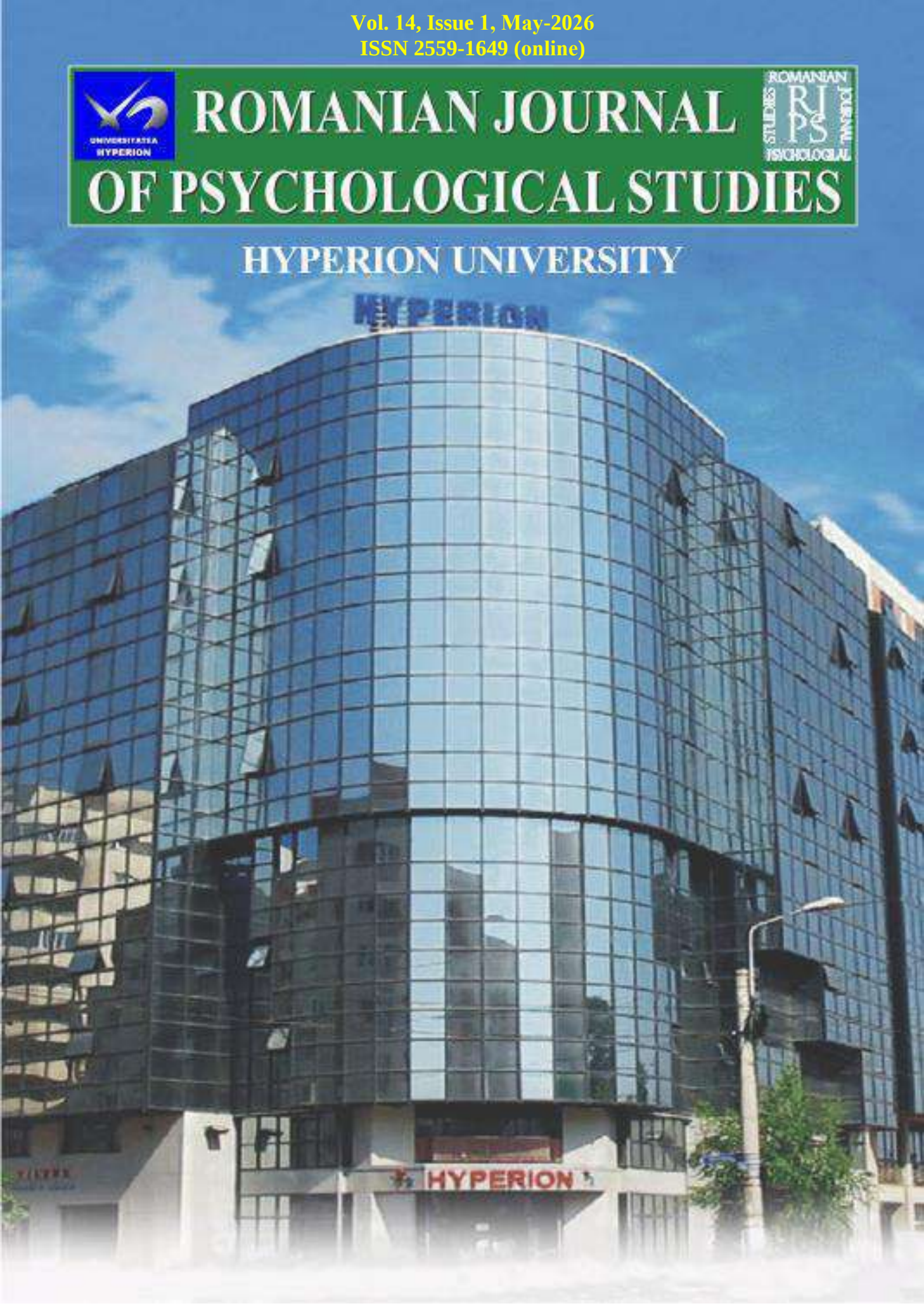
Vol. 14, Issue 1, May-2026
ISSN 2559-1649 (online)

ROMANIAN JOURNAL OF PSYCHOLOGICAL STUDIES

HYPERION UNIVERSITY



ROMANIAN JOURNAL OF PSYCHOLOGICAL STUDIES

Vol. 14, Issue 1 – 2026 ISSN 2559-1649, ISSN–L 2559-1649

Biannual journal published by Hyperion University,
Faculty of Psychology and Educational Sciences, Department of Psychology

Editorial Office: Hyperion University, Faculty of Psychology and Educational Sciences,
Calea Calarașilor no. 169, district 3, Bucharest, 030615
http://rjps.hyperion.ro, *office@rjps.hyperion.ro*

CONTENTS

Research articles

ROMANIAN JOURNAL OF PSYCHOLOGICAL STUDIES

HYPERION UNIVERSITY
www.rjps.hyperion.ro

CHARACTERISTICS OF PSYCHOSOCIAL ADAPTABILITY IN STUDENTS

OXANA PALADI[a], DIANA-ELENA DRAGOMIR[b],
[a]Moldova State University, Faculty of Psychology, Educational Sciences, Sociology and Social Work, Republic of Moldova
[b]Hyperion University, Bucharest, Faculty of Psychology, Romania

Abstract

This study examines students' psychosocial adaptability, conceptualised as a set of self-regulatory resources and social competencies that support university integration and quality of life. Using a sample of N = 420 students from Romania (n = 257) and the Republic of Moldova (n = 163), the MLO-AM, AMS, and a global adaptability/flexibility test (Adap) were administered, alongside demographic items, items on a prior diagnosis of anxiety, and the use of essential oils to reduce anxiety. Analyses (independent-samples t tests; one-way ANOVA with Tukey post hoc tests; p < 0,05) idntified differentiated profiles: students from Romania obtained higher mean scores on most specific dimensions (adaptive potential, stability, communication, and socio-educational needs), whereas global flexibility was slightly higher among students from the Republic of Moldova. Age, study cycle/year, and marital status showed robust effects, indicating higher levels of stability, communication, and integration among mature students and/or those at more advanced academic levels. A prior diagnosis of anxiety was associated with lower adaptability, and the use of aromas was linked to moderate advantages in socio-communicative functioning and professional orientation. The conclusions support the need for targeted psychoeducational interventions for groups with adaptive vulnerability.

Keywords: *psychosocial adaptability; students; quality of life; anxiety; aromatherapy*

1. INTRODUCTION

The student period represents an interval of accelerated transition, during which individuals simultaneously reorganise social roles, an emerging professional identity, and self-regulatory routines. The shift from relatively predictable educational structures to a competitive university environment, characterised by high autonomy and frequent exposure to evaluation, amplifies decisional pressure, cognitive demands, and the need for social integration. Within this context, psychosocial adaptability becomes a central construct: it reflects students' capacity to manage environmental demands, maintain functional relationships, adjust coping strategies, and preserve a satisfactory level of well-being.

Contemporary literature places psychosocial adaptability in close proximity to quality of life, given that well-being cannot be reduced to the absence of symptoms or to material resources, but includes how individuals evaluate their lives relative to their expectations, values, and opportunities. In the Romanian sociological and psychosocial tradition, quality of life is described as the set of elements characterising the physical, economic, social, cultural, political, and health-related circumstances in which people live (Mărginean & Bălașa, 2002), and the quality-of-life paradigm integrates objective determinants and subjective appraisals within a systemic perspective (Mărginean et al., 2011). Internationally, the definition and

Corresponding author: Oxana Paladi
E-mail address:oxana.paladi@usm.md

measurement of quality of life have been consolidated through the WHOQOL framework, which conceptualises quality of life as individuals' perception of their position in life within their cultural and value context, in relation to goals, expectations, and concerns (WHO, 1996; WHOQOL Group, 1998).

For students, quality of life is sensitive to adaptive resources—social support, relational competencies, optimism, and effective problem solving—but also to risk factors such as anxiety. Cognitive models describe anxiety as arising from threatening interpretations and avoidance strategies that, although reducing distress in the short term, tend to maintain vulnerability and restrict social or academic participation (Beck & Emery, 1985). In the university environment, academic anxiety can interfere with activity organisation, flexible use of cognitive strategies, and adaptation to performance demands (Toma, 2018). At the same time, the literature suggests that better adaptability, particularly through social resources and self-regulation, is associated with higher life satisfaction and more stable psychological functioning.

Accordingly, this article aims to synthesise theoretical and empirical foundations relevant to understanding the characteristics of psychosocial adaptability in students, through a review of the evolution of the quality-of-life concept, key approaches to psychosocial adaptation, and the mechanisms linking adaptability to well-being and anxiety in educational contexts.

Literature Review

1. Conceptual evolution of quality of life and the shift towards multidimensional models

In the initial phase of well-being research, assessments of prosperity were strongly anchored in economic indicators and comparisons of income levels. The development of aggregate measures of production and income provided a standardised language for describing "living standards" (Crum, 1935), yet it became evident that economic performance does not sufficiently capture the subjective experience of life or the actual distribution of opportunities. A major contribution to this paradigm shift is associated with the debate on the "Easterlin paradox", according to which economic growth does not automatically translate into proportionate increases in reported satisfaction, particularly beyond certain income thresholds (Easterlin, 1974). Subsequent analyses have nuanced the growth–well-being relationship, arguing that effects may be more consistent under particular historical and methodological conditions (Stevenson & Wolfers, 2008); however, the consensus has remained that well-being must be examined within a broader framework than the economic one.

In psychology, this broadening was achieved through the distinction between hedonic well-being (satisfaction, positive/negative affect) and eudaimonic well-being (meaning, autonomy, personal development), with an emphasis on optimal functioning (Ryan & Deci, 2001). Large-scale reviews of subjective well-being research have shown the accumulation of consistent evidence regarding the role of personal appraisals and social contexts in explaining interindividual variation (Diener et al., 1999). At the same time, the quality-of-life literature has treated the construct as an umbrella concept that can be partially explained by psychological well-being, yet requires the integration of life domains and social resources (Ring et al., 2007; Sirgy et al., 2006).

From a public policy perspective, multidimensional approaches have emphasised that well-being depends on real capabilities and freedoms, not solely on resources. Sen's (1999) capabilities approach offered an interpretative framework in which quality of life derives from the opportunity to choose and to achieve valued functionings. In an applied logic, the UNDP Human Development Report (1990) crystallised an integrative view of development by combining health, education, and resource indicators. More recently, the literature on multidimensional poverty measurement has provided methodological tools to capture multiple

deprivations and unequal distributions of well-being (Alkire & Foster, 2011). Within Europe, Eurostat's quality-of-life indicators cover domains such as material conditions, health, education, leisure time, and social relationships, providing a comparative framework across countries and population groups (Eurostat, 2022, 2023).

2. Measurement clarifications between objective criteria and subjective appraisals

A recurring issue in the field concerns overlap between quality of life, health status, and daily functioning. A critical appraisal of instruments used in research highlighted the risk that some measures capture symptom severity or functional limitations rather than an overall appraisal of life (Gill & Feinstein, 1994). In addition, terminological differences between "well-being", "satisfaction", "happiness", and "quality of life" may generate interpretative confusion, which justifies efforts towards conceptual clarification and integration (Haas, 1999).

Within this framework, WHOQOL instruments were designed as generic, cross-culturally comparable measures explicitly oriented towards individuals' subjective perceptions across fundamental life domains. WHOQOL-BREF provides an assessment structure including physical, psychological, social relationships, and environment domains, alongside a global appraisal of quality of life (WHO, 1996; WHOQOL Group, 1998). Relevance for student populations is also supported by validation studies confirming the instrument's use in academic contexts, including among medical students (Krăgeloh et al., 2011). Thus, quality of life can be investigated both as an outcome of adaptation to the university environment and as an indicator of psychosocial resources and vulnerabilities.

3. Psychosocial adaptation and adaptability

Psychosocial adaptation has attracted psychologists' interest in relation to the interaction between individuals and the social environment, being analysed both as a process and as an outcome. A systemic approach maintains that optimal adaptation involves constructing an interaction structure that enables individuals to meet needs, maintain identity, and function effectively in changing contexts (Melnikova, 2002). This perspective highlights several distinctive properties: the dynamic character of adaptation, its unfolding across development, the individualisation of response modalities, and the person's transformative role with respect to the environment—not only the environment's effects on the person (Melnikova, 2002).

In social psychology, psychosocial adaptation is described as an optimal ratio between the goals and values of the individual and those of the group, resulting from social interaction and the internalisation of relevant norms (Krâsiko, 2007). From this standpoint, psychosocial adaptability may be treated as a personality quality, reflected in flexibility, self-regulation, role negotiation capacity, and competence in maintaining functional relationships. Within the Republic of Moldova, analyses of psychosocial adaptation have explicitly included the role of value orientations and personal resources in shaping adaptive responses, emphasising that adaptation entails both internal change and contextual adjustment (Paladi, 2021, 2022).

A key operational core of adaptability is social competence. The relationship between adaptive behaviour and social skills raises definitional and assessment issues; however, there is consensus that these domains are interdependent, and that interventions targeting social skills may influence integration and everyday functioning (Gresham & Elliott, 1987). In school and adolescent populations, social competence has been associated with psychological well-being and better integration in educational contexts, suggesting a psychosocial protective mechanism (Holopainen et al., 2012). For students, this relationship is particularly relevant, because integration into learning groups, collaboration, and conflict management are components of academic success and subjective well-being.

4. Psychological determinants of adaptability and quality of life

The relationship between adaptability and well-being is influenced by the quality of social support. Studies examining adaptability and life satisfaction indicate that social support

may amplify the benefits of adaptability by functioning as a moderating factor: adaptable individuals report greater satisfaction when they have consistent relational resources (Mi & Weipeng, 2016). In a similar logic, optimism is associated with the use of active coping strategies, which may support persistence in tasks and reduce the impact of stressors on well-being (Nes & Segerstrom, 2006). For students, these resources may operate as buffers in the face of repeated evaluations, professional uncertainty, and performance pressure.

The university environment also includes specific vulnerabilities. Perfectionism may increase the risk of hopelessness and may affect academic performance through excessive standards and self-criticism, which can deteriorate perceived quality of life and integration within the academic community (Marian, 2023). Moreover, academic anxiety may interact with cognitive styles and learning strategies, affecting planning, cognitive flexibility, and self-regulation (Toma, 2018). Theoretically, cognitive models of anxiety explain symptom persistence through threatening interpretations and avoidance of feared situations, mechanisms that may reduce social and academic engagement (Beck & Emery, 1985). These mechanisms suggest that anxiety can function as a disruptive factor for adaptation, while interventions centred on cognitive restructuring and behavioural exposure may have indirect effects on quality of life.

Overall, the specialist literature outlines a robust convergence: quality of life is a multidimensional construct sensitive to adaptive resources and processes; psychosocial adaptability, understood as a process and a quality of social functioning, is associated with well-being and satisfaction, particularly when supported by social support and effective coping; and anxiety constitutes a risk factor that can compromise both adaptation and perceived quality of life. For students, this convergence justifies investigating adaptive profiles and their determinants, with an emphasis on relational and emotional variables within an assessment framework that is comparable and context-sensitive.

2. OBJECTIVE AND HYPOTHESES

2.1. OBJECTIVE

The study aims to assess students' psychosocial adaptability and to identify how it varies as a function of a series of individual factors. The primary objective is to determine whether statistically significant differences exist in levels of psychosocial adaptability among students, depending on independent variables such as: country of origin (Romania vs. the Republic of Moldova), gender, age category, study cycle (bachelor's vs. master's), year of study, academic achievement, background environment (urban vs. rural), marital status, essential oil use, a prior diagnosis of anxiety, and the use of aromas to reduce anxiety. Psychosocial adaptability was operationalised across multiple dimensions (subscales)—personal adaptive potential, neuropsychic stability, communication capacities, moral norms—and through the degree of satisfaction of various needs (socio-communicative, ecosocial, socioeconomic, communication with close others, peers and teaching staff, professional identification and training, and time management). Global adaptability/flexibility was also evaluated through a specific test. A secondary objective was to compare student groups defined by these variables in order to highlight potential differentiated adaptability profiles (e.g., married vs. unmarried students; students with vs. without a diagnosis of anxiety), with relevance for psychoeducational support.

2.2. HYPOTHESES

In line with the literature and the educational context, the following working hypotheses were formulated:

H1: There are significant differences between students from Romania and those from the Republic of Moldova with respect to psychosocial adaptability. Students from Romania are expected to obtain higher mean scores on most adaptability dimensions (e.g., adaptive potential, neuropsychic stability), given socio-cultural and educational differences.

H2: Psychosocial adaptability differs by gender, with women showing slightly higher levels on certain dimensions (e.g., satisfied socio-communicative needs) compared with men.

H3: Age influences adaptability: older students will have higher adaptability scores (due to maturation and life experiences) than younger students. An ascending trend is anticipated across age categories (18–21 years < 22–34 years < over 35 years).

H4: There will be significant differences by study cycle—master's students are expected to show more developed psychosocial adaptability (e.g., communication competencies, emotional stability) than bachelor's students, due to transition to a higher academic level.

H5: Psychosocial adaptability varies by year of study. Students in final years (e.g., Year III bachelor's, Year II master's) will report higher levels of adaptation (aligned with increased academic demands) than those at the beginning of university.

H6: Academic achievement is positively associated with adaptability. Students with high academic performance (mean grades 9–10) will obtain higher adaptability scores (e.g., personal adaptive potential, professional identification), whereas students with low performance (below grade 7) may show adaptation difficulties (lower emotional stability, communication, etc.).

H7: Background environment influences adaptation: students from urban environments will have higher psychosocial adaptability than those from rural environments, given the diverse opportunities for socialisation and education in urban settings.

H8: Marital status has a significant effect—married students are anticipated to display higher adaptability (potentially being more stable and socio-familially integrated) than unmarried students.

H9: Students who use essential oils (Lavender, Bergamot, Ylang-Ylang) for general purposes will have slightly better adaptability (possibly due to an interest in self-care and stress-management strategies) than students who do not use such aromas.

H10: Students with a prior diagnosis of anxiety will display lower levels of psychosocial adaptability (e.g., lower emotional resilience, communication and integration difficulties) than those without such a diagnosis.

H11: Using aromas to reduce anxiety (aromatherapy as a coping method) is associated with higher adaptability. Students who use aromas to manage anxiety are assumed to show slight adaptive advantages (e.g., better satisfied ecosocial needs) compared with those who do not use this strategy.

3. METHOD

Participants. The study included a sample of N = 420 students from two university centres (Romania and the Republic of Moldova). The gender distribution was unbalanced in favour of women (approximately 83% female, 17% male), reflecting the structure of the participating student population. Students' mean age was ~22 years, with subgroups defined for analyses: 18–21 years (younger bachelor's students), 22–34 years (the majority of master's students and a few older bachelor's students), and over 35 years (a small number of non-traditional students). By study cycle, 373 students were enrolled in bachelor's programmes and 47 in master's programmes. Year of study ranged from Year I to III (bachelor's) and Year I–II (master's); in the analysis, categories were: Year I bachelor's, Year II bachelor's, Year III bachelor's, and Year II master's (equivalently coded, because most master's students were in

the final year). Academic achievement was measured via grade point average: three groups were formed—students with a mean of 9–10 (high performance), a mean of 8 (good average performance), and below 7 (low performance). Approximately 20% of students were from rural backgrounds (n = 83), with ~80% from urban backgrounds (n = 337). Additionally, 88 students were married and 323 unmarried (including single and in non-formalised relationships).

Instruments and procedure. Data were collected using a comprehensive questionnaire assessing psychosocial adaptability across multiple domains. Standardised scales were used, including the MLO-AM (Multidimensional Locally-Oriented Adaptability Model)—with subscales for personal adaptive potential (internal capacity to cope with change), neuropsychic stability (emotional balance), communication capacities, and moral norms—and the AMS (Adaptability Measurement Scale), which measures satisfaction of fundamental needs at three levels: socio-communicative, ecosocial, and socioeconomic (labelled AMS1a, AMS1b, AMS1c), as well as satisfaction of communication needs in different contexts (family/friends—AMS2a, peers—AMS2b, teaching staff—AMS2c) and professional development needs (identification—AMS3a, training—AMS3b, time management—AMS3c). Students also completed a global adaptability/flexibility test, whose total score ("Adap") indicates the general level of adaptive flexibility.

The questionnaire included demographic questions and specific indicators: country, gender, age, year of study, academic status (overall grade average), background environment, and marital status. Targeted questions also addressed psychologically relevant habits/antecedents: "Do you have a clinical diagnosis of anxiety?" (Yes/No) and "Do you use essential oils (e.g., Lavender, Ylang-Ylang, Bergamot) to reduce your anxiety?" (Yes/No), as well as the general use of these aromas (Yes/No). Responses enabled group comparisons for each variable.

Analysis plan. Bivariate statistical tests appropriate to the nature of the independent variables were applied: independent-samples t tests (for dichotomous variables such as gender, environment, marital status, aroma use, etc.) and one-way ANOVA (for variables with more than two categories: country—2 groups, age—3 groups, year of study—4 groups, academic achievement—3 groups). For ANOVA, post hoc tests (Tukey HSD) were used to identify specific group differences. The significance threshold was $p < 0,05$. Analyses were conducted in SPSS 26, ensuring verification of assumptions (e.g., homogeneity of variances via Levene's test). Significant results are reported in the next section, highlighting the magnitude and direction of differences (which group shows higher/lower levels).

4. RESULTS

Overall, the analyses indicate a series of statistically significant differences in students' psychosocial adaptability as a function of the examined variables. Findings are presented below for each independent variable, with an emphasis on dimensions where notable differences were observed ($p < 0,05$) and brief notes for non-significant results.

Country (Romania vs. the Republic of Moldova). Significant differences were identified between Romanian students (n = 257) and Moldovan students (n = 163) on most adaptability indicators. Consistently, students from Romania obtained higher mean scores than those from the Republic of Moldova on: personal adaptive potential (M_RO = 1,89 vs. M_MD = 1,50, $p < 0,001$), neuropsychic stability (M_RO = 1,84 vs. M_MD = 1,50, $p < 0,001$), communication capacities (M_RO = 2,04 vs. M_MD = 1,89, $p < 0,001$), and a series of psychosocial needs: socio-communicative (M_RO = 2,47 vs. M_MD = 2,31, $p = 0,006$), ecosocial (M_RO = 2,43 vs. M_MD = 2,29, $p = 0,018$), and socioeconomic (M_RO = 2,31 vs. M_MD = 2,15, $p = 0,007$). Romanian students also reported better satisfaction of communication needs with relatives/friends (M_RO = 2,34 vs. M_MD = 2,18, $p = 0,025$) and

with peers (M_RO = 2,25 vs. M_MD = 2,04, p = 0,001), as well as with teaching staff (M_RO = 2,37 vs. M_MD = 2,04, p < 0,001). Similarly, regarding professional development, students from Romania had higher mean scores for professional identification (M_RO = 2,68 vs. M_MD = 2,39, p < 0,001), professional training (M_RO = 2,42 vs. M_MD = 2,15, p < 0,001), and personal time management (M_RO = 2,12 vs. M_MD = 1,87, p < 0,001). A notable exception concerns the global adaptability test: on this indicator, Moldovan students obtained a significantly higher score (M_MD = 2,21) than Romanian students (M_RO = 2,07, p = 0,006), suggesting slightly higher overall flexibility in the Republic of Moldova group. For moral norms, the very small mean difference (M_RO = 1,98 vs. M_MD = 1,96) did not reach statistical significance (p = 0,41), indicating similar values regarding internalisation of socio-moral norms across groups.

Gender (Male vs. Female). Gender-related differences were generally small and largely non-significant. On average, female students tended to have slightly higher scores than male students on most adaptive dimensions, but these differences did not reach statistical significance (e.g., personal adaptive potential: M_fem = 1,72 vs. M_masc = 1,81, p = 0,35; neuropsychic stability: M_fem = 1,69 vs. M_masc = 1,82, p = 0,10; communication capacities: M_fem = 1,96 vs. M_masc = 2,06, p = 0,051—difference at the threshold of significance). The only significant difference concerned socio-communicative needs: female students reported slightly better satisfaction of these needs (M_fem = 2,43) than male students (M_masc = 2,28, p = 0,044). This suggests that women may have somewhat higher social-communicative adaptability (e.g., satisfying communication and social relatedness needs more effectively); however, overall, gender does not appear to be a determining factor for global psychosocial adaptability (the total adaptability score is practically identical: M_fem = 2,13 vs. M_masc = 2,14, p = 0,85).

Age category. Analyses by age group reveal a strong and systematic effect of age on psychosocial adaptability. Older students (over 35 years, n = 113) presented, on average, the highest scores on almost all adaptive dimensions, followed by the intermediate age group (22–34 years, n = 119), whereas younger students (18–21 years, n = 144) had the lowest scores. This ascending trend with age was statistically confirmed for most indicators:

Personal adaptive potential: increases with age (M_18–21 = 1,45; M_22–34 = 1,71; M_>35 = 2,15), ANOVA F(2,373) = 41,91, p < 0,001. Differences are significant between all groups (students >35 years have significantly higher adaptive potential than those aged 18–21 and 22–34, p < 0,01).

Neuropsychic stability: increases with age (M_18–21 = 1,48; M_22–34 = 1,68; M_>35 = 2,08), F(2,373) = 34,24, p < 0,001. Students >35 years significantly exceed the other two groups (mean difference ~0,60 vs. 18–21 years, p < 0,001).

Communication capacities: highest in the >35 group (M = 2,11), significantly higher than in the other groups (M_18–21 ≈ 1,92, M_22–34 ≈ 1,93; p < 0,001). No differences emerged between the 18–21 and 22–34 groups (both with similar means ~1,92–1,93), suggesting that the additional life experience in the >35 category contributes to more developed communication skills.

Moral norms: a modest age effect was observed (F = 4,95, p = 0,008). Students >35 years tend towards slightly higher scores (M = 2,03) than those aged 18–21 (M = 1,93); the 22–34 group is intermediate (M = 1,97) and does not differ significantly from the others (the main difference is between >35 vs. 18–21, p = 0,005).

Satisfaction of socio-communicative needs: increases slightly with age (M_>35 = 2,53 vs. M_22–34 = 2,34 vs. M_18–21 = 2,36). ANOVA indicates a significant effect (F = 3,70, p = 0,026), with the notable difference being that students >35 years have a higher score than those aged 22–34 (p ≈ 0,04). The youngest group does not differ significantly from the others (M_18–21 is very close to M_22–34).

Ecosocial needs: improve with age (M_>35 = 2,52, compared with M_22–34 = 2,34 and M_18–21 = 2,29), F(2,373) = 5,49, p = 0,004. Students >35 years show significantly higher satisfaction of ecosocial needs than those aged 18–21 (p = 0,003), suggesting better social-ecological integration with maturation.

Socioeconomic needs: increase clearly after 18–21 years (M_18–21 = 2,08 vs. M_22–34 = 2,30 vs. M_>35 = 2,43), F = 11,87, p < 0,001. The 18–21 group has a significantly lower score than the other two groups (difference ~0,22–0,35, p < 0,01). Practically, younger students experience greater difficulties in meeting material and economic needs, probably due to lower financial resources or stability.

Communication with relatives/friends: does not vary significantly with age (p = 0,494); all groups have comparable means (~2,19–2,36).

Communication with peers: differs significantly (F = 7,09, p = 0,001). Students >35 years report the best communication with peers (M = 2,34), significantly higher than those aged 18–21 (M = 2,04, p = 0,001). The 22–34 group lies between the two (M = 2,16) and does not differ significantly from either—thus, the main difference is that older students (often master's students) communicate more effectively with peers than first-year students aged 18–21.

Communication with teaching staff: increases clearly with age (M_18–21 = 2,06; M_22–34 = 2,23; M_>35 = 2,55), F(2,373) = 19,20, p < 0,001. Students >35 years show significantly better communication with lecturers than younger groups (p < 0,001). Even students aged 22–34 tend to score higher than those aged 18–21, although their difference does not reach significance (p ≈ 0,09). This may reflect that mature students (often with professional responsibilities) interact more proactively and effectively with teaching staff.

Professional identification: increases with age (M_>35 = 2,79 vs. M_18–21 = 2,41; M_22–34 = 2,56), F = 11,33, p < 0,001. Students >35 years have a more consolidated professional identity than those aged 18–21 (p < 0,001) and slightly above those aged 22–34 (p = 0,02). Thus, vocational clarity increases markedly with age.

Professional training (skills development): improves with age (M_>35 = 2,60 vs. M_18–21 = 2,14), F = 19,99, p < 0,001. Students >35 years evaluate satisfaction of training needs significantly more positively than both younger groups (p < 0,001). The 18–21 and 22–34 groups do not differ (both younger groups still lack aspects of professional development that mature students have achieved).

Personal time management: also better in the >35 group (M = 2,19) compared with the 18–21 group (M = 1,88), F = 6,70, p = 0,001. The significant difference is between >35 and 18–21 (p = 0,001). Older students appear to manage time more efficiently, likely due to cumulative personal and professional experience.

Global adaptability (flexibility): interestingly, here the 18–21 group has a slightly higher score (M = 2,19) compared with students >35 years (M = 2,04), with a significant effect F(2,373) = 3,16, p = 0,044. Post hoc tests indicate a significant difference only between the 18–21 and >35 groups (p ≈ 0,03). In other words, although mature students lead on most specific adaptation dimensions, very young students show slightly higher general flexibility—possibly due to the enthusiasm and openness to novelty characteristic of early adulthood, whereas older students may become more rigid in their routines.

Study cycle (Bachelor's vs. Master's). Master's status entails clear differences in adaptability compared with being a bachelor's student. Master's students (n = 47) obtain significantly higher scores on most variables than bachelor's students (n = 373). Specifically, master's students are characterised by: higher personal adaptive potential (M_master = 2,21 vs. M_licență = 1,68, p < 0,001), better emotional stability (M_master = 2,06 vs. M_licență = 1,66, p < 0,001), and more developed communication capacities (M_master = 2,15 vs. M_licență = 1,96, p = 0,001). They also report more effective interaction with teaching staff (communication needs satisfied, M_master = 2,55 vs. M_licență = 2,20, p = 0,001). These

differences suggest that students at an advanced level of study become more psychosocially adaptable, likely due to accumulated academic experience and transition towards a professional profile. Other aspects do not differ significantly between the two cycles: for example, moral norms are very similar (M_master = 2,04 vs. M_licență = 1,97, p = 0,061—non-significant). Similarly, satisfaction of ecosocial or socioeconomic needs shows no notable variation between bachelor's and master's (all p > 0,1). Interestingly, general flexibility measured by the adaptability test is, on average, higher among bachelor's students (M = 2,16) than among master's students (M = 1,87), a very clear difference (p < 0,001). Thus, although master's students have advantages on specific dimensions (professional orientation, stability), bachelor's students show higher overall adaptive flexibility—possibly explained by their younger age and greater malleability in the face of change.

Year of study. Year-based results confirm the trends observed in the bachelor's–master's comparison, highlighting the effect of educational level on adaptation. ANOVA reveals significant differences (most p < 0,01) on almost all adaptive dimensions across groups from different years of study (Years I, II, III bachelor's and Year II master's). Year II master's students (coinciding with the final year) show the highest adaptive scores, whereas Year I bachelor's students typically show the lowest levels, with Years II–III bachelor's students in an intermediate position. This pattern is illustrated by the following differences:

Adaptive potential: increases progressively with advancement in year (M_an I = 1,63; M_an III = 1,71; M_an II Master = 2,21), p < 0,001. Master's students (Year II M) clearly exceed all bachelor's groups (difference ~0,5–0,6 vs. Year I, p < 0,001). No notable differences appear between Years I–III bachelor's on this indicator.

Neuropsychic stability: significantly higher among master's students (M_an II M = 2,06) than among bachelor's students (M_an I = 1,64, M_an III = 1,70; p < 0,001). Year I students are significantly below Year II master's students (p < 0,001).

Communication capacities: Year II M students have a higher mean (2,15) vs. bachelor's students (~1,91–1,97), p < 0,01. The notable difference is between master's students and Years I/II bachelor's (p = 0,012 vs. Year I; p = 0,021 vs. Year II); Year III bachelor's does not differ much from master's (1,96 vs. 2,15, p = 0,124).

Moral norms: no consistent significant differences emerge between years (p = 0,311). Mean values fluctuate narrowly (approximately 1,93–2,05) without a clear pattern.

Socio-communicative needs:* Year II master's students report the best satisfaction (M = 2,59), significantly above Year I (M = 2,37, p = 0,036). Bachelor's-year groups do not differ substantially from each other (~2,34–2,41).

Ecosocial needs:* increase gradually (M_an I = 2,29; M_an III = 2,38; M_an II M = 2,52), p = 0,004. Master's students have a significantly higher level than first-year students (difference ~0,23, p = 0,004).

Socioeconomic needs:* overall difference p < 0,001. Year II M students have the highest score (2,45), whereas Year I bachelor's students have the lowest (2,08). Post hoc tests show that Year I is significantly below Year II bachelor's and Year II master's (p < 0,01).

Communication with relatives/friends: not significantly influenced by year (p = 0,494).

Communication with peers: F(3,416) = 2,22, p = 0,085 (trend). Master's students (Year II M, M = 2,34) communicate somewhat better with peers than earlier-year students (e.g., M_an I = 2,08), but the difference is at the threshold of statistical significance.

Communication with teaching staff: F(3,416) = 5,18, p = 0,002. Year II M students demonstrate significantly better communication with lecturers (M = 2,51) than bachelor's students (M_an I = 2,19, M_an III = 2,17; p = 0,003 vs. Year III and p = 0,005 vs. Year I). Year II bachelor's (M = 2,41) also scores above Years I/III (possibly indicating gradual adaptation across the degree programme).

Professional identification: F(3,416) = 1,72, p = 0,162 (non-significant). Nevertheless, the mean increases from Year I (2,41) to Year II M (2,62). An improvement in the consolidation of professional goals towards the end of studies can be observed, but within-group variability means that the difference is not statistically robust.

Professional training: F(3,416) = 1,57, p = 0,195; unclear upward trend—Year II M (2,56) vs. Year I (2,14). Although ANOVA did not reach $p < 0,05$, the trend nonetheless indicates that senior students attribute greater importance to continuous professional development than students at the beginning.

Time management: F(3,416) = 1,23, p = 0,297 (non-significant difference). Year II M nonetheless has the highest mean (2,11 vs. ~1,96 in Year I). Master's students appear to manage time somewhat more effectively, but the difference is not statistically pronounced.

In conclusion, year of study confirms an academic cohort effect: students at the end of their academic trajectory (including master's students) are better psychosocially adapted than those at the beginning, particularly on parameters such as autonomy and relationships with lecturers—areas that develop with academic experience. The only notable reversal remains in general flexibility, where first-year students have values comparable to those of older peers (e.g., Adap ~2,13 constant across years).

Academic achievement. Students' academic performance (measured by grade averages) correlates with psychosocial adaptability, although the relationship is not linear across all components. Comparative analysis of three groups—means of 9–10 (high performance, n = 130), mean of 8 (moderate performance, n = 109), and below 7 (low performance, n = 85)—indicates significant differences for approximately half of the assessed adaptation dimensions. Students with high academic performance (mean 9–10) have higher scores on: personal adaptive potential ($F(2,321) = 14,82$, $p < 0,001$; e.g., mean difference ~0,49 vs. the "below 7" group and ~0,22 vs. the "8" group), neuropsychic stability ($p < 0,001$; top students showing greater emotional control than those with arrears, difference ~0,52), and also on satisfaction of socioeconomic needs (mean 9–10: ~2,32 vs. below 7: ~2,21, although the ANOVA effect is not very strong, p = 0,149) and communication with faculty peers (top students appear more collegially integrated, p = 0,113, although the difference is not significant). An interesting result emerges for moral norms: students with average results (grade 8) tend to have slightly higher morality scores ($M \approx 2,04$) than those with maximum grades ($M \approx 1,93$) or very low grades ($M \approx 1,94$), ANOVA $F(2,321) = 7,32$, p = 0,001. The main difference is that the grade-8 group scores significantly above the below-7 group ($p < 0,01$) and above the top group ($p < 0,05$), suggesting a possible regression-to-the-mean effect: very high- or very low-performing students similarly tend not to overvalue moral conformism, whereas those with commendable (but not excellent) performance score somewhat higher on this dimension.

Regarding students with weak academic results (mean below 7), they stand out negatively through lower adaptability on several components. They have the lowest scores on adaptive potential and emotional stability (differences noted above), indicating difficulties coping with academic stress. They also report significantly the poorest communication with teaching staff ($M\_sub7 \approx 2,10$ vs. $M\_9–10 \approx 2,51$, $p < 0,001$)—likely due to lower academic engagement—and the lowest involvement in professional development (professional training need scores $M\_sub7 \approx 2,14$ vs. $M\_9–10 \approx 2,33$, $p < 0,01$). In other words, academically underperforming students appear less integrated and less concerned with the vocational side of education. It should nevertheless be noted that for general flexibility (the total adaptability test), no significant differences emerge among the three academic achievement categories ($p > 0,5$); thus, general adaptation abilities do not depend directly on grades.

Overall, the hypothesis regarding a positive association between academic performance and adaptability is partially confirmed. Academically elite students excel on many adaptive

domains (emotional balance, adaptive self-efficacy, etc.), but in some areas students with average or even low performance may show comparable or better values (e.g., moral norms or flexibility). The specific context (pressure for maximum grades vs. moderate relaxation) may influence these results.

Background environment (Urban vs. Rural). A significant effect of background environment on adaptability is observed, with students from urban environments showing, on average, higher scores than students from rural environments on several indicators. Differences are pronounced for: personal adaptive potential (M_urban = 1,78 vs. M_rural = 1,57, p = 0,009), neuropsychic stability (M_urban = 1,76 vs. M_rural = 1,52, p = 0,002), and communication capacities (M_urban = 2,00 vs. M_rural = 1,90, p = 0,038). These findings indicate that students raised in larger cities tend to be more confident in their adaptive abilities and to manage psychosocial stress better than peers from villages or small towns. In addition, satisfaction of ecosocial needs (e.g., community integration and access to resources) is better among urban students (M = 2,41 vs. 2,24, p = 0,016), probably due to the broader opportunities offered by the urban environment (services, educational infrastructure, diverse social networks). Conversely, dimensions such as moral norms, socio-communicative needs, or relationships with relatives/friends do not show statistical differences by urban/rural status (p > 0,3–0,5); values are similar, suggesting that geographical origins do not influence adherence to moral principles or maintenance of close ties. Global adaptability does not differ significantly between the two categories (p = 0,63), with rural students having a practically identical mean score (2,14) to urban students (2,12). Nonetheless, the overall profile indicates an adaptive advantage for students shaped in urban environments, especially in terms of personal autonomy and emotional stability. It can be speculated that the more complex and unpredictable urban life experience provides earlier opportunities to practise adaptability.

Marital status (Unmarried vs. Married). One of the most robust factors associated with adaptability proved to be marital status. Differences between married students (n = 88) and unmarried students (n = 323) systematically favour married students across almost all domains. Married students have significantly higher mean scores than unmarried students for: personal adaptive potential (M_căs = 2,18 vs. M_nec = 1,62, p < 0,001), neuropsychic stability (M_căs = 2,13 vs. M_nec = 1,60, p < 0,001), communication capacities (M_căs = 2,08 vs. M_nec = 1,95, p = 0,004), and even moral norms (M_căs = 2,05 vs. M_nec = 1,96, p = 0,004). Married students also report higher satisfaction of all need types: socio-communicative (M_căs = 2,59 vs. M_nec = 2,36, p = 0,001), ecosocial (M_căs = 2,52 vs. 2,33, p < 0,001), socioeconomic (M_căs = 2,45 vs. 2,19, p < 0,001). They communicate better with family/friends (M_căs = 2,48 vs. 2,23, p = 0,003), peers (M_căs = 2,38 vs. 2,12, p = 0,001), and teaching staff (M_căs = 2,51 vs. 2,17, p < 0,001). Moreover, they endorse a clearer professional identity (M_căs = 2,77 vs. 2,52, p = 0,001) and a stronger need for professional upskilling (M_căs = 2,56 vs. 2,25, p < 0,001), while managing time more efficiently (M_căs = 2,24 vs. 1,97, p = 0,001). In practical terms, being married appears associated with greater maturity and personal stability, which is reflected in more extensive psychosocial adaptability. It may be assumed that family responsibilities and emotional support from a partner contribute to the development of these adaptive abilities. Notably, no indicator was weaker among married students than among unmarried students—including the global adaptability test, where the two groups had practically identical means (M = 2,13 for both, p = 0,895). Thus, marital status appears to be a positive predictor of adaptation: married students constitute the most adapted group, likely due to additional social and emotional capital available in their personal lives.

Use of essential oils (Lavender, Bergamot, Ylang-Ylang)—general use. The study investigated whether students who reported using aromatherapy (n = 167) differ from those who do not use such aromas at all (n = 253) with respect to adaptability. Results show significant differences only on certain dimensions. On average, essential oil users have higher

scores for satisfaction of socio-communicative needs (M_Da = 2,55 vs. M_Nu = 2,31, p < 0,001), ecosocial needs (M_Da = 2,51 vs. 2,29, p < 0,001), and socioeconomic needs (M_Da = 2,36 vs. 2,17, p = 0,002). They also interact significantly better with teaching staff (M_Da = 2,35 vs. M_Nu = 2,17, p = 0,006), possibly reflecting a more proactive attitude and self-control (potentially related to managing stress through remedies such as aromas). Additionally, aroma users score higher on clarifying professional identity (M_Da = 2,69 vs. 2,49, p = 0,002) and orientation towards training (M_Da = 2,43 vs. 2,24, p = 0,003), suggesting a student profile concerned with personal development and well-being. Conversely, no significant differences appear for adaptive potential, emotional stability, or general communication capacities (p = 0,05–0,13; e.g., MLO-AM PPA ~1,75 in both groups, p = 0,057). Global adaptability also does not differ (Adap ~2,12 for both subgroups, p = 0,63).

These findings indicate a weak beneficial association between essential oil use (as a relaxation or self-care practice) and certain aspects of adaptation—particularly the social dimension and attitudes towards studies. Students who resort to such wellness methods may, in general, be more aware of their psychosocial needs and more active in meeting them. However, aromatherapy in itself does not appear sufficient to influence internal adaptive capacity or emotional balance, as no differences were found on those parameters.

Prior diagnosis of anxiety. As expected, a clinical diagnosis of anxiety in students' history has a negative impact on their psychosocial adaptability. Comparing students who reported a diagnosis of anxiety (n = 63) with those without such a diagnosis (n = 357) shows significant differences across multiple domains, invariably in the direction of lower scores for the anxiety group. Students with diagnosed anxiety show reduced personal adaptive potential (M_DA = 1,49) compared with those without anxiety (M_NU = 1,78, p = 0,001), indicating lower confidence in their ability to cope with change. They also have lower neuropsychic stability (M_DA = 1,46 vs. M_NU = 1,75, p = 0,001), reflecting higher levels of emotional instability and vulnerability to stress. Communication capacities are also slightly affected: the anxious group's mean is lower (1,87 vs. 2,00, p = 0,013), possibly suggesting greater social withdrawal or expression difficulties. In the social domain, students with anxiety appear less integrated; for example, satisfaction of ecosocial needs is significantly lower (M = 2,19) than among peers without anxiety (M = 2,41, p = 0,005). Similarly, they lag behind in professional identification (M_DA = 2,38 vs. M_NU = 2,60, p = 0,013) and professional training (M_DA = 2,16 vs. 2,34, p = 0,036), possibly due to anxiety's impact on motivation and career-related concentration. It is noteworthy that socio-communicative needs, moral norms, and relationships with friends do not differ significantly (those with anxiety appear to benefit from close social support networks to a similar extent as others). Global adaptability has practically identical means for the two groups (2,13 vs. 2,13, p = 0,98), suggesting that although anxiety undermines certain specific aspects (confidence, emotional calm), affected students often mobilise general adaptive mechanisms comparable to those of others (possibly through conscious effort or external support). Nevertheless, the adaptive profile of the anxious student appears fragile and indicates the need for additional support to strengthen resilience (to stress), social skills, and academic/professional engagement.

Use of aromas to reduce anxiety. Among students, 108 (approximately 26%) report using aromas/essential oils specifically when feeling anxious, whereas 312 (74%) do not. It was examined whether this coping practice (anti-stress aromatherapy) is associated with adaptive differences. Findings show several adaptive advantages among students who use aromas for anxiety, although many dimensions remain similar between groups. Specifically, anti-anxiety aroma users show better satisfaction of socio-communicative needs (M_DA = 2,55 vs. M_NU = 2,35, p = 0,003), indicating an ability to maintain social relationships and communication even under anxious states. They also perform slightly better on ecosocial needs (M = 2,48 vs. 2,34, p = 0,030), suggesting better social-ecological integration, possibly due to

actively addressing stress through calming methods. Reports also indicate improved communication with teaching staff among students who use aromas (M = 2,39 vs. 2,20, p = 0,009), perhaps because aromatherapy helps them manage evaluative anxiety, allowing more relaxed interaction with lecturers. Another noted benefit concerns professional training: users appear more involved in competence development (M = 2,44 vs. 2,26, p = 0,010). By contrast, no significant differences were recorded for adaptive potential, emotional stability, or basic communication skills—thus aromatherapy does not directly influence internal adaptive capacity. Likewise, neither satisfaction of communication needs with friends nor general adaptability (Adap ~2,12 in both groups, p = 0,63) differs as a function of aroma use. It can be concluded that coping through aromas has limited but real effectiveness: students who adopt it appear slightly better adapted socially and academically under stress than those who do not. Aromatherapy may function as an indicator of an active, self-control-oriented coping style, which is reflected beneficially in certain adaptive behaviours (socialising, professional proactivity).

5. CONCLUSIONS

This study analysed students' psychosocial adaptability in a multidimensional manner, tracking its variation as a function of socio-cultural, demographic, academic, and personal factors. Overall, the objective was achieved: the results delineate differentiated adaptation profiles, indicating that integration into the university environment is not a uniform attribute, but rather the outcome of interactions between individual resources, contextual conditions, and accumulated experience.

From a socio-cultural perspective, country of origin delineates consistent differences. Students from Romania generally recorded higher levels on most specific adaptability dimensions (adaptive potential, stability, communication, and satisfaction of certain socio-educational needs), suggesting an advantage associated with access to different resources and opportunities. However, overall flexibility appears slightly higher among students from the Republic of Moldova. This dissociation indicates that more modest levels on certain subscales can coexist with good global capacity to adjust to change, possibly supported by compensatory strategies and greater tolerance of uncertainty.

Gender does not emerge as a major predictor. Differences between women and men are small and largely non-significant, with a modest advantage for female students in satisfaction of socio-communicative needs. The implication is pragmatic: support interventions should be designed on the basis of actual indicators of functioning and vulnerability (stress, integration, performance), rather than assumptions related to gender.

Age and life experience have a robust impact on adaptation. Mature students display higher specific adaptability: better emotional stability, more effective communication, and more solid academic and social integration. In parallel, very young students tend to show slightly higher general flexibility. This suggests two complementary components of adaptation: malleability and openness to novelty, more visible at the start of adulthood, versus specific competence, consolidated through experience and practice.

Educational trajectory (cycle and year of study) confirms the same logic. Master's students and students in final years generally obtain higher scores on applied adaptability dimensions, reflecting progressive accommodation to university norms, increased autonomy, and the development of functional relationships with teaching staff. At the same time, general flexibility may remain higher at bachelor's level, highlighting that academic seniority strengthens specific competencies without automatically guaranteeing flexibility in the face of change.

Academic achievement is, overall, associated with better adaptability, but the relationship is not strictly linear. High-performing students tend to be more emotionally balanced and more confident, whereas low performance functions as a risk indicator associated with vulnerabilities (instability, weaker institutional integration, less clear professional orientation). At the same time, certain dimensions may advantage medium-performing groups, suggesting that the pressure of excellence can entail costs in time, energy, and socio-relational availability.

Background environment differentiates adaptation in favour of urban students, particularly through adaptive potential and neuropsychic stability, likely due to exposure to more varied educational and social opportunities. Conversely, the primary support networks of rural students may function as a compensatory resource. Marital status stands out as a strong predictor: married students are, on average, the best adapted, probably through stability, emotional support, and structuring of daily life; for universities, this underscores the importance of building alternative sources of support for vulnerable unmarried students.

Aromatherapy-related variables indicate limited positive effects, mainly in the socio-communicative domain and academic engagement, suggesting a solution-focused coping style but without a major impact on intrinsic adaptive resources. In contrast, a prior diagnosis of anxiety is associated with a more fragile adaptive profile on specific dimensions (confidence, emotional resilience, integration), confirming the need for accessible psychological services and targeted interventions. Using aromas to reduce anxiety appears to yield modest benefits, particularly by maintaining socio-academic functioning (social contact and communication with teaching staff), even if it does not eliminate intrinsic differences associated with anxiety.

Thus, students' psychosocial adaptability is influenced primarily by maturity, academic seniority, social capital, and emotional health. The results recommend a differentiated institutional approach, with early identification of vulnerable students and implementation of targeted interventions (mentoring, counselling, tutoring, and coping programmes). Priority should be given to interventions for first-year students, students with weak results, and those with anxiety, in order to prevent adaptation difficulties, performance decline, and dropout.

REFERENCES

Alkire, S., & Foster, J. (2011). Counting and multidimensional poverty measurement. Journal of Public Economics, 95(7–8), 476–487.

Beck, A. T., & Emery, G. (1985). Anxiety disorders and phobias: A cognitive perspective. Basic Books.

Crum, W. L. (1935). National income, 1929–32. The Quarterly Journal of Economics, 49(3), 508–517.

Diener, E., et al. (1999). Subjective well-being: Three decades of progress. Psychological Bulletin.

Easterlin, R. A. (1974). Does economic growth improve the human lot? Some empirical evidence. In Nations and households in economic growth (pp. 89–125). Academic Press.

Eurostat. (2022). Indicatori de calitate a vieții – condiții materiale de viață. https://ec.europa.eu/eurostat/web/quality-of-life/information-data?language=ro

Eurostat. (2023). Indicatori de calitate a vieții – condiții materiale de viață. https://ec.europa.eu/eurostat/web/quality-of-life/information-data?language=ro

Gill, T. M., & Feinstein, A. R. (1994). A critical appraisal of the quality of quality-of-life measurements. JAMA, 272(8), 619–626.

Gresham, F. M., & Elliott, S. N. (1987). The relationship between adaptive behavior and social skills: Issues in definition and assessment. The Journal of Special Education, 21(1), 167–181.

Haas, B. K. (1999). Clarification and integration of similar quality of life concepts. Image: The Journal of Nursing Scholarship, 215–220.

Holopainen, L., Lappalainen, K., Junttila, N., & Savolainen, H. (2012). The role of social competence in the psychological well-being of adolescents in secondary education. Scandinavian Journal of Educational Research, 56(2), 199–212.

Krâsiko, V. G. (2007). Psihologia socială (V. Poleanu, Trad.). Europress Group.

Krăgeloh, C. U., Henning, M., Hawken, S. J., & Zhao, Y. (2011). Validation of the WHOQOL-BREF Quality of Life Questionnaire for use with medical students. Education for Health, 24(2), 1–5.

Marian, M. (2023). Perfecţionismul și deznădejdea: implicaţii pentru performanţa academică a studenţilor. Univers Pedagogic, 3(79), 88–91.

Melnikova, N. N. (2002). Социально-психологическая адаптация личности: Методические указания. Изд-во ЮУрГУ.

Mi, Z., & Weipeng, L. (2016). Adaptability and life satisfaction: The moderating role of social support. Frontiers in Psychology, 7, 11–34.

Mărginean, I., & Bălașa, A. (2002). Calitatea vieţii în România. Expert.

Mărginean, I., Precupeţu, I., Dumitru, M., et al. (2011). Paradigma calității vieții. Editura Academiei Române.

Nes, L. S., & Segerstrom, S. C. (2006). Dispositional optimism and coping: A meta-analytic review. Personality and Social Psychology Review, 10(3), 235–251.

Paladi, O. (2021). Orientările valorice şi adaptarea psihosocială la vârsta adolescenței: abordări teoretice. Print-Caro SRL.

Ryan, R. M., & Deci, E. L. (2001). On happiness and human potentials: A review of research on hedonic and eudaimonic well-being. Annual Review of Psychology, 141–166.

Sen, A. (1999). Development as freedom. Anchor Books.

Sirgy, M. J., et al. (2006). The quality-of-life (QOL) research movement: Past, present, and future. Social Indicators Research, 76, 343–466.

Stevenson, B., & Wolfers, J. (2008). Economic growth and subjective well-being: Reassessing the Easterlin paradox. National Bureau of Economic Research.

Toma, N. (2018). Particularități ale interacțiunii anxietate academică – stiluri cognitive la studenți (Teză de doctor în psihologie). Chișinău.

WHOQOL Group, et al. (1998). Development of the World Health Organization WHOQOL-BREF quality of life assessment. Psychological Medicine, 28(3), 551–558.

World Health Organization. (1996). WHOQOL-BREF: Introduction, administration, scoring and generic version of the assessment (field trial version). Geneva: World Health Organization.

ROMANIAN JOURNAL OF PSYCHOLOGICAL STUDIES

HYPERION UNIVERSITY
www.rjps.hyperion.ro

QUALITY OF LIFE CHARACTERISTICS AMONG UNIVERSITY STUDENTS

OXANA PALADI[a], DIANA-ELENA DRAGOMIR[b],
[a]Moldova State University, Faculty of Psychology, Educational Sciences, Sociology and Social Work, Republic of Moldova
[b]Hyperion University, Bucharest, Faculty of Psychology, Romania

Abstract

The study investigates quality of life characteristics among students from Romania and the Republic of Moldova from a psychological perspective, building on the multidimensional approaches presented in the specialised literature. Quality of life is analysed as a complex construct integrating physical, psychological, social and value-based dimensions and depends on individuals' subjective perceptions of their own existence. The research was conducted on a sample of 420 students using standardised instruments (the Quality of Life Inventory (QOLI - Quality of Life Inventory), Michael B. Frisch, and the Questionnaire for assessing satisfaction with quality of life, R.S. Elliot). The findings indicate a high prevalence of low and very low levels of overall quality of life, highlighting significant psychosocial vulnerabilities among students. Comparative analyses reveal differences by gender, background, academic achievement, age and national socio-cultural context. Higher academic performance, older age and stronger perceived social support are associated with higher levels of life satisfaction and adaptive coping mechanisms. The conclusions underscore the need to develop psychological interventions aimed at strengthening students' personal and social resources in order to optimise quality of life.

Keywords: *quality of life, psychological well-being, life satisfaction, adaptive coping mechanisms, student.*

1. Literature review

Quality of life is one of the central concepts in contemporary socio-human sciences and is used to describe individuals' overall well-being in relation to objective living conditions and subjective appraisals of their own existence. In the university environment, the analysis of quality of life is particularly relevant, as students simultaneously face academic, professional, relational and identity-related challenges. The transition into adulthood, pressures to achieve academically, uncertainties about the future and adaptation to diverse socio-cultural contexts can significantly influence psychological well-being. From this perspective, studying students' quality of life is not limited to evaluating general satisfaction; it requires investigation of emotional, social, value-based and adaptive dimensions. This article aims to analyse quality of life characteristics among students from Romania and the Republic of Moldova from an integrative psychological perspective, highlighting the individual and contextual factors contributing to the observed differences.

Corresponding author: Oxana Paladi
E-mail address:oxana.paladi@usm.md

The World Health Organization defines quality of life as individuals' perception of their social situations within the context of the cultural value systems in which they live and in relation to their own needs, standards and aspirations. Quality of life describes a concept through which living conditions, standard of living, population standards and lifestyle can be evaluated in all their complexity (Sârbu & Potâng, 2015).

The concept of quality of life was analysed and developed in advanced societies, more specifically in North American society, when the US President Lyndon Johnson argued that the achievements of American society could be measured through the quality of life of the native population. The starting point was that material abundance cannot represent everything that people need in order to be satisfied with their way of life, which implies the need for broader, global and specific evaluations of people's life problems (Bătrânescu & Gorobievschi, 2014).

Concerns about quality of life did not emerge from the internal logic of scientific development; rather, they were imposed on science from outside. They represented a response to a particular crisis of growth specific to contemporary society, in the view of I. Mărginean (2002).

In Romania, the Institute for Quality of Life Research was established in 1990, with objectives including conducting research in the field of quality of life in the context of the political, economic and social transformations after 1989 and developing methodologies for assessing quality of life levels. In a study published in the journal "Calitatea vieţii", I. Mărginean (1991) presents a list of word associations vis-a-vis this concept proposed by different authors. Some of these include: conditions necessary for happiness - McCall (1975); subjective satisfaction - Terhune (1973); adaptive potential - Colby (1987); the extent to which a person fulfils life goals - Cella and Cherin (1987); the meaning of life for the person - Zamfir (1993); subjective importance attributed to life - Jolles and Stalpers (1978). Specialists have not agreed on a single definition of quality of life, and empirical measurement practice often involves less relevant comparisons (Veenhoven, 2000). Quality of life is understood as physical, psychological and social well-being, as well as the capacity to perform usual tasks in everyday life (Sârbu & Potâng, 2015).

In the Republic of Moldova, quality of life has been addressed primarily from an economic perspective (A. Cojuhari, V. Childescu, 2012) and a sociological perspective (T. Danii, 2004). From this standpoint, quality of life is a socio-economic concept through which living conditions, standard of living, population standards and lifestyle can be evaluated in their full complexity (T. Danii, 2004). An overview of Moldovan researchers' evaluations of quality of life identifies positive points that function as supportive elements in people's lives, while other components remain within negative limits, constituting permanent sources of dissatisfaction and representing risks of marginalisation and social exclusion (Sârbu & Potâng, 2015). Recently, psychological research has addressed quality of life in relation to students' social competencies (S. Rusnac & N. Musienco, 2022, 2025).

In the view of Faraquhar (1995), quality of life is the most multidisciplinary term in current use. Within this approach, the concept of quality of life is studied from the perspective of multiple disciplines: psychology, philosophy, medicine, economics, environmental sciences and sociology (Sârbu & Potâng, 2015). In the same context, in the view of Revicki and Kaplan (1993), quality of life reflects preferences for certain health states that permit reductions in morbidity and mortality. Emotional or psychological well-being as an indicator of quality of life may be illustrated by happiness, self-contentment, a sense of personal identity, avoidance of excessive stress, self-esteem, richness of spiritual life and a sense of safety. Specialists are increasingly interested in the psychological aspects of emotional well-being or subjective well-being. Beyond material prosperity, the perception of one's own quality of life results from "filtering" lived experiences

through schemes or value judgements about what constitutes life satisfaction and happiness (Mărginean, I., 2010; 2013).

Several quality of life dimensions are identified by R.L. Schalock (1996): 1. Emotional or psychological well-being, 2. Interpersonal relations, 3. Material well-being, 4. Personal development, 5. Physical well-being, 6. Independence, 7. Social inclusion, 8. Safeguarding fundamental human rights.

The WHO (2012) quality of life assessment questionnaire highlights six domains: 1. Physical health, 2. Psychological health, 3. Level of independence, 4. Social health or quality of life in social relations, 5. Living environment, 6. Spiritual quality of life. In research conducted by E. Zaharia (1991) and I. Mărgineanu (1991; 2002; 2013), it is emphasised that the psychological dimension of quality of life constitutes an essential link within the broader construct.

The review of the specialised literature makes it possible to examine the quality of life dimensions defined by various authors. These are presented in Table 1.

Table 1. Quality of life dimensions defined by different authors

Felce (1996)	**Cummins (1997)**	**Hagerty (2001)**
Physical well-being	Health	Health
Material well-being	Material well-being	Material well-being
Social well-being	Community well-being	Being part of the community
Productive well-being	Work and productive activities	Work and productive activities
Emotional well-being	Emotional well-being	Emotional well-being
Civic well-being	Social and family connections	Relationships with friends and family
-	Safety	Personal safety

The comparative analysis indicates conceptual convergence across the authors presented, who define quality of life through similar dimensions: health, material, social and emotional well-being. Differences arise from the emphasis placed on community participation (Hagerty, 2001) and on safety (Cummins, 1997; Hagerty, 2001), suggesting a shift towards a more integrative and contextual approach to human well-being.

Against this background, the following sections address selected quality of life characteristics among students from a psychological perspective.

2. OBJECTIVES AND HYPOTHESES

2.1.OBJECTIVE

The aim of the study is to identify and analyse quality of life characteristics among students from a psychological perspective by reference to relevant socio-demographic, academic and cultural variables. The study seeks to: identify and characterise levels of perceived quality of life (measured using the Quality of Life Inventory (QOLI - Quality of Life Inventory) and the Questionnaire for assessing satisfaction with quality of life, R.S. Elliot adapted by N. Vodopianova) among students; determine quality of life characteristics as a function of multiple factors; analyse the overall level of students' quality of life; identify specific domains of satisfaction and psychological vulnerability; examine gender differences (female/male), differences by background (urban/rural), age (18-21 years, 22-34 years, over 35 years), and the

relationship between academic achievement and quality of life; and compare quality of life profiles between students from Romania and the Republic of Moldova.

2.2. HYPOTHESES

1. H1. It is assumed that students' quality of life levels are predominantly low or moderate.
2. H2. It is assumed that there are significant differences in quality of life by gender.
3. H3. It is assumed that there are significant differences in quality of life between students with different levels of academic achievement.
4. H4. It is assumed that there are differences between students from Romania and the Republic of Moldova in perceived quality of life.
5. H5. It is assumed that there are significant differences in students' quality of life by age (18-21 years, 22-34 years, over 35 years).

3. METHOD

3.1. Group of participants

The research sample comprises 420 participants, selected voluntarily and anonymised in accordance with the ethical principles of psychological research. All participants were students enrolled in higher education institutions in Romania and the Republic of Moldova: universities in Bucharest (61.2%) and in Chisinau (38.8%). This distribution provides a cross-border, culturally comparative perspective on the investigated psychological phenomena, relatively proportional to the population size of the two countries. The distribution confers a transnational comparative dimension, providing a framework for analysing cultural differences in quality of life.

3.2. Instruments

A Psychosocial Survey was used, including indicators related to: gender (female/male), background (urban/rural), cycle of studies (Bachelor's/Master's), year of study, study profile (humanities/sciences), age (18-21 years, 22-34 years, over 35 years), marital status (married/unmarried), use of essential oil aromas (yes/no), prior diagnosis of anxiety (yes/no), current treatment for anxiety (medication/therapy/other methods), and use of aromas to reduce anxiety (yes/no). It is noted that only selected results are presented in this paper.

To study personality-related quality of life, the Quality of Life Inventory (QOLI - Quality of Life Inventory) was administered. The questionnaire was developed by Michael B. Frisch, consists of 32 items, and aims to determine quality of life levels. The instrument evaluates how satisfied a person is with certain aspects of life, such as work or health, using specific definitions for terms such as "money", "work" and "play". Respondents indicate how important certain life areas are and how satisfied they are with them. "Importance" refers to the extent to which the evaluated domain contributes to the individual's overall happiness, using three levels ("Unimportant" - scored 0 points, "Important" - scored 1 point and "Very important" - scored 2 points). "Satisfaction" refers to the extent to which the individual's needs, goals and wishes are met in relation to the measured domain. Satisfaction is measured using six response options ranging from "Very dissatisfied" (-3) to "Very satisfied" (+3). Life areas assessed include: health, self-esteem, goals and values, money, work, play, learning, creativity, helping, love, friends, children, relatives, home, neighbourhood and community. Interpretation refers to a weighted satisfaction profile, identifying several levels: high, moderate, low and very low.

Another instrument used in the research to study personality-related quality of life was the Questionnaire for assessing satisfaction with quality of life, R.S. Elliot adapted by N.

Vodopianova. This instrument was developed by the Institute of Stress Medicine (USA) in 1993 to help patients balance the effect of stress on their behavioural choices, thereby supporting the process of overcoming stress. In its original version it comprises 40 categories assessing individual perceptions of strain on a scale from 1 to 9 points. The higher the satisfaction for each category, the lower the level of existential stress or the higher the perceived quality of life. The total quality of life index (ICV) is then computed and is considered to represent subjective satisfaction in the self-realisation of personal resources.

The adapted version contains 36 items reflecting satisfaction in the following life categories: work/service (career), personal aspirations and achievements, health, communication with friends, social support, optimism, psychological balance/tension (physical and psychological discomfort), self-control and emotional states. According to the scoring key, a score is calculated for each category. Subscale estimates correspond to satisfaction across different life domains. The lower the score, the higher the mental strain and the lower the satisfaction with quality of life in that domain. The overall quality of life index is also calculated as the mean of points obtained across all subscales.

3.3. Procedure

Questionnaires were completed in paper format, ensuring compliance with ethical codes and GDPR legislation. All questionnaires were completed using pencil-and-paper. All participants were informed about the theme and purpose of the research and provided consent, being fully aware that their identities were anonymised and that results would be processed statistically at the sample level.

4. RESULTS

As noted, determining levels of the overall quality of life score was considered important. By administering the Quality of Life Inventory (Michael B. Frisch), the level of quality of life development (overall index) was determined across the following components: health, self-esteem, goals and values, money, work, play, learning, creativity, helping, love, friends, children, relatives, home, neighbourhood and community. The results for the overall quality of life index are presented in Table 2.

Table 2. Levels of development of the overall quality of life index

Variable	Levels	Frequency	%
Quality of life	high level	29	6,9
	moderate level	27	6,4
	low level	235	56,0
	very low level	129	30,7
Quality of life	Total	420	100

In Table 2, the distribution of frequencies for participants' reported quality of life levels is presented, according to scores obtained on the QOLI inventory. The results indicate a distribution strongly skewed towards lower quality of life levels.

- High level of quality of life was reported by 29 participants (6.9%), suggesting a very small minority with a positive global perception of their own existence. Participants with high QOLI scores are clearly above average in life satisfaction. They form the top 20% of the standardisation sample.
- Moderate level is present in 27 participants (6.4%), indicating an even smaller segment situated in a zone of relative balance between satisfaction and dissatisfaction. Respondents with

moderate scores typically function well in their ability to achieve satisfaction in valued life areas.

- Low level characterises 235 participants (56.0%), representing the majority of the sample. This indicates that negative perceptions of quality of life predominate, with potential clinical and social implications. Respondents with low scores are typically unhappy and somewhat unable to obtain what they want from life, satisfy basic needs and fulfil goals across several important areas.
- Very low level is found in 129 participants (30.7%), a worryingly high proportion suggesting marked deterioration in psychosocial functioning and an increased likelihood of associations with emotional, cognitive or adjustment difficulties. Respondents with very low scores are extremely unhappy and unfulfilled and, in general, do not succeed in obtaining what they most want from life.

Considering cumulative QOLI percentages, approximately 69.3% of respondents fall within the low and very low categories, confirming the general tendency towards negative perceptions of quality of life in the investigated sample.

Next, results from the Questionnaire for assessing satisfaction with quality of life, developed by R.S. Elliot and adapted by N. Vodopianova, are presented. This instrument yields nine subscales/domains and an overall quality of life index. The subscales are: work (career), personal aspirations and achievements, health, communication with friends (close others), social support, optimism, psychological balance, self-control and emotional states.

The following analysis addresses the distribution of satisfaction with quality of life (SCV) scores by domain.

1. Domain "Work/Career".

Low satisfaction in the professional domain was reported by 33 participants (7.9%), indicating a small segment experiencing marked dissatisfaction with their professional trajectory. This may suggest difficulties with occupational integration, lack of meaning in work, or perceived stagnation.

Moderate level was reported by 143 respondents (34.0%), representing an intermediate category with fluctuating but relatively stable satisfaction, potentially reflecting a transitional or ambivalent professional position.

High satisfaction in career is reported by 244 participants (58.1%), the largest proportion of the sample, indicating a positive and functional perception of professional development, with a general sense of adaptation, meaning and personal fulfilment in work or study.

These results suggest that "Work/Career" is among the most valued and satisfying life domains for most respondents.

2. Domain "Personal aspirations and achievements".

Low satisfaction regarding aspirations and personal achievements was recorded for 40 participants (9.5%), signalling a vulnerable segment that perceives a substantial gap between personal objectives and actual achievements, potentially associated with chronic dissatisfaction and demotivation.

Moderate level was reported by 138 respondents (32.9%), indicating a sizeable group in an intermediate zone, likely experiencing partial achievements alongside unmet aspirations, oscillating between adaptive acceptance and latent frustration.

High satisfaction in this domain was expressed by 242 participants (57.6%), the largest share of the sample, suggesting a positive perception of personal progress, achievements and

congruence between the ideal self and concrete accomplishments, frequently associated with higher self-efficacy, resilience and psychological well-being.

This domain is closely connected to self-actualisation, placed at the top of the hierarchy of needs (Maslow, 1943) and widely regarded as a direct predictor of overall life satisfaction.

3. Domain "Health".

Low satisfaction with health was reported by 91 participants (21.7%), indicating a substantial proportion who perceive their health as unsatisfactory. This appraisal may be associated with persistent physical or psychosomatic symptoms (e.g., chronic pain, fatigue, insomnia), the influence of anxiety on bodily perception and physiological functioning, or heightened physical/psychological vulnerability.

Moderate level is present in 171 respondents (40.7%), representing the largest category and a fragile balance in which health is perceived as acceptable but not optimal, possibly marked by concerns about fatigue, stress or disease prevention.

High satisfaction with health is reported by 158 individuals (37.6%), indicating a sizeable proportion who perceive their physical and psychological health as good or very good; these individuals are likely to be more physically active, more emotionally resilient and better able to manage stress or minor symptoms without perceiving health as significantly impairing their lives.

Satisfaction in the health domain is critical for quality of life as it influences global life appraisal, functional capacity in social roles (student, employee, partner, etc.) and general emotional state through the health-affectivity-anxiety interplay.

4. Domain "Communication with friends (close others)".

Low satisfaction in communication with friends is present in 46 participants (11.0%), indicating a relationally vulnerable subgroup that may experience social isolation, difficulties with emotional expression or lack of consistent affective support, potentially linked to social anxiety or limited support networks.

Moderate level was reported by 140 respondents (33.3%), reflecting partially satisfactory relating, likely marked by intermittent communication, unresolved conflict or selective dependence on certain persons; this suggests a relative but fragile balance between relational openness and affective restraint.

High satisfaction is reported by 234 participants (55.7%), the majority of the sample, indicating functional and reciprocally supportive friendships, emotional openness and the capacity for self-regulation through social contact, as well as stable interpersonal networks operating as protective factors against psychological distress.

Communication with friends is a core component of mental health and relational quality of life, contributing to emotional regulation through dialogue and empathy, validation of personal identity in social contexts, and support in crisis or affective disequilibrium.

5. Domain "Social support".

Low social support was reported by 47 participants (11.2%), representing a vulnerable minority who may experience social isolation, limited support from family/friends, difficulties in building trusting relationships and psychological insecurity in the absence of relational resources.

Moderate level was identified in 159 participants (37.9%), suggesting partial support that may be insufficient to buffer the effects of stress and anxiety, and may be perceived as inconsistent, maintaining emotional uncertainty.

High social support is reported by 214 participants (51.0%), the largest category, indicating access to functional support networks (family, friends, colleagues) perceived as mutually validating and supportive; this is essential for psychological resilience and subjective well-being.

According to the specialised literature, social support is one of the most important predictors of mental health and psychosocial adjustment, contributing to reduced perceived stress intensity, increased belonging and emotional security, and strengthened self-efficacy and adaptive coping.

6. Domain "Optimism".

Low optimism was reported by 61 participants (14.5%), reflecting a vulnerable subgroup predisposed to negative interpretations of everyday events, perceiving the future as uncertain or threatening, and at greater risk of anxiety and depressive symptoms through catastrophic cognitive mechanisms.

Moderate optimism occurs in 219 respondents (52.1%), the largest proportion, indicating a relatively balanced attitude oscillating between hope and doubt; the outlook tends to be cautious rather than enthusiastic.

High optimism is present in 140 participants (33.3%), approximately one third of the sample, indicating a positive attitude towards life and the future, increased capacity to identify opportunities in stressful situations, and a higher likelihood of using proactive and adaptive coping strategies, supporting psychological resilience.

Optimism is recognised as a predictor of mental and physical health (Scheier & Carver, 1985) and is associated with lower psychological distress, higher quality of life, better academic and professional performance, and increased psychosocial adaptability.

7. Domain "Psychological balance".

Low psychological balance was reported by 76 participants (18.1%), indicating a vulnerable subgroup experiencing difficulties with emotional regulation, heightened anxiety and stress, and affective instability (e.g., irritability or psychological exhaustion), and therefore requiring increased attention with respect to psychological support.

Moderate level is present in 251 participants (59.8%), the largest proportion, indicating partial balance without severe dysfunction, but with pressures and emotional fluctuations that can affect daily functioning; this represents a fragile equilibrium where additional stressors may destabilise adjustment.

High psychological balance is reported by 93 participants (22.1%), indicating greater emotional stability, capacity to manage stress and robust internal resilience resources. This subgroup reflects healthy and functional adaptation to academic and social demands.

Psychological balance is a central indicator of mental health and is strongly associated with anxiety levels; optimism and social support act as protective factors, and balance is closely linked to overall quality of life (QOLI).

8. Domain "Self-control".

Low self-control was reported by 90 participants (21.4%), indicating difficulties in managing impulses and negative emotions, reduced frustration tolerance and reduced behavioural control under stress; clinically, this group is predisposed to emotional disorganisation, intensified anxiety symptoms and lower psychosocial adaptability.

Moderate level is present in 285 participants (67.9%), the large majority. Self-control is functional but variable: emotions and behaviours can be regulated in ordinary situations, but control may diminish under intense stress, allowing impulsivity or withdrawal. Social support, optimism and psychological balance may substantially influence behavioural stability.

High self-control is reported by only 45 participants (10.7%), indicating advanced emotional and behavioural self-regulation, greater tolerance to stress and frustration, maintenance

of adaptive behaviour under pressure, and use of functional coping strategies (e.g., planning, cognitive reappraisal, positive thinking).

Self-control is a fundamental psychological competence, strongly correlated with anxiety levels (low self-control favours escalation of anxious reactions), emotional resilience and social adaptation, as well as academic performance and the maintenance of functional interpersonal relationships.

9. Domain "Emotional states".

Low level was reported by 123 participants (29.3%), indicating a substantial segment likely characterised by predominance of negative emotions (anxiety, sadness, irritability), emotional instability and difficulties maintaining positive mood, and increased risk of emotional and adjustment disorders.

Moderate level is present in 196 respondents (46.7%), the largest proportion, reflecting a relatively neutral but fragile emotional state with oscillations between positive and negative emotions, influenced by stress, personal resources and social support.

High emotional satisfaction is reported by 101 individuals (24.0%), indicating greater affective stability, predominance of positive emotions and emotional resilience, making these participants less vulnerable to the effects of anxiety and stress.

Emotional states are fundamental for quality of life and psychosocial adaptability. The specialised literature (Fredrickson, 2001) indicates that positive emotions facilitate cognitive processes, openness to relationships and the consolidation of internal resources, whereas repeated or intense negative emotions are associated with anxiety, depression and social withdrawal.

Distribution of SCV scores - overall score. This aggregated variable integrates evaluations across multiple domains (career, health, relationships, social support, psychological balance, emotional states, self-control, optimism, etc.) and has a central role in analysing psychosocial adaptability.

Low overall score was reported by 32 participants (7.6%), representing a small but vulnerable subgroup likely characterised by negative perceptions across multiple life domains, difficulties with emotional and social adjustment, and increased risk of anxiety or depressive disorders.

Moderate level is present in 214 respondents (51.0%), the largest category, indicating moderate but unstable satisfaction and a fragile balance. Participants in this group may oscillate between periods of adaptive functioning and moments of vulnerability depending on personal resources and social context.

High level is reported by 174 individuals (41.4%), indicating a sizeable proportion with a positive global life perception, with resilience, optimism and psychological balance supporting good adjustment in the face of stress and everyday challenges.

The overall SCV score functions as an integrative indicator of life satisfaction and is associated with overall quality of life (QOLI).

Next, quality of life characteristics are examined as a function of selected factors. From a statistical perspective, the independent-samples t-test was used. As noted, comparative analyses by gender were considered relevant. This analysis compares psychological performance between male (N = 72) and female (N = 348) students across psychological variables associated with quality of life. The instruments used are scientifically validated and support the investigation of gender differences from an integrative psychological perspective.

Although most SCV subscales and QOLI do not indicate significant gender differences (e.g., QOLI, p = 0.462; SCV Optimism, p = 0.929), certain dimensions such as perceived social support and emotional states show statistically significant differences.

Table 3. T-test results for quality of life by gender

Variables	Male mean	Female mean	t	df	p	Mean difference
SCV – Social Support	2.25	2.43	-2.027	418	0.043	-0.178
SCV – Emotional States	2.13	1.91	2.279	418	0.023	0.214

The differences reflect gender-differentiated socialisation, whereby women tend to invest more in social relationships, while men may exhibit more positive emotional attitudes, potentially as a coping strategy. The comparative analysis indicates several statistically significant differences of modest magnitude. Overall, women report higher perceived social support and greater satisfaction with socio-communicative needs; by contrast, men report more positive emotional states and a higher level of positive (facilitating) anxiety. These differences may be explained by: gender-differentiated socialisation (women are encouraged to develop interpersonal networks and express emotions, whereas men may be encouraged to develop self-control and performance orientation); differentiated coping strategies (women more frequently use emotion- and relationship-focused strategies, whereas men focus more on action or on avoiding emotional expressiveness); and implications for psychological interventions, including programmes to strengthen support networks among men and interventions for anxiety regulation and the development of positive emotional states among women.

A comparative analysis by background aimed to identify significant psychological differences between students from urban (N = 337) and rural (N = 83) environments with respect to quality of life-associated variables.

Table 4. T-test results for quality of life by background

Variables	Urban mean	Rural mean	t	df	p	Mean difference
SCV – Career (work)/ Professional Orientation	2.54	2.35	2.450	418	0.015	0.191
SCV – Emotional States	1.98	1.81	1.965	418	0.050	0.175

According to the results, QOLI (overall quality of life) does not show significant differences between groups (p = 0.238). Comparative analysis between students from urban and rural backgrounds indicates a limited but significant number of differences.

Students from urban environments demonstrate clearer professional orientation, higher adaptive capacities, better psychological stability and emotional regulation, and higher eco-social satisfaction. Students from rural environments show higher levels of behavioural and general school-related anxiety and greater challenges in integrating into an urbanised university context.

For this research, a comparative analysis of psychological differences by academic achievement was also conducted. The aim was to examine statistically significant differences between students with different levels of academic achievement in relation to quality of life assessed using standardised instruments. Academic achievement was operationalised through

semester grade averages and classified into three categories: Grades 9-10 (N = 139), Grade 8 (N = 111), and Below grade 7 (N = 74).

ANOVA indicates statistically significant differences ($p < .05$) across the three groups for the psychological variables (from a broader set), with F values ranging between 3.056 and 14.821. Post-hoc tests identified group pairs with significant differences, with most relevant differences occurring between the group with high grades (9-10) and the other two groups.

Table 5. Quality of life results (significant differences) by academic achievement

Variables	Psychological description	F	p-value	Post-hoc differences
SCV – Career Satisfaction	Perceived evaluation of satisfaction in the vocational domain	5.776	.003	9–10 > 8; 9–10 > <7
SCV – Personal Aspirations and Achievements	Perceived level of personal achievement	5.599	.004	9–10 > 8; 9–10 > <7
SCV – Health	Perception of general health status	3.604	.028	9–10 > <7
SCV – Social Support	Perceived social support	4.442	.013	9–10 > <7
SCV – Optimism	Positive expectations about the future	4.956	.008	9–10 > <7
SCV – Self-Control	Capacity for behavioural regulation	3.564	.029	9–10 > <7
SCV – Emotional States	Quality of affective states	3.745	.025	9–10 > <7
SCV – General Coping Score (SCV_GCS)	Aggregate of personal values and coping strategies	4.452	.012	9–10 > <7

These results indicate that higher academic performance is associated with higher satisfaction in the professional domain, clearer personal aspirations, optimism and positive emotional states. Overall SCV scores indicate more robust psychological resilience and more functional coping mechanisms. These findings support theoretical models linking self-efficacy and goal orientation to subjective well-being. No significant differences were identified in overall quality of life: QOLI ($p = .604$) or SCV - communication with close others and psychological balance.

Next, comparative analyses between students from Romania and the Republic of Moldova regarding perceived quality of life are presented. This analysis investigates differences between students from Romania (N = 257) and the Republic of Moldova (N = 163) in relation to quality of life evaluated using standardised instruments: the Quality of Life Inventory (QOLI) and the Coping and Values Scale (SCV). The analysis uses the independent-samples t-test ($\alpha = .05$), with equality of variances checked via Levene's test. Where variances were unequal, the appropriate corrections were applied (Welch/Satterthwaite). Students from Romania report higher levels of perceived quality of life and a more pronounced orientation towards adaptive coping resources. Although statistically significant, differences are small to moderate in magnitude (Cohen's $d \approx 0.25$-0.45). This profile may be explained by differences in educational and social resources across the two contexts, without indicating individual-level deficits.

Table 6. Quality of life results by country (Romania vs Republic of Moldova)

Variables	M RO	M MD	t	df	p	ΔM
QOLI – Quality of life	3.19	2.98	2.661	418	.008	+0.21
SCV – Career (work)/ Professional Orientation	2.59	2.37	3.476	418	.001	+0.22
SCV – Social Support	2.51	2.21	4.479	418	<.001	+0.30
SCV – Optimism	2.26	2.08	2.672	418	.008	+0.18
SCV – Emotional States	2.07	1.75	4.561	418	<.001	+0.33

According to the results, Romanian students appear to benefit from a more positive appraisal of life and more consolidated coping resources, which may be influenced by socio-educational context and access to support services. Differences reflect group-level trends rather than individual-level evaluations. No differences were recorded for SCV - self-control (p = .416). Overall, the results support the view that distinct socio-educational contexts influence students' experiences in Romania and the Republic of Moldova.

Another dimension of the research examined comparative analyses by age. The aim was to identify statistically significant differences between three student age categories - 18-21 years (N = 144), 22-34 years (N = 119) and over 35 years (N = 113) - with respect to the psychological variable quality of life. The results indicate a significant increase in perceived quality of life and coping efficiency with increasing age. Students in the "over 35 years" category recorded the highest scores, reflecting higher psychological resilience, emotional balance and consolidated value integration.

Table 7. Quality of life results by age

Variables (Instruments)	18-21 years	22-34 years	Over 35 years	F	df	p
QOLI – Quality of Life	2.94	3.12	3.38	7.664	2/373	0.001
SCV – Career (work)/ Professional Orientation	2.33	2.51	2.75	11.247	2/373	<0.001
SCV – Personal Aspirations	2.29	2.50	2.74	15.990	2/373	<0.001
SCV – Health	2.00	2.18	2.38	7.802	2/373	<0.001
SCV – Communication with friends (close others)	2.35	2.42	2.65	6.478	2/373	0.002
SCV – Social Support	2.19	2.43	2.65	18.456	2/373	<0.001
SCV – Optimism	2.05	2.21	2.40	8.970	2/373	<0.001
SCV – Psychological Balance	1.94	2.03	2.23	6.688	2/373	0.001
SCV – Self-Control	1.80	1.90	2.05	6.879	2/373	0.001
SCV – Emotional States	1.75	1.95	2.24	15.430	2/373	<0.001
SCV – Overall Score	3.20	3.34	3.58	15.064	2/373	<0.001

The findings suggest that biological age is a relevant predictor for psychological adaptation in the academic environment. For QOLI - quality of life, a more positive life appraisal is associated with maturity and stability. For SCV - work (career), professional orientation is more consolidated among mature adults. For SCV - personal aspirations, self-efficacy and personal fulfilment are higher at older ages. SCV - health indicates a more positive appraisal of one's own health. SCV -

communication with close others reflects improved interpersonal relating with age. SCV - social support indicates stronger social networks among adults, effective in reducing stress. SCV - optimism reflects a positive attitude towards the future, associated with constructive coping. SCV - psychological balance reflects superior emotional stability. SCV - self-control indicates increased ability to regulate impulses. SCV - emotional states suggests significantly more effective emotion management. SCV - overall score indicates generally more adaptive coping with increasing age. Students over 35 years demonstrate a positive psychological profile with effective coping. By contrast, younger students (18-21 years) show less consolidated coping, underscoring the need for preventive psychological interventions to support their adaptation.

5. CONCLUSIONS

The present study confirms that students' quality of life must be interpreted as a multidimensional psychological construct, shaped simultaneously by subjective life satisfaction, emotional regulation, social resources, academic functioning and socio-cultural context. The first major conclusion concerns the general level of quality of life measured through QOLI. The distribution of scores shows a marked concentration in the low and very low categories: 235 students (56.0%) reported low quality of life and 129 students (30.7%) reported very low quality of life, whereas only 29 participants (6.9%) reached a high level and 27 participants (6.4%) a moderate level. Thus, hypothesis H1 is confirmed, with the important specification that the vulnerability profile is stronger than initially expected, as 86.7% of the sample is located in the low or very low QOLI range. This result indicates not only reduced satisfaction with several life domains, but also possible difficulties in fulfilling valued goals and basic psychological needs.

A second conclusion refers to the internal structure of students' life satisfaction. The SCV results reveal a differentiated profile: students report more favourable evaluations in instrumental and relational domains, but greater vulnerability in emotional and self-regulatory domains. High satisfaction is recorded for work/career (58.1%), personal aspirations and achievements (57.6%), communication with friends (55.7%) and social support (51.0%). These domains suggest that many students preserve important functional resources, especially orientation towards professional development, perceived progress and interpersonal connectedness. However, lower results in psychological balance, self-control and emotional states indicate less consolidated affective regulation. For example, only 10.7% report high self-control, while 29.3% show low satisfaction with emotional states. The overall SCV score is mostly moderate (51.0%), with 41.4% high and 7.6% low, suggesting that domain-specific resources coexist with a fragile emotional equilibrium.

The third conclusion concerns gender. Hypothesis H2 is only partially supported. Overall quality of life does not differ significantly by gender (QOLI, $p = .462$), but significant differences appear for social support and emotional states. Female students report higher social support ($M = 2.43$) than male students ($M = 2.25$), $t(418) = -2.027$, $p = .043$, whereas male students report more positive emotional states ($M = 2.13$) than female students ($M = 1.91$), $t(418) = 2.279$, $p = .023$. These findings suggest that intervention programmes should avoid global gender generalisations and should instead target specific mechanisms: strengthening relational support among men and emotional regulation among women.

A fourth conclusion concerns academic achievement. Hypothesis H3 is confirmed. Students with grades of 9-10 obtain significantly higher scores than students with grade 8 or below 7 in career satisfaction, personal aspirations, health, social support, optimism, self-control, emotional states and the general SCV coping score. The strongest effects are visible for personal aspirations ($F = 5.599$, $p = .004$), career satisfaction ($F = 5.776$, $p = .003$) and optimism ($F = 4.956$, $p = .008$). Academic achievement therefore appears to function not merely as an educational indicator, but also as a marker of perceived competence, goal clarity and adaptive coping.

The fifth conclusion concerns socio-cultural context. Hypothesis H4 is supported, as Romanian students report higher QOLI scores than students from the Republic of Moldova ($M = 3.19$ vs. $M = 2.98$), $t(418) = 2.661$, $p = .008$. They also obtain higher scores for career orientation, social support, optimism and emotional states, with the largest mean differences in emotional states (+0.33) and social support (+0.30). These results should be interpreted as contextual group-level differences, probably associated with educational resources, perceived opportunities and support infrastructures, not as individual deficits.

Finally, hypothesis H5 is clearly confirmed. Age is one of the most consistent differentiating variables: students over 35 years obtain the highest scores across all analysed indicators, including QOLI ($M = 3.38$), social support ($M = 2.65$), emotional states ($M = 2.24$) and overall SCV ($M = 3.58$). This pattern suggests that maturity, life experience, clearer values and more stable social roles contribute to better quality of life and coping efficiency. Consequently, universities should implement preventive and developmental psychological programmes focused on younger students, students with lower academic achievement and those with weaker emotional regulation. Such interventions should include emotional education, stress management, self-control training, peer support, counselling access and career guidance. In this sense, quality of life becomes not only an outcome of student adjustment, but also a strategic objective for higher education policy.

REFERENCES

Bătrânescu, V. & Gorobievschi, S. Influența actorilor sociali asupra calității vieții. 2014. Disponibil: http://repository.utm.md/bitstream/handle/5014/2687/Conf_UTM_2014_Vol_III_pg97_101.pdf?sequence=1&isAllowed=y

Cojuhari, A. & Childescu, V. (2012) Teorie economică. (Curs de prelegeri). Chișinău: Univ. Tehnică a Moldovei. ISBN 978-9975-45-184-0

Danii, T. (2004) Calitatea vieții populației Republicii Moldova în perioada de tranziție: probleme și tendințe sociale (analiză și evaluare sociologică). Teza de dr. hab. în sociologie. Chișinău: AȘM. 292 p.

Lupu, Iu. (2006) Calitatea vieții în sănătate: definiții și instrumente de evaluare. În: Revista Calitatea vieții, XVII, nr. 1-2, p. 73-91. Disponibil: https://revistacalitateavietii.ro/journal/article/view/649/548

Maslow, A.H. (2013) Motivație și personalitate. Trad. Răsuceanu A. Ed. a 3-a. București: Editura Trei. 567 p. ISBN 978-973-707-905-3

Mărginean, I. & Bălaşa, A. (2002) Calitatea vieţii în România. Bucureşti: Expert, 2002. 405 p. ISBN 973-618-059-X

Mărginean, I. (2010) Calitatea vieţii în România: Prezent și perspective. În revista Calitatea vieții, XXI, nr.3-4. Disponibil: https://revistacalitateavietii.ro/journal/article/view/50/35

Musienco, N. (2025) Competențele sociale și evaluarea calității vieții de către studenți. Teză de doctor, Chișinău. Disponibil: https://anacec.md/files/Musienco-teza.pdf

Rusnac, S. & Musienco, N. (2022) Calitatea vieții și adaptabilitatea studenților. În: Materialele Conferinței Științifice Asistența psihologică la etapa contemporană: realități și perspective, Bălți, 21 octombrie 2022. Disponibil: https://ibn.idsi.md/vizualizare_articol/170124

Sârbu, A. & Potâng, A. (2015) Abordări conceptuale ale calității vieții și dezvoltării regionale durabile. În: INTELECTUS, nr.1, pp. 92-99. Disponibil: https://ibn.idsi.md/ro/vizualizare_articol/37096

Turchină, T., Platon, C. & Bolea, Z. (2012) Starea subiectivă de bine – semnificații și implicații. În: Studia Universitatis. Revista științifică a Universității de Stat din Moldova, nr.5(55), p. 115-118. ISBN 1857-2103

Zaharia, E. (1991) Configuraţia coordonatelor de bază ale calităţii vieţii. În: Calitatea vieţii: teorie şi practică socială. Bucureşti: Academia Română.

Zamfir, C. (1984) Indicatori și surse de variație a calității vieții. București: Academiei R.S.R.

Farquhar, M. (1995) Definitions of Quality of Life: A Taxonomy. Journal of Advanced Nursing, 22, 502-508.

Frisch, M.B., Cornell, J., Villanueva, M., & Retzlaff, P.J. (1988). Quality of Life Inventory (QOLI). APA PsycTests. https://doi.org/10.1037/t03748-000

Fredrickson, B. L. (2001). The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. American Psychologist, 56(3), 218–226. https://doi.org/10.1037/0003-066X.56.3.218

Hansen, B. (2002) Quality of Life and Management of Living Resources. Fifth Framework. București: Economica. 340 p. ISBN 92-894-5352-4.

Revicki, D.A. & Kaplan, R.M. (1993) Relationships between psychometric and utility – based approaches to the measurements of health-related quality of life, „Quality of Life Research", 2, 477-487.

Schalock, R. L. (1996) Reconsidering the conceptualization and measurement of quality of life. In: R. Schalock (Ed.), Quality of life. Volume I: Conceptualization and measurement. Washington, DC: American Association on Mental Retardation. p. 123-139.

WHOQOL User Manual PROGRAMME ON MENTAL HEALTH 1998. Disponbil: https://iris.who.int/bitstream/handle/10665/77932/WHO_HIS_HSI_Rev.2012.03_eng.pdf?sequence=1

ROMANIAN JOURNAL OF PSYCHOLOGICAL STUDIES

HYPERION UNIVERSITY
www.rjps.hyperion.ro

THE MODERATING ROLE OF GENERATIVE AI CONVERSATIONS IN THE RELATIONSHIP BETWEEN PERCEIVED SOCIAL SUPPORT AND QUALITY OF LIFE IN YOUNG ADULTS

MARINELA, SÎRBU [a]
[a] Hyperion University, Faculty of Psychology and Educational Sciences, Department of Psychology

Abstract

This study examines the moderating role of generative artificial intelligence conversations in the relationship between perceived social support and quality of life among 252 young adults (18-30 years). Results indicate that generative AI usage significantly moderates this relationship, with distinct effects depending on the level of dependency. In individuals with low dependency, social support remains the primary predictor of quality of life; however, in those with high dependency, this relationship is substantially attenuated. Analysis reveals that the type of usage significantly influences this effect: emotional and recreational use diminishes the benefits of social support, while informational and professional use does not show this impact. The explanatory mechanism identified shows that emotional use contributes to the development of AI dependency, thereby reducing the ability to leverage traditional social support. These findings emphasize the importance of balanced use of conversational technologies to maintain the benefits of authentic interpersonal relationships.

Keywords: *generative artificial intelligence; social support; quality of life; technological dependency.*

1. INTRODUCTION

In the contemporary digital era, traditional social interactions are increasingly being supplemented or even replaced by technologically mediated interactions. Recently, generative artificial intelligence systems have become accessible conversational partners for millions of users. These systems offer not only information but also a form of interaction that mimics human conversations, demonstrating sophisticated capabilities for natural language processing and contextual response (Hancock et al., 2020; OECD, 2021). This mimicry can apparently diminish the need for social support, a fundamental factor for psychological well-being and quality of life (Cohen & Wills, 1985). Numerous studies have demonstrated the direct link between the perception of social support and quality of life indicators, including in young adults (Taylor et al., 2011). However, the way in which emerging technologies, especially conversational AI, influence this relationship remains insufficiently explored.

Corresponding author: Marinela Sîrbu
E-mail address:psihoterapii_scurte@yahoo.com

Recent literature suggests that young people can develop emotional attachments to conversational technologies (Turkle, 2012; Skjuve, 2021), and these systems can provide a certain type of perceived social support (Ta et al., 2020). Empirical studies have shown that interactions with conversational agents can generate social and emotional responses similar to those in human interactions (Nass & Moon, 2000; Mou & Xu, 2017). Artificial agents, including conversational chatbots, can constitute an important source of social support for users, with significant implications for their well-being and quality of life. Although most studies have focused on the role of these technologies in specifically stressful situations or in medical contexts, Ta et al. (2020) highlight the importance of analysing the social support provided by artificial agents in everyday interactions. According to these authors, companion chatbots offer multiple forms of social support, predominantly: companionship support (reducing feelings of loneliness through 24/7 accessibility and simulating human communication), emotional support (creating a „safe space" for self-disclosure without fear of being judged), informational support (offering useful advice and information), and appraisal support (facilitating self-reflection and self-evaluation). Interactions with chatbots can provide a level of trust and comfort that encourages self-disclosure, an aspect that can be particularly valuable for young adults who are frequently more reluctant to discuss certain topics with other people due to fears related to social judgment. This dimension of interaction with generative AI may explain the differentiated effects we have identified depending on the type of use and level of dependency.

The conclusions of these studies strengthen the premise of our research that artificial agents, including conversational chatbots, can represent a significant source of social support in everyday life, with potentially transformative implications for the psychological well-being of young adults, thus complementing the traditional social support offered by human interactions. However, although chatbots are perceived as accepting, available, and capable of empathically satisfying users' communication needs, these sources of support can also have a „dark side" that may diminish quality of life. Recent research shows that excessive dependency on AI interactions can lead to social isolation (Eling, 2025, in press), atrophy of interpersonal communication skills, and a distorted perception of authentic relationships (Boyd & Markowitz, 2025, in press). Additionally, studies have highlighted that frequent interactions with chatbots can create unrealistic expectations regarding human communication, as generative AI is programmed to provide optimized responses, lacking the inconsistencies and limitations characteristic of interpersonal communication (Naik et al., 2025, in press). There are voices that warn that AI companions rather reproduce than sustainably reduce the dynamics of loneliness, and loneliness simply becomes „digitized loneliness" (Jacobs, 2024; Lemay et al., 2019).

The present study aims to investigate the moderating role of conversations with generative AI in the relationship between perceived social support and quality of life in young adults. Unlike previous research that has predominantly focused on the direct effects of interactions with AI, our approach examines how these interactions can modify the well-established relationship between traditional social support and the perception of quality of life. This perspective offers a more nuanced understanding of the impact of conversational technologies on young adults, in a period when identity development and establishing significant social relationships represent fundamental processes. The original contribution

consists of examining the differentiated effects of interactions with generative AI according to the type of use and level of dependency, thus offering a more nuanced perspective on the conditions in which these technologies can augment or, conversely, diminish the benefits of traditional social support on quality of life. The results can guide both psychological interventions and the development of more responsible AI systems that maximize potential benefits for the well-being of young users while minimizing associated risks.

2. OBJECTIVE AND HYPOTHESES

2.1. OBJECTIVES

1. Evaluating the relationship between perceived social support and quality of life in young adults.
2. Investigating the potential mediating or moderating role of generative AI dependency in this relationship.
3. Exploring differences based on the intensity of generative AI usage and the purpose of interactions.

2.2. HYPOTHESES

1. There is a significant positive relationship between perceived social support and quality of life in young adults.

2. Generative AI dependency moderates the relationship between social support and quality of life, such that:

a. In individuals with low AI dependency, social support remains the primary predictor of quality of life.

b. At high levels of AI dependency, the relationship between social support and quality of life is attenuated.

3. The type of interaction with generative AI (informational vs. emotional) influences the nature of the moderating effect.

3. METHOD

3.1.Participants

The study included 252 participants aged between 18 and 30 years, recruited through stratified sampling from academic and professional environments. 139 were female (55.1%). Inclusion criteria were familiarity with generative AI systems and using them at least once a week in the past 3 months.

3.2.Instruments

1. ***Perceived Social Support Scale*** (PSSS) (Zimet et al., 1988). A 12-item instrument that measures the perception of support from family, friends, and significant others, with scores from 1 to 7 on a Likert scale. Psychometric properties include Cronbach's $\alpha = .91$ and construct validity demonstrated in numerous studies.

2. ***WHOQOL-BREF (WHO, 1998).*** Standardized instrument for assessing quality of life, with 26 items covering physical, psychological, social, and environmental domains. Scores range between 1 and 5, with Cronbach's α = .88 and solid concurrent validity.
3. ***Generative AI Dependency Scale (GADS)*** (Goh, 2025). A recent scale with 11 items that measures psychological dependency on interactions with generative AI. The scale includes subscales for Cognitive Preoccupation (prominence and compulsive use, 3 items e.g., „My decisions are often influenced by generative AI"), Negative Consequences (4 items, e.g., „I feel less confidence in my abilities without generative AI"), and Withdrawal (4 items, e.g., „I experience restlessness if I am unable to use generative AI"). Items are rated on a Likert scale from 1-strongly disagree to 5-strongly agree. Preliminary psychometric properties indicate Cronbach's α = .93.
4. ***Demographic and AI Usage Questionnaire.*** Collects information about age, gender, educational level, frequency of generative AI usage, main purpose of use (informational, emotional, recreational, professional, evaluated on a scale from 1 to 7), and platforms used.

4. RESULTS

4.1.Descriptive Statistics

Descriptive analysis of data by gender reveals significant differences in the perception of social support and patterns of generative artificial intelligence usage. Women report significantly higher levels of perceived social support (M = 5.61, SD = 0.98) compared to men (M = 5.19, SD = 1.17, $p < .01$), with the difference being particularly pronounced for support from friends ($p < .01$) and life partner ($p < .05$).

Regarding quality of life, no significant differences were recorded between genders, suggesting that the perception of general well-being does not vary substantially by gender among young generative AI users.

Concerning generative AI dependency, men show significantly higher scores only in the withdrawal dimension (M = 2.72, SD = 1.18) compared to women (M = 2.48, SD = 1.10, $p < .05$). No significant differences were observed in the other dimensions of dependency.

An interesting aspect is observed in the purpose of generative AI usage, with women reporting significantly more intense use for emotional purposes (M = 3.82, SD = 1.73) compared to men (M = 3.15, SD = 1.67, $p < .01$), while men tend to use AI for recreational purposes (M = 4.87, SD = 1.45) more frequently than women (M = 4.53, SD = 1.58, $p < .05$). For informational and professional purposes, no significant differences were recorded.

Table 1. MSPSS Means and Standard Deviation by gender

Scale	Men - M (SD) N=113	Women - M (SD) N=139	p
PSSS - Significant other	5.34 (1.27)	5.78 (1.15)	.003*
PSSS - Family	5.21 (1.41)	5.47 (1.33)	.087
PSSS - Friends	5.03 (1.32)	5.58 (1.09)	.001**
PSSS - Total	5.19 (1.17)	5.61 (0.98)	.002**
QOL - Physical	3.87 (0.68)	3.76 (0.72)	.165
QOL - Psychological	3.62 (0.75)	3.47 (0.81)	.097
QOL - Social	3.65 (0.79)	3.72 (0.84)	.464
QOL - Environment	3.74 (0.63)	3.71 (0.68)	.691
GAID - Cognitive	2.86 (1.15)	2.67 (1.09)	.123
GAID - Negative Consequences	2.54 (1.12)	2.43 (1.07)	.366
GAID - Withdrawal	2.72 (1.18)	2.48 (1.10)	.049*
Informational Purpose	5.87 (1.12)	5.73 (1.18)	.290
Emotional Purpose	3.15 (1.67)	3.82 (1.73)	.001**
Recreational Purpose	4.87 (1.45)	4.53 (1.58)	.047*
Professional Purpose	5.63 (1.32)	5.48 (1.41)	.339

*p < .05, **p < .01

4.2. Testing the Hypotheses

H1. The Relationship Between Perceived Social Support and Quality of Life

Results indicate significant positive correlations between perceived social support and all domains of quality of life, supporting the first part of our hypothesis. Correlations are weak to moderate (r = .25 - .58), with the strongest associations observed between total social support and the social domain of quality of life (r = .58, p < .001).

Table 2. Correlations between Perceived Social Support and Quality of Life

Variables	QOL-Physical	QOL-Psychological	QOL-Social	QOL-Environmental
PSSS-Total	.31***	.47***	.58***	.35***
PSSS-Significant Others	.25***	.39***	.51***	.30***
PSSS-Family	.27***	.42***	.44***	.32***
PSSS-Friends	.29***	.43***	.56***	.31***

*Note: ***p < .001

Regression analysis confirms that perceived social support is a significant predictor of quality of life across all four domains, even after controlling for demographic variables. Its contribution is substantial, explaining between 9% and 32% of the variance in quality of life.

The strongest effect is observed for the social domain of quality of life ($\beta = .57$, $\Delta R^2 = .32$, $p < .001$), followed by the psychological domain ($\beta = .46$, $\Delta R^2 = .21$, $p < .001$). Although the effect is more modest for the physical and environmental domains, social support remains a significant predictor for these aspects of quality of life as well.

Table 3. Results of hierarchical regression for Predicting Quality of Life

Predictor Variables	QOL-Physical	QOL-Psychological	QOL-Social	QOL-Environmental
Step 1. Demographic Variables				
Age	.07	.09	.04	.12*
Gender (0=M, 1=F)	-.08	-.10	.06	-.02
Educational Level	.14*	.16*	.10	.20**
R^2	.03	.04	.01	.05*
Step 2. Social Support				
PSSS-Total	.30***	.46***	.57***	.33***
ΔR^2	.09***	.21***	.32***	.11***
Total R^2	.12***	.25***	.33***	.16***

*Note: Values in the table represent standardized beta coefficients. *p < .05, **p < .01, ***p < .001

H2. The Moderating Effect of Generative AI Dependency

To test the moderation hypothesis, we conducted a hierarchical regression analysis with interaction, examining whether the intensity of the relationship between perceived social support and different domains of quality of life varies according to the level of generative AI dependency.

Table 4. Results of moderation analysis for the effect of AI Dependency

Predictors	QOL-Physical β (SE)	QOL-Psychological β (SE)	QOL-Social β (SE)	QOL-Environmental β (SE)
Step 1				
PSSS-Total	.30*** (.05)	.45*** (.04)	.56*** (.04)	.34*** (.05)
GAID-Total	-.11* (.05)	-.14** (.05)	-.08 (.04)	-.16** (.05)
R^2	.15***	.27***	.34***	.18***
Step 2				
PSSS-Total	.31*** (.05)	.46*** (.04)	.57*** (.04)	.35*** (.05)
GAID-Total	-.12* (.05)	-.15** (.05)	-.09* (.04)	-.17** (.05)
PSSS × GAID	-.17** (.05)	-.19*** (.04)	-.15** (.04)	-.12* (.05)
ΔR^2	.03**	.04***	.02**	.01*
Total R^2	.18***	.31***	.36***	.19***

*Note: Values represent standardized beta coefficients with standard errors in parentheses. *p < .05, **p < .01, ***p < .001

The analysis reveals a significant interaction effect between perceived social support and AI dependency for all domains of quality of life (coefficients between β = -.12 and β = -.19, p < .05). To interpret this effect, we calculated the conditional effects at three levels of AI dependency (Table 5).

Table 5. Conditional Effects of Social Support on Quality of Life at different levels of AI Dependency

AI Dependency Level	QOL-Physical (95% CI)	QOL-Psychological (95% CI)	QOL-Social (95% CI)	QOL-Environmental (95% CI)
Low (-1SD)	.47*** (.35, .59)	.64*** (.53, .75)	.71*** (.61, .81)	.46*** (.35, .57)
Medium (M)	.31*** (.23, .39)	.46*** (.38, .54)	.57*** (.50, .64)	.35*** (.27, .43)
High (+1SD)	.15* (.03, .27)	.28*** (.17, .39)	.43*** (.31, .55)	.24*** (.12, .36)

*Note: Values represent unstandardized regression coefficients with 95% confidence intervals in parentheses. *p < .05, **p < .001

The results confirm both components of hypothesis 2:

1. At low levels of AI dependency, the relationship between social support and quality of life is strong (coefficients between .46 and .71).
2. At high levels of AI dependency, the relationship is significantly attenuated (coefficients between .15 and .43).

The attenuating effect is most pronounced for the physical and psychological domains, suggesting that high AI dependency may particularly interfere with the benefits of social support on these aspects of quality of life. The social domain, although affected by moderation, appears to be the most resilient, indicating that social support remains a relatively strong predictor of social quality of life even in the presence of AI dependency.

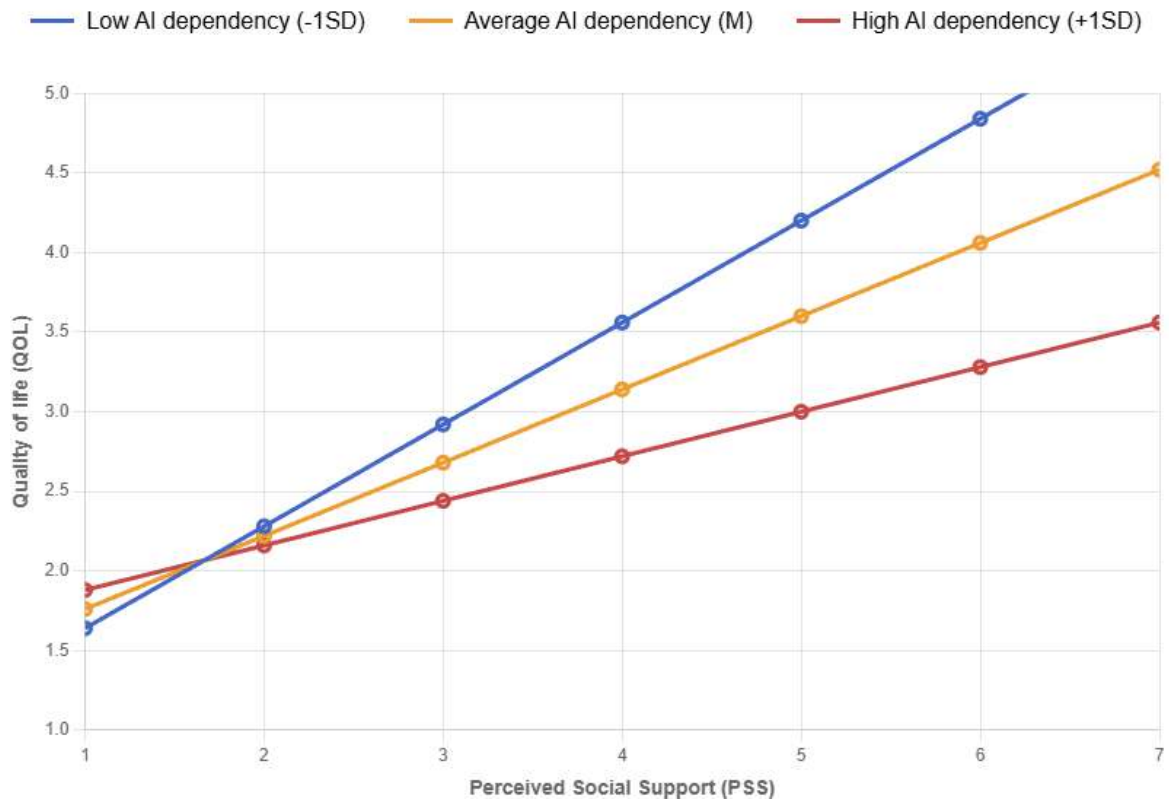


Figure 1. The Moderating effect of AI Dependency on the relationship between Social Support and Quality of Life

H3. The Type of Interaction with Generative AI and the Moderation Effect

For testing this hypothesis, we conducted separate analyses for different types of generative AI usage, focusing on informational and emotional interactions.

Table 6. Descriptive Statistics and Correlations for Types of Generative AI Use

AI Use Type	M (SD)	1	2	3	4	5
1. Informational	5.63 (1.21)	-				
2. Professional	5.27 (1.36)	.61***	-			
3. Emotional	3.48 (1.73)	.22***	.27***	-		
4. Recreational	4.70 (1.52)	.35***	.29***	.43***	-	
5. GAID-Total	2.71 (1.05)	.21***	.19**	.46***	.40***	-

*Note: *p < .05, **p < .01, ***p < .001*

We observe that emotional use of generative AI has the strongest correlation with the total score of AI dependency ($r = .46$, $p < .001$), suggesting that this type of use might be more closely linked to the development of dependency.

Table 7. Moderating effects of Informational vs. Emotional use on the relationship between Social Support and Quality of Life

Predictors	Model with Informational Use β (SE)	Model with Emotional Use β (SE)
Step 1		
PSSS-Total	.45*** (.04)	.46*** (.04)
AI Use (informational/emotional)	.06 (.04)	-.13** (.04)
R^2	.22***	.23***
Step 2		
PSSS-Total	.45*** (.04)	.47*** (.04)
AI Use (informational/emotional)	.05 (.04)	-.14** (.04)
PSSS × AI Use	-.04 (.04)	-.20*** (.04)
ΔR^2	.00	.04***
Total R^2	.22***	.27***

*Note: Values represent standardized beta coefficients with standard errors in parentheses. **p < .01, ***p < .001

The results reveal a significant difference between the moderating effects of the two types of usage:

1. Informational use does not significantly moderate the relationship between social support and quality of life ($\beta = -.04$, $p > .05$).
2. Emotional use significantly and negatively moderates this relationship ($\beta = -.20$, $p < .001$), adding 4% additional explained variance.

To better understand the moderating effect of emotional use, we calculated the conditional effects at three levels of emotional use of AI.

Table 8. Conditional effects of Social Support on Quality of Life at different levels of emotional AI use

Level of Emotional Use	b (95% CI)	p
Low (-1SD)	.63 (.52, .74)	<.001
Medium (M)	.47 (.39, .55)	<.001
High (+1SD)	.31 (.19, .43)	<.001

The results indicate a progressive attenuation of the relationship between social support and quality of life as the intensity of emotional AI use increases, from a strong effect at low levels (b = .63) to a significantly diminished effect at high levels (b = .31).

Table 9. Comparison between the moderating effects of different types of Generative AI usage

AI Usage Type	Interaction Coefficient (β)	ΔR^2	p
Informational	-.04	.00	.32
Professional	-.07	.01	.11
Emotional	-.20	.04	<.001
Recreational	-.14	.02	<.01

This comparison highlights that only emotional and recreational use of generative AI significantly moderates the relationship between social support and quality of life, with a stronger effect for emotional use.

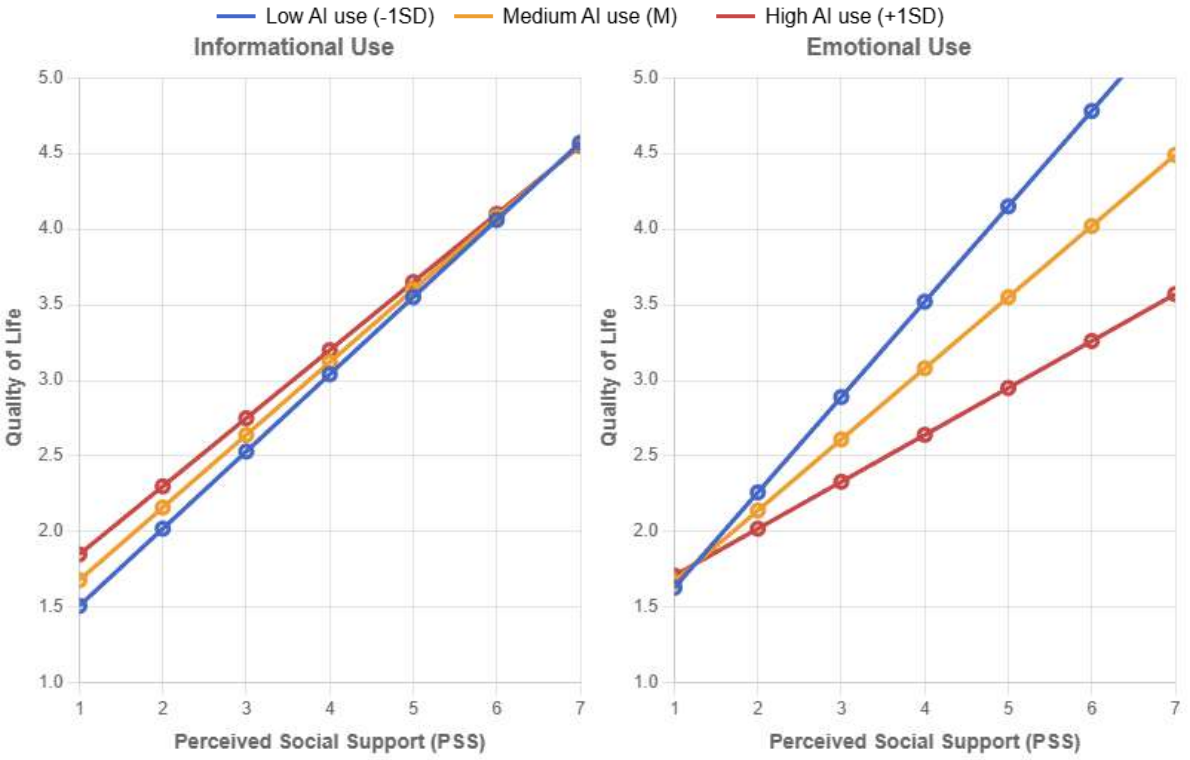


Figure 2. Comparison Between the Moderating Effects of Informational vs. Emotional Use of AI

The results confirm hypothesis 3, demonstrating that the type of interaction with generative AI significantly influences the nature of the moderation effect:

1. Informational and professional use do not moderate the relationship between social support and quality of life.
2. Emotional use significantly and negatively moderates this relationship.
3. Recreational use presents a significant moderating effect, although less pronounced than that of emotional use.

Additional analyses - moderated mediation

To explore the mechanisms that might explain the observed differences, we tested a moderated mediation model. In this model, we examined whether the type of use influences the relationship between social support and quality of life through AI dependency.

In the emotional use model (Fig. 3), there is a significant mediation effect through AI dependency: emotional use significantly increases dependency (a = .28, p < .001), which in turn negatively moderates the relationship between social support and quality of life (b = -.19, p < .001). In contrast, the informational use model (Fig. 4) does not present such a mediation effect: informational use does not have a significant influence on dependency (a = .08, p > .05), and the indirect effect is nonsignificant.

These results explain the mechanism through which emotional use, but not informational use, interferes with the benefits of social support for quality of life. Emotional use contributes to the development of dependency, which diminishes the individual's ability to benefit from traditional social support.

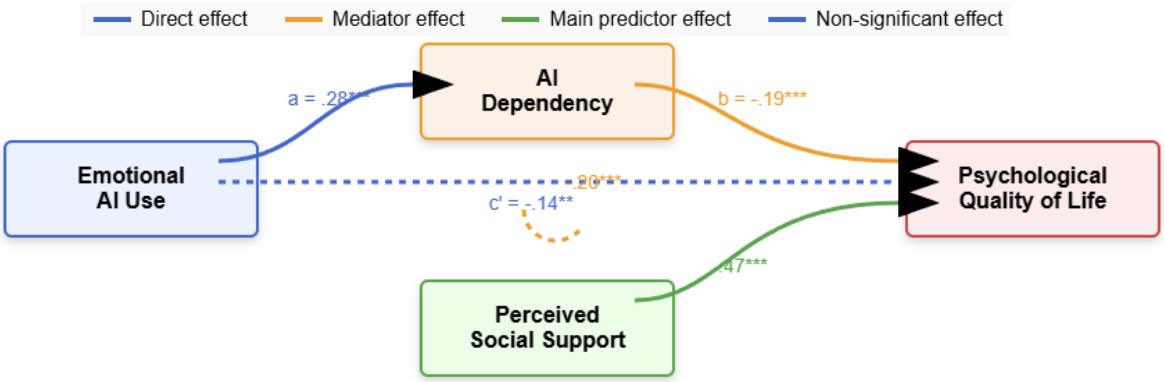


Figure 3. Model for Emotional Use of AI

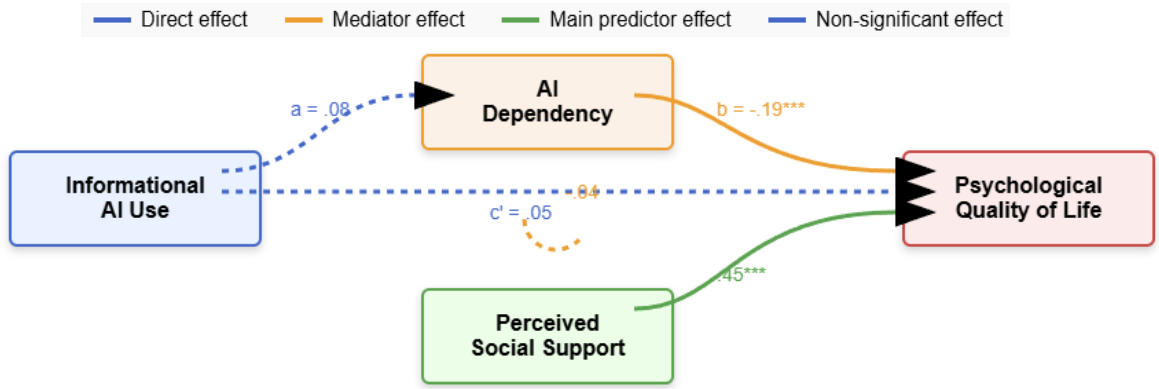


Figure 4. Model for Informational Use of AI

5. CONCLUSIONS

Our study highlighted three main findings: (1) social support is a robust predictor of quality of life in all domains evaluated; (2) this beneficial relationship is significantly attenuated at high levels of generative AI dependency; and (3) the type of AI use significantly influences this moderation effect, with emotional and recreational use having a negative impact, while informational and professional use do not show this effect. The moderated mediation analysis revealed the mechanism through which emotional use, but not informational use, interferes with the benefits of social support: emotional use contributes to the development of AI dependency, which in turn diminishes the individual's ability to benefit from traditional social support.

Theoretical implications. Our results extend the social compensation theory in the digital era, suggesting that using generative AI as an emotional substitute may undermine, rather than augment, the benefits of authentic social interactions. At the same time, they support the concept of „social AI paradox" - although AI can simulate social interactions, dependency on it reduces the ability to benefit from real social support.

Practical Implications

1. Individual users should be aware of the types of interactions with AI and monitor signals of dependency, especially when AI is used for emotional support.
2. AI developers should design systems that complement, not replace, authentic human relationships and integrate mechanisms that encourage healthy use.
3. Mental health practitioners should include the use of generative AI in the assessment protocols of young people, especially for emotional purposes.

Limitations and Future Directions

Our study presents three main limitations: the cross-sectional design which restricts causal inferences, the predominantly university sample which reduces generalizability, and measurements based on self-reporting.

Future research would benefit from longitudinal approaches to examine changes over time, experimental studies to establish causal relationships, and deeper investigations regarding the effects of different types of AI and contexts of use.

In conclusion, the results do not suggest rejection of generative AI but emphasize the importance of its conscious and balanced use. Although it represents a valuable tool for informational and professional purposes, dependency on AI for satisfying emotional needs can undermine the benefits of authentic social support. It is essential to maintain a critical approach, leveraging the benefits of technology without compromising human relationships that remain fundamental to our well-being.

REFERENCES

1. Boyd, R. & Markowitz, D. (2025). Artificial Intelligence and the Psychology of Human Connection. *Perspectives on Psychological Science*. 10.31234/osf.io/xqrkw_v3.

2. Cohen, S., & Wills, T. A. (1985). Stress, social support, and the buffering hypothesis. *Psychological Bulletin*, 98(2), 310-357.

3. Eling, F. (2025). The Psychological Impact of Digital Isolation: How AI-Driven Social Interactions Shape Human Behavior and Mental Well-Being. *International Journal of Research and Innovation in Social Science*. IX. 3697-3705. 10.47772/IJRISS.2025.90400265.

4. Goh, A. Y. H. (2025). Generative artificial intelligence dependency: Scale development, validation, and its motivational, behavioral, and psychological correlates, *Computers in Human Behavior Reports, Elsevier.* p. 1-87. Available at: https://ink.library.smu.edu.sg/etd_coll/774

5. Jacobs, K. A. (2024). Digital loneliness—Changes of social recognition through AI companions. *Frontiers in Digital Health*, 6, Article 1281037. https://doi.org/10.3389/fdgth.2024.1281037

6. Hancock, J. T., Naaman, M., & Levy, K. (2020). AI-mediated communication: Definition, research agenda, and ethical considerations. *Journal of Computer-Mediated Communication*, 25(1), 89–100. https://doi.org/10.1093/jcmc/zmz022

7. Hayes, A. F. (2017). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. Guilford Publications.

8. Lemay, D. J., Doleck, T., & Bazelais, P. (2019). Self-determination, loneliness, fear ofmissing out, and academic performance. *Knowledge Management & E-Learning: International Journal*, 485–496. https://doi.org/10.34105/j.kmel.2019.11.025

9. Mou, Y., Xu, K. (2017). The media inequality: Comparing the initial human-human and human-AI social interactions, *Computers in Human Behavior*, Volume 72, Pages 432-440, ISSN 0747-5632, https://doi.org/10.1016/j.chb.2017.02.067.

10. Naik, A., Thomas, J., Sree, T., Himavant, R. (2025, in press). Artificial Empathy: AI based Mental Health. 10.48550/arXiv.2506.00081.

11. Nass, C., & Moon, Y. (2000). Machines and mindlessness: Social responses to computers. *Journal of Social Issues*, 56(1), 81–103. https://doi.org/10.1111/0022-4537.00153

12. OECD (2021). *AI and the Future of Skills, Volume 1: Capabilities and Assessments, Educational Research and Innovation*, OECD Publishing, Paris, https://doi.org/10.1787/5ee71f34-en.

13. Skjuve, M., Følstad, A., Fostervold, K.I., Petter Bae Brandtzaeg, P.B. (2021). My Chatbot Companion - a Study of Human-Chatbot Relationships, *International Journal of Human-Computer Studies*, Volume 149, 102601, ISSN 1071-5819, https://doi.org/10.1016/j.ijhcs.2021.102601.

14. Ta, V., Griffith, C., Boatfield, C., Wang, X., Civitello, M., Bader, H., DeCero, E., & Loggarakis, A. (2020). User experiences of social support from companion chatbots in everyday contexts: Thematic analysis. *Journal of Medical Internet Research*, 22(3), Article e16235. https://doi.org/10.2196/16235

15. Taylor, S. E. (2011). Social support: A review. *In H. S. Friedman (Ed.), The Oxford handbook of health psychology* (pp. 189-214). Oxford University Press.

16. Turkle, S. (2012). *Alone together: Why we expect more from technology and less from each other*. Basic Books.

17. WHO Group. (1998). Development of the World Health Organization WHOQOL-BREF quality of life assessment. *Psychological Medicine*, 28(3), 551-558.

18. Zimet, G. D., Dahlem, N. W., Zimet, S. G., & Farley, G. K. (1988). The multidimensional scale of perceived social support. *Journal of Personality Assessment*, 52(1), 30-41.

ROMANIAN JOURNAL OF PSYCHOLOGICAL STUDIES

HYPERION UNIVERSITY
www.rjps.hyperion.ro

BIG FIVE PERSONALITY FACETS AS PREDICTORS OF WORK-LIFE INTERACTION, WORK ENGAGEMENT, AND LIFE SATISFACTION

VIOLETA, LUNGU [a]

[a] Hyperion University, Faculty of Psychology and Educational Sciences, Department of Psychology

Abstract

The present study investigated the relationships between the facets of the Big Five personality model and work-life balance, occupational well-being, and life satisfaction in a sample of professionally active Romanian adults. A total of 82 participants (48 women, 58.54%; 34 men, 41.46%; Mage = 40.1 years, SD = 10.99) completed an online battery comprising the Big Five Inventory-2 Short Form (BFI-2-S), the Survey Work-Home Interaction Nijmegen (SWING), the Utrecht Work Engagement Scale (UWES-9), and the Satisfaction With Life Scale (SWLS). Spearman correlations, multiple linear regression, and a simple mediation model (SEM, ML estimator) were employed. Results indicated that Conscientiousness facets — particularly Productivity — were the strongest positive correlates of work engagement, while Neuroticism facets were consistently associated with higher negative work-life interference and lower life satisfaction. The Anxiety facet of Neuroticism was the strongest individual predictor of life satisfaction (β = -0.339, p = .008), alongside work engagement (β = .345, p = .002). The mediation analysis revealed that negative work-life interference (NWH) did not significantly mediate the relationship between Anxiety and life satisfaction (indirect effect: β = -0.058, p = .120, 95% CI [-0.163, 0.003]), indicating a predominantly direct pathway. These findings have implications for personality-sensitive workplace interventions aimed at promoting employee well-being.

Keywords: *Big Five facets, work-life balance, work engagement, life satisfaction, mediation.*

1. INTRODUCTION

Work-life balance (WLB) represents one of the most pressing challenges faced by professionally active adults in contemporary society. The acceleration of work pace, digitalisation, the blurring of temporal and spatial boundaries between professional and domestic spaces, and the growing complexity of simultaneously assumed social roles have transformed WLB from an academic topic into a problem with direct implications for psychological health, interpersonal relationship quality, and overall individual well-being.

Despite a considerable body of research dedicated to this domain, one question remains relatively underexplored in the literature: to what extent do stable personality

Corresponding author: Violeta Lungu
E-mail address:violeta.lungu@gmail.com

characteristics — the Big Five traits — shape the subjective experience of work-life balance? While organizational factors (workload, schedule flexibility, managerial support) and demographic variables (gender, family status, presence of children) have received substantial research attention, stable intrapersonal factors — particularly personality traits — have been investigated less systematically in relation to the multiple dimensions of work-life interaction.

Research at the facet level of personality offers a more granular perspective than that provided by broad trait dimensions alone. The Big Five Inventory-2 (BFI-2; Soto & John, 2017) organises each of the five major personality dimensions into three lower-order facets, permitting more precise predictions about which specific personality characteristics are most strongly associated with work-life outcomes. For example, within Neuroticism, the Anxiety facet may differentially predict work-life interference compared to Depression or Emotional Volatility, while within Conscientiousness, Productiveness may show stronger associations with work engagement than Organization or Responsibility.

The present study aims to contribute to filling this gap by investigating the relationships between BFI-2-S personality facets and work-life interaction (SWING), occupational well-being (UWES), and global life satisfaction (SWLS), in a sample of professionally active Romanian adults. By simultaneously employing these three instruments, the study adopts an integrative perspective on well-being, capturing the way personality is reflected at distinct levels of individual experience. Additionally, a mediation model is tested to examine whether negative work-life interference mediates the relationship between Neuroticism-Anxiety and life satisfaction.

2. OBJECTIVE AND HYPOTHESES

2.1. OBJECTIVE

The primary objective of this study is to examine the relationships between the facets of the Big Five personality model (BFI-2-S) and indicators of work-life balance (SWING), occupational well-being (UWES), and global life satisfaction (SWLS), in a sample of professionally active Romanian adults.

Specific objectives:

O1. Identify associations between Neuroticism facets (Anxiety, Depression, Emotional Volatility) and negative work-life interference (NWH, NHW), work engagement (UWES), and life satisfaction (SWLS).

O2. Examine relationships between Extraversion facets (Sociability, Assertiveness, Energy) and positive work-life interaction dimensions (PWH, PHW), UWES, and SWLS.

O3. Investigate associations between Conscientiousness facets (Organization, Productiveness, Responsibility) and the criterion variables SWING, UWES, and SWLS.

O4. Explore relationships between Agreeableness facets (Compassion, Respectfulness, Trust) and the criterion variables.

O5. Explore relationships between Openness to Experience facets (Imagination, Curiosity, Aesthetic Sensitivity) and the criterion variables.

O6. Test whether negative work-life interference (NWH) mediates the relationship between Anxiety and life satisfaction (SWLS).

2.2. HYPOTHESES

H1. Neuroticism facets (Anxiety, Depression, Emotional Volatility) will be positively associated with negative work-life interference (NWH, NHW) and negatively associated with occupational well-being (UWES) and life satisfaction (SWLS).

H2. Extraversion facets (Sociability, Assertiveness, Energy) will be negatively associated with negative interference dimensions (NWH, NHW) and positively associated with positive interference dimensions (PWH, PHW), UWES, and SWLS.

H3. Conscientiousness facets (Organization, Productiveness, Responsibility) will be negatively associated with negative interference dimensions (NWH, NHW) and positively associated with UWES and SWLS.

H4. Agreeableness facets (Compassion, Respectfulness, Trust) will be positively associated with positive interference dimensions (PWH, PHW), UWES, and SWLS.

H5. Openness to Experience facets (Imagination, Curiosity, Aesthetic Sensitivity) will show positive associations with UWES and SWLS.

H6. Negative work-life interference (NWH) will mediate the relationship between Anxiety and life satisfaction (SWLS).

3. METHOD

3.1. Participants

The study included N = 82 professionally active Romanian adults (Mage = 40.1 years, SD = 10.99; range 19–62 years), recruited through convenience sampling via online social networks. Gender distribution was: 48 women (58.54%) and 34 men (41.46%). Professional domains represented included: MAI/Public Order/Military (n = 25), Health/Medical (n = 17), Technical/Engineering/Production (n = 8), Sales/Marketing/Services (n = 5), Education (n = 5), Economic/Financial (n = 5), and other domains (n = 14). Mean professional tenure was 17.52 years (SD = 8.26). Most participants worked full-time (n = 72; 87%). Regarding family status, 48 participants were married (58%), and 35 (42%) had at least one child.

3.2. Instruments

Big Five Inventory-2 Short Form (BFI-2-S; Soto & John, 2017*)* assesses the five personality factors — Extraversion (E), Agreeableness (A), Conscientiousness (C), Neuroticism (N), and Openness to Experience (O) — through 30 items (6 per dimension), each dimension structured into three facets (2 items per facet). Responses are scored on a Likert scale from 1 (Strongly disagree) to 5 (Strongly agree).

Survey Work-Home Interaction Nijmegen (SWING; Geurts et al., 2005*)* measures bidirectional work-home interaction through 22 items organised into four subscales: negative work-home interference (NWH), negative home-work interference (NHW), positive work-home interference (PWH), and positive home-work interference (PHW). Items are scored on a Likert scale from 0 (Never) to 3 (Always). Internal consistency of subscales ranges between $\alpha = .77$ and $\alpha = .89$.

Utrecht Work Engagement Scale — short version (UWES-9; Schaufeli et al., 2006) assesses work engagement through 9 items distributed across three subscales: Vigor, Dedication, and Absorption, scored on a scale from 0 (Never) to 6 (Always/Daily). The scale was adapted and validated in Romania by Vîrgă et al. (2009). The total score is calculated as the mean of all 9 items.

Satisfaction With Life Scale (SWLS; Diener et al., 1985) assesses global cognitive satisfaction with life through 5 items scored on a Likert scale from 1 (Strongly disagree) to 7 (Strongly agree). The scale was adapted in Romanian by Stevens et al. (2012). Total scores range from 5 to 35, with higher scores indicating greater life satisfaction.

3.3. Procedure

Data were collected online through distribution of the questionnaire battery on social networking platforms, in compliance with research ethics principles (informed consent, confidentiality, GDPR compliance). Participation was voluntary and unremunerated. The study design is cross-sectional and quantitative-correlational. Distribution normality was tested using the Shapiro-Wilk test, revealing significant departures from normality for all variables ($p < .05$), justifying the use of nonparametric tests. Statistical analyses included: descriptive statistics, Spearman correlations, multiple linear regressions, and a simple mediation model with ML estimator (SEM). All analyses were conducted using JASP (version 0.18).

4. RESULTS

4.1. Descriptive Statistics and Normality

Descriptive statistics for the 15 BFI-2-S facets are presented in Table 1. The highest means were recorded for A-Respectfulness (M = 4.421, SD = 0.606), C-Productiveness (M = 4.317, SD = 0.714), and C-Responsibility (M = 4.213, SD = 0.604), while the lowest values were observed for N-Depression (M = 1.890, SD = 0.754) and N-Emotional Volatility (M = 2.488, SD = 0.906), suggesting a psychologically healthy sample with low negative affectivity. The Shapiro-Wilk test indicated significant departures from normality for all 15 facets ($p < .05$), supporting the use of Spearman correlations for all correlational analyses.

Table 1. Descriptive Statistics and Shapiro-Wilk Normality Test for BFI-2-S Facets (N = 82)

Facet	*M*	*SD*	Skewness	Kurtosis	*p*SW
Extraversion					
E-Sociability	3.817	0.768	-0.427	0.099	< .001
E-Assertiveness	3.634	0.774	-0.566	0.372	< .001
E-Energy	3.970	0.787	-0.501	-0.353	< .001
Agreeableness					
A-Compassion	3.951	0.651	-0.332	-0.003	< .001
A-Respectfulness	4.421	0.606	-0.712	-0.503	< .001
A-Trust	3.750	0.746	-0.091	-0.680	< .001
Conscientiousness					

Facet	*M*	*SD*	Skewness	Kurtosis	*p*SW
C-Organization	4.146	0.855	-0.744	-0.564	< .001
C-Productiveness	4.317	0.714	-1.257	2.200	< .001
C-Responsibility	4.213	0.604	-0.536	-0.207	< .001
Neuroticism					
N-Anxiety	2.591	0.994	0.561	-0.203	< .001
N-Depression	1.890	0.754	0.628	0.182	< .001
N-Emotional Volatility	2.488	0.906	0.190	-0.675	.004
Openness to Experience					
O-Imagination	3.537	0.919	-0.159	-0.261	.003
O-Curiosity	3.573	0.699	-0.212	-0.278	.002
O-Aesthetic Sensitivity	3.988	0.753	-0.601	-0.177	< .001

Note. SW = Shapiro-Wilk test. All facets deviated significantly from normality ($p < .05$), justifying the use of Spearman correlations for all subsequent analyses.

4.2. Spearman Correlations

Spearman correlations between the 15 BFI-2-S facets and the criterion variables (SWING subscales, UWES subscales, SWLS) revealed a coherent pattern consistent with the theoretical framework.

Regarding Neuroticism facets, N-Anxiety presented significant positive associations with NWH ($\rho = .471$, $p < .001$) and NHW ($\rho = .260$, $p < .001$), and significant negative associations with UWES-Vigor ($\rho = -.413$, $p < .001$) and SWLS ($\rho = -.415$, $p < .001$). N-Depression showed similar associations, particularly with SWLS ($\rho = -.414$, $p < .001$) and NWH ($\rho = .334$, $p < .001$). N-Emotional Volatility was associated with NWH ($\rho = .288$, $p = .010$).

Regarding Conscientiousness facets, C-Productiveness showed the strongest and most consistent positive associations with all UWES subscales: Vigor ($\rho = .479$, $p < .001$), Dedication ($\rho = .383$, $p < .001$), Absorption ($\rho = .363$, $p < .001$), and UWES-Total ($\rho = .518$, $p < .001$). C-Responsibility and C-Organization were associated with reduced negative interference (NWH: $\rho = -.225$ and $\rho = -.220$, respectively) and higher engagement.

Extraversion facets showed positive associations with positive work-life interaction dimensions and work engagement. E-Energy in particular was associated with UWES-Vigor ($\rho = .400$, $p < .001$) and UWES-Dedication ($\rho = .337$, $p < .001$). Agreeableness facets showed mainly negative associations with negative interference subscales. Openness to Experience facets did not show significant associations with any criterion variable.

4.3. Multiple Linear Regression Analyses

Four multiple linear regression models were constructed to examine the contribution of personality facets to the variability of the criterion variables.

Table 2. Multiple linear regression — BFI-2-S facets as predictors of work engagement (UWES-Total), N = 82

Predictor	***B***	***SE***	**β**	***t***	***p***	**95% CI [Lower, Upper]**
(Intercept)	0.142	1.144	—	0.125	.901	[-2.136, 2.420]
C-Productiveness	0.683	0.190	.405	3.600	< .001	[0.305, 1.061]
C-Responsibility	0.322	0.211	.162	1.526	.131	[-0.098, 0.743]
N-Anxiety	-0.018	0.167	-.015	-0.105	.916	[-0.351, 0.316]
N-Depression	-0.367	0.187	-.230	-1.960	.054	[-0.740, 0.006]
N-Emotional Volatility	0.216	0.182	.163	1.188	.239	[-0.146, 0.578]

Note. $R^2 = .357$, $R^2adj = .315$, $F(5, 76) = 8.453$, $p < .001$. LL = lower limit; UL = upper limit.

The first model ($R^2 = .357$, $F(5, 76) = 8.453$, $p < .001$) identified C-Productiveness as the only significant individual predictor of work engagement ($\beta = .405$, $t = 3.600$, $p < .001$). N-Depression showed a marginal trend ($\beta = -.230$, $p = .054$).

Table 3. Multiple linear regression — BFI-2-S facets and UWES as predictors of life satisfaction (SWLS), N = 82

Predictor	***B***	***SE***	**β**	***t***	***p***	**95% CI [Lower, Upper]**
(Intercept)	29.736	3.394	—	8.762	< .001	[22.976, 36.497]
C-Productiveness	-0.346	0.655	-.062	-0.528	.599	[-1.651, 0.960]
N-Anxiety	-1.352	0.498	-.339	-2.712	.008	[-2.344, -0.359]
N-Depression	-1.159	0.588	-.220	-1.969	.053	[-2.331, 0.014]
N-Emotional Volatility	0.005	0.579	.001	0.009	.993	[-1.149, 1.159]
UWES-Total	1.137	0.350	.345	3.246	.002	[0.439, 1.835]
E-Energy	0.340	0.600	.068	0.567	.572	[-0.855, 1.535]

Note. $R^2 = .452$, $R^2adj = .408$, $F(6, 75) = 10.320$, $p < .001$. LL = lower limit; UL = upper limit.

The second model ($R^2 = .452$, $F(6, 75) = 10.32$, $p < .001$) explained 45.2% of the variance in SWLS. N-Anxiety ($\beta = -.339$, $t = -2.712$, $p = .008$) and UWES-Total ($\beta = .345$, $t = 3.246$, $p = .002$) were the only significant individual predictors.

Table 4. Multiple linear regression — BFI-2-S facets as predictors of negative work-home interference (NWH), N = 82

Predictor	***B***	***SE***	**β**	***t***	***p***	**95% CI [Lower, Upper]**
(Intercept)	1.348	0.509	—	2.650	.010	[0.335, 2.361]
N-Anxiety	0.100	0.114	.133	0.879	.382	[-0.127, 0.327]
N-Emotional Volatility	0.083	0.124	.100	0.666	.507	[-0.164, 0.330]
C-Organization	-0.197	0.096	-.225	-2.062	.043	[-0.388, -0.007]

Note. $R^2 = .117$, $R^2adj = .083$, $F(3, 78) = 3.453$, $p = .020$. LL = lower limit; UL = upper limit.

The third model ($R^2 = .117$, $F(3, 78) = 3.453$, $p = .020$) identified C-Organization as the only significant predictor of negative work-home interference ($\beta = -.225$, $t = -2.062$, $p = .043$).

Table 5. Multiple linear regression — BFI-2-S facets as predictors of positive home-work interference (PHW), N = 82

Predictor	***B***	***SE***	**β**	***t***	***p***	**95% CI [Lower, Upper]**
(Intercept)	-0.047	0.580	—	-0.081	.935	[-1.202, 1.107]
C-Productiveness	0.157	0.136	.156	1.158	.250	[-0.113, 0.428]
E-Energy	0.132	0.121	.144	1.094	.277	[-0.108, 0.372]
A-Compassion	0.122	0.130	.110	0.940	.350	[-0.136, 0.380]

Note. $R = .325$, $R^2 = .105$, R^2 adj. = .071, $F(3, 78) = 3.064$, $p = .033$. Although the overall model was statistically significant, no individual predictor reached significance ($p > .25$ for all). LL = lower limit; UL = upper limit.

The fourth model ($R^2 = .105$, $F(3, 78) = 3.064$, $p = .033$) was globally significant, however none of the three individual predictors (C-Productiveness, E-Energy, A-Compassion) reached statistical significance individually ($p > .25$ for all).

4.4. Mediation Analysis

To examine whether negative work-home interference (NWH) mediates the relationship between N-Anxiety and life satisfaction (SWLS), a simple mediation model was tested using structural equation modeling (SEM, ML estimator) in JASP.

Table 6. Mediation analysis — N-Anxiety → NWH → SWLS (N = 82)

Effect	**Path**	**Std. B**	**SE**	**z**	**p**	**95% CI [LL, UL]**
Total effect (c)	N-Anxiety → SWLS	-0.504	0.102	-4.922	< .001	[-0.682, -0.281]

Direct effect (c')	N-Anxiety → SWLS	-0.446	0.106	-4.223	< .001	[-0.626, -0.216]
Indirect effect (a×b)	N-Anxiety → NWH → SWLS	-0.058	0.038	-1.556	.120	[-0.163, 0.003]
Path a	N-Anxiety → NWH	0.250	0.138	1.815	.070	[-0.042, 0.507]
Path b	NWH → SWLS	-0.233	0.094	-2.473	.013	[-0.408, -0.029]

Note. Estimator: Maximum Likelihood (ML). Analysis conducted via SEM in JASP (version 0.18). The 95% CI of the indirect effect includes zero, indicating that negative work-home interference (NWH) does not significantly mediate the relationship between N-Anxiety and life satisfaction. LL = lower limit; UL = upper limit

The total effect of N-Anxiety on SWLS was significant (β = -0.504, z = -4.922, p < .001, 95% CI [-0.682, -0.281]). The direct effect of N-Anxiety on SWLS remained significant after introducing the mediator (β = -0.446, z = -4.223, p < .001, 95% CI [-0.626, -0.216]). Path b (NWH → SWLS) was statistically significant (β = -0.233, z = -2.473, p = .013). However, **the indirect effect** *(a×b)* did not reach statistical significance (β = -0.058, z = -1.556, p = .120, 95% CI [-0.163, 0.003]). Since the 95% confidence interval of the indirect effect includes zero, the mediating role of NWH in the relationship between N-Anxiety and life satisfaction is **not confirmed** in the present sample.

5. DISCUSSION

The present study examined the associations between Big Five personality facets and work-life balance, occupational well-being, and life satisfaction in a sample of professionally active Romanian adults, using correlational analyses, multiple regression models, and a mediation analysis.

Neuroticism facets as risk factors across all well-being dimensions. Consistent with H1, Neuroticism facets — particularly N-Anxiety and N-Depression — showed systematic negative associations with life satisfaction and positive associations with negative work-life interference. These findings align with the broader literature identifying Neuroticism as the most robust personality-based vulnerability factor for subjective well-being (Anglim et al., 2020; Tang et al., 2023). At the facet level, N-Anxiety emerged as the most influential individual predictor of life satisfaction in the regression model (β = -.339, p = .008), suggesting that the cognitive-anticipatory dimension of negative emotionality — characterised by worry, tension, and threat appraisal — is particularly detrimental to global life evaluation. Notably, N-Anxiety did not significantly predict work engagement when controlling for other facets, suggesting that its effect on well-being operates more directly on life evaluation than through professional involvement.

Conscientiousness facets as protective resources. Consistent with H3, C-Productiveness emerged as the most powerful positive correlate of work engagement across all UWES subscales (ρ = .518 for UWES-Total, p < .001) and the only significant individual predictor in the regression model for UWES-Total (β = .405, p < .001). This finding is

congruent with the established literature linking Conscientiousness to goal-directed behaviour, self-discipline, and high performance standards (Li et al., 2024; Judge et al., 2002). C-Organization was the only significant predictor of negative work-home interference (β = -.225, p = .043), indicating that the systematic, structured approach to task management characteristic of highly organised individuals helps maintain clearer work-personal boundaries, thereby reducing work intrusion into the personal domain (Kang, Guzman & Malvaso, 2023).

Extraversion and Agreeableness facets. Partially consistent with H2 and H4, Extraversion facets — particularly E-Energy — showed positive associations with work engagement subscales at the bivariate level, while Agreeableness facets showed mainly negative associations with negative interference dimensions. However, these effects did not survive in the multivariate regression context, suggesting that their contributions are partially shared with other personality facets. The fourth regression model (PHW criterion) was globally significant ($F(3, 78) = 3.064$, $p = .033$) but no individual predictor reached significance, reflecting a cumulative but non-specific effect of C-Productiveness, E-Energy, and A-Compassion on positive home-work spillover.

Openness to Experience. Consistent with patterns observed across all analyses, Openness facets showed no significant associations with any criterion variable, replicating a pattern documented in the broader literature where Openness shows the least consistent relationships with occupational and well-being outcomes (McCrae & Costa, 1999).

Work engagement is an independent contributor to life satisfaction. UWES-Total remained a significant predictor of life satisfaction (β = .345, p = .002) even when controlling for personality facets, indicating that work engagement contributes to global life evaluation independently of dispositional characteristics. This supports the eudaimonic well-being perspective according to which meaningful involvement in valued activities constitutes a fundamental source of life satisfaction (Deci & Ryan, 2000; Schaufeli & Bakker, 2004).

Mediation analysis. H6 was not confirmed. Although path b (NWH → SWLS) was significant (β = -0.233, p = .013) and the total effect of N-Anxiety on SWLS was substantial (β = -0.504, $p < .001$), the indirect effect through NWH was not significant (β = -0.058, p = .120, 95% CI [-0.163, 0.003]). These results suggest that the relationship between Anxiety and life satisfaction is predominantly direct, operating through cognitive-evaluative mechanisms — such as negative rumination, pessimistic appraisal, and sustained negative affect — rather than through the concrete experience of work-life interference. This finding underscores the importance of intrapersonal mechanisms in explaining the Neuroticism–well-being link.

6. CONCLUSIONS

The present study contributes to the literature on personality and well-being by examining Big Five facets in relation to work-life balance, work engagement, and life satisfaction in a Romanian adult sample.

Key findings are: (1) **N-Anxiety** was the most consequential Neuroticism facet, functioning as a direct negative correlate of life satisfaction independently of work-life interference; (2) C-Productiveness was the strongest correlate of work engagement, while **C-Organization** specifically attenuated negative work-home interference; (3) **work**

engagement contributed to life satisfaction independently of personality; (4) the **mediation hypothesis** was not supported, pointing to a predominantly direct Anxiety–life satisfaction pathway.

Limitations. The cross-sectional design precludes causal inferences. The convenience sample (N = 82) limits statistical power and generalizability. Exclusive reliance on self-report measures may introduce social desirability biases. The absence of organisational context variables represents a further limitation.

Future directions. Longitudinal designs, larger and more representative samples, and the inclusion of organisational moderators are recommended. Future research could examine whether interventions targeting anxiety regulation and conscientiousness-related skills differentially impact work-life balance and life satisfaction outcomes.

REFERENCES

Anglim, J., Horwood, S., Smillie, L. D., Marrero, R. J., & Wood, J. K. (2020). Predicting psychological and subjective well-being from personality: A meta-analysis. *Psychological Bulletin*, 146(4), 279–323. https://doi.org/10.1037/bul0000226

Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry, 11*(4), 227–268.

Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The Satisfaction With Life Scale. *Journal of Personality Assessment, 49*(1), 71–75.

Geurts, S., Taris, T., Kompier, M., Dikkers, J., Van Hooff, M., & Kinnunen, U. (2005). Work-home interaction from a work psychological perspective: Development and validation of a new questionnaire, the SWING. *Work & Stress, 19*(4), 319–339. https://doi.org/10.1080/02678370500410208

Judge, T. A., Heller, D., & Mount, M. K. (2002). Five-factor model of personality and job satisfaction: A meta-analysis. *Journal of Applied Psychology, 87*(3), 530–541.

Li, X., Zhou, M., & Guo, Y. (2024). Do conscientious employees have a high level of work engagement? *Frontiers in Psychology*, 15, Article 1485025. https://doi.org/10.3389/fpsyg.2024.1485025

Kang, W., Guzman, K. L., & Malvaso, A. (2023). Big Five personality traits in the workplace. *Frontiers in Psychology*, 14, Article 976022. https://doi.org/10.3389/fpsyg.2023.976022

McCrae, R. R., & Costa, P. T. (1999). A five-factor theory of personality. In L. A. Pervin & O. P. John (Eds.), *Handbook of personality* (pp. 139–153). Guilford.

Schaufeli, W. B., & Bakker, A. B. (2004). Job demands, job resources, and their relationship with burnout and engagement. *Journal of Organizational Behavior, 25*(3), 293–315.

Schaufeli, W. B., Bakker, A. B., & Salanova, M. (2006). The measurement of work engagement with a short questionnaire. *Educational and Psychological Measurement, 66*(4), 701–716.

Soto, C. J., & John, O. P. (2017). Short and extra-short forms of the Big Five Inventory-2: The BFI-2-S and BFI-2-XS. *Journal of Research in Personality, 68*, 69–81.

Stevens, M. J., Lambru, I., Sandu, C. G., Constantinescu, P.-M., Butucescu, A., & Uscatescu, L. (2012). Romanian adaptation of the Satisfaction with Life Scale. *Journal of Psychological and Educational Research, 20*(1), 17.

Tang, Q., He, X., & Liu, G. (2023). Effects of neuroticism on differences in symptom structure of depression and anxiety and life satisfaction. *Behavioral Sciences*, 13(8), Article 636. https://doi.org/10.3390/bs13080636

Vîrgă, D., Zaborilă, C., Sulea, C., & Maricuțoiu, L. (2009). Romanian adaptation of Utrecht Work Engagement Scale. *Psihologia Resurselor Umane*, 7(1), 58–74.

ROMANIAN JOURNAL OF PSYCHOLOGICAL STUDIES

HYPERION UNIVERSITY
www.rjps.hyperion.ro

CHROMATIC CORRELATES OF THERAPEUTIC CHANGE PROCESSES IN AMPLIFIED STATES OF CONSCIOUSNESS

MANOLEA ALIODOR [a]

[a] Hyperion University, Faculty of Psychology and Educational Sciences, Department of Psychology

Abstract

The study investigates changes in the chromatic values of the human auric field following a psychotherapeutic intervention based on amplified states of consciousness. A total of 45 paired cases were assessed before and after the intervention by means of standardized measurements on a 0-100 colorimetric scale covering five major auric zones: head, heart, center, right (Yang), and left (Yin). Paired-samples inferential analyses and effect-size estimates showed statistically significant increases in all evaluated zones, with large to very large effects. The results support the existence of a coherent post-intervention reorganization of the chromatic spectrum, marked by transitions from tones associated with cognitive activation and tension toward tones associated with affective balance, receptivity, and intuitive functioning. Overall, the findings suggest that colorimetric analysis can function as a complementary tool for assessing the effectiveness of psychotherapeutic interventions that employ amplified states of consciousness.

Keywords: *colorimetric analysis, amplified states of consciousness, psychotherapy, AuraVision, psycho-emotional coherence.*

1. INTRODUCTION

Contemporary psychology, especially in its applied and experiential branches, is undergoing a process of epistemological expansion beyond strictly cognitive-behavioral models, increasingly moving toward the integration of deeper levels of consciousness and human experience (Wilber, 2000; Grof, 1988; Maslow, 1971). From this perspective, therapeutic change is no longer reduced to symptom correction, but is understood as a reorganization of affective, cognitive, somatic, and symbolic functioning.

Amplified states of consciousness (ASC), induced through methods such as the Reverse technique, holotropic breathwork, intensive meditation, or hypnotic trance, are described in the transpersonal literature as functional mechanisms of self-regulation and psychic transformation, not merely as unusual or deviant experiences (Cortright, 1997; Grof, 2000; Phelps, 2017). By temporarily suspending the strictly ego-logical filter, these states

Corresponding author: Manolea Aliodor
E-mail address: aliodormanolea@hyperion.ro

facilitate access to deep emotional contents, archetypal dynamics, and integrative processes that go beyond exclusively cognitive insight.

Within postconventional psychology, the inclusion of ASC in research opens the possibility of correlating the experiential dimension with observable indicators of psychophysiological reorganization. In this framework, the AuraVision system is used as a complementary instrument for quantifying the bioelectrical and colorimetric transformations associated with the intervention, and the present study examines whether these modifications can be described coherently in statistical, psychological, and energetic terms (Hunt, 1995; McCraty et al., 2009; Manolea, 2022).

2. OBJECTIVE AND HYPOTHESES

2.1. OBJECTIVE

The general objective of the study was to evaluate changes in the chromatic and energetic values of the human aura following a psychotherapeutic intervention based on amplified states of consciousness, with the aim of determining the statistical, colorimetric, and psychological significance of the observed transformations.

Specific Objectives

1.Determining changes in mean chromatic values, on the 0-100 scale, across the five auric zones (Head, Heart, Center, Right, Left) before and after the psychotherapeutic intervention based on amplified states of consciousness.

2.Identifying tendencies of spectral reorganization through analysis of colorimetric distribution and the shift of dominant colors from yellow-orange toward green-blue-violet.

3.Evaluating statistically significant differences between pre- and post-intervention measurements using the paired-samples t test.

4.Determining effect size (Cohen's d) in order to evaluate the substantive magnitude of change beyond statistical significance.

5.Correlating chromatic changes with psychological and energetic interpretations to verify whether color shifts correspond to movement toward affective balance, inner coherence, and harmonious psycho-emotional functioning.

6.Constructing a global descriptive model of chromatic evolution of the aura under the influence of experiential interventions, integrable into transpersonal psychology research.

2.2. HYPOTHESES

H1. The application of a psychotherapeutic intervention based on amplified states of consciousness produces a significant increase in auric chromatic values across all analyzed zones.

H2a. The mean chromatic value in the Heart zone will increase significantly post-intervention, indicating affective-relational activation.

H2b. Values in the Left (Yin) zone will increase significantly, reflecting increased receptivity and energetic balance.

H2c. Values in the Head zone will show a moderate increase, but one below that of the affective-relational zones, suggesting reduced cognitive overcontrol.

H2d. Global values, calculated as the mean of the five zones, will show a significant increase with a large effect size (Cohen's $d > 0.80$).

H2e. Post-intervention colorimetric distribution will indicate a coherent shift from lower or intermediate colors toward colors associated with higher frequencies, reflecting a positive energetic transition.

3. METHOD

3.1. Participants

The study included 45 adult participants, 29 men and 16 women, with a mean age of 46 years. Participants were selected on the basis of their availability to take part in an intervention oriented toward amplified states of consciousness and to complete pre- and post-intervention colorimetric assessments. All records were paired, with each participant having one pre-intervention and one post-intervention measurement, with no missing data.

3.2. Procedure

Participants underwent a specific psychotherapeutic intervention aimed at accessing and processing deep emotional contents through the controlled induction of amplified states of consciousness (Grof, 2000; Phelps, 2017). Auric measurements were performed 24-48 hours before and after the main working session so that the comparison captured the pre-post change associated with the therapeutic process.

3.3. Apparatus and Theoretical Foundations

The system used, AuraVision, also known as Aura Video Station or Biofeedback Aura Imaging System, is a complex psychophysiological and colorimetric analysis device. It combines the capture of galvanic skin response (GSR), variations in electrical impedance, peripheral electromagnetic microvariations, and local skin temperature with computerized modeling of chromatic fields to generate a visual and numerical representation of the individual's energetic and emotional state (Hunt, 1995; Lowen, 1994).

The device sensor is a sensitive metal surface made of conductive alloy on which the participant places the palm. The processing interface transforms analog signals into a digital data stream interpreted through a chromatic mapping algorithm based on empirical and psychophysiological correlations, generating dynamic aura images, numerical diagrams, comparative tables, and zonal means.

At an interpretive level, GSR is correlated with activation of the sympathetic nervous system and emotional reactions, impedance variability with hydration and sweat gland activity, and electromagnetic microvariations with peripheral neuromuscular and bioenergetic dynamics. Accordingly, the device can be used as an observational medium for the way physiological and affective transformations are projected into a colorimetric register.

Table 1. Standardized colorimetric scale used in the interpretation of AuraVision values

Color	Value range	Energetic and psychological meaning
Black/Gray	0-9	Very low energy level, blockage, or very low tone
Red	20-29	Vital force, impulsivity, action
Orange	30-39	Emotion, creativity, expression
Yellow	40-49	Active mind, analysis, control
Green	50-59	Heart, balance, empathy
Blue	60-69	Communication, calm, basic spirituality
Indigo/Violet	70-89	Intuition, mental clarity, transcendence, inspiration
White	90-100	Coherence, high spirituality, global balance

Table 2. Analyzed auric zones and associated psychological indicators

Zone	Symbolic correspondence	Main indicator
Head	Cognitive / conscious	Mental activity, clarity
Heart	Affective / relational	Emotions, empathy, openness
Center (plexus)	Identity / vital energy	Inner balance
Right (Yang)	Expression / action	Externalization, strength, will
Left (Yin)	Receptivity / intuition	Openness, intuition, empathy

In applied terms, the system is suitable for research on amplified states of consciousness, monitoring the effects of psychotherapeutic interventions, analyzing psycho-emotional balance, and conducting biofeedback studies. Its methodological advantages include measurement repeatability, the convertibility of results into quantifiable indicators, and the possibility of providing immediate visual feedback to both participant and therapist.

Colorimetric analysis does not replace standard psychological assessment; it complements it. The correlations between colors and lived states are treated as semiotic and operational relationships, useful insofar as they are supported by statistical models and convergence with other clinical data.

3.4. Measurements and Statistical Analysis

For each participant, pre- and post-intervention chromatic values were extracted for five auric zones: center, head, heart, right (Yang), and left (Yin). Values were expressed on the 0-100 scale described above, and an overall subject-level mean was calculated to obtain a general indicator of energetic functioning. For each zone, a paired-samples t test was applied, reporting pre and post means, the mean difference, the t value, p level, the 95% confidence interval, and Cohen's d effect size. Analyses were performed on a synthetic data file converted into Excel tabular format and statistically processed.

4. RESULTS

Differential analysis across auric zones indicated significant increases in all evaluated areas. The largest mean differences appeared in the Heart zone ($\Delta = 13.22$; $d = 2.00$) and the Left (Yin) zone ($\Delta = 13.36$; $d = 1.81$), followed by Head ($\Delta = 11.27$; $d = 1.27$), Right ($\Delta = 10.58$; $d = 1.28$), and Center ($\Delta = 10.38$; $d = 1.43$). All comparisons were statistically

significant at $p < .001$, supporting the hypothesis of a consistent reorganization of the auric field after the intervention.

Table 3. Pre-post differential analysis by auric zone.

Zone	M_pre	M_post	Mean delta	t (44)	p	d	95% CI Δ
Center	60.62	71.00	10.38	9.60	<.001	1.43	[8,20; 12,56]
Head	64.53	75.80	11.27	8.54	<.001	1.27	[8,61; 13,92]
Heart	62.47	75.69	13.22	13.41	<.001	2.00	[11,23; 15,21]
Right	61.38	71.96	10.58	8.61	<.001	1.28	[8,10; 13,05]
Left	60.29	73.64	13.36	12.11	<.001	1.81	[11,13; 15,58]

The global score, calculated as the mean of the five auric zones, increased from M_pre = 61.86 to M_post = 73.62, with a mean difference of 11.76 points, $t(44) = 11.10$, $p < .001$, and $d = 1.66$. All participants showed increases in the Heart and Left zones, and more than 95% showed increases in the other zones as well, supporting hypothesis H2d concerning a robust global change.

4.1. Discussion of Results

The overall pattern of the data indicates that the intervention does not merely produce an undifferentiated intensification of values, but rather a coherent reorganization of the chromatic spectrum. The robustness of the increases in the Heart zone supports the hypothesis that deep emotional processing is associated with affective openness, relational coherence, and emotional integration, in line with the transpersonal literature on the effects of amplified states of consciousness (Grof, 2000; Phelps, 2017).

Consistent increases in the Left (Yin) zone suggest intensified receptivity, flexibility, and intuitive connectedness, while developments in the Head and Right zones indicate a cognitive-volitional harmonization that reduces overcontrol and supports a more balanced mode of action. From a colorimetric perspective, the shift from yellow-orange hues toward green, blue, indigo, or white-violet may be read as a sign of transition from tension and control toward inner coherence, acceptance, and expansion of consciousness (Brennan, 1987; Metzner, 2018).

The results support hypotheses H1, H2a, H2b, H2d, and, in a more nuanced form, H2c and H2e. Their interpretation must nonetheless be related to the methodological limits of the study: the sample is one of convenience, the clinical protocol is not described exhaustively, and colorimetric analysis remains a complementary measure rather than a substitute for standard psychological assessment. For this reason, the main relevance of these effects is heuristic and exploratory, even if their statistical magnitude is clear.

4.2. Illustrative Examples

The six cases selected below illustrate distinct types of chromatic reorganization: refinement of vital expression, movement toward affective balance, transpersonal expansion, or homogenization within a highly coherent register. In each example, the images from the two time points, the graphs, and the tables are integrated into the interpretive text to show how individual transformations translate statistically and psychologically.

Case 1. From Orange to Orange-Yellow

The first example captures a shift in hue rather than a radical change in register. At Time Point 1, the auric field is dominated by orange, with secondary areas of red and yellow, corresponding to a profile centered on expression, spontaneity, and affective activation. At Time Point 2, the same visual structure remains, but the orange is refined toward orange-yellow and the overall image becomes clearer and more ordered.

This shift can be interpreted as a maturation of creative expression: the raw energy of orange does not disappear, but is better supported by lucidity, mental clarity, and self-control. In other words, spontaneity is integrated into a more stable and better directed form.

Time Point 1 Time Point 2

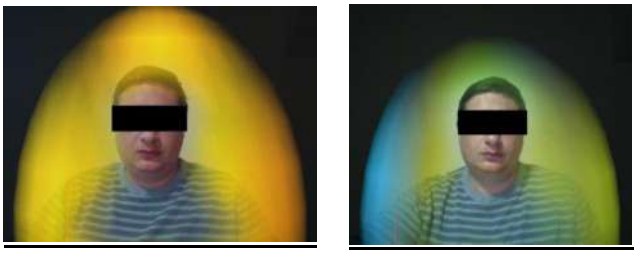


Figure 2. Case 1. From Orange to Orange-Yellow: separate crops for the graphs

The graphs confirm this reading. Values increase in all five zones, from 74 to 84 in the Head, from 80 to 86 in the Heart, from 78 to 82 in the Center, from 76 to 84 on the Right, and from 72 to 80 on the Left, bringing the overall mean from 76.0 to 83.2, with a difference of +7.2 points and a very large effect, d = 3.09. Spectral distribution shifts the emphasis from a strong orange of 55% and red of 15% toward orange at 40% and yellow at 35%, supporting the idea of a movement from impulsivity toward more reflective and better contained creativity.

Evolution chart Spectral diagram

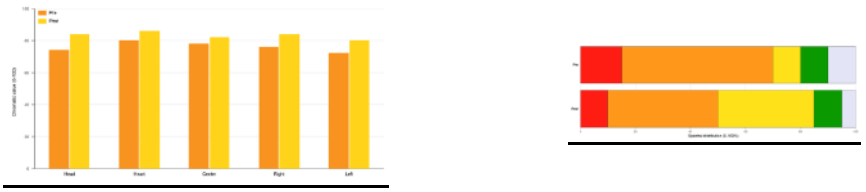


Table 4. The zonal table summarizes the main values of the case and supports the narrative reading of the transformation

Zone	Time Point 1	Time Point 2	Δ (2-1)
Head (mental)	74	84	+10
Heart (emotional)	80	86	+6
Center (vitality)	78	82	+4
Right (Yang)	76	84	+8
Left (Yin)	72	80	+8

Table 5. The summary table brings together the global indicators and interpretive landmarks of the case

Indicator	Time Point 1	Time Point 2
Overall mean	76.0	83.2
Overall difference		+7.2

Effect size d		3.09

Table 6. The spectral table explicitly presents the chromatic distribution relevant to this case

Spectrum / color	Time Point 1	Time Point 2
Red	15%	10%
Orange	55%	40%
Yellow	10%	35%
Green	10%	10%
White / Lavender	10%	5%

Case 2. From Orange-Yellow to Yellow-Green

The second example shows a clear shift from the analytical zone toward the relational zone. In the initial record, the dominant color is orange-yellow, with an overall value range of 30-49 and a tone explicitly described as mental-analytical. After the intervention, the dominant combination becomes yellow-green, the range rises to 45-55, and the general tone is redefined as balanced-empathic.

Visually, this shift produces a calmer and more centered aura, in which the cognitive component remains active but is accompanied by a more pronounced affective openness. The change may be read as an expansion of consciousness from analytical control toward psycho-emotional integration.

Time Point 1 Time Point 2

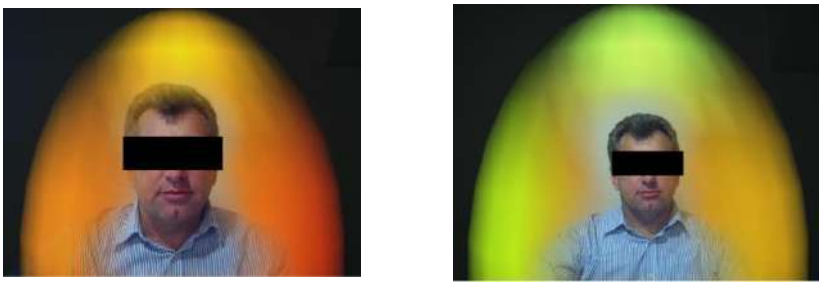


Figure 3. Case 2. From Orange-Yellow to Yellow-Green: separate crops for the two time points

The graphical data show increases from 42 to 50 in the Center, from 35 to 45 in the Head, from 45 to 55 in the Heart, from 40 to 46 on the Right, and from 33 to 50 on the Left. The overall mean rises from 39.0 to 55.8, and the mean chromatic value increases from approximately 39.6 to 49.5, together with an increase in energetic intensity from the 75-80 range to 80-85. Spectrally, the emphasis shifts from orange 45% and yellow 40% toward yellow 45% and green 45%, moving the field from analysis and processing toward balance and empathy.

Evolution chart Spectral diagram

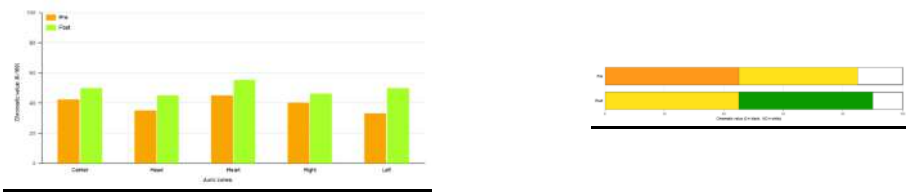


Figure 4. Case 2. From Orange-Yellow to Yellow-Green: separate crops for the graphs

Table 7. The zonal table summarizes the main values of the case and supports the narrative reading of the transformation

Zone	Time Point 1	Time Point 2	Δ (2-1)
Center (vitality)	42	50	+8
Head (mental)	35	45	+10
Heart (emotional)	45	55	+10
Right (Yang)	40	46	+6
Left (Yin)	33	50	+17

Table 8. The summary table brings together the global indicators and interpretive landmarks of the case

Indicator	Time Point 1	Time Point 2
Dominant color	Orange-Yellow	Yellow-Green
Overall value range	30-49	45-55
Mean chromatic value	≈ 39.6	≈ 49.5
Energetic intensity	75-80	80-85
General tone	Mental-analytical	Balanced-empathic
Reported overall mean	39.0	55.8
Overall difference		+16.8

Table 9. The spectral table explicitly presents the chromatic distribution relevant to this case.

Spectrum / color	Time Point 1	Time Point 2
Orange	45%	
Yellow	40%	45%
Green		45%

Case 3. From Yellow-Green to White-Violet

In the third case, the chromatic shift already enters the transpersonal register. The initial image is dominated by yellow-green, that is, by a profile of processing, adaptation, and self-regulation. After the intervention, the same aura opens toward white-violet, signifying higher clarity, acceptance, and reduced internal tension.

The difference between the two moments is one of the most recognizable in the whole set: Time Point 1 retains traces of a dynamic of effort and inner control, whereas Time Point 2 appears brighter, more uniform, and less fragmented. This shift marks the passage from effortful self-regulation to inner coherence.

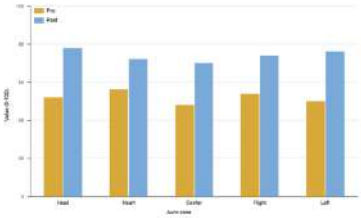
Time Point 1

Time Point 2

Figure 5. Case 3. From Yellow-Green to White-Violet: separate crops for the two time points.

Numerically, the Head increases from 52 to 78, the Heart from 56 to 72, the Center from 48 to 70, the Right from 54 to 74, and the Left from 50 to 76. The overall mean rises from 52.0 to 74.0, with a difference of +22 and an extremely large effect size, d = 5.10. Spectral distribution shows the complete disappearance of orange and yellow, a decrease in green from 40% to 10%, and an increase in white-lavender to 55% and violet to 30%, indicating a movement from processing and balancing toward clarity, calm, and transcendence.

Evolution chart



Spectral diagram

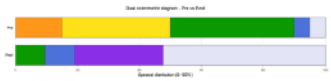


Figure 6. Case 3. From Yellow-Green to White-Violet: separate crops for the graphs

Table 9. The zonal table summarizes the main values of the case and supports the narrative reading of the transformation

Zone	Time Point 1	Time Point 2	Δ (2-1)
Head (mental)	52	78	+26
Heart (emotional)	56	72	+16
Center (vitality)	48	70	+22
Right (Yang)	54	74	+20
Left (Yin)	50	76	+26

Table 10. The summary table brings together the global indicators and interpretive landmarks of the case

Indicator	Time Point 1	Time Point 2
Overall mean	52.0	74.0
Overall difference		+22
Effect size d		5.10

Table 11. The spectral table explicitly presents the chromatic distribution relevant to this case

Spectrum / color	Time Point 1	Time Point 2
Orange	15%	0%
Yellow	35%	0%
Green	40%	10%
Blue	5%	10%
White / Lavender	5%	55%
Violet	0%	30%

Case 4. From Yellow to Intense Green

The fourth example is important precisely because it does not follow the classical route toward white-violet. What is observed here is a shift from yellow to intense green, that is, from mental, creative, and individual energy toward relational, healing, and social energy. Visually, the field moves from dominant yellow to a much greener and calmer structure.

This evolution shows that the effect of the intervention should not be read only as a vertical ascent toward higher frequencies, but also as a horizontal reorganization toward contact, empathy, and communication.

Values increase in all zones: the Head from 72 to 80, the Heart from 70 to 82, the Center from 68 to 76, the Right from 69 to 78, and the Left from 67 to 79. The overall mean rises from 69.2 to 79.0, with +9.8 points, and the effect is extremely large, d = 5.47. Spectral analysis shows that the initial profile is dominated by yellow, supported by orange and green at 20%, whereas after the intervention green rises to 50%, with yellow at 20% and blue at 15%, shifting the center of gravity of the field into the affective-communicative zone.

Time Point 1 Time Point 2

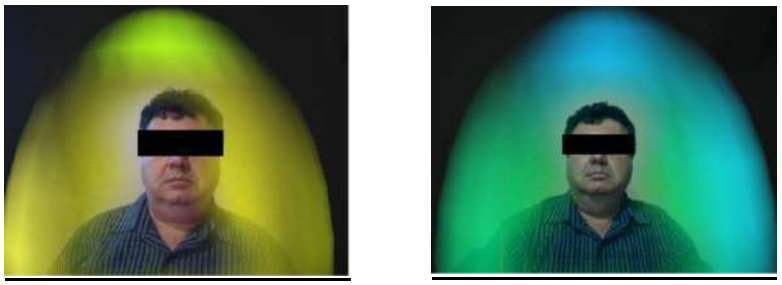


Figure 7. Case 4. From Yellow to Intense Green: separate crops for the two time points

Evolution chart Spectral diagram

Figure 8. Case 4. From Yellow to Intense Green: separate crops for the graphs

Table 12. The zonal table summarizes the main values of the case and supports the narrative reading of the transformation

Zone	Time Point 1	Time Point 2	Δ (2-1)
Head (mental)	72	80	+8
Heart (emotional)	70	82	+12
Center (vitality)	68	76	+8
Right (Yang)	69	78	+9
Left (Yin)	67	79	+12

Table 13. The summary table brings together the global indicators and interpretive landmarks of the case

Indicator	Time Point 1	Time Point 2
Overall mean	69.2	79.0
Overall difference		+9.8
Effect size d		5.47
Initial dominant profile	Dominant yellow; supporting orange; green 20%	
Final dominant profile		Green 50%; Yellow 20%; Blue 15%

Table 14. The spectral table explicitly presents the chromatic distribution relevant to this case

Spectrum / color	Time Point 1	Time Point 2
Yellow	dominant	20%
Orange	present as support	
Green	20%	50%
Blue		15%

Case 5. From Green-Yellow to White-Violet

The fifth case is probably the most spectacular in the entire set, because the change is both numerically massive and visually very clear. In the initial image, the field is green-yellow, with an active self-regulatory component and ongoing mental activity. After the intervention, the aura becomes more homogeneous within a white-violet register and internal contrast decreases radically.

This transformation signifies a passage from emotional load and cognitive overstimulation to clarity, inner reflection, and stable balance. It is not merely a matter of increase, but of a reorganization of the entire spectrum.

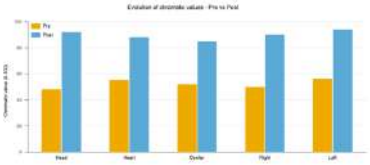
Time Point 1 Time Point 2

Figure 9. Case 5. From Green-Yellow to White-Violet: separate crops for the two time points

Zone data show an explosion of values: the Head rises from 48 to 92, the Heart from 55 to 88, the Center from 52 to 85, the Right from 50 to 90, and the Left from 56 to 94. The overall mean moves from 52.2 to 89.8, which means a difference of +37.6 points and a very large effect, d = 4.15. Before the intervention, green accounts for 45%, yellow for 20%, orange for 10%, violet for 10%, and white for only 5%; after the intervention, white accounts

for 55%, violet for 30%, and yellow and orange disappear, indicating a movement out of active, tension-laden regulation toward a more unified and stable field.

Evolution chart



Spectral diagram

Figure 10. Case 5. From Green-Yellow to White-Violet: separate crops for the graphs.

Table 15. The zonal table summarizes the main values of the case and supports the narrative reading of the transformation

Zone	Time Point 1	Time Point 2	Δ (2-1)
Head (mental)	48	92	+44
Heart (emotional)	55	88	+33
Center (vitality)	52	85	+33
Right (Yang)	50	90	+40
Left (Yin)	56	94	+38

Table 16. The summary table brings together the global indicators and interpretive landmarks of the case

Indicator	Time Point 1	Time Point 2
Overall mean	52.2	89.8
Overall difference		+37.6
Effect size d		4.15

Table 17. The spectral table explicitly presents the chromatic distribution relevant to this case

Spectrum / color	Time Point 1	Time Point 2
Green	45%	10%
Yellow	20%	0%
Orange	10%	0%
Violet	10%	30%
White	5%	55%

Case 6. From Violet to White-Lavender

The last example already begins from a high register. Before the intervention, the dominant color is violet, at 60%, accompanied by indigo at 20% and blue at 10%, indicating a visionary, intuitive, mystical, and artistic profile. After the intervention, the dominance shifts toward white-lavender, with white at 50%, lavender at 40%, and indigo at 10%.

Visually, the difference is subtle but highly relevant: Time Point 1 shows a field still intensely polarized around violet, whereas Time Point 2 becomes brighter, more uniform, and more encompassing. This transformation may be regarded as one of the highest chromatic transitions on the Aura Video Station scale.

Time Point 1 Time Point 2

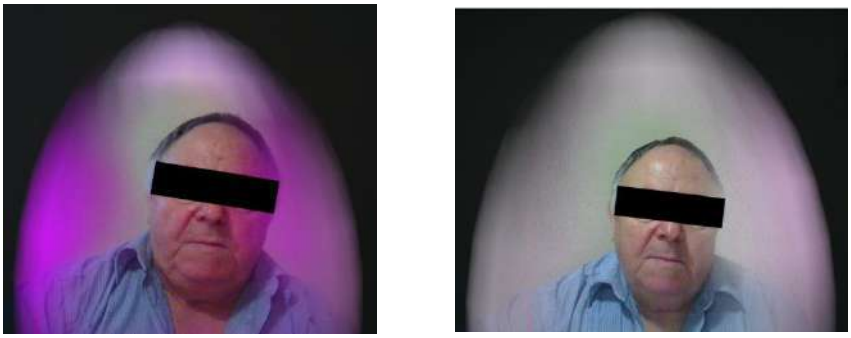


Figure 11. Case 6. From Violet to White-Lavender: separate crops for the two time points

Here too the numbers support the interpretation. The Head increases from 85 to 95, the Heart from 70 to 88, the Center from 68 to 80, the Right from 72 to 86, and the Left from 74 to 90. The overall mean rises from 73.8 to 87.8, with a difference of +14.0 and an extremely large effect, d = 4.95.

The main emphasis falls on the increase in the Heart zone and Yin receptivity, and the transition from violet to white-lavender is interpreted as a sign of higher coherence among mind, heart, and spirit.

Evolution chart Spectral diagram

Figure 12. Case 6. From Violet to White-Lavender: separate crops for the graphs

Table 18. The zonal table summarizes the main values of the case and supports the narrative reading of the transformation

Zone	Time Point 1	Time Point 2	Δ (2-1)
Head (mental)	85	95	+10
Heart (emotional)	70	88	+18
Center (vitality)	68	80	+12
Right (Yang)	72	86	+14
Left (Yin)	74	90	+16

Table 19. The summary table brings together the global indicators and interpretive landmarks of the case

Indicator	Time Point 1	Time Point 2
Overall mean	73.8	87.8
Overall difference		+14.0
Effect size d		4.95

Pre spectral dominance	Violet 60%; Indigo 20%; Blue 10%	
Post spectral dominance		White 50%; Lavender 40%; Indigo 10%

Table 20. The spectral table explicitly presents the chromatic distribution relevant to this case

Spectrum / color	Time Point 1	Time Point 2
Blue	10%	0%
Indigo	20%	10%
Violet	60%	0%
White		50%
Lavender	10%	40%

5. CONCLUSIONS

Data analysis supports the idea that the psychotherapeutic intervention based on amplified states of consciousness is associated with a coherent increase in chromatic values across all investigated auric zones and with a spectral reorganization oriented toward affective balance, receptivity, and inner clarity. At the group level, effects are large to very large, whereas at the case level they take different forms, from cognitive refinement to white-violet or white-lavender transitions.

Within a psychology journal framework, the main contribution lies in integrating theoretical foundations, methodological description, inferential results, and case examples into a unified format.

At the same time, the article retains the necessary caution: colorimetric analysis should be understood as a complementary instrument with exploratory value, most useful when interpreted in relation to broader clinical, experiential, and psychophysiological processes.

REFERENCES

Brennan, B. (1987). *Hands of Light: A Guide to Healing Through the Human Energy Field.* Bantam Books.

Cortright, B. (1997). *Psychotherapy and Spirit: Theory and Practice in Transpersonal Psychotherapy*. SUNY Press.

Grof, S. (1988). *The Adventure of Self-Discovery: Dimensions of Consciousness and New Perspectives in Psychotherapy and Inner Exploration*. SUNY Press.

Grof, S. (2000). *Psychology of the Future: Lessons from Modern Consciousness Research*. SUNY Press.

Grof, S. (2008). *Holotropic Breathwork: A New Approach to Self-Exploration and Therapy*. SUNY Press.

Hunt, V. (1995). *Infinite Mind: Science of the Human Vibrations of Consciousness.* Malibu Publishing.

Lowen, A. (1994). *Bioenergetics: The Revolutionary Therapy That Uses the Language of the Body to Heal the Problems of the Mind*. Penguin Books.

Manolea, A. (2017). *Psihologia stărilor amplificate ale conștiinței. Condiționarea psihosomatică. Psihodiagnoză și intervenție psihoterapeutică folosind stări amplificate ale conștiinței.* București, Editura Universitară.

Manolea, A. (2022). *Psihologia stărilor amplificate ale conștiinței. Metode nestandardizate în psihologia postconvențională.* București, Editura Universitară.

Maslow, A. H. (1971). *The Farther Reaches of Human Nature.* Viking Press.

McCraty, R., Atkinson, M., Tomasino, D., & Bradley, R. T. (2009). *The Coherent Heart: Heart-Brain Interactions, Psychophysiological Coherence, and the Emergence of System-Wide Order*. HeartMath Institute.

Metzner, R. (2018). *Allies for Awakening: Guidelines for Productive and Safe Experiences with Entheogens.* Green Earth Foundation.

Phelps, J. (2017). *Developing Psychedelic Therapies: Approaches to Healing with Expanded States of Consciousness.* Oxford University Press.

Tart, C. (1975). *States of Consciousness*. EP Dutton.

Vaughan, F. (1985). *The Inward Arc: Healing in Psychotherapy and Spirituality.* Shambhala.

Wilber, K. (2000). *A Theory of Everything: An Integral Vision for Business,* Politics, Science and Spirituality. Shambhala.

ROMANIAN JOURNAL OF PSYCHOLOGICAL STUDIES

HYPERION UNIVERSITY
www.rjps.hyperion.ro

THE RELATIONSHIP BETWEEN MOTIVATION, ACADEMIC ENGAGEMENT AND LEARNING BEHAVIORS

SÎRBU, MARINELA [a] , MOMANU, MIRELA-CLAUDIA [a] , ROTARU, ANA-MARIA [a,]
[a] Hyperion University, Faculty of Psychology and Educational Sciences, Department of Psychology

Abstract

Students' academic engagement is an essential pillar of their academic success, directly influencing their performance and motivation. This includes a wide range of behaviors, such as constructive feedback, involvement in extracurricular activities and adaptation to new educational technologies. It is also essential that educational institutions are aware of the external factors that can influence academic engagement, creating a learning environment that supports diversity and responds to the varied needs of students. In the current context, where technology plays an essential role in education, educational technologies and online platforms significantly influence students' behavioral engagement. Digital learning and distance learning have created both opportunities and challenges for students. The purpose of this study was driven by the need to systematically address the complex relationship between motivation, engagement and learning behaviors. This relationship profoundly influences students' academic performance and cognitive processes, determining the adoption of effective or ineffective learning strategies. In this context, the study involved 119 subjects who completed the questionnaire. The results of this study indicate that academic motivation and engagement are fundamental factors in the development of learning behaviors and in achieving educational success. However, digital learning can also bring challenges, such as digital distractions or lack of direct interaction, which can negatively affect student motivation and engagement. A deep understanding of the relationship between these factors allows the development of more effective educational strategies, adapted to the needs of students, thus encouraging a successful educational path and adequate preparation for professional challenges.

Keywords: *motivation, academic engagement, learning behaviors, competence, flexibility.*

1. INTRODUCTION

The research context related to student motivation and academic engagement is broad and complex, reflecting important concerns in the fields of educational psychology and educational sciences. Currently, universities and other higher education institutions face significant challenges in terms of increasing educational performance, promoting active learning and supporting student engagement. These demands are accentuated by economic and social changes, rapid technological development and the needs of the labor market, which require well-prepared graduates adapted to modern requirements.

Changes in higher education in recent decades have generated multiple challenges related to pedagogical methods, assessment and adapting curricula to current student needs and expectations. The internationalization of education, the integration of digital technologies in educational processes and the increasing diversification of the student population are some

Corresponding author: Momanu Mirela-Claudia
E-mail address: mirelamomanu@gmail.com

of these changes that highlight the need for a thorough understanding of academic motivation and engagement. These aspects are fundamental for adapting curricula and increasing the quality of education (Booth, 2007).

Motivation can be defined as the set of intrinsic and extrinsic factors that determine a student's desire to learn, achieve academic performance, and achieve educational goals (Deci & Ryan, 1985). In the context of self-determination theory, intrinsic motivation is considered the most effective form of motivation, as it is related to the pleasure and satisfaction that the student obtains from academic activities. Extrinsic motivation is determined by external factors: evaluations and social pressures (Ryan & Deci, 2008). Studies dedicated to academic motivation show that a learning environment that supports student autonomy and initiative has a positive effect on their involvement and academic development (Schunk, 2007). Also, interpersonal relationships among students and teachers, the constructive feedback and also the emotional support, play an important role in stimulating academic motivation. Strong intrinsic motivation is associated with strong engagement in learning, superior academic performance, and also developing self-regulated learning skills.

Academic engagement is a diversified concept and includes cognitive, affective, and behavioral aspects which describes the level of energy and dedication that a student invests in academic activities (Fredricks, Blumenfeld & Paris, 2004). Cognitive engagement is related to cognitive processes and information processing strategies used by students, affective engagement contains feelings and attitudes related to learning, and behavioral engagement involves active participation in academic activities. Academic engagement has been identified as a significant predictor of educational success and persistence in higher education. Studies show that academic engagement has an important role in effective learning behaviors and in the personal and professional development of students (Kahu, 2013).

The relationship between motivation and academic engagement influences students' learning behaviors. Students with high intrinsic motivation are usually more involved in academic activities, and this is reflected in higher academic performance. Conversely, lack of motivation or a specific extrinsic motivation can induce passive learning behaviors, procrastination or avoidance of academic tasks (Schunk, Pintrich & Meece, 2008). The relationship between motivation and academic engagement is explained by cuople of psychological theories, including self-determination theory, which inidcates that intrinsically motivated students are actively engage in the learning process and develop positive learning behaviors. In addition, expectancy-value theory suggests that students' level of engagement and motivation are influenced by their expectations of their academic success and the value they attribute to learning activities (Eccles, 1983).

Dweck's (2006) research highlighted that students with a growth mindset are more able to accept internal attributions for their failures and learn from their mistakes. Promoting a growth mindset among students can reduce amotivation and increase their resilience in the face of academic challenges, stimulating a more active and persistent approach to learning. Educational interventions that support the development of a growth mindset can facilitate not only academic performance but also sustainable long-term motivation (Dweck, 2006).

Learning behaviors are an important indicator of student engagement and motivation, and their quality can influence long-term academic outcomes. The study by Pintrich and De Groot (1990) suggests that students who adopt effective learning behaviors, such as active learning strategies and self-regulation, tend to achieve higher academic results and develop greater competence in managing academic tasks. Furthermore, learning behaviors are not only a reflection of cognitive abilities, but also of attitudes towards learning, including self-motivation and perseverance in the face of educational challenges. Thus, it is essential to understand how these behaviors are formed and how they can be supported in the educational setting to improve the learning process and academic success of students (Pintrich, 2003).

Intrinsic motivation is one of the most powerful forces influencing students' learning behaviors, having a direct impact on their academic engagement. It refers to students' commitment to learning and engaging in educational activities out of an internal motivation, without being influenced by external rewards or extrinsic factors. When students are intrinsically motivated, they are guided by curiosity and interest in the field of study, and learning becomes a satisfying activity in itself (Ryan & Deci, 1985).

Creating a stimulating learning environment, where students have easy access to a variety of educational resources, is essential for promoting deep learning behaviors. This environment can include digital libraries, online learning platforms, and constant access to tutoring and academic assistance, which support the deepening of knowledge and provide opportunities for autonomous learning (Boekaerts, 2011). In addition, educational institutions can promote extracurricular activities, such as academic clubs, conferences, or workshops, that encourage students to apply their knowledge in practical contexts and develop interpersonal skills. Teachers, in turn, can support these behaviors by using active learning methods that encourage students to be involved in the educational process.

2. OBJECTIVE AND HYPOTHESES

2.1. OBJECTIVE

The proposed objectives for this research focus on the following aspects: highlighting possible links between motivation and academic engagement, identifying an association between motivation and learning behaviors in the academic environment, concluding a set of results regarding the link between academic engagement and effective learning behaviors of students.

2.2. HYPOTHESES

The hypotheses proposed for the research are as follows:
H1: There is a relation between academic engagement and academic motivation.
H2: There is a relathion between academic engagement and learning behaviors.
H3: There is a relation between academic motivation and learning behaviors.

3. METHOD

This research involved 119 subjects who completed the questionnaire presented in Google Form, online. Participation was voluntary, anonymous and the responses were treated confidentially. Participants were informed that the research respected the confidentiality of the data collected in the study, as well as the anonymity and safety of the participants. The statistical processing of the data provided was analyzed only at the sample level, without being presented individually in any scientific publication. The questionnaire was distributed online for 4 months (October 2024 - January 2025). After statistical processing and performing descriptive and inferential statistical analyses, the final conclusions of the paper accumulated the study information, drawing on the theoretical basis, recent research in the field and the results obtained, identifying the limits of the study and possible future directions of the research. The research design is non-experimental (Vasiliu, 2018), of the type: N: O1 O2 O3, where O1 represents the measurement of academic engagement, O2 represents the measurement of academic motivation, and O3 represents the measurement of learning behaviors.

4. RESULTS

Exploratory and normality analysis of the dependent variables indicated that the dependent variables of the research have mixed distributions (normal and non-normal), so it was decided to apply non-parametric statistical tests to verify the hypotheses issued.

H1: There is a relation between academic engagement and academic motivation.

To verify this hypothesis, the Spearman correlation test was applied, with the following results:

Table 1. Associations between academic engagement, intrinsic motivation and extrinsic motivation

	1.	2.	3.
1. Academic engagement	1.000 .		
2. Intrinsic motivation	.813** .000	1.000 .	
3. Extrinsic motivation	.599** .000	.708** .000	1.000 .

**. Correlation is significant at the 0.01 level (2-tailed).

The findings confirm the rejection of the null hypothesis and indicate that there is a significant correlation between academic involvement and intrinsic motivation, which is positive and of high intensity. This means that when a student's level of intrinsic motivation is high, his level of academic involvement increases significantly. The effect size ($r^2 = 0.660$) indicates that approximately 66% of the variation in academic involvement scores can be explained by the variation in intrinsic motivation scores. According to widely accepted standards for interpreting effect size (Cohen, 1988), this value corresponds to a strong effect, which gives strong practical and theoretical relevance to the identified relationship. The results also show that there is a significant correlation between academic involvement and extrinsic motivation, which is positive and of good intensity. This means that when a student's level of extrinsic motivation increases, his level of academic involvement also increases. The effect size ($r^2 = 0.358$) indicates that approximately 35% of the variation in academic engagement scores can be explained by the variation in extrinsic motivation scores. According to widely accepted standards for interpreting effect size (Cohen, 1988), this value corresponds to a strong effect, which gives strong practical and theoretical relevance to the identified relationship.

H2: There is a relathion between academic engagement and learning behaviors.

To verify this hypothesis, the Spearman correlation test was applied, with the following results:

Table 2. Associations between academic engagement, competence motivation and rigidity

	1.	2.	3.
1. Academic engagement	1.000 .		
2. Competence motivation	.415** .000	1.000 .	
3. Inflexibility/rigidity	-.115 .213	-.653** .000	1.000 .

**. Correlation is significant at the 0.01 level (2-tailed).

The results indicate that there is a significant correlation between academic engagement and motivation for competence as a learning behavior, a positive correlation and of medium intensity. This means that when a student's level of motivation for competence increases, his level of academic engagement also increases. The null hypothesis for the first correlation is rejected. The effect size ($r^2 = 0.172$) indicates that approximately 18% of the variation in academic engagement scores can be explained by the variation in motivation for competence as a learning behavior. According to accepted standards for interpreting effect size, this value corresponds to a medium effect, which gives sufficient practical and theoretical relevance to the identified relationship. The other results show that there is no significant correlation between academic engagement and inflexibility as a learning behavior ($p > 0.05$), and in this case we retain the null hypothesis.

H3: There is a relation between academic motivation and learning behaviors.

To verify this hypothesis, the Spearman correlation test was applied, with the following results:

Table 3. Associations between motivation and learnig behaviors

	1.	2.	3.	4.
1. Intrinsic motivation	1.000			
	.			
2. Extrinsic motivation	.708**	1.000		
	.000	.		
3. Competence motivation	.483**	.222*	1.000	
	.000	.015	.	
4. Rigidity	-.161	-.007	-.653**	1.000
	.081	.943	.000	.

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

The results indicate that there is a significant correlation between intrinsic motivation and motivation for competence. This correlation is positive and has a high intensity. This confirms that when a student's level of intrinsic motivation is high, his level of motivation for competence will also be high. The null hypothesis for the first correlation is rejected. The effect size ($r^2 = 0.233$) indicates that approximately 23% of the variation in motivation for competence scores can be explained by the variation in intrinsic motivation scores. This value corresponds to a good effect, which confers important practical and theoretical relevance, according to the standards of interpreting effect size (Cohen, 1988). The findings also show that there is a significant correlation between extrinsic motivation and motivation for competence as a learning behavior. This correlation is positive, but of low intensity, indicating that with the increase in extrinsic motivation, the level of motivation for competence also increases. The null hypothesis for the second correlation is rejected. In this case, the effect size ($r^2 = 0.049$) indicates a small effect size.

5. CONCLUSIONS

Student academic engagement is a complex construct that involves behavioral, cognitive, emotional, and social commitment, all of which have a profound impact on academic performance and personal development. This engagement influences how students relate to learning tasks, set and pursue their academic goals, interact with peers and teachers, and overcome challenges encountered in the university environment. Academic motivation,

structured of intrinsic and extrinsic factors that determine a student's desire to learn, achievement of academic performance, and achievement of educational goals, is related to the pleasure and satisfaction that the student obtains from academic activities. Learning behaviors play a crucial role in academic success and are shaped by a number of factors, including the type of motivation that students demonstrate and the learning strategies adopted. Deep learning behaviors, which are supported by intrinsic motivation and a stimulating educational environment, are associated with higher academic performance and the development of cognitive and professional skills essential for future success. Thus, learning behaviors and intrinsic motivation must be continuously cultivated, and teachers and educational institutions have a critical role in supporting this process.

The purpose of this study was supported by the need to systematically address the complex relationship between motivation, engagement and learning behaviors. This relationship profoundly influences academic performance and cognitive processes of students, determining the adoption of effective or ineffective learning strategies.

The results confirm positive correlations between academic engagement, intrinsic motivation and extrinsic motivation, proving that when intrinsic or extrinsic motivation increases, academic engagement will increase accordingly. Also, there is a correlation between academic engagement and motivation for competence, highlighting the fact that when the motivation for competence in learning of the student increases, the academic engagement will increase accordingly. It was also confirmed the correlations between academic motivation and learning behaviors of students, specifically intrinsic motivation and motivation for competence, and alos extrinsic motivation and motivation for competence, as part of learning behaviors, These conclude that, with the increase in intrinsic or extrinsic motivation, the motivation for competence within learning behaviors will also increase.

The research conducted is important in understanding and supporting academic engagement and implicitly academic motivation, essential for creating an educational environment in which students are motivated to learn and develop constantly, both intellectually and personally. Through educational approaches that encourage deep commitment and long-term involvement, educational institutions can significantly contribute to students' career success and to the formation of responsible, resilient and adaptable individuals to the continuous changes of contemporary society.

REFERENCES

BoekaertsM. (2011). Emotions, emotion regulation, and self-regulation of learning in *Handbook of self-regulation of learning and performance*. eds. ZimmermanB. J.SchunkD. H. (New York, NY, USA: Routledge), 408–425.

Booth, S. (2007). Motivating learners in higher education. *Journal of Educational Psychology*, 97(1), 31-40.

Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. Springer Science & Business Media.

Deci, E. L., & Ryan, R. M. (2008). Self-determination theory: A macrotheory of human motivation, development, and health. *Canadian Psychology/Psychologie canadienne*, 49(3), 182-185.

Dweck, C. S. (2006). Mindset: *The new psychology of success*. Random House.

Eccles, J. S. (1983). Expectancies, values, and academic behaviors. In J. T. Spence (Ed.), *Achievement and achievement motivation* (pp. 75–146).

Fredericks, J. A., Blumenfeld, P. C., & Paris, A. H. (2004). School engagement: Potential of the concept, state of the evidence. *Review of Educational Research*, 74(1), 59-109.

Kahu, E. R. (2013). Framing student engagement in higher education. *Studies in Higher Education,* 38(5), 758–773.

Pintrich, P. R. (2003). A motivational science perspective on the role of student motivation in learning and teaching contexts. *Journal of Educational Psychology*, 95(4), 667-686.

Pintrich, P. R., & De Groot, E. V. (1990). Motivational and self-regulated learning components of classroom academic performance. *Journal of Educational Psychology,* 82(1), 33–40.

Schunk, D. H. (2007). *Learning theories: An educational perspective* (5th ed.). Pearson Prentice Hall.

Schunk, D. H., Pintrich, P. R., & Meece, J. L. (2008). Motivation and learning in educational psychology. Pearson Education.

Vasiliu, D. (2018). *Memento de cercetare în psihologie. Un ghid prietenos pentru studenți și nu numai*…București, E.D.P.

ROMANIAN JOURNAL OF PSYCHOLOGICAL STUDIES

HYPERION UNIVERSITY
www.rjps.hyperion.ro

HIGHLIGHTING THE EXISTENCE OF INTRAPSYCHIC CONFLICTS THROUGH THE ANALYSIS OF PSYCHOPHYSIOLOGICAL REACTIONS IN ORDINARY AND AMPLIFIED STATES OF CONSCIOUSNESS

MANOLEA ALIODOR[a]
[a] Faculty of Psychology and Educational Sciences, Department of Psychology Hyperion University, Bucharest
ERENA MARIE-LOUISE[b]
[b]Faculty of Psychology and Educational Sciences, "Spiru Haret" University, Bucharest

Abstract

Intrapsychic conflict represents a central construct for understanding human behavior because it emerges at the intersection of conscious and unconscious processing. Contemporary research in cognitive neuroscience and psychophysiology suggests that such conflicts can be investigated through objective physiological indicators, not only through self-report. Amplified States of Consciousness (ASC), especially those induced through hypnosis, provide an experimental framework for reducing executive filtering and increasing access to implicit processing.

The study included 40 participants (27 females, 13 males; M age = 21.6 years, SD = 2.78), in a within-subject design comparing Ordinary States of Consciousness (OSC) with Amplified States of Consciousness (ASC). Psychophysiological reactivity was recorded using the Lafayette LX4000 polygraph, while ideomotor responses were captured through a Force Sensitive Resistor sensor. Normality diagnostics indicated non-normal distributions; therefore, Wilcoxon signed-rank tests were used to compare response times across conditions and states of consciousness.

Response time was significantly higher in ASC than in OSC both for stimuli referring to the somatic self ($Z = -5.92$, $p < .001$, $r = .66$) and for stimuli referring to the psychological self ($Z = -6.37$, $p < .001$, $r = .71$). Descriptive statistics showed a systematic increase in response latency in ASC, and 82.5% of participants presented higher values in ASC than in OSC.

The results support the hypothesis that intrapsychic conflicts manifest through measurable psychophysiological responses and that ASC facilitates access to deeper unconscious processes. The ideomotor signal appears to add incremental value by indexing subtle dynamics that are not fully captured through explicit verbal responding.

Keywords: *intrapsychic conflict; hypnosis; psychophysiology; ideomotor signal; states of consciousness*

1. INTRODUCTION

Intrapsychic conflict has traditionally been regarded as a key mechanism of psychological functioning because it reflects tension between incompatible tendencies,

Corresponding author: Manolea Aliodor
E-mail address: aliodormanolea@hyperion.ro

motives, or representational systems. In contemporary research, this construct can be reformulated in terms of interactions between automatic and controlled processes, between implicit and explicit forms of cognition, as well as between emotionally charged responses and deliberately regulated responses. Such an expanded formulation allows a dialogue between psychodynamic theory, cognitive science, and psychophysiology.

Dual-process approaches emphasize that information processing in humans unfolds through at least two partially dissociable systems: a rapid, automatic, low-effort mode and a slower, more controlled, and reflective mode (Evans & Stanovich, 2013; Kahneman, 2011). Intrapsychic conflict becomes particularly visible when these systems generate incompatible outputs, forcing the organism to manage discrepant tendencies at the cognitive, affective, and behavioral levels. In parallel, neurocognitive models identify the anterior cingulate cortex and the associated prefrontal networks as essential for conflict monitoring and regulation (Botvinick et al., 2004, Manolea 2017).

Psychophysiological research also suggests that internal conflict is not exclusively symbolic or introspective, but is expressed through measurable bodily changes. Electrodermal activity, cardiovascular adjustments, and other autonomic indicators provide observable correlates of emotional salience, cognitive effort, and self-regulatory demands (Critchley & Garfinkel, 2021). These markers are especially valuable when the investigated process operates partly outside awareness, because they provide an indirect yet objective index of covert processing.

Amplified States of Consciousness (ASC) are especially relevant in this context because they reduce the dominance of ordinary executive control and allow the freer emergence of implicit dynamics. Hypnosis has been described as a useful experimental tool for modulating top-down control, suggestibility, and metacognitive monitoring, thereby facilitating access to latent or weakly articulated processes (Hilgard, 1991; Lush et al., 2021; Terhune et al., 2017, Manolea 2022).

Within this framework, ideomotor signaling has a distinct theoretical significance because it provides a behavioral pathway through which unconscious tendencies can be expressed without extensive conscious mediation (Cheek, 1962; Rossi, 1986, Manolea 2022).

In this article, we examine the following issue: Does psychophysiological response time differ between Ordinary States of Consciousness (OSC) and Amplified States of Consciousness (ASC) when participants answer questions referring to the somatic and psychological facets of the Self? The study also considers the ideomotor signal as a complementary indicator of unconscious processing and proposes a temporal model linking conscious verbal response, physiological activation, and ideomotor expression.

2. OBJECTIVE AND HYPOTHESES

2.1. OBJECTIVE

The objective of the study was to investigate the presence of intrapsychic conflicts through psychophysiological and ideomotor responses across different states of consciousness, using hypnotically induced ASC as an experimental condition.

2.2. HYPOTHESES

H1 General hypothesis. There are significant differences in psychophysiological responses between OSC and ASC when participants answer questions referring to facets of the Self.

H2 Specific hypothesis. Response time is significantly higher in ASC than in OSC both for stimuli referring to the somatic Self and for those referring to the psychological Self.

3. METHOD

3.1 PARTICIPANTS

The experimental sample consisted of 40 students recruited from university psychology programs (27 females and 13 males), aged between 18 and 26 years (M = 21.6, SD = 2.78). All participants provided informed consent prior to participation. The study is consistently framed as a non-clinical laboratory investigation of psychophysiological and ideomotor responses in two states of consciousness: Ordinary State of Consciousness and Amplified State of Consciousness.

3.2 APPARATUS AND MEASURES

The Lafayette LX4000 polygraph was used to record psychophysiological indices, the main dependent variable being defined as electrodermal response time. A Force Sensitive Resistor (FSR) sensor was used to detect ideomotor responses during ASC. Hypnotic depth and hypnotic responsiveness were assessed using the Stanford Hypnotic Susceptibility Scale, Form C (Weitzenhoffer & Hilgard, 1962).

3.3 PROCEDURE

The procedure was conducted in two successive phases. In the OSC phase, participants answered structured questions concerning the somatic and psychological facets of the Self while psychophysiological signals were recorded. In the ASC phase, participants first underwent hypnotic induction, which resulted in an ASC of cataleptic hypnotic trance type, after which they were asked the same questions. During this second phase, both psychophysiological and ideomotor responses were recorded. The overall procedure was designed to compare the way identical stimuli are processed when conscious executive mediation is more dominant (OSC) versus when access to implicit dynamics is amplified (ASC).

3.4 EXPERIMENTAL DESIGN AND DATA ANALYSIS

The study used a repeated-measures within-subject design, with state of consciousness (OSC vs. ASC) as the independent variable and response time as the main

dependent variable. Preliminary inspections of histograms and boxplots, together with the reported normality tests, indicated that the data were not normally distributed. Consequently, Wilcoxon signed-rank tests were used to assess differences between conditions, and effect sizes were expressed as the correlation

4. RESULTS

4.1 DESCRIPTIVE STATISTICS

Descriptive statistics indicated a clear increase in response time from OSC to ASC for both domains of the Self. Means, medians, and ranges converged in indicating slower responding in ASC conditions.

Table 1. Response Time (Seconds) as a Function of Condition/State of Consciousness

Variable¤	Condition¤	M¤	SD¤	Median¤	Min¤	Max¤
Somatic·Self¤	OSC¤	3.18¤	0.96¤	3.12¤	1.21¤	5.02¤
Somatic·Self¤	ASC¤	5.91¤	1.58¤	5.80¤	2.88¤	9.12¤
Psychological·Self¤	OSC¤	3.46¤	1.05¤	3.40¤	1.33¤	5.78¤
Psychological·Self¤	ASC¤	6.28¤	1.74¤	6.11¤	2.95¤	9.84¤

Note: OSC = Ordinary States of Consciousness; ASC = Amplified States of Consciousness.

4.2 INFERENTIAL STATISTICS

Wilcoxon signed-rank tests indicated statistically significant differences between OSC and ASC both for the Somatic Self and for the Psychological Self, with large effect sizes in both cases.

Table 2. Wilcoxon Signed-Rank Test Results for the Somatic Self

Comparison	Z	p	Effect Size (r)	Interpretation
Somatic Self: OSC vs. ASC	-5.92	< .001	0.66	Large effect

Note: OSC = Ordinary States of Consciousness; ASC = Amplified States of Consciousness.

Table 3. Wilcoxon Signed-Rank Test Results for the Psychological Self

Comparison	Z	p	Effect Size (r)	Interpretation
Psychological Self: OSC vs. ASC	-6.37	< .001	0.71	Large effect

4.3 DISTRIBUTION OF DIRECTIONAL CHANGES

The analysis of directional changes reinforced the inferential results. Most participants showed higher response times in ASC than in OSC, whereas only a small minority showed the opposite pattern.

Table 4. Distribution of Directional Changes Between Conditions

Pattern	Frequency	Percentage
ASC > OSC	33	82.5%
No difference	4	10.0%
OSC > ASC	3	7.5%

4.4 TEMPORAL PROCESSING MODEL: A REDUCTIVE ILLUSTRATION

In the temporal model of intrapsychic processing, t0 represents the conscious verbal response recorded in OSC, t1 the physiological response emerging at a subconscious level in OSC, t2 the physiological response in ASC, and t3 the ideomotor response in ASC. This model indicates deeper and more prolonged processing in ASC, while the ideomotor channel offered a faster route for the expression of unconscious material than simple autonomic responding.

Table 5. Temporal Processing Model

Level	Description
t_0	Conscious verbal response
t_1	Subconscious physiological response
t_2	Unconscious physiological response
t_3	Ideomotor response

Table 6. Illustrative Model of Temporal Response by Condition/State of Consciousness

Participant	t_0 (OSC verbal)	t_1 (OSC physiological)	t_2 (ASC physiological)	t_3 (ASC ideomotor)
P1	2.1	3.4	5.9	2.8
P2	1.9	3.0	6.2	2.6
P3	2.4	3.8	6.5	3.1
P4	2.0	3.2	5.7	2.7
P5	2.3	3.6	6.8	3.0

Note: The values in Table 6 are presented as an illustrative example of the temporal model.

5. DISCUSSION

The compiled results support the hypothesis that ASC systematically modifies psychophysiological processing, changing the organization of the response rather than merely adding random variance. Both in the conditions referring to the somatic self and in those referring to the psychological self, response time increased substantially under hypnotically induced ASC. Because electrodermal response time indexes the duration of physiological response following stimulation, the observed increase can be interpreted as evidence of

deeper, more sustained, or more complex processing when conscious executive filtering is reduced.

Effect sizes were large for both domains of the Self, suggesting that the observed differences are not only statistically reliable but also practically meaningful. The fact that 82.5% of participants presented higher values in ASC additionally indicates that the effect is not driven by a narrow subgroup. On the contrary, the pattern appears robust enough to support the broader claim that ASC enable access to latent intrapsychic dynamics that remain less visible in ordinary consciousness.

The ideomotor component strengthens this interpretation. If verbal responding in OSC captures the layer of processing available to consciousness, then psychophysiological recovery and ideomotor expression may index additional layers of activation unfolding outside complete conscious mediation. In this sense, the ideomotor signal functions as a complementary, not competing, channel: it does not replace physiological data, but helps highlight the way unconscious conflict may become behaviorally legible through subtle motor output.

The temporal model proposed in the source documents is particularly useful from a theoretical standpoint. It suggests that conscious verbal responding, physiological activation, and ideomotor signaling may be organized in a hierarchy of processing depth.

This model remains provisional, yet it offers a useful framework for future research seeking to integrate psychodynamic constructs with contemporary measures of autonomic and motor response. Consequently, the study contributes to an emerging bridge between theoretical explanations of intrapsychic conflict and experimentally observable indicators.

6. CONCLUSIONS

Three main conclusions can be supported.

First, intrapsychic conflicts can be investigated through objective psychophysiological indicators, not only through verbal report.

Second, Amplified States of Consciousness appear to facilitate access to unconscious or weakly articulated processes, as reflected by longer response times in ASC.

Third, ideomotor responses provide additional diagnostic and theoretical value, complementing autonomic measures through a more direct behavioral expression of covert processing.

Taken together, these findings support the inclusion of hypnosis-based methodologies in experimental and clinical research on Self processes, conflict, and implicit regulation.

7. LIMITATIONS AND FUTURE DIRECTIONS

Several limitations must be acknowledged. In this study, we used a within-subject design without a separate control group, which limits causal specificity regarding the mechanisms responsible for ASC effects. The sample was homogeneous, consisting mainly of psychology students, which restricts generalization to other age groups and clinical populations. In addition, variability in hypnotic susceptibility may have contributed to individual differences in the magnitude of response.

Finally, the temporal model and ideomotor examples were presented descriptively and would benefit from more formal quantitative testing.

Future research should expand the design in at least three directions.

First, replication in clinical populations could clarify whether the observed markers differentiate normative conflict from maladaptive or symptom-related conflict.

Second, multimethod designs integrating neuroimaging or additional autonomic indices could clarify the neural and physiological architecture of the proposed processing hierarchy.

Third, longitudinal and intervention-based studies could evaluate whether these indicators change over time and whether they predict therapeutic outcome, emotional integration, or symptom reduction.

REFERENCES

Botvinick, M. M., Cohen, J. D., & Carter, C. S. (2004). Conflict monitoring and anterior cingulate cortex. *Trends in Cognitive Sciences*, 8(12), 539-546.

Cheek, D. B. (1962). Ideomotor activity and its clinical significance. *American Journal of Clinical Hypnosis*, 5(1), 1-10.

Critchley, H. D., & Garfinkel, S. N. (2021). The influence of physiological signals on cognition. *Nature Reviews Neuroscience,* 22, 329-341. https://doi.org/10.1038/s41583-021-00437-6

Dienes, Z., & Seth, A. (2020). Consciousness and metacognition. *Psychological Review*, 127(6), 1051-1070.

Evans, J. St. B. T., & Stanovich, K. E. (2013). Dual-process theories of higher cognition: Advancing the debate. *Perspectives on Psychological Science*, 8(3), 223-241.

Hilgard, E. R. (1991). *Divided consciousness: Multiple controls in human thought and action*. Wiley.

Grof, S. (2000). *Psychology of the Future: Lessons from Modern Consciousness Research.* SUNY Press.

Kihlstrom, J. F. (2021). The cognitive unconscious. *Current Directions in Psychological Science*, 30(3), 197-203.

Lush, P., Seth, A. K., & Dienes, Z. (2021). Hypnosis and conscious control. *Neuroscience of Consciousness,* 2021(2), niab019.

Manolea, A. (2017). *Psihologia stărilor amplificate ale conștiinței. Condiționarea psihosomatică. Psihodiagnoză și intervenție psihoterapeutică folosind stări amplificate ale conștiinței.* Bucureşti. Editura Universitară.

Manolea A., (2017). *Stări amplificate ale conștiinței. Acţiunea beligenă şi influenţarea psihoinformaţională distală,* Bucureşti. Editura Universitară.

Manolea, A. (2022). *Psihologia stărilor amplificate ale conștiinței. Metode nestandardizate în psihologia postconvențională.* Bucureşti, Editura Universitară.

Manolea, A. (2022). *Psihologia stărilor amplificate ale conștiinței. Hipnoza clinică*, Bucureşti, Editura Universitară.

Oakley, D. A., & Halligan, P. W. (2013). Hypnosis and cognitive neuroscience. *Trends in Cognitive Sciences*, 17(6), 255-262.

Rossi, E. L. (1986). *The psychobiology of mind-body healing: New concepts of therapeutic hypnosis*. W. W. Norton.

Terhune, D. B., Cleeremans, A., Raz, A., & Lynn, S. J. (2017). Hypnosis and top-down regulation. *Neuroscience & Biobehavioral Reviews*, 81, 59-74.

Weitzenhoffer, A. M., & Hilgard, E. R. (1962). *Stanford Hypnotic Susceptibility Scale: Form C*. Consulting Psychologists Press.

ROMANIAN JOURNAL OF PSYCHOLOGICAL STUDIES

HYPERION UNIVERSITY
www.rjps.hyperion.ro

WHEN INTERNAL TIME FAILS: A THEORETICAL FRAMEWORK FOR TIMING-BASED MARKERS OF IMPULSIVITY

DANIEL-EMIL, ALEXE[a]
[a] Independent Researcher, Wiener Neustadt, Austria

Abstract

Impulsivity is commonly explained through inhibitory failure, reward-driven choice, or executive dysfunction. Although well supported, these models may not fully explain why some individuals respond prematurely in situations requiring pacing and self-regulation over time. This theoretical paper reviews evidence linking impulsive behavior with disturbances in time perception and proposes that deficits in the behavioral use of internal time may represent an underrecognized pathway to impulsive behavior. The construct of Temporal Decision Control is introduced, defined as the capacity to use internally represented temporal information to regulate behavior adaptively under changing demands. To operationalize this framework, a novel behavioral paradigm, the Internal Timing Regulation Paradigm (ITRP), is proposed, including Linear, Asymmetric, and Incentive conditions targeting baseline timing, attentional-temporal integration, and motivational regulation. Potential relevance is discussed in relation to ADHD, addictive disorders, and dimensional differences in self-regulation, with directions for empirical validation outlined.

Keywords: *impulsivity; time perception; ADHD; self-regulation; executive functioning; interval timing; decision-making; behavioral assessment*

1. INTRODUCTION

Impulsivity is widely regarded as a multidimensional construct involving motor disinhibition, poor planning, premature responding, and reduced tolerance for delayed gratification (Evenden, 1999; Stanford et al., 2009). It is relevant to everyday differences in personality and to several clinical conditions, including ADHD, substance-use disorders, behavioral addictions, and other disorders marked by difficulties with self-regulation. Despite its importance, impulsivity remains challenging to assess comprehensively. Common paradigms such as the Go/No-Go task, Stop-Signal task, and delay discounting procedures each assess particular components of impulsivity, such as inhibitory control or reward preference, while self-report measures remain vulnerable to response bias, social desirability, limited insight, inaccurate recall, transient mood states, motivational factors, and situational influences during assessment. This has maintained interest in complementary behavioral

Corresponding author: Daniel-Emil Alexe
E-mail address: alexedanielemil@gmail.com

indicators that may capture underlying cognitive mechanisms more directly, while avoiding some limitations of self-report alone.

One comparatively underexplored, though increasingly relevant, area concerns time perception. Subjective time estimation and interval reproduction tasks have repeatedly been associated with impulsive traits and dysregulated behavior (Wittmann & Paulus, 2008). Individuals with elevated impulsivity often display reduced temporal accuracy and greater trial-to-trial response variability, particularly when required to reproduce a previously learned interval or decide when to respond without external timing cues. Related impairments in time estimation and temporal variability have been reported in ADHD populations (Toplak et al., 2006) and individuals with stimulant-use dependence (Wittmann et al., 2011).

Traditional models such as Scalar Expectancy Theory suggest that subjective duration emerges through interactions among pacemaker processes, attention, and memory. However, real-world behavior may depend less on passive duration estimation alone and more on the capacity to align internal timing with adaptive decisions under uncertainty, distraction, emotional load, or reward pressure.

Building on these observations, the present theoretical paper advances the concept of Temporal Decision Control, defined as the capacity to use internally represented temporal information to regulate behavior adaptively under changing demands. From this perspective, impulsive behavior may partly emerge when internal timing processes fail to support effective pacing, delay tolerance, or behavioral recalibration. The present paper develops this proposition theoretically and outlines a framework for future empirical testing.

2. OBJECTIVE AND HYPOTHESES

2.1. OBJECTIVE

The primary objective of the present theoretical paper is to examine and integrate existing evidence on the relationship between time perception and impulsive behavior, with particular attention to how distortions in subjective timing may contribute to impaired decision-making and premature responding.

A second objective is to consider whether traditional interpretations of timing deficits, often framed solely as perceptual inaccuracies, may be too narrow. Instead, this paper considers the possibility that many timing-related impairments reflect broader dysfunctions in the ability to coordinate internal temporal representations with contextually appropriate behavior.

A further objective is to outline a novel timing-based experimental paradigm, provisionally referred to as the Internal Timing Regulation Paradigm (ITRP), designed to examine how individuals estimate, maintain, and respond to internally represented time intervals under varying task demands.

The broader aim is to clarify how temporal cognition may account for self-regulation and impulsive behavior across clinical and non-clinical populations.

2.2. HYPOTHESES

As a theoretical paper, the present article does not test empirical hypotheses directly. However, based on the reviewed literature and the proposed clinical-cognitive framework, three conceptual hypotheses are advanced to guide future research.

Hypothesis 1. Disturbances in internal timing are associated with impulsive behavior.

Individuals exhibiting elevated impulsive traits would be expected to demonstrate reduced temporal accuracy and greater response variability, particularly in tasks requiring internally guided estimation or reproduction of time intervals. From a clinical perspective, such disturbances may reflect deficits in self-monitoring and inhibitory control rather than isolated perceptual error alone.

Hypothesis 2. Temporal performance deteriorates under reward pressure, emotional arousal, or distraction.

Timing-related impairments are expected to become more pronounced when tasks involve motivational conflict, delayed reward, frustration, or competing attentional demands. This hypothesis is consistent with clinical observations that impulsive behavior often intensifies under stress, arousal, or immediate reinforcement pressure.

Hypothesis 3. Temporal Decision Control predicts dysregulated behavior more effectively than timing accuracy alone.

The ability to align subjective time estimation with adaptive action is expected to predict impulsive tendencies more effectively than simple duration estimation measures. Clinically meaningful impairment may arise from failure to use temporal information strategically in real-world decision contexts.

3. METHOD

3.1. CONCEPTUAL APPROACH

As a theoretical paper, the present article adopts an integrative review approach drawing on specialized empirical and clinical literature related to time perception, impulsivity, self-regulation, neuropsychological functioning, and behavioral decision-making. Particular attention is given to studies involving clinical populations, experimental temporal paradigms, and contemporary models of cognitive control. Empirical findings and theoretical frameworks were synthesized for the present analysis to develop the proposed construct of Temporal Decision Control and to guide the design of a future experimental paradigm.

3.2. PROPOSED EXPERIMENTAL PARADIGM: INTERNAL TIMING REGULATION PARADIGM (ITRP)

The Internal Timing Regulation Paradigm (ITRP) is proposed as a structured behavioral paradigm designed to examine how individuals estimate, maintain, and regulate internally represented temporal intervals under varying cognitive and motivational demands.

In particular, the paradigm is intended to examine whether disturbances in internal temporal regulation are associated with premature responding, inconsistent pacing, and reduced adaptive recalibration following error or feedback. The Linear condition is primarily relevant to Hypothesis 1, the Incentive condition to Hypothesis 2, and multidimensional performance indices to Hypothesis 3.

In a basic version of the task, participants are first exposed to a pacing sequence composed of visual or auditory intervals. These intervals may be constant or intentionally variable (e.g., alternating faster and slower rhythms) in order to reduce reliance on simple counting strategies and increase dependence on internal temporal encoding. Following the exposure phase, external cues are removed and participants are instructed to signal when they judge that a predefined target interval has elapsed, or when the learned pacing sequence would be expected to reach a specified endpoint. Primary performance indices include temporal accuracy, trial-to-trial response variability, premature responding, delayed responding, and adaptive adjustment across repeated trials.

To increase ecological and clinical relevance, additional task conditions may include reward incentives for accurate responding, penalties for premature responses, distraction manipulations, emotionally salient stimuli, or uncertainty regarding target duration. These manipulations are intended to evaluate Temporal Decision Control under motivational and cognitive pressure. The paradigm may be administered through computerized, web-based, or mobile platforms, allowing standardized delivery and repeated measurement across clinical and non-clinical populations.

3.2.1 ITRP-Linear condition

In the Linear condition, participants are exposed to a regular and constant pacing sequence presented either visually (e.g., second-marked clock) or auditorily (e.g., metronome clicks). Each trial consists of a predefined target interval (e.g., 12, 20, 30, 40, 50, 60 seconds), during which temporal information unfolds at a stable rate.

Following the pacing phase, external temporal cues are removed and participants are instructed to reproduce the duration as accurately as possible. Reproduction is typically operationalized via a keypress or response hold paradigm, where participants indicate the perceived passage of the original interval. This condition is intended to primarily engage baseline interval encoding processes commonly associated with internal timing models, allowing estimation of systematic distortions in subjective duration (bias).

3.2.2 ITRP-Asymmetric condition

In the Asymmetric condition, participants are exposed to a non-uniform pacing structure, in which temporal intervals vary in rhythm within the same total duration (e.g., alternating faster and slower segments such as fast–slow–fast sequences). The total interval duration remains equivalent to the Linear condition, but the internal structure is intentionally irregular. This manipulation is designed to reduce reliance on explicit counting strategies and increase dependence on continuous temporal integration and attentional allocation.

After exposure, participants reproduce the overall duration without external cues.

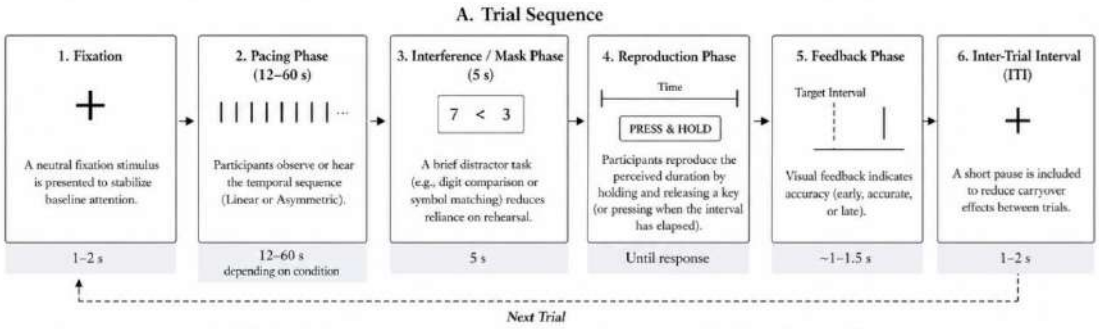
This condition is intended to increase sensitivity to attentional instability and variability in temporal encoding, operationalized primarily through intra-individual variability (coefficient of variation, CV). This condition is expected to place greater demands on attentional continuity and dynamic temporal integration than the Linear condition.

3.2.3 ITRP – Incentive Condition

In the Incentive condition, participants complete Linear or Asymmetric trials under explicit reward and penalty contingencies. Accurate reproduction within a predefined tolerance window (e.g., ±5–10%) is associated with point gains, monetary reward, or performance feedback, whereas premature or substantially delayed responses result in point loss, omission of reward, or corrective feedback. This condition is intended to increase motivational salience and simulate real-world contexts in which timing decisions carry consequences. It would be expected to place additional demands on inhibitory control, reward sensitivity, emotional regulation, and strategic pacing.

Primary indices include changes in bias, variability, premature responding, post-error adjustment, and sensitivity to reinforcement contingencies relative to neutral conditions.
In selected trials, tolerance windows or interval duration may vary unpredictably, introducing decision-making under uncertainty.

3.2.4 Trial structure and procedure



B. Task Conditions

Condition	Description	Primary Purpose
Linear Condition (Baseline)	Constant pacing across the interval.	Assesses baseline interval encoding and reproduction under predictable structure.
Asymmetric Condition (Attention / Integration)	Irregular pacing within the interval.	Increases attentional and temporal integration demands.
Incentive Condition (Reward Regulation)	Constant pacing with reward or penalty contingencies.	Introduces motivational pressure to engage reward processing and inhibitory control.

C. Primary Outcome Measures

Measure	Description
Temporal Bias (Mean Error)	Average signed deviation from the target interval (negative = early; positive = late).
Temporal Accuracy (Absolute Error)	Average absolute deviation from the target interval, regardless of direction.
Response Variability (Intra-individual SD)	Trial-to-trial variability of reproduced intervals, reflecting timing consistency.
Adaptive Correction Index (ACI)	Extent of adjustment in the subsequent trial following an error (direction and magnitude).

Figure 2. Structure of the Internal Timing Regulation Paradigm (ITRP)

Each trial in the ITRP follows a standardized sequence:
Fixation phase (1–2s)
A neutral fixation stimulus is presented to stabilize baseline attention.
Pacing phase (12–60 s depending on condition)
Participants observe or hear the temporal sequence (Linear or Asymmetric).

Interference / mask phase (5s).

A brief distractor task (e.g., simple digit comparison or symbol matching) is introduced to reduce reliance on short-term rehearsal of temporal cues.

Reproduction phase

Participants reproduce the perceived duration by holding and releasing a response key or pressing a button when they believe the original interval has elapsed.

Inter-trial interval (ITI)

A short pause is included to reduce carryover effects between trials.

The full task comprises approximately 24–36 trials, balanced across conditions and randomized in order to control for fatigue and learning effects.

3.2.5 Control mechanisms

To ensure that performance reflects internal temporal processing rather than strategy use or external compensation mechanisms, several controls are implemented:

Articulatory suppression (e.g., repeating a neutral syllable during reproduction) to reduce subvocal counting strategies

Randomized interval ordering to prevent anticipation effects

Masking task between encoding and reproduction to limit short-term rehearsal

Counterbalancing of condition order (Linear vs Asymmetric) to control for learning, fatigue, and adaptation effects

Optional recording of self-reported strategies post-task to identify counting or rhythm-based heuristics.

Exclusion criteria for noncompliance or excessive missed trials may be predefined.

3.2.6 Outcome measures

Performance in the Internal Timing Regulation Paradigm (ITRP) is quantified using four primary indices:

Bias (systematic temporal distortion):

(Reproduced duration − Target duration) / Target duration

Accuracy (absolute error):

Mean absolute percentage error (MAPE) across trials.

Variability (temporal stability):

Coefficient of variation (CV = standard deviation / mean reproduced duration).

Adaptive Correction Index (behavioral recalibration):

Mean reduction in absolute error on trials immediately following feedback, penalties, or inaccurate responses.

Bias is interpreted as an index of systematic deviation in subjective temporal estimation. Accuracy reflects overall precision of interval reproduction, whereas variability captures temporal stability across repeated trials. The Adaptive Correction Index reflects the capacity to incorporate corrective information and modify subsequent behavior in a goal-directed manner.

3.2.7 Theoretical role of the ITRP

The ITRP is not conceptualized as a standalone diagnostic instrument but as an experimental framework for isolating components of Temporal Decision Control. The Linear and Asymmetric conditions are intended to differentially engage pacemaker-based timing mechanisms and attentional integration processes, respectively, allowing mechanistic inference from dissociable performance patterns.

Collectively, these conditions are intended to differentiate baseline timing bias, attentional-temporal instability, and motivationally influenced regulation, thereby providing a multidimensional operationalization of Temporal Decision Control.

4. CLINICAL OBSERVATIONS, EXPECTED PATTERNS, AND CONCEPTUAL GAPS

4.1. CLINICAL OBSERVATION AND CONCEPTUAL ORIGIN OF THE PARADIGM

The conceptual basis of the present paper was partly shaped by early observational experiences encountered during prior volunteer work conducted by the author at SOS Children's Villages in Bucharest, Romania. Within this setting, repeated contact with children presenting attentional difficulties, impulsive behavior, emotional dysregulation, and reported or suspected neurodevelopmental features consistent with ADHD provided an applied context for considering how self-regulation difficulties may manifest beyond formal clinical interviews or questionnaire-based assessment. During educational and activity-based interactions, some children appeared to struggle with turn-taking, sustaining attention, and pacing their behavior in relation to time. Informal timing exercises resembling early versions of the proposed Internal Timing Regulation Paradigm (ITRP) suggested that certain participants had difficulty internalizing a simple learned rhythm and reproducing a target interval consistently. Some responded prematurely, others substantially overshot the intended interval, while others showed marked inconsistency across repeated attempts.

These observations were informal, were not collected under standardized research conditions, and should not be interpreted as empirical findings. However, they were clinically meaningful in that they raised the possibility that some impulsive or poorly regulated behavior may involve disturbances in internal pacing and temporal monitoring rather than inhibitory failure alone. This interpretation is broadly consistent with later literature indicating that populations characterized by attentional and self-regulatory difficulties often show impairments in time estimation, time reproduction, and increased temporal variability across tasks (Toplak et al., 2006; Noreika et al., 2013; Marx et al., 2022).

In parallel, reaction-time variability has repeatedly been identified as a robust feature in neurodevelopmental and attentional-control research, suggesting fluctuating state regulation and inconsistent cognitive control (Kofler et al., 2013; Castellanos & Tannock, 2002). From this perspective, the present paradigm emerged from a broader clinical question: when some individuals respond too quickly, too slowly, or inconsistently, could part of the underlying difficulty lie in how internal time is perceived and used to guide behavior?

4.2. EXPECTED PERFORMANCE PATTERNS

Based on the reviewed literature and the proposed framework of Temporal Decision Control, several performance patterns would be expected within the Internal Timing Regulation Paradigm (ITRP).

Individuals exhibiting elevated impulsive traits would be expected to demonstrate lower temporal accuracy and greater trial-to-trial variability than comparison participants, particularly in conditions requiring internally guided pacing without external cues. Performance may be characterized by premature responses, delayed responses, or inconsistent reproduction of previously learned temporal intervals.

These differences would be expected to become more pronounced under conditions involving reward pressure, distraction, emotional salience, or uncertainty regarding target duration. Such manipulations are likely to place additional demands on inhibitory control, sustained attention, and behavioral self-monitoring, thereby increasing the probability of dysregulated responding. Participants with stronger executive control capacities may be expected to recalibrate performance across repeated trials, showing improved accuracy following feedback, penalties, or missed targets. In contrast, individuals with greater self-regulatory difficulties may continue to respond inconsistently despite corrective information or motivational incentives.

Distinct performance profiles may also emerge across clinical and non-clinical groups. For example, some individuals may primarily exhibit premature responding, whereas others may show marked variability or reduced adaptive learning across trials. This suggests that temporal dysregulation may not represent a single deficit, but a heterogeneous process expressed through different behavioral patterns. If supported empirically, these findings would strengthen the proposition that impulsive behavior may arise from difficulties coordinating internal temporal representations with contextually appropriate action.

4.3. CLINICAL AND RESEARCH IMPLICATIONS

In clinical settings, the Internal Timing Regulation Paradigm (ITRP) may help identify subgroups of individuals whose impulsive or dysregulated behavior is linked more strongly to disturbances in internal pacing, temporal monitoring, or reduced adaptive calibration following feedback. This may be particularly relevant in populations presenting with ADHD, substance-use disorders, behavioral addictions, and other conditions characterized by impaired self-regulation.

The paradigm may also hold value for treatment planning and progress monitoring. For example, individuals who demonstrate improved performance when external pacing cues, structured feedback, or reinforcement contingencies are introduced may benefit from interventions emphasizing scheduling routines, countdown systems, cue-based prompting, or other strategies designed to scaffold temporal control in everyday functioning.

From a research perspective, the proposed model supports a broader reconceptualization of impulsive behavior. This perspective may help integrate findings across cognitive psychology, clinical science, and neuropsychological models of self-regulation. Future studies should examine the reliability, convergent validity, discriminant

validity, and clinical sensitivity of the ITRP across developmental stages and diagnostic groups. Longitudinal and cross-cultural research may further clarify whether disturbances in temporal regulation represent stable traits, context-dependent states, or modifiable targets for intervention.

4.4. METHODOLOGICAL AND THEORETICAL GAPS

Despite its potential value, the proposed Internal Timing Regulation Paradigm (ITRP) raises several methodological and conceptual questions that require systematic investigation.

First, performance within the paradigm may reflect multiple overlapping processes, including time perception, attention, working memory, motivational state, anxiety under evaluation, and inhibitory control. Future studies will need to determine the extent to which observed deficits are specific to temporal regulation, as opposed to reflecting broader attentional, mnemonic, or motivational processes.

Second, participants may rely on compensatory strategies such as silent counting, motor pacing, or learned heuristics rather than internal temporal estimation alone. Task design should therefore consider irregular pacing conditions, randomized intervals, and strategy monitoring procedures.

Third, repeated administration may produce practice effects, improved calibration, or fatigue-related decline. Establishing test-retest reliability and sensitivity to change will be essential before clinical application.

Fourth, individual differences including age, education, cultural rhythm exposure, musical training, neurodevelopmental history, sleep quality, and medication status may substantially influence performance. Normative data across populations would therefore be required.

At a theoretical level, further work is needed to clarify whether Temporal Decision Control represents a distinct construct or a higher-order expression of already established processes such as executive control, delay tolerance, or behavioral monitoring. Accordingly, the present framework should be regarded as hypothesis-generating and preliminary until validated through rigorous experimental and clinical research.

5. DISCUSSION

5.1. RECONCEPTUALIZING IMPULSIVITY THROUGH TEMPORAL DECISION CONTROL

Impulsivity has traditionally been conceptualized in terms of deficient inhibitory control, preference for immediate reward, impaired planning, or heightened sensitivity to salient stimuli. These perspectives have generated valuable theoretical models and widely used assessment tools. However, they may not fully account for why some individuals repeatedly respond too early, too late, or inconsistently across situations that require pacing, waiting, or adaptive timing.

This reconceptualization may help explain why individuals with similar scores on conventional impulsivity measures sometimes display markedly different real-world

behavior. One person may primarily struggle with motor inhibition, whereas another may show relatively intact inhibition but poor temporal regulation, inconsistent pacing, or difficulty using time strategically. A timing-based framework may therefore capture clinically meaningful heterogeneity within impulsive presentations.

The concept of Temporal Decision Control also supports a more dynamic understanding of self-regulation. Rather than viewing impulsivity as a static trait, it may be more accurately understood as a context-sensitive process shaped by the interaction of internal timing, motivational state, attention, emotional arousal, and feedback learning. This may help explain why impulsive behavior often fluctuates across settings, stress levels, and reward conditions.

Importantly, the present model does not seek to replace established theories of impulsivity, but to extend them. Inhibitory control, reward valuation, executive functioning, and temporal regulation are likely to interact rather than operate independently. The proposed framework suggests that disturbances in internal timing may represent one neglected pathway through which impulsive behavior is expressed.

5.2. RELATIONSHIP TO EXISTING MODELS

Several established models help explain impulsive behavior, each emphasizing different underlying mechanisms.

Inhibitory-control models emphasize difficulty suppressing prepotent responses and have informed paradigms such as the Go/No-Go and Stop-Signal tasks. These models remain highly relevant, particularly in neurodevelopmental and externalizing conditions. However, brief inhibition tasks do not always explain why some individuals perform adequately in laboratory settings yet struggle in everyday contexts requiring pacing, waiting, planning, and sustained regulation over time.

Reward-based accounts, including delay discounting paradigms, focus on preference for smaller immediate rewards over larger delayed rewards. This work has advanced understanding of impulsive choice. Nevertheless, many real-life self-regulation failures involve not only reward valuation, but also the practical ability to tolerate delay, estimate duration, maintain effort, and organize behavior during waiting periods. Distorted temporal processing may therefore interact with reward sensitivity rather than function independently.

Executive-function models provide a further explanatory framework. Working memory, sustained attention, cognitive flexibility, and self-monitoring are consistently implicated in impulsive behavior. Evidence also suggests that timing deficits may be partly mediated by these broader systems. For example, attentional control and reaction-time performance have been linked to time-perception inaccuracy in clinical populations with attentional dysregulation.

Temporal Decision Control is not proposed as a wholly separate construct independent of executive functioning. Rather, it is a functional integration construct describing how timing-related information is monitored, maintained, and behaviorally used during goal-directed action.

Recent clinical literature further supports the relevance of temporal dysfunction. Meta-analytic findings in ADHD populations suggest moderate time-perception deficits, with

working memory moderating effect sizes (Marx et al., 2022). Other studies indicate that altered time perception may affect prospective timing, task completion, and everyday organization in adults (Weissenberger et al., 2021; Mette et al., 2023).

In this context, Temporal Decision Control may be understood as an integrative construct situated at the intersection of inhibition, executive control, reward processing, and subjective timing. This may help explain why individuals with similar impulsivity scores differ substantially in real-world functioning: one may primarily struggle with inhibition, another with temporal regulation, pacing, or strategic use of delay.

5.3. CLINICAL RELEVANCE AND POTENTIAL APPLICATIONS

If supported by future empirical research, the proposed framework of Temporal Decision Control and the associated Internal Timing Regulation Paradigm (ITRP) may hold meaningful clinical value across assessment, case formulation, and intervention planning. In assessment contexts, the paradigm may provide complementary information beyond conventional self-report inventories or brief inhibitory-control tasks. While questionnaires can capture perceived tendencies and symptom burden, they are often influenced by insight, recall bias, and situational factors. Likewise, traditional laboratory paradigms frequently isolate narrow components of impulsivity.

A timing-based task may help identify individuals whose primary difficulties involve internal pacing, inconsistent behavioral calibration, premature responding under pressure, or poor regulation during delay.

From an intervention perspective, the framework may support more individualized treatment planning. Individuals who improve when external pacing cues, countdown structures, scheduled prompts, or feedback contingencies are introduced may benefit from strategies that compensate for weak internal timing processes. These may include digital reminders, structured routines, visual timers, rhythm-based pacing tools, and behavioral reinforcement systems.

The model may also be relevant for psychotherapy. Patients who repeatedly interrupt goals through premature decisions, abandonment of long-term plans, or inconsistent follow-through may benefit from interventions that explicitly target temporal awareness, delay tolerance, and pacing of action. In cognitive-behavioral approaches, this could involve training in task segmentation, structured waiting strategies, response delay techniques, and monitoring of time-related decision errors.

Importantly, the present proposal is not intended as a stand-alone diagnostic tool. Rather, it is best conceptualized as a supplementary framework that may help clinicians identify distinct pathways to impulsive behavior. Some individuals may primarily struggle with inhibition, others with reward valuation, and others with temporal regulation. Recognizing these differences may support more precise and personalized care.

Table 1. Hypothesized Profiles of Temporal Dysregulation in Impulsive Behavior

The profiles below are theoretical and illustrative. They reflect distinct patterns that may emerge on the Internal Timing Regulation Paradigm (ITRP) and correspond to different underlying mechanisms of dysregulation

Profile	Core Characteristic	Expected ITRP Pattern	Key Performance Indicators	Potential Interpretation
Inhibitory Subtype (Premature Responding)	Tendency to act before the optimal moment.	More premature responses Consistent underestimation across conditions Especially evident in Linear and Incentive conditions	• Negative Temporal Bias • Moderate to high premature response rate • Normal to mildly elevated variability • Average Adaptive Correction Index (ACI)	Deficits primarily in inhibitory control of action initiation rather than temporal representation per se.
Reward-Sensitive Subtype (Incentive-Dominant)	Strong influence of reward cues on timing and decision-making.	Markedly worse performance in Incentive condition. Increased premature responding under reward pressure. Larger bias shift relative to Linear condition.	• More negative bias in Incentive condition vs. Linear • Higher absolute error under incentive • Elevated premature response rate under reward • Lower ACI under incentive	Motivational factors override optimal timing control, leading to risk-taking and impatience when rewards are present.
Temporal Dysregulation Subtype (Timing Instability)	Inconsistent and unstable internal timing across contexts.	High variability across trials in all conditions Fluctuating bias (no consistent direction) Inconsistent pacing even without incentives	• High Response Variability • Variable bias (near zero mean but higher fluctuation) • Reduced accuracy despite normal bias • Average to low ACI	Core instability in internal time representation or monitoring processes, independent of inhibitory control or reward sensitivity
Feedback-Insensitive Subtype (Poor Recalibration)	Limited learning from errors and feedback.	Repetition of similar error patterns across trials Minimal adjustment after feedback Low improvement over time	• Low Adaptive Correction Index (ACI) • Persistently high error across blocks • Stable bias despite feedback • Little reduction in variability	Deficit in using feedback to update temporal estimates and strategies; weak learning and self-monitoring

Note. These profiles are not mutually exclusive; individuals may show features of more than one pattern. Empirical validation is required to determine the reliability, stability, and clinical relevance of these profiles.

5.4. FUTURE DIRECTIONS

Future research should first establish the psychometric properties of the Internal Timing Regulation Paradigm (ITRP), including reliability, feasibility, and sensitivity to change. Construct validity should then be examined through associations with impulsivity, executive functioning, attention, working memory, and delay discounting measures.

Comparative studies involving ADHD, addictive disorders, and control groups may clarify whether temporal dysregulation reflects a transdiagnostic process or disorder-specific profile. Longitudinal work may help distinguish trait-like vulnerabilities from state-dependent

influences such as stress, sleep disruption, or stimulant use. Intervention studies should test whether external pacing tools, structured routines, countdown systems, or feedback-based strategies improve both task performance and real-world self-regulation. Finally, digital and mobile formats may allow scalable assessment in naturalistic settings.

6. CONCLUSIONS

Impulsivity is commonly linked to inhibitory failure, reward sensitivity, and executive dysfunction. While these models remain central, they may not fully explain difficulties that arise in situations requiring pacing, waiting, and adaptive regulation over time. The present paper has argued that disturbances in the perception, monitoring, and behavioral use of internal time may represent an additional pathway to dysregulated action.

To address this possibility, the construct of Temporal Decision Control was introduced as the capacity to use internally represented temporal information to guide behavior under changing demands. From this perspective, some impulsive behaviors may reflect difficulties in sustaining pace, tolerating delay, recalibrating after errors, or coordinating action with subjective time.

The paper also outlined the Internal Timing Regulation Paradigm (ITRP) as a proposed behavioral framework for examining internally guided timing across neutral, cognitively demanding, and incentive-based conditions. Rather than serving as a stand-alone diagnostic instrument, the paradigm is intended as a complementary tool for investigating heterogeneity within impulsive behavior.

If supported through empirical research, this model may be relevant for populations in which timing, organization, and inconsistent responding are common, including ADHD, addictive disorders, and dimensional differences in self-regulation more broadly. Future studies will need to determine whether temporal regulation deficits reflect stable traits, context-dependent states, or modifiable intervention targets.

More broadly, the study of impulsivity may benefit from asking not only why individuals act too soon, but also how they perceive, organize, and use time in the service of adaptive behavior. This perspective may contribute to more differentiated theories of self-control and more targeted approaches to psychological assessment and intervention.

REFERENCES

Allman, M. J., Teki, S., Griffiths, T. D., & Meck, W. H. (2014). Properties of the internal clock: First- and second-order principles of subjective time. *Annual Review of Psychology, 65, 743–771.*

Bari, A., & Robbins, T. W. (2013). Inhibition and impulsivity: *Behavioral and neural basis of response control. Progress in Neurobiology, 108, 44–79.*

Buhusi, C. V., & Meck, W. H. (2005). What makes us tick? Functional and neural mechanisms of interval timing. *Nature Reviews Neuroscience, 6(10), 755–765.*

Castellanos, F. X., & Tannock, R. (2002). Neuroscience of attention-deficit/hyperactivity disorder: The search for endophenotypes. *Nature Reviews Neuroscience, 3(8), 617–628*.

Dalley, J. W., & Robbins, T. W. (2017). Fractionating impulsivity: Neuropsychiatric implications. *Nature Reviews Neuroscience, 18(3), 158–171*.

Evenden, J. L. (1999). Varieties of impulsivity. *Psychopharmacology, 146(4), 348–361*.

Gibbon, J., Church, R. M., & Meck, W. H. (1984). Scalar timing in memory. *Annals of the New York Academy of Sciences, 423, 52–77.*

Kofler, M. J., Rapport, M. D., Sarver, D. E., Raiker, J. S., Orban, S. A., Friedman, L. M., & Kolomeyer, E. G. (2013). Reaction time variability in ADHD: A meta-analytic review of 319 studies. *Clinical Psychology Review, 33(6), 795–811.*

Marx, I., Cortese, S., Kölch, M., Hacker, T., et al. (2022). Altered perceptual timing abilities in attention-deficit/hyperactivity disorder: A meta-analysis. *Journal of the American Academy of Child & Adolescent Psychiatry, 61(7), 890–901.*

Mette, C., et al. (2023). Time perception in adult ADHD: Findings from a decade—a review. *International Journal of Environmental Research and Public Health, 20(4), 3098.*

Noreika, V., Falter, C. M., & Rubia, K. (2013). Timing deficits in attention-deficit/hyperactivity disorder: Evidence from neurocognitive studies. *Neuropsychologia, 51(2), 235–266.*

Stanford, M. S., Mathias, C. W., Dougherty, D. M., Lake, S. L., Anderson, N. E., & Patton, J. H. (2009). Fifty years of the Barratt Impulsiveness Scale: An update and review. *Personality and Individual Differences, 47(5), 385–395.*

Toplak, M. E., Dockstader, C., & Tannock, R. (2006). Temporal information processing in ADHD: Findings to date and new methods. *Journal of Neuroscience Methods, 151(1), 15–29.*

Weissenberger, S., et al. (2021). Time perception is a focal symptom of attention-deficit/hyperactivity disorder in adults. *Frontiers in Psychiatry, 12, 638546.*

Wittmann, M., Leland, D. S., Churan, J., & Paulus, M. P. (2011). Impaired time perception and motor timing in stimulant-dependent subjects. *Drug and Alcohol Dependence, 117(2–3), 210–214.*

Wittmann, M., & Paulus, M. P. (2008). Decision making, impulsivity and time perception. *Trends in Cognitive Sciences, 12(1), 7–12.*

ROMANIAN JOURNAL OF PSYCHOLOGICAL STUDIES

HYPERION UNIVERSITY
www.rjps.hyperion.ro

THE RELATIONSHIP BETWEEN RESILIENCE AND EMOTIONAL INTELLIGENCE IN CHILDREN ACROSS FAMILY CONTEXTS

SOARE, ALINA- CRISTINA [a]

[a] *Ion Creanga State University, Chișinău, Republic of Moldova*

Abstract

This study looks at how emotional intelligence and psychological resilience are related in children aged 11 to 15. It also explores whether these two aspects differ depending on the type of family environment in which the child is raised, including nuclear families, single-parent families, and institutional care settings.

The sample included 170 participants. Resilience was measured using the CYRM-12, while emotional intelligence was assessed with the EQ-i:YV. The data were analyzed using descriptive statistics, Pearson correlation, and one-way ANOVA.

The results showed a strong positive association between emotional intelligence and resilience, indicating that children with better emotional skills tend to cope more effectively with difficult situations. At the same time, significant differences were observed between groups, suggesting that family context plays an important role in both emotional functioning and adaptive capacity. Overall, the findings point to the importance of emotional development in supporting resilience, especially in more vulnerable environments.

Keywords: *emotional inteligence, resilience, institutionalized children, psychological adaptation.*

1. INTRODUCTION

Resilience in childhood is generally understood as the ability to deal with difficult situations and continue to function in a relatively balanced way. Rather than being something fixed, it develops over time and depends on a combination of personal characteristics and environmental influences. Children learn how to cope with stress through everyday experiences, especially through the relationships they build with the people around them.

Emotional intelligence is closely linked to this process. It refers to how well individuals can recognize their own emotions, understand what others feel, and manage emotional reactions in different situations. During adolescence, these abilities become increasingly important, as children face more complex social interactions and emotional challenges.

Corresponding author: Alina - Cristina Soare
E-mail address: soare.alina-cristina@upsc.md

When looking at resilience and emotional intelligence together, it becomes clear that they are not independent from each other. Children who are able to understand and regulate their emotions tend to handle stressful situations more effectively. In turn, those who cope better with adversity often develop more stable emotional responses. This suggests that emotional intelligence may play an important role in supporting resilience.

At the same time, these processes do not develop in isolation. The family environment has a strong influence on both emotional development and adaptive functioning. In nuclear families, children often benefit from a more stable structure and consistent support, although this depends largely on the quality of relationships rather than the structure itself. In single-parent families, children may experience different types of challenges, such as increased responsibility or reduced availability of the caregiver, but this does not necessarily prevent the development of adaptive skills.

For children living in institutional care, the situation can be more complex. Many of them have experienced separation, instability, or lack of consistent emotional support. These experiences can affect both emotional regulation and the ability to form secure relationships. However, even in these contexts, children may develop resilience, especially when they have access to supportive adults or positive peer relationships.

Overall, differences between children raised in various family contexts are better explained by the quality of emotional and relational experiences than by family structure alone. Emotional intelligence and resilience appear to develop together, influenced by both individual abilities and environmental conditions. Understanding how these factors interact can provide useful insight into children's psychological development, particularly in more vulnerable groups.

2. OBJECTIVE AND HYPOTHESES

2.1. OBJECTIVE

The main objective of this study is to examine the relationship between emotional intelligence and psychological resilience in children aged 11 to 15, while also considering the influence of family structure. More specifically, the study aims:

1. To investigate the association between emotional intelligence and resilience levels in children.
2. To examine differences in emotional intelligence and resilience across children raised in nuclear families, single-parent families, and institutional care settings.

2.2. HYPOTHESES

H1: A significant positive relationship is expected between emotional intelligence and resilience in children.

H2: Children from institutional care will show lower levels of emotional intelligence and resilience compared to those from family environments.

3. METHOD

3.1 PARTICIPANTS

The study included a total of 170 children aged between 11 and 15 years. Participants were distributed across three groups based on family structure: 57 children raised in nuclear families, 56 from single-parent families, and 57 residing in institutional care settings.

The sample consisted of 84 boys and 86 girls, indicating a relatively balanced gender distribution. In terms of living environment, 86 participants were from urban areas and 84 from rural areas.

Participants were recruited using convenience sampling, with access facilitated through collaboration with schools and residential care institutions. Inclusion criteria required that participants fall within the specified age range and demonstrate the ability to understand and respond to the assessment instruments.

Prior to data collection, informed consent was obtained from parents, legal guardians, or institutional representatives, depending on the child's living situation. Additionally, all participants provided assent and were informed about the voluntary nature of their participation. The study was conducted in accordance with ethical guidelines, ensuring confidentiality and the protection of all participants.

3.2 INSTRUMENTS

Two standardized self-report instruments were used to assess the main psychological variables of the study: resilience and emotional intelligence.

1. The Child and Youth Resilience Measure - 12 items (CYRM-12) (Ungar & Liebenberg, 2011) is a brief version of the original CYRM-28 designed to assess global resilience in children and adolescents. The scale evaluates resilience as a multidimensional construct, capturing individual, relational, and contextual resources that support adaptation in the face of adversity. It consists of 12 items rated on a 5-point Likert scale, ranging from 1 (not at all true for me) to 5 (a lot true for me). Total scores range between 12 and 60, with higher scores indicating higher levels of perceived resilience. For interpretative purposes, scores between 12 and 25 indicate low resilience, 26 to 45 moderate resilience, and 46 to 60 high resilience.

2. The Bar-On Emotional Quotient Inventory - Youth Version (EQ-i:YV) (Bar-On & Parker, 2000) was used to assess emotional intelligence in children and adolescents. This instrument evaluates self-perceived emotional and social competencies across five domains: intrapersonal skills, interpersonal skills, adaptability, stress management, and general mood. The full version consists of 60 items rated on a 4-point Likert scale, ranging from 1 (very seldom true of me) to 4 (very often true of me). Raw scores are converted into standardized scores (mean = 100, standard deviation = 15). According to the normative interpretation, scores below 85 indicate low emotional intelligence, scores between 85 and 115 reflect an average level, while scores above 115 indicate a high level of emotional intelligence.

3.3 PROCEDURE

Data were collected in both school and residential care settings, with prior approval obtained from institutional representatives. The questionnaires (CYRM-12 and EQ-i:YV) were administered in small group sessions, under the supervision of the researcher.

Participants received clear instructions and were encouraged to answer honestly. The average completion time was approximately 25-30 minutes. All responses were confidential. The data were subsequently entered into SPSS and analyzed using descriptive statistics, Pearson correlation, and one-way ANOVA.

4. RESULTS

4.1. DESCRIPTIVE STATISTICS

Table 1. Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
							Std.		Std.
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Error	Statistic	Error
Resilience	170	15	59	37.00	12.310	-.057	.186	-1.096	.370
Emotional Inteligence	170	61	270	121.77	49.849	1.111	.186	.619	.370
Valid N (listwise)	170								

Descriptive statistics were calculated for resilience and emotional intelligence in order to examine the overall distribution of scores within the sample.

The mean score for resilience was M = 37.00 (SD = 12.31), with values ranging from 15 to 59. According to the interpretation criteria, this reflects a moderate level of resilience among participants. The relatively wide range and standard deviation suggest noticeable individual differences, indicating that while some children demonstrate stronger adaptive capacities, others may experience more difficulty in coping with adversity.

For emotional intelligence, the mean score was M = 121.77 (SD = 49.85), with observed values between 61 and 270. Based on the standardized interpretation, this corresponds to a high level of emotional intelligence at the group level. However, the large standard deviation points to substantial variability, suggesting that emotional competencies differ considerably across participants.

Overall, the results indicate a sample characterized by moderate resilience and relatively high emotional intelligence, with significant individual variation in both constructs. These differences support the need for further analysis to better understand the relationship between the two variables and their variation across family contexts.

4.2 PEARSON CORRELATION ANALYSIS

A significant positive relationship is expected between emotional intelligence and resilience in children.

Table 2. Pearson correlation between resilience and emotional inteligence

		1	2
1. Resilience	Pearson Correlation	1	.889**
	Sig. (2-tailed)		.000
	N	170	170
2. Emotional Inteligence	Pearson Correlation	.889**	1
	Sig. (2-tailed)	.000	
	N	170	170

**. Correlation is significant at the 0.01 level (2-tailed).

To test the first hypothesis (H1), a Pearson correlation analysis was conducted to examine the relationship between resilience and emotional intelligence.

The results revealed a strong, positive, and statistically significant correlation between resilience and emotional intelligence, $r(170) = .889$, $p < .001$. This indicates that higher levels of emotional intelligence are associated with higher levels of resilience among participants.

The strength of the correlation suggests a substantial relationship between the two variables, highlighting the role of emotional competencies in supporting adaptive functioning. In other words, children who demonstrate better emotional understanding and regulation also tend to exhibit greater capacity to cope with challenges and adversity.

4.3 ANOVA

Children from institutional care will show lower levels of emotional intelligence and resilience compared to those from family environments.

Table 3. One-way Anova examining differences in resilience across family structures.

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	18486.733	2	9243.367	216.704	.000
Within Groups	7123.267	167	42.654		
Total	25610.000	169			

To examine differences in resilience and emotional intelligence across family structures, one-way ANOVA analyses were conducted.

The results indicated a statistically significant effect of family structure on resilience scores, $F(2, 167) = 216.70$, $p < .001$. This finding suggests that resilience levels differ significantly among children raised in nuclear families, single-parent families, and institutional care settings.

The large F value points to substantial differences between groups, indicating that family context plays an important role in shaping children's adaptive capacities.

Table 4. One-way Anova examining differences in emotional intelligence across family structures.

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	260081.560	2	130040.780	135.845	.000
Within Groups	159864.493	167	957.272		
Total	419946.053	169			

A similar pattern was observed for emotional intelligence. The ANOVA results showed a statistically significant effect of family structure on emotional intelligence scores, $F(2, 167) = 135.85$, $p < .001$.

This result indicates that children's emotional competencies vary significantly depending on their family environment. The magnitude of the F value suggests that these differences are not only statistically significant, but also meaningful at a practical level.

Taken together, the findings support the second hypothesis, confirming that both resilience and emotional intelligence differ across family structures. These results highlight the influence of environmental and relational contexts on children's psychological development.

5. CONCLUSIONS

The aim of this study was to explore the link between emotional intelligence and resilience in children, while also considering the role of family structure.

The results showed a strong connection between the two variables, suggesting that emotional abilities are closely related to how children deal with challenges. In addition, differences between groups indicate that the environment in which children grow up can influence both emotional functioning and resilience.

These findings underline the importance of looking at both individual and contextual factors when studying adaptation in children. Developing emotional skills may represent a useful direction for interventions, particularly for those growing up in less stable environments.

REFERENCES

1. Amato, P. R. (2005). The impact of family formation change on the cognitive, social, and emotional well-being of the next generation. *The Future of Children, 15*(2), 75–96.

2. Liebenberg, L., Ungar, M., & Van de Vijver, F. (2012). Validation of the Child and Youth Resilience Measure. *Research on Social Work Practice, 22*(2), 219–226.

3. Masten, A. S. (2014). *Ordinary magic: Resilience in development*. Guilford Press.

4. Mayer, J. D., Salovey, P., & Caruso, D. R. (2004). Emotional intelligence: Theory, findings, and implications. *Psychological Inquiry, 15*(3), 197–215.

5. Mestre, J. M., Núñez-Lozano, J. M., Gómez-Molinero, R., Zayas, A., & Guil, R. (2017). Emotion regulation ability and resilience in a sample of adolescents. *Frontiers in Psychology, 8*, 1980.

6. Petrides, K. V., Sangareau, Y., Furnham, A., & Frederickson, N. (2006). Trait emotional intelligence and children's peer relations at school. *Social Development, 15*(3), 537–547.

7. Tottenham, N. (2012). Risk and developmental heterogeneity in previously institutionalized children. *Journal of Adolescent Health, 51*(2), S29–S33.

8. Ungar, M. (2011). The social ecology of resilience. *American Journal of Orthopsychiatry, 81*(1), 1–17.

9. Zeidner, M., Matthews, G., & Roberts, R. D. (2012). What we know about emotional intelligence. MIT Press.

ROMANIAN JOURNAL OF PSYCHOLOGICAL STUDIES

HYPERION UNIVERSITY
www.rjps.hyperion.ro

UNPACKING YOUTH DEPRESSION: THE MEDIATING POWER OF STRESS AND ANXIETY

MAHADI-UL-MORSHED [a], MD. KHABBAB HOSSAIN ANTOR [b], DHARMENDRA NATH ROY [c], SHAMSUN NAHER ROZY [d], & JANNATUN NUR HAIDER CHOWDHURY [e]

[a] Lead Researcher, Centre for Research in Multidiscipline - CRM, & BONDHU
[b e] Department of Clinical Psychology, University of Dhaka., & Research Assistant, Centre for Research in Multidiscipline - CRM
[c] Clinical Psychologist One Stop Crisis Center (OCC), RTCC Ministry of Women and Children Affairs
[d] Psychologist, Somonnito Shishu Punorbashon Kendra, Ministry of Social Welfare, Govt. Republic of Bangladesh

Abstract

The main objective of the present study was to find out the current scenarios of Depression in Bangladeshi urban young adult people. The specific goals are to: (i) To investigate whether there is any relationship among Depression, Stress, & Anxiety. (ii) To find out whether anxiety predicts depression individually. (iii) To see whether Stress predicts Depression individually. In this study the target population was the Bangladeshi urban young adult people. 380 both male and female young adult people who live in urban areas and 18–39 age range were selected following the purposive sampling method as respondents in the present study. This present study required i) Personal Information Form ii) Bangla Version of Depression, Anxiety, Stress Scale (DASS 21) developed by Lovibond and Lovibond (1995) which measures depression, anxiety and stress of the respondents. The findings indicate that the correlation among Stress, Anxiety, and Depression variables were positive. According to additional research, stress was the best predictor, accounting for 48.5% and 49.5% of the variation in depression, respectively. It seems that the result fits the model. Finally, It concluded that Significant relationships were found between stress, anxiety, and depression among the study participants, highlighting the intertwined nature of these mental health conditions. Anxiety and stress both identified as a significant predictor of depression, emphasizing its role in influencing mental health outcomes in the research population.

Keywords: *Stress, Depression, Anxiety, Urban Adult People.*

Corresponding author: Mahadi-Ul-Morshed
E-mail address: mahadi.psy2006@gmail.com

1. INTRODUCTION

Depression, sometimes known as depressive disorder, is a prevalent mental health condition. It is typified by chronic sadness, loss of pleasure or indifference to activities. Normal changes in mood or everyday sensations are not the same as a state of depression. It can affect relationships with friends, family, and the community, among other aspects of life. It could result from or be an underlying cause in problems at place of employment and in the classroom. Depression can strike anyone at any time. Depression is more widespread in people who have been victimized to abuse, major losses, or other stressful circumstances. Women experience depression at a higher rate than males do (World Health Organization(WHO), 2024).

Mental health conditions have become an important issue worldwide. Globally, the prevalence of depression is estimated to be close to 264 million people (James et al., 2018). Depression is also a significant issue in Bangladesh. It is a major problem in the country, confirming recent research findings. Research has proven that depression is a common problem in all demographic categories. Depression is prevalent among the university's students due to social pressure, academic pressure, and the consequences of post-breakups lockups (Nasrin et al., 2023).

Based on a study, students applying to undergraduate courses in Bangladesh showed indicators of severe stress, sadness, and anxiety. Females, science background students, and possessing a past mental health condition are significant positive predictors of this mental health concern. Likewise, there was a significant association found between students' inclination to attend public colleges and their low family income and their chance to struggle with anxiety, stress, and depression (Rabby et al., 2023). Given that suicide ranks as the second leading cause of death for individuals between the ages of 15 and 29, depression is connected with a somewhat high rate of mortality. According to the results of a study carried out by the WHO, there are approximately 6.4 million people in Bangladesh who suffer from depression disease (van Ommeren et al., 2005). Hossain (2014) stated that the prevalence of mental problems in adults in Bangladesh ranges from 6.5 to 31.0%. (Hossain et al., 2014).

A variety of factors can have an impact on a person's psychological state and Covid-19 is one of them. Covid-19 is considered a pandemic and at that time people must stay at home which affects their mental health. A survey to examine the mental health status during covid-19 and found that 51.9% of adults were suffering from poor mental health by staying at home during this time which is higher than before the pandemic (Ali et al., 2020).Human mental health condition affects human behavior, emotion, and overall function. Not all people face the same level of mental illness. Following sorrow (45.3%), anger (40.5%), confusion (27.7%), worthlessness (21.8%), exhaustion (21.5%), and sleeplessness (18.0%), confusion (27.7%), and worthlessness (21.8%) were found to be the most prevalent depressive symptoms in a study that was carried out in Bangladesh on individuals (Ria et al., 2022). A total of 2898 respondents from 31 trials were included in the analysis. In randomized controlled trials, the three community intervention categories investigated the largest number of projects. The majority of studies came from high-income nations and they also had the highest proportion of communities compared to people with IHD. They had poor study.

Dropout from the included trials around 1 % indicated low dropout percentages while withholding less than 1 in every 100 patients. The determination of potential mechanisms of action was hindered by the insufficient description of interventions (Buechner et al., 2023). Another two significant mental health issues are Stress and Anxiety.

Stress: Several people have provided various descriptions of stress. The topic has aroused the interests of social scientists, anthropologists, psychologists, health care providers, and even zoologists. It suspects analyzing it from several angles is going to be exceedingly useful, enabling us a thorough grasp of the phenomenon and its historical roots (Selye, 1956). In the twenty-first century, stress is a result of all situations and is associated with psychopathology and urbanization. Stress can be brought on by threats and urban factors such long commutes, work-home imbalances, bad behaviors, pollution, traffic, crime, employment insecurity, and problems connecting. Urban living can be detrimental to mental health since it raises the risk of cancer, heart disease, and metabolic disorders. Cities are more likely to have higher rates of diabetes, stroke, hypertension, respiratory conditions, alcoholism, drug addiction, chronic infections (including HIV), and common mental illnesses. Urban dwellers' mental health is negatively impacted by a number of factors, including pollution, volatility, unsteady economic conditions, and limited access to natural areas (Ventriglio et al., 2021).

Anxiety: One of the most common psychological disorders is anxiety, which is a collection of mental illnesses marked by excessive concern, excessive (often unjustified) dread, obsessive thoughts, and disturbed sleep as a result of fear or uneasiness. (Khan & Khan, 2020). According to the 2017 Global Burden of Disease Study, 284 million people worldwide or 3.8% of the world's population struggle with anxiety disorders of some kind. This is an increase of 32.3% between 1990 and 201. Mental health disorders become a major global concern (James et al., 2018).

The movement of people from rural areas to urban areas is an inevitable part of the process of urbanization. In addition to this, the economy of the society transitioned from one centered on agriculture to one based on advanced industrial production (Lipi & Hasan, 2021). The United Nations Development Program predicts that by the year 2050, nearly two-thirds of people will live in cities. However, not all forms of urbanization are effective if they are not planned. The rapid population increase has repercussions for the urban environment, the policy framework, environmental difficulties, urban poverty, and urban health. New problems relating to mental health are emerging because of rapid urbanization and growing urban populations. There is some evidence that urbanization is linked to problems with mental health. Numerous social, economic, and environmental elements have an impact on mental health in urban environments. In metropolitan locations, prevalent mental illnesses are more common (Lipi & Hasan, 2021).

Urban mental health is negatively impacted by socioeconomic disparity, instability, pollution, and a lack of access to nature.(Ventriglio et al., 2021). This cross-sectional study found that during the COVID-19 epidemic, a sizable portion of Bangladeshi teenagers, both urban and rural, suffered from stress, anxiety, and depression. It has been demonstrated that several significant risk variables, including age, sex, place of residence, parenting style, and food insecurity, affect teenagers' mental health. Because mental health problems during

adolescence increase the likelihood of adult mental pain, responsible authorities must act quickly to prevent a mental health epidemic in the post-COVID period (Haque et al., 2023).

Bangladesh's urban adult population's mental health is now in poor shape (Alam, et. al, 2021). Diverse studies shed light on the requirements and values of urban adolescents in Bangladesh, which can inform the creation of beneficial initiatives that improve their well-being (Amin & Sajeda, 2015).The rate of urbanization on a worldwide scale has accelerated in recent decades. The population is also growing, and people are migrating from rural areas to urban areas because of the many push forces that influence people to settle in urban metropolitan centers. The state of mental health can improve if economic situations are improved. However, many other obstacles can influence a person's mental health condition (Chandra et al., 2018). Therefore, understanding the impact that urban settings have on people's mental health is crucial. According to the findings of a study conducted in Bangladesh, maintaining positive mental health is essential to living a happy life, despite the prevalence of mental disease in the country. In addition to this, it is exacerbated among some communities, and it is an essential component for urban adults to have to enjoy a prosperous existence (Hasan et al., 2021a). The research was conducted in India, and they tried to find out the relationship between socioeconomic conditions and mental illness. It found that mental illness significantly varies according to gender and females suffer more than men (Böge et al., 2018).The medium and income families people have more mental health problems than the rich (Karim et al., 2006). Bangladesh provides inadequate treatment for mental illness due to several factors, including a lack of public mental health facilities, a scarcity of trained mental health practitioners, inefficient financial resource allocation, poorly managed mental health policy, and prejudice (Hasan et al., 2021; Islam & Biswas, 2015).

In a developing nation such as Bangladesh, there is insufficient data about the mental health condition of the adult. The study will help investigate the mental health condition and the factors affecting the mental health condition of urban adults. It will also be helpful to policymakers to take the necessary steps to prevent the problem of the urban adult. The Southeast Asian developing nation is Bangladesh (Rabbani et al., 2015).In a developing country like Bangladesh, mental illness is ignored by both government and NGOs (Islam & Biswas, 2015).

It's interesting to note that while more current research seems to support the reverse, older studies frequently show that Adolescents in cities are more prone to struggle with mental health difficulties. It has been observed, for example, that the prevalence of mental health problems among teens from rural areas is increasing to the point where it is either greater or equal to that of teenagers from metropolitan areas (Maggi et al., 2010). Prior studies that concentrated on different particular difficulties have been carried out. For example: Examination-related depression. This study shows Students' mental health suffers from exams in terms of stress, anxiety, and depression (Arusha & Biswas, 2020). Another study focuses on depression in-school adolescents. This research concluded that depressive symptoms are prevalent among urban and semi-urban adolescents in Dhaka, Bangladesh. Therefore, urgent initiatives should be taken to curb the spread of depression among

Bangladeshi adolescents (Anjum et al., 2022). In this case, my interest grows to investigate this phenomenon in a general way and over a wide population.

Research Question: What is the scenario of depression in Bangladesh's urban young adult people?

Rationale of the study

The swift urban growth in Bangladesh has formed a high-pressure atmosphere in which young adults encounter a distinct "urban paradox": unmatched physical closeness alongside significant social isolation. As conventional community support networks decline due to overwhelming busyness and economic rivalry, the mental well-being of this group has hit a crucial turning point; however, the absence of concrete data hinders successful intervention by government and healthcare organizations. This research is crucial for scientifically charting how urban daily stressors translate into chronic anxiety and ultimately develop into clinical depression. By pinpointing these mediating pathways, the study delivers essential evidence to shift from reactive care to proactive, data-informed mental health policies that safeguard both the welfare of the youth and the nation's long-term economic stability

2. OBJECTIVE

2.1. OBJECTIVES

The main objective of the present study was to find out the current scenarios of Depression in Bangladeshi urban young adult people.

The specific goals are to:

1. To investigate whether there is any relationship among Depression, Stress, & Anxiety.
2. To see whether stress predicts depression individually.
3. To find out whether anxiety predicts depression individually.

3. METHOD

3.1Target Population

The study was conducted to know about depression in Bangladeshi urban young adult people. The age of young adults was usually considered 18-39. Those ages above 18 and less than 39 were considered as the population of this study (Edward, 1980).

3.2 Sample Size and Sampling Technique

In this study, 402 data were collected from Dhaka and Sylhet and were selected purposively. The people who were living in Dhaka and Sylhet city, and the sample was selected convenient sampling technique.

3.3 Research Design

A cross-sectional survey design was used in the present study. According to this design, data was collected at a single point in time.

3.4 Research instruments

For data collection, the following instruments were used in this study:

1. *Personal Information Form (PIF)*

The first section is used for primary data collection related to demographic information about the respondents. This PIF involved information about the respondent's self and family history. These will include the respondent's age, socio-economic and marital status, designation, salary, number of family members, and educational qualifications.

2. *Bangla Version of Depression, Anxiety, Stress Scale (DASS 21)*

Lovibond & Lovibond (1995) developed DASS-21. This DASS version, which consists of 1 valid set of 3 self-report scales with 21 items, was created to assess the negative emotional states of stress, anxiety, and depression. The frequency or severity of each participant's experiences over the last week is measured on a 4-point Likert scale, emphasising states over attributes. These scores vary from 0, which indicates that the client thought the item didn't apply to them at all, to 3, which suggests that the client thought the item was used by him or her either frequently or very often. At the same time, the first and second sections were in the middle of each other. Furthermore, the instructions emphasise that there is no right or wrong answer. Each subscale consists of 7 questions. The severity rating index evaluates each participant's total score or the seven questions they answered correctly on each of the four sub-scales. The Bangla DASS-21 was adapted, and Cronbach's Alpha for Depression, Anxiety, and Stress subscales were 0.987.0.957 and 0.964, respectively. (Alim et al., 2014) Adapted by Morshed, & Naz (2024), and Cronbach's alpha Anxiety, Stress, and Depression were 0.823, 0.798, and 0.861, respectively.

3.5 Procedure

First, consent was obtained to gather data and build relationships with participants to collect precise data from them. Once they had established a rapport, the researcher went over the investigation's objectives while assuring them that their responses would remain confidential. Subsequently, the participants were directed to carefully examine the scale components and provide prompt answers on questionnaires. Comparatively, the respondents were instructed to quickly answer the questionnaire and carefully read the scale items. They were instructed to select the corresponding box. They also asked not to leave out any questions on the questionnaire and to be informed that there was no right or wrong response. They ensured the information would be kept private and used exclusively for research. When they completed the work, they received a lot of praise. On average, an estimated 20 minutes were needed for each respondent to receive all of the instruments. The collection of all data will take three months.

4. RESULTS

Table 1. Correlation matrix among Stress, Anxiety and Depression

Variables	1	2	3
1. Stress	-		
2. Anxiety	.729**	-	
3. Depression	.697**	.703**	-

** Correlation is significant at the 0.01 level (2-tailed).

To begin with, the correlation matrix of Table 1 is presented the sample correlation of Independent variables with each dependent variable. To assess the size and direction of the linear relationship between the scores of Stress, Anxiety and Depression, correlation coefficient (r) was calculated. The bivariate correlation among these Stress, Anxiety and Depression variables were positive, r (380) = 1, p < .001., .729, p < .001, and .697, p < .001.

Table 2. Selected Statistics from Regression of Depression on Stress

Variables	R	R^2	R^2 change	P
Predictor Variable: Stress	.697	.485	.484	.000

Dependent Variable: Depression

Results of Table 2 indicate that the strongest predictor was Stress which alone explained 48.5% variance in Depression.

Table 3. Simple Regression of Depression on Stress

Model	Unstandardized Coefficients B	Std. Error	Standardized Coefficients B	t	P
(Constant)	1.158	.424	.697	2.734	.007
Stress	.798	.042		18.879	.000

Dependent Variable: Depression

The results presented in Table - 3 suggest that unstandardized B is .798, this value indicates that as Stress increases by one unit, Depression increases by .798 units. This interpretation is true only if the effects of other variables are held constant. The value of standardized beta indicates that as Stress increases by one standard deviation, Depression increases by .697 standard deviations.

Table 4. The Overall F-Test for Regression of Depression on Stress

Sum of variations	SS	df	MS	F	P
Regression	4407.998	1	4407.99	356.427	.000
Residual	4674.792	378	12.367		
Total	9082.789	379			

The findings in the table above demonstrate that stress is significantly predicted by depression.

Table 5. Selected Statistics from Regression of Depression on Anxiety

Variables	R	R^2	R^2 change	P
Predictor Variable: Anxiety	.703	.495	.493	.000

Dependent Variable: Depression

According to the above table, anxiety was the best predictor, explaining 49.3% of the variation in stress (R2 = 0.495). This indicates a strong and significant correlation between the two variables, with anxiety alone accounting for almost half of the variability in stress levels.

Table 6. Simple Regression of Depression on Anxiety

Model	Unstandardized Coefficients B	Std. Error	Standardized Coefficients B	t	P
(Constant)	3.216	.323	.703	9.950	.000
Depression	.774	.040		19.232	.000

Dependent Variable: Stress

The results presented in Table - 6 suggest that unstandardized B is .774, this value indicates that as Anxiety increases by one unit, Depression increases by .774 units. This interpretation is true only if the effects of other variables are held constant. The value of standardized beta indicates that as Depression increases by one standard deviation, Depression increases by .703 standard deviations.

Table 7. The Overall F-Test for Regression of Depression on Anxiety

Sum of variations	SS	df	MS	F	P
Regression	4492.103	1	4492.103	369.883	.000
Residual	4590.686	378	12.145		
Total	9082.789	379			

In above table shows that Anxiety is a good predictor. This result fits the model. It is also said that ANOVA tells us depression is statistically significant.

5. DISCUSSION

The main objective of the present study was to find out the current scenarios of Depression in Bangladeshi urban young adult people. The specific goals are to: (i) To Investigate whether there is any relationship between Depression, Stress, & Anxiety. (ii) To

find out whether anxiety predicts depression individually. (iii) To see whether Stress predicts Depression individually.

To explore the connection among Stress, Anxiety, and Depression, correlation analysis was performed. The study revealed that the correlation analysis was significant at the 0.01 level (2-tailed). The correlation table shows the correlation coefficients for Stress, Anxiety, and Depression variables, revealing the strength and direction of their interrelationships. The relationship between Stress and Anxiety shows a strong positive correlation, meaning that as stress levels rise, anxiety levels also significantly tend to rise. Likewise, stress and depression show a significant positive correlation between the two variables, suggesting that increased stress levels are linked to elevated depression levels among the participants of the study. Furthermore, Anxiety and Depression demonstrate a robust positive relationship between the two variables, indicating that higher levels of anxiety are likely to result in a significant rise in levels of depression.

The findings from the regression analyses and correlation coefficients in the research consistently demonstrate a strong and significant relationship between anxiety and depression among young adults in urban Bangladesh. Higher anxiety and depression levels are correlated, demonstrating how intertwined these mental health conditions are in the research population.

The regression analyses in the research consistently show that anxiety is a significant predictor of depression among young adults in urban Bangladesh. Higher levels of anxiety are associated with higher levels of depression, highlighting the predictive power of anxiety in determining the mental health outcomes of the study participants. The findings from this research support the significant relationship between anxiety and depression, highlighting the predictive power of anxiety in influencing mental health outcomes in the study population.(Nasrin et al., 2023) The study by Alam et al. may provide complementary insights or corroborate the importance of anxiety as a predictor of depression among young adult populations.(Alam et al., 2021b). The regression analyses and correlation coefficients in the research consistently demonstrate a strong and significant relationship between stress and depression among young adults in urban Bangladesh. Higher stress levels are linked to higher depression levels, demonstrating how intertwined these mental health conditions are in the research group. The regression analysis in the research highlights that stress is a strong predictor of depression, with higher levels of stress leading to higher levels of depression among the participants. This underscores the importance of addressing stress management as a potential intervention for preventing or reducing depression in young adults in urban Bangladesh.

The study conducted by Rabby et al., (2023) is detailed in this reference, along with an analysis of how stress predicts depression in young adults living in metropolitan Bangladesh on an individual basis. The results of this study demonstrate the predictive capacity of stress to impact the mental health outcomes of the study population and indicate the strong association between stress and depression (Rabby et al., 2023). The study by Alam et al. (2021) may provide complementary insights or corroborate the importance of stress as a predictor of depression among the young adult population (Alam et al., 2021b).

Recent studies in the literature have highlighted the importance of anxiety as a predictor of depression among young adults, indicating that anxiety symptoms play a crucial role in determining mental health outcomes. Studies have shown a strong correlation between anxiety and depression, indicating that these two mental health conditions are closely intertwined. Higher levels of anxiety are often associated with higher levels of depression among young adults in urban environments. Recognizing the predictive power of anxiety in determining mental health outcomes, interventions aimed at preventing or reducing depression among young adults should also focus on addressing anxiety symptoms. By targeting anxiety early on, mental health professionals can potentially mitigate the risk of developing depression. The emphasis on anxiety as a predictor of depression underscores the need for comprehensive mental health interventions that consider both anxiety and depression symptoms. Tailored interventions that address anxiety management strategies may be particularly beneficial for young adults in urban Bangladesh (Alam et al., 2021b; Nasrin et al., 2023).

Existing research suggests that demographic factors such as gender, socioeconomic status, and cultural background can significantly influence the prevalence and severity of depression among young adults in urban settings. Studies have shown that gender plays a role in the manifestation of depression, with women often experiencing higher rates of depression compared to men. This gender disparity in depression prevalence highlights the importance of considering gender as a demographic factor in mental health research and interventions. Socioeconomic status has been identified as a crucial determinant of mental health outcomes, including depression. Individuals from lower socioeconomic backgrounds may face additional stressors and barriers to accessing mental health resources, potentially increasing their risk of developing depression. Cultural beliefs and practices can also impact mental health outcomes, including the experience and expression of depression. Understanding cultural factors is essential for developing culturally sensitive interventions that effectively address depression among young adults in urban environments. It is important to recognize that these demographic factors often intersect and interact with one another to shape mental health outcomes. For example, the intersection of gender and socioeconomic status can create unique challenges and vulnerabilities that may contribute to the development of depression in young adults.(Hasan et al., 2021; James et al., 2018).

Another point regarding challenges in mental health care, as highlighted in the existing literature, can be further explained as follows: Firstly, Lack of Public Mental Health Facilities: Research indicates that there is a shortage of public mental health facilities in countries like Bangladesh, which can limit access to essential mental health services for individuals in need. The lack of adequate mental health infrastructure hinders the delivery of timely and effective care to those experiencing mental health issues. Secondly, Shortage of Qualified Professionals: Another significant challenge identified in the literature is the shortage of qualified mental health professionals. The scarcity of trained professionals, such as psychiatrists, psychologists, and counselors, can impede the provision of quality mental health care services to individuals seeking help for depression and other mental health conditions. Thirdly, Inadequate Financial Resources: Insufficient financial resources allocated to mental health care pose a barrier to the development and maintenance of mental

health services. Limited funding for mental health programs and initiatives can restrict the availability of affordable and accessible treatment options for individuals struggling with depression in urban areas. Fourthly, Poorly Managed Policies: The literature also points out the impact of poorly managed policies regarding mental health care. Inadequate policy frameworks, regulations, and guidelines related to mental health services can lead to fragmented and ineffective mental health care systems, hindering the delivery of comprehensive and integrated care for individuals with depression and other mental health disorders. Lastly, Consequences of Inadequate Mental Health Care: The challenges in mental health care, including the lack of facilities, professionals, financial resources, and effective policies, can result in suboptimal treatment outcomes, increased stigma surrounding mental illness, and a higher burden of untreated mental health conditions in urban populations. Addressing these challenges is crucial for improving mental health care delivery and outcomes for individuals with depression.

By recognizing and addressing these challenges in mental health care, stakeholders can work towards enhancing the accessibility, quality, and effectiveness of mental health services for individuals experiencing depression in urban settings. Efforts to strengthen mental health infrastructure, increase workforce capacity, secure adequate funding, and improve policy frameworks are essential for addressing the mental health needs of urban populations effectively.(Hasan et al., 2021b; Islam & Biawas, 2015; Ventriglio et al., 2021b).

LIMITATIONS

Several limitations of this study need to be mentioned.

1. The data was gathered exclusively from the cities of Sylhet and Dhaka. The information would be more trustworthy if it could also be gathered from other cities. So, it can be extended the sample size of this research.

2. The present study was conducted without funds. If it is possible to add funds, it will be possible to focus more precisely on in-depth areas.

RECOMMENDATIONS

1. Undertake more investigation to examine the occurrence of depression among urban young people from Bangladesh in a wider age range, encompassing those who are not in the 18–39 age group. This would offer a more thorough comprehension of the prevalence of depression across various age groups in the urban population.

2. Expand the breadth of the depression evaluation by adding more items from the Bangla DASS-21 scale or by employing additional validated measures to gain a more sophisticated understanding of depression in child caretakers. This in-depth assessment could lead to a better comprehension of the mental health problems this demographic encounters.

3. Examine how different socioeconomic and cultural factors affect the prevalence of depression among young adults living in metropolitan Bangladesh. Future research can offer a more comprehensive understanding of the factors that contribute to depression in this community by looking at variables such cultural beliefs, mental health resource accessibility, and socioeconomic position.

6. CONCLUSIONS

This research indicates that stress, anxiety, and depression are prevalent among urban young adults in Bangladesh, with significant correlations found between these mental health issues. Anxiety plays a crucial role in influencing stress levels, explaining a substantial portion of the variance in stress among the study population. Depression is also a significant predictor of stress, indicating a positive relationship between the two mental health conditions. The study highlights the impact of urban factors like work-home imbalance, long commutes, and employment uncertainty on stress levels in Bangladeshi cities. Future research should consider exploring other cities, age groups, and external factors like socioeconomic status for a more comprehensive understanding of stress in the urban Bangladeshi population.

ACKNOWLEDGMENT

The authors financed the complete research process, from data collection to analysis, independently.

REFERENCES

Alam, F., Hossain, R., Ahmed, H. U., Alam, M. T., Sarkar, M., & Halbreich, U. (2021a). Stressors and mental health in Bangladesh: Current situation and future hopes. BJPsych International, 18 (4), 91–94. https://doi.org/10.1192/bji.2020.57.

Alim, S. A. H. M., Kibria, S. M. E., Lslam, M. J., Uddin, M. Z., Nessa, M., Wahab, M. A., & Lslam, M. M. (2014). Translation of DASS 21 into Bangla and validation among medical students. Bangladesh Journal of Psychiatry, 28(2), Article 2. https://doi.org/10.3329/bjpsy.v28i2.32740

Ali, M., Ahsan, G. U., Khan, R., Khan, H. R., & Hossain, A. (2020). Immediate impact of stay-at-home orders to control COVID-19 transmission on mental well-being in Bangladeshi adults: Patterns, Explanations, and future directions. BMC Research Notes, 13(1), 494. https://doi.org/10.1186/s13104-020-05345-2

Amin, S. (2015). Urban adolescents needs assessment survey in Bangladesh. Poverty, Gender, and Youth. https://doi.org/10.31899/pgy9.1066

Anjum, A., Hossain, S., Sikder, T., Uddin, M. E., & Rahim, D. A. (2022). Investigating the prevalence of and factors associated with depressive symptoms among urban and semi-urban school adolescents in Bangladesh: A pilot study. International Health, 14(4), 354–362. https://doi.org/10.1093/inthealth/ihz092

Arusha, A. R., & Biswas, R. K. (2020). Prevalence of stress, anxiety and depression due to examination in Bangladeshi youths: A pilot study. Children and Youth Services Review, 116, 105254. https://doi.org/10.1016/j.childyouth.2020.105254

Böge, K., Zieger, A., Mungee, A., Tandon, A., Fuchs, L. M., Schomerus, G., Tam Ta, T. M., Dettling, M., Bajbouj, M., Angermeyer, M., & Hahn, E. (2018). Perceived stigmatization and discrimination of people with mental illness: A survey-based study of the general population in five metropolitan cities in India. Indian Journal of Psychiatry, 60(1), 24–31. https://doi.org/10.4103/psychiatry.IndianJPsychiatry_406_17

Buechner, H., Toparlak, S. M., Ostinelli, E. G., Shokraneh, F., Nicholls-Mindlin, J., Cipriani, A., Geddes, J. R., & Syed Sheriff, R. (2023). Community interventions for anxiety and depression in

adults and young people: A systematic review. Australian & New Zealand Journal of Psychiatry, 57(9), 1223–1242. https://doi.org/10.1177/00048674221150362

Chandra, P. S., Shiva, L., & Nanjundaswamy, M. H. (2018). The impact of urbanization on mental health in India. Current Opinion in Psychiatry, 31(3), 276–281. https://doi.org/10.1097/YCO.0000000000000408

Edward P., S. (1980). Child & Adolescent Development. Scott, Foresman Company.

Haque, M. A., Anjum, A., Mousum, S., Salwa, M., Ratan, Z. A., Khan, M. M. H., Islam, M. T., Ahmed, H. U., Amin, M. R., & Mamun, M. A. A. (2023). Prevalence of and factors associated with depression, anxiety and stress among adolescents in Bangladesh during the COVID-19 pandemic: A population-based study. F1000Research, 12, 730. https://doi.org/10.12688/f1000research.132304.1

Hasan, M. T., Anwar, T., Christopher, E., Hossain, S., Hossain, M. M., Koly, K. N., Saif-Ur-Rahman, K. M., Ahmed, H. U., Arman, N., & Hossain, S. W. (2021a). The current state of mental healthcare in Bangladesh: Part 1 – an updated country profile. BJPsych International, 18(4), 78–82. https://doi.org/10.1192/bji.2021.41

Hossain, M. D., Ahmed, H. U., Chowdhury, W. A., Niessen, L. W., & Alam, D. S. (2014). Mental disorders in Bangladesh: A systematic review. BMC Psychiatry, 14(1), 216. https://doi.org/10.1186/s12888-014-0216-9

Islam, A. (2015a). Mental Health and the Health System in Bangladesh: Situation Analysis of a Neglected Domain. American Journal of Psychiatry and Neuroscience, 3, 57. https://doi.org/10.11648/j.ajpn.20150304.11

Islam, A., & Biswas, T. (2015). Mental health and the health system in Bangladesh: Situation analysis of a neglected domain. American Journal of Psychiatry and Neuroscience, 3(4), 57–62. https://doi.org/10.11648/j.ajpn.20150304.11

James, S. L., Abate, D., Abate, K. H., Abay, S. M., Abbafati, C., Abbasi, N., Abbastabar, H., Abd-Allah, F., Abdela, J., Abdelalim, A., Abdollahpour, I., Abdulkader, R. S., Abebe, Z., Abera, S. F., Abil, O. Z., Abraha, H. N., Abu-Raddad, L. J., Abu-Rmeileh, N. M. E., Accrombessi, M. M. K., … Murray, C. J. L. (2018a). Global, regional, and national incidence, prevalence, and years lived with disability for 354 diseases and injuries for 195 countries and territories, 1990–2017: A systematic analysis for the Global Burden of Disease Study 2017. The Lancet, 392(10159), 1789–1858. https://doi.org/10.1016/S0140-6736(18)32279-7

Karim, E., Alam, M., Rahman, A., Hussain, A., Uddin, M. M. J., & Firoz, A. (2006). Prevalence of Mental Illness in the Community. TAJ, 19. https://doi.org/10.3329/taj.v19i1.3163

Khan, Md. M. A., & Khan, Md. N. (2020). Effects of psychosocial and socio-environmental factors on anxiety disorder among adolescents in Bangladesh. Brain and Behavior, 10(12), e01899. https://doi.org/10.1002/brb3.1899.

Lovibond, S. H., & Lovibond, P. F. (1995). Depression Anxiety Stress Scales DASS-21. https://psycnet.apa.org/doiLanding?doi=10.1037%2Ft01004-000

Lipi, A. I., & Hasan, N. (2021). URBANIZATION IN BANGLADESH: EMERGING CHALLENGES AND THE WAY FORWARD. Bangladesh Journal of Multidisciplinary Scientific Research, 3(1), 33–44. https://doi.org/10.46281/bjmsr.v3i1.1112

Maggi, S., Ostry, A., Callaghan, K., Hershler, R., Chen, L., D'Angiulli, A., & Hertzman, C. (2010). Rural-urban migration patterns and mental health diagnoses of adolescents and young adults in British Columbia, Canada: A case-control study. Child and Adolescent Psychiatry and Mental Health, 4(1), 13. https://doi.org/10.1186/1753-2000-4-13

Morshed, M. U., & Naz, H. (2024). Validation of Depression scale on Bangladeshi Urban young Adult Population. Unpublish Manuscript. Centre for Research In Multidiscipline-CRM.

Nasrin, N., Shohel, T. A., Shovo, T.-E.-A., Farjana, F., Nizam, H., Heme, M. A., Islam, A., Paul, P., & Hossain, Md. T. (2023). A qualitative investigation of stressful life events and mental health disorders: The views of patients and caregivers in Bangladesh. PLOS ONE, 18(2), e0281649. https://doi.org/10.1371/journal.pone.0281649

Rabbani, G., Ahmed, H. U., Desai, G., & Dinesh Bhugra. (2015). The Bangladesh perspective. In Routledge Handbook of Psychiatry in Asia.

Rabby, Md. R.-A., Islam, Md. S., Orthy, M. T., Jami, A. T., & Hasan, M. T. (2023). Depression symptoms, anxiety, and stress among undergraduate entrance admission seeking students in Bangladesh: A cross-sectional study. Frontiers in Public Health, 11, 1136557. https://doi.org/10.3389/fpubh.2023.1136557

Ria, I. I., Biswas, R. K., Alam, A., Rakshit, P. V., & Tahsin, S. (2022). Depressive Symptoms Among Adolescents in Bangladesh. International Journal of Mental Health and Addiction. https://doi.org/10.1007/s11469-022-00860-8

SELYE, H. (1956). What is stress. Metabolism: Clinical and Experimental, 5(5), 525–530.

van Ommeren, M., Saxena, S., & Saraceno, B. (2005). Mental and social health during and after acute emergencies: Emerging consensus? Bulletin of the World Health Organization, 83(1), 71–75; discussion 75-76.

Ventriglio, A., Torales, J., Castaldelli-Maia, J. M., Berardis, D. D., & Bhugra, D. (2021a). Urbanization and emerging mental health issues. CNS Spectrums, 26(1), 43–50. https://doi.org/10.1017/S1092852920001236

World Health Organization(WHO). (2024). World Health Organization(WHO). https://www.who.int/news-room/fact-sheets/detail/depression

Ra, D. (2021a). Urbanization and emerging mental health issues. CNS Spectrums, 26(1), 43–50. https://doi.org/10.1017/S1092852920001236

World Health Organization(WHO). (2024). World Health Organization(WHO). https://www.who.int/news-room/fact-sheets/detail/depression

ROMANIAN JOURNAL OF PSYCHOLOGICAL STUDIES

HYPERION UNIVERSITY
www.rjps.hyperion.ro

EFFECTS OF REHEARSAL METHODS ON PUBLIC SPEAKING ANXIETY AMONG UNDERGRADUATES

PRAISE E. AYODELE[1], NYITOR A. SHENGE,[2] & EMMANUEL E. UYE[3]
[1,2 &3] University of Ibadan, Faculty of the Social Sciences, Department of Psychology.

Abstract

This study examines the effects of solo and peer-assisted rehearsal techniques on public speaking anxiety (PSA) among undergraduates. The study adopted experimental design where purposive sampling technique was used to select study population and simple random sampling method used to assign participants to experimental and control groups. After exposing the participants to solo and peer-assisted rehearsal training sessions, data were collected from the participants using a validated Public Speaking Anxiety Scale and analyzed using Analysis of Covariance statistics to test two hypotheses which were accepted at p <.05 level of significance. The result revealed a significant difference between solo method and control group in PSA with mean difference of -21.583 (SE = 1.77, p < 0.05). In addition, the result indicated significant difference between peer-assisted rehearsals and control group in PSA with mean difference of -21.844 (SE = 1.94, p < 0.05). However, there were no gender differences among study participants, $F_{(1,53)} = 0.728$, p > 0.05. The study concludes that solo and peer-assisted rehearsals are robust techniques to reduce PSA among study participants. The study recommends school authority and mental health professionals to incorporate both types of rehearsal methods into public speaking training to help students affected by PSA.

***Keywords**: solo rehearsal, peer-assisted rehearsal, public speaking anxiety, undergraduates.*

1. INTRODUCTION

Public speaking is an important skill in personal, academic, and professional spaces which serves as a fundamental means of communication that allows individuals to convey their ideas, share knowledge, and influence others effectively. It is an indispensable tool for leadership, collaboration, and societal engagement. Whether an individual is delivering a persuasive argument, presenting research findings, or motivating a team, public speaking empowers individuals to connect with their audience, articulate their thoughts clearly, and inspire meaningful action, thus fostering confidence and building credibility in various settings (Burgess, 2020).

However, despite the significance of public speaking, many individuals face the challenges of public speaking anxiety, a psychological dysfunction that occurs when individuals experience intense fear, nervousness, or discomfort in response to the anticipation of performing in front of an audience (Hernandez & Liu, 2024). Public speaking anxiety, also known as stage fright, or performance anxiety, emanates from a fear of negative evaluation, perceived inadequacy, or the overwhelming pressure to meet audience expectations, leading to physical symptoms such as trembling, sweating, or rapid heartbeat, alongside cognitive

Corresponding author: emmanuel.e.uye@gmail.com
https://orcid.org/0000-0002-7867-270X

difficulties like forgetfulness or mental blocks (Eysenck, 2021; Ingraham, 2020). The National Social Anxiety Centre (2023) reported that approximately 73% of the population are affected by public speaking anxiety (PSA), making it one of the most commonly cited fears among people. Public speaking anxiety affects anyone who regularly speaks or performs in front of crowds such as professional athletes, actors, musicians and students (Darja, 2021; Davies, 2020).

There are three interrelated components of PSA: cognitive, physiological, and emotional components. The cognitive component has to do with the mental processes and thought patterns that influence how individuals perceive and respond to speaking situations which is rooted in deeply ingrained fears and negative expectations (Ougrin, 2020). These thought patterns typically include a pronounced fear of negative evaluation, where speakers worry excessively about being judged, criticized, or misunderstood by their audience, resulting in heightened self-awareness and an exaggerated sense of vulnerability (Ougrin, 2020). The physiological component is linked to the fight-or-flight mechanism, which is activated when an individual perceives a situation as threatening or overwhelming (Ougrin, 2021). This response triggers physical symptoms such as an accelerated heart rate, excessive sweating, trembling, dry mouth, and shortness of breath, all of which are directly caused by the release of adrenaline into the bloodstream (Olatunji et al., 2020).

The emotional component involves intense feelings of anxiety, embarrassment, and apprehension that arises either in anticipation of or during a public speaking engagement, playing a significant role in shaping the overall experience of performance anxiety (Gregersen & MacIntyre, 2019). These emotions often stem from a profound fear of failure, where individuals worry about not meeting their own or others' expectations, and this fear can be particularly paralyzing in situations perceived as high-stakes or evaluative (Gregersen & MacIntyre, 2019). Furthermore, the emotional component frequently interacts with both cognitive and physiological responses to amplify the speaker's sense of discomfort and create a feedback loop that perpetuates the experience of PSA.

Some cognitive-behavioral techniques (CBT) have been used to help individuals affected by public speaking anxiety. One of the CBT techniques investigated in this study is rehearsal method, which is the process of repeatedly practicing of information or actions over a period of time to strengthens memory and boosts confidence in the individual's knowledge (Karpicke & Blunt, 2014; McPherson & Welch, 2020; Schwieren et al., 2017; Thayer & Lane, 2018). Rehearsal technique requires the learner to repeatedly engage with the material through practice without immediate access to it. This act of repetition strengthens the neural pathways associated with the information, making it more durable and accessible over time (Roediger & Butler, 2021).

In this study, two types of rehearsal methods: solo rehearsal and peer-assisted rehearsal on PSA were investigated. Cizek and Borg (2019) described solo rehearsal as the process whereby an individual independently practices recalling and rehearsing information previously learned without the assistance of external prompts or collaboration with peers. This approach is grounded in the theory that actively engaging with material on one's own strengthens memory traces and enhances long-term retention. For instance, Grieve (2021) found that solo rehearsal creates opportunities for learners to reconstruct their knowledge, identify gaps, and correct misconceptions, which ultimately improves their ability to recall information in the future.

In addition, Morris (2021) found the act of rehearsing information without external aid to require significant cognitive effort, which activates deeper levels of processing and strengthens the neural connections associated with the material. In another study, Agarwal and Bain (2019) found solo rehearsal as particularly beneficial when learners space their practice over time, as this spacing effect leads to durable learning outcomes. However, Pan and Rickard (2018)

asserted that while solo rehearsal could be effective, its success largely depends on the learner's motivation and prior knowledge, as individuals with limited foundational understanding would struggle to recall or accurately reconstruct information in isolation.

The second type of rehearsal method considered in this study is peer-assisted rehearsal which refers to a collaborative learning strategy where learners engage in recalling and rehearsing information with the support and interaction of their peers (Frankenstein et al., 2022). This form of rehearsal is grounded in social constructive theories, which posits that meaningful learning would occur in social contexts where individuals co-construct knowledge through dialogue and shared problem-solving activities (Vygotsky, 2021). As a form of rehearsal, peer-assisted rehearsal involves structured exercises such as group quizzes, collaborative discussions, or paired testing where participants actively rehearse and discuss answers together. Karpicke and Blunt (2014) found peer-assisted rehearsal as effective in fostering interactive learning environments, since it combines the cognitive benefits of rehearsal with the social dynamics of peer collaboration. By explaining their thought processes and listening to others, learners would both reinforce their understanding and expose themselves to diverse perspectives that would deepen their comprehension of the subject matter.

Moreover, the interactive nature of peer-assisted rehearsal has been found to enhance engagement and motivation among learners (Morehead, 2019). In addition, it makes students feel more accountable and encouraged when participating in group-based rehearsal activities. This process of mutual reinforcement and shared accountability would lead to improved retention and application of knowledge, particularly in settings where learners actively challenge and correct each other's responses (Roelle, 2020). Studies have confirmed the meta-cognitive benefits of peer-assisted rehearsal. For example, Pan (2021) found that discussing answers and receiving immediate feedback from peers helps learners to better evaluate their own understanding and address gaps in their knowledge. Similarly, Agarwal and Bain (2020) found that the social element of peer-assisted rehearsal fosters a sense of community and reduces the anxiety often associated with independent practice, thereby creating a more conducive environment for learning and memory consolidation.

Gender effects on public speaking anxiety have been examined by various researchers and the results tend to be varied. For instance, Schneider and Miller (2022) who explored the role of rehearsal and cognitive restructuring in reducing public speaking anxiety in high school students found male and female students both experienced significant reductions in public speaking anxiety after engaging in rehearsals and cognitive restructuring techniques. In addition, Foster (2021) found both genders to show comparable levels of improvement in reducing their anxiety after participating in the guided rehearsal sessions. Furthermore, Zhang and Morgan (2022) studied the effects of solo and peer-assisted rehearsals on public speaking anxiety among male and female high school students and found that feedback and practice whether done individually or in groups helped them gain greater control over their nerves, leading to reduced public speaking anxiety across both genders.

However, Davies and Reynolds (2021) and Morris and Chen (2023) did not find gender differences in the effect of solo and peer-assisted rehearsal methods on public speaking anxiety among their study participants. This indicates that both rehearsal techniques were equally effective for all participants in reducing public speaking anxiety irrespective of gender.

While studies on the effects of solo and peer-assisted rehearsal techniques on public speech anxiety have been done using different populations and samples in developed countries and professions with varied results, studies using these techniques on undergraduates in Nigeria tends to be lacking leaving gaps in knowledge to fill.

2. OBJECTIVE AND HYPOTHESES

Therefore, this study examines the effects of solo rehearsal and peer-assisted rehearsal techniques on public speech anxiety among undergraduates at the University of Ibadan, Nigeria. The study sought to answer these questions: Will solo rehearsal and peer-assisted rehearsal techniques reduce public speaking anxiety among undergraduates at the University of Ibadan? And, will there be gender differences in public speaking anxiety among study participants?

The study would fill critical gap in understanding the roles of rehearsal modes in the management of undergraduates suffering from PSA. In addition, the results of the study would help the university authority and professionals to develop strategies for students to overcome PSA in public speaking and improve their academic and professional life.

The study tested these hypotheses: There will be significant main effect of treatment (solo rehearsal mode and peer-assisted rehearsals) on stage fright reduction in public speaking among undergraduates of the University of Ibadan, and there will be a significant effect of gender on stage fright reduction in public speaking among undergraduates.

3. METHOD

The study was an experimental research design that incorporated both pretest and post-test assessments as well as a control group. The experimental design facilitated an examination of how different levels of rehearsal practice affect the reduction of stage fright in public speaking tasks among undergraduates at the University of Ibadan. The independent variables were solo retrieval practice and peer-assisted retrieval practice, while the dependent variable was stage fright reduction in public speaking.

The study was conducted among undergraduates at the University of Ibadan which consisted of different groups of students actively engaged in public speaking activities. The research specifically focused on undergraduates from the Department of Psychology since they possess the academic background that is relevant to the research topic.

Multistage sampling techniques were employed. Stratified random sampling method was used to divide the population into strata based on age, gender, religion, and level of study to enhance representative. Afterwards, a simple random sampling technique was used to recruit potential participants. The probability random sampling method ensured that each participant has an equal chance of selection.

Data were collected using a validated questionnaire.

Public Speaking Anxiety Scale (PSAS, Bartholomay & Houlihan, 2016) was used to measure cognitive, affective, and physiological symptoms associated with public speaking anxiety. The PSAS consisted of 17 items rated on a 5-point Likert's format ranging from "not at all" to "extremely". The items are grouped into three categories: cognitive symptoms (e.g., negative thoughts and fear of failure), behavioral symptoms (e.g., avoidance and verbal disfluencies), and physiological symptoms (e.g., increased heart rate and sweating). Sample items include: " "Giving a speech is terrifying" and " I am nervous that I will embarrass myself in front of the audience" (C); "My voice trembles when I give a speech" and "I do not have problems making eye contact with my audience"(B); and "I feel sick before speaking in front of a group" and "I feel relaxed while giving a speech"(P). The PSAS has strong psychometric properties demonstrating high reliability and validity in previous studies. Overall composite Cronbach' $\alpha = 0.89$ was obtained in the present study.

Ethical approval was obtained by the researchers by submitting a research proposal to the Social Sciences and Humanities Research Ethics Committee (SSHREC) at the University of

Ibadan. When approval was granted, recruitment of participants was carried out. Participants were randomly selected and briefed on the objectives of the study. Informed consent was obtained before their participation. A pretest was administered using the Public Speaking Anxiety Scale (PSAS) to establish baseline anxiety levels. After the pretest, participants were randomly assigned to one of these three groups:

(1) Solo Retrieval Practice – Participants practiced retrieving speech content individually.
(2) Peer-Assisted Retrieval Practice – Participants engaged in retrieval practice with a peer.
(3) Control Group – Participants underwent any retrieval practice intervention.

Each group followed their respective practice method for two weeks, with three sessions per week. After the intervention period, a post-test using the PSAS was administered to assess changes in public speaking anxiety. During the study, participants were instructed on how to complete the research instruments accurately. Trained research assistants were available to provide clarifications and ensure consistency in data collection. After the study, participants were debriefed, and those in the control group were offered access to the intervention techniques after the conclusion of the study.

The following ethical considerations were strictly adhered to:

Confidentiality: Participants were assured of the confidentiality of their responses.
Informed consent was sought and obtained from the potential participants.
Beneficence/Non-maleficence: Participants were briefed of the positive contributions of the study to the well-being of adolescents in Ibadan and the Nigerian society at large without any negative implications.
Voluntary Participation: Participants were informed of the voluntary nature of the study and their right to decline or withdraw from the study at any time without facing any consequences.

IBM^R version 26 was used for data analysis. Both descriptive and inferential analysis were computed. All the hypotheses were tested using Analysis of Covariance (ANCOVA)and accepted at $p < 0.05$ level of significance.

4. RESULTS AND DISCUSSION

The study first presents the demographic data of the study participants.

Table 1: Participants' demographics

Variables	Categories	N	%
Sex	Male	19	32
	Female	41	68
Age *(Mean = 21, SD = 3)*	18 -20	18	30
	21 - 23	28	47
	24 - 26	11	18
	Above 26	3	5
Religion	Christian	31	52
	Muslim	29	48
Marital Status	Single	58	97
	Married	2	3
Level	200 Level	32	53
	300 Level	28	47
Experimental Conditions	Solo rehearsal mode group	20	33
	Peer-assisted rehearsal group	20	33
	Control group	20	33

Table 1 presents the demographic variables of the study participants. The result showed that 68% of the participants were females with 47% between 21 and 26 age brackets, and 52% were Christians. In terms of marital status, 97% were unmarried (single), while 53% were in the second year of their study.

Testing the hypothesis…

H1: There will be significant main effect of treatment (solo rehearsal mode and peer-assisted rehearsals) on stage fright reduction in public speaking among undergraduates of the University of Ibadan. The hypothesis was tested using Analysis of Covariance (ANCOVA) and the results are presented in Table 2.

Table 2: ANCOVA of the effect of treatments (solo rehearsal mode and peer-assisted rehearsals) on public speaking anxiety among study participants

Tests of Between-Subjects Effects						
Dependent Variable: Post-test score on public speaking anxiety scale						
Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	6305.367a	6	1050.895	43.554	0.000	0.831
Intercept	728.406	1	728.406	30.188	0.000	0.363
Pre-test	0.034	1	0.034	0.001	0.970	0.000
Gender	17.563	1	17.563	0.728	0.397	0.014
Treatment	4216.102	2	2108.051	87.367	0.000	0.767
Gender * Treatment	25.917	2	12.958	0.537	0.588	0.020
Error	1278.816	53	24.129			
Total	111501	60				
Corrected Total	7584.183	59				
a R Squared = .831 (Adjusted R Squared = .812)						

Table 2 shows ANCOVA of the effect of treatment (solo rehearsal mode and peer-assisted rehearsals) on stage fright reduction in public speaking among undergraduates of the University of Ibadan. The results revealed a significant main effect of the treatments on public speaking anxiety $F_{(2,53)} = 87.367$, $p < 0.05$, $\eta^2 = .767$, $R^2 = .831$, Adj $R^2 = .812$. The effect size, as indicated by partial eta squared ($\eta^2 = .767$), shows a large effect, indicating that the treatments had significant effects on reducing stage fright. The R^2 value of .831 (Adjusted $R^2 = .812$) implies that approximately 81.2% of the total variation in public speaking anxiety scores was explained by the model, with 76.7% ($\eta^2 = .767$) of the variance specifically attributable to differences in the treatment groups. Therefore, the hypothesis that solo rehearsal mode and peer-assisted rehearsals will significantly reduce stage fright in public speaking among undergraduates at the University of Ibadan was confirmed.

To examine the significant main effect of treatment on stage fright reduction in public speaking, Bonferroni post-hoc test was conducted and the results are presented in Table 3.

Table 3: Bonferroni post-hoc tests for experimental and control groups

Pairwise Comparisons					
Dependent Variable: Post-test score on public speaking anxiety scale					
(I) Treatment	(J) Treatment		Std. Error	Sig. b	95% Confidence Interval for Difference b

		Mean Difference (I-J)			Lower Bound	Upper Bound
Solo rehearsal mode	Peer-assisted rehearsals	0.261	1.702	1.000	-3.947	4.468
	Control group	-21.583*	1.773	0.000	-25.966	-17.201
Peer-assisted rehearsals	Solo rehearsal mode	-0.261	1.702	1.000	-4.468	3.947
	Control group	-21.844*	1.938	0.000	-26.634	-17.054
Control group	Solo rehearsal mode	21.583*	1.773	0.000	17.201	25.966
	Peer-assisted rehearsals	21.844*	1.938	0.000	17.054	26.634

Table 3 presents the Bonferroni post-hoc test of the main effect of treatment and control group on stage fright reduction in public speaking among study participants. The result revealed a significant difference between solo rehearsal mode and the control group, with a mean difference of -21.583 (SE = 1.77, $p < 0.001$). In addition, the result indicated significant difference between peer-assisted rehearsals and the control group in the reduction in public speaking anxiety with a mean difference of -21.844 (SE = 1.94, $p < 0.001$). However, the results revealed no significant difference between the solo rehearsal mode and peer-assisted rehearsals in reducing public speaking anxiety, with a mean difference of 0.261 (SE = 1.70, $p > 0.05$). This implies that both methods were equally effective in reducing stage fright among study participants.

H2: There will be a significant effect of gender on stage fright reduction in public speaking among undergraduates. The hypothesis was tested using ANCOVA and the result is presented in Table 2.

The ANCOVA results in Table 2 indicated that gender has no significant effect on PSA among study participants, $F_{(1,53)} = 0.728$, $p > 0.05$, partial $\eta^2 = .014$, which is not statistically significant at the 0.05 level. Therefore, the hypothesis was not supported.

The hypothesis that there will be significant effect of treatment (solo rehearsal mode and peer-assisted rehearsals) on stage fright reduction in public speaking among undergraduates at the University of Ibadan was confirmed. This means that both solo rehearsal mode and peer-assisted rehearsals significantly reduced stage fright in public speaking as participants in these treatment groups had lower anxiety levels compared to the control group. Participants who participated in either of these treatments showed significantly lower anxiety levels compared to those in the control group.

This finding aligns with that of Ingraham (2020) who found a high percentage of participants to consider public speaking as their most significant fear, which ranked higher than other commonly feared situations such as heights and insects. Younger individuals and those with limited public speaking were more anxious about speaking in front of others, compared to older, more experienced speakers who displayed lower anxiety levels. In addition,

participants indicated that rehearsal in private, free from external judgment, helped them to reduce some of the anxiety by boosting their confidence and preparation.

In addition, the result supports Pribyl's (2020) finding that individuals who engaged in a structured skills-based program experienced a notable reduction in anxiety levels, emphasizing the value of acquiring specific speaking skills and strategies for managing anxiety. Moreover, this finding corroborates that of Lucas (2019) who found structured individuals' rehearsal to significantly improve their public speaking abilities and reduced the anxiety levels particularly among those enrolled in public speaking courses. Participants were found to feel more confident and prepared after several weeks of solo practice. These private rehearsals allowed them to refine their delivery without the immediate pressure of audience evaluation, thus enhancing their overall performance and content mastery.

Finally, the current finding agrees with that of Keller (2020) that participants who engaged in solo retrieval practice, where they independently rehearsed and recalled information in private, performed significantly better when under stressful conditions compared to a control group that did not participate in such practices. The solo retrieval group experienced less cognitive load and emotional anxiety, which in turn allowed them to manage high-pressure situations more effectively. This means that practicing independently in a stress-free environment both enhances participants' recall abilities and contributes to their ability to handle stress and perform well in high-pressure scenarios.

Contrasting the previous findings (Lucas, 2017; Keller et al., 2020; Pribyl, 2020), Asysyfa et al. (2019) found a significant negative relationship between group rehearsal practice and speaking anxiety among EFL students in Indonesia. This means that increased frequency of group rehearsal tasks led to decreased anxiety levels, with students citing peer feedback and the safe environment as important in reducing their fears.

Finally, the hypothesis that gender will significantly influence stage fright reduction in public speaking among undergraduates was not supported. This implies that male and female students experienced similar reductions in public speaking anxiety compared to the control group. This finding corroborates that of Schneider and Miller (2022) who found both male and female students to show similar reductions in anxiety after participating in a structured rehearsal program. Further support for the present result is that of Zhang and Morgan (2022) who found feedback and practice done individually or in groups helped students gain greater control over their nerves, leading to reduced public speaking anxiety across both genders. However, Davies and Reynolds (2021) and Morris and Chen (2023) did not find gender differences in the effect of solo and peer-assisted rehearsal methods on public speaking anxiety among their study participants. This indicates that both rehearsal techniques were equally effective for all participants in reducing public speaking anxiety irrespective of gender.

5. CONCLUSIONS

This study investigates the effects of solo rehearsal and peer-assisted rehearsal methods on reducing stage fright in public speaking tasks among undergraduates at the University of Ibadan. Two hypotheses were tested and accepted at $p < .001$ level of significance. The study reveals that both solo rehearsal and peer-assisted rehearsal methods were effective in reducing public speaking anxiety among study participants. Participants who engaged in the two rehearsal methods demonstrate significant reductions in anxiety levels compared to those in the control group. This suggests that structured rehearsal, regardless of whether it is performed alone or in collaboration with peers, plays a pivotal role in mitigating anxiety associated with public speaking tasks. However, gender did not influence the reduction of public speaking

anxiety among study participants, meaning that both male and female students experienced similar levels of anxiety reduction.

Since both solo and peer-assisted rehearsal methods were effective strategies for reducing public speaking anxiety, educators should incorporate both types of rehearsal methods into public speaking curricula to cater to diverse student needs. Because there were no gender differences in the effectiveness of rehearsal methods among study participants, there is a need to develop gender-neutral strategies for addressing public speaking anxiety among study participants.

Some limitations of the study need to be mentioned and addressed in further study. For instance, the study was conducted with a specific sample of undergraduates from the University in different cultural or educational contexts, therefore, further study should include other universities across different geopolitical zones to enhance generalization of study findings.
In addition, data on public speaking anxiety were primarily collected through self-reported questionnaires which were not free of response biases, hence, further study should include observation methods and key informant interviews to triangulate data collected from self-reported questionnaires. Finally, the study concentrates only on two methods of reducing public speaking anxiety which was not exhaustive. Further study investigates external variables such as personal experiences with public speaking, classroom environment, and social support.

ACKNOWLEDGMENT

The authors sincerely thank the participants for their time in completing the questionnaires used in this study.

REFERENCES

Asysfa, A., Handyani, A.M., & Rizkiani, S. (2019). Students' Speaking Anxiety in EFL Classroom. *PROJECT (Professional Journal of English Education*)., 2(4), 581-587 https://doi.org/10.22460/PROJECT.V2I4.P581-587

Agarwal, P. K., & Bain, P. M. (2019). The retrieval practice effect: A meta-analytic review. *Educational Psychology Review*, 31(1), 61-75.

Bartholomay, E.M. & Houlihan, D. (2016). Public speaking scale. In PsycTESTS Dataset. https://doi.org/10.1037/t51140-000

Burgess, C. (2020). The impact of public speaking on communication skills. *Journal of Effective Communication*, 46(3), 212-225.

Cizek, A. (2019). Solo rehearsal and its effectiveness in public speaking. *Communication Research*, 38(4), 456-470.

Darja, S. (2021). Coping mechanisms of professional musicians: Managing stage fright. *Journal of Music Psychology*, 64(2), 145-158.

Davies, A. (2020). Gender differences in public speaking anxiety. *Gender and Communication*, 16(2), 45-59.

Davies, A., & Reynolds, K. (2021). The effects of gender on public speaking anxiety: A comparative study. *Gender and Communication*, 15(1), 24-38.

Eysenck, M. W. (2021). Anxiety, performance, and public speaking: A review. *Emotion and Cognition*, 13(1), 15-30.

Foster, L. (2021). Guided rehearsal and public speaking anxiety: A focus on feedback. *Communication Studies*, 42(2), 89-108.

Frankenstein, J., et al. (2022). Peer-assisted rehearsal and its impact on learning. *Educational Research Review*, 18(1), 45-60.

Gregersen, T., & MacIntyre, P. D. (2019). The impact of public speaking anxiety on communication competence. *International Journal of Communication*, 13, 345-360.

Grieve, R., (2021). The effectiveness of solo rehearsal in enhancing public speaking skills. *Journal of Speech Communication*, 54(3), 200-215.

Hernandez, M., & Liu, Y. (2024). Comparing rehearsal methods in public speaking: Insights from a longitudinal study. *Journal of Educational Psychology*, 116(2), 150-165.

Ingraham, B. (2020). Public speaking anxiety in educational settings. *Journal of Communication Research*, 35(2), 210-225.

Karpicke, J. D., & Blunt, J. (2014). Retrieval practice produces more learning than elaborative studying with concept mapping. *Science*, 331(6015), 772-775.

Keller, P. E. (2020). The role of solo practice in public speaking. *Journal of Experimental Psychology*, 42(1), 44-56.

Lucas, D. (2019). Improving public speaking through structured rehearsal. *Journal of Communication Studies*, 6(3), 243-258.

McPherson, G. E., & Welch, G. F. (2020). Biofeedback and stage fright: A systematic review. *Journal of Music Therapy*, 57(4), 423-442.

Morehead, K. (2019). Peer-assisted learning and public speaking. *Educational Psychology Review*, 28(2), 239-256.

Morris, D. (2021). Solo vs. peer-assisted rehearsal: A comparative analysis. *Communication Research Reports*, 39(3), 201-215.

Morris, D., & Chen, L. (2023). Solo vs. peer-assisted rehearsal: A comparative study on public speaking anxiety. *Communication Research Reports*, 40(1), 29-38.

Olatunji, B. O., Cisler, J. M., & Deacon, B. J. (2020). The cognitive aspects of stage fright: A review. *Clinical Psychology Review*, 78(1), 101-112.

Ougrin, D. (2020). Cognitive and physiological perspectives on stage fright. *Psychological Bulletin*, 147(2), 123-139.

Ougrin, D. (2021). Understanding stage fright: Cognitive and physiological perspectives. *Psychological Bulletin*, 147(2), 123-139.

Pan, S. C. (2021). Spacing effects and public speaking: A meta-analysis. *Psychological Bulletin*, 147(5), 678-692.

Pan, S. C., & Rickard, T. C. (2018). Spacing effects in learning: A meta-analysis. *Psychological Bulletin*, 144(9), 867-889.

Pribyl, G. (2020). Skills-based rehearsal and public speaking anxiety: Impacts and outcomes. *Journal of Education and Training Studies*, 8(2), 67-78.

Roediger, H. L. III (2021). The power of retrieval practice. *Educational Psychology Review*, 33(3), 679-695.

Roelle, J. (2020). Peer feedback in collaborative learning environments: Implications for learning. *Educational Psychology Review*, 32(1), 101-121.

Schneider, E., & Miller, J. (2022). Rehearsal and its impact on public speaking anxiety. *Psychology of Learning*, 19(1), 45-62.

Schwieren, C. (2017). The impact of rehearsal on performance anxiety in public speaking. *Journal of Applied Social Psychology*, 47(10), 563-576.

Spitzberg, B.H., Canary, D.J., & Cupach, W.R. (1994). *A competence-based approach to the study of interpersonal conflict*. Routledge.

Thayer, J. F., & Lane, R. D. (2018). The role of cognitive-behavioural therapy in reducing stage fright: A review. *Behaviour Research and Therapy*, 110, 1-8.

Vygotsky, L. S. (2021). The social context of learning and public speaking. *Educational Psychologist*, 55(1), 34-45.

Zhang, Y., & Morgan, A. (2022). The effects of rehearsal methods on public speaking anxiety among high school students. *Journal of Educational Psychology*, 114(4), 695-709.

ROMANIAN JOURNAL OF PSYCHOLOGICAL STUDIES

HYPERION UNIVERSITY
www.rjps.hyperion.ro

HOW ANXIETY AND DEPRESSION MEDIATE STRESS: A STUDY OF THE URBAN ADULT POPULATION IN BANGLADESH

MAHADI-UL-MORSHED [a], MD. KHABBAB HOSSAIN ANTOR [b], SHAMSUN NAHER ROZY [c], HAMIDA NAZ [d], DHARMENDRA NATH ROY [e], & JANNATUN NUR HAIDER CHOWDHURY[f]

[a] Lead Researcher, Centre for Research in Multidiscipline - CRM, & BONDHU
[b f] Department of Clinical Psychology, University of Dhaka., & Research Assistant, Centre for Research in Multidiscipline - CRM
[c] Psychologist, Somonnito Shishu Punorbashon Kendra, Ministry of Social Welfare, Govt. Republic of Bangladesh
[d] Lecturer, Department of Psychology, Ideal College, Dhanmondi, Dhaka-1205
[e] Clinical Psychologist One Stop Crisis Center (OCC), RTCC Ministry of Women and Children Affairs

Abstract

The main objective of the present study was to find out the current scenarios of Stress in Bangladeshi urban young adult people. The specific objective of the present study was (i) To Investigate whether there is any relationship among Stress, Anxiety, & Depression. (ii) To find out whether anxiety predicts stress individually. (iii) To see whether depression predicts stress individually. 402, both male and female young adult people who live in urban areas and the 18–39 age range, were selected following the purposive sampling method as respondents in the present study. This present study required i) Personal Information Form ii) a Bangla Version of Depression, Anxiety, Stress Scale (DASS 21) developed by Lovibond and Lovibond (1995), which measures the depression, anxiety and stress of the respondents. The findings indicate that the correlation among Stress and Anxiety variables was positive, $r (402) = 1$, $p < .001$., .059, $p < .001$. Besides negative correlation was seen on Depression $r (402) = .058$, $p < .001$. According to this research, anxiety was the best predictor, accounting for 49.5% of the variation in depression and 53.2% of the variation in stress. It seems that the result fits the model. Finally, It concluded that Significant relationships were found between stress, anxiety, and depression among the study participants. Depression and Anxiety are also a significant predictor of stress, indicating a positive relationship between the two mental health conditions.

Keywords: *Stress, Depression, Anxiety, Urban Adult People*

Corresponding author: Mahadi-Ul-Morshed
E-mail address: mahadi.psy2006@gmail.com

1. INTRODUCTION

A common description is that stress is a state that includes psychological strain or apprehension brought on by a difficult situation. Stress is a natural human response that drives us to overcome challenges and risks in our lives. Everyone experiences stressful times (WHO, 2024). Many people have defined stress in a variety of ways. Social scientists, anthropologists, psychologists, doctors, and even zoologists have expressed interest in the subject. We believe that examining it from multiple perspectives would be highly informative, giving us a thorough grasp of the phenomenon and its historical roots. (Selye, 1956). Bangladesh is one of the world's developing nations. Additionally, its infrastructure is growing. To secure their sources of income, people are relocating to larger cities. The atmosphere of the town becomes stressed as a result. People living in cities must deal with additional difficulties, which adds to their mental stress levels. However, not everyone experiences the same effect on their mental health. In addition, it varies based on factors including age, income, marital status, and education level. Studies show that a range of mental diseases affect 6.5% to 31% of adult Bangladeshis(Hossain et al., 2014a).

A new diagnostic category in the DSM-5 includes disorders that are brought on by particular stressful and possibly traumatic circumstances, “Trauma and Stress-Related Disorders,” which includes both Adjustment Disorders (ADs) and PTSD(American Psychiatric Association, 2013). The main types of stress include acute stress, an instantaneous, transient stress reaction brought on by certain circumstances or occurrences known as acute stress. Situations like speaking in front of an audience, taking tests, or running into unforeseen obstacles at work or home are common causes of acute stress. Acute stress is acceptable and can even be inspiring, but long-term exposure to stresses without appropriate coping mechanisms can have detrimental consequences on one's health.(Friedman, n.d. 2013)

Chronic stress: Chronic stress is long-term, chronic stress brought on by constant hardships, demands, and obstacles in life. Chronic health ailments, marital problems, work unhappiness, and financial difficulties are familiar sources of chronic stress. Long-term stress raises the chance of immune system malfunction, depression, anxiety, and cardiovascular disease, among other adverse effects on one's physical and mental health (Friedman, 2013). Eustress: Eustress, also known as good or constructive stress, gives people the drive and inspiration to take on new challenges, adjust to new situations, and accomplish their goals. In contrast to the detrimental state of distress, eustress is linked to feelings of contentment, enthusiasm, and anticipation. A few examples include starting a new job, planning a wedding, and preparing for an event. Decreased stress can improve personal development, resilience, and general well-being (Friedman, 2013). Compared to the 6.5% identified in the only other community-based study conducted in Bangladesh, the observed prevalence of 28% is much greater. The second study, conducted in a rural region, employed a different case-finding tool and included children whose psychiatric frequency was lower in the denominator group (Islam et al., 2003). In 61.4% of cases, stress has been determined to be pervasive. Numerous factors, such as male gender, marital status, low educational attainment, multiple disabilities, comorbid medical conditions, poor sleep quality, living in a rural area, hearing

impairment, disability beginning later in life, and positive COVID-19 test results, have been linked to these mental health issues.

The World Health Organization reports that PWDs have greater rates of illness and mortality. This is particularly true for people who suffer from underlying illnesses that impact the heart, immunological system, diabetes, or respiratory system. In addition, those with disabilities are more vulnerable to the pandemic's effects on their mental health than on their physical health. These variables make it clear that psychological vulnerabilities can arise as a result of stressful conditions such as the COVID-19 outbreak, and people with disabilities typically have worse mental health than people without disabilities. A US study in February–March 2021 reported similar differences by disability status: symptoms of anxiety or depression (56·6% [PWDs] vs. 28·7%), new or increased substance use (38·8% vs. Ethiopia, Canada, the US and the UK, to mention a few countries, are good examples for which studies revealed the negative consequences of endemic on those with disabilities.(Roy et al., 2023).

An overview of mental well-being and stressors concerns in Bangladesh reveals gaps in the field's understanding and provision of care for mental health issues connected to stress. A concept of total management through a PHC approach has supplanted the practice of attending to mental health issues only after a crisis has occurred, leading to some progress. There are plans to improve workforce assistance and training, improve logistics, and build infrastructure even further. Collaboration with other pertinent government agencies and the effective use of multidisciplinary teams in service design and delivery are essential for success. Owing to the current shortage of resources, aid from national and international organizations is necessary(Alam et al., 2021). More than 83% of people with COVID-19 feel emotional stress, which can cause tumultuous relationships, irritable outbursts, and sleep disturbances in the family. The results of PCA and HCA showed a strong correlation between respondents' perceptions and human stress factors, which was consistent with the situation that was already in place in the nation. The results of PCM shed insight into the relationship between human stress elements and reveal that food crises, daily expenditure reductions, and financial difficulty are all related to stress. Additionally, impeding kids' goals for their future careers and formal education is a major source of mental stress (Amit et al., 2021). A necessary component of the urbanization process is the migration of people from rural to urban areas. Moreover, society's economy shifted from being centred on agriculture to being focused on sophisticated industrial output. (Lipi & Hasan, 2021). The United Nations Development Program projects that over two-thirds of people on the planet will live in cities by 2050. However, according to UNDP (2017), not all forms of urbanization are effective if they are not planned. The policy framework, urban poverty, urban health, and environmental challenges are all impacted by the city's rapid population growth. The expanding urban population and increasing rate of urbanization are causing new mental health issues. There is some evidence between mental health issues and urbanization. Numerous social, economic, and environmental elements have an impact on mental health in urban environments. In metropolitan locations, prevalent mental illnesses are more common (Lipi & Hasan, 2021).

In the twenty-first century, stress is a result of all situations and is associated with psychopathology and urbanization. Threats and urban elements such as time pressure, unhealthy habits, pollution, traffic, crime, job uncertainty, limited social support, trouble

connecting lengthy distances, and work-home imbalance can cause stress. Urban lifestyles raise the risk of metabolic, cardiovascular, and cancer diseases, which might have a negative impact on mental health. Diabetes, stroke, hypertension, respiratory problems, alcoholism, substance abuse, chronic infections (e.g., HIV), and common mental illnesses are all more prevalent in cities. Pollution, unstable economic situations, a lack of access to nature, and volatility all have a negative impact on the mental health of city dwellers(Ventriglio et al., 2021a).

One of the most common psychological disorders is anxiety, which is a collection of mental illnesses marked by excessive concern, excessive (often unjustified) dread, obsessive thoughts, and disturbed sleep as a result of fear or uneasiness. (Khan & Khan, 2020a). According to the findings of the Global Burden of Disease Study conducted in 2017, there are approximately 284 million people (3.8% of the global population) who suffer from various types of anxiety disorders. This represents a 32.3% rise from 1990 to 2017 (James et al., 2018). Mental health conditions have become an important issue worldwide. Globally, the prevalence of depression is estimated to be close to 264 million people. (James et al., 2018). For those between the ages of 15 and 29, suicide is the second leading cause of death, and depression has a comparatively high death rate. According to the findings of a study conducted by the WHO, there are approximately 6.4 million people in Bangladesh who suffer from depression disease. (van Ommeren et al., 2005). Hossain (2014) suggested that the burden of mental disorders in Bangladesh is very high and reported that mental disorders varied from 6.5 to 31.0% among adults. (Hossain et al., 2014a). Mental health conditions can be affected by various factors, including Covid-19. Recent research indicates that young adult college students experience increased levels of depression, anxiety, and stress. In this research, the DASS-21 scale was used. It is unclear what techniques college healthcare experts may employ to aid students in reducing these mental health difficulties(Mahmoud et al., 2012).

A study provided additional information on the relationship between life events, cognitive factors, and depression. The results show that there is only a correlation between depressive symptoms and stressful life events in those who display particular cognitive vulnerabilities. People with an attentional bias toward negative stimuli, particularly those who ruminate, may be more prone to the adverse consequences of stressful situations(Łosiak et al., 2019). The COVID-19 pandemic has negatively impacted countless individuals' physical, mental, and financial well-being. Uncertainty surrounds the precise effects of this pandemic on highly marginalised populations, such as urban poor people. The study's goal was to investigate the links between financial concerns and symptoms of PTSD and depression in poor urban Dhaka, Bangladesh, citizens during the COVID-19 pandemic. Individual interviews were used in a cross-sectional survey in six impoverished communities (often known as "slums") in Dhaka during August and September 2020. A systematic questionnaire measuring lifestyle, depression, PTSD, financial well-being about the COVID-19 pandemic, and socio-demographics was used to interview participants (Islam et al., 2020). According to a qualitative study conducted in Bangladesh, PWDs' physical and mental well-being, social support, food security, and economic stability have all been severely impacted(Roy et al., 2023). From July 2015 to June 2016, a mixed methodological study or a

study that combined qualitative and quantitative components was carried out. A new mixed-methods assessment of adult psychosocial stresses has been developed. According to the findings, the latest scale appears trustworthy and culturally valid for measuring stressors among adult Bangladeshi people. (Mullick et al., 2019). A study was carried out in Bangladesh's Bhashantek slum in Dhaka. Slum settlements are growing as a result of urbanisation, climate change, and Bangladesh's ongoing poverty, which is driving large numbers of people into cities. The study team included two anthropologists (ASMEA, ARA) with extensive qualitative research expertise in Bhashantek and a doctoral candidate (SSW) in global public health who is a skilled qualitative researcher in global mental health. Two other members were a professor of international mental health (BAK) at George Washington University, a psychiatrist and a medical anthropologist, and a professor of public health (MS) at BRAC University, who has spent decades conducting research in Bangladesh. Qualitative observations of distress idioms in urban Bangladesh from a group of young males living in slums were made for this study. We offer a wide range of regional terminology to express different levels of suffering about regional self-concepts in a broader sociocultural setting. We also explain the fundamental term for distress, "tension," along with its genesis, phenomenology, and related consequences. To bring the findings together, we propose an ethno-psychological model that explains the link between "tension" and a wide range of human emotions and experiences, including but not limited to mental illness. The findings of this study can help create culturally competent evaluation instruments as well as preventative and treatment plans for the millions of males living in slums (Wahid et al., 2022).

Some research has been conducted in the past that has focused on various specific issues. For example: Examination-related Stress. This study demonstrates that examinations have a negative impact on students' mental health in terms of stress, anxiety, and sadness(Arusha & Biswas, 2020). Another study focuses on stress in school adolescents. This study found that stress symptoms are common among urban and semi-urban adolescents in Dhaka, Bangladesh. As a result, urgent measures should be implemented to combat the growth of stress among Bangladeshi teenagers(Anjum et al., 2022) . For this instance, my interest grows to investigate this phenomenon in a general way and over a wide population.

Research Question: What is the scenario of Stress in Bangladesh's urban young adult people?

Rationale of the study

Although living in a city has made people's lives faster and more convenient, it has also presented many difficulties when it comes to depression. The excessive busyness of city life has led to increasing feelings of loneliness and a decline in interpersonal communication and support. Consequently, the Depression significantly deteriorated, which, in turn, affected the overall economy. However, due to the lack of accurate statistics, neither the government nor mental health institutions can effectively address these issues. Considering the relationship between the urban environment and depression, it is crucial to study the depression of adults living in urban areas of Bangladesh within the current context. By conducting surveys on urban adults, we can scientifically determine and predict the

interrelationship between urbanisation and their mental health status, leading to positive contributions in this field.

2. OBJECTIVE

2.1. OBJECTIVES

The main objective of the present study was to find out the current scenarios of Stress in Bangladeshi urban young adult people.

The specific goals are to:

1. To Investigate whether there is any relationship among Stress, Anxiety, & Depression.
2. To find out whether Anxiety predicts Stress individually.
3. To see whether Depression predicts Stress individually.

3. METHOD

3.1Target Population

The study was conducted to know about depression in Bangladeshi urban young adult people. The age of young adults was usually considered 18-39. Those ages above 18 and less than 39 were considered as the population of this study (Edward, 1980).

3.2 Sample Size and Sampling Technique

In this study, 402 data were collected from Dhaka and Sylhet and were selected purposively. The people who were living in Dhaka and Sylhet city and the sample was selected convenient sampling technique.

3.3 Research Design

A cross-sectional survey design was used in the present study. According to this design, data was collected at a single point in time.

3.4 Research instruments

For data collection, the following instruments were used in this study:

1. *Personal Information Form (PIF)*

The first section is used for primary data collection related to demographic information about the respondents. This PIF involved information about the respondent's self and family history. These will include the respondent's age, socio-economic and marital status, designation, salary, number of family members, and educational qualifications.

2. *Bangla Version of Depression, Anxiety, Stress Scale (DASS 21)*

Lovibond and Lovibond (1995) developed DASS-21. This DASS version, which consists of 1 valid set of 3 self-report scales with 21 items, was created to assess the negative emotional states of stress, anxiety, and depression. The frequency or severity of each participant's experiences over the last week is measured on a 4-point Likert scale,

emphasising states over attributes. These scores vary from 0, which indicates that the client thought the item didn't apply to them at all, to 3, which suggests that the client thought the item was used by him or her either frequently or very often. At the same time, the first and second sections were in the middle of each other. Furthermore, the instructions emphasise that there is no right or wrong answer. Each subscale consists of 7 questions. The severity rating index evaluates each participant's total score or the seven questions they answered correctly on each of the four sub-scales. The Bangla DASS-21 was adapted, and Cronbach's Alpha for Depression, Anxiety, and Stress subscales were 0.987.0.957 and 0.964, respectively. (Alim et al., 2014) Adapted by Morshed, & Naz (2024), and Cronbach's alpha Anxiety, Stress, and Depression were 0.823, 0.798, and 0.861, respectively.

3.5 Procedure

First, consent was obtained to gather data and build relationships with participants to collect precise data from them. Once they had established a rapport, the researcher went over the investigation's objectives while assuring them that their responses would remain confidential. Subsequently, the participants were directed to carefully examine the scale components and provide prompt answers on questionnaires. Comparatively, the respondents were instructed to quickly answer the questionnaire and carefully read the scale items. They were instructed to select the corresponding box. They also asked not to leave out any questions on the questionnaire and to be informed that there was no right or wrong response. They ensured the information would be kept private and used exclusively for research. When they completed the work, they received a lot of praise. On average, an estimated 20 minutes were needed for each respondent to receive all of the instruments. The collection of all data will take three months.

4. RESULTS

Table 1. Correlation matrix among Stress, Anxiety and Depression

Variables	1	2	3
1. Stress	-		
2. Anxiety	.059**	-	
3. Depression	-.058**	.536**	-

** Correlation is significant at the 0.01 level (2-tailed).

To begin with, the correlation matrix of Table 1 presents the simple correlation of the independent variable with each dependent variable. The result indicates that the correlation among Stress and Anxiety variables was positive, $r\ (402) = 1$, $p < .001$, .059, $p < .001$. Besides negative correlation was seen on Depression $r\ (402) = .058$, $p < .001$.

Table 2. Selected Statistics from Regression of Stress on Anxiety

Variables	R	R^2	R^2 change	P
Predictor Variable: Anxiety	.730	.532	.531	.001
Dependent Variable: Stress				

Anxiety was the best predictor, accounting for 53.2% of the variance in stress (R2 = 0.532), according to the results shown in Table 2. This implies a strong predictive link between the two variables, with anxiety alone accounting for almost half of the variability in stress levels.

Table 3. Simple regression of Stress on Anxiety

Model	Unstandardized Coefficients B	Std. Error	Standardized Coefficients B	t	P
(Constant)	4.326	.265	.730	16.333	.001
Anxiety	.706	.033		21.335	.001

Dependent Variable: Stress

To find out if anxiety and stress are strongly predicted by one another, a straightforward linear regression analysis was performed. According to the findings, stress is significantly predicted by anxiety. Stress rises by 0.706 units for every unit increase in anxiety, according to the unstandardized regression coefficient (B = 0.706). A strong positive correlation is indicated by the standardized beta coefficient (β = 0.730), which means that a rise of one standard deviation in anxiety is correlated with an increase of 0.730 standard deviations in stress. According to these results, stress levels are positively correlated with anxiety levels.

Table 4. The Overall F-Test for Regression of Stress on Anxiety

Sum of variations	SS	df	MS	F	P
Regression	3884.086	1	3884.086	6.719	.001
Residual	3413.108	400	8.533		
Total	7297.194	401			

The findings in the table above demonstrate that stress is significantly predicted by anxiety. The ANOVA findings, which validate that the model is statistically significant, show that the regression model fits the data well. This implies that anxiety has a significant role in predicting stress and that there is little probability of a correlation between the two variables.

Table 5. Selected Statistics from Regression of Stress on Depression

Variables	R	R^2	R^2 change	P
Predictor Variable: Depression	.693	.480	.479	.001

Dependent Variable: Stress

According to the above table, depression was the best predictor, explaining 48% of the variation in stress (R2 = 0.48). This indicates a strong and significant correlation between the two variables, with depression alone accounting for almost half of the variability in stress levels.

Table 6. Simple Regression of Stress on Depression

Model	Unstandardized Coefficients B	Std. Error	Standardized Coefficients B	t	P
(Constant)	3.944	.307	.693	12.863	.001
Depression	.611	.032		.549	.001

Dependent Variable: Stress

Determining whether depression predicts stress was done using a straightforward linear regression analysis. Stress is significantly positively predicted by depression, according to the findings. The unstandardized regression coefficient (B = 0.611) indicates that stress

rises by 0.611 units for every unit increase in depression. When depression increases by one standard deviation, stress increases by 0.693 standard deviations, according to the standardized beta coefficient (β = 0.693). These results show that stress and depression are strongly and statistically significantly correlated.

Table 7. The Overall F-Test for Regression of Stress on Depression

Sum of variations	SS	df	MS	F	P
Regression	3501.542	1	3504.542	369.614	.000
Residual	3792.652	400	9.4820		
Total	7297.194	401			

The table above demonstrates how well anxiety predicts outcomes. The model fits this outcome. ANOVA is also used to determine whether stress is statistically significant.

5. DISCUSSION

The main objective of the present study was to find out the current scenarios of Stress in Bangladeshi urban young adult people. The specific objective of the present study was (i) To Investigate whether there is any relationship among Stress, Anxiety, & Depression. (ii) To find out whether anxiety predicts stress individually. (iii) To see whether depression predicts stress individually. The obtained data was analyzed through correlation and regression methods.

To investigate the relationship between Stress, Anxiety, and Depression, a Correlation analysis was conducted. The correlation analysis in the study was significant at the 0.01 level (2-tailed). The correlation table in the research indicates that Stress and Anxiety show a positive correlation. Besides, stress and depression indicate a negative correlation. A negative correlation is a relationship between two variables that move in opposite directions. In other words, when stress increases, depression decreases. Moreover, Anxiety and Depression indicate a strong positive correlation. These correlation coefficients provide insights into the associations between stress, anxiety, and depression in the study population.

Threats and urban factors such as work-home imbalance, long commutes, bad habits, pollution, traffic, crime, employment uncertainty, and connecting problems can bring stress. That's why it can be said that mental disorders are more common in cities. So, this study also supports the findings that explain how stress impacts urban areas (Ventriglio et al., 2021).

One of the most common psychological disorders is anxiety, which is a collection of mental illnesses marked by excessive concern, excessive (often unjustified) dread, obsessive thoughts, and disturbed sleep as a result of fear or uneasiness. Our study also supports the findings that anxiety predicts stress individually in different conditions (Khan & Khan, 2020).

This research discusses the relationship between anxiety and stress among urban young adults in Bangladesh. It mentions a positive correlation between stress and anxiety, indicating that as stress levels increase, anxiety levels also tend to grow. Additionally, the results show that anxiety is a strong predictor of stress, explaining a significant portion of the variance in stress levels. This suggests that anxiety plays a crucial role in influencing stress levels among the urban young adult population in Bangladesh.

The research findings indicate that anxiety is a significant predictor of stress among urban young adults in Bangladesh. This regression analysis illustrates that anxiety alone

explains a substantial amount of the variance in stress levels (53.2%). This suggests that higher levels of anxiety are associated with higher levels of stress among the study population. Therefore, the evidence from the regression analysis supports the notion that anxiety can predict stress individually in this context (Mahmoud et al., 2012).

The relationship between depression and stress is examined through regression analysis. The results indicate that depression is a significant predictor of stress among Bangladeshi urban young adults. In the regression analysis of stress on depression, the unstandardised coefficient (B) for depression is 0.611, suggesting that as stress increases by one unit, depression also increases by 0.611 units. Additionally, the standardised beta coefficient (β) for depression is 0.549, indicating that as stress increases by one standard deviation, depression increases by 0.549 standard deviations (Łosiak et al., 2019; Mahmoud et al., 2012).

Some factors influence stress in Bangladesh. They are:

Urban factors such as work-home imbalance, long commutes, and job insecurity increase stress in Bangladeshi cities (Islam et al., 2020; Roy et al., 2023). Financial worries, lifestyle challenges, and poor living conditions in urban slums have been linked to increased stress during the COVID-19 pandemic (Ventriglio et al., 2021b).

The COVID-19 outbreak has exacerbated stress due to issues like economic instability, food security concerns, and reduced social support, significantly affecting individuals with disabilities. The transition to city life to secure income sources has added stress to the urban population in Bangladesh.(Friedman, n.d.). Other factors, including age, income, marital status, and education level, can also influence individual stress levels in Bangladesh.(Hossain et al., 2014b).

LIMITATIONS

A number of limitations of this study need to be mentioned:

1. The data was gathered exclusively from the cities of Sylhet and Dhaka. The information would be more trustworthy if it could also be gathered from other cities. So, the sample size of this research can be extended.

2. The present study was conducted without funds. If it is possible to add funds, it will be possible to focus more precisely on in-depth areas.

3. The study's narrow emphasis on detecting depression levels in young adult Bangladeshi individuals between the ages of 18 and 39 may have limited the findings' applicability to other age groups or rural populations.

RECOMMENDATIONS

1. Conduct further research to explore the prevalence of depression in Bangladeshi urban young adults across a broader age range, including individuals outside the 18-39 age bracket. This would provide a more comprehensive understanding of depression prevalence in different age groups within the urban population.

2. Expand the assessment of depression by incorporating a more extensive range of items from the Bangla DASS-21 scale or utilising additional validated measures to capture a more nuanced understanding of depression in caregivers of children. This broader assessment

could offer a more comprehensive insight into the mental health challenges faced by this demographic group.

3. Investigate the influence of various socio-economic and cultural factors on depression prevalence in Bangladeshi urban young adults. By examining variables such as socioeconomic status, access to mental health resources, and cultural beliefs, future studies can provide a more holistic view of the determinants of depression in this population.

6. CONCLUSIONS

This research indicates that Stress, anxiety, and depression are prevalent among urban young adults in Bangladesh, with significant correlations found between these mental health issues. Anxiety plays a crucial role in influencing stress levels, explaining a substantial portion of the variance in stress among the study population. Depression is also a significant predictor of stress, indicating a positive relationship between the two mental health conditions. The study highlights the impact of urban factors like work-home imbalance, long commutes, and employment uncertainty on stress levels in Bangladeshi cities. Future research should consider exploring other cities, age groups, and external factors like socioeconomic status for a more comprehensive understanding of stress in the urban Bangladeshi population.

ACKNOWLEDGMENT

The authors financed the complete research process, from data collection to analysis, independently.

REFERENCES

Alam, F., Hossain, R., Ahmed, H. U., Alam, M. T., Sarkar, M., & Halbreich, U. (2021). Stressors and mental health in Bangladesh: Current situation and future hopes. BJPsych International, 18(4), 91–94. https://doi.org/10.1192/bji.2020.57

Alim, S. A. H. M., Kibria, S. M. E., Lslam, M. J., Uddin, M. Z., Nessa, M., Wahab, M. A., & Lslam, M. M. (2014). Translation of DASS 21 into Bangla and validation among medical students. Bangladesh Journal of Psychiatry, 28(2), Article 2. https://doi.org/10.3329/bjpsy.v28i2.32740

American Psychiatric Association (Ed.). (2013). Desk reference to the diagnostic criteria from DSM-5. American Psychiatric Publishing.

Amit, S., Barua, L., & Kafy, A.-A. (2021). A perception-based study to explore COVID-19 pandemic stress and its factors in Bangladesh. Diabetes & Metabolic Syndrome: Clinical Research & Reviews, 15(4), 102129. https://doi.org/10.1016/j.dsx.2021.05.002

Anjum, A., Hossain, S., Sikder, T., Uddin, M. E., & Rahim, D. A. (2022). Investigating the prevalence of and factors associated with depressive symptoms among urban and semi-urban school adolescents in Bangladesh: A pilot study. International Health, 14(4), 354–362. https://doi.org/10.1093/inthealth/ihz092

Arusha, A. R., & Biswas, R. K. (2020). Prevalence of stress, anxiety and depression due to examination in Bangladeshi youths: A pilot study. Children and Youth Services Review, 116, 105254. https://doi.org/10.1016/j.childyouth.2020.105254

Edward P., S. (1980). Child & Adolescent Development. Scott, Foresman Company.

Friedman, W. J. (n.d.). Types Of Stress And Their Symptoms. MentalHelp.Net. Retrieved June 24, 2024, from https://www.mentalhelp.net/blogs/types-of-stress-and-their-symptoms/

Hossain, M. D., Ahmed, H. U., Chowdhury, W. A., Niessen, L. W., & Alam, D. S. (2014a). Mental disorders in Bangladesh: A systematic review. BMC Psychiatry, 14(1), 216. https://doi.org/10.1186/s12888-014-0216-9

Islam, M. S., Rahman, M. E., Banik, R., Emran, M. G. I., Saiara, N., Hossain, S., Hasan, M. T., Sikder, M. T., Smith, L., & Potenza, M. N. (2020). Correlates of Financial Concerns and Symptoms of Depression and Posttraumatic Stress Disorder in Impoverished Urban-dwelling Individuals in Bangladesh During the COVID-19 Pandemic: Face-to-face Interview Findings. OSF. https://doi.org/10.31234/osf.io/nfr5m

Islam, Md. M., Ali, M., Ferroni, P., Underwood, P., & Alam, Md. F. (2003). Prevalence of psychiatric disorders in an urban community in Bangladesh. General Hospital Psychiatry, 25(5), 353–357. https://doi.org/10.1016/S0163-8343(03)00067-7

James, S. L., Abate, D., Abate, K. H., Abay, S. M., Abbafati, C., Abbasi, N., Abbastabar, H., Abd-Allah, F., Abdela, J., Abdelalim, A., Abdollahpour, I., Abdulkader, R. S., Abebe, Z., Abera, S. F., Abil, O. Z., Abraha, H. N., Abu-Raddad, L. J., Abu-Rmeileh, N. M. E., Accrombessi, M. M. K., … Murray, C. J. L. (2018). Global, regional, and national incidence, prevalence, and years lived with disability for 354 diseases and injuries for 195 countries and territories, 1990–2017: A systematic analysis for the Global Burden of Disease Study 2017. The Lancet, 392(10159), 1789–1858. https://doi.org/10.1016/S0140-6736(18)32279-7

Khan, Md. M. A., & Khan, Md. N. (2020a). Effects of psychosocial and socio-environmental factors on anxiety disorder among adolescents in Bangladesh. Brain and Behavior, 10(12), e01899. https://doi.org/10.1002/brb3.1899

Lovibond, S. H., & Lovibond, P. F. (1995). Depression Anxiety Stress Scales DASS-21. https://psycnet.apa.org/doiLanding?doi=10.1037%2Ft01004-000

Lipi, A. I., & Hasan, N. (2021). URBANIZATION IN BANGLADESH: EMERGING CHALLENGES AND THE WAY FORWARD. Bangladesh Journal of Multidisciplinary Scientific Research, 3(1), 33–44. https://doi.org/10.46281/bjmsr.v3i1.1112

Łosiak, W., Blaut, A., Kłosowska, J., & Łosiak-Pilch, J. (2019). Stressful Life Events, Cognitive Biases, and Symptoms of Depression in Young Adults. Frontiers in Psychology, 10. https://doi.org/10.3389/fpsyg.2019.02165

Mahmoud, J. S. R., Staten, R. "Topsy," Hall, L. A., & Lennie, T. A. (2012). The Relationship among Young Adult College Students' Depression, Anxiety, Stress, Demographics, Life Satisfaction, and Coping Styles. Issues in Mental Health Nursing, 33(3), 149–156. https://doi.org/10.3109/01612840.2011.632708.

Morshed, M. U., & Naz, H. (2024). Validation of Stress scale on Bangladeshi Urban Adult Population. Unpublish Manuscript. Centre for Research In Multidiscipline-CRM.

Mullick, M. S. I., Algin, S., Islam, M., Phillipson, A., Nahar, J. S., Morshed, N. M., Chowdhury, H. R., & Shahid, S. F. B. (2019). Dhaka Stress Scale-Adult: A scale for assessing psychosocial stressors among adults. Bangabandhu Sheikh Mujib Medical University Journal, 12(3), 119–127. https://doi.org/10.3329/bsmmuj.v12i3.43328

Roy, N., Amin, M. B., Mamun, M. A., Sarker, B., Hossain, E., & Aktarujjaman, M. (2023). Prevalence and factors associated with depression, anxiety, and stress among people with disabilities during COVID-19 pandemic in Bangladesh: A cross-sectional study. PLOS ONE, 18(7), e0288322. https://doi.org/10.1371/journal.pone.0288322

SELYE, H. (1956). What is stress. Metabolism: Clinical and Experimental, 5(5), 525–530. van Ommeren, M., Saxena, S., & Saraceno, B. (2005). Mental and social health during and after acute

emergencies: Emerging consensus? Bulletin of the World Health Organization, 83(1), 71–75; discussion 75-76.

Ventriglio, A., Torales, J., Castaldelli-Maia, J. M., Berardis, D. D., & Bhugra, D. (2021a). Urbanization and emerging mental health issues. CNS Spectrums, 26(1), 43–50. https://doi.org/10.1017/S1092852920001236

Wahid, S. S., Sarker, M., Arafat, A. S. M. E., Apu, A. R., & Kohrt, B. A. (2022). Tension and Other Idioms of Distress Among Slum Dwelling Young Men: A Qualitative Study of Depression in Urban Bangladesh. Culture, Medicine, and Psychiatry, 46(2), 531–563. https://doi.org/10.1007/s11013-021-09735-4

World Health Organization(WHO). (2024). World Health Organization(WHO). https://www.who.int/news-room/fact-sheets/detail/depression

ROMANIAN JOURNAL OF PSYCHOLOGICAL STUDIES

HYPERION UNIVERSITY
www.rjps.hyperion.ro

CLINICAL AND COGNITIVE PROFILES OF CHILDREN REFERRED FOR POOR MEMORY AND ACADEMIC DIFFICULTIES: A RETROSPECTIVE CASE SERIES FROM BANGLADESH

JANNATUN NUR HAIDER CHOWDHURY [a]

[a] University of Dhaka, Faculty of Biological Sciences, Department of Clinical Psychology

Abstract

Children are frequently referred to psychological services for complaints of poor memory and academic underachievement, yet such complaints often reflect broader cognitive difficulties rather than isolated memory impairment, particularly in low-resource settings. This study examined the clinical and cognitive characteristics of 12 children aged 6–14 years referred for poor memory and academic difficulties at a tertiary child development center in Bangladesh. Using a retrospective case series design, data from clinical records included demographic information, caregiver-reported complaints, WISC-IV cognitive assessments, and diagnostic formulations. Quantitative data were analyzed descriptively; qualitative thematic analysis was applied to clinical narratives. The mean Full Scale IQ was 57.50, with 58.3% meeting criteria for Intellectual Disability. Although 41.7% of caregivers reported poor memory as a primary concern, objective working memory impairment was identified in only half of the cases. Memory complaints more commonly reflected global intellectual limitations, slow processing speed, or reduced verbal comprehension. Qualitative themes included cumulative academic failure, delayed help-seeking, curricular-cognitive mismatch, and preserved adaptive strengths. Caregiver-reported poor memory among children referred for academic difficulties often serves as a non-specific label for broader intellectual challenges. Integrating standardized cognitive assessment with careful interpretation of caregiver narratives is essential for accurate diagnosis and educational planning in low-resource settings.

Keywords: *intellectual disability, academic difficulties, memory complaints, WISC-IV, retrospective case series.*

Corresponding author: Jannatun Nur Haider Chowdhury
E-mail address: jannatunnur-2022118400@psy.du.ac.bd

1. INTRODUCTION

Worldwide, caregivers' concerns about their children's memory difficulties consistently rank as a leading cause of psychological referral (Alloway, 2009; Deary et al., 2007). In clinical practice, however, such complaints rarely indicate isolated memory impairment. Instead, they typically reflect broader cognitive or developmental challenges that interfere with learning (Baddeley, 2000; Swanson & Alloway, 2012). This distinction carries special importance in resource-limited environments, where restricted availability of standardized evaluation tools often results in extended periods of educational misalignment. The present study examines whether caregiver-reported memory complaints in a Bangladeshi clinical sample correspond to objective working memory deficits or to broader intellectual limitations.

Intellectual Disability (ID) and borderline intellectual functioning represent significant yet frequently under-recognized contributors to academic underachievement in childhood. ID is defined by significant limitations in both intellectual functioning (typically IQ below 70) and adaptive behavior, with onset during the developmental period (American Psychiatric Association [APA], 2022). Borderline intellectual functioning (IQ range 70–85), while not meeting full diagnostic thresholds, similarly places children at elevated risk for persistent academic difficulties when educational expectations exceed cognitive capacities (Giofrè, Toffalini, & Cornoldi, 2021). Global ID prevalence is estimated at approximately 1%, with disproportionate burden in low- and middle-income countries (LMICs) due to limited early screening infrastructure (World Health Organization [WHO], 2023). Many children with mild to moderate ID remain unidentified until they encounter formal education (Olusanya et al., 2020).

In clinical practice, caregivers rarely present with complaints of "low IQ." Instead, they commonly report that their child has "poor memory," "cannot retain lessons," or "forgets what is taught in school" (Alloway, 2009; Deary et al., 2007). This discrepancy between caregiver-reported memory problems and objective cognitive profiles has received limited empirical attention, particularly in low-resource settings where access to standardized assessment is constrained. This study introduces the concept of the "memory mismatch phenomenon" to describe the common clinical scenario where caregiver-reported memory complaints do not correspond to isolated working memory deficits on standardized assessment. Instead, such complaints often reflect broader intellectual limitations affecting multiple cognitive domains.

Several mechanisms explain this mismatch. First, caregivers observe functional academic failures and intuitively attribute these to memory failure, as memory is the most visible cognitive process involved in learning (Hossain, Rahman, & Khan, 2022). Second, cultural emphasis on rote memorization in South Asian educational systems leads caregivers to equate academic success with memory capacity (Islam, Rahman, & Ahmed, 2023). Third, stigma surrounding ID may lead caregivers to prefer the less stigmatizing label of "memory weakness" (Ghouri & Khan, 2020). Children with global intellectual limitations require different interventions (curricular modification, functional skill development) than those with isolated working memory deficits (memory strategy training). Misattributing global ID to "poor memory" delays appropriate educational placement.

Bangladesh, a lower-middle-income country with over 170 million people, faces substantial challenges in identifying children with ID. Recent national data indicate neurodevelopmental disorder prevalence of approximately 1.7%, affecting nearly 3 million children (Bangladesh Bureau of Statistics [BBS], 2022). However, most remain undiagnosed. The country has fewer than 100 child psychologists, concentrated in Dhaka, with no formal school psychology cadre. Approximately 20% of children attend Madrasas, which have fewer resources for identifying difficulties (BBS, 2022). Grade repetition affects 30% of children by age 12, but repetition rarely includes diagnostic assessment (UNESCO, 2024). Stigma leads caregivers to avoid disability labels, instead using proxies like "poor memory" (Islam et al., 2023). Only 23% of Bangladeshi caregivers correctly identify ID symptoms, and fewer than 10% know specialized assessment is available (Islam et al., 2023). Many caregivers initially attribute delays to "late blooming," seeking assessment only after prolonged failure (Walker et al., 2011). Consequently, by the time children reach tertiary assessment, they have typically experienced years of academic failure, with mean age 9.45 years despite difficulties evident from early primary grades.

A central argument is that "poor memory" as a caregiver complaint is not equivalent to any specific deficit or diagnosis. Subjective complaints identify that a problem exists but cannot specify its cause. Cognitive deficits are objectively measured impairments on standardized indices (low working memory, low processing speed, low verbal comprehension, or low perceptual reasoning). Diagnostic entities (ID, borderline functioning, ADHD, SLD) require evidence of functional impairment and developmental history. Standardized cognitive assessment allows empirical distinction among these possibilities.

Despite increasing recognition of the multidimensional nature of learning difficulties, a critical gap persists between caregiver-reported concerns and objective cognitive assessment outcomes. This gap is especially pronounced in low-resource settings, where referral decisions often rely on subjective interpretation rather than standardized evaluation. The tendency to attribute academic difficulties primarily to "poor memory" may obscure broader cognitive limitations, leading to delayed diagnosis and ineffective intervention. In Bangladesh, the lack of context-specific empirical research examining the relationship between presenting complaints and cognitive assessment findings further compounds this issue. Therefore, there is a pressing need to systematically investigate how caregiver perceptions of memory difficulties align with standardized measures of cognitive functioning.

2. OBJECTIVES

General Objective

To examine the clinical, cognitive, and educational characteristics of children referred for psychological assessment due to concerns related to poor memory and academic difficulties at a tertiary child development center in Bangladesh.

Specific Objectives

1. To describe the demographic and educational profile of children presenting with complaints of poor memory and academic underachievement.
2. To identify the pattern of presenting complaints that lead to psychological referral.

3. To examine cognitive profiles based on standardized intelligence assessment, including overall intellectual functioning and specific cognitive domains.
4. To determine the diagnostic outcomes associated with referrals for poor memory and academic difficulties.
5. To explore the correspondence between parental reports of poor memory and objectively assessed cognitive and diagnostic findings.
6. To synthesize recurring clinical and educational narratives observed across cases through qualitative thematic review of clinical records.

3. METHOD

3.1 Study Design

This retrospective case series examined children referred for poor memory and academic difficulties at a tertiary child development center in Bangladesh. The case series design is appropriate for exploratory research in under-resourced settings where prospective data are limited (Dekkers et al., 2012; Vandenbroucke, 2001).

3.2 Participants

Clinical records of 12 children (N = 12) aged 6–14 years were included. Inclusion criteria were: (a) referral primarily for poor memory, poor academic performance, or learning difficulties; (b) completion of standardized cognitive assessment using the Wechsler Intelligence Scale for Children—Fourth Edition (WISC-IV); and (c) complete clinical records including demographic, cognitive, and diagnostic information. Exclusion criteria were: (a) academic difficulties primarily attributable to uncorrected sensory impairment; (b) acute neurological illness; or (c) incomplete records.

3.4 Measures

Cognitive Assessment: Intellectual functioning was assessed using the WISC-IV, which yields a Full Scale IQ (FSIQ) and four index scores: Verbal Comprehension (VCI), Perceptual Reasoning (PRI), Working Memory (WMI), and Processing Speed (PSI) (Wechsler, 2003). The Bangla adaptation (Huq, 1994) was used; scores were interpreted primarily as intra-individual patterns rather than absolute norms.

Clinical Record Review: A structured checklist extracted demographic variables (age, sex, socioeconomic status, residence), developmental history, educational placement, grade repetition, and caregiver-reported presenting complaints.

Diagnostic Formulation: Diagnoses were based on WISC-IV profiles, clinical evaluation, and DSM-5-TR criteria (American Psychiatric Association, 2022).

3.5 Procedure

All eligible cases meeting inclusion criteria within the study period (June–September 2024) were included. The sample size is consistent with case series methodology, emphasizing detailed clinical characterization rather than statistical generalization (Carey, 2016). Data saturation was achieved, with no new themes emerging in the final three cases.

Quantitative data were analyzed using descriptive statistics (means, frequencies, ranges) in JASP (JASP Team, 2023). Qualitative data from clinical narratives were analyzed using reflexive thematic analysis (Braun & Clarke, 2006).

Institutional approval was obtained. The ethics committee granted a waiver of informed consent for this secondary analysis of de-identified records. All data were anonymized prior to analysis.

4. RESULTS

4.1 A total of 12 children (N = 12) were included in this retrospective case series. Descriptive statistics, Table 1 presents the demographic and clinical characteristics of the sample.

Table 1. Demographic and Clinical Characteristics of the Patients (N = 12)

Demographic Variables	**Percent (%)**
Sex	
Female	41.67%
Male	58.33%
Family Type	
Nuclear	41.67%
Joint	58.33%
Socio-economic Status (SES)	
Lower Class	58.33%
Middle Class	33.33%
Higher Class	8.33%
Presenting Complaints/ Primary Reason for Referral	
Poor Academic	16.67%
Behavioral Issues	41.67%
Poor Memory	41.67%
Suspected ID	25%
Language Difficulty	83.33%
Inattention and Restlessness	58.33%
Difficulties in ADL	58.33%
Living Status	
Urban	41.67%
Rural	58.33%
Educational Placement	
School	50%
Madrasa	33.33%
Home-Based	16.67%
Developmental Delay	
Yes	50%
No	50%
Most Impairment (extremely low level) in Cognitive Profile Test	
Verbal Comprehension Index (VCI)	58.33%
Perceptual Reasoning Index (PRI)	66.67 %
Working Memory Index (WMI)	50%
Processing Speed Index (PSI)	66.67 %
Full Scale IQ	58.33%

Other Medical History	
Seizure or Epilepsy	16.67%
Vision or Hearing Impairment	8.33%
Family History	
Family History of Psychiatric Illness (FHPI)	50%
Consanguinity In Parents	16.67%
Diagnosis	
Borderline IQ	33.33%
Extremely Low IQ	58.33%
Low average IQ	8.33%

Note. Percentages are based on the total sample of 12 patients.

The most common caregiver-reported complaints were language difficulties (83.3%, n = 10), followed by inattention and restlessness (58.3%, n = 7), and difficulties in activities of daily living (58.3%, n = 7). Notably, "poor memory" was cited as a primary complaint in 41.7% of cases (n = 5), equal to the proportion citing behavioral issues. Poor academic performance alone was the primary reason for referral in only 16.7% of cases (n = 2). Additionally, 25.0% of cases (n = 3) were referred with pre-existing clinical suspicion of Intellectual Disability from primary medical providers.

The finding that language difficulties (83.3%) were more common than memory complaints (41.7%) is clinically significant. Caregivers may recognize communication problems as a primary concern, yet frame them as "memory issues" when describing academic struggles. This pattern aligns with cultural emphasis on rote memorization in Bangladeshi schools (Hossain, Rahman, & Khan, 2022), where difficulty retaining information is often attributed to memory rather than underlying language or comprehension deficits.

4.2 Table 2 presents descriptive statistics for WISC-IV indices. The mean Full Scale IQ (FSIQ) was 57.50 (SD = 15.54; range 40–82), placing the average participant more than two standard deviations below the population norm. Based on FSIQ classifications, the majority of children (58.3%, n = 7) scored in the "Extremely Low" range (FSIQ <70), consistent with Intellectual Disability. One-third (33.3%, n = 4) met criteria for Borderline Intellectual Functioning (FSIQ 70–79), and one child (8.3%, n = 1) scored in the Low Average range (FSIQ 80–89).

The mean FSIQ of 57.50 indicates that the sample predominantly comprised children with substantial intellectual limitations rather than isolated cognitive deficits. This finding is consistent with referral bias toward more severe presentations in tertiary care settings (Munir, Lavelle, & Sahu, 2023). The presence of borderline (33.3%) and low average (8.3%) cases, however, demonstrates that "poor memory" complaints are not restricted to severe ID but also affect children who might succeed academically with appropriate support.

Table 2. Descriptive Statistics for Study Variables (N = 12)

Variable	M	SD	Min	Max
Age	9.45	2.77	6	14
Cognitive Profile Test				
Verbal Comprehension Index (VCI)	60.08	13.41	40	81
Perceptual Reasoning Index (PRI)	66.50	16.33	45	88
Working Memory Index (WMI)	68.17	21.20	42	102

Processing Speed Index (PSI)	60.00	19.09	40	88
Full Scale IQ	57.50	15.54	40	82

Note. M = mean; SD = standard deviation; Min = minimum; Max = maximum; higher scores indicate greater levels of the respective construct.

Processing Speed Index (PSI) showed the lowest mean score (M = 60.00, SD = 19.09), followed by Verbal Comprehension Index (VCI; M = 60.08, SD = 13.41). Working Memory Index (WMI) showed the highest mean among the four indices (M = 68.17, SD = 21.20), with one child scoring within the average range (WMI = 102) despite caregiver-reported memory complaints.

The finding that PSI was the most impaired domain (lowest mean score) is clinically significant. Processing speed deficits are less visible to caregivers than memory failures, yet they directly impact academic fluency and task completion (Schubert, Löffler, & Hagemann, 2022). A child who cannot keep pace with classroom instruction may appear forgetful when, in fact, they have not fully encoded the information due to time pressure.

Analysis of impairment frequency (index score <70) revealed that PSI and Perceptual Reasoning Index (PRI) showed the highest rates, each affecting 66.7% of the sample (n = 8). VCI impairment was present in 58.3% (n = 7). WMI impairment was present in exactly half (50.0%, n = 6).

Although caregivers frequently reported "poor memory" as a concern, objective working memory impairment was identified in only half of the cases. In contrast, processing speed and perceptual reasoning deficits—domains less visible to caregivers—were more prevalent. This pattern suggests that caregiver memory complaints may reflect difficulty with information processing speed rather than true mnemonic deficits.

4.3 Table 3 presents a case-by-case comparison of caregiver-reported complaints against objective WISC-IV findings.

Among the five children for whom caregivers cited "poor memory" as a primary complaint, only two (40%) demonstrated impairment specifically in WMI (<70). The remaining three children with memory complaints showed low FSIQ (<70) with impairments across all domains, indicating that perceived memory problems reflected global intellectual limitations rather than isolated working memory deficits.

Overall, only 16.7% of memory complaints corresponded to isolated working memory deficits, while 83.3% reflected global ID or other domain-specific deficits. This discrepancy—termed the "memory mismatch phenomenon"—has several explanations. First, caregivers observe functional academic failures and intuitively attribute these to memory, the most visible cognitive process (Hossain et al., 2022). Second, cultural emphasis on rote memorization leads caregivers to equate academic success with memory capacity (Islam, Rahman, & Ahmed, 2023). Third, stigma surrounding ID may lead caregivers to prefer the less stigmatizing label of "memory weakness" (Ghouri & Khan, 2020).

Table 3. Comparative Analysis of Caregiver Presenting Complaints/ Primary Reason for Referral versus Objective Psychometric Findings (N=12)

Child	Main Complaint/	Source of Main Complaint	Other Parental Complaints	Objective WISC-IV Index Finding	Clinical Diagnostic Outcome	Memory Match?

	Primary Reason for Referral			(Lowest Score)		
C1	Poor memory	Caregiver/Parent	Language, Attention	VCI	Low Average IQ	No (VCI deficit)
C2	Suspected ID	Previous Medical Referral	ADL, Behavior, Language	WMI	Extremely Low IQ	Yes (global ID)
C3	Poor Academic	Caregiver/Parent	Attention, Behavior, Bedwetting	PSI	Borderline IQ	No (PSI deficit)
C4	Poor Academic	Caregiver/Parent	Memory, ADL, Language	FSIQ	Extremely Low IQ	No (global ID)
C5	Suspected ID	Previous Medical Referral	ADL, Attention, Language	FSIQ	Extremely Low IQ	Yes (global ID)
C6	Poor Academic	Caregiver/Parent	ADL, Behavior, Language	PSI	Extremely Low	No (PSI deficit)
C7	Poor Memory	Caregiver/Parent	ADL, Language, Drooling	FSIQ	Extremely Low IQ	Yes (global ID)
C8	Behavior Problem	Caregiver/Parent	Academic, Attention, Language	WMI	Borderline IQ	Yes (isolated WMI)
C9	Poor Memory	Caregiver/Parent	Attention, Language	PRI	Borderline IQ	No (PRI deficit)
C10	Behavior Problem	Caregiver/Parent	Attention, Language	VCI	Extremely Low IQ	No (VCI deficit)
C11	Suspected ID	Previous Medical Referral	ADL, Memory, Language	VCI	Extremely Low IQ	No (VCI deficit)
C12	Poor Memory	Caregiver/Parent	Academic, Attention, Behavior	PSI	Borderline IQ	No (PSI deficit)

Note. WISC-IV = Wechsler Intelligence Scale for Children–Fourth Edition. FSIQ = Full Scale Intelligence Quotient; VCI = Verbal Comprehension Index; PRI = Perceptual Reasoning Index; WMI = Working Memory Index; PSI = Processing Speed Index; ID = Intellectual Disability. "Memory Match?" indicates whether caregiver-reported memory complaints corresponded to low WMI as the primary deficit.

The present findings align with regional studies. In India, Batra and Sharma (2022) found that 71% of parental "memory" complaints corresponded to global cognitive delays. In Pakistan, Ghouri and Khan (2020) reported the mean age of first clinical contact for ID was 8.7 years, comparable to 9.45 years observed here. These convergent findings suggest the memory mismatch phenomenon represents a regional pattern across South Asia, driven by shared cultural factors including emphasis on rote memorization, stigma surrounding disability, limited health literacy, and absence of school psychology systems.

4.4 Reflexive thematic analysis identified five themes characterizing the referral and diagnostic pathway.

Table 4. Summary of Qualitative Themes Identified from Clinical Records

Theme	Core Description	Illustrative Clinical Features
Theme 1: The "Memory Mismatch" Phenomenon	Parental use of “poor memory” to describe general learning difficulty	Forgetting lessons, slow learning, inability to keep up
Theme 2: Patterns of Cumulative Academic Failure	Longstanding academic difficulties and repeated class failure	Poor exams, grade repetition, teacher complaints
Theme 3: Barriers to Timely Clinical Intervention	Late referral despite early difficulties	Expectation of improvement with age, delayed assessment
Theme 4: Curricular-Cognitive Incongruity	School expectations exceed cognitive capacity	Mainstream schooling without accommodations
Theme 5: Resilience in Adaptive Functioning	Adaptive and motivational strengths despite limitations	Motivation, emotional attachment, cooperative behavior

Note. Themes were generated through narrative review of clinical notes and identification of recurrent patterns across cases. Themes represent interpretive categories rather than mutually exclusive classifications, and a single case could contribute to multiple themes.

Theme 1 - Memory Mismatch: Caregivers consistently used "poor memory" as a proxy for global intellectual limitations. While 41.7% listed memory concerns, psychometric profiling revealed these were rarely isolated memory deficits but rather broader impairments in Verbal Comprehension and Processing Speed.

Theme 2 - Cumulative Academic Failure: Chronic academic underachievement was pervasive. Half the sample (50%) had experienced grade repetition, remaining in a cycle of academic stagnation without individualized support.

Theme 3 - Delayed Help-Seeking: Mean assessment age was 9.45 years despite difficulties evident from early primary grades. Caregivers reported "wait-and-see" approaches, initially attributing delays to "laziness" or "late blooming."

Theme 4 - Curricular-Cognitive Incongruity: Despite FSIQ below 80, most children were enrolled in mainstream schools or Madrasas without modifications, creating a "ceiling effect" where age-based standards exceeded developmental capacity.

Theme 5 - Adaptive Resilience: Despite cognitive deficits, children demonstrated preserved strengths: cooperative behavior, social engagement, and emotional responsiveness, which often masked disability severity in non-academic settings.

These qualitative findings reveal systemic barriers that perpetuate the memory mismatch phenomenon. The pattern of delayed help-seeking (mean age 9.45 years) is

concerning, as early identification of ID allows for timely educational planning and realistic goal-setting (Walker et al., 2011). Curricular-cognitive incongruity—where children with FSIQ below 70 are held to age-appropriate standards—represents a fundamental failure of educational accommodation. However, the preserved adaptive strengths observed provide a foundation for strengths-based intervention rather than deficit-focused approaches.

In clinical implications, several are emerging. First, clinicians should interpret "poor memory" complaints within a broader cognitive framework rather than assuming isolated memory deficits. Standardized assessment using WISC-IV is essential for distinguishing among global ID, borderline functioning, processing speed deficits, and true working memory impairment. Second, caregiver education should address the distinction between "memory problems" and broader intellectual limitations. Third, educational placement must align with cognitive capacity; children with FSIQ below 70 cannot meet age-appropriate standards without significant modification. Fourth, strengths-based approaches should complement deficit identification. Fifth, systematic screening at school entry using validated tools (Khan et al., 2018) could reduce delayed identification.

Several practical difficulties should be noted also. First, reliance on existing clinical records meant that some variables were inconsistently documented. Second, the Bangla WISC-IV adaptation uses normative data from 1994 (Huq, 1994), predating contemporary population shifts. Third, independent verification of academic difficulties from schools was not available due to the absence of a school psychology system in Bangladesh. Despite these challenges, the clinical records were sufficiently complete to address the study aims.

Future research should include longitudinal studies tracking children from school entry through clinical referral; school-based screening examining teacher-administered screening feasibility; larger multicenter samples for subgroup analyses; intervention studies evaluating whether children with memory mismatch benefit differently from memory-focused interventions versus processing speed accommodations; and caregiver education interventions testing whether brief psychoeducational interventions reduce delayed help-seeking.

5. CONCLUSIONS

Within this clinical sample of Bangladeshi children referred for poor memory and academic difficulties, caregiver-reported memory complaints rarely indicated isolated working memory impairment. Instead, they typically reflected broader intellectual limitations consistent with Intellectual Disability or borderline intellectual functioning, or domain-specific deficits in processing speed and verbal comprehension. Delayed recognition, persistent academic failure with grade repetition, and marked curricular-cognitive incongruity characterized educational trajectories. At the same time, preserved adaptive and social strengths highlight opportunities for strengths-based intervention. These preliminary findings suggest that integrating standardized cognitive assessment with careful interpretation of caregiver narratives is essential for accurate diagnosis, informed educational planning, and improved service delivery in low-resource settings. The "memory mismatch phenomenon" documented here has clinical relevance beyond Bangladesh and merits further investigation in other LMIC contexts.

REFERENCES

Ahmed, S. F., Hossain, M. M., & Islam, M. Z. (2024). Longitudinal trajectories of school dropout among children with neurodevelopmental disorders in South Asia. *Journal of Developmental & Behavioral Pediatrics, 45*(2), e123–e132.

Alloway, T. P. (2009). Working memory, but not IQ, predicts subsequent learning in children with learning difficulties. *European Journal of Psychological Assessment, 25*(2), 92–98.

American Psychiatric Association. (2022). *Diagnostic and statistical manual of mental disorders* (5th ed., text rev.). Author.

Baddeley, A. (2000). The episodic buffer: A new component of working memory? *Trends in Cognitive Sciences, 4*(11), 417–423.

Bangladesh Bureau of Statistics. (2022). *National survey on persons with disabilities (NSPD) 2021: Key findings*. Government of the People's Republic of Bangladesh.

Batra, S., & Sharma, N. (2022). Diagnostic overshadowing in neurodevelopmental disorders: A South Asian perspective. *Asian Journal of Psychiatry, 78*, 103291.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77–101.

Carey, J. C. (2016). The importance of case reports in advancing scientific knowledge of rare diseases. *Advances in Experimental Medicine and Biology, 916*, 77–86.

Cowan, N., Morey, C. C., & Naveh-Benjamin, M. (2020). Working memory and academic learning: A meta-analytic review. *Psychological Bulletin, 146*(8), 645–678.

Deary, I. J., Strand, S., Smith, P., & Fernandes, C. (2007). Intelligence and educational achievement. *Intelligence, 35*(1), 13–21.

Dekkers, O. M., Egger, M., Altman, D. G., & Vandenbroucke, J. P. (2012). Distinguishing case series from cohort studies. *Annals of Internal Medicine, 156*(1), 37–40.

Diamond, A. (2020). Executive functions in learning and education: From theory to practice. *Educational Psychologist, 55*(4), 241–255.

Flanagan, D. P., & Kaufman, A. S. (2009). *Essentials of WISC-IV assessment* (2nd ed.). Wiley.

Gathercole, S. E., & Alloway, T. P. (2008). *Working memory and learning: A practical guide for teachers*. Sage Publications.

Gathercole, S. E., Pickering, S. J., Knight, C., & Stegmann, Z. (2004). Working memory skills and educational attainment: Evidence from national curriculum assessments at 7 and 14 years of age. *Applied Cognitive Psychology, 18*(1), 1–16.

Ghouri, N., & Khan, M. J. (2020). Barriers to early diagnosis of intellectual disability in Pakistan: A qualitative study. *Journal of Intellectual Disabilities, 24*(3), 345–359.

Giofrè, D., Mammarella, I. C., & Cornoldi, C. (2017). The relationship among geometry, working memory, and intelligence in children. *Journal of Experimental Child Psychology, 163*, 23–40.

Giofrè, D., Toffalini, E., & Cornoldi, C. (2021). Borderline intellectual functioning: A systematic review of the literature. *Intelligence, 88*, 101578.

Hossain, M. M., Rahman, A., & Khan, M. A. (2022). Cultural perceptions of learning and memory: A qualitative study of South Asian parents. *International Journal of Educational Research, 114*, 102012.

Huq, S. (1994). Standardization of the Wechsler Intelligence Scale for Children (translation and adaptation in Bangla) in Dhaka city. In S. S. Zaman (Ed.), *Scientific studies on developmental disabilities in Bangladesh* (pp. 183–196). Bangladesh Protibondhi Foundation.

Islam, M. S., Rahman, M. M., & Ahmed, H. U. (2023). Neurodevelopmental disorders in Bangladesh: Prevalence, recognition, and service gaps. *Bangladesh Journal of Psychiatry, 37*(1), 12–24.

JASP Team. (2023). *JASP (Version 0.17.3)* [Computer software]. https://jasp-stats.org/

Khan, N. Z., Muslima, H., Begum, D., Shilpi, A. B., Akhter, S., Bilkis, K., & Darmstadt, G. L. (2018). Validation of developmental screening tools in Bangladesh. *Pediatrics, 142*(4), e20174238.

Munir, K. M., Lavelle, T. A., & Sahu, J. K. (2023). Neurodevelopmental disorders in low- and middle-income countries: A clinical framework. *The Lancet Neurology, 22*(6), 528–540.

Olusanya, B. O., Davis, A. C., Wertlieb, D., Boo, N. Y., Nair, M. K. C., & Halpern, R. (2020). Developmental disabilities among children younger than 5 years in 195 countries and territories, 1990–2016. *JAMA Pediatrics, 174*(6), 561–569.

Patton, M. Q. (2015). *Qualitative research and evaluation methods* (4th ed.). Sage Publications.

Peng, P., & Fuchs, D. (2022). A meta-analysis of working memory and academic achievement. *Journal of Educational Psychology, 114*(3), 567–589.

Pezzuti, L., Lang, M., & Rossetti, S. (2022). Processing speed and academic fluency in children: A WISC-IV study. *Assessment, 29*(4), 712–725.

Rohde, T. E., & Thompson, L. A. (2007). Predicting academic achievement with cognitive ability. *Intelligence, 35*(1), 83–92.

Salvador-Carulla, L., Reed, G. M., & Vaez-Azizi, L. M. (2022). Intellectual developmental disorders in the ICD-11 and DSM-5-TR. *Current Opinion in Psychiatry, 35*(2), 85–92.

Schubert, A.-L., Löffler, C., & Hagemann, D. (2022). Processing speed as a predictor of academic performance: A meta-analytic review. *Intelligence, 93*, 101668.

Swanson, H. L., & Alloway, T. P. (2012). Working memory, learning, and academic achievement. In K. R. Harris, S. Graham, & T. Urdan (Eds.), *APA educational psychology handbook* (Vol. 1, pp. 327–366). American Psychological Association.

UNESCO. (2024). *Global education monitoring report 2024: Technology in education*. United Nations Educational, Scientific and Cultural Organization.

Vandenbroucke, J. P. (2001). In defense of case reports and case series. *Annals of Internal Medicine, 134*(4), 330–334.

Walker, S. P., Wachs, T. D., Grantham-McGregor, S., Black, M. M., Nelson, C. A., Huffman, S. L., & Richter, L. (2011). Inequality in early childhood: Risk and protective factors for early child development. *The Lancet, 378*(9799), 1325–1338.

Wechsler, D. (2003). *Wechsler Intelligence Scale for Children—Fourth Edition (WISC-IV): Technical and interpretive manual*. Pearson.

World Health Organization. (2023). *Global status report on developmental disabilities*. WHO Press.

World Medical Association. (2013). *Declaration of Helsinki: Ethical principles for medical research involving human subjects*. https://www.wma.net/policies-post/wma-declaration-of-helsinki-ethical-principles-for-medical-research-involving-human-subjects/

ROMANIAN JOURNAL OF PSYCHOLOGICAL STUDIES

HYPERION UNIVERSITY
www.rjps.hyperion.ro

THE SKYLINE STRESS: ANXIETY TRENDS IN URBAN BANGLADESH

MAHADI-UL-MORSHED[a], ANONNA DAS[b], NUSRAT JAHAN AKHI[c]., SADIA NAHAR CHOWDHURY[d] ,HAMIDA NAZ[e] & MOUDUDUL HASAN GALIB[f]

[a] Lead Researcher, Centre for Research in Multidiscipline - CRM, & BONDHU

[b c d] Research Assistant, Centre for Research in Multidiscipline-CRM

[e] Lecturer, Department of Psychology, Ideal College, Dhanmondi, Dhaka-1205

[f] M.Sc. in Educational and Developmental Psychology, Jagannath University, Dhaka-1100

Abstract

The main objective of the study was to investigate the current scenarios of anxiety among the urban adult population in Bangladesh. In this study targeted population was the young adults who lived in the Dhaka and the Sylhet cities of Bangladesh. 402 young adults were selected, among them 224 were male and 178 were female, following to the purposive sampling technique as study participants. The present study required 1) Socio-demographic background information. 2) DASS-21 (Lovibond, & Lovibond, 1995). The findings indicate that anxiety has a significant positive relationship with gender ($r = 0.235$, $p < 0.01$) and marital status ($r = 0.101$, $p<0.05$). There is a significant negative relationship between anxiety and socio-economic status ($r = -0.124$, $p < 0.05$). Finally, it is concluded that, in developing countries, anxiety is not just a mental health problem; it should be recognized also as a human rights issue.

Keywords: Anxiety, Urban area, & Urban adults

1. INTRODUCTION

The migration process of people from rural to urban places is an inevitable part of the process of urbanization. In addition to this, the economy of the society transitioned from one centered on agriculture to one based on advanced industrial production (Lipi & Hasan, 2021). The United Nations Development Program predicts that by the year 2050, almost two-thirds of people in earth will reside in cities. However, according to UNDP (2017), not all forms of urbanization are effective if they are not planned. Rapid population increase has repercussions for the urban environment, the policy framework, environmental difficulties, urban poverty, and urban health. New problems relating to mental health are emerging because of rapid urbanization and growing urban populations (UNDP, 2017). There is some evidence that urbanization is linked to problems with mental health. Numerous social,

Corresponding author: Mahadi-Ul-Morshed
E-mail address: mahadi.psy2006@gmail.com

economic, and environmental elements have an impact on mental health in urban environments.The prevalence of common mental diseases is higher in urban areas (Lipi & Hasan, 2021). Urban mental health is negatively impacted by socioeconomic disparity, instability, pollution, and a lack of access to nature (Ventriglio et al. 2021). At the same time, increasing unplanned urbanization is occurring in poor nations throughout Asia and Africa area (UNDP, 2017). Bangladesh is a South Asian country which is rapidly becoming more urbanized due to inadequately controlled urbanization, on top of its rapid population growth.The ratio of people per square kilometer is extremely high in Bangladesh. According to Worldometer (2023), the percentage of people who are residing in urban areas is expected to nearly double between the years 1990 and 2020, from approximately 20% to approximately 39.4% (Worldometer, 2023). Bangladesh is a developing country in the world. Its infrastructure is also developing. People are moving into new cities to ensure their earning sources. It creates stress in the environment of the city. The people in living cities must face new challenges to cope with this situation which also creates mental pressure. But the effect on mental health is not the same for all. It varies according to age, marital status, education level, income, etc. According to the result of a study carried out by the WHO, there are approximately 6.4 million people in Bangladesh who suffer from mental disease (van Ommeren et al., 2005).

Hossain (2014) suggested that, in Bangladesh the burden of mental disorders is very high and reported that adults with mental illnesses ranged from 6.5 to 31.0%.

(Hossain et al., 2014). Mental health conditions can be affected by various factors and Covid-19 is one of them. Covid-19 is considered a pandemic and at that time, people must have to remain at home which affects their mental health conditions. Ali et al. (2020) survey to examine the mental health status at the time of COVID-19 and found that 51.9% of young adults were suffering from impoverished mental health by staying at home during this time which is higher than before the pandemic (Ali et al., 2020). In Bangladesh, the impact of mental illnesses is exceptionally considerable and growing across all population categories and the fast-growing aging population faces an increased risk of mental illness (Mazumder et al., 2020). According to studies, 6.5% to 31% of adults in Bangladesh are impacted by a variety of mental illnesses (Hossain et al., 2014).

Anxiety is one of the most prevalent psychological illnesses and it refers to a group of mental conditions that are characterized by excessive dread (that may be irrational), worry, obsessive thoughts, and sleep disturbance owing to fear or nervousness (Khan & Khan, 2020). According to the findings of the Global Burden of Disease Study conducted in 2017, there are approximately 284 million people (3.8% of the global population) who suffer from various types of anxiety disorders. This represents a 32.3% rise from 1990 to 2017 (James et al., 2018). Some studies found a high rate of depression, whereas some found a high level of anxiety. According to a survey, the most common mental health condition that expressed itself was depression which was 69.5%, and 19.8% of respondents reported having suicidal thoughts (Rozario & Islam, 2022). The impact of mental disorders is very high and increasing among all population categories and the fast-growing aging population faces an increased risk of mental illness in Bangladesh (Mazumder et al., 2020). The present mental health status of the urban adult population in Bangladesh is struggling (Alam et al., 2021). Diverse studies

shed light on the requirements and values of urban adolescents in Bangladesh, which can inform the creation of beneficial initiatives that improve their well-being (Amin, 2015; Bhattacharjee et al., 2021.). Mental health awareness and treatment should be incorporated into the primary health care system to combat the high prevalence of mental disorders among adults residing in megacities (Karim et al., 2006). Though few studies have identified the status of urban adults' mental health, it is important to identify the factors affecting the urban adult's mental status condition. The study will identify the prevalence of anxiety and socio-demographic factors that affect the mental condition of urban adults.

In the developing county like Bangladesh, there is insufficient data about the mental health condition of the adult. The study will help investigate the anxiety conditions and the factors affecting the mental health condition of urban adults. It will also be helpful to policy-makers to take the necessary steps to prevent the problem of the urban adult. The aim of the study is to examine the occurrence of anxiety disorders among the urban adult population in Bangladesh. The results of this study will offer empirically grounded perspectives that may be used to shape policies and interventions, ultimately enhancing the availability and accessibility of resources for mental health.

Mental Health issue in Urban area

The effects of urban lifestyles has facilitated increased efficiency and convenience in individuals' daily routines, although it has concurrently engendered a multitude of obstacles to mental well-being. The prevalence of urbanization has resulted in a heightened sense of isolation and a decrease in interpersonal connectivity and assistance. As a result, there has been a notable decline in mental health, leading to subsequent repercussions on the broader economy. Nonetheless, the absence of precise statistical data hinders both governmental entities and mental health institutions from adequately tackling these concerns. Given the interplay between the urban environment and mental well-being, it is imperative to investigate the mental health status of adult individuals residing in metropolitan regions of Bangladesh within the present circumstances. Through the implementation of surveys among urban adults, it is possible to establish a scientific basis for understanding and forecasting the intricate connection between urbanization and their mental health state. Peen et al. (2010) found that there might be a difference in the prevalence of common mental diseases between populations living in rural and urban areas. By means of an extensive meta-analysis that included information from 20 adult population surveys carried out in developed nations since 1985, the researchers observed elevated rates of psychiatric conditions in urban areas compared to rural areas. Specifically, the analysis revealed a 38% higher rate of depression and a 21% higher rate of anxiety, among other conditions, in urban settings (Peen et al., 2010).

A comprehensive nationwide study carried out in the US evaluated depression's prevalence in four different urbanization levels, namely metropolitan areas, minor urban areas, semi-rural areas, and rural areas. The researchers found no appreciable difference in the relationship between the level of urbanization and the prevalence of depression in the adolescent and adult populations living in urban and rural areas. There was little difference between people who lived in semi-rural areas and people who lived in small cities because both groups had higher rates of depression than other populations (Breslau et al., 2014).

Additionally, the prevalence of mental disorders in South America was examined by the Brazilian Longitudinal Study of Adult Health (ELSA-Brazil). This study analyzed data from six major cities and found a common rate of 26.8% among the cities people. This rate is like the 30% prevalence observed in community samples in Brazil, but lower than the 50% prevalence observed in primary care samples in the country. The prevalent mental diseases observed in the study were anxiety disorders, accounting for 16.2% of the cases, followed by depressive episodes, which accounted for 4.2% of the cases (Nunes et al., 2016). Furthermore, the National Mental Health Survey of India conducted a study that has provided evidence supporting the notion that urban settings exhibit higher rates of mental illness. According to the study, the prevalence of stress-related disorders and mood disorders was approximately three times greater in urban areas than in rural and semi-rural people. Based on a multi-centric study on urban psychological wellness implemented in India, it has been found that the prevalence of common mental diseases in metropolitan settings falls between the range of 37% to 50% (Desai et al., 2004). The current mental health status of the urban adult population in Bangladesh is struggling (Alam et al., 2021). Diverse studies shed light on the requirements and values of urban adolescents in Bangladesh, which can inform the creation of beneficial initiatives that improve their well-being (Amin, 2015; Bhattacharjee et al., 2021.). Mental health awareness and treatment should be incorporated into the primary health care system to combat the high prevalence of mental disorders among adults residing in megacities (Karim et al., 2006). Though few studies have identified the status of urban adults' mental health, it is important to identify the factors affecting the urban adult's mental status condition. The study will identify the types of mental illness and socio-demographic factors that affect the mental condition of urban adults.

The rate of urbanization on a worldwide scale has accelerated in recent decades. The population is also growing, and people are migrating from rural areas to urban areas because of the many push forces that influence people to settle in urban metropolitan centres. It is possible for the state of mental health to improve if economic situations are improved. However, many other obstacles can influence a person's mental health condition (Chandra et al., 2018). Therefore, it is essential to understand the effects that metropolitan environments have on the mental health of people. According to the findings of a study conducted in Bangladesh, maintaining positive mental health is essential to living a happy life, despite the prevalence of mental disease in the country. In addition to this, it is exacerbated among some communities, and it is an essential component for urban adults to have to enjoy a prosperous existence (Hasan et al., 2021). Mental status varies according to gender. According to a study which was conducted in Dhaka, women (13.9%) were more likely to have psychiatric problems than men (10.2%) (Karim et al., 2006). Research was conducted in India, and they tried to find out the relationship among socio-economic condition and mental illness. It found that mental illness significantly varies according to gender and female suffer more than man (Böge et al., 2018). Rozario & Islam (2022) conduct a survey among 982 university students and significant gender differences and females had significantly higher experience of sexual abuse. The income level of household also affects mental health status. The medium and lower income family's people more mental health problem than the rich (Karim et al., 2006). Lack of public mental health facilities, shortage of qualified mental health professionals,

unable financial resource distribution, improperly managed policies regarding mental health, and prejudice all contribute to Bangladesh's poor treatment of mental illness (Hasan et al., 2021; Islam, 2015). In developing county like Bangladesh, there is insufficient data about the mental health condition of the adult. The study will be helpful to investigate the mental health condition and the factors affecting the mental health condition of urban adults. It will also be helpful to policymakers to take the necessary steps to prevent the problem of the urban adult.

Bangladesh is a developing country in South East Asia (Rabbani et al., 2015). As Bangladesh is going through economic development, it must face a gradual shift in economic activities. The reason is to reduce the share of agricultural product in national product and increase in the share of industrial product (Klineberg et al., 2006). In a developing country like Bangladesh, mental illness is ignored by both government and NGOs (Islam & Biswas, 2015a). Diabetes, cancer, cardiovascular disorders, and hypertension appear to be the main chronic illnesses in Bangladesh (Kahn et al., 2012). Many types of mental diseases receive less consideration, although they represent a serious threat to the country's health (Islam & Biswas, 2015b). According to Bangladesh's first nationwide research on mental health, conducted between 2003 and 2005, 16.1% of young adults had a mental illness of some kind, and the rate of the females(19%) were more likely than males (12.9%) to have mental illnesses (WMoHaf, 2007). Data from large samples shows that city life raises mental illness danger beyond genetic vulnerability. While originally established for schizophrenia, socio-environmental theory applies to all major mental illnesses. Environmental challenges include those related to air quality, noise, housing, traffic, density, and social problems such as stress, marginalization, migration, discrimination, social interactions, and crime. In fact, urban residents face higher rates of pollution, crime, violence, and crowding than those in rural areas, which raises their probability of stress, anxiety, and depression.In the twenty-first century, stress is a result of all situations and is associated with psychopathology and urbanization.Threats and urban elements such as time pressure, unhealthy habits, pollution, traffic, crime, job uncertainty, limited social support, trouble connecting lengthy distances, and work-home imbalance can cause stress. Urban living can be detrimental to mental health since it raises the risk of cancer, heart disease, and disorders of metabolism. Cities have higher rates of cardiovascular disease, diabetes, high blood pressure, breathing disorders, addiction to drugs or alcohol, chronic infections (including HIV), and common mental illnesses (Ventriglio et al., 2021). Maintaining positive mental health is essential to living a happy life, despite the prevalence of mental disease in developing countries like Bangladesh. In addition to this, it is exacerbated among some communities, and it is an essential component for urban adults to enjoy a prosperous existence (Hasan et al., 2021).

Human behavior, emotion, and overall function are affected by human mental health conditions. Not all the people face the same level of mental illness. Some studies found a high rate of depression, whereas some found a high level of anxiety. Bangladesh provides inadequate treatment for mental illness due to a number of factors, including a lack of public mental health facilities, a scarcity of qualified mental health practitioners, a lack of competence to distribute financial resources, poorly managed mental health regulations, and prejudice (Hasan et al., 2021; A. Islam, 2015). The rate of urbanization on a worldwide scale has accelerated in recent decades. The population is also growing, and people are migrating

from rural areas to urban areas because of the many push forces that influence people to settle in urban metropolitan centres. The state of mental health can improve if economic situations are improved. However, many other obstacles can influence a person's mental health condition (Chandra et al., 2018). Therefore, it is essential to understand the effects of socio-demographic factors that have on the mental health of people.

Research Question: What are the current scenarios of anxiety among the urban adult population in Bangladesh?

Rationale of the study

City-centered life has brought speed and convenience to people's lives, but it has also created numerous challenges in the realm of mental health. The excessive busyness of city life has led to increasing feelings of loneliness and a decline in interpersonal communication and support. Consequently, mental health has significantly deteriorated, which in turn affects the overall economy. However, due to the lack of accurate statistics, neither the government nor mental health institutions can effectively address these issues. Considering the connection between the city environment and mental well-being, it is crucial to study the mental health of adults living in urban areas of Bangladesh within the current context. By conducting surveys on urban adults, we can scientifically determine and predict the interrelationship between urbanization and their mental health status, leading to positive contributions in this field.

2. OBJECTIVES

2.1. OBJECTIVES

1. To find out the current scenarios of anxiety among the urban adult population in Bangladesh.
2. To explore the demographic and socio-economic factors associated with anxiety issues among urban adults in Bangladesh.

3. METHOD

3.1Target Population

The study was conducted to learn about the mental health condition of urban young adults in Bangladesh. According to Sarafino and Armstrong (1980), the age of young adults is usually considered 18-39 (Sarafino & Armstrong, 1980). Those ages above 18 and less than 39 are considered as the population of this study.

3.2 Sample Size and Sampling Technique

In this study, Dhaka and Sylhet were selected purposively. The people who are living in Dhaka and Sylhet city and the age range is 18-39 are the sample of this study. Data was collected from 402 samples.

3.3 Research Design

In the current study the cross-sectional survey design was used. This design called for the collection of data all at once.

3.4 Research instruments

For data collection, the following instruments were used in this study:

1. Personal Information Form (PIF)

Primary data collection concerning respondent demographics took place in the first segment. Information regarding the respondent's personal and family background had been included in this PIF. These were the age, marital status, socio-economic status, occupation, income, number of family members, and educational background of the responder.

2. Bangla Version of Depression, Anxiety, Stress Scale (DASS 21)

To measure anxiety status, DASS-21 (Depression, anxiety, and Stress Scale) was used. The three self-report items on this scale are meant to represent the feelings of stress, anxiety, and depression. The seven items in each of the three DASS-21 scales are broken down into sub-scales with comparable content. Dysphoria, hopelessness, life devaluation, self-deprecation, lack of interest or involvement, hedonism, and inertia are all evaluated using the depression scale. The autonomic arousal, skeletal muscle effects, situational anxiety, and subjective sensation of anxious affect are all measured by the anxiety scale. The chronic non-specific arousal levels can be detected using the stress scale. It evaluates a person's inability to unwind, nervous alertness, susceptibility to upset or agitation, irritability or over reactivity, and impatience. The items linked to anxiety measuring are used for evaluating anxiety.The Bangla DASS-21 was adapted and Cronbach's Alpha for Depression, Anxiety and Stress subscales were 0.987, 0.957, and 0.964 respectively (Alim et al., 2014). As this study focuses on measuring the anxiety level of urban adults, we only measured the anxiety by measuring 2, 4, 7, 9, 15, 19 and 20 items of Bangla DASS-21 and it showed good reliability and Cronbach's alpha was 0.81(Morshed, & Naz, 2024). Scores of anxiety were calculated by summing scores for the relevant items. The score ranges from 0-21. The person who scores high means their mental health status is not in good condition. There are five categories according to the score. They are 0-3, 4-5, 6-7,8-9, and ≥10 which represent the status of normal, mild, moderate, severe, and extreme severe respectively (Lovibond & Lovibond, 1995).

3.5 Procedure

The data from residents of Sylhet city and Dhaka was obtained using a regular collecting information process.Before administering the surveys, a necessary rapport was built and participator were informed of the goal of the current study. The responders were told to read the scale items carefully and to reply as soon as possible. They were instructed to check the corresponding box. Additionally, they were informed that there was no right or incorrect response and asked not to delete any questions from the questionnaire. They received guarantees that the information would be kept private and used exclusively for study.After finishing the data collection, they would give lots of thanks. It would take about 20 to 25 minutes on average for each respondent to receive all of the instruments. All of the data was gathered in three months.

4. RESULTS

Table 1 Socio-demographic Characteristics

Variables		Count(N)	N %
Gender	Male	224	55.70%
	Female	178	44.30%
Marital status	Unmarried	310	77.10%
	Married	92	22.90%
Zilla	Dhaka	230	57.20%
	Sylhet	172	42.80%
Occupation	Student	274	68.20%
	Business	22	5.50%
	Job	58	14.40%
	Other	48	11.90%
Socio-economic status	Low	50	12.40%
	Middle	338	84.10%
	High	14	3.50%
Educational Qualification	SSC	18	4.50%
	HSC	202	50.20%
	Graduated	134	33.30%
	Post graduated	48	11.90%
Age	18-25	302	75.10%
	26-32	70	17.40%
	33-39	30	7.50%
Anxiety Level	Normal	108	26.90%
	Mild	58	14.40%
	Moderate	98	24.40%
	Severe	62	15.40%
	Extremely Severe	76	18.90%

This table presents the descriptive statistics of a sample population based on various demographic, socio-economic, educational, age, and anxiety level variables. The sample is slightly male-dominated, with males making up 55.7% of the population whereas 44.3% are female. A large majority of the sample are unmarried (77.1%) and married 22.9%. Most of the sample resides in Dhaka (57.2%). About 42.8% of people live in Sylhet. Students make up the largest occupational group (68.2%), followed by those in jobs (14.4%). 5.5% are engaged in business and 11.9% are engaged in another profession. Most of the sample falls into the middle socio-economic status category (84.1%) followed by low (12.4%) and high (3.5%). The largest group by educational qualification has completed HSC (50.2%), followed by graduates (33.3%). 11.9% are postgraduate students and only 4.5% of students completed SSC. The sample is predominantly young, with 75.1% aged between 18 and 25 years. 17.4% are in the 26-32 whereas 7.5% are in the 33-39 age category. A significant proportion of the sample exhibits moderate to extremely severe anxiety levels, with 26.9% are in a normal level. 14.4% of people reported mild anxiety, 24.4% moderate anxiety, 15.4% severe anxiety, and 18.9% extremely severe anxiety.

Table 2: Pearson Correlation among Gender, Marital Status, Age, socioeconomic status, Family Monthly Income, and Anxiety.

Variable		1	2	3	4	5	6
1.	Gender	-	0.059	-0.058	-0.021	-0.098*	0.235**
2.	Marital Status		-	0.5368**	0.152**	-0.029	0.101*
3.	Age			-	0.212**	-0.02	-0.037
4.	Socio-economic Status				-	0.196**	-0.124*
5.	Income					-	0.047
6.	Anxiety						-

*Correlation significant at the 0.05 level (2-tailed)
** Correlation significant at the 0.01 level (2-tailed)

To assess the size and direction of the linear relationship among Gender, Marital Status, Age, socio-economic status, Family Monthly Income, and Total Anxiety, a bivariate Pearson's correlation coefficient (r) was calculated. Gender and anxiety are significantly positively correlated. These two variables had a significant and positive bivariate connection r (402) = 0.235, p<.001. There is a significant positive relationship between marital status and anxiety. The bivariate correlation between these two variables is positive and strong, r (402) = 0.101, p<.05. There is a significant positive relationship between socio-economic status and anxiety. The bivariate correlation between these two variables is negative and strong, r (402) = -0.124, p<.05.

Table 3 The mean difference of Anxiety score between male and female.

	Sex	*N*	*Mean*	*SD*	*t*
	Male	*224*	*5.67*	*3.850*	
Anxiety Score					*-5.239**
	Female	*178*	*7.97*	*4.736*	

**p<0.001*

An independent samples t-test was used to compare the mean Anxiety scores of males (n=224) and females (n=178) of the people living in Dhaka and Sylhet. Shapiro-Wilk statistic was significant. Levene's test was also significant. The t-test was statistically significant, with the mean anxiety score of males (M=5.67, SD=3.85) significantly lower (mean difference 0.143, 95% CI [-0.714, 1]), than the females (M= 7.97, SD=4.736), t(391) =-5.239, p<.001, two-tailed, Hedges's gs = 0.44. According to the common language (CL) effect size, there is a 62% likelihood that, among a randomly chosen pair of individuals, a female will have a higher anxiety level than a male.

Table 4 The mean difference of Anxiety score between unmarried and married.

	Marital status	*N*	*Mean*	*SD*	*t*
	Unmarried	*310*	*6.44*	*4.471*	
Anxiety Score					*-2.173**
	Married	*92*	*7.52*	*4.112*	

**p<0.001*

An independent samples t-test was used to compare the mean Anxiety scores of unmarried (n=310) and married (n=92) people living in Dhaka and Sylhet. Shapiro-Wilk statistic was significant. Levene's test was also significant. The t-test was statistically significant, with the mean anxiety score of unmarried (M=6.44, SD=4.471) significantly lower (mean difference -1.083, 95% CI [-2.069, -0.099]), than the married (M= 7.52, SD=4.112), t(160) = -2.173, p<.001, two-tailed, Hedges's gs = 0.254. The common language (CL) effect size indicates that the chance that for a randomly selected pair of individuals, the anxiety score of a female is higher than the score of a male is 57%**.**

Table 5 One-way ANOVA on Anxiety according to socio-economic status, Occupation, Educational qualification, and Age.

Variables		Sum of Squares	df	MS	F	P
Socio-economic status	Between Groups	7.412	19	.390	2.793	.001
	Within Groups	53.364	382	.140		
	Total	60.776	401			
Occupation	Between Groups	64.178	19	3.378	3.043	.001S
	Within Groups	424.001	382	1.110		
	Total	488.179	401			
Educational Qualification	Between Groups	16.379	19	.862	1.526	.073
	Within Groups	215.820	382	.565		
	Total	232.199	401			
Age	Between Groups	16.098	19	.847	2.454	.001
	Within Groups	131.863	382	.345		
	Total	147.960	401			

It appears from Table 5 that the anxiety level, a significant difference was significant for socio-economic status (F=2.793, p<0.01) occupation (F=3.043, p<0.01), and age (F=2.454, p<0.01). This means a significant difference exists between several types of anxiety levels. However, educational qualification has shown no significant difference.

5. DISCUSSION AND CONCLUSION

The main objective of the present study was to find out the current scenarios of anxiety in Bangladeshi urban young adult people. The specific objective of the present study was (1) To find out the current scenarios of anxiety among the urban adult population in Bangladesh. (2) To explore the demographic and socio-economic factors associated with anxiety issues among urban adults in Bangladesh. The study utilized the Bangla DASS-21 scale to measure anxiety levels, showing good reliability with a Cronbach alpha of 0.823. The age range of 18-39 was chosen to represent young adults in urban Bangladesh, highlighting the importance of understanding mental health issues in this population. The correlation analysis in the study was found to be significant at the 0.01 level (2-tailed). To assess the size and direction of the linear relationship among Gender, Marital Status, Age, socio-economic

status, Family Monthly Income, and depression, a bivariate Pearson's product-moment correlation coefficient (r) was calculated. A significant proportion of the sample exhibits moderate to extremely severe anxiety levels, with 26.9% are in a normal level. 14.4% of people reported mild anxiety, 24.4% moderate anxiety, 15.4% severe anxiety, and 18.9% extremely severe anxiety. A study in Bangladesh found that psychological distress varied from 6.5 to 31% among urban adults (Hossain et al., 2014). Due to Covid-19, the number raised at 51.9% (Ali et al., 2020).

The one sample t-test of gender and marital status shows that there is a significant relationship between gender and anxiety score; and marital status and anxiety score. Studies indicate that women in urban areas of Bangladesh exhibit higher levels of anxiety compared to men. Among adolescents in Dhaka, 49.9% of females experience moderate to severe anxiety, significantly higher than the 40.1% reported by males, with contributing factors including irregular physical activity and high screen time (Anjum et al., 2022). In urban slums, women are more affected by anxiety, exacerbated by shared household facilities, food insecurity, and fear of infection (Koly et al., 2021). However, in rural areas, there was no significant difference between young adult men and women (Islam, 2019). Marital status significantly influences anxiety levels among urban adults in Bangladesh, with married individuals exhibiting better mental health compared to their unmarried, divorced, or widowed counterparts. Studies indicate that married people in urban slums report lower anxiety levels, benefiting from the psychosocial support of their partners (A. Rabbani et al., 2018). In contrast, widowed older adults face significantly higher anxiety due to the lack of support and increased financial and health concerns (Islam, 2019).

According to the ANOVA table, educational qualification doesn't show a significant difference at the 0.05 level of significance, however, significant differences in socio-economic status, occupation, and age have been found. Socio-economic status, education level, age, and occupation significantly influence anxiety levels among urban adults in Bangladesh. Lower SES, lower education, older age, and unemployment are associated with higher anxiety. Financial threat and economic hardship are significant predictors of anxiety, particularly among unemployed youths in Bangladesh. Economic challenges exacerbate mental health issues, highlighting the critical role of financial stability in mitigating anxiety (Mamun et al., 2020). Education provides a protective effect against anxiety, as higher levels of education are associated with better-coping mechanisms and access to mental health resources (Shi et al., 2014). Lower educational attainment is linked to higher anxiety levels. Individuals with no formal education or only primary education experience significantly higher anxiety compared to those with higher educational qualifications (F. M. A. Islam, 2019).

Anxiety levels vary with age, with older adults experiencing higher anxiety levels than younger adults. The prevalence of severe psychological distress is notably higher in older adults aged 60-90 years compared to younger adults aged 18-59 years (F. M. A. Islam, 2019). Among adolescents, age and school grade are significant factors, with older students showing higher anxiety levels due to academic and social pressures (Anjum et al., 2022). Employment status impacts anxiety levels, with unemployed individuals or those in unstable jobs reporting higher anxiety. Job insecurity and financial instability are major contributors to

increased anxiety (Mamun et al., 2020). The research contributes to the understanding of anxiety prevalence among young adults in urban Bangladesh, shedding light on the mental health challenges faced by this demographic group. This study highlights the significance of treating mental health concerns in this demographic and offers insightful information about the incidence of anxiety among young adults in metropolitan Bangladesh.

LIMITATION

Several limitations of this study need to be mentioned.

1. The study only focused on measuring anxiety levels in Bangladeshi urban young adults aged 18-39, potentially limiting the generalizability of the findings to other age groups or rural populations.

2. The study did not explore potential confounding variables or external factors that could influence the prevalence of anxiety in Bangladeshi urban young adults. Factors such as socio-economic status, access to mental health services, or cultural influences were not thoroughly examined, which could have provided a more holistic understanding of depression in this population.

RECOMENDATIONS

1. Conduct further research to explore the prevalence of anxiety in Bangladeshi urban young adults across a broader age range, including individuals outside the 18-39 age bracket. This would provide a more comprehensive understanding of anxiety prevalence in different age groups within the urban population.

2. Expand the assessment of depression by incorporating a more extensive range of items from the Bangla DASS-21 scale or utilizing additional validated measures to capture a more nuanced understanding of depression in caregivers of children. This broader assessment could offer a more comprehensive insight into the mental health challenges faced by this demographic group.

3. Investigate the influence of various socio-economic and cultural factors on depression prevalence in Bangladeshi urban young adults. By examining variables such as socio-economic status, access to mental health resources, and cultural beliefs, future studies can provide a more holistic view of the determinants of depression in this population.

ACKNOWLEDGMENT

The authors financed the complete research process, from data collection to analysis, independently.

REFERENCES

Alam, F., Hossain, R., Ahmed, H. U., Alam, M. T., Sarkar, M., & Halbreich, U. (2021). Stressors and mental health in Bangladesh: Current situation and future hopes. *BJPsych International*, *18*(4), 91–94. https://doi.org/10.1192/bji.2020.57

Ali, M., Ahsan, G. U., Khan, R., Khan, H. R., & Hossain, A. (2020). Immediate impact of stay-at-home orders to control COVID-19 transmission on mental well-being in Bangladeshi adults: Patterns, Explanations, and future directions. *BMC Research Notes*, *13*(1), 494. https://doi.org/10.1186/s13104-020-05345-2

Alim, S. A. H. M., Kibria, S. M. E., Lslam, M. J., Uddin, M. Z., Nessa, M., Wahab, M. A., & Lslam, M. M. (2014). Translation of DASS 21 into Bangla and validation among medical students. *Bangladesh Journal of Psychiatry*, *28*(2), Article 2. https://doi.org/10.3329/bjpsy.v28i2.32740

Amin, S. (2015). Urban adolescents needs assessment survey in Bangladesh. *Poverty, Gender, and Youth*. https://doi.org/10.31899/pgy9.1066

Anjum, A., Hossain, S., Hasan, M., Uddin, M. E., & Sikder, M. T. (2022). Anxiety among urban, semi-urban and rural school adolescents in Dhaka, Bangladesh: Investigating prevalence and associated factors. *PLoS ONE*, *17*. https://doi.org/10.1371/journal.pone.0262716

Bhattacharjee, A., Haque, S. M. T., Hady, A., Alam, S. M. R., Rabbi, M., Kabir, M. A., & Ahmed, S. I. (2021). Understanding the social determinants of mental health of undergraduate students in Bangladesh: Interview study. *JMIR Formative Research*, *5*(11), e27114. https://doi.org/10.2196/27114

Böge, K., Zieger, A., Mungee, A., Tandon, A., Fuchs, L. M., Schomerus, G., Tam Ta, T. M., Dettling, M., Bajbouj, M., Angermeyer, M., & Hahn, E. (2018). Perceived stigmatization and discrimination of people with mental illness: A survey-based study of the general population in five metropolitan cities in India. *Indian Journal of Psychiatry*,*60*(1),24–31. https://doi.org/10.4103/psychiatry.IndianJPsychiatry_406_17

Breslau, J., Marshall, G. N., Pincus, H. A., & Brown, R. A. (2014). Are mental disorders more common in urban than rural areas of the United States? *Journal of Psychiatric Research*, *56*, 50–55. https://doi.org/10.1016/j.jpsychires.2014.05.004

Chandra, P. S., Shiva, L., & Nanjundaswamy, M. H. (2018). The impact of urbanization on mental health in India. *Current Opinion in Psychiatry*, *31*(3), 276–281. https://doi.org/10.1097/YCO.0000000000000408

Desai, N. G., Tiwari, S. C., Nambi, S., Shah, B., Singh, R. A., Kumar, D., Trivedi, J. K., Palaniappan, V., Tripathi, A., Pali, C., Pal, N., Maurya, A., & Mathew, M. (2004). Urban Mental Health Services in India: How Complete or Incomplete? *Indian Journal of Psychiatry*, *46*(3), 195–212.

Hasan, M. T., Anwar, T., Christopher, E., Hossain, S., Hossain, M. M., Koly, K. N., Saif-Ur-Rahman, K. M., Ahmed, H. U., Arman, N., & Hossain, S. W. (2021). The current state of mental healthcare in Bangladesh: Part 1 – an updated country profile. *BJPsych International*, *18*(4), 78–82. https://doi.org/10.1192/bji.2021.41

Hossain, M. D., Ahmed, H. U., Chowdhury, W. A., Niessen, L. W., & Alam, D. S. (2014). Mental disorders in Bangladesh: A systematic review. *BMC Psychiatry*, *14*(1), 216. https://doi.org/10.1186/s12888-014-0216-9

Islam, A. (2015). Mental Health and the Health System in Bangladesh: Situation Analysis of a Neglected Domain. *American Journal of Psychiatry and Neuroscience*, *3*, 57. https://doi.org/10.11648/j.ajpn.20150304.11

Islam, A., & Biswas, T. (2015a). *Mental Health and the Health System in Bangladesh: Situation Analysis of a Neglected Domain*.

Islam, A., & Biswas, T. (2015b, June). *Mental Health and the Health System in Bangladesh: Situation Analysis of a Neglected Domain Anwar Islam*.

Islam, F. M. A. (2019). Psychological distress and its association with socio-demographic factors in a rural district in Bangladesh: A cross-sectional study. *PLOS ONE*, *14*(3), e0212765. https://doi.org/10.1371/journal.pone.0212765

James, S. L., Abate, D., Abate, K. H., Abay, S. M., Abbafati, C., Abbasi, N., Abbastabar, H., Abd-Allah, F., Abdela, J., Abdelalim, A., Abdollahpour, I., Abdulkader, R. S., Abebe, Z., Abera, S. F., Abil, O. Z., Abraha, H. N., Abu-Raddad, L. J., Abu-Rmeileh, N. M. E., Accrombessi, M. M. K.,

… Murray, C. J. L. (2018). Global, regional, and national incidence, prevalence, and years lived with disability for 354 diseases and injuries for 195 countries and territories, 1990–2017: A systematic analysis for the Global Burden of Disease Study 2017. *The Lancet*, *392*(10159), 1789–1858. https://doi.org/10.1016/S0140-6736(18)32279-7

Kahn, K., Collinson, M. A., Gómez-Olivé, F. X., Mokoena, O., Twine, R., Mee, P., Afolabi, S. A., Clark, B. D., Kabudula, C. W., Khosa, A., Khoza, S., Shabangu, M. G., Silaule, B., Tibane, J. B., Wagner, R. G., Garenne, M. L., Clark, S. J., & Tollman, S. M. (2012). Profile: Agincourt Health and Socio-demographic Surveillance System. *International Journal of Epidemiology*, *41*(4), 988–1001. https://doi.org/10.1093/ije/dys115

Karim, E., Alam, M., Rahman, A., Hussain, A., Uddin, M. M. J., & Firoz, A. (2006). Prevalence of Mental Illness in the Community. *TAJ*, *19*. https://doi.org/10.3329/taj.v19i1.3163

Khan, Md. M. A., & Khan, Md. N. (2020). Effects of psychosocial and socio-environmental factors on anxiety disorder among adolescents in Bangladesh. *Brain and Behavior*, *10*(12), e01899. https://doi.org/10.1002/brb3.1899

Klineberg, E., Clark, C., Bhui, K. S., Haines, M. M., Viner, R. M., Head, J., Woodley-Jones, D., & Stansfeld, S. A. (2006). Social support, ethnicity and mental health in adolescents. *Social Psychiatry and Psychiatric Epidemiology*, *41*(9), 755–760. https://doi.org/10.1007/s00127-006-0093-8

Koly, K., Khanam, M. I., Islam, M. S., Mahmood, S., Hanifi, S., Reidpath, D., Khatun, F., & Rasheed, S. (2021). Anxiety and Insomnia Among Urban Slum Dwellers in Bangladesh: The Role of COVID-19 and Its Associated Factors. *Frontiers in Psychiatry*, *12*. https://doi.org/10.3389/fpsyt.2021.769048

Lipi, A. I., & Hasan, N. (2021). URBANIZATION IN BANGLADESH: EMERGING CHALLENGES AND THE WAY FORWARD. *Bangladesh Journal of Multidisciplinary Scientific Research*, *3*(1), 33–44. https://doi.org/10.46281/bjmsr.v3i1.1112

Lovibond, S. H., & Lovibond, P. F. (1995). *Depression Anxiety Stress Scales DASS-21*. https://psycnet.apa.org/doiLanding?doi=10.1037%2Ft01004-000

Mamun, M., Akter, S., Hossain, I., Faisal, M., Rahman, M. A., Arefin, A., Khan, I., Hossain, L., Haque, M. A., Hossain, S., Hossain, M., Sikder, T., Kircaburun, K., & Griffiths, M. (2020). Financial threat, hardship and distress predict depression, anxiety and stress among the unemployed youths: A Bangladeshi multi-city study. *Journal of Affective Disorders*, *276*, 1149–1158. https://doi.org/10.1016/j.jad.2020.06.075

Mazumder, H., Murshid, M.-E., Faizah, F., & Hossain, M. M. (2020). Geriatric mental health in Bangladesh: A call for action. *International Psychogeriatrics*, *32*(5), 667–668. https://doi.org/10.1017/S1041610220000423

Morshed, M. U., & Naz, H. (2024). Validation of Ansiety scale on Bangladeshi Urban young Adult Population. Unpublish Manuscript. Centre for Research In Multidiscipline- CRM.

Nunes, M. A., Pinheiro, A. P., Bessel, M., Brunoni, A. R., Kemp, A. H., Benseñor, I. M., Chor, D., Barreto, S., & Schmidt, M. I. (2016). Common mental disorders and sociodemographic characteristics: Baseline findings of the Brazilian Longitudinal Study of Adult Health (ELSA-Brasil). *Brazilian Journal of Psychiatry*, *38*, 91–97. https://doi.org/10.1590/1516-4446-2015-1714

Peen, J., Schoevers, R. A., Beekman, A. T., & Dekker, J. (2010). The current status of urban-rural differences in psychiatric disorders. *Acta Psychiatrica Scandinavica*, *121*(2), 84–93. https://doi.org/10.1111/j.1600-0447.2009.01438.x

Rabbani, A., Biju, N., Rizwan, A., & Sarker, M. (2018). Social network analysis of psychological morbidity in an urban slum of Bangladesh: A cross-sectional study based on a community census. *BMJ Open*, *8*. https://doi.org/10.1136/bmjopen-2017-020180

Rabbani, G., Ahmed, H. U., Desai, G., & Dinesh Bhugra. (2015). The Bangladesh perspective. In *Routledge Handbook of Psychiatry in Asia.*

Rozario, L., & Islam, S. (2022). Scenario of mental health in Bangladesh: A signature glimpse. *Dhaka University Journal of Biological Sciences*, 405–416. https://doi.org/10.3329/dujbs.v30i3.59033

Sarafino, E. P., & Armstrong, J. W. (1980). *Child and Adolescent Development*. Scott, Foresman.

Shi, J., Zhang, Y., Liu, F., Li, Y., Wang, J., Flint, J., Gao, J., Li, Y., Tao, M., Zhang, K., Wang, X., Gao, C., Yang, L., Li, K., Shi, S., Wang, G., Liu, L., Zhang, J., Du, B., … Kendler, K. (2014). Associations of Educational Attainment, Occupation, Social Class and Major Depressive Disorder among Han Chinese Women. *PLoS ONE*, *9*. https://doi.org/10.1371/journal.pone.0086674

UNDP. (2017). Rapid urbanisation: Opportunities and challenges to improve the well-being of societies. In *Human Development Reports*. United Nations. https://hdr.undp.org/content/rapid-urbanisation-opportunities-and-challenges-improve-well-being-societies

van Ommeren, M., Saxena, S., & Saraceno, B. (2005). Mental and social health during and after acute emergencies: Emerging consensus? *Bulletin of the World Health Organization*, *83*(1), 71–75; discussion 75-76.

Ventriglio, A., Torales, J., Castaldelli-Maia, J. M., Berardis, D. D., & Bhugra, D. (2021). Urbanization and emerging mental health issues. *CNS Spectrums*, *26*(1), 43–50. https://doi.org/10.1017/S1092852920001236

WMoHaf, welfare. (2007). *WHO-AIMS Report on Mental Health System in Bangladesh*. 27.

Worldometer. (2023). *Bangladesh Population (2023)—Worldometer*. https://www.worldometers.info/world-population/bangladesh-population/

Ra, D. (2021a). Urbanization and emerging mental health issues. *CNS Spectrums*, *26*(1), 43–50. https://doi.org/10.1017/S1092852920001236

World Health Organization(WHO). (2024). World Health Organization(WHO). https://www.who.int/news-room/fact-sheets/detail/depression

ROMANIAN JOURNAL OF PSYCHOLOGICAL STUDIES

HYPERION UNIVERSITY
www.rjps.hyperion.ro

INSTRUCTIONS FOR AUTHORS
ARTICLE TEMPLATE

CAREGIVING IN ROMANTIC RELATIONSHIPS: THE ROLE OF EMOTIONAL STABILITY

MARIA-CLARA STANCOV [a]
[a] Ion Creangă State University, Chișinău, Republic of Moldova

Abstract

This study investigated the relationship between caregiving and emotional stability in a sample of 121young adults aged between 23 and 41 years, including 63 females and 58 males. To measure the variables participants completed Emotional Stability Scale from the Big Five Factor Markers and the Caregiving Questionnaire. Simple linear regression indicated that emotional stability acts as a significant predictor for all dimensions of caregiving: proximity ($R^2 = .510$, $p = .000$), sensitivity ($R^2 = .291$, $p = .000$), control ($R^2 = .510$, $p = .000$) and compulsive caregiving ($R^2 = .086$, $p = .001$). In practice we can observe that individuals who show higher stability in the emotional area, tend to react less impulsively effectively managing their feelings and they tend to engage in context-appropriate caregiving behaviors within romantic relationships. The main limitation of this present study is that the data were collected through self-reported questionnaire responses, which may not fully capture the complexity of the emotions or relational dynamics that the participants might experienced. Longitudinal designs can definitely bring larger benefits, following individuals over time, and also including contextual variables as relationship satisfaction and partners responsiveness.

Keywords: *emotional stability, caregiving behaviors, proximity, sensitivity, control*

1. INTRODUCTION

Romantic relationships often generate emotional responses that are less evident in other spheres of life point this is possibly because there is more closeness involved and at least to some extent people rely on their partner (Bowlby, 1982; Hazan & Shaver, 1987). In these situations, it is more difficult to maintain a certain emotional distance and responses are more immediate. Other authors have discovered that close relationships have the capacity of magnifying rather than attenuate emotional reactions, which makes daily interactions more psychologically relevant than might appear at first (Reis & Clark, 2013). At the same time, offering support within a relationship is not a uniform process. Even when intentions are similar responses can be experienced very differently what feels supportive in one moment can be felt as intrusive or inadequate in another (Feeney & Collins, 2001; Mikulincer &shaver, 2007). This suggests that situational factors alone cannot fully explain how

Corresponding author: Maria-Clara Stancov
E-mail address: stancov.maria-clara@upsc.md

people respond to their partners. Individual differences in emotional regulation appear to play a central role. Also, the previous research reelevates that caregiving responses are often mirrored more by internal regulatory tendencies than by the immediate context (George & Solomon, 2008).

People respond on emotionally difficult situations in very different ways, some of the individuals are relatively stable and some fluctuate more dramatically in their emotional responses. These differences can be explained through emotional stability, especially the way people are getting overwhelmed and how quickly they can recover (Goldberg et al., 2006; Lahey, 2009).As a concept this often seen as the opposite of neuroticism and has been linked closely to patterns of emotional reactivity (McCrae & Costa, 2008; John et al., 2008). This trait is especially salient in close relationships.

Sometimes these differences are revealed in all kinds of vulnerability or when people need emotional support. Some individuals can be present and responsive in a calm attuned way, and others might get tight, or unsure or shut down. Such patters may, over the time, affect the climate of the relationship in general, mostly during the times of stress or conflict (Karney & Bradbury, 1995). From this perspective, support should not be treated as an automatic and uniform feature in romantic relationships, but as a context dependent form of responsiveness (Overall et al., 2009; Simpson & Rholes, 2017).

Although the personality traits and attachment process literature is vast, the specific relationship between emotional stability and caregiving remains unclear. One of the possible explanation for the inconsistent interpretation of this relationship is that caregiving does not have the same meaning in every relational context. Caregiving is better understood as part of the emotional regulation that takes place between partners, mostly when they negotiate closeness, vulnerability, and relational tension (Kunce & Shaver, 1994; Collins & Feeney, 2000; Reis & Clark, 2013).

2. OBJECTIVE AND HYPOTHESES

2.1. OBJECTIVE

The study focuses on the role of emotional stability in shaping caregiving responses within romantic relationships, with attention to the way individuals confront with emotional need or vulnerability. In this moments individual differences are more easily seen, especially in the way how partners respond to one another. Emotional stability matters here because it shows how individuals handle their emotions in times of distress. In the same time, caregiving behaviours reflect how individuals orient themselves toward their partner whether they remain engaged, become hesitant or withdraw. Given that, these processes unfold simultaneously, and distinguishing them can be challenging, yet they appear to be closely interconnected. Although both constructs have been explored separately in previous research, their relationship remains insufficiently understood, particularly in non-clinical populations. Caregiving does not have the same meaning in every relational situation. Which makes the association between the variables more difficult to be interpreted. For this reason, this study approached emotional stability as a personality dimension that may be reflected in the way individuals offer care and respond to partner's needs in romantic relationship

The study follows two main objectives:

1. Emotional stability is significantly associated with caregiving behaviors in romantic relationships.
2. To determine if emotional stability accounts for significant variance in caregiving behaviors.

2.2. HYPOTHESES

Assuming emotional balance may influence the way people offer care in close relationships, the following hypotheses were proposed:

H1: An association exists between emotional stability and caregiving behaviours.

H2: Emotional stability has a predictive role for the caregiving dimensions.

3. METHOD

3.1 THE PARTICIPANTS

A total of 121 young adults took part of the study. Their ages ranged from 23 to 41 years, having a mean age of 34,69 (SD = 5,16). Recruitment was carried out online, using public announcements and digital sharing channels addressed to individuals from the general population. Those who decided to participate accesed the questionnaire on their own and offered their confirmation on voluntary participation before completing the measures. The main eligibility conditions were belonging to the targeted age group, being able to provide informed consent and report having had at least one romantic relationship. Data collection was carried out through a self-administered questionnaire completed online in a private setting using personal devices. Prior to starting the questionnaire, participants read on information sheet and provide the informed consent electronically. Participation was entirely voluntary and participants were free to withdraw at any time without any consequences. Participants were assured anonymity regarding their answers and only basic demographic information was collected thus protecting confidentiality. The final group of participants consisted of a non-clinical sample of young adults considered appropriate for exploring how emotional stability relates to caregiving behaviors within romantic relationships.

3.2 INSTRUMENTS

Emotional stability was measured using the emotional stability scale derived from The Big Five Factor Markers, which is based on items from the International Personality Item Pool (IPIP) and has been adapted for use with the Romanian population (Iliescu et al., 2015). The scale includes 20 items, with responses recorded on a five-point Likert format, ranging from strong disagreement to strong agreement. Higher overall scores reflect a greater degree of emotional stability.

Caregiving behaviors were assessed with the Caregiving Questionnaire (Kunce & Shaver; 1994). The scale has 32 items and four dimensions of caregiving that are relevant to romantic relationships: proximity, sensitivity, control and compulsive caregiving. The the responses are given on a six-point response scale, from low to high agreement with each self-descriptive statement. Scores are calculated separately for each dimension with higher values indicating a stronger expression of the respective caregiving pattern.

3.3 PROCEDURE

Participants completed the questionnaire online at their own pace. Before starting they were presented with information about the study and provided their informed consent

electronically. After this step they filled in both the emotional stability scale and the caregiving questionnaire. Usual completion time was approximately 15 minutes. Identifiable information was kept confidential and the right to step back from the study was . The participation was anonymous and totally voluntary. Data were exported and analysed using IBM SPSS statistics, version 29. The methodology specified conducting these descriptive statistics for the variables of interest, assessing the correlations between emotional stability and caregiving dimensions, and performing simple linear regression analysis to examine the predictive role of emotional stability on caregiving behaviours.

4. RESULTS

Descriptive statistics were computed for the central variables of the study: emotional stability, caregiving dimensions, and age.

Table 1. Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Age	121	23	42	34.69	5.15
Emotional stability	121	1	5	3.32	0.98
Proximity	121	1.88	6	4.62	1.30
Sensitivity	121	1.50	6	4.34	1.14
Control	121	1.13	5.25	2.90	1.05
Compulsive caregiving	121	1.13	5.63	3.26	0.87
Valid N (listwise)	121				

The descriptive analysis indicated that the average emotional stability score among participants was M = 3.32 (SD = 0.99), suggesting a moderate level of emotional balance within the sample. This result may indicate that most young adults included in the study tend to show a relatively stable emotional functioning, although individual differences remain visible.

Regarding caregiving behaviors, the highest mean score was observed for proximity (M = 4.62, SD = 1.30), followed by sensitivity (M = 4.34, SD = 1.15). These values suggest that participants generally reported a stronger tendency to offer closeness, comfort, and emotional responsiveness in romantic relationships. By contrast, the mean scores for compulsive caregiving (M = 3.26, SD = 0.88) and control (M = 2.91, SD = 1.06) were lower, which may indicate that more intrusive or overinvolved forms of caregiving were less strongly expressed in this sample.

The mean age of the sample was M = 34.69 (SD = 5.16), confirming the focus on young adults. This developmental period is typically associated with emotional maturation, relational commitment, and greater interpersonal responsibility, which makes the investigation of emotional stability and caregiving behaviors particularly relevant in the context of romantic relationships.

4.2 PEARSON CORRELATION ANALYSIS

To explore the associations between emotional stability with the different caregiving dimensions, Pearson correlation coefficients were calculated.

Table 2. Pearson Correlations Between Emotional Stability and Caregiving Dimensions

		1.	2.	3.	4.	5.
1. Emotional	Pearson Correlation	1	.553**	.539**	-.714**	-.293**

		1.	2.	3.	4.	5.
stability	Sig. (2-tailed)		<.001	<.001	<.001	.001
	N	121	121	121	121	121

1. Proximity
2. Sensitivity
3. Control
4. Compulsive caregiving

**. Correlation is significant at the 0.01 level (2-tailed).

The results indicated some statistically significant relationships between emotional stability and caregiving patterns. Emotional stability showed moderate positive correlations with both proximity ($r = .553$, $p < .001$) and sensitivity ($r = .539$, $p < .001$). Individuals that have higher emotional stability may be more able to remain emotionally present in the relationship and more available to their partner's needs.

Emotional stability strongly and negatively correlates with control ($r = -.714$, $p < .001$), indicating that higher levels of emotional stability are associated with a lower tendency to manifest controlling behaviours. A similar, but weaker, negative association was observed for compulsive caregiving ($r = -.293$, $p = .001$), suggesting that emotionally stable individuals appear more able to offer support while they can also maintain a healthy boundry.

When interpreted psychologically the results suggest that emotional stability may influence the emotional quality behind caregiving. A more emotional stable person may be better to remain calm and connected when the partner needs support, without tensioning the situation with suplimentary pressure. This is why, caregiving reflects not only the intention to help, but also the individual capacity to regulate their own emotional reactions and at the same time, still being emotionally present for the other person.

4.3 SIMPLE LINEAR REGRESSION ANALYSIS

To further examine whether emotional stability functions as a predictor of caregiving behaviors, a series of simple linear regression analyses was carried out.

Table 3. Linear Regression Coefficients predicting Proximity from Emotional Stability

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	2.192	.350		6.271	<.001
	Emotional stability	.731	.101	.553	7.246	<.001

a. Dependent Variable: Proximity

The linear regression model revealed that emotional stability significantly predicts proximity in young adults. The standardized beta coefficient ($\beta = .553$, $p = <.001$) indicates a moderate positive predictive relationship. The unstandardized coefficient ($B = .731$) suggests that for every one-point increase in emotional stability, the proximity score increases by approximately 0.73 points.

The model explained 30.6% of the total variance in proximity ($R^2 = .306$), reflecting a meaningful predictive effect of emotional stability. The results indicate that emotional stability positively predicts proximity in young adults, suggesting that higher emotional stability is associated with greater closeness and supportive responsiveness in romantic relationships.

Table 4. Linear Regression Coefficients predicting Sensitivity from Emotional Stability

Model	Unstandardized Coefficients	Standardized Coefficients	t	Sig.

		B	Std. Error	Beta		
1	(Constant)	2.260	.311		7.272	<.001
	Emotional stability	.627	.090	.539	6.986	<.001

a. Dependent Variable: Sensitivity

The linear regression model revealed that emotional stability significantly predicts sensitivity in young adults. The standardized beta coefficient (β = .539, p = <.001) indicates a moderate positive predictive relationship. The unstandardized coefficient (B = .627) suggests that for every one-point increase in emotional stability, the sensitivity score increases by approximately 0.63 points.

The model explained 29.1% of the total variance in sensitivity (R^2 = .291), reflecting a meaningful predictive effect of emotional stability. The results indicate that emotional stability positively predicts sensitivity in young adults, suggesting that higher emotional stability is associated with greater attentiveness to a partner's emotional needs.

Table 5. Linear Regression Coefficients predicting Control from Emotional Stability

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	5.454	.239		22.864	<.001
	Emotional stability	-.766	.069	-.714	-11.125	<.001

a. Dependent Variable: Control

The linear regression model revealed that emotional stability significantly predicts control in young adults. The standardized beta coefficient (β = -.714, p = <.001) indicates a strong negative predictive relationship. The unstandardized coefficient (B = -.766) suggests that for every one-point increase in emotional stability, the control score decreases by approximately 0.77 points.

The model explained 51.0% of the total variance in control (R^2 = .510), reflecting a substantial predictive effect of emotional stability. The results indicate that emotional stability negatively predicts control in young adults, suggesting that higher emotional stability is associated with lower levels of controlling caregiving behaviours.

Table 6. Linear Regression Coefficients predicting Compulsive Caregiving from Emotional Stability

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	4.129	.271		15.242	<.001
	Emotional stability	-.261	.078	-.293	-3.341	.001

a. Dependent Variable: Compulsive caregiving

The linear regression model revealed that emotional stability significantly predicts compulsive caregiving in young adults. The standardized beta coefficient (β = -.293, p = .001) indicates a weak to moderate negative predictive relationship. The unstandardized coefficient (B = -.261) suggests that for every one-point increase in emotional stability, the compulsive caregiving score decreases by approximately 0.26 points.

Emotional stability explained 8,6% of the variance in compulsive caregiving (R^2=.086), showing a small but still relevant predictive contribution of emotional stability. The negative direction of the effect shows that young adults who are more emotionally stable, report lower levels of compulsive caregiving, indicating a lower implication in excessive overinvolvement behaviours.

5. CONCLUSIONS

The present research helped to understand if emotional stability is connected to the way young adults offer care in close relationships, and the results suggest that it is relevant for all dimensions of caregiving explored in the analysis, More precisely, it showed positive associations with proximity ($r = .553$, $p < .001$) and sensitivity ($r = .539$, $p < .001$), and negative associations with control ($r = -.714$, $p < .001$) and compulsive caregiving ($r = -.293$, $p = .001$).

The regression analyses provided additional support for these patterns, indicating that emotional stability acts as a meaningful predictor across all caregiving dimensions. It accounted for 30.6% of the variance in proximity ($R^2 = .306$), 29.1% in sensitivity ($R^2 = .291$), 51.0% in control ($R^2 = .510$), and 8.6% in compulsive caregiving ($R^2 = .086$).

Individuals who show higher levels of emotional stability tend to respond to their partners in ways that involve closeness and sensitivity while being less inclined toward controlling or overly intrusive forms of caregiving. Beyond being a stable personality characteristic, emotional stability can also be understood as a psychological resource that supports emotional regulation, atonement to others and more balanced ways of offering support. Given that young adulthood is the period character characterized by ongoing identity development increasing emotional maturity and deeper relational involvement, these findings provide useful insight into how personality traits may influence the way individuals function within close relationships. At the same time lower emotional stability appears to be associated with less consistent caregiving patterns, often marked by tension control or excessive involvement.

From an applied perspective these results highlight the potential value of psychological interventions focused on improving social regulation increasing self-awareness and straightening relational skills. Enhancing emotional stability may have benefits not only at the individual level but also in promoting more supportive and functional romantic relationships.

Several limitations should be considered when interpreting these findings. The cross-sectional design does not allow conclusion about causality, and the use of self-report measures may introduce biases related to social desirability and subjective perception. Future studies could address this limitation by using longitudinal designs including more diverse samples and examining additional relational factors that may further clarify the role of emotional stability in caregiving processes.

REFERENCES

1. Bowlby, J. (1982). *Attachment and loss: Vol. 1. Attachment* (2nd ed.). Basic Books.
2. Collins, N. L., & Feeney, B. C. (2000). A safe haven: An attachment theory perspective on support seeking and caregiving in intimate relationships. *Journal of Personality and Social Psychology, 78*(6), 1053–1073. https://doi.org/10.1037/0022-3514.78.6.1053
3. Feeney, B. C., & Collins, N. L. (2001). Predictors of caregiving in adult intimate relationships: An attachment theoretical perspective. *Journal of Personality and Social Psychology, 80*(6), 972–994. https://doi.org/10.1037/0022-3514.80.6.972
4. George, C., & Solomon, J. (2008). The caregiving system: A behavioral systems approach to parenting. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical applications* (2nd ed., pp. 833–856). Guilford Press.
5. Goldberg, L. R., Johnson, J. A., Eber, H. W., Hogan, R., Ashton, M. C., Cloninger, C. R., & Gough, H. G. (2006). The International Personality Item Pool and the future of public domain personality measures. *Journal of Research in Personality, 40*(1), 84–96. https://doi.org/10.1016/j.jrp.2005.08.007
6. Hazan, C., & Shaver, P. R. (1987). Romantic love conceptualized as an attachment process. *Journal of Personality and Social Psychology, 52*(3), 511–524. https://doi.org/10.1037/0022-3514.52.3.511
7. Iliescu, D., Popa, M., & Dimache, R. (2015). Adaptarea românească a Setului Internațional de Itemi de Personalitate: IPIP-Ro. *Psihologia Resurselor Umane, 13*(1), 83–112.

8. John, O. P., Naumann, L. P., & Soto, C. J. (2008). Paradigm shift to the integrative Big Five trait taxonomy: History, measurement, and conceptual issues. In O. P. John, R. W. Robins, & L. A. Pervin (Eds.), *Handbook of personality: Theory and research* (3rd ed., pp. 114–158). Guilford Press.

9. Karney, B. R., & Bradbury, T. N. (1995). The longitudinal course of marital quality and stability: A review of theory, method, and research. *Psychological Bulletin, 118*(1), 3–34. https://doi.org/10.1037/0033-2909.118.1.3

10. Kunce, L. J., & Shaver, P. R. (1994). An attachment theoretical approach to caregiving in romantic relationships. In K. Bartholomew & D. Perlman (Eds.), *Advances in personal relationships: Vol. 5. Attachment processes in adulthood* (pp. 205–237). Jessica Kingsley Publishers.

11. Lahey, B. B. (2009). Public health significance of neuroticism. *American Psychologist, 64*(4), 241–256. https://doi.org/10.1037/a0015309

12. McCrae, R. R., & Costa, P. T., Jr. (2008). Empirical and theoretical status of the five factor model of personality traits. In G. J. Boyle, G. Matthews, & D. H. Saklofske (Eds.), *The SAGE handbook of personality theory and assessment: Vol. 1. Personality theories and models* (pp. 273–294). SAGE Publications. https://doi.org/10.4135/9781849200462.n13

13. Mikulincer, M., & Shaver, P. R. (2007). *Attachment in adulthood: Structure, dynamics, and change*. Guilford Press.

14. Overall, N. C., Fletcher, G. J. O., Simpson, J. A., & Sibley, C. G. (2009). Regulating partners in intimate relationships: The costs and benefits of different communication strategies. *Journal of Personality and Social Psychology, 96*(3), 620–639. https://doi.org/10.1037/a0012961

15. Reis, H. T., & Clark, M. S. (2013). Responsiveness. In J. A. Simpson & L. Campbell (Eds.), *The Oxford handbook of close relationships* (pp. 400–423). Oxford University Press. https://doi.org/10.1093/oxfordhb/9780195398694.013.0018

16. Simpson, J. A., & Rholes, W. S. (2017). Adult attachment, stress, and romantic relationships. *Current Opinion in Psychology, 13*, 19–24. https://doi.org/10.1016/j.copsyc.2016.04.006

ROMANIAN JOURNAL OF PSYCHOLOGICAL STUDIES

HYPERION UNIVERSITY
www.rjps.hyperion.ro

THE RELATIONSHIP BETWEEN SELF-ESTEEM, MOTIVATION AND ACADEMIC ENGAGEMENT AMONG UNIVERSITY STUDENTS

SÎRBU, MARINELA [a] , MOMANU, MIRELA-CLAUDIA [a] , GHERGHE, ELENA CRINELA [a,]

[a] Hyperion University, Faculty of Psychology and Educational Sciences, Department of Psychology

Abstract

The present study aimed to examine in depth the relationship between self-esteem, academic motivation, and students' academic engagement, considering the significant impact of these psychological dimensions on educational success and adaptation to the demands of the university environment. Within the academic context, self-esteem, defined as students' perceptions of their own worth and competence, plays a crucial role in shaping self-confidence and the ability to cope with academic challenges. Accordingly, one of the main objectives of the study was to explore the relationship between self-esteem and academic engagement by examining the extent to which students' self-perceptions influence their involvement in educational activities.

Another objective of the research was to investigate the role of academic motivation in determining students' level of academic engagement. Academic motivation, encompassing both intrinsic motivation (the desire to learn driven by interest, enjoyment, and curiosity) and extrinsic motivation (orientation toward external rewards, such as career prospects and social recognition), represents the driving force that encourages students to persist in academic activities even when they become challenging. This study sought to evaluate how each type of motivation influences students' participation and persistence, with the aim of highlighting the distinct effects of intrinsic and extrinsic motivation on academic engagement.

The findings revealed a strong relationship among these constructs and identified several characteristics that may be further explored to enhance students' motivation, self-esteem, and academic engagement within the higher education environment.

Keywords: *academic motivation, academic engagement, self-esteem.*

1. INTRODUCTION

Among university students, self-esteem influences not only self-confidence but also the way students approach academic challenges and respond to failure. Students with high self-esteem tend to adopt a more proactive approach to achieving their academic goals and are generally more capable of overcoming obstacles than those with low self-esteem. Similarly, academic motivation, defined as the set of processes and factors that determine the energy, direction, and persistence of learning-related behaviors, has a significant influence on students' academic engagement. Previous research has demonstrated that both intrinsic motivation (the desire to learn driven by personal interest and curiosity) and extrinsic motivation (motivation oriented toward external rewards or the avoidance of negative consequences) contribute to students' level of engagement, resilience in the face of academic challenges, and overall

Corresponding author: Momanu Mirela-Claudia
E-mail address: mirelamomanu@gmail.com

academic achievement. In an educational environment characterized by increasingly demanding academic requirements, motivation can be the determining factor that distinguishes students who successfully reach their full potential from those who experience difficulties in adaptation or academic performance.

The effects of self-esteem on academic performance have been well documented in the literature. Longitudinal studies have shown that positive self-esteem is a significant predictor of academic success, as it contributes to higher levels of motivation and greater persistence when facing academic challenges (Rosenberg, Schooler, & Schoenbach, 1989). Furthermore, individuals with high self-esteem tend to approach academic tasks with greater confidence and are more likely to employ effective self-regulated learning strategies, such as planning, goal setting, and self-monitoring of their progress (Zimmerman, 2002). In contrast, low self-esteem has been associated with less adaptive outcomes, including a greater tendency to avoid effort, increased vulnerability to stress and anxiety, and reduced persistence in the face of academic difficulties (Baumeister et al., 2003).

Although high self-esteem is generally considered desirable, research has also highlighted the potential negative consequences of excessively elevated self-esteem. Baumeister and colleagues introduced the concept of narcissistic self-esteem, suggesting that individuals with unrealistically inflated self-views may display defensive behavior and a low tolerance for criticism. Such individuals often experience difficulties accepting failure, which may lead to interpersonal conflicts and ineffective adaptation to life's challenges.

In addition to family influences, the educational environment plays a crucial role in the development of self-esteem. Relationships with both peers and teachers can profoundly shape students' perceptions of themselves. A positive school climate, in which students feel accepted, respected, and valued, promotes the development of healthy self-esteem. Conversely, experiences of bullying and social exclusion can undermine self-esteem, contributing to feelings of inadequacy and social withdrawal. Therefore, social relationships within the educational setting are fundamental, as they shape how individuals perceive themselves in relation to others, and both positive and negative interpersonal experiences may have lasting effects on self-evaluation (Chubb, Fertman, & Ross, 1997).

Within the educational environment, teachers' involvement and peer relationships play a significant role in shaping students' self-esteem. Research has shown that a positive educational climate, characterized by acceptance, cooperation, and social support, contributes to the development of healthy self-esteem (Wentzel, 1998). Teachers who adopt an inclusive and empathetic teaching approach by providing constructive feedback and emotional support foster students' positive perceptions of their own worth and competence (Ryan & Deci, 2000). Conversely, highly competitive school environments, as well as experiences of bullying and social exclusion, may have the opposite effect, leading to insecurity and social withdrawal, both of which are associated with lower levels of self-esteem (Juvonen & Graham, 2014).

Cross-cultural research has further demonstrated that cultural values influence the development and expression of self-esteem. Hofstede (1980) argued that the distinction between individualistic and collectivistic cultures has important implications for self-evaluation. In individualistic cultures, where personal achievement and individual success are highly valued, self-esteem is often closely tied to accomplishments and perceived competence. Consequently, academic or personal failures may exert a stronger negative impact on self-evaluation, resulting in greater fluctuations in self-esteem (Heine et al., 1999). In contrast, collectivistic cultures, which emphasize interpersonal relationships, group harmony, and collective well-being, tend to foster a form of self-esteem that is more strongly grounded in social connectedness and contribution to the group. As a result, self-esteem in these cultural contexts is generally more stable and less vulnerable to fluctuations arising from individual successes or failures.

Research by Perloff (2014) suggests that adolescents are particularly vulnerable to media influences due to the developmental stage during which their identity and self-esteem are still being formed. Excessive use of social media and continuous exposure to the "idealized images" presented by influencers and celebrities may trigger a cycle of social comparisons, leading to fluctuating or diminished self-esteem and negatively affecting adolescents' mental health and overall well-being.

Self-esteem is a fundamental psychological construct that influences not only individuals' self-perceptions but also students' academic performance. This complex relationship is mediated by several variables, including academic motivation, engagement in educational activities, and learning strategies, all of which have a substantial impact on academic achievement. Self-esteem refers to an individual's subjective evaluation of his or her own worth and competence, and higher levels of self-esteem are consistently associated with better academic outcomes. This relationship can be explained through several psychological and social mechanisms.

Empirical research consistently supports the positive relationship between self-esteem and academic performance. For example, a study conducted by Marsh and Craven (2006) found that students with higher levels of self-esteem achieved better academic grades and demonstrated greater involvement in educational activities than those with lower levels of self-esteem. Their findings further indicated that students with positive self-esteem tend to perform better academically because they exhibit greater motivation, increased perseverance when facing challenges, and a more positive attitude toward learning.

These findings are further supported by research emphasizing the importance of a positive educational climate in which students feel accepted, respected, and supported. Such an environment not only promotes the development of healthy self-esteem but also enhances academic performance. Healthy self-esteem contributes to the establishment of positive relationships with both peers and teachers, thereby fostering cooperation and collaborative learning. Studies have shown that students who perceive strong support from their academic community are more likely to participate actively in the learning process and achieve higher levels of academic performance (Wentzel, 1998).

An academic environment that promotes mutual support and values each individual contributes to the development of a sense of belonging, which, in turn, has a positive influence on self-esteem and, consequently, on academic achievement (Osterman, 2000). Conversely, a lack of social support may intensify feelings of insecurity and limit students' access to the personal and social resources necessary for academic success. Accordingly, research has consistently demonstrated that self-esteem is a significant predictor of academic performance.

Both intrinsic and extrinsic motivation are also central to understanding the relationship between self-esteem and academic achievement. Intrinsic motivation, defined as the desire to learn for the inherent enjoyment and personal satisfaction derived from the learning process, is closely associated with self-esteem. Students with higher levels of self-esteem are more likely to engage in learning voluntarily, exploring and deepening their knowledge of topics that interest them, which promotes deeper understanding and superior academic performance (Deci & Ryan, 2000). In contrast, extrinsic motivation, which is driven by external rewards and social recognition, may be less effective in sustaining long-term academic engagement, particularly when students' self-esteem is low and heavily dependent on external validation (Linnenbrink & Pintrich, 2002). Although extrinsic motivation may enhance academic performance under certain circumstances, its long-term impact on engagement is often limited, as students who rely primarily on external rewards may develop a more superficial approach to learning rather than a genuine commitment to knowledge acquisition (Deci & Ryan, 2000).

The study conducted by Fredricks, Blumenfeld, and Paris (2004) demonstrated that motivation is closely associated with academic engagement, influencing not only the amount

of time students devote to educational activities but also the quality of their participation. Motivated students are more likely to engage actively in classroom discussions, collaborate effectively with their peers, and take initiative in the learning process. Such active involvement in educational activities is essential for the development of critical thinking skills and the acquisition of deep, meaningful knowledge. Motivation also influences how students manage their time and academic resources. Intrinsically motivated students are more likely to organize their time effectively, set clear learning goals, and seek additional resources to enhance their understanding and academic performance.

Technology has dramatically transformed the educational landscape, reshaping the ways in which students engage in learning activities. An increasing number of studies have highlighted both the positive and negative effects of technology on academic engagement, examining how different forms of educational technology can either facilitate or hinder the learning process. This section reviews recent research on the use of technology in education, its effects on students' motivation and academic engagement, and the challenges faced by both students and educators as digital technologies become increasingly integrated into learning environments. Much of the recent literature has focused on the ways technology is utilized within educational settings. With the rapid advancement of digital technologies, education has evolved beyond traditional instructional methods to incorporate online learning platforms, multimedia resources, educational applications, and digital collaboration tools.

Research suggests that technology can have a significant impact on students' motivation and academic engagement. The use of online learning platforms enables students to access educational resources, participate in discussions, and collaborate with peers in a flexible and convenient manner. This not only facilitates the learning process but also encourages students to engage more actively in educational activities. Furthermore, educational technologies support personalized learning by allowing students to progress at their own pace and adapt their educational experiences to their individual needs. Such flexibility not only enhances students' academic engagement but also fosters a greater sense of autonomy and control over their own learning process, both of which are positively associated with intrinsic motivation (Deci & Ryan, 2000).

However, not all studies have reported positive effects of technology on academic engagement. A number of challenges have been associated with the integration of technology into education. For example, excessive reliance on digital technologies may contribute to increased distraction, reducing students' ability to maintain focus on learning activities. Howard-Jones (2014) emphasized that frequent use of social media and other digital platforms during study sessions may negatively affect academic engagement, as students are often tempted to engage in entertaining or non-academic activities rather than concentrate on educational tasks. Furthermore, unequal access to technology may create disparities among students, thereby limiting the academic engagement of those who lack adequate technological resources. A report published by the Organisation for Economic Co-operation and Development (OECD, 2015) highlighted that inequalities in access to digital technologies can significantly influence students' learning experiences and academic engagement, underscoring the need to address these disparities in order to promote equitable learning opportunities.

Within the context of the relationship among self-esteem, motivation, and students' academic engagement, future research directions are essential for advancing the understanding of this complex phenomenon and for developing effective educational interventions. As educational environments continue to evolve, shaped by technological innovations and broader socio-cultural changes, it is increasingly important to investigate additional factors that may influence these relationships and contribute to students' academic success and well-being.

2. OBJECTIVE AND HYPOTHESES

2.1. OBJECTIVE

In the contemporary educational context, understanding the factors that contribute to students' academic success has become increasingly important. Within a university environment characterized by diverse academic, psychological, and social challenges, students' self-perceptions and motivation play a crucial role in shaping both their academic performance and their level of engagement. Consequently, constructs such as self-esteem, academic motivation, and academic engagement constitute fundamental components of the student experience, directly influencing not only educational achievement but also students' personal and professional development.

Self-esteem represents a core component of personal identity, reflecting the way individuals perceive and evaluate their own abilities, competencies, and overall self-worth. The primary aim of the present study is to examine the relationships among students' self-esteem, academic motivation, and academic engagement, as these constructs represent key factors underlying students' academic development and educational trajectories. Specifically, the study seeks to investigate the association between self-esteem and academic motivation, to evaluate the extent to which these variables are related to academic engagement, and to identify potential differences according to academic characteristics that may influence students' educational experiences, such as year of study, grade point average (GPA), and other indicators of academic progress.

2.2. HYPOTHESES

The following research hypotheses were formulated:

H1: There is a significant association between students' self-esteem and amotivation.

H2: There is a significant association between students' intrinsic motivation, extrinsic motivation, and academic engagement.

H3: There is a significant association between students' amotivation and academic engagement.

H4: There are significant differences in self-esteem, intrinsic motivation, extrinsic motivation, amotivation, and academic engagement among students enrolled in different years of study.

3. METHOD

In the contemporary educational context, understanding the factors that contribute to students' academic success has become increasingly important. Within a university environment characterized by diverse academic, psychological, and social challenges, students' self-perceptions and motivation play a crucial role in shaping both their academic performance and their level of engagement.

Accordingly, constructs such as self-esteem, academic motivation, and academic engagement have emerged as fundamental components of the student experience, directly influencing not only educational achievement but also students' personal and professional development. Self-esteem constitutes a core component of personal identity, reflecting the way

individuals perceive, evaluate, and value their own abilities, competencies, and overall sense of self-worth.

The study sample consisted of 105 undergraduate students enrolled across the three years of the bachelor's degree program. The sample was predominantly female, comprising 80 women and 25 men. The mean age of the participants was 30 years.

Participants were asked to complete a series of socio-demographic questions in order to characterize the sample according to several demographic variables. A non-probability (convenience) sampling method was employed, with the sole inclusion criterion being current enrollment as a university student. Data were collected online through a Google Forms questionnaire.

Participation in the study was voluntary and anonymous, and all responses were treated confidentially. Participants were informed that the study complied with ethical principles regarding data confidentiality, anonymity, and participant protection. Statistical analyses were conducted exclusively at the group level, and no individual participant data were reported or disclosed in any scientific publication.

The study employed the following psychometric instruments:

The Rosenberg Self-Esteem Scale (RSES), developed by Morris Rosenberg in 1965, was used to assess participants' global self-esteem. It is one of the most widely used and well-established instruments in psychological research examining mental health, well-being, and personal development. Validation studies have consistently demonstrated that the scale possesses strong psychometric properties, including high internal consistency, reliability, and construct validity, making it suitable for use across clinical, educational, and social psychology research. The instrument consists of ten items that assess individuals' overall evaluation of their self-worth and personal competence.

Academic motivation was assessed using the Academic Motivation Scale (AMS-C 28), College (CEGEP) Version, developed by Vallerand, Pelletier, Blais, Brière, Senécal, and Vallières (1993). The instrument was originally published in *Educational and Psychological Measurement* and comprises 28 items organized into three higher-order motivational dimensions: intrinsic motivation, extrinsic motivation, and amotivation. The AMS-C 28 has been validated across numerous cultural contexts, with research consistently confirming its factorial structure, reliability, and validity. It is widely employed in educational research to assess students' motivational orientations, evaluate the effectiveness of interventions designed to enhance academic motivation, and investigate the relationship between motivation and educational outcomes.

Academic engagement was assessed using the Academic Engagement Scale (AES), developed by Zhang, Shi, Yun, Li, Wang, He, and Miao (2015). The AES is a psychometric instrument designed to evaluate students' engagement in academic settings. Academic engagement is generally conceptualized as a multidimensional construct encompassing behavioral, emotional, and cognitive components. Previous validation studies have demonstrated that the scale possesses satisfactory reliability across repeated administrations and strong construct validity, indicating that it accurately measures the concept of academic engagement. The Academic Engagement Scale is widely used to identify students at risk of academic disengagement, to inform interventions aimed at increasing student engagement, and to evaluate the effectiveness of educational programs and instructional practices.

The items from all instruments used in the study were integrated into a questionnaire developed using Google Forms, which also included questions designed to collect socio-demographic information. The questionnaire was administered online, with data collection taking place between 2024 and 2025. Following data collection, responses were coded and entered into the IBM SPSS Statistics software package for statistical analysis. Descriptive and inferential statistical analyses were performed, and appropriate statistical tests were conducted

to evaluate each research hypothesis. The study employed a correlational research design (*N*: O_1, O_2, O_3), where *N* represents a non-probability (convenience) sample and O_1, O_2, and O_3 represent the measurements of the study variables (Vasiliu, 2018). The findings were interpreted from a psychological perspective, and the final conclusions integrated the theoretical framework, recent empirical research, and the results obtained in the present study.

4. RESULTS

The exploratory and normality analyses of the dependent variables indicated that the study variables exhibited mixed distributions, with some variables following a normal distribution and others deviating from normality. Consequently, nonparametric statistical tests were selected to evaluate the proposed research hypotheses.

H1: There is a significant association between students' self-esteem and amotivation.

To test this hypothesis, Spearman's rank-order correlation coefficient (Spearman's rho) was calculated, with the following results:

Table 1. Associations between self-esteem and amotivation

	1.	2.
1. Self-Esteem	1.000 .	
2. Amotivation	-.216* .027	1.000 .

*. Correlation is significant at the 0.05 level (2-tailed)

The findings indicate that participants with higher levels of self-esteem tend to report lower levels of amotivation, whereas individuals with lower self-esteem are more likely to experience a lack of motivation, perceive their efforts as ineffective or meaningless, and encounter difficulties in identifying reasons to engage in academic activities.

These results are consistent with Self-Determination Theory (Deci & Ryan), which posits that a positive self-perception promotes active engagement and reduces the likelihood of experiencing amotivation.

Regarding effect size, according to the criteria proposed by Cohen (1988), the obtained correlation coefficient ($r = -.216$) represents a small-to-moderate effect. Although the relationship is statistically significant, its magnitude is relatively modest, suggesting that self-esteem constitutes only one of several factors influencing students' levels of academic amotivation.

An additional estimate of the effect size, based on the coefficient of determination ($r^2 = .047$), indicates that approximately 4.7% of the variance in amotivation is associated with variations in self-esteem. Consequently, more than 95% of the variance is explained by other factors, such as self-efficacy, perceived competence, social support, educational climate, self-regulated learning strategies, or personality characteristics.

H2: There is a significant association between students' intrinsic motivation, extrinsic motivation, and academic engagement.

To test this hypothesis, Spearman's rank-order correlation coefficient (Spearman's rho) was computed, with the following results:

Table 2. Associations between intrinsic motivation and academic engagement

	1.	2.
1. Intrinsic motivation	1.000 .	
2. Academic engagement	.765** .000	1.000 .

**. Correlation is significant at the 0.01 level (2-tailed)

The correlation analysis revealed a strong positive and statistically significant relationship between intrinsic motivation and academic engagement, with a correlation coefficient of $r = .765$, $p < .001$. This finding indicates that students who exhibit higher levels of intrinsic motivation—characterized by a genuine interest in learning, satisfaction derived from acquiring new knowledge, and enjoyment of engaging in academic activities—also tend to demonstrate higher levels of academic engagement.

The results suggest that the more students' motivation to learn is driven by internal factors, such as curiosity, personal growth, and the satisfaction of developing competence, the more behaviorally, cognitively, and emotionally engaged they become in the educational process. The findings of the present study are consistent with Self-Determination Theory proposed by Edward L. Deci and Richard M. Ryan, which identifies intrinsic motivation as one of the most important psychological resources underlying active engagement, persistence, and academic achievement. Furthermore, these results are in agreement with Vallerand's motivational model, according to which self-determined motivation promotes successful adaptation and sustained engagement in educational activities.

With respect to effect size, according to the criteria proposed by Cohen (1988), the obtained correlation coefficient ($r = .765$) represents a large effect, indicating a strong association between intrinsic motivation and academic engagement. The corresponding coefficient of determination ($r^2 = .585$) indicates that approximately 58.5% of the variance in academic engagement is associated with variations in intrinsic motivation, representing a substantial proportion of explained variance in the context of educational psychology research.

These findings suggest that intrinsic motivation is one of the strongest predictors of academic engagement. Nevertheless, approximately 41.5% of the variance in academic engagement remains attributable to other psychological and contextual factors, including self-efficacy, self-regulated learning strategies, personality traits, social support, and the educational climate.

Table 3. Associations between extrinsic motivation and academic engagement

	1.	2.
1. Extrinsic motivation	1.000 .	
2. Academic engagement	.639** .000	1.000 .

**. Correlation is significant at the 0.01 level (2-tailed)

The results of the statistical analysis revealed a strong positive and statistically significant relationship between extrinsic motivation and academic engagement, with a correlation coefficient of $r = .639$, $p < .001$.

These findings suggest that students who are motivated by external factors—such as achieving high grades, gaining social recognition, obtaining rewards, enhancing future career

prospects, or avoiding negative consequences—tend to demonstrate higher levels of academic engagement. Accordingly, as levels of extrinsic motivation increase, students also exhibit greater behavioral, cognitive, and emotional engagement in the learning process.

These findings are consistent with Self-Determination Theory developed by Edward L. Deci and Richard M. Ryan, which proposes that extrinsic motivation can support academic engagement, particularly when its regulatory processes are more internalized (e.g., identified or integrated regulation). Although intrinsic motivation is generally regarded as the most adaptive form of motivation, the literature indicates that extrinsic motivation can also promote academic engagement and achievement when externally oriented goals are perceived as personally meaningful and congruent with an individual's values.

With respect to effect size, according to the criteria proposed by Cohen (1988), the obtained correlation coefficient (r = .639) represents a large effect, indicating a strong association between extrinsic motivation and academic engagement. The corresponding coefficient of determination (r^2 = .408) indicates that approximately 40.8% of the variance in academic engagement is associated with variations in extrinsic motivation, representing a substantial effect. The remaining 59.2% of the variance is attributable to other psychological and contextual factors, including intrinsic motivation, self-efficacy, self-regulated learning strategies, personality traits, and characteristics of the educational environment.

H3: There is a significant association between students' amotivation and academic engagement.

To test this hypothesis, Spearman's rank-order correlation coefficient (Spearman's rho) was computed, with the following results:

Table 4. Associations between amotivation and academic engagement

	1.	2.
1. Amotivation	1.000	
	.	
2. Academic engagement	-.215*	1.000
	.027	.

*. Correlation is significant at the 0.05 level (2-tailed)

The results revealed a negative and statistically significant relationship between amotivation and academic engagement, with a correlation coefficient of $r = -.215$, $p = .027$.

These findings indicate that students with higher levels of amotivation tend to exhibit lower levels of academic engagement. Specifically, as students experience a stronger sense of purposelessness, perceive their efforts as ineffective, or have greater difficulty identifying meaningful reasons for engaging in university studies, their behavioral, cognitive, and emotional engagement in the learning process decreases.

These findings are consistent with Self-Determination Theory developed by Edward L. Deci and Richard M. Ryan, according to which amotivation represents the lowest level of self-determination and is characterized by the absence of intention to act, low perceived competence, and a diminished sense of value attributed to one's activities. Consequently, amotivated students are more likely to display limited interest in learning, reduced participation in academic activities, and an increased risk of academic disengagement and university dropout.

According to the criteria proposed by Cohen (1988), the obtained correlation coefficient ($r = -.215$) represents a small effect. Although the relationship is statistically significant, its

magnitude is modest, suggesting that amotivation influences academic engagement but constitutes only one of many factors contributing to students' levels of engagement.

The corresponding coefficient of determination ($r^2 = .046$) indicates that approximately 4.6% of the variance in academic engagement is associated with variations in amotivation. Thus, more than 95% of the variance is explained by other psychological and contextual factors, including intrinsic and extrinsic motivation, self-efficacy, self-esteem, self-regulated learning strategies, personality traits, and characteristics of the educational environment.

H4: There are significant differences in self-esteem, intrinsic motivation, extrinsic motivation, amotivation, and academic engagement among students enrolled in different years of study.

To test this hypothesis, the Kruskal–Wallis H test was employed, as the majority of the study variables did not meet the assumption of normality. Differences were examined across three independent groups: first-year, second-year, and third-year undergraduate students.

The results for differences in self-esteem are presented in Tables 5 and 6.

Table 5. Mean ranks for self-esteem of students from different study year

	N	Mean Rank
1. Self-esteem – first-year undergraduate students	14	35.04
2. Self-esteem – second-year undergraduate students	39	50.77
3. Self-esteem – third-year undergraduate students	52	59.51
Total	105	

Table 6. Kruskal-Wallis H test results for self-esteem

	Self-esteem
Chi-Square	7.52
df	2
Asymp. Sig.	.023

Differences in self-esteem among first-, second-, and third-year undergraduate students were examined using the Kruskal–Wallis H test, as comparisons involved three independent groups.

The results revealed statistically significant differences in self-esteem across the three groups, $\chi^2 = 7.52$, $p = .023$. This finding indicates that year of study is associated with variations in students' self-esteem.

An examination of the mean ranks showed a progressive increase in self-esteem as students advanced through their university studies. First-year students obtained the lowest mean rank (*Mean Rank* = 35.04), followed by second-year students (*Mean Rank* = 50.77), whereas third-year students achieved the highest mean rank (*Mean Rank* = 59.51).

These findings suggest that accumulated academic experience and gradual adaptation to the demands of the university environment may contribute to the development of a more positive self-concept and greater confidence in one's abilities.

With respect to effect size, the obtained value ($\eta^2 = .054$) indicates a small-to-moderate effect. This finding suggests that approximately 5.4% of the variance in self-esteem is associated with differences in year of study, indicating that academic year exerts a modest but statistically meaningful influence on students' levels of self-esteem.

The results regarding differences in intrinsic motivation of students are presented in Tables 7 and 8.

Table 7. Mean ranks for intrinsic motivation of students from different study year

	N	Mean Rank
1. Intrinsic motivation – first-year undergraduate students	14	59.86
2. Intrinsic motivation – second-year undergraduate students	39	52.18
3. Intrinsic motivation – third-year undergraduate students	52	51.77
Total	105	

Table 8. Kruskal-Wallis H test results for intrinsic motivation

	Intrinsic motivation
Chi-Square	.83
df	2
Asymp. Sig.	.662

The results indicated no statistically significant differences in intrinsic motivation among students across the three years of study, $\chi^2 = 0.83$, $p = .662$. Therefore, the hypothesis that intrinsic motivation differs according to year of study was not supported by the data.

An examination of the mean ranks showed that first-year students obtained the highest mean rank (*Mean Rank* = 59.86), followed by second-year students (*Mean Rank* = 52.18) and third-year students (*Mean Rank* = 51.77). Although these descriptive differences suggest slightly higher levels of intrinsic motivation among students at the beginning of their university studies, the observed variations were small and did not reach statistical significance.

These findings indicate that students' genuine interest in learning and the satisfaction derived from academic activities remain relatively stable throughout the different years of undergraduate study.

The results regarding differences in extrinsic motivation are presented in Tables 9 and 10.

Table 9. Mean ranks for extrinsic motivation of students from different study year

	N	Mean Rank
1. Extrinsic motivation – first-year undergraduate students	14	52.11
2. Extrinsic motivation – second-year undergraduate students	39	55.79
3. Extrinsic motivation – third-year undergraduate students	52	51.14
Total	105	

Table 10. Kruskal-Wallis H test results for extrinsic motivation

	Extrinsic motivation
Chi-Square	.53
df	2
Asymp. Sig.	.765

The results indicated no statistically significant differences in extrinsic motivation among students across the three years of study, $\chi^2 = 0.53$, $p = .765$. Therefore, year of study does not appear to have a significant influence on motivation driven by external factors, such as rewards, social recognition, academic achievement, or future career prospects.

An examination of the mean ranks showed that second-year students obtained the highest mean rank (*Mean Rank* = 55.79), followed by first-year students (*Mean Rank* = 52.11) and third-year students (*Mean Rank* = 51.14). Although these descriptive differences suggest a

slight tendency toward higher levels of extrinsic motivation among second-year students, the observed variations were small and did not reach statistical significance.

The results regarding differences in amotivation are presented in Tables 11 and 12.

Table 11. Mean ranks for amotivation of students from different study year

	N	Mean Rank
1. Amotivation – first-year undergraduate students	14	73.11
2. Amotivation – second-year undergraduate students	39	47.99
3. Amotivation – third-year undergraduate students	52	51.35
Total	105	

Table 12. Kruskal-Wallis test results for amotivation

	Amotivation
Chi-Square	8.10
df	2
Asymp. Sig.	.017

The results revealed statistically significant differences in amotivation across the three groups of students, $\chi^2 = 8.10$, $p = .017$. This finding indicates that year of study is associated with differences in the level of academic amotivation.

An examination of the mean ranks showed that first-year students exhibited the highest level of amotivation (*Mean Rank* = 73.11), whereas second-year students obtained the lowest mean rank (*Mean Rank* = 47.99). Third-year students showed a slightly higher level of amotivation (*Mean Rank* = 51.35) than second-year students, but substantially lower than that observed among first-year students.

These findings suggest that students at the beginning of their university studies are more likely to experience feelings of amotivation, uncertainty regarding the purpose of their academic activities, and difficulty recognizing the value of learning. As students gain academic experience and adapt to the demands of the university environment, levels of amotivation tend to decrease.

With respect to effect size, the obtained value ($\eta^2 = .060$) indicates a medium effect. This finding suggests that approximately 6.0% of the variance in amotivation is associated with differences in year of study, indicating that progression through the university program exerts a modest but meaningful influence on reducing students' levels of amotivation.

The results regarding differences in academic engagement are presented in Tables 13 and 14.

Table 13. Mean ranks for academic engagement of students from different study year

	N	Mean Rank
1. Academic engagement – first-year undergraduate students	14	54.82
2. Academic engagement – second-year undergraduate students	39	55.38
3. Academic engagement – third-year undergraduate students	52	50.72
Total	105	

Table 14. Kruskal-Wallis test results for academic engagement

	Academic engagement
Chi-Square	.58
df	2
Asymp. Sig.	.748

The results indicated no statistically significant differences in academic engagement among students across the three years of study, $\chi^2 = 0.58$, $p = .748$. This finding suggests that year of study does not significantly influence students' behavioral, cognitive, and emotional engagement in academic activities.

An examination of the mean ranks revealed very similar values across the three groups. Second-year students obtained the highest mean rank (*Mean Rank* = 55.38), followed closely by first-year students (*Mean Rank* = 54.82), whereas third-year students obtained a slightly lower mean rank (*Mean Rank* = 50.72). However, these differences were minimal and not sufficiently large to indicate systematic variations in academic engagement as a function of students' university experience.

5. CONCLUSIONS

The primary aim of the present study was to examine the relationships among students' academic motivation, self-esteem, and academic engagement, as these constructs represent key factors underlying students' academic development and educational trajectories.

Self-esteem is a fundamental psychological construct that influences not only individuals' self-perceptions but also their academic performance. This complex relationship is mediated by multiple variables, including academic motivation, engagement in educational activities, and learning strategies, all of which exert a significant influence on academic outcomes. Self-esteem refers to an individual's subjective evaluation of his or her own worth and competence, and higher levels of self-esteem are consistently associated with superior academic performance. This relationship can be explained through several psychological and social mechanisms.

One of the most important mechanisms is the influence of self-esteem on students' intrinsic motivation. Individuals with high self-esteem tend to perceive themselves as capable of achieving their goals and overcoming academic challenges, which enhances their intrinsic motivation to learn. This increased motivation, in turn, promotes greater engagement in the educational process and encourages the development of effective learning strategies.

Another mechanism through which self-esteem influences academic performance is students' ability to cope with stress and academic failure. Students with lower levels of self-esteem are more likely to experience test anxiety and to become discouraged when confronted with setbacks. As a result, they may adopt avoidance behaviors, such as withdrawing from academic activities or avoiding challenging tasks due to fear of failure.

Academic motivation also has a substantial impact on the learning process and academic performance. Research has consistently shown that students who demonstrate high levels of motivation are more likely to engage actively in learning activities, employ effective study strategies, and persist in the face of academic difficulties. These students are more likely to establish realistic goals and effectively regulate their behavior to achieve them.

Another essential aspect of motivation is its influence on students' emotional functioning. Emotions play a crucial role in determining how individuals engage in academic activities and sustain their motivation throughout the learning process.

This interaction between emotions and motivation highlights the importance of creating a supportive learning environment that fosters both students' intrinsic motivation and their emotional well-being. Motivation is a complex and dynamic construct influenced by a wide range of internal and external factors. It plays a crucial role in the learning process and academic performance by shaping not only students' engagement in academic activities but also the ways in which they establish goals and regulate their behaviors. A thorough understanding of motivation is therefore essential for developing effective educational strategies that support students in achieving their full academic potential.

Students' academic engagement is essential not only for immediate educational success but also for the development of the knowledge, skills, and attitudes required for their future professional and personal lives. Academic engagement is also influenced by students' learning approaches and the strategies they adopt. Students who employ a deep learning approach are generally more engaged in the learning process, seeking to understand, integrate, and apply knowledge rather than merely memorizing information for examinations. These students are more likely to collaborate with their peers, exchange ideas, and ask questions, thereby contributing to an active and intellectually stimulating learning environment. In contrast, students who adopt a surface learning approach may appear to be engaged but are often motivated primarily by the need to pass examinations rather than by a genuine desire to develop a deep understanding of the subject matter.

Furthermore, students who perceive learning as relevant to their personal and professional goals are more likely to participate actively in academic activities. Positive emotions associated with the learning process, such as curiosity and enthusiasm, can enhance both academic engagement and learning satisfaction. Conversely, negative emotions, including anxiety and fear of failure, may undermine students' engagement and reduce the quality of their educational experience.

The findings of the present study, obtained through the statistical analyses conducted to test the research hypotheses, revealed several significant relationships and group differences among the psychological constructs investigated.

The results demonstrated a statistically significant, negative, and weak correlation between self-esteem and amotivation. Specifically, students with higher levels of self-esteem tended to report lower levels of amotivation.

The findings also revealed a statistically significant, positive, and strong correlation between intrinsic motivation and academic engagement, indicating that students with higher levels of intrinsic motivation were more likely to demonstrate greater academic engagement.

Furthermore, a statistically significant, positive, and strong correlation was identified between extrinsic motivation and academic engagement. This finding suggests that students with higher levels of extrinsic motivation also tended to exhibit higher levels of academic engagement.

Finally, the results indicated a statistically significant, negative, and weak correlation between amotivation and academic engagement. In other words, students with higher levels of amotivation tended to report lower levels of academic engagement.

The findings further indicate that statistically significant differences across years of study were observed only for self-esteem and amotivation. Self-esteem was highest among third-year students and lowest among first-year students, whereas amotivation was highest among first-year students and lowest among third-year students. These findings suggest that as students progress through their university studies and become more adapted to the academic environment, their self-esteem tends to increase while their levels of amotivation decrease.

The present study provides an empirical basis for the development of educational strategies aimed at enhancing both students' self-esteem and academic motivation. The findings may assist higher education institutions in creating supportive learning environments that foster students' psychological well-being, motivation, and academic engagement.

Such initiatives may include programs designed to strengthen interpersonal and socio-emotional skills, team-building activities, and peer support groups that encourage social interaction, collaboration, and a stronger sense of belonging within the academic community. These interventions have the potential to promote not only students' academic success but also their personal and professional development.

Furthermore, the development of communication platforms that facilitate interaction between faculty members and students could promote a better understanding of students' needs and strengthen interpersonal relationships within the academic environment. Future research on self-esteem, academic motivation, and academic engagement offers valuable opportunities to deepen our understanding of these interrelated constructs and to inform the development of effective strategies aimed at enhancing students' educational experiences. It is essential that the findings of such studies be translated into educational practice in order to create learning environments in which students feel supported, motivated, and actively engaged in the learning process.

Several limitations of the present study should be acknowledged. These include the use of a non-probability sampling method, the relatively small sample size, the online administration of the questionnaires, and the limited period of data collection. These factors may have introduced measurement and interpretative biases and limit the generalizability of the findings to the broader student population.

In an educational context that is becoming increasingly diverse and digitalized, further investigation of the relationships among self-esteem, motivation, and academic engagement may provide valuable guidance for the development of educational policies that are responsive to the needs of contemporary university students. A more comprehensive understanding of these interrelated psychological constructs can contribute to the creation of supportive and stimulating university environments that promote both academic success and student well-being.

Future research should focus on designing and evaluating targeted intervention models aimed at strengthening self-esteem, fostering sustainable academic motivation, and enhancing academic engagement. Such interventions could provide an empirical foundation for evidence-based educational support and learning strategies that promote not only short-term academic achievement but also the development of healthy self-esteem and enduring motivation, both of which are essential for students' long-term personal and professional development.

REFERENCES

Baumeister, Roy & Campbell, JD & Krueger, Joachim & Vohs, Kathleen. (2003). Does high self-esteem cause better performance, interpersonal success, happiness, or healthier lifestyles?. *Psychological Science*. 4. 1-44.

Chubb NH, Fertman CI, Ross JL. (1997)Adolescent self-esteem and locus of control: a longitudinal study of gender and age differences. *Adolescence.* Spring;32(125):113-29. PMID: 9105496.

Fredricks, J. A., Blumenfeld, P. C., & Paris, A. H. (2004). School engagement: Potential of the concept, state of the evidence. *Review of Educational Research*, 74(1), 59-109.

Heine, S. J., Lehman, D. R., Markus, H. R., & Kitayama, S. (1999). Is there a universal need for positive self-regard? *Psychological Review*, 106(4), 766–794. https://doi.org/10.1037/0033-295X.106.4.766

Hofstede, G. (1980). *Culture's Consequences: International Differences in Work-Related Values.* Beverly Hills, CA: Sage Publications.

Howard-Jones, P. (2014). Neuroscience and education: myths and messages. *Nat Rev Neu*rosci 15, 817–824 https://doi.org/10.1038/nrn3817Juvonen J, Graham S. (2013)Bullying in schools: the power of bullies and the plight of victims. *Annu Rev Psychol.* 2014;65:159-85. doi: 10.1146/annurev-psych-010213-115030. Epub 2013 Aug 5. PMID: 23937767.

Linnenbrink, E. A., & Pintrich, P. R. (2002). Motivation as an Enabler for Academic Success. *School Psychology Review*, 31, 313-327.

Marsh, H. W., & Craven, R. G. (2006). Academic self-concept: Beyond the dusty old self-esteem concept. *The Australian Educational Researcher*, 33(2), 25-49.

Osterman, Karen. (2000). Students' Need for Belonging in the School Community. Review of Educational Research – *Rev. Educ. Res.* 70. 323-367. 10.3102/00346543070003323.

Perloff, R.M. (2014). Social Media Effects on Young Women's Body Image Concerns: Theoretical Perspectives and an Agenda for Research. Sex Roles 71, 363–377 https://doi.org/10.1007/s11199-014-0384-6

Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton University Press.

Rosenberg, M., Schooler, C., & Schoenbach, C. (1989). Self-Esteem and Adolescent Problems: Modeling Reciprocal Effects. *American Sociological Review,* 54, 1004-1018. http://dx.doi.org/10.2307/2095720

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 55(1), 68-78.

Vallerand, R. J., Pelletier, L. G., Blais, M. R., Brière, N. M., Senécal, C., & Vallières, E. F. (1993). On the assessment of intrinsic, extrinsic, and amotivation in education: Evidence on the concurrent and construct validity of the Academic Motivation Scale. *Educational and Psychological Measurement*, 53(1), 159–172.

Vasiliu, D. (2018). *Memento de cercetare în psihologie. Un ghid prietenos pentru studenți și nu numai*…București, E.D.P.

Wentzel, K. R. (1998). Social relationships and motivation in school. In *Educational Psychologist*, 33(3), 167-183.

Zhang, Y., Shi, W., Yun, L., Li, F., Wang, Y., He, Y., & Miao, D. (2015). Development of the Academic Engagement Scale for university students. *Chinese Journal of Clinical Psychology*, 23(5), 848–851.

Zimmerman, B. J. (2002). Becoming a self-regulated learner: An overview. *Theory into Practice,* 41(2), 64-70.

https://www.oecd.org/en/publications/government-at-a-glance-2015_gov_glance-2015-en.html

ROMANIAN JOURNAL OF PSYCHOLOGICAL STUDIES

HYPERION UNIVERSITY
www.rjps.hyperion.ro

CAREGIVING IN URBAN CONTEXTS: A STUDY OF SOCIO-DEMOGRAPHIC INFLUENCES ON STRESS IN BANGLADESH

MAHADI-UL-MORSHED[a], MD FAISAL AHMED[b], ASHIS PAUL[c], NUSRAT JAHAN AKHI[d], SADIA NAHAR CHOWDHURY[e], SHAMSUN NAHER ROZY[f], DHARMENDRA NATH ROY[g], HAMIDA NAZ[h]

[a] Lead Researcher, Centre for Research in Multidiscipline - CRM, & BONDHU; [b c d e] Research Assistant, Centre for Research in Multidiscipline-CRM; [f] Psychologists, Somonnito Shishu Punorbashon Kendra, Ministry of Social Welfare, Govt. Republic of Bangladesh; [g] Clinical Psychologist One Stop Crisis Center (OCC), RTCC Ministry of Women and Children Affairs; [h] Lecturer, Department of Psychology, Ideal College, Dhanmondi, Dhaka-1100

Abstract

This research investigated stress levels in caregivers of children living in urban regions of Bangladesh and analyzed how demographic factors affect stress. A cross-sectional approach was used, focusing on caregivers of children between 0 and 12 years living in large urban areas. The sample comprised 229 caregivers who filled out a Personal Information Form and the Bangla adaptation of the Depression, Anxiety, and Stress Scale (DASS-21). Data were examined through descriptive statistics, Pearson correlation, one-way ANOVA, and multiple regression analysis. Findings showed notable connections between caregiver stress and multiple demographic factors. Greater levels of education were linked to reduced stress levels ($r = -.251$, $p < .01$). Conversely, advanced age ($r = .181$, $p < .01$), a larger number of offspring ($r = -.135$, $p < .05$), and elevated socioeconomic status ($r = .248$, $p < .01$) correlated with heightened stress. ANOVA results indicated substantial differences in stress based on age, education, marital status, number of children, and socioeconomic status. Regression analysis revealed that education, occupation, and socioeconomic status are important indicators of stress. These results underscore the intricate connection between demographic factors and caregiver stress, stressing the necessity for focused interventions in urban Bangladesh.

Keywords: Caregiver stress, Urban caregiving, Socio-demographic factors, & Bangladesh

1. INTRODUCTION

Mental well-being is essential to our overall health, enabling us to navigate life's challenges, develop skills, and contribute positively to our communities. However, the global COVID-19 pandemic has significantly impacted mental health, leading to a substantial increase in anxiety and

Corresponding author: Mahadi-Ul-Morshed
E-mail address: mahadi.psy2006@gmail.com

depression disorders. According to the World Health Organization (2022), there has been a notable rise in the number of individuals experiencing symptoms of depression and anxiety worldwide, with depression cases increasing by 28% and anxiety disorders by 25% (Santomauro et al., 2021).

Stress, a key aspect of mental health, is our response to feeling overwhelmed or challenged by various circumstances. It can affect individuals differently, depending on the source and nature of the stress. Stress not only impacts individuals but also extends to caregivers who provide support to those in need. Caregivers are a vulnerable population at risk for mental distress, including anxiety that can surpass even that of the individuals they care for. The stress experienced by caregivers ultimately influences the quality of care provided to children, often due to inadequate preparation, insufficient knowledge about caregiving, financial burdens, and physical and emotional strain (MIND, 2022). A stress-free and confident caregiver can care for children more effectively than one who is overwhelmed and confused.

Caregivers play a critical role in the lives of individuals with special needs, such as children with autism spectrum disorder, chronic disabilities, or attention deficit hyperactivity disorder. These dedicated caregivers often assume additional responsibilities, including providing rehabilitation interventions and physiotherapy. However, their demanding schedules and the challenges they face can lead to mental health issues such as depression, anxiety, and work-related stress, impacting their personal lives, social interactions, and occupational well-being (Dhiman et al., 2020).

Various factors contribute to the mental health challenges faced by caregivers. These include a lack of support from family members, inadequate knowledge of management techniques and healthcare services, communication gaps with healthcare professionals and therapists, financial difficulties, concerns about contagious diseases, and insufficient awareness of safety measures (Dhiman et al., 2020). The burden of caregiving can result in physical symptoms such as headaches, migraines, fatigue, and throat pain due to the demanding nature of their work (Dhiman et al., 2020). High levels of stress and impaired mental health among parents and caregivers can hinder early and effective interventions for children with special needs and other psychiatric conditions. Factors such as language development problems, lack of knowledge about healthcare services and physiotherapy, and difficulty adjusting to new environments contribute to the burden experienced by caregivers (Baykal et al., 2018). The mental health of caregivers significantly influences the well-being of the children they care for, making it a critical public health concern (Meyer et al., 2017).

The experiences and mental health challenges faced by caregivers are not confined to any one region but are a global issue. Studies conducted in diverse contexts, such as rural Ghana, North Macedonia, Kenya's urban informal settlements, and Canada, highlight the unique circumstances and impacts on caregivers' mental well-being. These studies provide valuable insights into the need for developing effective interventions and support systems tailored to the specific needs of caregivers in various regions (Ae-Ngibise et al., 2015; Bajraktarov et al., 2023; Angwenyi et al., 2021; Wister et al., 2022).

For example, a study conducted in Turkey found that high levels of stress, depression, and anxiety among caregivers significantly disrupt their normal and occupational lives. Among caregivers of children with autism spectrum disorder (ASD), severe mental health issues were reported, highlighting the profound impact of caregiving responsibilities (Baykal

et al., 2018). Similarly, a study in Oklahoma City, USA, revealed a deep association between caregivers' anxiety, depression, parenting characteristics, socio-economic conditions, and the severity of the child's illness. The study emphasized the necessity of psychological support and adjustments to improve caregivers' mental health (Malm-Buatsi et al., 2014).

The burden of caregiving is further complicated in contexts like refugee camps, where exposure to violence and gender disparities exacerbate the mental health challenges of caregivers. A study conducted in a Ugandan refugee camp found that caregiver depression was significantly associated with children's depression, illustrating the interconnectedness of caregiver and child mental health (Meyer et al., 2017). In rural Nepal, caregivers of children with neurodevelopmental disorders (NDD) exhibited high levels of psychological distress, with a significant proportion scoring above the threshold for common mental disorders (CMD) (Maridal et al., 2021).

Moreover, studies have shown that the health-related quality of life (HRQOL) of children is often compromised due to the mental health challenges faced by their caregivers. In South India, a significant portion of children had moderately to severely affected HRQOL due to the caregiver's burden (Surender et al., 2016). Caregivers, who are predominantly female and from low-income backgrounds, perform various caregiving tasks that contribute to their mental health challenges (Thrush & Hyder, 2014). Additionally, caregivers of adolescents with cerebral palsy have been found to experience higher levels of depression and stress compared to caregivers of adolescents without disabilities, with several factors influencing their mental health (Power et al., 2019).

These studies underscore the need for comprehensive support systems to address the mental health needs of caregivers, especially during challenging times like the COVID-19 pandemic. By understanding the unique challenges faced by caregivers in different contexts, we can develop interventions that not only enhance their mental health and well-being but also improve the quality of care provided to individuals with special needs or serious mental disorders. This research aims to contribute to the overall enhancement of caregivers' quality of life and the individuals they support.

Research Question: What is the level of stress in the child caregivers among city dwellers of Bangladesh?

Rationale of the study

Caregivers play a vital role in supporting and maintaining children's well-being, but they often face significant challenges that can significantly affect their mental health. The presence of stress in caregivers of children is a serious issue that negatively impacts their quality of life. It is common for individuals to experience mental illness when caring for a sick child, as it can emotionally affect them. Therefore, scientific research on stress among this demographic is crucial as it can help improve the mental well-being of caregivers. Furthermore, studying stress among caregivers of different major cities can provide insights into the effectiveness of interventions. By focusing on this specific population, the study aims to enhance overall mental health outcomes for caregivers and children, ultimately contributing to the creation of healthier and more resilient families in different major cities in Bangladesh. As there is no such study conducted among the caregivers of Bangladesh to assess their stress level, the result of the study will create a positive impact on the community and policy making.

2. OBJECTIVES

2.1. OBJECTIVES

1. To find out the current scenarios of stress among the child caregivers in city dwellers of Bangladesh.
2. To examine the influence of demographic factors such as age, educational background, and marital status etc. on caregiver stress levels.
3. To explore the relationship between caregiver stress and demographic variables such as age, marital status, number of children, etc.
4. To predict educational level (EQ), marital status (MS), occupation (OC), number of children (NC), age of the children (AC), and socioeconomic status of the caregivers (SES) on Stress jointly

3. METHOD

3.1Target Population

This study targets caregivers residing in urban areas of Bangladesh who are responsible for the care of children aged birth to 12 years old, encompassing four developmental stages: infancy, early childhood, middle childhood, and late childhood (Sarafino & Armstrong, 1980). Caregivers include parents (mother or father) as well as other family members such as grandparents or older siblings. Inclusion criteria involve caregivers of both healthy children and those with short or long-term limitations due to illness, disability, or injury. Exclusion criteria encompass caregivers of children outside the specified age range or residing in rural areas.

3.2 Sample Size and Sampling Technique

In this study, caregivers of children were selected as a sample and sampling of people from different major cities of Bangladesh. A total of 229 caregivers of children were reached out for this study.

3.3 Research Design

The research study was completed by following a cross-sectional design to find out the level of stress among caregivers of children in different major cities of Bangladesh.

3.4 Research instruments

For data collection, the following instruments were used in this study:

1. Personal Information Form (PIF)

2. Bangla Version of Depression, Anxiety, Stress Scale (DASS 21)

DASS-21 was developed by Lovibond and Lovibond (1995). This version of DASS is a valid 1 set of 3 self-report scales with 21 items, which was designed to measure the negative emotional states of depression, anxiety, and stress. Each item, on a 4-point Likert scale, indicates the frequency or severity of the participant's experience in the past week to emphasize states rather than traits. These scores range from 0, meaning the client thinks the item does not apply to him or her at all, to 3, meaning the client thinks the item applies to him or her a lot or most of the time, with items 1 and 2 falling somewhere in between.

Additionally, the instructions emphasize that there are no right or wrong answers. There are 7 questions in each subscale. The sum of the scores for each of the 7 questions completed by each participant on each of the 4 subscales is evaluated according to the severity index. The Bangla DASS-21 was adapted and the Cronbach's alpha coefficients for the depression, anxiety and stress scales were 0.987, 0.957 and 0.964 respectively (Alim et al., 2014). As this study focuses on measuring the stress level of the caregivers of children, we only measured the stress by measuring 1, 6, 8, 11, 12, 14, and 18 items of Bangla DASS-21 and it showed good reliability and Cronbach's alpha was 0.791 (Morshed, Ahmed, & Naz, 2024).

3.5 Procedure

At the beginning of the data collection, permission was taken and a rapport was built up with the caregivers of the children. Then the participants were informed about the purpose of the study and were also informed of the risks, benefits, and privacy issues. Next, participants were asked to complete a questionnaire containing a personal information form and a Bangla version of Stress scale (from DASS-21 scale) after reading the questionnaire instructions. They were asked to complete it as soon as possible without wasting time. Afterwards, upon completion of the questionnaire, participants were thanked for their cooperation in the research.

4. RESULTS

The main objective of the study was to see the state of stress experiencing by the caregivers of children. Data collected was organized and subjected to statistical analysis. The suitable statistical techniques, as follows: descriptive statistics such as mean, SD and correlation were used to examine the association between stress and other demographic variables. Regression and one-way ANOVA was used to see the difference in stress level due to the demographic variables. The analyzed data is presented in the form of tables based on the findings under various headings.

Table 1 Mean and Standard Deviation of demographic variables (i.e., age, educational qualification, marital status, occupation of the caregiver, socioeconomic status of the caregiver).

Variable	Mean	Standard Deviation
Age of the Caregivers	35.28	6.830
Educational Qualification of the Caregiver	5.05	2.394
Marital Status	1.17	.523
Occupation of the Caregiver	2.76	3.294
Number of Children of the Caregiver	1.46	.691
Age of the Children	9.7052	4.84286
Socioeconomic Status of the Caregiver	2.85	.482
Stress	24.38	7.871

Descriptive statistics of all the demographic variables was measured, representing the mean, and standard deviation of the age, educational background, Marital Status, Occupation of the caregiver, number of children of the caregiver, age of the children, Socioeconomic Status, and stress (Table 1).

Table 2 Pearson Correlation among the caregivers of the children according to their age (Age), educational qualification (EQ), marital status (MS), occupation of the caregiver (OC), number of children (NC), age of the children (AC), socioeconomic status (SES), and stress

Variable	1	2	3	4	5	6	7	8
1. Age	1							
2. EQ	-.157*	1						
3. MS	-.109	-.045	1					
4. OC	.057	.017	.248**	1				
5. NC	.136*	.185**	-.061	-.006	1			
6. AC	.459**	-.245**	.035	-.053	-.157**	1		
7. SES	.344**	-.020	-.038	.024	-.003	.280**	1	
8. Stress	.181**	-.251**	.046	-.121	-.135*	.278**	.248**	1

* Correlation is significant at the 0.05 level (2-tailed)

** Correlation is significant at the 0.01 level (2-tailed)

Pearson correlation was measured to see if there are any relationships between stress and demographic variables. Table 2 illustrates a significant negative correlation between stress and educational qualifications ($r = -0.251$, $p < .01$), stress and number of the children ($r = -0.135$, $p < .05$); and significant positive correlation between stress and age ($r = .181$, $p < .01$), stress and age of the children ($r = .278$, $p < .01$), and stress and socioeconomic status ($r = .248$, $p < .01$).

Table 3 One-way ANOVA on Stress among the caregivers of the children according to their age (Age), educational qualification (EQ), marital status (MS), occupation of the caregiver (OC), number of the children (NC), age of the children (AC), socioeconomic status (SES).

Variables		Sum of squares	df	Mean Square	F	Sig.
Age	Between groups	4079.563	31	131.599	2.581	<.001
	Within groups	10044.140	197	50.985		
	Total	14123.703	228			
EQ	Between groups	1429.167	9	158.796	2.739	.005
	Within groups	12694.537	219	57.966		
	Total	14123.703	228			
MS	Between groups	414.300	2	207.150	3.415	.035
	Within groups	13709.403	226	60.661		
	Total	14123.703	228			
OC	Between groups	1665.761	17	97.986	1.660	.052
	Within groups	12457.942	211	59.042		
	Total	14123.703	228			
NC	Between groups	929.156	5	185.831	3.141	.009
	Within groups	13194.547	223	59.168		
	Total	14123.703	228			
AC	Between groups	2438.767	29	84.095	1.432	.081
	Within groups	11684.936	199	58.718		

	Total	14123.703	228			
SES	Between groups	880.494	2	440.247	7.513	<.001
	Within groups	13243.209	226	58.598		
	Total	14123.703	228			

One-way between-groups analysis of variance (ANOVA) was used to investigate the impact of age, EQ, MS, OC, NC, AC, SES on stress (Table 3). Table 3 indicates that there was a statistically significant difference at the .05 level in stress for five groups: age ($F = 2.581$, $p < .01$), educational qualifications ($F = 2.739$, $p < .01$), marital status ($F = 3.415$, $p < .05$), number of the children ($F = 3.141$, $p < .01$), and socioeconomic status ($F = 7.513$, $p < .01$).

Table 4. Selected Statistics from Regression of stress level on educational level (EQ), marital status (MS), occupation (OC), number of children (NC), age of the children (AC), and socioeconomic status of the caregivers (SES).

Variables	R	R^2	R^2 Change	P
Predictor Variable: EQ, MS, OC, NC, AC, SES	.415	.173	.173	.001
*Dependent Variable: Stress				

Results of this table indicate that the strongest predictor explained 17.3% variance in stress level. A regression analysis aimed to predict stress based on multiple independent variables (Table 4). The results illustrated that the combined predictor variable comprising EQ, MS, OC, NC, AC, SES explained significantly variance in the dependent variable, stress ($P < .001$).

Table 5. Simple Regression of stress level on educational level (EQ), marital status (MS), occupation (OC), number of children (NC), age of the children (AC), and socioeconomic status of the caregivers (SES).

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	P
(Constant)	15.121	3.908		3.869	.001
Age	.060	.086	.052	.694	.488
EQ	-.612	.212	-.186	-2.892	.004
MS	1.134	.967	.075	1.173	.242
OC	-.328	.153	-.137	-2.147	.033
NC	-.943	.738	-.083	-1.278	.203
AC	.213	.120	.131	1.780	.077
SES	3.200	1.079	.196	2.965	.003

Dependent Variable: Stress

A simple multiple regression analysis was done to predict stress level based on age, EQ, EQ, MS, OC, NC, AC, SES (Table 5). Data revealed that three of the independent variables were statistically significant predictors of stress levels: educational qualifications ($p < .01$), occupation of the caregiver ($p < .05$), and socioeconomic status ($p < .01$).

Table 6. The Overall F-test for Regression of stress level on educational level (EQ), marital status (MS), occupation (OC), number of children (NC), age of the children (AC), and socioeconomic status of the caregivers (SES).

Sum of variations	SS	df	MS	F	P
Regression	2437.063	7	348.152	6.584	.001
Residual	11686.640	221	52.881		

Total	141123.703	228

a. Dependent Variable: Stress
b. Predictors: (Constant), EQ, MS, OC, NC, AC, SES

In above table shows that EQ, MS, OC, NC, AC, and SES are good predictors. This result fits the model. It is also said that ANOVA tells us Age, EQ, MS, NC, and SES are statistically significant.

5. DISCUSSION

The purpose of this study was to examine the levels of stress experienced by child carers in Bangladesh's urban areas, as well as to investigate how various demographic characteristics influence these levels. It specifically attempted to investigate the association between carer stress and age, educational background, marital status, occupation, number of children, children's ages, and socioeconomic situation. Understanding caregivers' stress levels is critical since it affects not just their well-being but also the quality of care they deliver to children. This study adds significantly to the literature by focusing on carers in an urban Bangladeshi setting, revealing demographic characteristics that increase carer stress. These findings can help to guide focused treatments for carers, ultimately improving child welfare and family resilience.

In relation to the stated research objectives, the findings showed that age, educational qualifications, marital status, number of children, and socioeconomic status significantly influence caregiver stress levels. Specifically, higher educational qualifications were associated with lower stress levels, while older age, a greater number of children, and higher socioeconomic status were linked to increased stress. These results align with previous studies that have highlighted the complex interplay between demographic factors and caregiver stress. The findings of this study are consistent with previous research highlighting the significant stress levels among caregivers. For instance, Dhiman et al. (2020) found that caregivers of children with special needs often experience high levels of stress due to demanding schedules and various challenges. Similarly, Baykal et al. (2018) reported that caregivers of children with autism spectrum disorder exhibit elevated levels of stress, depression, and anxiety, impacting their personal and occupational lives.

The significant negative correlation between stress and educational qualifications found in this study aligns with the findings of Meyer et al. (2017), who highlighted that better-educated caregivers often have more resources and coping mechanisms to manage stress. The positive correlation between stress and socioeconomic status suggests that higher socioeconomic status may be associated with greater responsibilities and expectations, contributing to increased stress, which contrasts with the generally expected protective role of higher socioeconomic status found in other contexts (Angwenyi et al., 2021; Wister et al., 2022).

Unexpectedly, the study found a negative correlation between the number of children and stress levels, which diverges from the findings of Thrush and Hyder (2014), who indicated that a higher number of caregiving responsibilities could lead to increased stress. This discrepancy might be due to cultural factors or support systems available in urban Bangladeshi families that were not present in other study contexts. The negative relationship between the number of children and stress levels may be explained by the prevalence of

extended family support in urban Bangladesh, where caregiving obligations are divided among family members, lessening the strain on the individual carer. Furthermore, cultural norms and expectations in Bangladesh may provide psychological comfort and a sense of task fulfilment, thereby lowering stress levels despite the increased number of children.

The outcomes of this study have a number of managerial ramifications. Policymakers and healthcare professionals should provide targeted support programs for carers, focusing on those with lower educational levels and those with higher socioeconomic situations who may suffer additional stressors. Training programs that improve carers' knowledge and abilities can reduce stress, resulting in better care for children. Furthermore, community-based programs that strengthen social support networks might reduce carer stress.

LIMITATION

Sample size is respectable, but it may not accurately reflect Bangladesh's diverse urban populations. After all funding issues may the main limitation in this study.

RECOMENDATIONS

Future research should include longitudinal studies that investigate the causal links between demographic variables and caregiver stress levels. Investigating the influence of cultural norms and support networks in stress management could provide additional insights into the findings. Expanding the study to include rural parts of Bangladesh would provide a more complete picture of caregiver stress in various situations. Additionally, qualitative research could investigate caregivers' actual experiences, giving valuable, contextual data to supplement quantitative findings. Finally, interventions based on these findings should be assessed for their efficacy in lowering caregiver stress, thereby contributing to evidence-based policy and practice improvements.

6. CONCLUSIONS

Stress levels among child caregivers in urban Bangladesh are significantly influenced by various demographic factors, including age, educational qualifications, marital status, number of children, and socioeconomic status. Higher educational qualifications are associated with lower stress, whereas older age, more children, and higher socioeconomic status contribute to elevated stress levels. These findings challenge some conventional assumptions, particularly the expectation that higher socioeconomic status generally protects against stress. The negative correlation between the number of children and stress may reflect the role of extended family support and cultural norms in urban Bangladesh, which help mitigate the burden of caregiving. These insights highlight the necessity of targeted interventions for caregivers, especially those with higher socioeconomic status and greater caregiving responsibilities, who may be more vulnerable to stress. Effective support programs can enhance caregivers' well-being and, consequently, the quality of care provided to children. These interventions are crucial for fostering family resilience and promoting child welfare, making them essential considerations for policymakers and healthcare providers in the region.

ACKNOWLEDGMENT

The entire research process, including data collection and analysis, was self-funded by the authors.

REFERENCES

Ae-Ngibise, K. A., Doku, V. C. K., Asante, K. P., & Owusu-Agyei, S. (2015). The experience of caregivers of people living with serious mental disorders: a study from rural Ghana. *Global Health Action/Global Health Action. Supplement*, *8*(1), 26957. Retrieved from: https://doi.org/10.3402/gha.v8.26957.

Alim, S. A. H. M., Kibria, S. M. E., Lslam, M. J., Uddin, M. Z., Nessa, M., Wahab, M. A., & Lslam, M. M. (2014). Translation of DASS 21 into Bangla and validation among medical students. *Bangladesh Journal of Psychiatry*, *28*(2), Article 2. https://doi.org/10.3329/bjpsy.v28i2.32740.

Angwenyi, V., Kabue, M., Chongwo, E., Mabrouk, A., Too, E. K., Odhiambo, R., Nasambu, C., Marangu, J., Ssewanyana, D., Njoroge, E., Ombech, E., Mokaya, M. M., Obulemire, E. K., Khamis, A., & Abubakar, A. (2021). Mental Health during COVID-19 Pandemic amongCaregivers of Young Children in Kenya's Urban Informal Settlements. A Cross-Sectional Telephone Survey. *International Journal of Environmental Research and Public Health/International Journal of Environmental Research and Public Health*, *18*(19), 10092. Retrieved from: https://doi.org/10.3390/ijerph181910092.

Bajraktarov, S., Kunovski, I., Raleva, M., Bolinski, F., Isjanovska, R., Kalpak, G., Novotni, A., Hadzihamza, K., & Stefanovski, B. (2023). Depression and Anxiety in Adolescents and their Caregivers: A Cross-Sectional Study from North Macedonia. *Prilozi - Makedonska Akademija Na Naukite I Umetnostite. Oddelenie Za Medicinski Nauki*, *44*(1), 47–56. Retrieved from: https://doi.org/10.2478/prilozi-2023-0006.

Baykal, S., Karakurt, M. N., Çakır, M., & Karabekiroğlu, K. (2018). An Examination of the Relations Between Symptom Distributions in Children Diagnosed with Autism and Caregiver Burden, Anxiety and Depression Levels. *Community Mental Health Journal*, *55*(2), 311–317. Retrieved from: https://doi.org/10.1007/s10597-018-0343-8.

Dhiman, S., Sahu, P. K., Reed, W. R., Ganesh, G. S., Goyal, R. K., & Jain, S. (2020). Impact of COVID-19 outbreak on mental health and perceived strain among caregivers tending children with special needs. *Research in Developmental Disabilities*, *107*, 103790. Retrieved from: https://doi.org/10.1016/j.ridd.2020.103790.

Malm-Buatsi, E., Aston, C. E., Ryan, J., Tao, Y., Palmer, B. W., Kropp, B. P., Klein, J., Wisniewski, A. B., & Frimberger, D. (2015). Mental health and parenting characteristics of caregivers of children with spina bifida. *Journal of Pediatric Urology*, *11*(2), 65.e1-65. e7. Retrieved from: https://doi.org/10.1016/j.jpurol.2014.09.009.

Maridal, H. K., Bjørgaas, H. M., Hagen, K., Jonsbu, E., Mahat, P., Malakar, S., & Dørheim, S. (2021). Psychological Distress among Caregivers of Children with Neurodevelopmental Disorders in Nepal. *International Journal of Environmental Research and Public Health/International Journal of Environmental Research and Public Health*, *18*(5), 2460. Retrieved from: https://doi.org/10.3390/ijerph18052460.

Mental health. (2022). World Health Organization. Retrieved March 21, 2024, from https://www.who.int/news-room/fact-sheets/detail/mental-health-strengthening-our-response

Meyer, S. R., Steinhaus, M., Bangirana, C., Onyango-Mangen, P., & Stark, L. (2017). The influence of caregiver depression on adolescent mental health outcomes: findings from refugee

settlements in Uganda. *BMC Psychiatry*, *17*(1). Retrieved from: https://doi.org/10.1186/s12888-017-1566-x.

MIND. (2022). Mental health and the impact of the cost of living crisis. Mind: For Better Mental Health. https://www.mind.org.uk/.

Morshed, M. U., Ahmed, F., & Naz, H. (2024). Validation of Stress scale. Unpublish Manuscript. Centre for Research In Multidiscipline-CRM.

Power, R., Muhit, M., Heanoy, E., Karim, T., Galea, C., Badawi, N., & Khandaker, G. (2019). Depression, anxiety and stress among caregivers of adolescents with cerebral palsy in rural Bangladesh. *Disability and Rehabilitation*, *43*(15), 2123–2130. Retrieved from: https://doi.org/10.1080/09638288.2019.1692378.

Santomauro, D. F., Herrera, A. M. M., Shadid, J., Zheng, P., Ashbaugh, C., Pigott, D. M., Abbafati, C., Adolph, C., Amlag, J. O., Aravkin, A. Y., Bang-Jensen, B. L., Bertolacci, G. J., Bloom, S. S., Castellano, R., Castro, E., Chakrabarti, S., Chattopadhyay, J., Cogen, R. M., Collins, J. K., . . . Ferrari, A. J. (2021). Global prevalence and burden of depressive and anxiety disorders in 204 countries and territories in 2020 due to the COVID-19 pandemic. *Lancet*, *398*(10312), 1700–1712. Retrieved from: https://doi.org/10.1016/s0140-6736(21)02143-7

Sarafino, E. P., & Armstrong, J. W. (1980). *Child and adolescent development*. Scott, Foresman and company.

Surender, S., Gowda, V. K., Sanjay, K. S., Basavaraja, G. V., Benakappa, N., & Benakappa, A. (2016). Caregiver-reported health-related quality of life of children with cerebral palsy and their families and its association with gross motor function: A South Indian study. *Journal of Neurosciences in Rural Practice*, *7*(2), 223. Retrieved from: https://doi.org/10.4103/0976-3147.178657.

Thrush, A., & Hyder, A. (2014). The neglected burden of caregiving in low- and middle-income countries. *Disability and Health Journal*, *7*(3), 262–272. Retrieved from: https://doi.org/10.1016/j.dhjo.2014.01.003.

What is stress? (2022, March). MIND. Retrieved March 20, 2024, from https://www.mind.org.uk/information-support/types-of-mental-health-problems/stress/wh at-is-stress.

World Health Organization. (2022). Mental health and COVID-19: Early evidence of the pandemic's impact: Scientific brief, 2 March 2022. Retrived from: https://www.who. int/publications/i/item/WHO-2019-nCoV-Sci_Brief-Mental_health-2022.1.

Wister, A., Li, L., Mitchell, B., Wolfson, C., McMillan, J., Griffith, L. E., Kirkland, S., Raina, P., Costa, A., Anderson, L., Balion, C., Yukiko, A., Basta, N., Cossette, B., Levasseur, M., Hofer, S., Paterson, T., Hogan, D., Liu-Ambrose, T., . . . Cosco, T. (2022). Levels of depression and anxiety among informal caregivers during the COVID-19 pandemic: A study based on the Canadian Longitudinal Study on Aging. *˜the œJournals of Gerontology. Series B, Psychological Sciences and Social Sciences*, *77*(9), 1740–1757. Retrieved from: https://doi.org/10.1093/geronb/gbac035.

ROMANIAN JOURNAL OF PSYCHOLOGICAL STUDIES

HYPERION UNIVERSITY
www.rjps.hyperion.ro

SOURCES OF ACADEMIC STRESS AND COPING STRATEGIES AMONG POLYTECHNIC STUDENTS IN OYO STATE, NIGERIA

FADIPE, RASAQ ABIMBOLA [a] , YAHAYA, LASIELE ALABI [a] , KAYODE OLAJIDE CHARLES [a,] SALMAN SIKIRAT [b,]

[a] University of Ilorin, Department of Guidance and Counselling
[b] University of Ilorin, Department of Educational Management

Abstract

Academic stress poses a significant threat to polytechnic students in Oyo State, and the lack of effective coping strategies highlights the need for counselling interventions. This study therefore, examined the sources of academic stress and coping strategies among students. A descriptive survey design was employed, and a sample of 400 students was randomly selected across the institutions. A researcher-designed instrument, titled: "Sources of Academic Stress and Coping Strategies Questionnaire (SASCSQ)" was used to collect data from the respondents. Findings revealed that major stressors include an unconducive learning environment, poor time management, and fear of failure, while coping strategies include seeking guidance and counselling, sharing concerns with friends, practicing meditation, getting sufficient sleep, and effective time management. No significant gender differences were found. It was recommended that students should actively engage in guidance and counselling services, and that polytechnic authorities provide a more conducive learning environment and offer training in time management and coping strategies to enhance students' wellbeing and academic performance. Polytechnic management and counsellors should also establish policies and programmes to reduce academic stress and ensure regular psychological and counselling assessment for students on campus.

Keywords: *Academic stress, Coping strategies, Polytechnic students, Oyo State, Nigeria.*

1. INTRODUCTION

Stress arises when an individual faces a situation he or she perceives as overwhelming or difficult to manage. The term "stress" originates from the Latin word *strictus*, meaning "tight" or "narrow." Many students entering polytechnics in Nigeria experience adjustment challenges for the first time due to the unfamiliar environment. These challenges can lead to acute or chronic stress, influenced by various conditions, events, or circumstances. If not properly managed, stress can hinder their academic performance, participation in extracurricular activities, and overall mental and physical well-being.

Polytechnic students in Oyo State express concerns about the heavy burden of academic assignments, particularly when balancing academic responsibilities and extracurricular activities. These concerns, which include excessive workload, tight deadlines, and inadequate time for rest and personal needs, are often expressed through complaints to lecturers and academic advisers, discussions with peers, and reports during counselling sessions. Stress-induced behaviours often emerge midway through the semester, and students frequently report

Corresponding author: Fadipe, Rasaq Abimbola
E-mail address: fadiperasaqabimbola@gmail.com

symptoms of academic stress such as headaches, loss of appetite, feelings of inadequacy, and sleep disturbances (Dada et al., 2025). Prolonged academic stress can negatively affect students' academic performance and overall wellbeing (Power & Dalgleish, 2022). These challenges highlight the need for students to use polytechnic resources, including guidance counsellors, social workers, psychologists, nurses, and administrative staff, to manage academic stress effectively.

Numerous factors contribute to academic stress, including challenges with time management, financial pressures, interactions with teachers, personal objectives, social commitments, adapting to campus life, lack of support systems, concerns about post-graduation employment prospects, self-imposed expectations, peer expectations, familial expectations, parental standards, inconvenient school schedules, high student-to-teacher ratios, and unsuitable classroom environments (Arsenio & Loria, 2024). Nkwuda, Chuka, Sampson, and Oginyi (2020) further add to these factors, mentioning issues like insufficient teacher-student interactions, rigid disciplinary measures, physical punishment, overwhelming workload, teaching approaches, pressure from parents, pressure to maintain high grades, lateness to do assignments, difficulty in public speaking, and inadequate financial resources.

Academic stress among polytechnic students varies between gender, influenced by societal expectations and personal circumstances (Thawabieh & Qaisy, 2024). Female students often face high academic expectations, particularly in male-dominated fields, leading to increased pressure to excel. They also manage multiple responsibilities, such as family obligations and part-time jobs, which can exacerbate stress levels. In contrast, male students often deal with peer pressure to conform to social norms related to masculinity, impacting their academic performance (Adegboyega, 2020). Additionally, concerns about securing stable job prospects after graduation create anxiety for male students, while the competitive nature of their programmes adds further stress. Recognising these gender-specific sources of academic stress is essential for developing targeted support systems that promote a healthier academic environment for all students (Rahmayani, et al., 2024).

Academic stress is a significant concern that can negatively affect students' overall adjustment. It often manifests through physical, emotional, and behavioural symptoms such as frequent illnesses, anxiety, low self-esteem, depression, irritability, emotional distress, reduced academic performance, and experimentation with drugs or alcohol (Adegboyega, 2020). Students employ various coping strategies to manage these stressful situations, and those with more effective coping mechanisms typically experience lower levels of academic stress (Thawabieh & Qaisy, 2024). Such strategies may include time management, seeking support from peers or counsellors, engaging in relaxation techniques like meditation, and maintaining a healthy lifestyle. Developing strong coping skills helps students regulate emotions, maintain focus, and promote overall wellbeing and academic success.

Ukeh, Hassan, and Dauda (2023) suggested that managing academic stress may require employing various techniques, with students who adopt better coping strategies experiencing low anxiety levels and risk of academic frustration and stress. Dada, Babatunde, and Adeleye (2025) proposed relaxation techniques, exercise, maintaining good health, and effective time management as methods for managing academic stress. Power and Dalgleish (2022) identified the five most commonly utilised coping strategies among students, including internet browsing, sleeping and resting, watching TV shows or movies, instant messaging, and seeking counselling. Notably, 70% of Nigerian students surveyed expressed the belief that having a counselling center on campus would be beneficial (Nkwuda, et al., 2020). Therefore, there is a need for counselling programmes staffed by trained professional counsellors to assist students in managing academic stress effectively.

Afonne et al. (2023) proposed several strategies for coping with academic stress, including relaxation techniques, breathing exercises, challenging irrational thoughts,

assertiveness training, effective time management, maintaining a healthy diet, engaging in regular exercise, participating in recreational activities, and altering daily routines to manage stressful situations experienced in school. Nkwuda, et al. (2020) advocated for the guidance and counselling services to mitigate academic stress and tension, which adversely impact students' abilities. Effective techniques such as biofeedback, yoga, life skills training, mindfulness meditation, and psychotherapy have been shown to effectively reduce academic stress among students. Mauthner (2024) identified various methods students employ to mitigate academic stress, including efficient time management, seeking social support, adopting positive reappraisal techniques, and refraining from drug use or substance abuse.

Coping with academic stress varies significantly between male and female students due to differences in socialisation and expectations. Female students often rely on social support and engage in emotion-focused strategies, such as journaling and collaborative learning, which foster community and help them process their feelings (Arsenio & Loria, 2024). Many also turn to mindfulness practices like meditation and yoga to manage anxiety effectively (Ezelote, et al., 2024). In contrast, male students tend to adopt problem-solving approaches, focusing on identifying challenges and finding practical solutions. They often engage in physical activities, using exercise as an outlet for stress, while some may resort to distraction or avoidance strategies that can lead to procrastination (Power & Dalgleish, 2024).

Numerous research studies had been carried out on the nature of academic stress in Nigeria. For instance, Ifeagwazi, et al. (2013) examined role of stress reactivity, age and gender on neuroticism among students; Lamidi (2016) worked on prevalence and correlates of depression, anxiety and academic stress among undergraduates in Oduduwa University, Ile-Ife, Nigeria; Adegboyega (2020) investigated sources of academic stress among undergraduates at University of Ilorin, Ilorin, Nigeria. Despite the efforts of earlier researchers on academic stress; to the best of the researchers' knowledge, none of the previous researchers had worked on the sources of academic stress and coping strategies among polytechnic students in Oyo State. Therefore, the study contributed and filled the gap left by the previous researchers, and examined the sources of academic stress and coping strategies among polytechnic students in Oyo State, Nigeria.

2. OBJECTIVE AND HYPOTHESES

2.1. OBJECTIVE

The main objectives of the study were to:

1. examine the sources of academic stress among polytechnic students in Oyo State
2. examine the strategies polytechnic students employ to cope with academic stress in Oyo State.

The following research questions were raised and answered in this study:

(1) What are the sources of academic stress among polytechnic students in Oyo State?

(2) What strategies do polytechnic students employ to cope with academic stress in Oyo State?

2.2. HYPOTHESES

The following research hypotheses were formulated and tested in this study at the 0.05 level of significance:

(1) There is no significant difference in the sources of academic stress among polytechnic students in Oyo State based on gender.

(2) There is no significant difference in the strategies for coping with academic stress among polytechnic students in Oyo State based on gender.

3. METHOD

The researchers chose a descriptive survey design as the most suitable method for collecting and analysing data on the sources of academic stress and coping strategies among polytechnic students in Oyo State, Nigeria. The study focused on all polytechnic students in Oyo State, Nigeria, as its population. Researchers used a multi-stage sampling procedure to select a representative sample. The student population figures obtained was as follows: Polytechnic of Ibadan, 19,603; Oke-Ogun Polytechnic, 7,000; and School of Surveying, Oyo, 10,307, totaling 36,910 students across the selected institutions. Following the recommendation of the Research Advisor (2006), a sample size of 381 respondents was suggested for a population of this magnitude. To account for potential attrition, an additional 5% of the sample size was added, resulting in a total of 400 respondents. In the first stage, one institution was purposively selected from each senatorial district. The School of Surveying was selected from the Oyo Central Senatorial District, Oke-Ogun Polytechnic from the Oyo North Senatorial District, and the Polytechnic of Ibadan from the Oyo South Senatorial District. In the second stage, a proportional sampling technique was employed to select students from each institution participating in the study.

Table 1: Proportional sample of Students in the Targeted Schools in Oyo State

S/N	Institution	Targeted Population	Sample
1	Polytechnic of Ibadan	19, 603	212
2	Oke-Ogun Polytechnic	7, 000	76
3	School of Surveying, Oyo	10, 307	112
	Total	36, 910	400

In the third stage, a simple random sampling technique (through dip-hat method) was used to select 400 students. Simple random sampling ensures that each individual or unit in the population has an equal opportunity to be chosen for inclusion in the desired sample.

The researchers designed the data collection instrument, titled: "Sources of Academic Stress and Coping Strategies Questionnaire (SASCSQ)", based on insights gathered from the literature review. To validate the instrument, face and content validity were established by five lecturers from the Department of Counselling and Human Development Studies, University of Ibadan. Reliability testing involved a test-retest method, where the instrument was administered twice to a group of students at Kwara State Polytechnic, Department of Civil Engineering Technology, with a two-week interval between administrations. The correlation of the two sets of scores, analysed using Pearson Product Moment Correlation, yielded a reliability coefficient of 0.83.

The questionnaire thus comprised three sections: Section A focused on demographic information, Section B addressed sources of academic stress, and Section C delved into coping strategies. Sections B and C were structured using a four-point Likert scale format, including options for "Strongly Agree =4points, Agree =3points, Disagree =2points, and Strongly Disagree =1point". The benchmark for the instrument was established by summing the response points and dividing by 4, resulting in a mean score of 2.5 (i.e., 4+3+2+1=10/4=2.5). Mean scores of 2.5 and above were considered as sources of academic stress and effective coping strategies, while mean scores below 2.50 were not or less considered.

Following ethical guidelines, two researchers, with the support of two trained research assistants briefed on the study's objectives, personally distributed the questionnaires to respondents. The study's purpose was clearly explained, and participants' consent was obtained beforehand. Individuals who chose not to participate were excluded and did not receive the questionnaire. Additionally, confidentiality was assured before participants completed the questionnaires.

4. RESULTS

In Oyo State, 400 questionnaire forms were distributed for the study, but only 389 were properly filled, recovered, and analysed. Hypotheses 1 and 2 were analysed using inferential statistics (Independent t-test) at a significance level of 0.05.

Research Question 1: What are the sources of academic stress among polytechnic students in Oyo State?

Table 2 presented the mean scores and rank order of sources of academic stress among polytechnic students in Oyo State, Nigeria. The table revealed that all items were identified as sources of academic stress among these students, as all mean scores exceeded the mid-point value of 2.50. Specifically, items with mean values of 3.89, 3.87, and 3.77 were ranked 1st, 2nd, and 3rd, respectively, indicating that an unconducive learning environment, lack of time management, and fear of failure were the major stressors.

Table 2: Mean and Rank Order of Sources of Academic Stress among Polytechnic students in Oyo State, Nigeria

N	As a student, I experience academic stress due to:	Mean	Rank
7	Unconducive learning environment	3.89	1st
13	Lack of time management	3.87	2nd
4	Fear of failure	3.77	3rd
2	Abuse of substances	3.74	4th
6	Delays in releasing examination timetables	3.72	5th
8	Inadequate study facilities i.e. computers, books, chairs, electricity	3.72	5th
15	No parental support	3.72	5th
5	Financial problems	3.70	8th
11	Pressure to maintain high grades	3.68	9th
9	Insufficient sleep	3.64	10th
12	Competition with fellow students	3.62	11th
1	Overcrowded lecture halls	2.59	12th
14	Low motivation	2.57	13th
10	Lack of transportation	2.53	14th
3	Lateness to do assignments	2.50	15th

Researcher's Fieldwork, 2025

Research Question 2: What strategies do polytechnic students employ to cope with academic stress in Oyo State?

Table 3 presented the mean scores and rank order of coping strategies employed by polytechnic students in Oyo State, Nigeria. All items listed were identified as coping strategies employed by these students, as their mean scores exceeded the mid-point value of 2.50. Specifically, items with mean values of 3.86, 3.81, and 3.73 were ranked 1st, 2nd, and 3rd, respectively, indicating that seeking guidance counselling services, engaging in meditation, and ensuring sufficient sleep were the most common coping mechanisms.

Table 3: Mean and Rank Order of Coping Strategies of Polytechnic students in Oyo State, Nigeria

N	As a student, I cope with academic stress by:	Mean	Rank

10	Seeking guidance and counselling services	3.86	1st
3	Engaging in meditation	3.81	2nd
4	Getting a sufficient sleep	3.73	3rd
7	Keeping a sense of humour	3.71	4th
12	Approaching the lecturer for further explanation	3.69	5th
8	Engaging in group discussion	3.69	5th
13	Taking good diet	3.67	7th
5	Having a positive view of one's future	3.65	8th
6	Avoiding illegal drugs, alcohol, and tobacco	3.65	8th
9	Playing online games	3.61	10th
11	Setting realistic goals	3.59	11th
1	Attending regular classes	3.56	12th
14	Sharing feelings with trusted friends	3.53	13th
15	Creating good time management for reading	2.59	14th
2	Avoiding unnecessary arguments	2.55	15th

Researcher's Fieldwork, 2025

Hypothesis One: There is no significant difference in the sources of academic stress among polytechnic students in Oyo State based on gender

Table 4: Mean, Standard Deviation and t-test showing Sources of Academic Stress among Polytechnic students in Oyo State based on gender

Gender	N	Mean	SD	df	Cal. t-value	Crit. t-value	p-value
Male	182	36.90	5.64				
				387	0.34	1.96	0.12
Female	207	37.10	5.54				

* Not significant at 0.05 alpha level

Table 4 showed the calculated t-value of 0.34 and critical t-value of 1.96. It was revealed that the calculated t-value was less than the critical t-value; hence, the hypothesis was accepted. Therefore, no significant difference was revealed in the sources of academic stress among polytechnic students in Oyo State based on gender.

Hypothesis Two: There is no significant difference in the strategies for coping with academic stress among polytechnic students in Oyo State based on gender

Table 5: Mean, Standard Deviation and t-test showing the Strategies for Coping with Academic Stress among Polytechnic students in Oyo State based on gender

Gender	N	Mean	SD	df	Cal. t-value	Crit. t-value	p-value
Male	182	32.80	7.13				
				387	1.16	1.96	0.36
Female	207	31.92	7.78				

* Not significant at 0.05 alpha level

Table 5 indicated the calculated t-value of 1.16 and critical t-value of 1.96. It was revealed that the calculated t-value was less than the critical t-value; hence, the hypothesis was accepted. Therefore, no significant difference was showed in the strategies for coping with academic stress among polytechnic students in Oyo State based on gender.

5. CONCLUSIONS

The findings revealed that polytechnic students experience academic stress due to an unconducive learning environment, poor time management, and fear of failure. This aligns with Dada et al. (2025), who reported that limited resources, lack of social support, and poor planning increase student stress. However, Deshpande and Chari (2014) found that students with strong resilience may not experience high stress despite similar demands, suggesting individual traits can buffer stress. The reason for this finding might be that the pressure to achieve high grades and meet expectations from parents and peers overwhelms students who lack coping skills. The implications are that polytechnic counsellors should provide stress management programmes, while management should improve learning conditions and offer resources, peer support, and time-management training to help students handle academic demands effectively.

The findings indicated that polytechnic students adopt various strategies to cope with academic stress, such as seeking counselling, sharing feelings with friends, good time management, meditation, sufficient sleep, and avoiding unnecessary arguments. This is supported by Francis-Edoziuno et al. (2023), who found that problem-focused coping and social support help students manage academic stress effectively. Ezelote et al. (2024) also reported that planning and time management are linked with lower stress levels among undergraduates. However, some studies, such as Lamidi (2016) and Ukeh et al. (2023), found that not all coping strategies reduce stress, showing that avoidance or maladaptive strategies can worsen stress outcomes. The reason for this finding might be that students who set realistic goals, attend classes regularly, maintain a healthy lifestyle, and seek social support are better able to regulate their stress and avoid psychological distress. These findings imply that counsellors in polytechnics should design inclusive programmes that teach effective coping strategies and provide regular guidance on stress management. They also suggest that polytechnic management should create supportive learning environments to help students apply these strategies successfully.

The finding showed no significant difference in the sources of academic stress among polytechnic students in Oyo State based on gender, suggesting that male and female students face similar academic pressures. This supports Afonne (2023), though Thawabieh and Qaisy (2024) noted that female students may experience higher stress due to social and academic expectations. The reason for this study might be that both genders face similar workloads, performance pressures, and environmental challenges. The implication is that polytechnic management, educators, and student support services should implement stress-reduction programmes and strategies that address common stressors, promote time management, and provide resources to support all students' well-being.

Findings revealed no significant difference in coping strategies for academic stress among polytechnic students in Oyo State based on gender, suggesting that both male and female students use similar methods to manage stress. This aligns with Mauthner (2024), though Arsenio and Loria (2024) found that female students sometimes use wishful thinking and problem-focused disengagement more than males. Hence, the reason for this study might be that both genders face similar academic demands and pressures. The implication is that polytechnic management, educators, and the Student Affairs Unit should provide stress-management programmes, guidance on effective coping techniques, and opportunities for peer support that benefit all students equally.

The study concluded that polytechnic students in Oyo State experience academic stress due to factors such as an unsupportive learning environment, poor time management, fear of failure, low motivation, transportation challenges, and procrastination. To manage and reduce this stress, students use strategies like seeking guidance and counselling, confiding in friends,

practicing meditation, ensuring adequate sleep, avoiding conflicts, and organising their time effectively. The findings also showed that gender did not significantly affect either the sources of academic stress or the coping strategies, suggesting that interventions should target all students and focus on improving the learning environment, promoting time management, and providing accessible counselling services.

Recommendations

Based on the findings of the study, it was recommended that:

1. Polytechnics in Oyo State should create a conducive learning environment with well-equipped classrooms and supportive spaces to reduce academic stress and enhance student success.

2. Students experiencing academic stress should seek guidance and counselling services, as these can help them manage stress, overcome fear of failure, prevent substance abuse, improve time management, apply stress-reduction techniques, maintain healthy sleep habits, and ensure regular class attendance.

3. Students should develop an effective time management to balance between study time and social activities which academically constitute so much stress for them.

4. Students should be provided with adequate support services by the Polytechnic management, such as counselling, time management workshops, peer support groups, and wellness programmes, to make school activities less stressful and help them cope with academic stress.

5. Polytechnic management and counsellors should establish policies and programmes for the reduction of academic stress and ensure regular psychological and counselling assessment for students on campus.

6. Students should have access to a comprehensive stress management programme that provides support to all individuals in school, regardless of gender, to address common sources of academic stress.

7. Polytechnic institutions in Oyo State should foster a culture of inclusivity, support, and resilience, ensuring that all students, regardless of gender, develop effective coping strategies to manage stress and achieve academic success.

ACKNOWLEDGMENT

We sincerely appreciate all the respondents for dedicating their valuable time to complete the questionnaire. Their willingness to participate played a crucial role in the successful completion of this study. We are also grateful for their sincere and thoughtful responses, which strengthened the quality of the data gathered. Their contributions have provided important insights that will aid future research and counselling interventions.

REFERENCES

1.Adegboyega, L. O. (2020). Sources of academic stress among undergraduates at university of Ilorin, Ilorin, Nigeria. Canadian Journal of Family and Youth, 12(1), 1-8.

2.Afonne, A. J., Agbakoba, N. R., & Nwankwo, C. U. (2023). Stress, stressors, stress responses and coping strategies among student nurses in Anambra State, South-East Nigeria. *Advances in Health and Behaviour, 6*, 263-274. https://doi.org/10.25082/AHB.2023.01.003

3.Arsenio, W. F. & Loria, S. (2024). Coping with negative emotions: Connections with adolescents' academic performance and stress. The Journal of Genetic Psychology: Research and Theory on Human Development, 175(1), 76-90.

4.Dada, J. O., Babatunde, S. O., & Adeleye, R. O. (2025). Assessment of academic stress and coping strategies among built environment undergraduate students in Nigerian higher education.

Journal of Applied Research in Higher Education, 11(3), 367-378. https://doi.org/10.1108/JARHE-06-2018-0100

5.Deshpande, A. & Chari, S. (2014). Perceived sources of stress and coping strategies in dental students and interns. The Journal of Psychology, 5(2), 133-141.

6.Eneogu, N. D., Ugwuanyi, C. K., & Ugwuanyi, C. S. (2023). Efficacy of cognitive behavioral therapy on academic stress among rural community secondary school economics students: A randomized controlled evaluation. *Journal of Rational-Emotive and Cognitive-Behaviour Therapy*. https://doi.org/10.1007/s10942-023-00508-z

7.Ezelote, J. C., Asuzu, E., Akam, N., & Mbachu, J. (2024). Academic stress and coping strategies among postgraduate students: Comparative study of universities in Imo State, Nigeria. *Asian Journal of Advanced Research and Reports, 15*(7), 26-42.
https://doi.org/10.9734/ajarr/2021/v15i730411

8.Francis-Edoziuno, C. C., Abiona, M. O., & Odetola, T. D. (2023). Stressors and coping measures among undergraduate nursing students in Western Nigeria. *Pan Africa Science Journal, 3*(03). https://doi.org/10.47787/pasj.v3i04.55

9.Lamidi, R. E. (2016). Prevalence and correlates of depression, anxiety and academic stress among science students in Oduduwa University, Ile- Ife, Nigeria. Texila International Journal of Public Health, 4(3), 1-11. DOI: 10.4103/nbcs.nbcs_55_15

10.Mauthner, N. S. (2024). Research philosophies and why they matter, in Keith Townsend, Mark, N. K. Saunder, Rebecca Loudon and Emily Morrison (Eds), How to keep your doctorate on track: Insights from students' and supervisors' experiences (76-86). Cheltenham: Edward Elgar Publishing.

11.Nkwuda, F. C. N., Chuka, M. I., Sampson, K. N. & Oginyi, R. C. (2020). Suicidal ideation among undergraduate students: Academic stress and self-esteem as predictive factors. Nigerian Journal of Psychological Research, 16(1), 56-64. DOI: 10.2478/jesr-2019-0013

12.Power, M. J. & Dalgleish, T. (2024). Cognition and emotion: From order to disorder. Hove: Psychology Press.

13.Rahmayani, R. D., Liza, R. G.& Syah, N. A. (2024). Gambaran tingkat stres berdasarkan stressor pada mahasiswa kedokteran tahun pertama program studi profesi dokter fakultas kedokteran universitas andalas angkatan 2017. [An overview of stress levels based on stressors in first year medical students of the medical profession study program at the Faculty of Medicine, Andalas University, class of 2017]. Journal Kesehatan Andalas, 8(1), 103–111.

14.Thawabieh, A. M. & Qaisy, L. M. (2024). Assessing stress among polytechnic students. American International Journal of Contemporary Research, 2(2), 110–116.

15.Ukeh, M. I., Hassan, A. S., & Dauda, I. A. (2023). Stress and coping strategies as predictors of psychological wellbeing among Nigeria university students. *Journal of Behavioural Health and Psychology, 12*(2), 328-356. https://doi.org/10.33425/2832-4579/23052