



Self-esteem and Aggression in University Students: Investigating the Mediating Role of Social Comparison

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Abstract: Purpose of the present study was to explore indirect relationship between self-esteem and aggression through social comparison among university students. The sample comprised of 305 male and female students from three different universities in Quetta city. Rosenberg Self Esteem Scale (1965) was used for measuring self-esteem, and Buss-Perry Aggression Questionnaire (Buss & Perry, 1992) was used for measuring Aggression and Social Comparison Scale by Allan and Gilbert (1995) was used to measure students` tendency to evaluate themselves relative to others. Pearson Correlation results showed non-significant relationship of self-esteem with aggression. Link between self-esteem and social comparison was significant and negative. Significant positive association was observed between social comparison and aggression. Regression analysis endorsed both self-esteem and social comparison as significant predictors of aggression as outcome variable. Mediation analysis revealed that social comparison completely mediated the relationship of self-esteem with aggression. No significant differences were observed on self-esteem, aggression and social comparison between male and female students. It is concluded based on the findings of the present study that youth with low self-esteem involve in more social comparison and that more social comparison result in more aggression in such individuals. The findings of the present study are discussed in the context of the past research and suggestions for the future research are also included.

Key Words: Self-esteem, Social Comparison, Aggression, Mediation, University Students

Introduction

Aggression refers to any behavior that is purposefully directed to harm another person who does not consent to that harm (Anderson & Bushman, 2002). Biological perspectives suggest that aggression is rooted in our physiology. For instance, certain areas of the brain, such as the amygdala, are associated with aggression and emotional regulation. Hormones also play a role, high levels of testosterone, for example, have been linked to increased aggressive behavior (Archer, 2006). Genetics, too, may predispose individuals to higher levels of aggression (Miles & Carey, 1997). Frustration-Aggression Hypothesis is one of the pioneer psychological theories of aggression; the frustration-aggression hypothesis suggests that aggression is an automatic response to any blocking of goal-directed behavior. When people are not allowed to reach their goals, they often become frustrated; this can lead to aggressive acts (Dollard et al., 1939). According to Social learning theory, individuals learn aggressive behaviors by watching others, especially influential models such as parents, peers, or media figures. For example, a child who witnesses aggression at home may be more likely to express aggression themselves (Bandura, 1973).

The General Aggression Model integrates personal and situational variables to give thorough explanation for aggression. It suggests that aggression results from a combination of individual factors (like personality, beliefs, and past

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experiences) and situational factors (like provocation or stress). These factors influence our internal state, thoughts, emotions, and arousal, which then affect how we interpret situations and ultimately how we act (Anderson & Bushman, 2002).

Self-esteem

Self-esteem refers to unconscious beliefs about self, formed throughout life by how we see our worth, abilities and the reasons we attribute to the events in our lives. (Shindler, 2009). The judgment a person makes, and maintains routinely, of him or herself; that is, overall, self-esteem is an expression of acceptance or refusal. Indicating the person believes about self-worth (Coopersmith, 1981). According to Sociometer theory, our self-esteem fluctuates based on the social acceptance, if we feel valued then our self-esteem rises and it is low when we feel devalued (Leary & Baumeister, 2000; Leary et al., 1995). Self-esteem is not just a temporary emotion; it is an individual's subjective assessment of his/her own worth formed throughout life (Rosenberg, 1965). People with high self-esteem tend to feel secure, resilient, and motivated. They are more likely to take on challenges, form healthy relationships, and bounce back from setbacks. High self-esteem is linked with emotional stability, better coping mechanisms, and a lower risk of mental health issues. In contrast, low self-esteem weakens an individual's sense of self. People may doubt their self-worth; avoid challenging situations, and experience high levels of anxiety, depression, and hopelessness. They personalize failures and negative feedback, associating them with their self-identity (Orth & Robins, 2014).

Social Comparison

Social comparison means evaluating one's abilities, opinions, or status by making comparisons with others (Festinger, 1954). This behavior is a basic human action that impact thoughts, emotions, and behaviors in both subtle and overt ways. In the era of social media, people are exposed to filtered lives and achievements of others, making social comparison more influential in daily life (Vogel et al., 2014).

According to Social Comparison theory, individuals have an intrinsic desire to assess their own-worth. When objective information is unavailable, social comparison becomes their strategy. When comparison seems similar, whether its ability, situation, or personality, that comparison feels more meaningful (Festinger, 1954). Self-evaluation maintenance model emphasizes that individual struggle to maintain a positive self-image, adjust their response according to the situation. Comparisons with close others in domains significant to the self may threaten self-esteem, leading to withdrawal, devaluation of the domain, or changes in the relationship (Tesser, 1988).

Social Comparison Orientation is the tendency of individuals to frequently engage in and be influenced by social comparisons. High orientation individuals are more likely to be affected by and react emotionally and behaviorally to such comparisons (Gibbons & Buunk, 1999). Social media has expanded the impact of social comparison. Now, we compare ourselves not only against friends and classmates but also against influencers, celebrities, and even acquaintances. And normally we are exposed to curated lives of others, showing only their best moments, which can make such comparisons feel unjust (Vogel et al., 2014; Chou & Edge, 2012).

In psychology, this process matters because how we compare ourselves to others can affect how we feel about ourselves, and how we treat others. It is closely linked to self-esteem and can even influence aggression, especially when someone feels threatened, inadequate, or judged (Festinger, 1954; Bushman & Baumeister, 1998).

Aggression can be influenced by having a strong self-esteem, positive inclination towards others and acting responsibly towards self. Aggression is lower when a student's positive inclination towards others is higher and towards self is lower and when a student acts with greater responsibility towards self (Myburgh et al., 2020). A large number of research studies have been done exploring the relationship between self-esteem and aggression, but the mediating role of social comparison remains unexplored. This study is conducted to explore the relationship between self-esteem and aggression and the mediating role of social comparison.

Literature Review

Psychological theories and daily life problems both see aggression as a great issue at hand (Anderson & Bushman, 2002). One increasingly connected point is social comparison, or evaluating oneself in relation to others (Festinger, 1954). This self-reflection process evokes feelings of inadequacy, jealousy, isolation, and frustration, especially against others who are doing better (more successful or more fortunate) (Dijkstra et al., 2008).

A substantial positive correlation between social comparison and aggression was observed; meaning individuals who frequently engage in comparison tend to demonstrate aggression more (Han et al., 2024). These findings validate the general aggression model (GAM), which associates negative emotions resulting from comparison with likelihood of aggression (Anderson & Bushman, 2002).

DeWall et al. (2015) found that individuals who were unable to manage their emotions were more likely to show aggressive behaviors, especially when their self-esteem was low. Aggression is a complex behavior influenced by psychological and social factors; among them one (factor) is self-esteem (Baumeister et al., 1996; Donnellan et al., 2005). In past, researchers have debated over whether aggression is caused by low self-esteem or unstable high self-esteem (Baumeister et al., 1996). They argued that individuals with low self-esteem can respond aggressively when their self-concept is challenged. Similarly, Bushman et al., (2000) suggested that not only low self-esteem but threatened egotism can trigger aggressive behavior as well, especially in individuals with narcissistic traits. More direct negative correlations between self-esteem and aggression have been reported by other research, for example, a study observed that lower self-esteem was slightly but significantly associated with higher aggression (Silverberg, 2010).

Donnellan et al., (2005) observed that low self-esteem is related to aggression. In addition, Bynner et al., (1981) reported that those adolescents who have low self-esteem are more prone to be involved in delinquent acts, emphasizing the defensive role of positive self-esteem. This study is focused on physical aggression and its relationship with self-esteem (Anderson & Bushman, 2002; Buss & Perry, 1992). Empirical findings support the relationship between self-esteem and aggression (Alodia & Suryadi, 2021).

A weak but significant negative correlation was observed between social comparison and self-esteem in a study consisting of 198 late adolescents. This shows that individuals who frequently compared themselves to others had low self-esteem (Alodia & Suryadi, 2021). Results of empirical studies demonstrated that repeated exposure to upward social comparison especially through social media can indirectly weaken an individual's self-esteem (Vogel et al., 2014). When individuals compare their abilities and opinions against impractical expectations (through platforms like instagram etc), it can damage their self-identity (Noon, 2020).

Method

Cross-sectional and correlational research design was used in this study. Students from three universities in Quetta city participated in the study. Convenient sampling technique was used for the selection of sample. A total of 305 BS students, comprising of male and female students, participated in the study. Participant's ages ranged from 20 to 30 years. Before the collection of the data, each participant was informed about the objectives of the study, and their consent was taken. The data confidentiality was maintained at every stage. The Rosenberg Self-Esteem Scale (Rosenberg, 1965), the Social Comparison Scale (Allan & Gilbert, 1995) and the Aggression Questionnaire (Buss & Perry, 1992) were the three standardized scales used in this study.

The Rosenberg Self-Esteem Scale consisted of 10 items, was used to measure self-esteem. Some items on the Self-Esteem Scale were reverse coded, such as RSE-3, RSE-5, RSE-8, RSE-9, and RSE-10. The sum of components RSE-1 through RSE-10 was used to get the overall self-esteem score.

The 11-item Self-Comparison Scale was used to measure social comparison. The items on the Social Comparison Scale were evaluated directly, and the sum of the answers from SCS-1 to SCS-11 was used to get the final score. A 5-point Likert scale, with 1 denoting "strongly agree" and 5 denoting "strongly disagree," was utilized for each item on this measure.



The 29-item Buss-Perry Aggression Questionnaire was used to measure aggression. Two items (BPAQ-7 and BPAQ-18) were reverse coded. The sum of the answers to items BPAQ 1 through BPAQ 29 was used to measure the total score.

Statistical Package for Social Sciences (SPSS, version 26) was used for data analyses. Reverse-scored items were re-coded and then total scores were computed. To evaluate the data's normality and distribution, descriptive statistics along with standard error were computed.

Since all data for this study came from self-report questionnaires, there was no experimental manipulation. In addition to being given enough time to complete the questionnaires, participants were told they could leave at any moment without incurring any fees. Ethical principles, such as voluntary involvement, informed consent, and confidentiality, were rigorously adhered to. After data collecting was completed, all information was safely saved and kept private and intact by not sharing it with any outside parties.

Results

The present study was conducted to examine the indirect relationship between self-esteem and aggression through social comparison among university students. Firstly, the data was checked for normal distribution, missing values and extreme values in the scores. No missing values and outliers were detected.

Table 1

Descriptive Statistics, Cronbach's Alpha and Correlations coefficients for the Study Variables (N=305)

Variables	Items	Mean	S. D	Range	α	Skewness	1	2	3
Self Esteem	10	20.81	4.45	10 - 33	0.68	.08 (.140)	-	-.35**	.05
Social. Com	11	69.69	15.20	11 - 110	0.82	-.26 (.140)	-	-	-.12**
Aggression	29	82.30	14.57	44 - 126	0.79	-.05 (.140)	-	-	-

*P=.01***

Table 1 present the descriptive statistics, reliability coefficients (Cronbach's alpha), and Pearson correlation coefficients for the study variables: self-esteem, social comparison and aggression. The table shows the number of items for each scale, as well as measures of central tendency, variability and distribution (i.e., skewness and kurtosis). Reliability coefficients indicated acceptable internal consistency for all the three scales. The Pearson bivariate correlation analysis revealed a statistically significant negative coefficient for relationship between self-esteem and social comparison, and statistically significant coefficient for positive relationship between social comparison and aggression. However, the relationship between self-esteem and aggression was observed to be positive but non-significant ($r = .05$, $p = >.05$).

Table 2

Gender Differences in Self Esteem, Social Comparison and Aggression in University Students (N = 305)

Variables	Items	Male (n=174)		Female (n=131)		t	p	CI95%		Cohen's d
		Mean	S.D	Mean	S.D			LL	UL	
Self Esteem	10	20.74	4.47	20.90	4.45	-.31	.756	-1.17	.852	0.04
Social Com	11	70.30	14.90	68.91	15.61	.79	.428	-2.06	4.85	0.09
Aggression	29	81.19	15.33	83.70	13.46	-1.50	.136	-5.81	.792	0.18

In the above table, means and standard deviations are displayed for male and female students on self-esteem, social comparison and aggression. The results shown in table 2 indicate that there were non-significant differences between male and female on self-esteem, social comparison and aggression. The effect sizes were very small for all variables indicating that males and females in this sample did not differ significantly on these variables.

this study. As indicated by the previous research that even if effect sizes are small, the results could still have practical significance. Small changes in social comparison processes can result in meaningful reductions in aggression when applied across larger populations. Previous research indicates that school-based violence prevention programs frequently produce small effect sizes (around $d = -0.15$), however when applied on large scale, they produced observable decline in aggressive and violent behavior (Park-Higginson et al., 2008).

First hypothesis of the present study had proposed that self-esteem would be negatively and significantly correlated with aggression. Since from the data yielded no support for statistically significant relationship between the predictor and outcome variables therefore the first hypothesis in the present study stood unsupported. Earlier studies have also documented reports of non-significant relationship between self-esteem and aggression (e.g. Bushman & Baumeister, 1998; Hamilton, 2019). Studies by Ziqiang et al. (2007) also found an indirect relationship between self-esteem and aggression once a mediator was included, indicating that self-esteem may not independently predict aggression.

The second hypothesis in the present study that social comparison plays mediating role in the relationship between self-esteem and aggression was supported. The results from the data revealed significant indirect relationship between self-esteem and aggression through social comparison. This supports the idea that individuals with lower self-esteem are more involved in social comparisons, which in turn may increase aggression (Festinger, 1954).

Findings of the present study regarding mediating role of social comparison are also consistent with findings of the past empirical studies. Hu et al. (2023) studied over 650 Chinese adolescents and discovered a mediation chain of low self-esteem leading to jealousy (a form of negative social comparison) and less self-control and ultimately resulting in more aggression. These findings illustrate the mechanism of how social comparison play mediating role in the relationship between self-esteem and aggression.

No significant gender differences in self-esteem, social comparison, or aggression were detected in data of the present study, suggesting that these psychological processes function similarly for male and female students. This is consistent with evidence reported from meta-analytic findings, indicating that gender differences in self-esteem are very small; that aggression shows non-significant gender differences in non-clinical samples; and that social comparison functions equivalently for male and female students (Hyde, 2005).

Conclusion

This study makes a valuable contribution to the literature on psychological predictors of aggression by investigating the mediating role of social comparison in the relationship between self-esteem and aggression. The results indicate that those who have low self-esteem are more prone to compare themselves in relation to others, which in turn causes higher levels of aggression. The relationship of self-esteem with aggression was non-significant, indicating that impact of self-esteem on aggressive behavior occurs through social comparison. The results indicate non-significant gender differences across all variables, suggesting generalizability of the results. Findings of the present study can be used to guide intervention techniques. Interventions designed to increase self-esteem and decrease social comparison may be successful approaches for managing aggressive behavior. In addition, techniques aiming on self-acceptance, mindfulness and developing self-directed judgments rather than comparisons could be impactful for reducing aggression among youth.

Despite its contribution, the present research has limitations. As this study used cross-sectional and correlational research design which limits the ability to assess cause and effect relationship among variables and the temporal effect on this relationship. More specifically, while this study revealed significant relationship between self-esteem, social comparison, and aggression, it cannot determine if changes in self-esteem actually bring about changes in aggression through social comparison, or if the relationship might work conversely. This happens because the data was collected at a single point in time, making it difficult to examine how these variables might affect each other over time. For example, it is likely that low self-esteem led individual to be involved in repeated social comparisons, which may ultimately increase aggressive behavior. However, being involved in repeated social comparisons or showing aggressive behaviors might lower a person's self-esteem over time. In order to understand these phenomena more clearly, future research should



use longitudinal studies, which track participants over an extended period, or experimental studies, in which researchers test and confirm the direction of these relationships. Another limitation of the study is that it used self-report questionnaires to assess self-esteem, social comparison and aggression. So, the results can be influenced by the social desirability, where participants can minimize their aggressive behaviors and show their positive qualities (Podsakoff et al., 2003). Other data sources, such as peer reports, behavioral observations, or experimental methods should be used in future research, for better understanding of these psychological processes. Additionally, this research emphasized on general social comparison, future studies may explore upward and downward social comparison.

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