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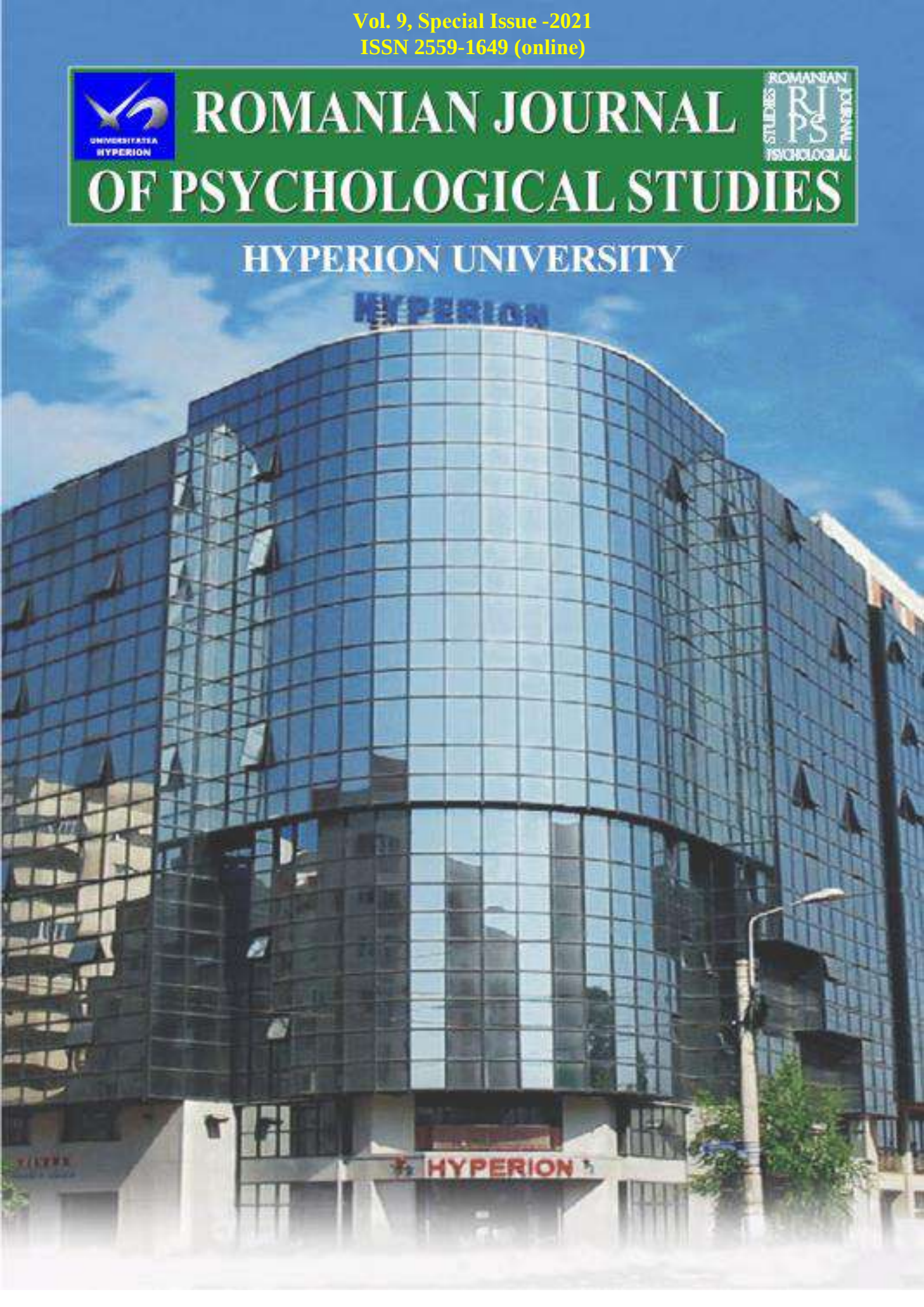

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# THE RELATIONSHIP BETWEEN SOCIAL PROBLEM SOLVING AND PSYCHOLOGICAL WELL-BEING: A LITERATURE REVIEW

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***Abstract***

*This study aims to review the association between Social Problem Solving (SPS) and Psychological Well-Being (PWB). In addition, the study reviews the relationship between PWB and the orientations of SPS: Positive Problem Orientation (PPO) and Negative Problem Orientation (NPO), and the styles of SPS: Impulsive Style (IS), Avoidance Style (AS), and Rational Style (RS). The study relies on various studies and primarily depends on the Google Scholar research engine. After reviewing the studies, this study finds that SPSI–R by D'Zurilla et al. (2002) is the main instrument used in the other studies to define individuals' SPS methods. The study also finds that there is a relationship between SPS and PWB; that PPO and RS positively impact PWB, while NPO, IS and AS negatively impact PWB.*

***Keywords:*** *social problem solving; psychological well-being.*

## 1. INTRODUCTION

### 1.1 Defining SPS

Social Problem Solving (SPS) is real-life problem solving and a self-directed process as individuals seek to recognize, find out, and/or develop adaptive managing solutions for the problems they face in their everyday life. In order to deal with such situations, solutions should be found in a social context (Nezu et al., 2012). Siu and Shek (2009) clarify SPS as a behavioral process that is cognitive and affective and employed by individuals attempting to find solutions to social problems facing them in their social environment. D'Zurilla & Nezu, (2007) add that SPS is a procedure that is followed by individuals who seek to find adaptive means and apply them in order to cope with a wide range of problems encountered

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by them in everyday life. SPS deals with problematic circumstances that are related to interpersonal issues that cannot be easily resolved in the context of everyday life as individuals do not have the solutions because their reasoning alone cannot address the problem. However, the nature of SPS has numerous suitable and effective solutions depending mainly on individuals' characteristics as well as the factors of particular environments during the stage of the problem-solving (D'Zurilla & Nezu, 1999). Most essentially in this review study is that D'Zurilla et al. (2004) point out that SPS is fundamental to manage individual's emotions and Psychological Well-Being (PWB). This is a key statement for this study, which reviews the association between SPS, by the review of the related studies, and SPS' orientations and styles that are the main parts of SPSI-R (2002) of D'Zurilla and his colleagues. The SPSI-R is the main study that is used in various other studies to investigate individuals' SPS methods. Aburezeq and Kasik (2021a) found that SPS has been investigated in various fields such as loneliness, psychological adjustment, peace education, academic achievement, and also in quality of life.

### 1.2 Defining PWB

PWB has been investigated since the time of Aristotle; philosophers have always been interested in PWB as an issue connected to the qualities of a good life and a good society. PWB from Aristotle's point of view was living a good life in terms of health, wealth, knowledge, friendship, and other life domains (Diener & Suh, 1997). In recent years, social scientists have deeply researched PWB and found it to be a concept connected to people's ability to live inventive, vigorous, and fulfilling lives (Western & Tomaszewski, 2016). PWB is a term that could be described as a person's possession of all reasons for happiness in life (e.g., MacLeod & Moore, 2000; Wissing & Van Eeden, 2002). Furthermore, Edwards (2005) declares that PWB means the helpful mental health. And, it is has been shown that PWB is a concept that is various and multidimensional (MacLeod & Moore, 2000; Wissing & Van Eeden, 2002) and which is developed through the integration of life involvements, character, emotional regulation, and personal identity (Helson & Srivastava, 2001). It can increase with age, education, extraversion and consciousness, and decreases with neuroticism (Keyes et al., 2002). However, PWB can also decrease with age as it has been found that depressive symptoms during adolescence are linked to increased deficiencies in numerous areas in adulthood, including sustained mental health problems (Maciejewski, et al., 2018).

PWB, which refers to optimal psychological experience and functioning, has been vigorously studied in psychology, sociology and other foundational behavioral science disciplines over the past quarter-century (Youssef-Morgan & Luthans, 2015). In relation to sociology, Gallagher and Lopez (2009) find that social well-being is a main part of PWB and thus it is valuable to discuss PWB as a

social aspect. In this regard, Keyes and Lopez (2002) mention that PWB is composed of five social scopes: (1) social acceptance (i.e. to accept other people as they are), (2) social actualization (i.e. an indicator of a positive coziness level with society), (3) social contribution (i.e. an individual's feeling that s/he can contribute to his/her society), (4) social coherence (i.e. accepting the social world as foreseeable and comprehensible), and (5) social integration (i.e. a person's feeling that s/he is an integral part of the community). On this matter, Al-Moharib and Al-Neaim (2003) found that social problems have a strong correlation with psychological aspects and they are interchangeably connected; social problems have a psychological aspect, while psychological problems have a social aspect. Hence, Clarizio (1992) found that there is no logic to separate social problems from psychological aspects and vice versa, as there is no evidence that they are isolated.. Not surprisingly then, Chang et al. (2009) indicates that SPS is moderately to highly associated with several aspects of PWB (e.g., self-acceptance, purpose in life, and personal growth).

### 1.3 Impact of Interpersonal Relationships on PWB and SPS

Feeney & Noller (1996) stated that the nature of interpersonal connections is a key determinant of individuals' PWB in modern societies. Not having interpersonal relationships could lead to detrimental repercussions (Aburezeq & Kasik 2021b). Hirsch et al. (2012) investigated the impacts of loneliness and life stress on SPS and suicidal behaviors in 385 students who study at Northeastern University in the United State, and found that only loneliness played a moderated role between SPS and suicidal behaviors as loneliness worked to increase the level of association between having poor SPS and showing suicidal behaviors. In addition, in a review study, Blanchard-Fields (2007) found that managing SPS helps adolescents enjoy interpersonal ties and reduce aggressive behavior as their ability to balance their emotions allow them to successfully solve their social problems.

## 2. OBJECTIVE AND HYPOTHESES

### 2.1. OBJECTIVE

The current study aims to review the relationship between SPS and PWB. In addition, the study reviews the relationship between PWB and the orientations of SPS: PPO) and NPO, and the styles of SPS: IS, AS, and RS.

## 3. METHOD

The study reviews the studies that reveal a connection between SPS, its styles and dimensions in one hand and PWB in it other hand. We conducted comprehensive search on Google Scholar, web of Science and PsycInfo to collect

these studies that were published since 2000 until 2021. The main focus is placed on the results on the studies, not on the procedures.

## 4. RESULTS

### 4.1 The Relationship between SPS and PWB

Given the importance of successful interpersonal relationships on PWB, it makes sense that because SPS has a fundamental role in deciding the quality of a person's social connections; it also impacts a person's PWB. It has been evidenced from empirical studies that there is a direct link between SPS and PWB as insufficiencies in SPS increase depression and anxiety (Keltikangas-Jarvinen, 2005). It has been suggested that developing SPS works to reduce the effect of anxiety, negative life stress, and depressive symptoms, while lacking SPS raises the negative consequences on PWB (Chang et al. 2004, Aburezeq & Kasik, 2021b). Additionally, SPS is a main intrapersonal and interpersonal process affecting quality of life (Wallander, et al., 2001); and SPS training works to promote individuals' control of aggressive behavior and anger (Frey et al., 2000). Since the 1970s, the pioneer of the field of SPS, Thomas J. D'Zurilla, has considered SPS to be one of the important coping processes that has a direct connection to mental health (D'Zurilla & Goldfried, 1971). Additionally, SPS processes have been associated as key predictors of the mental health outcomes of adults i.e. quality of life and depressive indications (de la Fuente, et al., 2019; Chang, et al., 2009; D'Zurilla, et al., 2002). Furthermore, McMurran et al. (2012) concludes that personality disorder in later adulthood results from the lack of SPS.

SPS training has been shown to be critical to managing anger, aggressive behaviour (Frey et al., 2000), and depression (Frye and Goodman, 2000). It is a fact that the development of SPS depends on various mediators such as emotions and anxiety (Kasik, et al., 2016; Bond, et al., 2002; Belzer, et al., 2002). Atadokht, et al. (2014) conducted their experimental study to examine the influence of SPS training to develop psychological well-being and resiliency among 40 students with learning disabilities, who were assigned into an experimental or control group. Six sessions of SPS training were taught to the experimental group. The study indicated that SPS training positively promoted PWB in students suffering learning disabilities in almost all of the PWB components (i.e. self-autonomy, the aim of life, self-acceptance, good relations toward others, and personal growth).

Furthermore, a strong connection was found between Problem-Solving Therapy (PST) and PWB. PST is considered a psychosocial intervention classified under a cognitive-behavioral domain aiming to enhance individuals' ability to successfully handle their major stressors, e.g., traumatic events, and minor stressors, e.g., chronic daily problems (Nezu et al., 2012). Generally, PST has been effective to assist persons who suffer from a number of mental and health problems

such as anxiety, back pain, cancer, stroke, depression, emotional distress, hypertension, suicidal ideation, heart disease, posttraumatic stress disorder, diabetes and traumatic brain injury. PST has also been successfully used to treat persons who suffer from mental retardation and schizophrenia. It also helps to prevent emotional difficulties from being formed or from becoming worse among particular vulnerable categories, such as veterans who have traumatic memories that go back to their moments during the war (Ibid). On the same line of thinking, Sahler et al. (2002) conducted a study on a sample of 92 mothers whose children suffered from pediatric cancer and had less levels of PWB compared to other mothers whose children did not suffer from serious diseases. PST was used effectively to treat negative psychological symptoms such as anxiety, depression and other appearances showing reduced PWB. The 92 mothers were included as the experimental group, which is treated by PST, while the standard psychosocial care was included in the control group. The intervention lasted for eight weeks, and then mothers in the experimental group had been significantly empowered by SPS and had significantly reduced anxiety and depression. Furthermore, it was revealed that constructive problem solving is developed by PST.

This introduction presents the relationship between SPS and PWB. It intends to show that PWB is directly connected to SPS and greatly impacted by individuals' SPS methods. Before going into greater detail concerning the relationship between SPS and PWB, it is worth mentioning to demonstrate how SPS is measured and how the different orientations and styles of SPS are related to PWB.

### 4.2 SPSI-R as A Measurement of SPS and Its Relationship to PWB

In order for researchers to be able to investigate how persons solve their social problems, they need to understand the orientations and styles of SPS. The adoptions of SPS orientations and styles can determine the relationship between SPS and any other aspects, i.e. PWB. For the right measuring, Blanchard-Fields (2007) mentions that examining individuals' social problems could help define if the problem-solving strategies followed by individuals work to reduce the negative effects of social problems and increase their PWB. After reviewing a considerable number of studies, this study finds that SPSI–R, which was invented by D'Zurilla et al. (2002), was the most widely used instrument to assess SPS among people of different ages. Therefore, study delves into SPSI-R and its orientations and styles and their relationships to PWB.

SPSI–R by D'Zurilla et al. (2002), which consists of a scale of twenty-five items, is one of the most prominent instruments used to study SPS. It is an assessment for individuals' perceptions to their approach and style when coping with their social problems. The SPSI–R subscales consist of 5-point that is Likert-Type (from 0 to 4) as follows: (0) shows 'Not at all true of me', (1) indicates

'Slightly true of me', (2) indicates 'Moderately true of me', (3) indicates 'Very true of me', while (4) indicates 'Extremely true of me'. The SPSI–R is a theory-based measure of SPS processes consisting of five dimensions as follows: (1) Positive Problem Orientation (PPO), (2) Negative Problem Orientation (NPO), (3) Rational Style (RS), (4) Impulsive Style (IS), and (5) Avoidance Style (AS). 'PPO' includes the components of constructive problem-solving (i.e. positive expectation to solve the problem and self-efficacy. However, 'NPO' includes the opposite features of dysfunctional cognitive-emotional arrangements (i.e. the negative expectation of solving the problem and low self-efficacy). The styles such as 'RS' indicates a constructive coping with that problem and it is characterised by logic, thoughtful, and methodical application of the operative skills of solving the problem. 'IS' shows a group of dysfunctional endeavours to solve a problem (i.e. carelessness). Lastly, 'AS' indicates a dysfunctional characteristic to transfer the responsibility to solve a problem to other people (Chang, 2002; D'Zurilla et al., 2003; D'Zurilla et al., 2002; Jaffee & D'Zurilla, 2003).

There are various positive uses for SPSI–R by D'Zurilla et al. (2002) in clinical therapy, working to ease treatment arrangement and categorize persons who are at risk of suffering from adjustment problems. SPSI-R assists in providing a vision for recommendations concerning patient temper, following up the treatment, dealing with the offered choices, and follow-up evaluations as well (Dreer, et al., 2009). Furthermore, SPS has been found to be related to significant measures of social competence, psychological distress, PWB (i.e. life satisfaction, depression, distress, anxiety, optimism), health-related behaviors, situational coping, externalizing behaviors and aggression (Chang, 2002; Dreer et al., 2005; Dreer et al., 2004; D'Zurilla et al., 2003; Jaffee & D'Zurilla, 2003). In addition, it has been found that SPS capacities impact adjustment among individuals who have emotional concerns (Dreer et al., 2005; D'Zurilla & Nezu, 2007; Heppner et al., 2004; Hills-Briggs et al., 2006).

D'Zurilla (2004) divides the SPS dimensions into: (a) Problem Orientations, which is either PPO or NPO and (b) Problem-Solving Styles, which are RS, IS, and AS. Each is discussed below.

### 4.2.1 Problem Orientations (PPO and NPO)

Problem orientation could be defined as the group of relatively unchanging cognitive-affective schemes that show individuals' general attitudes, beliefs, and emotional reactions towards everyday problems and persons' capacity to address such problems (Nezu et al., 2012). Successful SPS requires both an adaptive orientation towards the problem and essential skills to generate significant and operative solutions (Romano et al., 2019). In their model, D'Zurilla and Goldfried (1971) show that there are two types of problem orientations: PPO and NPO.

#### 4.2.1.1 PPO

Explaining each orientation, Nezu (2004) states that individuals that practice PPO tend to evaluate their problems as challenges; they have an optimistic view that problems can be solved. They strongly believe in their self-efficacy to manage problems as they have a fundamental idea that successful coping with problems needs effort and time. Individuals that follow PPO consider negative emotions as an essential part in the overall process to solve the problem, and they believe that negative emotions can help to cope with worrying problems. In this regard, (Nezu et al., 2012) explains that PPO should be enhanced through training to facilitate the right way to address problems. He adds, based on clinical experiences, that there are some obstacles that hinder the adoption of PPO such as: (1) individuals' beliefs that they have poor self-efficacy, (2) individuals' negative thinking, and (3) individuals' negative emotions that could be found in a strong NPO towards a problem.

PPO has a relationship to psychology and PWB. Ciarrochi et al. (2009) finds that adolescents whose PPO is high enjoy emotion rates. Additionally, higher levels of PPO are also related to better quality of life in schools. Ciarrochi and his colleagues add that adolescents are characterized dominantly by PPO and they reveal that they have positive emotions. Moreover, PPO is connected to their better family quality of life as fewer parent-adolescent conflicts are envisaged. In the same respect, Nezu, et al. (2004) finds that SPS and PWB have a considerable diverse in young adults.

#### 4.2.1.2 NPO

As for NPO, Nezu et al. (2012) adds some characteristics of how individuals see problems negatively, including: (1) they consider problems as threats; (2) they expect problems not to be solved; (3) they have doubts about their ability to successfully solve the problems; (4) they became distressed when dealing with problems; and (5) they face negative emotions when dealing with problems.

In connection to PWB, researchers have found that NPO results in poor PWB (Ciarrochi, et al., 2009). NPO was found to be a significant predictor of worry as it is associated with negative thinking in relation to problem-solving, while PPO was not found to be significantly related to worry (Belzer et al., 2002). NPO predicts hopelessness, suicidal tendency, and depression among normal and psychiatric samples (D'Zurilla, et al., 1998). In Australia, Wilson, Bushnell and Rickwood (2011), examined the relationship between NPO, depression and anxiety in 285 young adults using the dimensions of NPO using SPSI–R. The results indicated strong connections between anxiety symptoms and depressive symptoms and NPO. Additionally, many researchers have indicated that social anxiety is related to NPO (Fergus, et al., 2015; Fergus & Wu, 2011; Hearn, et al., 2017). Nevertheless, Farmer, et al., (2014) concludes that although there was an indication that social

anxiety had a relationship to the lack of PPO, the researchers did not amply examine the relationship that connects problem orientation and social anxiety.

Addressing the orientation of the problem is especially important as it impacts an individual's motivation and capacity to be involved in concentrated attempts to make a problem solvable (Nezu, 2004). Nezu et al. (2012) explained that certain orientation (positive or negative) is not consistent with individuals across all life problems, but differs as situations change. For instance, PPO could be connected to addressing achievement-related problems such as in a career. On the contrary, NPO could be found when dealing with interpersonal problems such as parenting issues or dating. Ciarrochi et al. (2009) states that adolescents should think positively towards any problem they face so that they can solve it. However, some adolescents do experience increasing NPO that is connected to worsening PWB. D'Zurilla, et al. (2004) stressed that adolescents should perfect the strategies that enable them to solve these problems. Otherwise, they may engage in bad acts such as bullying, crimes or even face failure in their academic progress. Hence, their social problems ought to be defined properly in order to provide a diagnosis to the problems they face.

During this research, it was found that studies found a direct relationship between NPO and PPO and PWB. Chang et al. (2020) studied whether SPS worked to be a mediator between ill-being (i.e. depression and suicide) and PWB (i.e. life satisfaction) among 230 females. The results indicated that NPO emerged as a significant unique predictor of both ill-being and PWB. However, PPO played a significant unique predictor of positive PWB. In addition, in Hungary, Kasik et al. (2016) studied the relationship among SPS, anxiety and empathy in 445 Hungarian adolescents using the short version of SPSI–R (2002). It was shown that regardless of age, adolescents who have an increased level of anxiety also have high levels of NPO and AS. Furthermore, Abu-Ghazal and Falwah (2014) found that practicing PPO towards problems leads to positive PWB, while NPO is associated with depression. More widely, studies have found a link between NPO and stress (i.e. Çelik, & Gültekin, 2013, Bell & D'Zurilla, 2009; Eskin, Akyol,; Lee, Nezu, & Nezu, 2018; Lucas, Chang, Li, Chang, & Hirsch, 2019; Nezu, Nezu, & Jain, 2008).

#### 4.2.2 Problem Solving Styles

The second dimension of SPS is the styles, which are a set of cognitive-behavioral actions individuals are involved in when they attempt to successfully cope with their problems such as RS (planful problem solving), AS, and IS (D'Zurilla et al., 2004).

##### 4.2.2.1 Rational Style (RS)

RS is considered the constructive approach to cope with stressful problems since it uses tactful and systematic application to a set of skills (i.e. defining,

clarifying and delineating the problem, clarifying the obstacles that hinder individuals to realize their goals, creating alternative strategies and solutions to address and overcome the obstacles, decision making based on understanding the consequences of different alternatives to overcome problems, implementing, and verifying the solutions by following up the plans set before) (Nezu et al., 2012). In this respect, Jonassen (2002) considers SPS as a cognitive activity in our daily lives, and finds that all people are in need of learning how to solve their social problems rationally. However, Jonassen mentions that people are still lacking the proper methods to deal with their social problems. Additionally, RS is inhibited by the increase of emotional stress (D'Zurilla & Nezu, 1999).

Elias and Tobias (1996) explained eight successful strategies for SPS as follows: (1) observing signs of feelings; (2) recognizing issues or problems; (3) determining and selecting aims; (4) generating substitute solutions; (5) foreseeing possible consequences; (6) choosing the best solutions; (7) scheduling and making a final check for difficulties; and (8) observing what happened and using the information for future decisions. Consequently, Nezu, et al. (2012) states some characteristics of individuals who effectively apply the strategies of SPS as they: (1) recognizing a stressful life event as a problem that should be resolve; (2) having a belief that they are capable of successfully coping with the problem; (3) describing the problem well; (4) setting realistic goals to be achieved; (5) generating various alternative coping options or solutions for the problem; (6) having the ability to select the most operative solution; (7) having the ability to effectively implement the solution, and (8) sensibly observing and assessing the results.

#### 4.2.2.2 Impulsive Style (IS)

IS is an approach to problem-solving where individuals partake in thoughtless or careless attempts to solve a problem. These attempts could be characterized as rushed, narrow, and partial. It is found that individuals who follow an IS in dealing with their problems are thinking only of a few alternative solutions. It is also found that these people often thoughtlessly choose the first idea that comes to their mind. Furthermore, such individuals always scan alternative resolutions and consequences hurriedly, inaccurately, and arbitrarily, in addition to observing solution results inadequately and carelessly (Nezu et al., 2012). In connection to PWB, Belzer et al. (2002) mention that IS is principally responsible for the relationship between SPS and catastrophic worry.

#### 4.2.2.3 Avoidance style (AS)

AS is a style which is known as a dysfunctional pattern of problem-solving where the individuals following this style prefer procrastination, feel passive towards the problem, suffer from inaction, depend on others most of the time,

prefer avoidance rather than confrontation, and wait for a problem to be resolved on its own (Nezu et al., 2012).

When connecting SPS styles to PWB, SPS is found to be directly connected to anxiety, which is found to be primarily linked to AS, less so to IS, and even less to RS. Additionally, the mechanism of SPS in catastrophic worry may vary depending on the factors that might increase the stressfulness of the problem, such as the observed importance of the problem for well-being (Belzer et al., 2002). Siu and Shek conducted two studies, one in 2010 which examined the relationship between SPS and PWB in adolescents' families and found that NPO, AS, and IS have a relationship to lower family functioning, while RS and PPO are related to higher family functioning. The other study conducted in 2005 studied the relationship between SPS, empathy and family well-being, and revealed that having proper SPS increases empathy which subsequently decreases personal distress

## 5. CONCLUSION

The study investigates the relationship between SPS and PWB by reviewing the related literature. The study finds that there is a relationship between SPS and PWB; more specifically, between the SPS orientations (PPO and NPO), and SPS styles (RS, IS, and AS) and PWB. The study shows that SPSI–R by D'Zurilla et al. (2002) is primarily used to investigate SPS. It shows that PPO positively affects PWB; individuals who use PPO and RS to solve their problems enjoy higher levels of PWB. On the other hand, individuals who practice NPO towards their social problems have less levels of PWB. IS and AS, and NPO almost always have a negative impact on PWB. Finally, PST is found to work to increase the level of PWB.

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# PATTERN OF PSYCHIATRIC DISORDERS AMONG PATIENTS AT A PRIVATE CONSULTATION CHAMBER IN BANGLADESH

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***Abstract***

*An increasing prevalence of various mental illnesses is a global public health concern today. In the past few decades, Bangladesh also experienced a gradual rise in the number of people living with the illnesses. However, very few people seek treatment from psychiatrists due to high prevalence of stigma about the illnesses. This study aimed at investigating the pattern of psychiatric disorders diagnosed among patients at a private consultation chamber in Bangladesh. Data were collected using a semi-structured questionnaire. Meanwhile, the 10th Revision of the International Statistical Classification of Diseases and Related Health Problems (ICD-10) was used to gather relevant information. The results indicate that Major Depressive Disorder, Schizophrenia and Bipolar Mood Disorder are on the top of the psychiatric disorders for which most patients sought treatment. Females, young adults, and middle-aged people were on the top for seeking consultation for the diseases, and most of them were from urban areas. This article concludes that psychiatric illnesses such as Depressive Disorders and Schizophrenia are rising public mental health concern of the country.*

**Keywords:** *Mental Health; Mental Illness; Psychiatric Disorders; Depression; Public Health; Bangladesh*

## 1. INTRODUCTION

Human life is much easier today than any time in the past (Veenhoven, 2005), thanks to the proliferation and availability of numerous advanced communication devices (Conner et al., 2001), lifesaving medicines, rapid urbanization, and

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economic development (Moore & Simon, 2000; Poushter, 2017). Yet, today more people suffer from multiple psychological distresses than ever around the world (Twenge et al., 2019). Several studies indicate that rapid urbanization and technological advancement are bringing changes to the vary structures and functions of the society by transforming social, economic and environmental dimensions of human life (Ventriglio et al., 2021) and social value system (Bolton & Bhugra, 2021), which put a adverse impact on the mental health of people (Chandra et al., 2018; Hong, 2006; Prasad et al., 2016). Urban life often lack in shared social history and social capital, which lead to negative mental health outcomes of an individual (Chandra et al., 2018; Mckenzie, 2008; Srivastava, 2009; Szabo, 2018). Scholars argue that people are increasingly suffering from some common psychological disorders (Naveed et al., 2020; National Collaborating Centre for Mental Health (UK), 2011; WHO, 2019) as a result of an inappropriate relationship with social environment they live in (Pappachan, 2011; Sharma & Majumdar, 2009).

Although there are debates about whether the prevalence of psychological illnesses is increasing over the time (Häfner, 1985; Richter et al., 2019), several studies indicate that the number of people living with the illness have been increasing in the past few decades around the world (Dai et al., 2016; Furukawa, 2019; Kessler et al., 2009; Steel et al., 2014). A change in the structure of the demography has mainly led to increase of mental illness among adult people in recent decades (Richter et al., 2019; Steel et al., 2014). Another study argued that mental health issues increased significantly in young adults over the last decade (Twenge et al., 2019). Analyzing data from the Global Burden of Disease study, Hannah Ritchie and Max Roser (2020) showed that more than one in ten people (10.7%) suffered from any form of psychological disorder in 2017.

Like in any other part of the world, the prevalence of various psychiatric disorders is increasing in Bangladesh, a developing nation with about 164.7 million populations in South Asia. Several studies indicate that the prevalence of mental disorders range between 6.5% and 31.0% among adults, and between 13.4% and 22.9% among children in the country (A. Hossain, 2018; M. D. Hossain et al., 2014). According to a report by the National Institute of Mental Health (NIMH), about 17% of adults in the country were living with various forms mental illness, and among them, 92.3% did not seek any medical care (Dhaka Tribune, 2019). The actual prevalence of mental disorders might be higher than the reported rate as many people often do not want to disclose their sufferings due to a fear of being excluded from society (Hinshaw & Cicchetti, 2000; Robinson, 2012; Schauman, MacLeod, Thornicroft & Clement, 2019). Even they do not seek mental health care services due to stigma (Golberstein, Eisenberg & Gollust, 2008; Sharp et al., 2015; Semrau, Evans-Lacko, Koschorke, Ashenafi & Thornicroft, 2015; Bathje & Pryor, 2011), lack of health literacy (Das, Mia, Hanifi, Hoque & Bhuiya, 2017), financial

issues and poor service quality at public hospitals (Nuri et al., 2019; Islam & Biswas, 2015; Andaleeb, 2000; Ahmed, Tarique, & Arif, 2017). Moreover, people with mental health problems often seek care from either alternative healers or non-psychiatric medical care providers before consulting psychiatrists or mental healthcare professionals in Bangladesh (Nuri et al., 2018) due to a lack of an appropriate referral system (Gater et al., 2005; National Collaborating Centre for Mental Health (UK), 2011a; Volpe et al., 2015; Giasuddin, et al., 2012) .

Despite high prevalence, psychiatric disorders are relatively unrecognized and under-researched issue in Bangladesh. There are some studies that looked at the pattern of psychiatric disorders among patients attended at psychiatry outpatient departments of both public and private medical college hospitals in the country (Jahan et al., 2020; Islam, Rahman & Paul, 2020; and Monzur, Maruf, Roy, Royle & Rahman, 2018). In most cases, individuals with psychological disorders seek treatment at private psychiatric consultation chambers to get quality and improved services. But very few studies investigated the issue at the private psychiatric consultation chamber settings in the country. One study found that most of the patients, who sought treatment at private consultation chambers in Dhaka city, suffered from depressive disorder, somatoform disorder, schizophrenia, and substance abuse; and most of the patients belonged to 21-30 years of age group, hailed from an urban area and were married (Ahmed et al., 2016).

## **2.** OBJECTIVE AND HYPOTHESES

The study aimed at exploring the pattern of psychiatric disorders among individuals seeking treatment at a private psychiatric consultation chamber in Bangladesh, from a holistic approach which includes age, gender, residence, and family history of the patients.

## **3. METHOD**

Data were collected from 204 individuals seeking treatment at the chamber of a psychiatrist, the first author of the study between March 2019 and March 2020. Participants were selected by using purposive consecutive sampling techniques. A semi-structured questionnaire was used to collect data. The questionnaire contained socio-demographic variables which include age, gender, residence, education, occupation, marital status and family history of the illness. The 10th Revision of the International Statistical Classification of Diseases and Related Health Problems (ICD-10) (WHO 1992) was used to collect data on psychiatric diagnosis of the

patients. Data were analysed using the Statistical Package for Social Science (SPSS) version 20 for Windows and Microsoft Excel version 2019.

During the consultation sessions, verbal consent was obtained from the participants by explaining to them the aims, objectives, risks, and benefits of the study. The data were recorded only after the participants gave their verbal consent to use it in this research. A trained psychiatrist recorded the data during the consultation sessions. The ethical approval was not required for this study as no identifiable data were collected. There was no possibility of causing harm of the participants either directly or indirectly as the data were properly anonymised.

## 4. RESULTS

*Demographic information*

Data in Table 1 show that more than half (53.4%) of total participants were female and 46.6% were male. Among the total participants, 47.1% were middle-aged (31-55 years) and 36.3% were young adults (18-30 years). About two-thirds (72.1%) of the total participants were married. The majority (41.7%) participants were housewives and 15.2% were students; 61.3% had secondary education, 72.1% were married and 98.0% lived in an urban area.

Table 1 – Socio-demographic distribution of the respondents

| | | N | % |
|---|---|---|---|
| Sex | Male | 95 | 46.6 |
| | Female | 109 | 53.4 |
| Age | Adolescent (0-17 years) | 25 | 12.3 |
| | Young Adult (18-30 years) | 74 | 36.3 |
| | Middle aged (31-55 years) | 96 | 47.1 |
| | Old adults (56+ years) | 9 | 4.4 |
| Occupation | Student | 31 | 15.2 |
| | House wife | 85 | 41.7 |
| | Private job | 21 | 10.3 |
| | Business | 30 | 14.7 |
| | Self employed | 26 | 12.7 |
| | Teacher | 1 | .5 |
| | Driver | 1 | .5 |
| | Farmer | 9 | 4.4 |
| Education | Primary | 54 | 26.5 |
| | Secondary | 125 | 61.3 |
| | Graduate | 12 | 5.9 |
| | Master & Above | 13 | 6.4 |
| Marital status | Married | 147 | 72.1 |
| | Unmarried | 57 | 27.9 |

| | | | |
|---|---|---|---|
| Residence | Urban | 200 | 98.0 |
| | Rural | 4 | 2.0 |

***Diagnosis of psychiatric disorders***

Major Depressive Disorder (27.5%) was the most prevalent mental illness among the participants, followed by Schizophrenia (22.1%), Bipolar Mood Disorder (14.2%), Obsessive-Compulsive Disorder (9.3%) and Phobia (6.9%), Panic disorder (3.4%), Conversion disorder (4.9%), Generalized Anxiety Disorder (3.4%) and Adjustment Disorder (2.9%). Details are shown in the Table 2.

Table 2 – Diagnosis of psychiatric disorders among the patients

| | | Frequency | Per cent |
|---|---|---|---|
| Diagnosis | Bipolar Mood Disorder | 29 | 14.2 |
| | Major Depressive Disorder | 56 | 27.5 |
| | Schizophrenia | 45 | 22.1 |
| | Obsessive-compulsive disorder | 19 | 9.3 |
| | Attention Deficit Hyperactivity Disorder | 3 | 1.5 |
| | Phobia | 14 | 6.9 |
| | Conduct disorder | 1 | .5 |
| | Substance use disorder | 1 | .5 |
| | Conversion disorder | 10 | 4.9 |
| | Panic disorder | 7 | 3.4 |
| | Behavioural problem | 1 | .5 |
| | Mental retardation (MR) | 3 | 1.5 |
| | Drug dependency | 1 | .5 |
| | Generalized Anxiety Disorder | 7 | 3.4 |
| | Adjustment disorder | 6 | 2.9 |
| | Bereavement | 1 | .5 |
| | Total | 204 | 100.0 |

**Diagnosis of psychiatric diseases by age group**

The patients who suffered from bipolar mood disorder among them a majority (6.4%) were young adults. Meanwhile, middle aged people are more likely to suffer from major depressive disorder 27 (13.2%) and schizophrenia 23 (11.3%). Details are shown in the Table 3.

Table 3 – Diagnosis of psychiatric disorders by age group

| | Age | | | | Total |
|---|---|---|---|---|---|
| | Adolescent | Young Adult | Middle aged | Old adults | |

| | | | | | |
|---|---|---|---|---|---|
| Bipolar Mood Disorder | 5 (2.5%) | 13 (6.4%) | 11 (5.4%) | 0 (0.0%) | 29 (14.2%) |
| Major Depressive Disorder | 6 (2.9%) | 20 (9.8%) | 27 (13.2%) | 3 (1.5%) | 56 (27.5%) |
| Schizophrenia | 4 (2.0%) | 16 (7.8%) | 23 (11.3%) | 2 (1.0%) | 45 (22.1%) |
| Obsessive Compulsive Disorder (OCD) | 2 (1.0%) | 8 (3.9%) | 9 (4.4%) | 0 (0.0%) | 19 (9.3%) |
| Attention Deficit Hyperactivity Disorder | 1 (0.5%) | 0 (0.0%) | 2 (1.0%) | 0 (0.0%) | 3 (1.5%) |
| Phobia | 0 (0.0%) | 6 (2.9%) | 8 (3.9%) | 0 (0.0%) | 14 (6.9%) |
| Conduct disorder | 1 (0.5%) | 0 (0.0%) | 0 (0.0%) | 0 (0.0%) | 1 (0.5%) |
| Substance use disorder | 0 (0.0%) | 1 (0.5%) | 0 (0.0%) | 0 (0.0%) | 1 (0.5%) |
| Conversion disorder | 2 (1.0%) | 1 (0.5%) | 4 (2.0%) | 3 (1.5%) | 10 (4.9%) |
| Panic disorder | 0 (0.0%) | 2 (1.0%) | 5 (2.5%) | 0 (0.0%) | 7 (3.4%) |
| Behavioural problem | 1 (0.5%) | 0 (0.0%) | 0 (0.0%) | 0 (0.0%) | 1 (0.5%) |
| Mental Retardation (MR) | 2 (1.0%) | 1 (0.5%) | 0 (0.0%) | 0 (0.0%) | 3 (1.5%) |
| Drug dependency | 0 (0.0%) | 0 (0.0%) | 1 (0.5%) | 0 (0.0%) | 1 (0.5%) |
| Generalized Anxiety Disorder | 0 (0.0%) | 5 (2.5%) | 2 (1.0%) | 0 (0.0%) | 7 (3.4%) |
| Adjustment disorder | 1 (0.5%) | 1 (0.5%) | 3 (1.5%) | 1 (0.5%) | 6 (2.9%) |
| Bereavement | 0 (0.0%) | 0 (0.0%) | 1 (0.5%) | 0 (0.0%) | 1 (0.5%) |
| Total | 25 (12.3%) | 74 (36.3%) | 96 (47.1%) | 9 (4.4%) | 204 (100.0%) |

***Diagnosis of psychiatric diseases by gender***

Of total respondents more than half 109 (53.4%) were female and 95 (46.6%) were male. Of the individuals who were diagnosed with Bipolar Mood Disorder, 19 (9.3%) were male and 10 (4.9%) were from the female gender group. Meanwhile, those who suffered from Major Depressive Disorder, 22 (10.8%) were male and 34 (16.7%) were female. On the other hand, among the people patients who suffered

from Schizophrenia, 23 (11.3%) were male and 22 (10.8%) were female. Details are shown in the Table 4.

Table 4 – Diagnosis of psychiatric disorders by gender

| | Gender | | Total |
|---|---|---|---|
| | Male | Female | |
| Bipolar Mood Disorder | 19 (9.3%) | 10 (4.9%) | 29 (14.2%) |
| Major Depressive Disorder | 22 (10.8%) | 34 (16.7%) | 56 (27.5%) |
| Schizophrenia | 23 (11.3%) | 22 (10.8%) | 45 (22.1%) |
| Obsessive Compulsive Disorder | 9 (4.4%) | 10 (4.9%) | 19 (9.3%) |
| Attention Deficit Hyperactivity Disorder | 1 (0.5%) | 2 (1.0%) | 3 (1.5%) |
| Phobia | 4 (2.0%) | 10 (4.9%) | 14 (6.9%) |
| Conduct disorder | 1 (0.5%) | 0 (0.0%) | 1 (0.5%) |
| Substance use disorder | 1 (0.5%) | 0 (0.0%) | 1 (0.5%) |
| Conversion disorder | 5 (2.5%) | 5 (2.5%) | 10 (4.9%) |
| Panic disorder | 3 (1.5%) | 4 (2.0%) | 7 (3.4%) |
| Behavioural problem | 0 (0.0%) | 1 (0.5%) | 1 (0.5%) |
| Mental Retardation | 1 (0.5%) | 2 (1.0%) | 3 (1.5%) |
| Drug dependency | 1 (0.5%) | 0 (0.0%) | 1 (0.5%) |
| Generalized Anxiety Disorder | 4 (2.0%) | 3 (1.5%) | 7 (3.4%) |
| Adjustment disorder | 1 (0.5%) | 5 (2.5%) | 6 (2.9%) |
| Bereavement | 0 (0.0%) | 1 (0.5%) | 1 (0.5%) |
| Total | 95 (46.6%) | 109 (53.4%) | 204 (100%) |

***Diagnosis of psychiatric diseases by residence***

Most of the participants 200 (98.0%) were from urban areas. Among them, 56 (27.5%) suffered from major depressive disorder, 43 (21.1%) suffered from schizophrenia and 27 (13.2%) suffered from bipolar mood disorder. Details are shown in the Table 5.

Table 5 – Diagnosis of psychiatric diseases by residence

| | Residence | | Total |
|---|---|---|---|
| | Urban | Rural | |
| Bipolar Mood Disorder | 27 (13.2%) | 2 (1.0%) | 29 (14.2%) |
| Major Depressive Disorder | 56 (27.5%) | 0 (0.0%) | 56 (27.5%) |
| Schizophrenia | 43 (21.1%) | 2 (1.0%) | 45 (22.1%) |
| Obsessive Compulsive Disorder | 19 (9.3%) | 0 (0.0%) | 19 (9.3%) |
| Attention Deficit Hyperactivity Disorder | 3 (1.5%) | 0 (0.0%) | 3 (1.5%) |
| Phobia | 14 (6.9%) | 0 (0.0%) | 14 (6.9%) |
| Conduct disorder | 1 (0.5%) | 0 (0.0%) | 1 (0.5%) |
| Substance use disorder | 1 (0.5%) | 0 (0.0%) | 1 (0.5%) |
| Conversion disorder | 10 (4.9%) | 0 (0.0%) | 10 (4.9%) |

| | | | |
|---|---|---|---|
| Panic disorder | 7 (3.4%) | 0 (0.0%) | 7 (3.4%) |
| Behavioural problem | 1 (0.5%) | 0 (0.0%) | 1 (0.5%) |
| Mental Retardation | 3 (1.5%) | 0 (0.0%) | 3 (1.5%) |
| Drug dependency | 1 (0.5%) | 0 (0.0%) | 1 (0.5%) |
| Generalized Anxiety Disorder | 7 (3.4%) | 0 (0.0%) | 7 (3.4%) |
| Adjustment disorder | 6 (2.9%) | 0 (0.0%) | 6 (2.9%) |
| Bereavement | 1 (0.5%) | 0 (0.0%) | 1 (0.5%) |
| Total | 200 (98.0%) | 4 (2.0%) | 204 (100%) |

***Family history of mental illness***

A large number of participants (69.6%) reported that they did not have any family history of mental illness, which means about 30.4% of participants had a family member(s) who suffered from any form of mental illness. Those who suffered from Major Depressive Disorder and Schizophrenia 16 (7.8%) of them respectively had family history of the diseases. Meanwhile, the patients who suffered from bipolar mood disorder 12 (5.9%) had family history of the illness. Details are shown in the Table 6.

Table 6 – Diagnosis and family history of psychiatric disorders

| | | Family History | |
|---|---|---|---|
| | | Yes | No |
| Diagnosis | Bipolar Mood Disorder | 12 (5.9%) | 17 (8.3%) |
| | Major Depressive Disorder | 16 (7.8%) | 40 (19.6%) |
| | Schizophrenia | 16 (7.8%) | 29 (14.2%) |
| | Obsessive Compulsive Disorder | 3 (1.5%) | 16 (7.8%) |
| | Attention Deficit Hyperactivity Disorder | 0 (0.0%) | 3 (1.5%) |
| | Phobia | 5 (2.5%) | 9 (4.4%) |
| | Conduct disorder | 0 (0.0%) | 1 (0.5%) |
| | Substance use disorder | 0 (0.0%) | 1 (0.5%) |
| | Conversion disorder | 3 (1.5%) | 7 (3.4%) |
| | Panic disorder | 0 (0.0%) | 7 (3.4%) |
| | Behavioral problem | 0 (0.0%) | 1 (0.5%) |
| | Mental Retardation | 2 (1.0%) | 1 (0.5%) |
| | Drug dependency | 1 (0.5%) | 0 (0.0%) |
| | Generalized Anxiety Disorder | 2 (1.0%) | 5 (2.5%) |
| | Adjustment disorder | 1 (0.5%) | 5 (2.5%) |
| | Bereavement | 1 (0.5%) | 0 (0.0%) |

**Discussion**

The results reveal that Major Depressive Disorder was the most prevalent psychiatric disorder among the participants, followed by Schizophrenia and Bipolar Mood Disorder. The results support the findings of the national mental health

survey by the National Institute of Mental Health (2019) and Ahmed et al., (2016). According to the NIMH survey, the most prevalent mental illness in the country is depressive disorder, followed by anxiety, somatic symptoms, and related disorders, sleep-wake disorder, obsessive-compulsive and related disorders, neurodevelopment disorder, neurocognitive disorders, substance-related and addictive disorders, personality disorder, sexual dysfunction and disruptive, impulse control and conduct disorders. Meanwhile, Ahmed et al., (2016) found that depressive disorder was the most common mental illness, followed by somatoform disorder and schizophrenia.

The results show that the rate of seeking treatment for psychiatric diseases is higher among female than male gender group, which indicates that there might have a higher prevalence of mental illness among females. However, according to the National Mental Health Survey of Bangladesh, the prevalence rates of psychiatric disorders among both the male and female gender groups are almost similar.

The majority of the participants were from the middle (31-55 years) and young adult (18-30 years) age groups, which indicate that there is a high risk of mental illness at the ages between 18-55 years. In most cases, middle-aged people suffered from massive depressive disorder and schizophrenia. There was a high prevalence of bipolar mode disorder among young adults. Multiple factors may contribute to the mental health risks. At the ages, an individual becomes active participants in familial, social, academic, and professional lives. The stresses they encounter in their real-life may lead to a higher risk of mental illness. Moreover, various psychosocial stressors which can contribute to the psychiatric illness include domestic violence, marital breakdown, and co-morbid physical illness (Ahmed et al., 2016).

Most of the participants who sought treatment during the research at the private consultation chamber were from urban areas. The findings indicate three important insight— first, there might have a high prevalence of various mental illnesses among people who live in an urban area than the people who live in a rural area (NIMH, 2019); second, urban dwellers are more aware of mental illness which lead them seeking treatment; and people living in rural areas are not aware of mental illness due to lack of mental health literacy leading them not to seek treatment for their psychiatric illnesses (Das, Mia, Hanifi, Hoque & Bhuiya, 2017) and there is lack of appropriate mental healthcare referral system (Nuri et al., 2018; Volpe, Mihai, Jordanova & Sartorius, 2015) in the country.

A large number of the participants reported that they had family history of the psychiatric disorder. There might have a strong association the psychiatric disorders and family history (Islam et al., 2006).

## 5. CONCLUSIONS

Three psychological disorders—Major Depressive Disorders, Schizophrenia and Bipolar Mood Disorder—are rising public mental health concerns of Bangladesh. The diseases were on the top of some common psychiatric disorders for which most patients sought treatment at a private consultation chamber for a one-year period. The prevalence of the diseases was relatively higher among females, young adults, and middle-aged people. Most of the participants were from urban areas.

The results would be of interest to policymakers, public health research, and anyone interested in mental health issues.

The study has some limitations. The results may not reflect the whole picture of the prevalence of psychiatric disorders in the country as this was small-scale research among a very small sample of the population at a private psychiatric consultation chamber in a city of the country. More researches on the topic at least in divisional cities would generate a bigger and clearer picture of the problem. This study did not investigate the factors that influence treatment-seeking for psychiatric disorders among the participants. Moreover, it did not explore the causal relationship among various variables.

It is recommended that further researches are conducted among a larger population with a special focus on people dwelling in rural areas in the context of Bangladesh. It is also recommended that future studies investigate the factors that influence seeking treatment among both rural and urban dwellers in the countries. Immediate policy intervention is required targeting young adults and middle-aged, who are the driving force of the society, as the prevalence rates of psychiatric disorders are higher among them than the people from other age groups.

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**Declaration of interest**

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# COMPARATIVE ELEMENTS OF THE EFFECTS OF THE COVID-19 PANDEMIC ON GAMBLING ADDICTS

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***Abstract***

*The research is focused on highlighting the effects of the COVID-19 pandemic on addicted gamblers, compared with non-gamblers, and was conducted based on the premise that during this period, addicted gamblers were significantly influenced by the restrictions imposed on pandemic. It should be noted that these circumstances are unique, they have not been encountered before, which offers a special opportunity to study behaviors for different categories of people, as well as how they manage to adapt to this new situation. The research on the comparative elements of the effects of the COVID-19 pandemic was carried out on a sample of 96 participants, one year after the outbreak of the pandemic with its imposed restrictions to prevent the spread of the virus. The aim of the research was to check the fear of COVID-19, the manifestations of anxiety, depression, and stress in this period checked on addicted gamblers and compared to non-gamblers, assuming that these elements would be different for gambling addicts; the research highlights also the elements related to self-esteem and life satisfaction, estimated to be lower in the case of addicted gamblers compared to people who are not involved in gambling*.

***Keywords:*** *addicted gamblers, COVID-19 pandemic, depression, anxiety, stress*

## 1. INTRODUCTION

Gambling is initially seen by players as a pleasant form of leisure, with a willingness to allocate a certain amount for the game and a certain amount of time to play the game (Rizeanu, 2012, 2018). Often the initial involvement in gambling is catalyzed by several factors that can trigger the emergence of pathological gambling, which can later be enhanced and maintained by the existence of certain favorable aspects.

The initial involvement in gambling is sustained by a series of motivational elements and enhanced by three categories of factors that can trigger the appearance and development of pathological gambling: the desire to reduce or compensate some

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emotional states, the intention to impress and prove their value, the desire to be approved and validated by the social circle (Back, Lee, & Stinchfield, 2011).

The pathological form of gambling (gambling addiction), is included in the section "Disorders unrelated to substance use" according to DSM-V and is "problematic behavior of pathological, persistent and recurrent, which causes discomfort or clinically significant damage, manifested by four or more of the characteristic elements, over a period of 12 months."

The accumulation of all aspects of pathological gambling induces over time a decrease in cognitive abilities, physical and mental deterioration, and increased symptoms of depression, culminating in potential suicidal thoughts, given that financial losses will severely affect players, in a way which they lose control of their lives in favor of gambling (Blaszczynski, Phillips, Ogeil, & Chow, 2013).

Other aspects that appear following to the addiction developed by gamblers: they suffer from impairment of studies, work and other activities carried out in society; they have frustrations related to financial losses that will generate negative emotional states, most often associated with anxiety, increased stress levels and the appearance of stress-related illnesses; they face family and social problems; they tend to isolate themselves and have criminal and legal problems; they fall prey to collateral vices, such as excessive alcohol and substance use; they frequently have behaviors of mythomania and manipulation (Rizeanu, 2012, 2013b).

The profile of the pathological gambler in Romania can be described by the following elements: in 94.1% of cases the gambler is male, aged between 17-61 years, most often from rural areas, from families with several children and most often from families with various problems. A percentage of 75.46% of pathological players have depressive disorders, and in 64.71% of cases there is an average level of anxiety (Rizeanu, 2013a, 2014).

The influence of the COVID-19 pandemic may be significant on gambling-related behaviors, following the fact that gambling is considered one of the potential effects of mental health. The rise of gambling had been associated with a greater degree of gambling problems, increased alcohol consumption and psychological distress. Increased participation in gambling during COVID-19 pandemic can be explained because of the changes imposed by the pandemic every day in the lives of people with problematic gambling patterns (Håkansson & Widinghoff, 2021). Players who were already involved in gambling diversified their gambling activities, bet more per session, and spent more money on gambling. Compared to the same period last year, data from online gambling companies indicate that products with a faster gaming cycle, such as slots, have seen an increase in the number of active players. The number of bets on virtual sports and online poker increased in 2020 compared to 2019, as did the number of hourly gambling sessions (Auer & Griffiths, 2021). In conclusion, in terms of gambler behavior and the risk situations to which

it is exposed, it has been shown that the COVID-19 pandemic increases gambling problems due to migration to the online area during quarantine.

## 2. **OBJECTIVE AND HYPOTHESES**

### 2.1. OBJECTIVE

The objectives of the research are:

1. To highlight the possible correlations between the following variables: depression, anxiety, stress, self-esteem, life satisfaction, fear of COVID-19 and gambling addiction.
2. To demonstrate that fear of COVID-19 is similar for both gambling addicts and non-players.
3. To highlight that self-esteem, life satisfaction, depression, anxiety, and stress presents differences between addicted gamblers and non-players during pandemic.

### 2.2. HYPOTHESES

The research hypothesis are as follows:

1. There are statistically significant correlations between gambling addiction, depression, anxiety, stress, self-esteem, life satisfaction and fear of COVID-19 among gambling addicts.
2. The intensity of fear of COVID-19 is not different between gambling addicts and non-gamblers.
3. The level of self-esteem and life satisfaction are lower for addicted gamblers compared to non-gamblers.
4. The levels of depression, anxiety and stress are higher for addicted gamblers compared to non-gamblers.

## 3. METHOD

### 3.1 The participants

The participants were a group of 96 males, with various ages, different background, and marital status, out of which 49 males were problem gamblers and addicted gamblers (SOGS more than 0) and 47 non-players (SOGS 0). They responded by filling out both Google forms and physical document forms in March and April 2021.

4.2 The instruments

1. SOGS – South Oaks Gambling Screen" (Lesieur and Blume, 1987) is a questionnaire consisting of 33 detailed items, consisting of certain items that present an answer associated with the risk of pathological gambling (a total of 20 items).

2. Fear of COVID-19-FCV-19S scale (Ahorsu, Lin, Imani et al, 2020) has an internal consistency ($\alpha = 0.82$) and test-retest reliability (ICC = 0.72). The scale consists of 7 items. All items are answered using a 5-step Likert scale format, from strong disagreement to strong agreement. The total score results from the calculation of the score resulting from the sum of the items (between 7 and 35). The higher the score is, the fear of COVID-19 is higher.

3. The Rosenberg Self-Esteem Scale (Rosenberg, 1965) contains 10 items that measure the overall self-worth, measuring both positive and negative feelings about the self. The results obtained after scoring can be between 10 and 40.

4. The "Life Satisfaction" scale (Diener, Emmons, Larsen, and Griffin, 1985) consists of 5 items and was designed to measure the global cognitions of one's life satisfaction. Participants must indicate how much they agree or disagree with each of the 5 items using a 7-step Likert scale. Being a summative scale, based on the answers rated on the Likert scale in 7 steps, the scores obtained for the items are summed.

5. The DASS questionnaire - Depression, Anxiety and Stress Scales (Lovibond & Lovibond, 1995) has 21 items, divided equally on 3 scales, respectively Depression, Anxiety and Stress. Each scale has 7 items, these being interspersed randomly, the completion of each item being made by the respondent by self-assessment.

3.2 Procedure

The instruments were applied both on-line by Google forms, as well as in physical forms. The Ethical code and GDPR legislation were respected. All participants were noticed about the research and they consented, being aware of their anonymous identity.

3.4 The design

Below variables were considered:

1. Independent variables: addiction to gambling (gambling addicts and non-gamblers)
2. Dependent variables: fear of COVID-19, depression, anxiety, stress, self-esteem, life satisfaction, gambling addiction.

## 4. RESULTS

Mean and Std. Deviation are indicated in Table 1, for both groups: gambling addicts and non-players, for following variables: fear of COVID-19, depression, anxiety, stress, self-esteem, life satisfaction and gambling addiction.

Table 1. Descriptive statistics

| | Gambling addicts | | Non-gamblers | |
|---|---|---|---|---|
| Variable | Mean | Std. Deviation | Mean | Std. Deviation |
| Fear of COVID-19 | 14.02 | 5.01 | 13.32 | 6.23 |
| Depression | 21.06 | 7.92 | 19.87 | 8.18 |
| Anxiety | 15.11 | 7.66 | 19.49 | 6.36 |
| Stress | 30.12 | 8.36 | 24.98 | 9.26 |
| Self-esteem | 28.88 | 4.51 | 34.72 | 5.4 |
| Life satisfaction | 13.51 | 8.26 | 26.3 | 5.83 |
| Gambling addiction | 6 | 3.03 | 0 | 0 |
| N | 96 | | | |

The bivariate correlations are indicated in Table 2, only for gambling addicts' group, for variables: fear of COVID-19, depression, anxiety, stress, self-esteem, life satisfaction and gambling addiction.

Table 2. Correlations

| | | GA | FC | SE | LS | D | A | S |
|---|---|---|---|---|---|---|---|---|
| Gambling addiction (GA) | Pearson Correlation | 1.000 | -0.152 | -0.250 | -0.431* | -0.031 | 0.057 | 0.102 |
| | Sig. (2-tailed) | | 0.296 | 0.084 | 0.002 | 0.831 | 0.695 | 0.486 |
| | N | 49 | 49 | 49 | 49 | 49 | 49 | 49 |
| Fear of COVID-19 (FC) | Pearson Correlation | -0.152 | 1.000 | -0.045 | 0.049 | -0.039 | -0.171 | 0.253 |
| | Sig. (2-tailed) | 0.296 | | 0.758 | 0.737 | 0.788 | 0.239 | 0.080 |
| | N | 49 | 49 | 49 | 49 | 49 | 49 | 49 |
| Self esteem (SE) | Pearson Correlation | -0.250 | -0.045 | 1.000 | 0.882* | -0.497* | 0.008 | -0.515* |
| | Sig. (2-tailed) | 0.084 | 0.758 | | 0.000 | 0.000 | 0.957 | 0.000 |
| | N | 49 | 49 | 49 | 49 | 49 | 49 | 49 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Life satisfaction (LS) | Pearson Correlation | -0.431* | 0.049 | 0.882* | 1.000 | -0.494* | -0.018 | -0.469* |
| | Sig. (2-tailed) | 0.002 | 0.737 | 0.000 | | 0.000 | 0.901 | 0.001 |
| | N | 49 | 49 | 49 | 49 | 49 | 49 | 49 |
| Depression (D) | Pearson Correlation | -0.031 | -0.039 | -0.497* | -0.494* | 1.000 | 0.548* | 0.666* |
| | Sig. (2-tailed) | 0.831 | 0.788 | 0.000 | 0.000 | | 0.000 | 0.000 |
| | N | 49 | 49 | 49 | 49 | 49 | 49 | 49 |
| Anxiety (A) | Pearson Correlation | 0.057 | -0.171 | 0.008 | -0.018 | 0.548* | 1.000 | 0.504* |
| | Sig. (2-tailed) | 0.695 | 0.239 | 0.957 | 0.901 | 0.000 | | 0.000 |
| | N | 49 | 49 | 49 | 49 | 49 | 49 | 49 |
| Stress (S) | Pearson Correlation | 0.102 | 0.253 | -0.515* | -0.469* | 0.666* | 0.504* | 1.000 |
| | Sig. (2-tailed) | 0.486 | 0.080 | 0.000 | 0.001 | 0.000 | 0.000 | |
| | N | 49 | 49 | 49 | 49 | 49 | 49 | 49 |

In table 2 is indicated that there are several statistically significant correlations between variable as follows:

- There is a statistically significant negative correlation between the gambling addiction and self-esteem (r=-.431; p<.05)
- There is a positive statistically significant correlation between self-esteem and life satisfaction (r=.882; p<.05)
- There is a statistically significant negative correlation between the self-esteem and depression (r=-.497; p<.05)
- There is a statistically significant negative correlation between the self-esteem and stress (r=-.515; p<.05)
- There is a statistically significant negative correlation between the life satisfaction and depression (r=-.494; p<.05)
- There is a statistically significant negative correlation between the life satisfaction and stress (r=-.469; p<.05)
- There is a positive statistically significant correlation between depression and anxiety (r=.548; p<.05)
- There is a positive statistically significant correlation between depression and stress (r=.666; p<.05)
- There is a positive statistically significant correlation between anxiety and stress (r=.504; p<.05). The other correlations are not confirmed.

Table 3 presents the results of independent sample test of fear of COVID-19 between gambling addicts and non-gamblers.

Table 3. Independent Samples Test results-Fear of COVID-19

| | Group | N | Mean | Std. Deviation | S.E. Mean |
|---|---|---|---|---|---|
| Fear of COVID-19 | Non-players | 47 | 13.32 | 6.23 | 0.91 |
| | Gambling addicts | 49 | 14.02 | 5.01 | 0.72 |

| | | Levene's Test for Equality of Variances | | T-Test for Equality of Means | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
| | | | | | | | | | Lower | Upper |
| Fear of COVID-19 | Eq. var assumed | 1.6 | 0.213 | -0.61 | 94 | 0.544 | -0.7 | 1.15 | -2.99 | 1.58 |
| | Eq. var. not assumed | | | -0.61 | 88.22 | 0.546 | -0.7 | 1.16 | -3 | 1.6 |

The statistically significance is not relevant (p>.05) and there are no significant differences for fear of COVID-19 between the groups.

Table 4 presents the results of independent sample test regarding self-esteem and life satisfaction for gambling addicts compared to non-players.

Table 4. Independent Samples Test results – Self-esteem & Life satisfaction

| | Group | N | Mean | Std. Deviation | S.E. Mean |
|---|---|---|---|---|---|
| Life satisfaction | Non-players | 47 | 26.3 | 5.83 | 0.85 |
| | Gambling addicts | 49 | 13.51 | 8.26 | 1.18 |
| Self-esteem | Non-players | 47 | 34.72 | 5.4 | 0.79 |
| | Gambling addicts | 49 | 28.88 | 4.51 | 0.64 |

| | Levene's Test for Equality of Variances | T-Test for Equality of Means |
|---|---|---|

| | | F | Sig. | t | df | Sig. (2-tailed) | Mean Dif. | Std. Error Difference | 95% Confidence Interval of the Difference | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | Lower | Upper |
| Life satisfaction | Eq.Var. As. | 10 | 0.002 | 8.73 | 94 | 0.000 | 12.79 | 1.46 | 9.88 | 15.7 |
| | Eq.Var.Not As. | | | 8.79 | 86.49 | 0.000 | 12.79 | 1.45 | 9.9 | 15.68 |
| Self-esteem | Eq.Var. As. | 1 | 0.327 | 5.77 | 94 | 0.000 | 5.85 | 1.01 | 3.83 | 7.86 |
| | Eq.Var.Not As. | | | 5.74 | 89.69 | 0.000 | 5.85 | 1.02 | 3.82 | 7.87 |

The statistically significance is relevant ($p<.05$) for both variables, life satisfaction and self-esteem and there are significant differences between the gambling addicts and non-players regarding life satisfaction and self-esteem during pandemic. For both variables, the gambling addicts present lower levels compared to non-players.

Table 5 presents the results of independent sample test regarding depression, anxiety and stress for gambling addicts compared to non-players.

Table 5. Independent Samples Test results – Depression, Anxiety & Stress

| | Group | N | Mean | Std. Deviation | S.E. Mean |
|---|---|---|---|---|---|
| Depression | Non-players | 47 | 19.87 | 8.18 | 1.19 |
| | Gambling addicts | 49 | 21.06 | 7.92 | 1.13 |
| Anxiety | Non-players | 47 | 19.49 | 6.36 | 0.93 |
| | Gambling addicts | 49 | 15.18 | 7.66 | 1.09 |
| Stress | Non-players | 47 | 24.98 | 9.26 | 1.35 |
| | Gambling addicts | 49 | 30.12 | 8.36 | 1.19 |

| | Levene's Test for Equality of Variances | | T-Test for Equality of Means | | | | | |
|---|---|---|---|---|---|---|---|---|
| | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Diff | 95% Confidence Interval of the Difference |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | eren ce | Low er | Upp er |
| Depression | Eq. var. assumed | 0.1 | 0.804 | -0.72 | 94 | 0.471 | -1.19 | 1.64 | -4.45 | 2.07 |
| | Not assumed | | | -0.72 | 93.48 | 0.471 | -1.19 | 1.64 | -4.45 | 2.07 |
| Anxiety | Eq. var. assumed | 1.2 | 0.276 | 2.99 | 94 | 0.004 | 4.31 | 1.44 | 1.45 | 7.16 |
| | Not assumed | | | 3 | 92.13 | 0.003 | 4.31 | 1.43 | 1.46 | 7.15 |
| Stress | Eq. var. assumed | 0.2 | 0.661 | -2.86 | 94 | 0.005 | -5.14 | 1.8 | -8.72 | -1.57 |
| | Not assumed | | | -2.85 | 92.1 | 0.005 | -5.14 | 1.8 | -8.72 | -1.56 |

The statistically significance is relevant ($p<.05$) for anxiety and stress. For anxiety, the gambling addicts present lower levels compared to non-players, while for the stress, gambling addicts present higher levels compared to non-players, during pandemic. The statistically significance is not relevant ($p>.05$) for depression, there are no significant differences between the groups.

## 5. CONCLUSIONS

The conclusion of the bivariate correlations indicates that, for the gambling addicts, during pandemic, there is a statistically significant negative correlation between the gambling addiction and self-esteem; there is also a negative correlation between self-esteem and depression and stress. The analysis concluded that there is a positive statistically significant correlation between self-esteem and life satisfaction, while there is a statistically significant negative correlation between the life satisfaction and depression and stress. At the same time, there are positive statistically significant correlation between depression, anxiety and stress.

Regarding the fear of COVID-19, both gambling addicts and non-gamblers have similar levels. The research was conducted exactly one year after the outbreak of the pandemic, a substantial period in which the population has increasingly adapted to the existing situation.

With reference to life satisfaction and self-esteem, there are significant differences between the gambling addicts and non-players, for both variables, the gambling addicts present lower levels compared to non-players. There are also significant differences between the gambling addicts and non-players regarding the levels of anxiety and stress: for anxiety, the gambling addicts present lower levels compared to non-players, while for the stress, gambling addicts present higher levels compared to non-players, during pandemic.

The research will be able to be continued later, after the end of the restrictions imposed by the pandemic, once the return to normal life and activity, to see if the

aspects related to the analyzed elements were temporarily amplified during the pandemic or if they created a permanent change, which will be found later in the structure of manifestations and in the behavior of gambling addicts.

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# A CONFIRMATORY FACTOR ANALYTIC STUDY OF THE WORK DOMAIN SATISFACTION SCALE IN ZAMBIA

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***Abstract***

*This study aimed at investigating the psychometric properties of the Work Domain Satisfaction Scale (WDSS) on a Zambian sample. Work attitudes are important predictors of employee effectiveness on the job (Randhawa, 2013). A psychometrically sound instrument that evaluates cognitive appraisal of employee wellbeing is therefore required to detect employee's level of work domain satisfaction. A non-probability sample consisting of 209 government employees working in Zambia was studied. The WDSS was used to measure work domain satisfaction, and its reliability was evaluated using SPSS, while construct validity was assessed through confirmatory factory analyses in the Linear Structural Relations (LISREL) programme. Reasonable fit with the data was found for the measurement model through confirmatory factor analyses. The study demonstrated evidence of construct validity for the usage of the WDSS in the Zambian context. By confirming the psychometric properties of the WDSS the study promotes the usage of reliable and valid instruments in Zambia.*

***Keywords:*** *work domain satisfaction, confirmatory factor analysis*

## 1. INTRODUCTION

Work is central to people's lives in that it provides the economic basis of our lifestyles, defines and shapes our self-concept and also affects our well-being (Blustein, 2008; Greenberg & Baron, 2003). Work is an important life domain that has an impact on one's overall well-being (Vallerand, 1997). According to Kahneman (2006) work is the life domain in which employees report the lowest levels of well-being. Given this importance, it is therefore essential that organisations have an understanding on how work influences wellbeing. Although literature abounds with instruments measuring job satisfaction yet none of these instruments

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measures employees' cognitive evaluations of how their work brings them well-being. One such a scale is the work domain satisfaction scale which measures work domain satisfaction and captures employee cognitive appraisals wellbeing with work related activities. The job satisfaction instruments on the other hand measures wellbeing within a job.

The WDSS thus holds potential to be used in Zambia as a predictor of employee wellbeing. To justify the use of the WDSS in Zambia, however requires that predictive validity of the criterion-referenced inferences be empirically demonstrated. This requires more than merely demonstrating a correlation relationship between the WDSS and wellbeing. To convincingly demonstrate that the derivations of inferences on a specific criterion construct are justifiable the construct validity and the predictor measures as well as the construct validity of the criterion measures have to be demonstrated (Binning & Barrett, 1989). To the researcher's knowledge, there's been no study done to validate the construct-referenced inferences derived from the dimension scores obtained on the WDSS on a Zambian sample. It was considered important that the validation of the construct-referenced inferences derived from the dimension scores obtained on the WDSS precedes its use in applied and research settings and precedes the validation of the criterion-referenced inferences derived from the dimension scores obtained on the WDSS. The main research question of the study was thus, is the Work Domain Satisfaction Scale (WDSS) a reliable and constructs valid measure of the perceived work domain satisfaction construct as constitutively defined in Zambia.

### 1.1 RESEARCH-INITIATING QUESTION

The research-initiating question setting the current research study in motion consequently was the two-pronged question:

- What is the connotative meaning of the perceived work domain satisfaction construct?
- Does the WDSS provide reliable and construct valid measures of the perceived work domain construct as constitutively defined?

## 2. OBJECTIVE AND HYPOTHESES

### 2.1. OBJECTIVE

The main objective of the study was to empirically evaluate the reliability and construct validity of the work domain satisfaction Scale (WDSS) adapted by Berube, Donia, Gagne & Houlfort (2016), from the Satisfaction with Life Scale developed by Diener, Emmons, Larsen, and Griffin's (1985) on the Zambian Sample. Specific operational objectives were:

- To explicate the constitutive definition of the perceived work domain satisfaction construct that clarifies the connotative meaning of the construct;
- To confirm the reliability of the Work Domain Satisfaction Scale by computing the Cronbach's alpha reliability coefficient;
- To evaluate the construct validity of the Work Domain Satisfaction Scale by testing the measurement model goodness of fit using the confirmatory factor analyses;
- To confirm discriminant validity of the Work Domain Satisfaction Scale.

### 2.2. HYPOTHESES

The overarching substantive research hypothesis is that the WDSS provides a construct valid and reliable measure of satisfaction with work as defined by the instrument among government employees in Zambia. The overarching substantive research hypothesis can be dissected into the following specific operational hypotheses:

- The construct -referenced inferences on Zambian employee's standing on the satisfaction with work-dimensional construct, derived from the WDSS, could be considered valid (i.e. permissible) if: The measurement model implied by the scoring key and the design intention on the manner in which the WDSS items should reflect the latent dimensions of the work domain satisfaction construct shows close (or at least reasonable) fit;
- The unstandardised factor loadings $\lambda_{ij}$ are statistically significant ($p < .05$);
- The completely standardised factor loadings are large ($\lambda_{ij} \geq .50$);
- The unstandardised measurement error variances $\theta_{\delta ii}$ are statistically significant ($p < .05$);
- The completely standardised measurement error variances are small ($\theta_{\delta ii} \leq .75$);
- The inter-latent dimensions correlate $\phi_{kj}$ statistically significantly ($p < .05$) but low with each other.

## 3. METHOD

### 3.1. PARTICIPANTS

The research sample consisted of 209 adult employees of whom 96 were male, 110 female, and 3 falling in the other category. They were aged between 18 and 40

years and above. Majority of participants are degree holders and with most in middle management.

### 3.2. INSTRUMENTS

Data was collected using the 5 item Work Domain Satisfaction Scale. The WDSS is a five items questionnaire that evaluates cognitive appraisal of a person's work situation or a person's well-being in the work context on a seven point Likert scale (Berube et al., 2016). The scale has acceptable reliability coefficients of between .73 to .87 (Berube et al., 2016).

### 3.3. PROCEDURE

Research subjects were invited to participate through convenience sampling. All the recruited participants completed an online survey taking no more than 10 minutes. The purpose of the research was explained to the Participants with anonymity of participants carefully protected.

### 3.4. RESEARCH DESIGN

Structural equation modelling (SEM) was used to achieve the objectives set out for this study. A quantitative ex post facto correlational design was used to achieve the research objectives.

#### 3.4.1 STATISTICAL ANALYSIS

The success with which the indicator variables comprising the latent variables were evaluated empirically via item analysis, exploratory factor analysis (EFA) and confirmatory factor analysis. Item analysis was done using the statistical package of the social sciences (SPSS 25.0) to evaluate the internal consistency of the work domain satisfaction scale by means of the Cronbach's alpha coefficients ($\alpha$). Item analysis assesses the consistency between items in (Van der Bank, 2007). Good items will have high internal consistency and weak items will be inconsistent with the rest of the items (Chikampa, 2013). Exploratory factor analysis (EFA) was used to examine the uni-dimensionality assumption with regards to the satisfaction with work scale. In particular, the principal-axis factoring extraction method with the direct oblimin-rotated solution was used in SPSS 25.0. The cut-off point for substantial factor loadings was loadings $\geq 0.40$ (Hinkin, 1998).

#### 3.4.2 EVALUATION OF THE FIRST ORDER WDSS MODEL

Data was also analysed with confirmatory factor analysis (CFA) and structural equation modelling in Lisrel 8.80 (Jöreskog & Sörbom, 2006).

An assessment of model fit was based on various goodness fit indices (Bollen, 1989), such as the root mean square error of approximation (RMSEA), root mean squared residual (RMR), standardised root mean square residual (SRMR) goodness-of-fit index (GFI), adjusted GFI, normed fit index (NFI), non-normed Fit Index (NNFI), comparative fit index (CFI), incremental fit index (IFI), and relative fit index (RFI).

The root mean square error of approximation (RMSEA) focuses on the discrepancy between the observed population covariance matrix and the estimated population covariance matrix implied by the model per degree of freedom (Diamantopoulos & Siguaw, 2000). Values under .05 are indications of good model fit, those above .05 but less than .08 indicate reasonable fit, values greater than .08 but smaller than .10 indicate a mediocre model fit and those above .10 indicate poor fit(Browne & Cudeck,1993;Diamantopoulos & Siguaw,2000).

The root mean square residual (RMR) is a summary measure of fitted residuals and represents the average value of the residual matrix while the SRMR represents the fitted residual divided by their estimated standard errors **(**Diamantopoulos & Siguaw, 2000). Values less than .05 on the latter index are regarded as indicative of a model that fits the data well.

The goodness of fit index (GFI) is an indication of the relative amount of variance and covariances explained by the model (Diamantopoulos & Siguaw, 2000). Values of the GFI should range between 0 and 1, with values greater than .90 indicating that the model fits the data well (Diamantopoulos & Siguaw, 2000).

The normed fit index (NFI) represents the portion of total covariance among observed variables explained by a target model when using the null model as a baseline model (Hoyle, 1995). The Non-normed fit index (NNFI) uses a similar logic as the NFI but adjust the normed fit index for the number of degrees of freedom in the model (Kelloway,1998). The two measures should range between 0 and 1. Values greater than .90 are interpreted as reflecting acceptable fit (Diamantopoulos & Siguaw, 2000).

For model comparative assessment purpose the Incremental fit index (IFI), the comparative fit index (CFI) and the RFI are recommended (Diamantopoulos & Siguaw, 2000; Schumacher & Lomax, 2004; Balogun, Mahembe & Allen IIe, 2020).

## 4. RESULTS

### 4.1 MISSING VALUES

Multiple imputation was used as the method to solve the problem of missing values. Treating missing values is the process of dealing with data sets with incomplete responses. The multiple imputation method conducts several imputations for each missing value (Du Toit & Du Toit, 2001; Jöreskog & Sörbom, 1996; Raghunatha & Schafer as cited in Dunbar-Isaacson, 2006). The use of this method resulted in an effective sample size of 209 cases.

## 4.2 RELIABILITY ANALYSIS

Reliability coefficient was calculated using SPSS (Version 25). The work domain satisfaction scale obtained a cronbach alpha of .74. The scale reliability analysis results can generally be considered satisfactory. The scale meets the benchmark reliability standard of greater than 0.70(Nunnally & Berstein, 1994; Pallant, 2010).

## 4.3 EXPLORATORY FACTOR ANALYSIS

Exploratory factor analysis (EFA) was used to investigate the uni-dimensionality assumption with regards to each of the three scales.

The scale was found to be uni-dimensional. The items comprising the scale all reflect a single underlying factor. All factor loadings were acceptable (> 0.50) and variance explained was satisfactory (> 40%). The Scale obtained an adequate Kaiser-Meyer-Olkin (KMO) value of .734. According to Tabachinick and Fidel (2007) when the KMO approaches unity, or at achieves a value bigger than .60 the correlational matrix is deemed factor analysable.

## 4.4 MULTIVARIATE NORMALITY

Robust maximum likelihood (RML) estimation method was performed to normalise the data.

## 4.5 CONFIRMATORY FACTOR ANALYSIS

The completely standardised solution for the WDSS measurement model is shown in Figure 1. The goodness of fit statistics for the measurement model are presented in Table 1. The RMSEA value of 0.157 indicates poor model fit in the sample (Diamantopoulos & Siguaw, 2000).

Although the RMSEA is currently one of the most popular measures of goodness of model fit within structural equation modelling (SEM), yet RMSEA performs poorly in models with small degrees of freedom (Kenny, Kaniskan & McCoach,2015). In this study there were 5 degrees of freedom. When the cut off

values are used to assess the fit of models with small degree of freedom and small sample size, the RMSEA too often falsely indicates a poor fitting model (Kenny et al., 2015). Since the usage of RMSEA when assessing model fit in models with small degree of freedom is problematic and potentially misleading, it is advisable to consider other model fit indices (Macculum, 1990; Kenny et al., 2015). In this study a number of indices of comparative fit were considered.

Results of the incremental fit measures indicate that the model achieved NFI (0.90), NNFI(0.829 ) , CFI(0.915 ), IFI(0.916), and the RFI (0.803) indices closer and exceeding .90 which represent reasonable fit(Diamantopoulos & Siguaw, 2000; Kelloway, 1998). The GFI value of 0.932 meets the acceptable.90 levels. However In terms of the SRMR, the model missed the accepted 0.05 cut-off level. An overall evaluation of the fit indices is generally within acceptable fit cut off levels.

The test of close fit indicates that the probability of observing the sample RMSEA estimate under the null hypothesis of close fit in the parameter ($H_0$: RMSEA ≤.05) was sufficiently small ($p < .05$) to reject the assumption of close fit in the parameter.

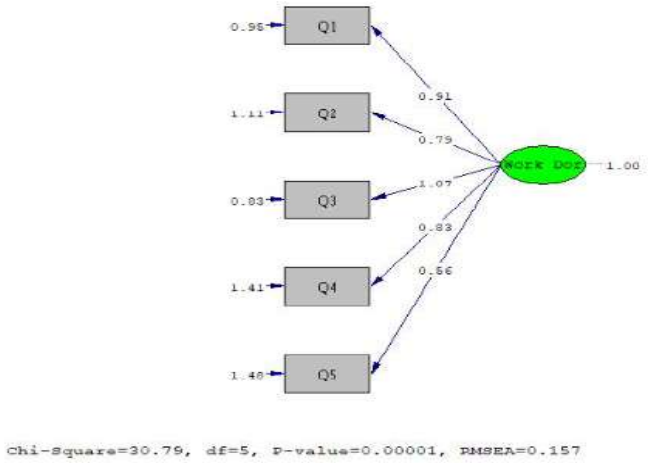


*Figure 1*. Path diagram of the fitted WDSS measurement model (completely standardised solution)

Table 1-Goodness of fit indices for the WDSS (5item) measurement model

| Model | P_close fit | RMSEA | SRMR | GFI | NFI | NNFI | CFI | IFI |
|---|---|---|---|---|---|---|---|---|
| Measurement | .001* | .157 | 0.0689 | .932 | 0.901 | 0.829 | 0.915 | 0.916 |

* $p < .05$

The completely standardised statistical significance factor loading for the items contained in the overall measurement model are shown in table 2 and are generally satisfactorily large >.50 (Hair, Black, Babin, & Anderson, 2010), except for item 5 with a relatively low loading (0.417) on its hypothesised latent factor. As is evident, all items were reasonable indicators of their respective latent factors.

Table 2-Completely standardised lambda-X factor loading matrix of the WDSS measurement model.

| | W_Domain |
|---|---|
| Q1 | .684 |
| Q2 | .600 |
| Q3 | .761 |
| Q4 | .574 |
| Q5 | .417 |

Note: W_Domain refers to work domain satisfaction scale.

The completely standardised measurement error variances are shown in Table 3. All the measurement error variances are satisfactorily small (≤.75) except for item 5.

Table 3-Completely standardised measurement error variances

| Q1 | Q2 | Q3 | Q4 | Q5 |
|---|---|---|---|---|
| 0.533 | .640 | .421 | .671 | .826 |

The squared multiple correlations are shown in Table 4. The $R^2$ values in Table 4 are the sum of the squared completely standardised factor loadings for each item as shown in Table 2. Table 4 echoes the fact that the WDSS items generally were quite.

Table 4-Squared multiple correlations for the items of the WDSS

| Q1 | Q2 | Q3 | Q4 | Q5 |
|---|---|---|---|---|
| .467 | .360 | .579 | .329 | .174 |

In terms of the dissected overarching substantive research hypothesis, the WDSS to a limited degree met this evidentiary burden but failed to do so in an unqualified manner. The measurement error variances $\theta_{\delta ii}$ were statistically insignificant ($p > .05$).

## 4.6 DISCRIMINANT VALIDITY

An examination of the phi matrix of the WDSS measurement model revealed that there was no need of testing for discriminant validity since the instrument only measures one latent dimension. In Berube et al., (2016) the work domain satisfaction is a related but distinct construct from general life satisfaction and job satisfaction.

## 5. CONCLUSIONS

The primary goal of the present study was to ascertain the reliability and construct validity of the WDSS on a Zambian sample. The scale recorded high reliability coefficient above the .70 threshold (Nunnally & Bernstein, 1994). This is in tandem with the reliability coefficients obtained by Berube et al., (2016) which were all above .70. The WDSS was found to be uni-dimensional and accounted for more than 49% of the variance. The measurement model showed reasonable model fit to the data on account of the goodness fit statistics although it can be conclusively said that limited support for the construct validity of the WDSS was obtained.

The current study makes a significant contribution to industrial psychology as well as human resource literature by providing empirical evidence on the psychometric property of the WDSS on the Zambian sample.

Small sample size could have had a huge effect on the result. Future studies should replicate the study using bigger and culturally diverse samples. Future studies should avoid using an ex post facto research design and a non-probability procedure since it is difficult to generalize the results. Conclusive research on the reliability and construct validity of the WDSS is required since the study provided limited evidence of construct validity. Future studies should also determine the measurement equivalence and measurement invariance of the WDSS across different Zambian cultural groups.

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# APPEARANCES OF STIGMA AND DISCRIMINATION AMONG IMMUNOCOMPROMISED FEMALE INJECTING DRUG USERS (FIDU) – A STUDY IN CHAMPAI, MIZORAM IN INDIA

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***Abstract***

*In India the HIV positivity in among IDUs stands at a staggering 7.71. Injecting drug use among female appear to mirror patterns among males, but with greater adverse consequences. They are still a group of population that lacks visibility, and are subjected to multiple layers of stigma because they belong to socially deviant and disenfranchised groups with facing gender-specific inequality and exclusion. The study aimed at understanding the ways in which FIDUs Champai district of Mizoram indigenous minority community, experience stigma and discrimination and the impacts that stigma and discrimination may have on their abilities to access health services. The qualitative study also used content analysis and the health stigma and discrimination framework analysis. The study found several forms of stigma among female injecting drug user, that deters their access and utilization of health services and suggested a range of specific gender-specific individual-, social-, and structural-level interventions.*

***Keywords:*** Champai, FIDU, PLHIV, stigma, discrimination.

## 1. INTRODUCTION

Injecting drug use is a notable driver of HIV infection globally [1]. In India the HIV positivity in among IDUs stands at a staggering 7.71% [2]. Even though no global estimate of female IDUs exist, but recent study in India estimated female IDUs were 10,055–33,392 in numbers [2]. Injecting drug use among female appear

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to mirror patterns among males, but with greater adverse consequences. Social adversity, high levels of exposure to substance using families, high rates of sharing and reusing, high rates of involvement in sex work, high levels of stigma and poor social support characterize this group. Sexual and reproductive health problems are frequent, particularly abortions [3]. Even though evidences suggest an increase in the number of Female Injecting Drug Users (FIDUs), they belong to socially deviant and disenfranchised groups with facing gender-specific inequality, stigma and exclusion [4].

This study attempts to focus on FIDUs of Mizoram state's Champai district, situated at Myanmar border, known for the illegal drug route. Mizoram estimated more than 28 thousand people injecting drugs for non-medical purposes – highest among all states [5]. The HIV prevalence of 19.8 % was considered stable to rising epidemic [6]. Heroin addiction among young people of both genders stood at 81.7% and injecting drug use affected 96.2% young males and females of Champai district with 61.2% sharing of injecting paraphernalia reported for the district [7].

## **2.** OBJECTIVE AND HYPOTHESES

### 2.1. OBJECTIVE

The study was conducted among hard-to-reach female injecting drug users with the view to understanding the impediments to their proper healthcare service uptakes, especially reproductive health care and harm reduction services.

### 2.2. HYPOTHESES

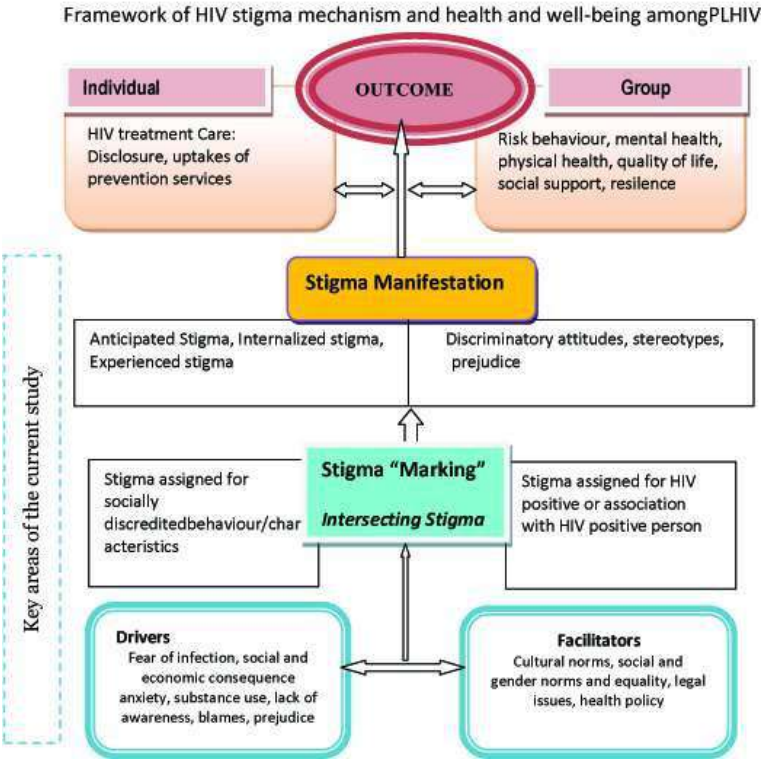
The study emabarked at finding out the antithesis fallout on affected population i.e. stigmatized persons or groups, as well as their family, friend or healthcare providers. Accordingly, we focused on conceptualizing the study on diseases and identities of HIV.

## **3. METHOD**

The qualitative study was conducted in August and September 2019 among Female HIV positive intravenous drug users registered in the anti-retroviral therapy centers (ARTC) for more than two years. The data for qualitative study were collected through focus groups with 14 HIV positive FIDUs, conducted in local Mizo tawng dialect, were semi-structured consisting of a series of broad open-ended questions. Five individual interviews with ART service providers and Stakeholders were undertaken to obtain their 'views on FIDUs' experiences and perspectives. The study used content analysis based on the health stigma and discrimination framework, as proposed by Stangl, Earnshaw, et al [8]. We embarked at finding out the antithesis fallout on affected population i.e. stigmatized persons or groups, as well as their family, friend or healthcare providers. Accordingly, we focused on

conceptualizing the study on diseases and identities of HIV, taking cue from the foresaid study, to construct relevant health stigma and discrimination framework for the study, as in Figure 1 below.

**Figure-1**




**Settings:** The focus groups were conducted at participants' convenient location near to New Hope Society- care & support center organization (CSCO). All the participants were linked to CSCO, but none of reportedly linked to any intravenous drug user (IDU) targeted intervention (TI) and not covered under needle-syringe exchange programme (NSEP), nor were they receiving opioid substitution therapy (OST). However, they received CSCO services as counselling, periodic CD4 count test guide, and referrals, as stated.

**Participant selection and recruitment:** In the current study a person who has injected at least once in the last three months is categorized as an IDU in keeping with the definition followed in the National AIDS Control Programme (NACO). She should be above 18 years of age and give consent to participate.

**Sampling**: Given the hidden nature of FIDUs, we attempted snowball sampling to recruit participants for the study. Altogether 18 FIDUs were approached at the ARTC among whom 2 females declined to participate stating time constraints. Only

14 females consented to participate in the 2 focus groups organized. 5 Key Informants including ARTC Doctor, Nurse, Counsellor and 2 CSC functionary participated in the Individual interviews.

**Data Collection & Analysis**: Data Collection & Analysis: Thematic content analysis with some elements of grounded theory was used to analyze the data. All individual interviews were conducted either in Mizotwang or English according to convenience of respondents. Focus Groups Discussion (FGD) were conducted in Mizo twang language and each focus group lasted between 60-75 minutes. A summary of socio-demographic with drug use and HIV positive status was generated using Microsoft Excel systems. Discussion were noted verbatim by two note takers holding knowledge of the languages and verbatim responses capturing methodologies. Two separate transcripts were prepared and tallied for consistency. Emerging themes were identified as being 'chief' if they were common across sources. Transcripts were analyzed through QAD MINAR software and codes were generated. Recurrent themes were identified with further examination of data for nuances, similarities, and differences through constant comparison approach done [9]. Final codes were categorized to generate themes related to women's experiences of stigma and its impact on their access to health services. The socio-demographic profile of participants (n= 14) and years are summarized in Table-II below.

**SOCIODEMOGRAPHIC PROFILE WITH SUBSTANCE USE HISTORY & ART STATUS OF PARTICIPANTS**

| Characteristics | Women (n=14) |
|---|---|
| Age | |
| 20-35 years | 78.6 |
| Above 35 years | 21.4 |
| | |
| Education | |
| College level- | 28.6 |
| High School level- | 50.0 |
| Primary- | 21.4 |
| Illiterate | 0.0 |
| | |
| Employment status- | |
| Service- | 14.3 |
| Business- | 35.7 |
| Housewife- | 0.0 |
| Without formal job- | 7.1 |
| Unemployed- | 42.9 |
| | |
| Income- | |
| No income- | 42.9 |

| | |
|---|---|
| Below 5000- | 7.1 |
| 5000-10000- | 42.9 |
| Above 10000 | 7.1 |
| **Mean Income** | **5250.0** |
| Marital status- | |
| Single- | 28.6 |
| Married- | 21.4 |
| Widow- | 7.1 |
| Seperated- | 35.7 |
| Single- | 7.1 |
| **Substance use status** | |
| Oral & Chasing – | 0.0 |
| Heroin & Ors – | 100.0 |
| Frequency | Daily (100.0) |
| Injecting drug use- | Heroin (100.0) |
| Frequency | |
| Weekly- | 50.0 |
| Monthly- | 50.0 |
| **HIV treatment status** | |
| Registered with ARTC- | |
| 2-5 years | 71.4 |
| Above 5 years | 28.6 |
| Adherence in the last 12 months- | |
| Above 95% - | 0.0 |
| 90 – 95%- | 50.0 |
| 80% and below- | 50.0 |

## 4. RESULTS

The study identified major forms of stigma as- Anticipated Stigma, Internalized Stigma and Experienced Stigma based on interface with respondents as enumerated hereunder.

***Anticipated Stigma*** among FIDUs reflects their expectations of stereotyping, prejudice, and/or discrimination. Most of the participants stated that human interaction begins to be framed within the context of HIV, and becomes the overriding perspective when dealing with others. According to FGD participant 1 *'As a HIV positive female, I become very sensitive to what people say and how they*

*treat me. I feel 'en dwang (looked down upon)'.* Another FGD participant 4 pointed out "*I think especially for women doing IDU, it's hard because we're expected to be a play mother's roles, take care of everything, always look good, always be happy and not care for ourselves as much as we care for everyone else*. While this narrative illustrates perception of female drug users' greater stigmatization based on traditional family norms, it also suggests a complex and contradictory power dynamic at play in gender role norms, particularly for women. Participants account suggested that women perceived a unique stigma of drug use, because injecting drug use ran contrary to gender norms of behaviour. The ARTC counsellor commenting on the prevalent negative perception of FIDUs said, *'most people feel it is a shame for a woman to be an injecting drug user'.*

Most of the participants tend to perceive discrimination in general healthcare settings for FIDUs, as segregation practices intentionally used to differentiate people living with HIV (PLHIV) from the general care population. One FGD participant 6 informed '*my friend was referred to gynaecologist in the hospital for her STI problems that didn't subside with presumptive treatment at ART centre. The doctor at the hospital noticed her ARTC green booklet (patient treatment history book) pulled his chair back and hurriedly jotted down some medicine and asked her to leave without explaining her anything*". Some participants shared that there was a recent reduction in discriminatory attitudes and behaviour in HIV health care settings, as they said *'HIV/AIDS specialists treated us normally and quite helpful to PLHIV without being judgmental toward IDUSs'.*

***Internalized stigma***- participants' account indicated a self-directed shameful consciousness of being an injecting drug user female and PLHIV. Internalization of stigma was often associated with low self-esteem among participants as- *'It is difficult to tell others of my HIV positive status, being IDU'* – FGD participant 2 stated. '*I feel worthless being IDU and also as HIV positive'* – another FGD participant 13 added. Both the statements carry participants negative reflection about self in varying degrees. Self-stigmatization resulted from study participants internalizing the negative perception of injecting drug use within the study setting, where drug use was generally construed as resulting from a failure of individual morality. FIDUs were commonly referred as '*hmeichhia ruihhlo ngai'* (female drug user) and they are often thought of as 'K.S.' (slang word for female sex workers). Not surprisingly, FIDUs found such identities shameful and they had an interest in concealing their stigmatized identities. As FGD respondent 8 said, *'I usually don't like people to know my drug injecting status because I feel shame and when going out invariably use body covered clothes to hide injection marks'*.

***Experienced stigma***- Many participants stated to have experienced negative attitude towards injecting drug user from their communities. '*When I started doing drugs and injecting, others who do not use, refused to mix with me. I was able only to associate only with fellow drug users'* – informed FGD participant 5. Two other FGD respondents also stated they were also stigmatized by some of their family members: *'From my own perspective, even the CSC workers are more concerned*

*with us and love us even more than our relatives'*- respondent 9 stated. And respondent 11 added, '*If you try to reason out or explain something in the family settings, they brush you aside as an addict. It pains."*

Among the participants 42% females were earning either from petty business or in some job. Stigma and discrimination at workplace seemed experienced by some. Said FGD participant 12, a 28 years old single female, *'I was working in a beauty parlour. Once my HIV positive status became known to the owner, he instructed that I leave the job in the interest of the parlor and find engagement somewhere. I felt devasted'.*

Participants described how this stigma was invoked within a milieu of social dynamics and moralistic attitudes, conveying a notion of moral judgments and suspicion: '*People stated to me that a ruihhlo ngai (drug user) is a sinner'*- FGD respondent 14 stated. Another respondent 7, informed, *'My school-day friends and neighbors become unduly alarmed by my presence near to their houses, as if I am thief. Very demeaning for me.'*

Apart from experiencing stigma and discrimination in public spaces, FIDUs frequently experienced the same in healthcare related settings. Respondent 10 reported *'health care staff at the center have a queer look at us, and whisper among fellow staff on my doing drugs and injecting habits'.* Some participants also lamented over their non-existed access to needle syringe exchange programme and opioid substitution therapy under the IDU TIs.

Stigma of being FIDU was layered over HIV-related stigma, as respondent 11 described preceding HIV stigma, even from their fellow drug users. According to FGD respondent 3,*'Once I was detected HIV positive through community based testing, my fellow drug user asked me not to come in their group'.* This statement suggested that being HIV positive was different source of shame among women who inject drugs.

Given these deeply ingrained cultural beliefs and taboos, coping with multi-layered stigma is particularly challenging for females. Despite this, PLHIV FIDUs found to hold positive internal beliefs about themselves as- *'I have changed over the years. It's like, I don't care who knows, everybody can know,'* respondent 9, a 36 years old lady, a separated from marriage and in a government, on ART for the last seven years asserted. Still another respondent-13, a 26 years old single lady, with college level education, on ART regimen for 5 years and doing petty business, stated- *'I have understood that worrying won't help. I take my ART medicines regularly and keep going.'*

***Negative impact of stigma-*** Notwithstanding the source, stigmatization of women seemed to result in isolation and exclusion through prejudiced social processes and institutional practices. Responding to a question about the impact of stigma, one participant described how relatives and associates '*abandon and stay away*' FGD respondent 1 said. Another FGD respondent 5 opined that '*people cannot agree to be with someone who is chasing or injecting drugs*.' Notwithstanding social isolation, our data suggested that enactment of stigma – overt

discrimination- served as a distinctive barrier to health service access. Participants characterized the actions of health system functionaries '*disdainful maltreatment'* as FGD respondent 2 commented. Another FGD respondent 7 stated, *'Should they know that one is an addict, they send the patient backward on the queue or tell the person to go and come later'.*

Apart from the negative perception of drug use, CSC functionary pointed out- *'the health care workers did not understand why and how they need to serve female drug users.* Nevertheless, given women's experiences, being stigmatized at health facilities meant that '*she had never gone back*' he added. But, studies indicated that many women inevitably found themselves compelled by circumstances to seek health services, and in those situations, they strived to conceal their identities, so as to avoid being stigmatized or discriminated against [12]. In Champai many participants opted to be accompanied by CSC outreach workers to the health centers, to avoid being feeling embarrassed. One FGD respondent-4 claimed, *'if we go to hospital with the out-reach workers (ORW), the health providers give us the required services without asking many question'.*

## 4.1. DISCUSSION

In review of relevant documents and published research articles, the study endeavoured at analysing the various forms of stigma and discrimination faced by PLHIV FIDUs of Champai on the conceptualized stigma framework as in figure-1, to understand the stigma drivers and facilitators. Interactions with key informants indicated that lack of public awareness and knowledge on HIV issues concerning intravenous drug use, especially by females, existed, as the CSCO functionary said "*intravenous drug use is considered as synonymous with HIV paying no heed to the fact that injecting drugs, per se, does not spread HIV; it is the sharing infected injecting equipment that does so. IDUs in the region were unfortunately subjected to a high level of stigma and discrimination, and unsubstantiated fear of infection existed as, FIDUs are blamed mostly for the infection*". He also asserted - "*Drug use was, rather, looked at as a fashion and a fad of the young in the region. The unfortunate rise of such stigma on the IDUs made them hides their habit. They stopped accessing the services provided for their safety and wellbeing*".

Notably, high literacy rate among females in Mizoram is recorded and all FIDUs participants at Champai held minimum of middle school education. Sharing of injecting paraphernalia by females with their male partner or spouse and unprotected sex were reportedly the dual modes of HIV transmission among FIDUs. In Champai, males continue to be main earning members for the family; and as such females have minimum say in economic matters, in decision making and obviously weak negotiating capacities in conjugal life. Again, among sensitized females, indulging in risky behavior under influence of drugs with male IDUs and partners found common, since IDU is considered by them 'enjoyable group activity'. Said

the ARTC counsellor, "*Females are discriminated within the husband's family if both of them held HIV positive status. Females are often blamed for the death of her husband/male partner, even if the male had been diagnosed HIV positive earlier. Females reuse needles and injecting equipment with their male partners,"* she added.

In the socio-cultural domain, drug use in Mizoram existed since long and casual sex has never been a taboo in some tribal culture. Many of the women drug users grew up in single parent households, experiencing an unstable and unhappy childhood [10]. Champai's geographical location reportedly gave rise to drug trafficking and human trafficking with Chins tribe people of Myanmar, stereotyped as drug peddlers and traffickers, fleeing and residing permanently in Champhai district mostly [10]. The strong sense of community among the people in the North-eastern states has its negative aspects: drug users, people living with HIV/AIDS and especially female drug users, and their immediate families are often the target of fierce discrimination [10]. The numerous ethnic communities are affiliated to social and religious organizations such as Young Mizo Association and Churches of northeast; but these institutions plagued by incomplete and incorrect information on drug use and HIV and holding narrow moral angle, too acted as a major source of stigma and discrimination [ 11]. The CSC functionary stated, "*easy availability of illegal heroin pushed young people to opioid use and also the sudden surge in wealth and property, which is attributed to profits made from smuggling the precursors, and stress arising out lack of suitable employment opportunities educated youth in the region were contributing factors*". Also, he pointed out, *"many of females into drugs also act as conduit for drug peddling and peer influence push them into IV drug use"*. An ARTC service provider stated "*for FIDUs, treatment options through drug de-addiction and due coverage under targeted intervention programmes not existed. FIDUs are reluctant to go to oral substitution clinics attended by men; hence many female users stay out of reach of treatment facilities".* According to CSC functionary "*gender bias against FIDUs and more so against PLHIV FIDUs in general healthcare settings, barring ART centre, in Champai often compel FIDUs, requiring specialized treatment for certain ailments, suffer.*

Drug possession and peddling in Mizoram, is punishable offence and repeated case of Police arrests reported. Stringent law enforcement against heroin trafficking and peddling, in the early 1990s, resulted in shift towards the vein puncturing habit of injecting heroin and other pharmaceutical products [11]. In the perspectives of the above drivers and facilitators, stigma 'marking', intersecting with socially discredited behaviour/characteristics on one side and HIV positive status identification and association with persons living with HIV (PLHIV) on the other hand was evident. These caused the emerging of stigma 'manifestation' for PLHIV individual and groups; and FIDUs carry the multiple layers of stigmatization i.e. gender norms, injecting drug use and HIV infection. The study thus found several forms of stigma, as stigma of being a drug user, gender-related stigma of being female injecting drug user, and stigma of being PLHIV.

In the perspectives of the above it is important to address different forms of stigma to mitigate their negative impacts on women's ability to access health services at individual, social and structural levels. At individual level, interventions that support reversal of internalized stigma are required. Research among stigmatized populations has shown that peer-based support approaches can assist in coping and confronting self and external stigma, by harnessing collective self-efficacy, and providing an environment to revamp self-esteem [13,14]. At the social level, it is essential to address moralistic judgements and attitudes that reinforce conservative, but often inequitable stigmatization of women. Working with community group functionaries and religious leaders and initiating community-based advocacy and outreach has shown to soften hard community stances and to reduce discrimination against drug users in Vietnam [15]. Thus, community sensitization can be successful approach adoptable.

At the structural level, interventions for eliminating stigma through proper sensitization of healthcare providers and zero discrimination rules enforced, given the fact that rising number of FIDUs would require health service access [16]. Training on globally recommended comprehensive package of harm reduction services need to be imparted [17]. In addition, peer navigation to health facilities would reduce experiences of stigma and discrimination among FIDUs. The current harm reduction programme, supported by NACO across states, required to refocused with inclusion of effective community and socially oriented harm reduction interventions in mitigating stigma, as it provides an avenue to strengthen employment, livelihood and skills development [17], progressive policing [18], legal support and violence mitigation with a rights-based approach [19,20,21].

In the current study, we embarked at understanding the stigma and discrimination issues concerning female injecting drug users based on the on the conceptualized stigma framework. This framework facilitated in analyzing the social and structural pathways in addition to individual pathways. We observed that the stigmatization process unfolds across the socio-ecological spectrum and varies across economic contexts in low-, middle- and high-income countries [21]. We attempted to study the drivers, facilitators, intersecting stigma and stigma manifestations and observed that drivers and facilitators determine stigma marking through which stigma is applied to people or groups. We posited that stigma manifestations influence a number of outcomes for affected individuals and groups, including social acceptance, access to and uptakes of healthcare services, resilience and advocacy. The use of this framework enabled us to gauge stigma among PLHIV FIDUs in concise and comparable manner; and hopefully may be found suitable for use in future research studies, as well.

### 4.2. LIMITATIONS AND FUTURE DIRECTTION

Our study had certain limitations as it involved participants though registered under antiretroviral therapy regimen, but not availing harm reduction service

coverage. They were linked to a care and support organization as such their accounts and experiences of stigma may differ from other women. It is indeed possible that our study may be underestimating the impact of stigma among female injecting drug users of Champai, because our purposively sampled participants were already accessing some psychosocial support and anti-retroviral treatment services.

## 5. CONCLUSIONS

Without intending to totally understand or cause over simplification of the context and experiences of stigma, it is evident that women who injects drugs in Champai or anywhere in Mizoram often self-stigmatize, face stigma of injecting drug use, and are discriminated. These are deterrent in their accessing and availing of health services. Suggestively, to overcome the multiple forms of stigma simultaneously experienced by participants in this study and ensure that tailored gender-sensitive interventions are available to them, a range of specific individual-, social-, and structural-level interventions will need to be implemented. For these to auger, necessary review of National Policy Narcotic Drugs and Psychotropic Substances 2012, to enable suitable inter-ministerial coordination on provision of addiction treatment under the Union Ministry of Social Justice, as well as access to Harm Reduction interventions and sexual health under Union Ministry of Health and Family Welfare are equally meted to female injecting drug users with suitable facilitation at state levels.

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## Disclosure statement

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# THE RELATIONSHIP BETWEEN SUBJECTIVE WELL-BEING, PERCEPTION OF TRAFFIC SIGNS, RISK TAKING AND ERRORS IN TRAFFIC

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***Abstract***

*The study is focused on evidencing the relationship between the variables Psychological well-being, Reckless and fun driving, Violation of traffic rules, Reckless and fun driving, Dangerous errors and the Perception of traffic signs. The participants were a number of 45 amateur drivers with driving license minimum 2 years. The instruments were: The Flourishing Scale (Diener et al. 2009), The Manchester Driver Behaviour Questionnaire (DBQ) the version of Sucha, Sramkova & Risser (2014), Risk-taking attitudes and risky driving behaviour (Iversen, 2004) (Violation of traffic rules/speeding, Reckless driving/fun driving) and the traffic signs perception scale. The participants consent was collected before the application. The hypotheses were confirmed at the statistically significance between .01 and .05. Hence the variables Psychological well-being and reckless/fun driving predicts the perception of traffic signs. Furthermore, the reckless/fun driving and violation of traffic rules predict positive statistically significant the dangerous traffic errors. The findings evidence the importance of defensive driving and increasing the drivers subjective well-being.*

***Keywords:*** *Perception of traffic signs, Flourishing, Fun driving, Errors in traffic.*

## 1. THEORETICAL FRAMEWORK

Iversen (2004) was interested to highlight the relationship between the risk-taking attitudes and risky driving behavior. Hence, the results evidenced a significant effect of the attitudes towards rule violations/speeding and towards the careless driving of others on risky driver behavior as drinking, driving and seat belt use.

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Furthermore, the authors highlighted that drivers involved in road traffic accidents in the last year took more risky behaviors.

Allahyari, et al. (2008) conducted a study regarding the relationship between the Driving errors, cognitive failures and driving accidents. The authors used the Cognitive Failures Questionnaire and Driving Behavior Questionnaire 24 items version. The results evidenced that the cognitive failures dimensions predict the traffic accidents.

Sucha & Sramkova & Risser (2014) were interested to evidence the relationship between the driving behavior, road accidents and offences, while the study conducted by Vladu, Gatej, Rizeanu (2019) concluded that psychological aggressive characteristics have negative effects in learning driving skills.

Bichajlo (2017) conducted a study in the real road traffic environment. In this way the author equipped the participants with eye measurement system for the eye fixation on the advertisement tables. The results evidenced three groups of participants as follows: the first group focusing on the surface, the second group focusing on the advertisements and road signs and the third group focusing on the selected objects as road signs and advertisements.

Trespalacios, Truelove, Watson, & Hinton (2019) highlighted the impact of road advertising signs on driver behaviour and road safety. In this way the authors investigated studies focused on driver inattention and distraction as road safety factors.

The findings of Hawkis et al. (2012), Izadpanah et al. (2014) and Yannis et al. (2014) cited by Trespalacios, et al. (2019) highlighted that the changing luminescence road advertising signs attract and hold driver's attention.

Hudak & Madleňák (2016) conducted a study focused on the research of driver´s gaze at the traffic signs. The authors used the human eyes tracking glasses, designed to record the human gaze behavior.

Beijer (2004) cited by Hudak & Madleňák (2016) underline that traffic signs provide information and keep vigilance of drivers on the road. Moreover, the traffic signs offer indications about the route, the dangerous parts, what is allowed and what not to run on the route. In this way, the traffic signs equipped with light bulbs will focus the drivers' attention and reduce the accident risk. Edquist (2011) cited by the same authors consider that the roadside advertisements represent driver distraction from the road sign and the route.

Topol & Drahotský (2017) point out that young people under the age of 24 are the most dangerous drivers because they exceed the speed limit, hit the red traffic signal and take risky manoeuvre and the study conducted by Gatej, Rizeanu, Ursachi, (2017) evidenced the same conclusion.

The psychological well-being of drivers represents the key of focused attention on the road during driving. This is related to a high level of quality of life and memory and attention to optimal parameters, while.

## 2. OBJECTIVE AND HYPOTHESES

### 2.1. OBJECTIVE

The objectives of the research:

1. To highlight possible correlations between the variables: perception of traffic signs and dangerous errors.
2. To evidence that psychological well-being predicts the perception of traffic signs.
3. To evidence that Reckless and fun driving predict dangerous errors.
4. To highlight that Violation of traffic rules predicts dangerous errors.
5. To evidence that Reckless and fun driving predict the perception of traffic signs.

### 2.2. HYPOTHESES

The research hypotheses are the followings:

1. There is a statistically significant negative correlation between perception of traffic signs and dangerous errors.
2. Psychological well-being predicts the perception of traffic signs.
3. Reckless and fun driving predict dangerous errors.
4. Violation of traffic rules predicts dangerous errors.
5. Reckless and fun driving predict the perception of traffic signs.

## 3. METHOD

### 3.1. The participants

The participants were a number of 23 man and 22 woman drivers, age between 21 and 46 years old (Mean =28.56, S.D.=7.35), amateur drivers. The selection criteria was minimum 2 years of driver licence. The responses were collected by interview, respecting the ethical rules and the informed consent, voluntary and anonymized data. The participants were agreed the publication of the anonymized results.

### 3.2. The instruments

1. The Flourishing Scale (Diener, Wirtz, Tov, Kim-Prieto, Choi, Oishi, & Biswas-Diener, 2009). The scale is composed from a number of 8 items from 1-very low to 7-very high. The flourishing scale revealed a strong factor with an eigenvalue of 4.24, representing 53% of the variance and no other eigenvalue above 1.0. The factor load ranged from .61 to .77. The test has a Cronbach Alpha index of .87.

2. The Manchester Driver Behaviour Questionnaire (DBQ) (Reason, Manstead, Stradling, Baxter & Campbell, 1990), the version of Matus Sucha & Lenka Sramkova & Ralf Risser (2014). The Manchester driver behaviour questionnaire is self-reports of behaviour among drivers. The items are scaled from 1- very low to 5 very high. The Alpha Cronbach reliability was calculated between .63 and .73 for the British, Finnish and Dutch data (Lajunen, Parker & Summala, 2004). The Romanian data follows the trend.

3. Risk-taking attitudes and risky driving behaviour (Iversen, 2004) The following dimensions were applied: Violation of traffic rules/speeding (Alpha Cronbach=.847), Reckless driving/fun driving (Alpha Cronbach= .671). The applied items for this study are scaled from 1-very low to 5 very high.

4. Traffic signs perception scale was issued for the purpose of the present study. The Alpha Cronbach is ,83. A sample of the items are the followings:
1. I can easily see the indicator! pedestrian crossing!
2. I can easily perceive visually the traffic signs from 30 meters.
3. I can easily see the sign! Crossing the railway level!
4. I can easily see the indicator masked by the leaves of the tree.
5. I can easily see the signs in the rain.
6. I can easily see the indicators even when I have financial problems.
7. I can easily distinguish the indicators at night from a distance of 30 meters.
The scale was Likert from 1-very low to 5-very high.

### 3.3. Procedure

The instruments were applied paper pencil during the interview with the participants. The interview lasted between 6 and 12 min. The Ethical code and legislation were respected. In the beginning of the items interview, the participants were informed about the study, the ethics, consent and the instruction. They were

volunteer, the anonymized data is respected and they agreed for the publication of the results.

### 3.4. The design

To test the regression hypotheses, the variables were the followings:

- Independent variables: Psychological well-being, Reckless and fun driving, Violation of traffic rules and Reckless and fun driving.
- Dependent variables: dangerous errors, the perception of traffic signs.

## 4. RESULTS

In the table 1 can be seen the Means and Std. Deviation for the variables: Psychological well-being, Reckless and fun driving, Violation of traffic rules, Dangerous errors and the Perception of traffic signs.

Table 1.- Descriptive statistics

| Variable | Mean | Std. Deviation |
|---|---|---|
| Psychological well-being | 37.44 | 8.923 |
| Reckless and fun driving | 44.04 | 14.953 |
| Violation of traffic rules | 44.04 | 14.953 |
| Dangerous errors | 59.40 | 18.467 |
| Perception of traffic signs | 29.13 | 8.179 |
| N | 45 | |

Applying the Pearson correlation test the following bivariate correlations were obtained:

There are statistically significant positive correlations between the variables: Psychological well-being and Perception of traffic signs ($r=.587$; $p<.001$), Errors and Violation of traffic rules ($r=.552$; $p<.01$), Reckless and fun driving and Violation of traffic rules ($r=.466$; $p<.01$) and Reckless and fun driving and Dangerous errors ($r=.806$; $p<.01$).

There are statistically significant negative correlation between the following variable: Perception of traffic signs and Dangerous errors ($r=-.456$; $p<.01$), Perception of traffic signs and Violation of traffic rules ($r=-.631$ $p<.01$), Psychological well-being and Reckless and fun driving ($r=-.370$; $p<.05$), Perception of traffic signs and Reckless and fun driving ($r=-.312$; $p<.05$).

The correlation hypotheses (There is a statistically significant negative correlation between perception of traffic signs and Dangerous errors) was tested with

the bivariate Pearson correlations statistical test. The hypothesis was confirmed for r=-.456 and p<.01.

For the rest of the hypotheses were applied simple linear regression models. Hence, the followings results were obtained:

1. Testing the second hypotheses" Psychological well-being predicts the perception of traffic signs." it was confirmed for R=.587, p<.01. The simple linear regression model is the following:

Perception of traffic signs=9.001+ .538*Psychological well-being

2. Testing the third hypotheses "Reckless and fun driving predict dangerous errors." it was confirmed for R=.806, p<.01. The regression equation is the following:

Dangerous errors=11.513+ 1.483* Reckless and fun driving

3. Testing the fourth hypotheses "Violation of traffic rules predicts dangerous errors." it was confirmed for R=.552, p<.01. The linear regression model is the following:

Dangerous errors=29.390+ .681* Violation of traffic rules

4. Testing the fifth hypotheses "Reckless and fun driving predict the perception of traffic signs." it was confirmed for R=.312, p<.01.

The linear regression model is the following:

Perception of traffic signs=37.332 -.254* Reckless and fun driving

## 5. CONCLUSIONS

The research hypothesis were tested with the Pearson bivariate correlation test and the simple linear regression model statistical tests. All the fifth hypotheses were confirmed for p<.01. Furthermore, there were obtained statistically significant bivariate correlations between Psychological well-being and Perception of traffic signs, Dangerous errors and Violation of traffic rules, Reckless and fun driving and Violation of traffic rules, Reckless and fun driving and Dangerous errors, Perception of traffic signs and Dangerous errors, Perception of traffic signs and Violation of traffic rules, and Perception of traffic signs and Reckless and fun driving for the statistically significant threshold between.01 and .05. The linear regression models evidence that the variables Psychological well-being and Reckless and fun driving predicts the perception of traffic signs. Furthermore, the risk assuming behaviour as reckless and fun driving and violation of traffic rules predict in a positive statistically significant way Dangerous errors.

Analysing these findings, the implementation of a defensive driving program for amateur drivers would encounter the needs for safety driving (Rizeanu, Gatej, Ciolacu, 2017). Also, increasing the perception of the traffic signs represents a major objective for reducing the risk of minor and major traffic accidents.

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# BEWARE OF THE EMPTY LOOK: THE MEDIATION ROLE OF DEPERSONALIZATION IN THE RELATIONSHIP BETWEEN DARK TRIAD PERSONALITY FACTORS AND COUNTERPRODUCTIVE WORK BEHAVIOURS

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***Abstract***

*The current study analyzes the contribution of dark triad (DT) personality traits (Narcissism, Psychopathy and Machiavellianism) in the occurrence of counterproductive work (CWB) behaviors in the organizations, as well as the mediation role of the emotional disconnection in the relation between dark triad personality facets and organizational deviance.*

*The results of this study had shown that out of the three traits of the dark triad, the psychopathy plays the most important role and is the only facets responsible for the occurrence of CWB among employees. When acting as a mediator, there was shown a total effect of depersonalization in the relationship between the DT personality facets and CWB.*

*The research has practical implications connected directly with reducing organizational negative outcomes and, therefore, promoting a healthy, more productive and inclusive atmosphere at work with a focus on diminishing the organizational and personal costs related to negative outcomes.*

***Keywords:*** *Dark Triad (DT), Psychopathy, Counterproductive Work Behaviors (CWB), Depersonalization, Burnout, Mediation.*

## 1. INTRODUCTION

One of the goals that is increasingly in the attention of organizations is the reduction of costs, but not all types of costs have roots of a financial nature. Some

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of them are correlated with behavioural aspects, especially when these aspects, through their negative nature, produce negative outcomes in the workplace, such as: absenteeism, failure to follow instructions, theft, physical and verbal aggression, dissatisfaction and criticism of colleagues and superiors, intentional misuse of information etc. (Fox et al., 2001; Gruys & Sackett, 2003; Spector & Fox, 2002; Spector et al., 2006).

Also, there are studies that showed that personality traits play an important role in explaining and addressing counterproductive behaviours of employees in the workplace, through causality that links negative personality traits with imbalances occurrence in organizations (Fida et al., 2014).

Consequently, the need to assess the maladaptive personality traits, known in the literature as "dark" (even if sub-clinical), led to the development of psychological testing tools meant to assess other individual differences that are not part of the Big Five model (Judge et al., 2009). Therefore, over the time, different models and approaches have been created to assess and explain the dark side of the personality (Spain et al., 2013), among the most well-known being the Dark Triad of Personality (Paulhus & Williams, 2002).

Relatively new as a concept, the Dark Triad of Personality (Paulhus & Williams, 2002) consists of three personality traits (Narcissism, Machiavellianism and Psychopathy), that, in this context, should be understood as sub-clinical in nature, their common feature being *aversion*. The manifestation of these features occurs in individuals who are placed in stressful situations or when their control mechanisms are extremely weak. Their presence usually has a negative impact on the long-term results, but, in some contexts, they can facilitate the achievement of short-term goals.

Recent research has highlighted that one of the main causes of negative behaviours in the organization is the presence of depersonalization. Being a symptom of burnout syndrome, depersonalization is manifested mainly by an "unfeeling and impersonal response toward recipients of one's service, care, treatment, or instruction" (Maslach et al., 1996).

### 1.1. THE RELATIONSHIP BETWEEN DT AND CWB'S OCCURENCE IN ORGANIZATIONS

The interest played by the influence of dark facets of personality in the occurrence of CWB in organizations has grown in recent decades. Paulhus and Williams (2002) considered the DT personality as a multidimensional construct, but other authors report models that include the DT as a unique factor (Wu & Lebreton, 2011).

Talking about the occurrence of deviant behaviours in organizations labelled as *psychopathic traits*, some authors point out that people who score high on these traits are generally interested in their own needs, affecting the smooth running of activities

in a company through lack of responsibility and distraction from the set objectives (O'Boyle et at., 2012).

Also, in their relationship with authority, defined here as the relationship between employee and superior, people with high scores find it easier to get involved in antisocial behaviours than when their position in the company gives them a chance to achieve their goals. Thus, we can say that impulsivity and aggression are two other defining characteristics of psychopaths, which are activated against the background of possible frustrations arising from failure to achieve their own goals and interests. In this sense, Hare and Neuman (2009) note the emergence of physical and verbal abuse as an effect of low emotional tolerance, as well as cognitive non-integration of social norms.

In a recent study, it was reported a significant correlation between the occurrence of counterproductive behaviours of employees in the medical system and the abusive management of narcissistic managers (Erkutlu & Chafra, 2017), that are prone to exploit others by taking side more to their own personal agenda than the one of the organization (Khoo & Burch, 2008). Moreover, there is a similarity between them and leaders with psychopathic personality traits. Arrogance, the need for recognition, low empathy, belief in a special status and lack of moral integrity are not the best attributes when discussing the qualities of a leader. Thus, the appearance of counterproductive behaviours on the part of employees can also take the form of a protest against the conduct of superiors, since toxic leadership, as the one inferred by the leaders with high levels of DT personality is possible only if *susceptible followers* are present (Padilla et al., 2007).

## 2. OBJECTIVE AND HYPOTHESES

### 2.1. OBJECTIVE

By exploring the implications related to depersonalization in the relation between DT and CWB, we aim to add and deepen the existing body of literature on the occurrence and management of CWB.

### 2.2. HYPOTHESES

Considering the negative effects of counterproductive behaviours in the workplace and the potential influence on DT personality on their outset (Mennecke et al., 2016), we formulate the following hypotheses:

**H1:** We assume that the three facets of the DT, *H1a)* Narcissism, *H1b)* Machiavellianism, *H1c)* Psychopathy, predict the occurrence of organizational deviance (CWBO).

**H2:** We consider that the three facets of the DT, *H2a)* Narcissism, *H2b)* Machiavellianism, *H2c)* Psychopathy, predict the occurrence of the deviance focused on the individual (CWBI).

Also, considering the results of, even if limited-numbered, existing studies in which depersonalization was studied separately from the whole construct of burnout in relation with CWB and researchers pointed out the existence of positive correlation between these two variables (Ugwu & Okafor, 2017; Banks et al., 2012), we believe depersonalization can affect the good development of activities in an organization, the emotional disconnection leading to the weakening of interpersonal relationships. Depersonalization acts as "a shield to protect the individual from possible negative experiences when in contact with another person" (Maslach & Jackson, 1981) as well as "a coping strategy through which the employee distances himself from the company's requirements, thus preventing further depletion of emotional resources" (Bolton et al., 2011). Building on these results, we propose the following hypothesis:

**H3:** We assume that depersonalization mediates the relationship between the presence of DTP and the occurrence of *H3a)* organizational deviance (CWBO) as well as *H3b)* deviance focused on the individual (CWBI).

## 3. METHOD

### 3.1. PARTICIPANTS

The study sample consisted of 127 Romanian individuals ($M_{age}$ = 38.04, *SD* = 9.94), 53,5% women. The data were collected via an online questionnaire placed on a virtual platform. The snowball technique was used for the recruitment of the participants, ensuring the confidentiality. The study sample was diverse from the sectors of the activity point of view, the participants reporting running their activity in industries such as: financial-banking, medical, marketing-PR-advertising, administrative, legal, industrial, communications and telecommunications, construction and real estate, agriculture, trade, HoReCa, education, culture, entertainment, transport and IT.

### 3.2. MEASURES

***Dark Triad Personality*** (DTP) was measured with the short version of the homonym Questionnaire (Jones & Paulhus, 2014). Alpha Cronbach coefficients ranged from α =.59 for the sub-scale of Narcissism (9 items) and for the sub-scale of Psychopathy (9 items), to α = .79 for the sub-scale of Machiavellianism (10 items). A 5-point Likert scale was used with 1=Strongly Disagree and 5=Strongly Agree. The low fidelity registered for Psychopathy and Narcissism sub-scales was reported in several studies, that can mainly be due to the obviously negative content of the item and the particular interpretation of each respondent of the questions in the questionnaire. Therefore, their use in our statistical analyzes was performed considering these premises (Ying & Cohen, 2018).

***Counterproductive work behaviors*** were measured using the Counterproductive Work Behavior Checklist (CWB-C, Fox et al., 2001). The 45

questions version has two sub-scales: the first one, assessing the deviance, namely the counterproductive work-behaviors, directed against individuals (CWB-I) and a second sub-scale that evaluates the deviance directed against the organization (CWB-O).

The CWB-C items are evaluated on a 5-point Likert scale, where 1 is Never and 5 is Daily. The Alpha Cronbach calculated on the current study data was α = .93 for the entire CWB-C scale, α = .87 for CWB-O and α = .91 for CWB-I.

***Depersonalization*** was evaluated through the homonym sub-scale from the Maslach Burnout Inventory, MBI (Maslach & Jackson, 1981). This subscale contains 5 items and describes the detached and impersonal treatment of the individual towards other people. The Alpha Cronbach coefficient on the current study data was α = .75, with a 7-point Likert scale, where 1 is Never and 7 is Daily.

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### 3.3. DATA ANALYSIS

The statistical analysis was carried out in SPSS. In the first stage, we calculated the total score for each variable and the coefficient Alpha Cronbach. Next, we run a correlation analysis between the study. To test the hypotheses, in the last two stages of the data analysis we used multiple linear regression analysis using the stepwise method (step by step) introducing into the system only independent variables that had statistically significant correlations with the two dependent variables. In the last stage, we tested the theoretical model (Figure 1), using the add-on package for SPSS, Process v3.5 (Hayes, 2013).

## 4. RESULTS

### 4.1. CORRELATION ANALYSIS

The means, standard deviations, Alpha Cronbach coefficients and the correlations between study variables are included in Table 1.

Table 1 – Means, Standard Deviations and Correlations for the study variables (N=127)

| | Variable | *M* | *SD* | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | DTP Total | 2.61 | .39 | (.80) | | | | | | |
| 2 | Machiavellianism | 2.76 | .59 | .87** | (.79) | | | | | |
| 3 | Narcissism | 3.07 | .45 | .66** | .39** | (.59) | | | | |
| 4 | Psychopathy | 1.99 | .49 | .71** | .43** | .45** | (.59) | | | |
| 5 | CWB-O | 1.41 | .36 | .34** | .29** | .08 | .37** | (.87) | | |
| 6 | CWB-I | 1.18 | .26 | .35** | .31** | .02 | .43** | .75** | (.91) | |
| 7 | Depersonalization | 1.63 | .83 | .45** | .41** | .21* | .39** | .53** | .51** | (75) |

*Note.* $^{*}p < .05$, $^{**}p < .01$, Alpha Cronbach coefficients in parenthesis; DTP Total = Dark Triad Personality (as a composite factor); CWB–O = counterproductive work-behaviors directed against the organization; CWB-I = counterproductive work-behaviors directed against individuals

Related to CWB-I, there are statistically significant correlations indices, positive, at a moderate level, with two out of the three facets of the DT, at a high level, in the case of Machiavellianism ($r$ =. 31, $p$ <.001), and in the case of Psychopathy ($r$ = .43, $p$ <.001). The Narcissism does not statistically significant correlate with CWB-I ($r$ = .02, $p$ =.785). Still, there is a statistically significant positive correlation, at a high level with depersonalization ($r$ = .51, $p$ <.001).

Regarding the correlations associated with CWB-O, the results are similar with the results above as in the case of CWB-I, namely Machiavellianism ($r$ = .29, $p$ <.001), respectively Psychopathy ($r$ = .37, $p$ < .001), records statistically significant, positive correlations, of medium intensity, with a very good significance with CWB-O, the third facet, Narcissism ($r$ = .80, $p$ = .368), not registering correlation in this respect. Depersonalization, similar to the results obtained for the second dimension of CWB, presents in relation to CWB-O, a statistically significant correlation, positive, of high intensity and with a very good significance ($r$ = .53, $p$ < .001).

## 4.2. REGRESSION ANALYSIS

We analyzed the existence of prediction models in the case of the occurrence of counterproductive behaviors in organizations from the perspective of personality traits of employees. Organizational counterproductive behaviors (CWB-O) and inter-individual counterproductive behaviors in organizations (CWB-I) were considered dependent variables. We generated a prediction model for each and the results are included in Tables 2 and 3.

Table 2. – Regression models between the personality facets of the dark triad and organizational counterproductive behaviors (CWB-O) (N=127)

| Variable | β | *t* | *p* | *R* | $R^2$ | $\Delta R^2$ |
|---|---|---|---|---|---|---|
| Personality | | | | | | |
| Model 1 | | | | | | |
| Psychopathy | .37 | 4.51*** | .001 | .37 | .14 | .14 |

Note. *$p$ < .05. **$p$ < .01, ***$p$ < .001; CWB–O = counterproductive work-behaviors directed against the organization

As shown in Table 2, the Psychopathy proved to be the only variable that contributes significantly to the regression model, $F_{change}$ (1,125) = 20.27, $p$ <.001, accounting for 14% from the variance of the occurrence of CWB. The other two facets of personality, Machiavellianism and Narcissism, did not contribute significantly in their capacity as independent variables to the emergence of CWB-O, being excluded by the system. We also controlled for age and gender. Therefore, only H1c is validated.

Table 3.- Regression models between the personality facets of the dark triad and inter-individual counterproductive behaviors (CWB-I) (N=127*)*

| Variable | β | *t* | *p* | *R* | $R^2$ | $\Delta R^2$ |
|---|---|---|---|---|---|---|
| Personality | | | | | | |
| Model 1 | | | | | | |
| Psychopathy | .43 | 5.36*** | .001 | .43 | .19 | .19 |

Note. *$p$ < .05. **$p$ < .01, ***$p$ < .001; CWB-I = counterproductive work-behaviors directed against individuals

According to the results included in Table 3 we observe a similarity with the results obtained for H1, meaning that the Psychopathy is the only variable that contributes significantly to the regression model $F_{change}$ (1,125) = 28.78, $p$ <.001and is responsible for 19% of the variance the occurrence of counterproductive behaviors at the inter-individual level within organizations. Also, Machiavellianism, Narcissism, and demographic variables, similar to the results obtained in the first hypothesis, were excluded from the system. Also, only H2c is validated.

## 4.3. TESTING THE MEDIATION MODEL

To test H3, we used the simple mediation method, using the Process v3.5 procedures (Hayes, 2013), in the SPSS. The procedure involves analyzing the independent and the dependent variable, as well as the mediator according to the stimulus-conditions-response model, and assumes that between treatment (cause) and result (effect) there is an interactive process of a certain complexity. In our case, the independent variable, DT, was analyzed as a global factor, the dependent variables were the two forms of counterproductive behaviors (CWB-O and CWB-I) and the mediating variable was considered the Depersonalization. The proposed mediation model is included in Figure 1.

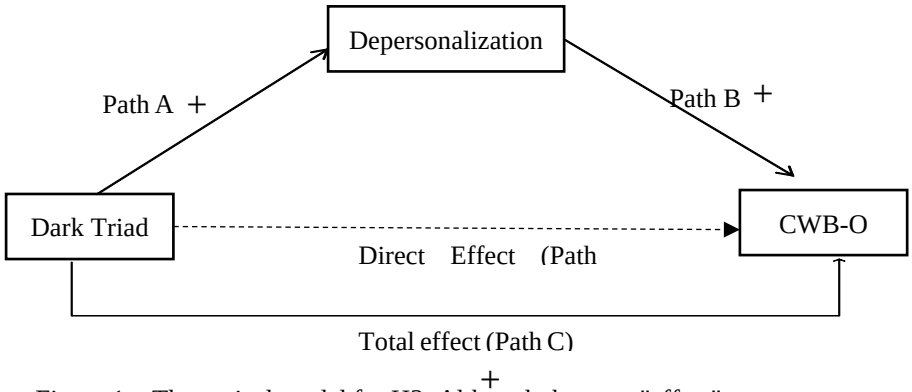


Figure 1 – Theoretical model for H3. Although the term "effect" may suggest a causal relationship, no inferences about causality are intended. The terminology introduced by Preacher and Hayes (2008) is used for reasons of consistency and clarification.

We used bootstrapping procedure with the number of 1000 samples set to generate the 95% confidence intervals. These are recommended in the content of the analysis because in this way the normality characteristic is no longer required as regards the distribution of the sample for which the indirect effect is calculated.

The results shown that depersonalization totally mediated the relationship between DTP and CWB through the two pathways (A and B), both of statistical significance, of a positive nature.

The result of the mediation analysis indicates that in the case of the relationship between DTP and CWB-O, the direct effect becomes statistically not significant ($B$ = .11, $p$ = .141, with a confidence interval between - .04 and .26) when the relationship is mediated by the depersonalization. Also, the indirect effect remains statistically significant ($B$ = .19, $p$ <.001, with a confidence interval between .09 and .32), indicating the existence of a total mediation relationship.

In the case of the result of the mediation analysis of the H3b, we observed that in the relationship between DTP and CWB-I, similar to the previously obtained results, the direct effect becomes statistically insignificant ($B$ = .10, $p$ = .078, with an interval trust located between -.02 and .22), when the situation is controlled through the mediator. The indirect effect remains statistically significant ($B$ = .13, $p$ <.001, with a confidence interval between .05 and .25), indicating in this case the presence of a total mediation relationship.

## 5. DISCUSSIONS AND CONCLUSIONS

According to the results recorded after testing the H1 and H2 hypotheses, we found that Psychopathy is the only facet of the dark personality that predicts the occurrence of dysfunctional behaviors in the Romanian organizational, in a proportion of 14% in case of counterproductive behaviors directed against the organization (CWB-O) and in a proportion of 19% regarding the occurrence of counterproductive behaviors directed against the individuals (CWB-I). Regarding the other two facets of the personality, both Machiavellianism and Narcissism did not register statistically significant results regarding the CWB prediction, consequently H1 and H2 being only partially confirmed. These results are in agreement with those obtained by Özsoy (2018) in a study conducted in the organizational environment of Turkey, in which Psychopathy ($B$ = .20, $p$ < .001) was the single one of DT personality that predicted 7% of the occurrence of CWB.

In supporting and explaining the above situation, other studies had shown that the involvement of Psychopathy, in a sub-clinical context, is more likely to trigger destructive behaviors in organizations than the Machiavellian or Narcissistic side, due, in particular, to the impulsivity and the aggression specific to this DT facet. Miller et al. (2016) stated that although Machiavellianism and Psychopathy have common elements, such as hedonism or impulsivity, low scores are also reported in terms of agreeableness or conscientiousness, Machiavellian individuals can wait

longer periods of time to and achieve goals despite the frustrations that arise. Therefore, we can assume that the manipulative and duplicitous attitude of Machiavellians can harm the companies in which they are employed, but it is much more likely that in the case of Psychopathy these dysfunctional behaviors appear faster, have a greater consistency given the low tolerance for frustration, as well as low impulse control, which can lead to more unpredictable and toxic behaviors. The same authors came to the conclusion that Psychopathy is the darkest element of this triad.

In contrast to the results of our study, in a recent study, Ying and Cohen (2018) reported the occurrence of CWB under the influence of Machiavellianism ($r$ = .33, $p$ <.001) for CWB-I and ($r$ = .45, $p$ < .001) for CWB-O. Similar to our results included in Table 2, a multiple linear regression analysis showed that both Narcissism and Psychopathy were excluded by the statistical system. Regarding the Narcissism, a meta-analysis reported its prediction in the onset of CWB, Psychopathy and Machiavellianism being excluded following the regression analysis (Grijalva & Newman, 2014). Therefore, we can observe both similarities and contrasts in terms of comparing the results of the present study with other international studies, among the possible explanations of these findings being the cultural and professional differences of each sample investigated.

The results of the current study highlight the role played by dark personality traits in triggering counterproductive behaviors in the organizations from the Romanian business environment. Thus, both in agreement and in contrast to the results of other similar studies we discussed during this research, we can conclude that at the facet level, psychopathy is the most important element of this triad, responding to the occurrence of CWB among employees in Romania.

As a mediator, the effect of depersonalization has a major impact when it mediates the relationship between two already connoted negative variables, respectively DT and CWB, amplifying the relationship between them. Therefore, following the signs of depersonalization manifested by employees can be one of the most effective strategies to prevent the occurrence of counterproductive behaviors and, respectively, the extremely high costs associated with them. As a last resort, following the numb gaze, fixed, empty look of employees who are already showing signs of burnout in the form of depersonalization may be the key to prophylaxis in the occurrence of important negative results at the organizational level.

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# PERSPECTIVES ON COPING MECHANISMS IN ADOLESCENT TEENAGERS

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***Abstract***

*Juvenile delinquency is due to the inability of the adolescent to adapt satisfactorily to the environment by adopting dysfunctional coping strategies. The improvement of delinquent vulnerabilities is done by learning new coping strategies following the application of a psychological intervention program. In this article we present the data of the ascertaining experiment regarding the results obtained following the application of a psychological intervention program regarding the improvement of dysfunctional coping strategies in delinquent adolescents. The effectiveness of the psychological intervention program demonstrates the validity of those theories of personality that claim that the individual is capable of change and that coping styles can be learned. These factors are involved in the perpetration of juvenile delinquency and therefore psychological intervention programs can change the destinies of young people who, in this way, have increased chances of adequate, non-delinquent adaptation to social life.*

***Keywords:*** *adolescence, delinquency, dysfunctional coping.*

## 1. INTRODUCTION

The behavior of the juvenile delinquent often reflects the status and socio-professional category (age, sex, presence of criminal record in other family members, schooling, family composition), convergence or divergence from work rules, family relations ( antagonistic or conciliatory, homelessness), race, religion, individual conception of existence (follower of sociability or individualism), behavioral disorders (caused by physical or mental accidents), the existence of the normalizing law and the possibility of its categorical application , the stage of one's own morality and even the ways of coping. The aggression phenomenon represents a concrete social existence, determined by the objective and subjective interactions,

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respectively by the way of reflecting the environment, through cognitions as well as by the way of elaborating the response relationship by the individual.

The trend of primary control refers to the attempts of individuals to change the external world so as to suit their personal needs and desires. Typical examples of primary control efforts are persistence in objectification efforts or investment of time and effort if obstacles arise. The tendency for secondary control, in contrast, is directed toward the inner world and involves the efforts of individuals to influence their own motivation, emotion, and mental representation (Rothbaum et al., 1982). Exemplary secondary control processes include positive reassessment, bottom-up comparison, award bias, or disengagement of objectives.

Heckhausen and Schulz (Wrosh, Heckhausen, & Lachman, 2000) developed a theory of lifelong control that proposes age-specific trajectories for primary control potential, primary control effort, and secondary control effort. The ability to achieve results, ie the potential for primary control, is expected to increase during childhood and early adolescence, to remain stable in adulthood and to decrease in old age.

Instead, individuals' efforts for primary control should remain stable throughout their lives, so that individuals are motivated to produce behavior-event contingencies throughout life. Compensatory secondary control efforts are expected to develop in middle childhood and then increase throughout life. Extensive use of compensatory secondary control as we age should help the individual compensate for developmental failure and loss that is more commonly experienced at older ages.

In most etiological models of delinquency there is at least one emphasis on stressors. How stressors contribute to delinquency. According to the general theory of social pressure (Merton, Ogien, 2002, Agnew, 2001), a pressure is a "situation in which the individual is not treated in the way he would like to be treated" (p.48). Objective pressures are events or conditions considered antagonistic by almost all members of a group. Subjective pressures are events or conditions that displease the individual experiencing them. The pressure of both types increases the possibility of negative emotional outcomes. Pressure theory suggests that delinquent activity reduces the pressure caused by exposure to negative stimuli. Because the coping literature uses both the terms "pressure" and "stress" for consistency, the term stress will be used for the cumulative experience caused by exposure to stressors.

We support the views that promote the idea that young people who are subjected to a range of stressors in the environment must develop coping skills. The importance of coping skills when faced with stressors is highlighted by the fact that most young people who grow up in high-risk environments overcome difficulties, lead a productive and crime-free life and are neither criminals nor pathologists.

Coping as a moderator and mediator. Exposure to environmental stressors such as poverty, the violent environment, poor parents and parental abuse and trauma do not directly create negative psychological and behavioral outcomes such as psychopathology and delinquency, but rather the assessed outcomes are associated with stressors and stress through mediation and moderation. Coping has been

conceptualized as a possible link in the relationship between stressors, psychopathology and delinquency. Coping can directly protect individuals from the negative influences of stressors, by eliminating or changing the source of stress, or indirectly by changing the way individuals respond to stressors that cannot be eliminated (Zeidner and Sakalofske, 1996).

Coping as a moderator. As a moderator, coping is seen as pre-existing, so the association between stress and psychopathology depends on what type of coping the individual tends to adopt. Sandler, Tein, and West (1994) suggested a model of stress relief moderation, according to which the relationship between stressors and negative outcomes is attenuated when an individual uses effective coping strategies. In contrast, moderating stress amplification suggests that the influence of stressors would increase when an inefficient coping strategy increase. Their findings indicated the active approach (namely, decision-making through cognitive strategies, direct problem solving, seeking support, and cognitive restructuring) as a moderator of the relationship between parental divorce and behavioral problems.

A model of mediating coping assumes that this is a flexible intervention process, which is directly influenced by the stress factor and which subsequently leads to the psychological outcome. Thus, the specific coping behavior generates the result and is not only associated with it. Complete mediation is a strong assumption, namely that once coping has been controlled, the relationship between stressors and the psychological outcome disappears completely. Partial mediation would suggest that a control of coping behavior would significantly reduce the relationship between the stressor and the outcome.

## 2. OBJECTIVES AND HYPOTHESES

### 2.1 OBJECTIVES

The aim of this research focuses on identifying the peculiarities of personality and delinquent behavior in adolescents, studying the level of their manifestations at the time (current area).

### 2.2 HYPOTHESES

- In this research we stated the following general hypothesis: we assume that the psycho-social and clinical profile of the delinquent adolescent is different from that of the non-delinquent adolescent, and the manifestations, levels and dynamics of delinquent behavior in adolescents are determined by a complex of intrinsic factors. , related to their personality data (personality traits, clinical profile and determining the degree to which a particular person fits or not the prototype personality with delinquent pattern), as well as extrinsic factors

(demographic data, family and social environment, level economic, level of education).

- The operational hypothesis is defined by the fact that delinquent adolescents use different coping strategies than non-delinquent ones.

## 3. METHOD

Sample description: The research sample consisted of 210 adolescents aged 14 to 17 years at the start of the research. The socio-demographic aspects of the structure are: sex, age, environment of origin, type of family, presence of delinquency in the family, material situation, school situation, number of classes graduated. The 210 teenagers were divided into two sub-groups: 102 delinquent teenagers, investigated by the police for criminal offenses and sent to the Ilfov Psychiatric Forensic Expert Commission to establish discernment about the deed and 108 teenage students at high schools in Ilfov County.

The place of examination of the sub-group of delinquent adolescents was the Ilfov Forensic Medicine Service, the Ilfov County Police Inspectorate and the Ilfov County Emergency Clinical Hospital.

The data from the criminal investigation files, the social investigations, the transcripts, the observations regarding the environment (family, relatives, school, local administration), the interview, the data from the files of the psychiatric forensic expertise commissions from Ilfov county, the psychological examinations were used. carried out by the expert commissions.

The interpreted data were structured according to the following investigated dimensions:

1. biographical data (age, gender, environment of origin, level of education);
2. judicial status (type of crime, age of first offense, recidivism);
3. family structure (type, material level, presence of delinquency)
4. psychological and psychopathological peculiarities that resulted from the examinations and applied psychological tests.

### 3.1 PSYCHOLOGICAL TESTS

The tool used to evaluate the coping mechanisms in the two subgroups of adolescents was the CERQ test. The cognitive-emotional coping assessment questionnaire is a multidimensional questionnaire, built to identify cognitive-emotional coping strategies, which a person uses after experiencing certain events or negative situations. A high score may indicate frequent use of that item as a cognitive coping strategy. A low score indicates less use of this strategy. The CERQ questionnaire measures the frequency of use of certain strategies, through 9 evaluation scales:

1. Self-blame - refers to the thoughts by which we blame ourselves for what happened.

2. Acceptance - refers to the thoughts by which we resign ourselves to what happened

3. Ruminating - we constantly think about the feelings and ideas associated with the negative event.

4. Positive refocusing - we think about pleasant things and not about the event itself

5. Refocusing on planning - we think about the steps we will follow to deal with the event;

6. Positive re-evaluation - through which we think to assign a positive meaning to the event, in terms of a personal development;

7. Putting in perspective - thoughts that minimize the severity of the event, when compared to other events;

8. Catastrophes - we explicitly emphasize the terror caused by the event

9. Guilt - we think of blaming others for what happened.

### 3.2 PROCEDURE

Description of the procedure. Following the training of the research participants, the evaluation questionnaires of the studied construct (coping mechanism) were applied. Participants were instructed to read the sentences given and to indicate how often they had certain thoughts, circling the most appropriate answer for each item of the scales. They were told that all options were correct. The way to complete the scales was pencil-paper. The completion of the scales was done without time limit.

Description of variables. The cognitive dimension of coping is not the only one that exists. Coping is a process that can take the form of behaviors, emotions, cognitions, physiological reactions. It is a mixture of emotions, behaviors, cognitions, and to intervene effectively we need all the pieces of the puzzle (cognitions, emotions, behaviors, physiological reactions of the body). It is not enough to know the cognitive dimension of coping and to ignore the behavioral or emotional one. It is less common for a person to use exclusively cognitive or exclusively behavioral coping. The coping strategies used by a person in a situation are rather complementary. It interferes in that person's attempt to deal with the problems they face, and in order for the intervention to be as effective as possible, the other dimensions of coping must be investigated, taking into account especially the relationship between cognitions, behaviors and emotions.

## 4. RESULTS

Description of results. Following the application of the CERQ test on coping strategies, it was found that the coping style of type Self-blame, the average response of delinquent adolescents was MD = 4.51 and a standard deviation of 2,119, which

indicates a low level score and shows that in the face of negative events, such as exposure to the police investigation is not responsible for the situation experienced, the blame is attributed to those around him and there are no concerns about thoughts that relate to the mistakes he may have made. Non-delinquent adolescents indicated responses with a mean MnD = 8.35 to a standard deviation of 1.75 (Table 1). These scores for non-offenders indicate an average level. Between the averages obtained by the two subgroups there are statistically significant differences, according to Table no.2 in which t = -14,480 and p = 0.0001.

In the Coping style Acceptance, scores were obtained for the group of delinquent adolescents with an average of MD = 8.31 and a standard deviation of 1.67 which determines an average level, in which these adolescents adopt, but not frequently, this style of coping. which consists in thoughts due to which we resign ourselves to what happened and accept the situation, thinking that it can no longer be changed and that life goes on. And the group of non-delinquent teenagers get here also an average level score MnD = 8.94 at a standard deviation of 2,029. There is no statistically significant difference between the results of the two groups, obtaining a score t = -2,415 and a p = 0.17.

The Ruminating coping style records as scores in delinquent adolescents an average MD = 2.99 at a standard deviation of 1,039 which falls to a very low level and shows us that these adolescents never use preoccupied with the feelings and thoughts they associate with an event negative, not taking responsibility. The group of non-delinquents obtain scores with an average of MnD = 7.43 and a standard deviation of 2,383, being also at a level below average that indicates the frequent non-adoption of this style of coping. But between the two groups there are statistically significant differences with a score t = -17.303 and p = 0.0001.

Regarding the coping style Positive refocusing, the group of delinquent adolescents obtain low level scores, the average being MD = 5.14 at a standard deviation of 2,044. These scores show that delinquents have a low level of emotional well-being, compared to non-delinquent adolescents whose scores reach an average of MnD = 8.99 and a standard deviation of 2,934. Between the two coping styles there are statistically significant differences between groups with t = -10,977 and p = 0.0001.

The refocusing on planning coping registers in the group of delinquents an average level with an average MD = 9.03 and a standard deviation of 3.222, close to the scores obtained by the group of non-delinquents, which fall in the same level MnD = 9.13, between the two groups, there being no statistical differences t = -. 222 and p = .824. Not all of these young people often choose to think about the steps they need to take to deal with a negative event or when they think of a plan to change a situation.

The coping style Positive Reassess records as scores in delinquent adolescents an average MD = 5.18 to a standard deviation of 2,203 which falls to a low level and shows us that these adolescents are never concerned with this style of coping, not

assuming and responsibility. The group of non-delinquents obtain scores with an average of MnD = 9.24 and a standard deviation of 4,207, being also at an average level that indicates the adoption of this style of coping. But between the two groups there are statistically significant differences with a score t = -17,303 and p = 0.0001.

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In the coping style, the average perspective of delinquent adolescents was MD = 2.17, at a standard deviation of 1,014, a very low level score. Perspective refers to those thoughts that reduce the severity of the event, by comparison with other events and emphasizes that there are more serious things in the world. A low score indicates the use of this strategy to a lesser extent in delinquent adolescents. The non-delinquent group obtains an average of Mnd = 10.21 with a standard deviation of 4,277 and an above average level, indicating that they frequently use this style of coping. We found significant differences between the two groups of adolescents at this factor MD = 2.17, MnD = 10.21 with t = -18.502 and p = 0.0001.

Analyzing the Catastrophic type coping we identify in the group of delinquents an average MD = 1.81 with a standard deviation of only 0.87 which indicates as an extremely low level and shows that these young people do not use in the face of a negative event, almost not in the recurrent type of thinking how terrible the event was and the fact that it is the most cruel / terrible thing that could happen, that it is much worse than what happened to others. But non-delinquent adolescents identify with this style of thinking by obtaining an average of MnD = 7.09 and a standard deviation of 2.74. Between the two coping styles there are statistically significant differences between groups with t = -18.584 and p = 0.0001.

Adolescent delinquents most often adopt as a coping style the responsibility of others for what happened. Blaming others occurs when we blame others for what happened to us, when we hold others responsible for what happened, and / or when we think about the mistakes others have made in this regard. The average obtained by them is 9.61 with a standard deviation of 4.46 compared to non-delinquents who obtain an average of 6.36 with a standard deviation of 2.12. We found significant

differences between the two groups of adolescents at this factor MD = 9.61, MnD = 6.36, t = 6.79, p = 0.0001.

Table 1. Descriptive data for coping strategies according to delinquent status

| Delinqent status | | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| Self-blame scor | Delincvent | 102 | 4.51 | 2.119 | .210 |
| | non-delincvent | 108 | 8.35 | 1.715 | .165 |
| Acceptance scor | Delincvent | 102 | 8.31 | 1.671 | .165 |
| | non-delincvent | 108 | 8.94 | 2.029 | .195 |
| Rumination scor | delincvent | 102 | 2.99 | 1.039 | .103 |
| | non-delincvent | 108 | 7.43 | 2.383 | .229 |
| Positive refocusing scor | Delincvent | 102 | 5.14 | 2.044 | .202 |
| | non-delincvent | 108 | 8.99 | 2.934 | .282 |
| Refocus on planning scor | Delincvent | 102 | 9.03 | 3.222 | .319 |
| | non-delincvent | 108 | 9.13 | 3.093 | .298 |
| Positive reassessment scor | delincvent | 102 | 5.18 | 2.283 | .226 |
| | non-delincvent | 108 | 9.24 | 4.207 | .405 |
| Putting into perspective scor | delincvent | 102 | 2.17 | 1.014 | .100 |
| | non-delincvent | 108 | 10.21 | 4.277 | .412 |
| Catastrophization scor | delincvent | 102 | 1.81 | .870 | .086 |
| | non-delincvent | 108 | 7.09 | 2.744 | .264 |
| Blame scor | delincvent | 102 | 9.61 | 4.469 | .442 |
| | non-delincvent | 108 | 6.36 | 2.129 | .205 |

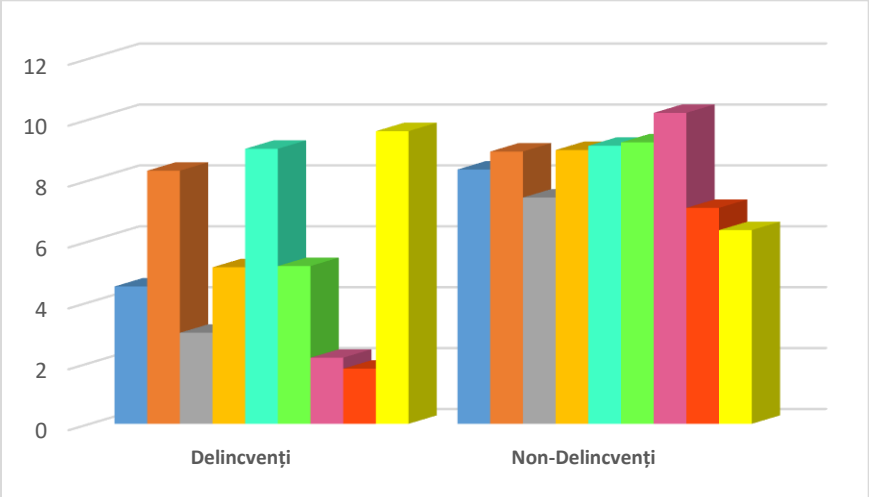


Fig. 1. Arranging coping styles on groups of delinquents and non-delinquents

*Table 2 Significance test for CERQ coping strategies*

Independent Samples Test

| | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference Lower | Upper |
| Self-blame scor | Equal variances assumed | 3.683 | .056 | -14.480 | 208 | .000 | -3.842 | .265 | -4.365 | -3.319 |
| | Equal variances not assumed | | | -14.394 | 194.384 | .000 | -3.842 | .267 | -4.368 | -3.316 |
| Acceptance scor | Equal variances assumed | 5.239 | .023 | -2.415 | 208 | .017 | -.621 | .257 | -1.129 | -.114 |
| | Equal variances not assumed | | | -2.428 | 204.255 | .016 | -.621 | .256 | -1.126 | -.117 |
| Rumination scor | Equal variances assumed | 63.936 | .000 | -17.303 | 208 | .000 | -4.435 | .256 | -4.940 | -3.930 |
| | Equal variances not assumed | | | -17.644 | 148.028 | .000 | -4.435 | .251 | -4.932 | -3.938 |
| Positive refocusing scor | Equal variances assumed | 9.184 | .003 | -10.977 | 208 | .000 | -3.852 | .351 | -4.544 | -3.160 |
| | Equal variances not assumed | | | -11.087 | 191.616 | .000 | -3.852 | .347 | -4.537 | -3.167 |
| Refocus on planning scor | Equal variances assumed | .136 | .712 | -.222 | 208 | .824 | -.097 | .436 | -.956 | .762 |
| | Equal variances not assumed | | | -.222 | 206.001 | .824 | -.097 | .436 | -.957 | .763 |
| Positive reassessment scor | Equal variances assumed | 40.169 | .000 | -8.606 | 208 | .000 | -4.054 | .471 | -4.982 | -3.125 |
| | Equal variances not assumed | | | -8.742 | 166.929 | .000 | -4.054 | .464 | -4.969 | -3.138 |
| Putting into perspective scor | Equal variances assumed | 124.112 | .000 | -18.502 | 208 | .000 | -8.041 | .435 | -8.898 | -7.185 |
| | Equal variances not assumed | | | -18.983 | 119.668 | .000 | -8.041 | .424 | -8.880 | -7.203 |
| Catastrophization scor | Equal variances assumed | 71.215 | .000 | -18.584 | 208 | .000 | -5.284 | .284 | -5.845 | -4.724 |
| | Equal variances not assumed | | | -19.025 | 129.425 | .000 | -5.284 | .278 | -5.834 | -4.735 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Blame scor | Equal variances assumed | 50.470 | .000 | 6.791 | 208 | .000 | 3.252 | .479 | 2.308 | 4.196 |
| | Equal variances not assumed | | | 6.670 | 142.750 | .000 | 3.252 | .488 | 2.288 | 4.216 |

## 5. CONCLUSIONS

Statistical results confirmed the hypothesis and demonstrated the existence of statistical differences in certain coping mechanisms between the group of delinquent and non-delinquent adolescents, reinforcing the idea that the majority of juvenile delinquents do not assume the facts, diminishing their importance and showing serenity on social injustice. This is explained by the fact that in families with a high position, education centered on moral beliefs and the avoidance of risks by family members predominate; as a result, intolerance towards breaking the law is strongly asserted and therefore children are less likely to commit delinquency than those from poor families with low social status, where there are many shortcomings that generate a sharp sense of social injustice, which leads to tolerance visible against the violation of the law and therefore, the chances of becoming a criminal may become more frequent.

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