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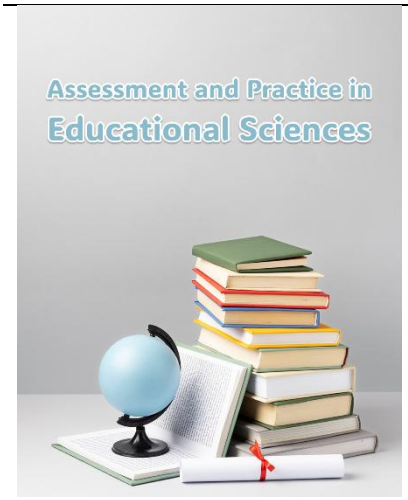

Presenting a Structural Model of the Effect of Self-Esteem on Creativity with the Mediating Role of Academic Self-Efficacy in Students

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ABSTRACT

The present study aimed to present a structural model of the effect of self-esteem on creativity with the mediating role of academic self-efficacy among students of the Islamic Azad University, Neka Branch. This research employed a descriptive–survey design. The statistical population included all students of the Islamic Azad University, Neka Branch, in the 2022–2023 academic year, totaling 1,653 individuals. Based on the Krejcie and Morgan table, a sample of 312 students was selected using stratified random sampling according to gender. Data collection tools included the standard Rosenberg Self-Esteem Questionnaire, the Torrance Creativity Questionnaire, and the McIlroy and Bunting Academic Self-Efficacy Questionnaire. The reliability coefficients, calculated using Cronbach's alpha, were 0.84 for the self-esteem questionnaire, 0.78 for the creativity questionnaire, and 0.83 for the academic self-efficacy questionnaire, indicating acceptable reliability for these instruments. Data were analyzed using structural equation modeling (SEM) with Amos software. Self-esteem had a positive and direct effect on students' creativity and academic self-efficacy. Moreover, academic self-efficacy had a positive and direct effect on students' creativity. In addition, self-esteem influenced creativity through the mediating role of academic self-efficacy among students of the Islamic Azad University, Neka Branch. It is concluded that students with higher self-esteem and academic self-efficacy demonstrate greater creativity, employ more effective learning strategies, and ultimately achieve better performance.

Keywords: Self-esteem, Creativity, Academic self-efficacy, Students, Neka

Introduction

Self-esteem, as a fundamental construct in psychology and education, has long been recognized as a crucial determinant of students' learning experiences, motivation, and overall academic development. It refers to an individual's evaluative perception of their own worth and competence, influencing not only their emotional well-being but also their cognitive and behavioral engagement in academic settings (1, 2). High self-esteem has been linked to increased academic engagement, resilience, and persistence in the face of challenges (3, 4), while low self-esteem often correlates with avoidance behaviors, reduced participation, and decreased creativity (5, 6). The interplay between self-esteem and creativity is of particular importance in

the context of higher education, where the cultivation of innovative thinking and problem-solving is critical for academic success and professional readiness (7, 8).

Creativity, often defined as the capacity to generate novel and useful ideas, is not a static trait but a dynamic process influenced by cognitive, affective, and social factors (9, 10). Within the academic sphere, creativity plays a pivotal role in enabling students to approach learning tasks with flexibility, originality, and persistence (11, 12). Research indicates that students with higher self-esteem tend to demonstrate greater creative potential, as self-assured individuals are more willing to take intellectual risks and explore unconventional solutions (7, 9). Furthermore, creative performance is often mediated by psychological constructs such as cognitive flexibility, openness to experience, and self-efficacy, which are themselves shaped by self-esteem (4, 13).

Academic self-efficacy, defined as students' beliefs in their capabilities to successfully perform academic tasks, emerges as a central mediating factor in the self-esteem–creativity relationship (4, 14). Bandura's social cognitive theory posits that self-efficacy beliefs regulate motivation, effort, and perseverance, which in turn affect learning outcomes and creative expression (13, 15). Empirical evidence supports the view that students with strong academic self-efficacy exhibit higher levels of intrinsic motivation, employ more adaptive learning strategies, and demonstrate superior problem-solving abilities (16, 17). Conversely, low academic self-efficacy may hinder creative engagement, as students doubt their ability to generate original ideas or solve complex problems (5, 6).

The relationship between self-esteem and academic self-efficacy is well documented, with numerous studies reporting significant positive correlations between the two constructs (1, 18). Students with high self-esteem often perceive themselves as capable learners, which enhances their confidence in handling challenging academic tasks (2, 19). Academic self-efficacy not only predicts academic performance but also mediates the influence of self-esteem on learning outcomes and creativity (4, 15). This mediational role suggests that interventions aimed at boosting self-esteem could indirectly enhance creativity by strengthening students' beliefs in their academic abilities (14, 20).

Moreover, creativity in academic contexts is shaped by multiple factors, including achievement motivation (10, 12), emotional intelligence (21), and the quality of the learning environment (16, 17). Achievement motivation, in particular, has been shown to strengthen the link between self-efficacy and creative performance by encouraging persistence and sustained effort in problem-solving tasks (11, 15). Similarly, emotional intelligence enhances both self-esteem and creativity by enabling students to regulate their emotions, navigate social interactions, and cope effectively with stress (8, 21). These findings underscore the need to view self-esteem, self-efficacy, and creativity as interdependent constructs within a broader psychosocial framework.

Educational research has increasingly highlighted the role of innovative pedagogical approaches in fostering these competencies. Constructivist learning environments, for example, encourage active engagement, collaboration, and real-world problem-solving, thereby enhancing both self-efficacy and creative thinking (16, 17). Creativity-based education has been found to significantly improve students' academic performance, particularly when instructional strategies promote autonomy, mastery, and self-directed learning (22, 23). Similarly, e-learning platforms, when designed to support interaction and personalized feedback, can stimulate creativity and self-confidence (16, 24). These approaches align with the growing emphasis on 21st-century skills, where creativity, critical thinking, and self-regulation are viewed as essential for academic and career success (10, 12).

The relevance of examining self-esteem, academic self-efficacy, and creativity together becomes even more pronounced in the context of contemporary academic challenges. Factors such as perfectionism in supervisory relationships (24), behavioral activation strategies for enhancing well-being (8), and social integration in competitive educational environments (20) all

interact with these constructs in complex ways. For instance, while supervisor perfectionism can motivate high standards, it may also undermine self-esteem and creativity if perceived as overly critical (24). On the other hand, interventions like behavioral activation therapy have been shown to boost both happiness and creativity, suggesting that psychological well-being is a key enabler of academic innovation (8).

In light of these interconnections, the present study seeks to extend the literature by testing a structural model in which academic self-efficacy mediates the relationship between self-esteem and creativity among university students.

Methods and Materials

The research method, in terms of purpose, is applied, and in terms of data collection and analysis approach, it is descriptive and of the structural modeling type. The statistical population of this study included all students of the Islamic Azad University, Neka Branch, enrolled in the 2022–2023 academic year, totaling 1,653 individuals. The statistics were obtained from the Islamic Azad University, Neka Branch. The sample size, based on the Krejcie and Morgan table (sample size determination from population size), was determined to be 312 students, who were selected using stratified random sampling according to gender. Furthermore, three questionnaires were used to collect the required data in this research.

Rosenberg Self-Esteem Questionnaire (1973): This is a 10-item questionnaire designed and administered to assess the level of self-esteem. It includes two components: life satisfaction and feeling good. Items 1, 2, 3, 4, and 5 measure life satisfaction, while items 6, 7, 8, 9, and 10 measure feeling good. The scoring is based on a four-point Likert scale: Strongly Agree (4), Agree (3), Disagree (2), Strongly Disagree (1). It should be noted that items 6, 7, 8, 9, and 10 are reverse scored.

Torrance Creativity Questionnaire (1992): This is a 60-item questionnaire designed and administered to assess students' creativity levels. Developed by Torrance (1992), it consists of four components: fluency, flexibility, originality, and elaboration. Items 1–15 measure fluency, items 16–30 measure flexibility, items 31–45 measure originality, and items 46–60 measure elaboration. The scoring method assigns 1 point to the first statement, 2 points to the second, and 3 points to the third. In the study by Seyyedi (2018), Cronbach's alpha was calculated at 0.82. Torrance (1992) reported the reliability of this questionnaire to be 0.86.

McIlroy and Bunting Academic Self-Efficacy Questionnaire (2002): Developed by McIlroy and Bunting in 2002, this scale evaluates the academic behaviors, planning, and organization of students. It consists of 10 items, scored on a seven-point Likert scale (Strongly Disagree (1), Disagree (2), Slightly Disagree (3), Neutral (4), Slightly Agree (5), Agree (6), Strongly Agree (7)). It should be noted that items 5, 6, and 9 are reverse scored. This questionnaire is unidimensional. In the study by Ghorbani Valik Chali (2012), Cronbach's alpha was calculated at 0.86, indicating good reliability. McIlroy and Bunting (2001) reported a reliability coefficient of 0.91 for this scale. Given that the questionnaires used in this research are standardized, their face validity was confirmed by academic supervisors and advisors. To assess reliability in this study, the questionnaires were first distributed among participants, and then Cronbach's alpha was calculated as follows: self-esteem = 0.84, creativity = 0.78, academic self-efficacy = 0.83, all indicating acceptable reliability.

For data analysis, AMOS software was used. Since the research involved model presentation, the data were analyzed based on structural equation modeling (SEM).

Findings and Results

Hypothesis 1: Self-esteem affects students' creativity.

Table 1. Results of the effect of self-esteem on students' creativity

Hypothesis	T-Value	Significance Level	Standardized Path Coefficient

First	8.004	0.000	0.431

As shown in Table 1, the T-Value and significance level related to the effect of self-esteem on students' creativity were 8.004 and 0.000, respectively. Since the T-Value is greater than 1.96 and the significance level is less than 0.05, it can be concluded that self-esteem affects creativity in students. Moreover, given that the standardized path coefficient is 0.431, it can be inferred that self-esteem has a positive and direct effect on students' creativity.

Hypothesis 2: Self-esteem affects students' academic self-efficacy.

Table 2. Results of the effect of self-esteem on students' academic self-efficacy

Hypothesis	T-Value	Significance Level	Standardized Path Coefficient
Second	8.616	0.000	0.517

As shown in Table 2, the T-Value and significance level related to the effect of self-esteem on academic self-efficacy in students were 8.616 and 0.000, respectively. Since the T-Value is greater than 1.96 and the significance level is less than 0.05, it can be concluded that self-esteem affects academic self-efficacy in students. Moreover, given that the standardized path coefficient is 0.517, it can be inferred that self-esteem has a positive and direct effect on students' academic self-efficacy.

Hypothesis 3: Academic self-efficacy affects students' creativity.

Table 3. Results of the effect of academic self-efficacy on students' creativity

Hypothesis	T-Value	Significance Level	Standardized Path Coefficient
Third	7.718	0.000	0.407

As shown in Table 3, the T-Value and significance level related to the effect of academic self-efficacy on creativity in students were 7.718 and 0.000, respectively. Since the T-Value is greater than 1.96 and the significance level is less than 0.05, it can be concluded that academic self-efficacy affects creativity in students. Moreover, given that the standardized path coefficient is 0.407, it can be inferred that academic self-efficacy has a positive and direct effect on students' creativity.

Main Hypothesis: Self-esteem affects creativity with the mediating role of academic self-efficacy among students of the Islamic Azad University, Neka Branch.

To examine the mediating role of academic self-efficacy in the relationship between self-esteem and creativity, Baron and Kenny's test was used in this study.

The first condition is that the independent variable must have a significant relationship with the dependent variable (path c).

The second condition is that the relationship between the independent and mediating variables must be significant (path a).

The third condition is the confirmation of a significant relationship between the mediating and dependent variables (path b).

The fourth condition is that when the mediating variable is entered into the regression equations, the relationship between the independent and dependent variables becomes non-significant—in which case the mediating variable is a full mediator—or that this relationship decreases in the presence of the mediating variable but remains significant, in which case the mediating role is partial (path c′).

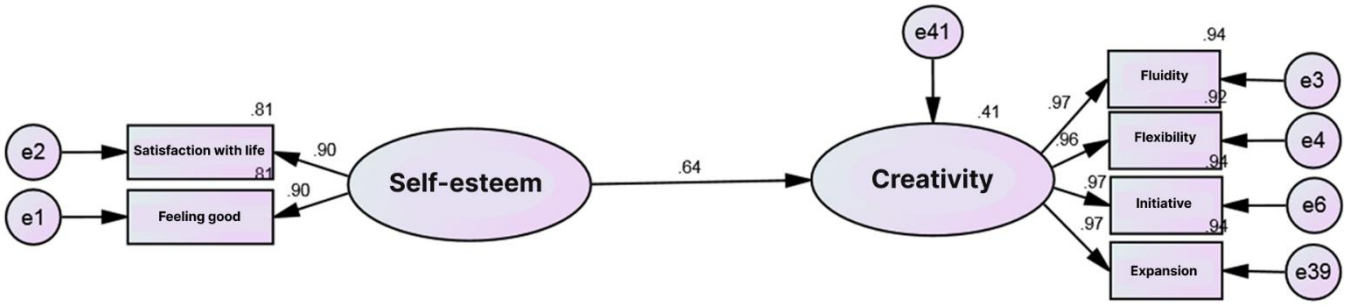

Figure 1. Standardized path coefficient between self-esteem and creativity without the mediating variable (path c).

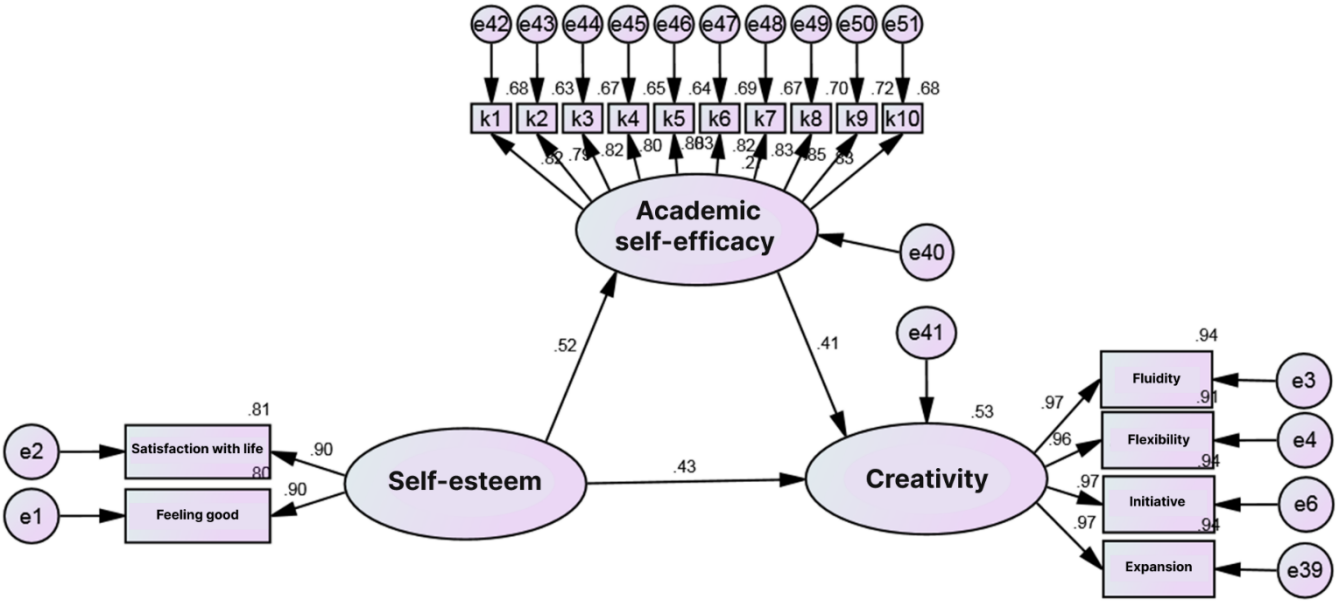

Figure 2. Standardized path coefficient between self-esteem and creativity in the presence of the mediating variable of academic self-efficacy (path c′).

Table 4. Results of testing the mediating role of academic self-efficacy in the relationship between self-esteem and creativity

Steps of Baron and Kenny Test	Independent Variable	Dependent Variable	Path Coefficient	T-Value (Critical Ratio)	Significance Level
First Condition	Self-esteem	Creativity	0.642	11.998	0.000
Second Condition	Self-esteem	Academic self-efficacy	0.517	8.616	0.000
Third Condition	Academic self-efficacy	Creativity	0.407	7.718	0.000
Fourth Condition	Self-esteem	Creativity	0.431	8.004	0.000

As shown in Table 4, the significance level for the relationship between self-esteem and creativity in the absence of the mediating variable was 0.000, which is less than 0.05. The path coefficient was 0.642, and the T-Value was 11.998, which is greater than 1.96. Therefore, it can be concluded that self-esteem affects creativity, confirming the first condition. The significance level, path coefficient, and T-Value for the relationship between self-esteem and academic self-efficacy were 0.000, 0.517, and 8.616, respectively. Since the significance level is less than 0.05 and the T-Value is greater than 1.96, it can be concluded that self-esteem affects academic self-efficacy, confirming the second condition. The significance level, path coefficient, and T-Value for the relationship between academic self-efficacy and creativity were 0.000, 0.407, and 7.718, respectively. Since the significance level is less than 0.05 and the T-Value is greater than 1.96, it can be concluded that academic self-efficacy affects creativity, confirming the third condition. The significance level for the relationship between self-esteem and creativity in the presence of the mediating variable (academic self-efficacy) was 0.000, which is less than 0.05. The path coefficient was 0.431, and the T-Value was 8.004, which is greater than 1.96. Therefore, it can be concluded that self-esteem affects creativity in the presence of the mediating variable, and since this relationship decreased compared to the absence of the mediating variable but remained significant, the mediating role of academic self-efficacy is partial. The mediating effect in this section is thus confirmed. Consequently, it can be concluded that self-esteem affects creativity with the mediating role of academic self-efficacy among students of the Islamic Azad University, Neka Branch.

Discussion and Conclusion

The findings of this study demonstrated that self-esteem has a significant and positive direct effect on creativity among university students, supporting the notion that individuals with a positive self-concept are more likely to engage in creative thought processes and generate novel ideas. This aligns with prior evidence indicating that self-esteem is positively associated with creative potential, as high self-esteem enhances willingness to take risks, openness to unconventional solutions, and perseverance in the face of challenges (7, 9). The structural model also revealed that self-esteem exerts a significant and positive influence on academic self-efficacy, a result that corroborates previous findings which have consistently shown that students who value themselves highly tend to perceive greater competence in their academic abilities (1, 18). Moreover, academic self-efficacy was found to have a significant positive effect on creativity, emphasizing its role as a motivational and cognitive driver in the creative process (14, 15). Most importantly, the analysis confirmed that academic self-efficacy partially mediates the relationship between self-esteem and creativity, suggesting that self-esteem contributes to creativity both directly and indirectly through its influence on students' academic confidence.

The mediating role of academic self-efficacy identified in this study is consistent with theoretical frameworks and empirical studies that conceptualize self-efficacy as a mechanism through which self-esteem impacts learning outcomes and creative expression. For example, Bandura's social cognitive theory underscores that individuals' beliefs in their capabilities shape their goals, persistence, and adaptability, all of which are critical for creative engagement (4, 13). Empirical findings further suggest that students with higher academic self-efficacy are more likely to adopt mastery-oriented learning strategies, seek innovative solutions to problems, and persist in the face of setbacks (16, 17). The present results parallel those of Du and Shi (15), who found that creative self-efficacy mediates the relationship between achievement goals and creativity, and extend this evidence by demonstrating that general academic self-efficacy can similarly mediate between a broader personality construct—self-esteem—and creativity.

Furthermore, the positive link between self-esteem and academic self-efficacy found here reinforces prior work indicating that these two constructs are mutually reinforcing in academic contexts (1, 6). Students with strong self-esteem are more confident in their academic competencies, which not only improves performance but also fosters the confidence necessary to approach complex problems creatively (2, 19). This is in line with research showing that academic self-efficacy contributes to self-regulation, effective time management, and proactive engagement in learning—all of which support creative endeavors (13, 14). The finding that self-esteem directly predicts creativity even in the presence of the mediator also highlights that positive self-perception can inspire creativity beyond cognitive-motivational pathways, possibly through emotional resilience, openness to new experiences, and intrinsic motivation (8, 12).

The observed relationship between academic self-efficacy and creativity is strongly supported by previous literature. Students with higher self-efficacy tend to view challenging tasks as opportunities for growth rather than threats, which encourages divergent thinking and innovative problem-solving (10, 17). In turn, this creative engagement can contribute to higher academic achievement, creating a positive feedback loop between creativity, self-efficacy, and performance (16, 20). The present findings are consistent with Salari Chineh Parvin (21), who identified psychological capital, including self-efficacy, as a mediator between creativity and academic achievement. Moreover, this study complements evidence from Mohebbi and Shamabadi (23) indicating that creativity is significantly correlated with self-confidence and academic success, further validating the theoretical premise that self-beliefs are integral to creative performance.

Another important implication of these findings is the interconnectedness of affective, cognitive, and motivational factors in academic creativity. For instance, the role of self-esteem in fostering academic self-efficacy resonates with the results of

Murad (5) and Hernández and Luy-Montejo (18), who found that self-esteem contributes to self-efficacy in diverse cultural and academic contexts. Similarly, the observed mediating effect reflects the dynamic interactions identified by Stolz (11), where creative problem-solving experiences enhance both creative self-efficacy and academic performance. This reinforces the argument that educational interventions aiming to enhance creativity must also target underlying self-beliefs to be effective.

The partial mediation effect found in this study further suggests that interventions should adopt a multifaceted approach. Enhancing self-esteem may directly increase creativity by improving emotional resilience, optimism, and openness to new experiences (7, 8), while simultaneously boosting academic self-efficacy, which strengthens students' motivation and willingness to engage with challenging, open-ended tasks (4, 12). This dual pathway underscores the importance of integrated educational programs that develop both affective-motivational and cognitive competencies.

Overall, these findings make a meaningful contribution to the understanding of the mechanisms linking self-esteem, academic self-efficacy, and creativity in university students. They support a growing body of literature emphasizing the need to cultivate positive self-perceptions and confidence in academic ability as a foundation for creative performance (10, 16). This study extends existing research by empirically validating the mediating role of academic self-efficacy in this relationship and provides evidence for designing interventions that simultaneously target self-esteem and self-efficacy to foster creativity in higher education contexts.

While the results offer valuable insights, certain limitations should be acknowledged. First, the study employed a cross-sectional design, which restricts the ability to draw causal inferences about the relationships among self-esteem, academic self-efficacy, and creativity. Longitudinal or experimental designs would be necessary to establish temporal precedence and causality. Second, the sample was drawn exclusively from students at a single branch of the Islamic Azad University, which may limit the generalizability of the findings to other institutions, academic disciplines, or cultural contexts. Third, the reliance on self-report measures introduces the potential for social desirability bias and common method variance, which could inflate the observed relationships. Finally, the study focused solely on academic self-efficacy as a mediator, without considering other possible mediators such as emotional intelligence, intrinsic motivation, or learning strategies, which may also play significant roles in linking self-esteem to creativity.

Future studies should address these limitations by employing longitudinal research designs to examine how changes in self-esteem and academic self-efficacy over time influence creativity. Expanding the sample to include students from different universities, cultural backgrounds, and academic disciplines would enhance the external validity of the findings. Researchers could also incorporate multiple methods of assessment, including performance-based creativity tasks and teacher evaluations, to complement self-report measures and reduce potential bias. Moreover, future work should explore additional mediating and moderating variables, such as resilience, emotional intelligence, achievement motivation, and perceived social support, to develop a more comprehensive understanding of the mechanisms underlying the self-esteem–creativity relationship. Experimental interventions targeting both self-esteem and self-efficacy could also be designed and tested to determine their causal impact on creative outcomes in educational settings.

Educators and academic administrators can draw on these findings to design and implement interventions that simultaneously enhance students' self-esteem and academic self-efficacy, thereby fostering creativity. Programs should include activities that promote positive self-reflection, recognition of personal achievements, and constructive feedback, all of which can strengthen self-esteem. Instructional strategies grounded in constructivist principles, such as collaborative problem-solving, project-based learning, and inquiry-driven assignments, can build academic self-efficacy by allowing students to experience mastery and autonomy. Integrating creativity training into the curriculum, alongside mentorship programs that encourage risk-taking and innovation, can further reinforce the positive cycle between self-esteem, self-efficacy, and creative performance.

Such initiatives can prepare students not only for academic success but also for the complex, adaptive problem-solving demands of their future professional lives.

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Authors' Contributions

All authors equally contributed to this study.

Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

All ethical principles were adheried in conducting and writing this article.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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