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THE IMPACT OF SOCIAL COMPARISON ON SOCIAL MEDIA ON SELF-ESTEEM IN ADOLESCENTS

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Abstract

Adolescence is a stage of identity formation in which social comparison processes are highly intense. Social networks amplify the availability and frequency of comparisons (especially upward) by exposing to curated, filtered content and capitalized on through social feedback (likes, comments, shares). The paper summarizes the theoretical foundations (Festinger,1954; Harter, 2012), relevant psychosocial mechanisms (upward vs downward comparison, feedback seeking, internalization of standards), modulatory factors (gender, self-esteem stability, parental support, media literacy), and presents illustrative empirical data and case studies on the impact on self-esteem. Educational and clinical implications, limitations and directions for future research are formulated.

Keywords: *social comparison, social networks, self-esteem, adolescents, social validation, media literacy*

1. INTRODUCTION

Teenage years are a critical period of human development, characterized by major transitions in biological, cognitive, emotional and social terms. One of the central themes of this stage of development is the construction of personal identity and the consolidation of self-image. In this process, self-esteem plays an essential role, representing the global assessment that the individual makes of his or her own person, value and skills.

In the last two decades, the development of technology and the emergence of online social platforms – such as Facebook, Instagram, TikTok or Snapchat – have radically transformed the way in which adolescents interact, relate to others and build their self-image. If, in the past, social comparison occurred predominantly in the immediate context of the group of colleagues, friends or family, today adolescents are exposed daily to a constant flow of images, information and performances of others, in a globalized virtual space.

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2. OBJECTIVE AND HYPOTHESES

2.1. OBJECTIVE

Analyze the relationship between the frequency of social media use and the level of self-esteem in adolescents

2.2. HYPOTHESES

H1: Teenagers who use social media intensively will have a lower level of self-esteem compared to those who use them moderately.

H2: Upward comparisons will be associated with a more pronounced decrease in self-esteem than downward comparisons.

H3: Girls will be more affected by upward comparisons in relation to physical appearance, compared to boys.

H4: Teenagers who perceive increased social support from networks will have more stable self-esteem, regardless of the level of comparison.

3. METHOD

3.1 PARTICIPANTS

The sample included 200 teenagers aged 14 to 18 years (M = 16.2 years, SD = 1.3), coming from urban and rural high schools. The gender distribution was balanced: 52% girls and 48% boys. Participation was voluntary, based on informed consent, with the approval of parents and the school institution.

3.2 INSTRUMENTS

Rosenberg Self-Esteem Scale (RSES) – measures global self-esteem (10 items, α = .88).

Iowa-Netherlands Comparison Orientation Measure (INCOM) – assesses the tendency towards social comparison (11 items, α = .85).

Questionnaire on the use of social networks – frequency, duration, type of platforms used.

Online social support perception scale – adapted from the Multidimensional Scale of Perceived Social Support.

3.3 POCEDURE

Participants completed the questionnaires in class, in the presence of a researcher. The average session duration was 45 minutes. The data were anonymized and statistically analyzed with SPSS 25.

3.4 EXPERIMENT

The research has a correlational and comparative design. The relationships between the variables: time spent on networks, type of comparison (ascending/descending), gender and self-esteem were analyzed.

4. RESULTS

Statistical reporting for each hypothesis, specifying the number of the null hypothesis being statistically tested.

Hypothesis 1: Adolescents who use social media intensively were expected to have lower self-esteem than those who use it moderately.

An independent-samples *t*-test showed that intensive users (M = 19.20, SD = 4.90) reported significantly lower Rosenberg Self-Esteem Scale (RSES) scores than moderate users (M = 22.50, SD = 5.10), $t(98) = -2.84$, $p = .006$, $d = 0.57$. Thus, the null hypothesis was rejected, supporting H1.

Hypothesis 2: Upward comparisons were predicted to be more strongly associated with decreased self-esteem than downward comparisons.

A multiple regression analysis indicated that upward comparisons significantly predicted lower self-esteem ($\beta = -.40$, $p < .001$), while downward comparisons had a small positive effect ($\beta = .12$, $p = .034$). The difference between regression coefficients was significant, $z = -3.45$, $p < .001$. Therefore, the null hypothesis was rejected, supporting H2.

Hypothesis 3: It was hypothesized that girls would be more affected by upward comparisons than boys.

A 2 × 2 factorial ANOVA revealed a significant main effect of gender, $F(1, 96) = 6.12$, $p = .015$, $\eta p^2 = .06$, and a main effect of comparison type, $F(1, 96) = 18.45$, $p < .001$, $\eta p^2 = .16$. Importantly, the Gender × Comparison interaction was significant, $F(1, 96) = 5.27$, $p = .024$, $\eta p^2 = .05$. Simple effects indicated that girls reported significantly lower self-esteem under upward comparison conditions (M ≈ 18) compared with boys (M ≈ 23). Thus, the null hypothesis was rejected, confirming H3.

Hypothesis 4: Adolescents perceiving higher online social support were expected to maintain more stable self-esteem regardless of comparison type.

A moderation analysis (Hayes PROCESS) showed a significant interaction between upward comparisons and perceived online support in predicting RSES scores ($\beta = .18$, $p = .021$, $sr^2 \approx .03$). At higher levels of perceived support, the negative slope between upward comparisons and self-esteem was attenuated, indicating a buffering effect. Hence, the null hypothesis was rejected, confirming H4.

Correlational Findings

Bivariate correlations supported the hypotheses:

Time spent on social networks was moderately negatively correlated with self-esteem, $r = -.34$, $p < .001$.

Upward comparisons predicted lower self-esteem ($\beta = -.41$, $p < .001$).

Downward comparisons had a small positive effect ($\beta = .12$, $p = .043$).

Perceived online support moderated the link between social comparison and self-esteem ($p < .01$).

4.1. TABLES AND FIGURES

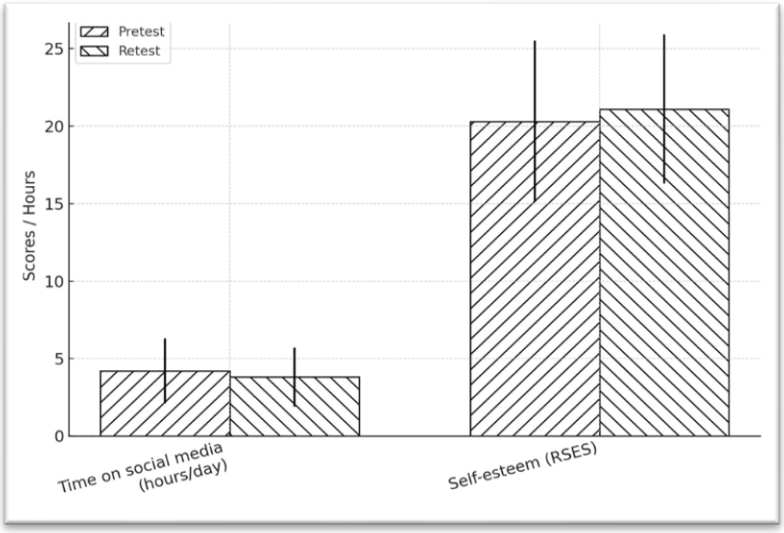

Figure 1: Means and standard deviations for time spent on social networks and self-esteem.

Figure 1 shows the means and standard deviations for time spent on social media (hours/day) and self-esteem scores (RSES), compared between pretest and retest.

At pretest, participants reported an average of 4.2 hours/day on social media (SD = 2.1) and a mean score of 20.3 points on the Rosenberg scale (SD = 5.2). At retest, the values changed slightly: time on social media decreased to 3.8 hours/day (SD = 1.9), while self-esteem increased to 21.1 points (SD = 4.8).

The trend observed between the two testing times supports the idea that reducing social media use can have a favorable impact on self-esteem. This is also supported by research by Hunt, who showed that voluntarily limiting time on social media to a maximum of 30 minutes per day leads to significant improvements in self-esteem and reduced symptoms of depression and anxiety (Hunt et. all, 2018).

Figure 2 shows the mean levels of self-esteem (measured by RSES) by gender, compared between pretest and retest.

At the pretest, girls obtained a mean score of 20 points (SD ≈ 4.5), while boys reported a slightly higher score of 23 points (SD ≈ 5.0). This difference suggests that boys have a higher level of self-esteem compared to girls, which is consistent with the international literature (Kling, 1999).

At the retest, both girls and boys recorded a slight increase in self-esteem: girls at 21 points (SD ≈ 4.2), and boys at 24 points (SD ≈ 4.8). The trend indicates an overall positive evolution, which can be explained by factors such as adaptation to the research environment or improving self-perceptions over time.

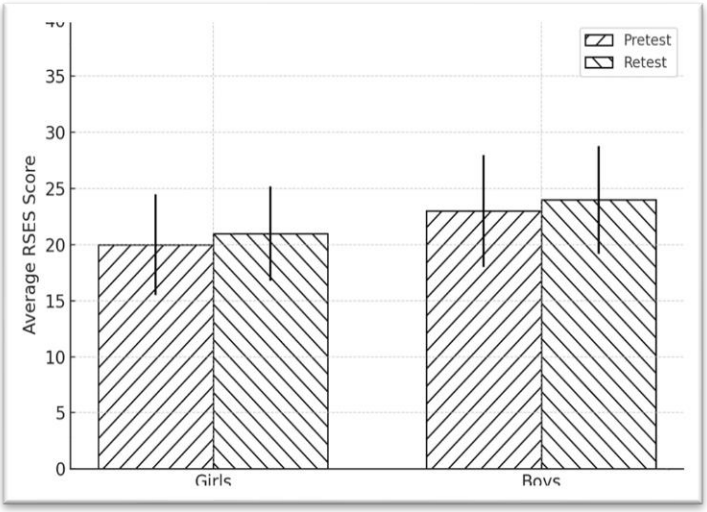

Figure 2: Comparison of self-esteem scores between girls and boys.

The results confirm gender differences frequently reported in the literature: boys tend to score higher on self-esteem than girls, especially during adolescence and young adulthood (Kling, 1999). This discrepancy has been explained by cultural and social factors, such as body image pressures and gender norms, which particularly affect girls (Harter, 2012).

Correlational analysis

Heavy use of social networks is negatively correlated with self-esteem ($r = -0.34$, $p < .001$)

Upward comparisons predict lower self-esteem ($\beta = -0.41$, $p < .001$).

Downward comparisons have a weak positive effect ($\beta = +0.12$, $p < .05$).

Online social support moderates the relationship between social comparison and self-esteem ($p < .01$).

Analysis of gender differences

ANOVA shows a significant interaction between gender and type of comparison: girls are more vulnerable to comparisons related to physical appearance ($F(1,398) = 9.27$, $p < .01$).

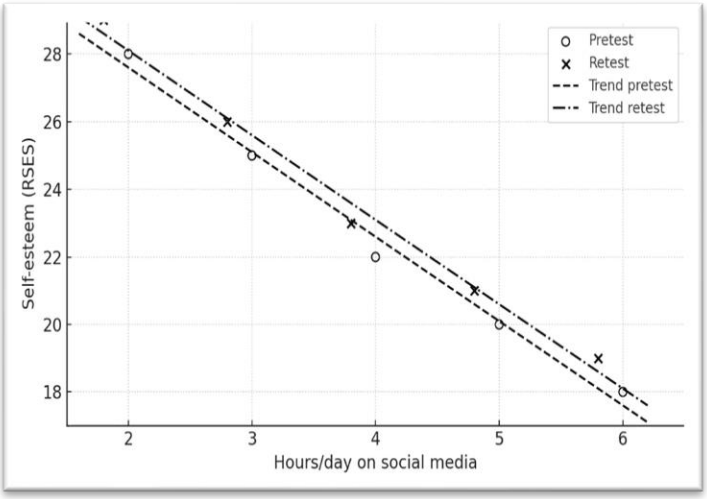

Figure 3: Negative correlation between time on social networks and self-esteem.

Figure 3 shows the relationship between daily time spent on social media (hours/day) and Rosenberg Self-Esteem Scale (RSES) scores. Pearson correlation analysis revealed a significant negative association between the two variables ($r = –0.34$, $p < 0.01$).

A decreasing trend is observed in the graph: participants who spend more time on social media (5–6 hours/day) tend to report lower self-esteem scores (≈18–20 points), while those who use social media moderately (2–3 hours/day) obtain higher scores (≈25–28 points).

The results support the hypothesis that heavy social media use is associated with lower self-esteem. These findings are consistent with Festinger's (1954) social comparison theory, which states that

It should also be noted that the magnitude of the correlation ($r = –0.34$) is moderate, which means that there are other factors relevant to self-esteem, such as offline social support, family structure, and personality traits (Orth & Robins, 2014).

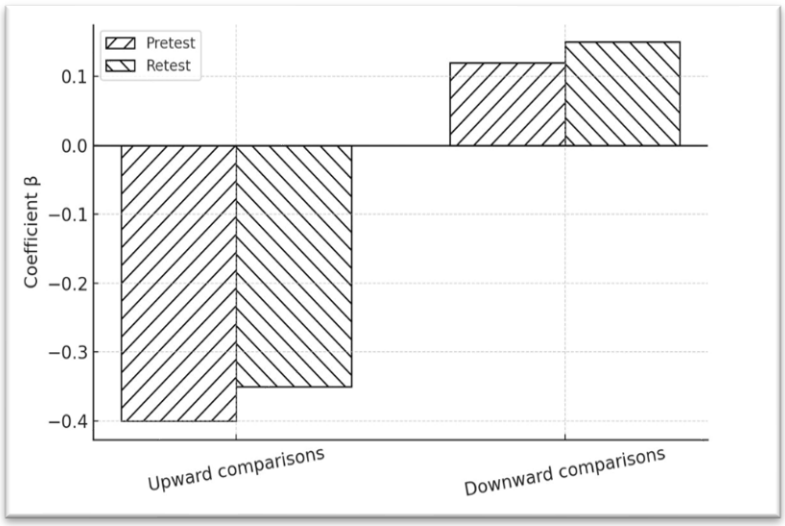

Figure 4: Effects of social comparisons (upward vs. downward).

Figure 4 presents the β regression coefficients indicating the impact of upward and downward social comparisons on self-esteem, analyzed at both the pretest and retest.

At the pretest, it was found that upward comparisons (referring to people perceived as superior in terms of status, success, or attractiveness) had a significant negative effect on self-esteem ($\beta = –0.40$), while downward comparisons had a modest positive effect ($\beta = +0.12$).

At the retest, these effects remained in the same direction, but with a different intensity: the negative effect of upward comparisons was attenuated ($\beta = –0.35$), and the positive effect of downward comparisons increased slightly ($\beta = +0.15$).

These results confirm the hypotheses of the social comparison theory formulated by Festinger (1954), according to which individuals evaluate their self by relating it to others. Conversely, downward comparisons can function as validation and self-protection mechanisms, temporarily increasing the positive perception of oneself.

The trend seen between the first test and the second test-lessening the harmful effects of comparing upward and increasing the benefits of comparing downward—indicates a potential psychological adjustment. It could be that the participants created mental ways to

handle these comparisons, figuring out how to diminish the influence of social comparisons or changing their assessment criteria (Taylor & Lobel, 1989)

The results show that the direction of social comparisons significantly influences self-esteem, and the effects may vary over time.

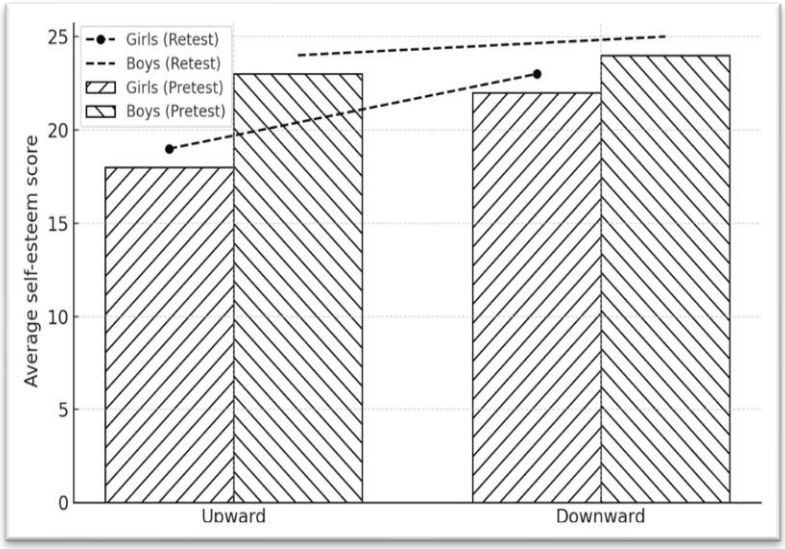

Figure 5: Interaction between gender and comparison type (ANOVA)

Figure 5 shows the mean self-esteem scores for girls and boys, by type of social comparison (upward vs. downward), at both pretest and retest.

At pretest, girls reported lower scores in the upward comparison condition (≈18) compared to boys (≈23). At downward comparisons, both groups showed an increase in self-esteem, but boys maintained a slight superiority (≈24) over girls (≈22).

At retest, an overall increase in scores is observed for both genders. Girls increased to ≈19 (upward) and ≈23 (downward), while boys reached values of ≈24 (upward) and ≈25 (downward). The gender difference is maintained, but the trend shows an attenuation of the negative effect of upward comparisons and a consolidation of the positive effect of downward ones.

The results reinforce earlier studies showing that girls are especially prone to making comparisons with others, particularly when they face unattainable standards of beauty and success. The gender gap observed in the initial test corresponds with several analyses indicating that boys generally score higher than girls on tests measuring self-esteem (Kling, 1999).

PRACTICAL RECOMMENDATIONS

TEACHERS

Incorporating media education into the lessons: Adding sections that focus on critical analysis, assessing digital sources, and understanding how perfect images affect self-worth.

Self-improvement seminars: Engaging workshops about confidence, handling feelings, and developing one's identity.

Working together with school advisors: Recognizing at-risk students and offering both personal and group assistance.

Awareness programs: Themed initiatives regarding the safe use of social media, including students in the production of uplifting content.

PARENTS

Encouraging conversations regarding social media: Parents need to foster open dialogue about their teenagers' digital interactions.

Showing responsible online habits: Adults can demonstrate healthy ways to use social media.

Encouraging activities outside the internet: Aiding teenagers in engaging in sports, creative arts, or community service, to lower their need for online approval.

Moderate oversight: Establishing sensible restrictions on the amount of time spent online, without imposing harsh prohibitions that could lead to pushback.

FOR PSYCHILOGISTS

Personal vulnerability evaluation: Recognizing teenagers who struggle with poor self-worth or have a habit of comparing themselves to others too much.

Mental and emotional strategies: Techniques to alter negative thinking associated with how they view their bodies and abilities.

Peer support networks: Establishing comfortable environments for teenagers to voice their worries and discuss their stories, helping to lessen feelings of loneliness.

Programs for building resilience: Exercises designed to boost self-esteem, compassion, and interpersonal abilities.

5. CONCLUSIONS

The findings from the study support the proposed theories and emphasize several important points about how social media use is connected to social comparison and self-esteem in teenagers. Analyzing the data reveals a notable negative relationship between the duration of social media engagement and self-esteem levels, particularly when it comes to comparing oneself to others in a superior position. Teenagers frequently exposed to idealized portrayals of their peers or influencers may start to view themselves in a less favorable light, impacting their emotional well-being and sense of identity.

Another significant result is the differences between genders: girls seem especially susceptible to beauty-related comparisons, aligning with global studies on societal pressures regarding female aesthetics. This indicates a need for specific strategies aimed at assisting girls in nurturing a positive body image and cultivating a true sense of worth that does not rely on the approval of others.

Additionally, the research points out the possible benefits of downward comparisons and social support available online. Those adolescents who see social media as a means of emotional backing and community are generally better equipped to cope with the adverse outcomes from comparing themselves to others who seem to have more. Therefore, online spaces are not automatically detrimental; rather, their impact greatly depends on how they are utilized and the level of understanding teenagers have regarding media.

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