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Original scientific article**GENDER AND AGE DIFFERENCES IN SELF-ESTEEM AMONG ADOLESCENTS**

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ABSTRACT

The aim of this research is to examine the effects of gender and age, as well as their potential interaction, on self-esteem across early, middle, and late adolescence. The study included 305 elementary school students, 324 high school students, and 281 university students. The average age of participants was $M = 12.57$ ($SD = .63$) in the younger adolescent group, $M = 16.49$ ($SD = .57$) in the middle adolescent group, and $M = 20.51$ ($SD = 1.16$) in the older adolescent group. The following measurement instruments were used: General Data Questionnaire and Rosenberg Self-Esteem Scale. The results of the two-way ANOVA showed a statistically significant main effect of age group ($F(2, 904) = 5.77, p = .00, \eta^2 = .01$). Neither the main effect of gender nor the interaction between gender and age group were statistically significant, indicating that self-esteem levels do not differ significantly between males and females within any age group. The post hoc analysis showed a statistically significant difference in mean self-esteem scores between the younger and middle adolescent groups, with middle adolescents reporting lower self-esteem. The obtained results are discussed in relation to the developmental characteristics of different periods of adolescence.

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KEYWORDS:

Self-esteem; Adolescence; Gender and age differences

SAŽETAK:

Cilj istraživanja je ispitivanje uticaja pola i uzrasta, kao i njihove moguće interakcije, na samopoštovanje u periodu rane, srednje i kasne adolescencije. Istraživanje je obuhvatilo 305 učenika osnovne škole, 324 učenika srednje škole i 281 studenta univerziteta. Prosječna starost ispitanika u grupi mlađih adolescenata iznosila je $M = 12.57$ ($SD = .63$), u grupi srednjih adolescenata $M = 16.49$ ($SD = .57$), dok je u grupi starijih adolescenata prosječna starost bila $M = 20.51$ ($SD = 1.16$). Kao instrumenti mjerenja korišćeni su: Upitnik opštih podataka i Rozenbergova skala samopoštovanja. Rezultati dvosmjerne ANOVA-e pokazali su statistički značajan glavni efekat uzrasne grupe ($F(2, 904) = 5.77$, $p = .00$, $\eta^2 = .01$). Ni glavni efekat pola, niti efekat interakcije pola i uzrasne grupe nisu bili statistički značajni, što implicira da se nivoi samopoštovanja ne razlikuju značajno između muških i ženskih ispitanika u okviru bilo koje uzrasne grupe. Post hoc analiza je pokazala da se prosječan skor samopoštovanja u grupi srednjih adolescenata značajno razlikuje od onog u grupi mlađih adolescenata, ukazujući na to da srednji adolescenti izvještavaju o značajno nižem nivou samopoštovanja u odnosu na mlađe adolescente. Dobijeni rezultati razmatraju se u kontekstu razvojnih specifičnosti različitih perioda adolescencije.

KLJUČNE RIJEČI:

Samopoštovanje; Adolescencija; Polne i uzrasne razlike

Introduction

In its broadest sense, self-esteem refers to an individual's subjective assessment of his or her personal value¹. It is regarded as developing throughout life, influenced not only by cognitive and emotional processes, but also by actual or perceived interactions with significant others^{2,3,4,5}. In general, self-esteem is widely recognized as a core component of well-being and a crucial psychological resource that facilitates healthy psychosocial adjustment⁶. A large number of studies consistently confirm that higher levels of self-esteem are associated with a range of positive outcomes, including better social skills⁷ and higher self-efficacy⁸. Furthermore, empirical findings show that individuals with higher self-esteem generally cope better with failure compared to those with lower self-esteem^{9,10}, experience more positive emotions¹¹ and report higher levels of life satisfaction^{12,13}. In contrast, lower levels of self-esteem are associated with numerous negative outcomes, including anxiety and depression¹⁴, drug abuse¹⁵, eating disorders¹⁶, and generally poor health¹⁷.

Over the last twenty years, a substantial body of research has further investigated the relationship between self-esteem and various factors, including demographic variables such as age and gender. In terms of age, a recurring finding in this line of research is that self-esteem follows a dynamic trajectory across the lifespan, rather than remaining stable. For example, in a cross-sectional study conducted by Robins et al.¹⁸, it was found that self-esteem tends to be relatively high during childhood, declines during adolescence, gradually rises throughout adulthood, and declines again in older age. This age-related pattern has been supported by findings from a number of longitudinal studies (for a review, see Orth & Robins¹⁹).

In addition to age-related variations, empirical findings also point to gender differences in self-esteem. Specifically, a consistent pattern emerging from this body of work is that men typically report higher levels of self-esteem than women^{20,21,22,23}. These gender differences tend to become apparent during adolescence and continue into early and middle adulthood, though they appear to gradually lessen, or in some cases disappear, later in life²⁴. However, it is

worth noting that the observed effects of gender on self-esteem are typically modest, with effect sizes ranging from small to medium^{25,26}.

Although the majority of studies support the conclusion that self-esteem varies across age and gender, there is still limited understanding of how these patterns unfold during different periods of adolescence. Robins et al.²⁷, for instance, found that self-esteem is highest in childhood (ages 9–12), declines sharply from childhood to adolescence (ages 13–17), continues to decrease from adolescence to the college period (ages 18–22), and begins to increase again from the college period to the postcollege period (ages 23–29).

These findings are attributed to developmental factors, such as evolving thinking and judgment, associated with cognitive maturation. Specifically, it is assumed that self-esteem in younger children is relatively high due to their unrealistically positive self-perception. As children cognitively mature, they begin to rely more on external comparisons and judgments from others, which leads to more realistic self-assessments. The continued decline in self-esteem during adolescence, on the other hand, is attributed to changes in body self-image and other developmental challenges unique to this stage of life. A significant contributing factor is the increased self-awareness that comes with cognitive development in adolescence, including a heightened understanding of one's own traits and how others perceive him/her. This growing self-consciousness can lead to a decrease in self-esteem. Furthermore, self-assessments during this period become more abstract and generalized, often involving considerations of past experiences and future possibilities, which may foster feelings of missed opportunities and unmet expectations^{28,29}. An additional explanation for the continued decline in self-esteem during adolescence is that adolescents' connections with their families tend to weaken as they begin to spend more time with other significant individuals, such as peers and teachers, who may provide more critical and objective feedback³⁰.

However, it is important to note that some studies have not confirmed these trends in self-esteem changes during adolescence or have yielded somewhat different findings. For example, some authors report relative stability in self-

esteem throughout adolescence, while others even note a slight increase (for a review, see Erol & Orth³¹, and Robins et al.³²). These contrasting findings highlight that empirical data on the variability of self-esteem during adolescence are inconsistent, and further research is needed to clarify this issue.

As pointed out by Robins et al.³³, a particular challenge in this area lies in the different operationalizations of the construct, as well as the use of various measurement instruments to assess self-esteem, which creates a challenge for comparing results and contributes to the existing confusion in the literature. Additionally, the fact that many studies have used age-diverse samples of adolescents makes it more challenging to draw clear conclusions about the developmental patterns of self-esteem changes across different stages of adolescence.

Empirical findings regarding gender-related variations in self-esteem during adolescence reveal a similar pattern of inconsistencies. Generally, in several studies it has been found that significant gender differences become more pronounced during adolescence, with girls typically reporting lower levels of self-esteem compared to boys^{34,35,36,37}. One possible explanation for these findings, as proposed by Robins et al.³⁸, may lie in the different implications of maturation and socioemotional changes associated with puberty for boys and girls. According to the authors, while these changes affect both genders, it is possible that the physical changes occurring during this period have a greater impact on girls than on boys, which may negatively affect their self-esteem. However, it is important to note that some researchers have found no significant differences in self-esteem between male and female adolescents^{39,40,41,42}, which indicates that there is still a substantial uncertainty in this area of research.

Given the inconsistency of existing empirical findings regarding gender and age differences in self-esteem during adolescence, this study aims to provide further insight into these variations by examining the effects of gender and age, as well as their potential interaction, on self-esteem in adolescents. The sample included three age groups corresponding to early (ages 11–14), middle (ages 15–18), and late adolescence (from age 19 onward)⁴³, all of whom completed the

same self-report instrument for measuring global self-esteem. Based on both prior empirical findings on this topic and theoretical considerations regarding specific developmental challenges of middle adolescence, such as intensified disagreements with parents, elevated stress arising from the school transition, increased focus on identity exploration, and a stronger striving for autonomy^{44,45}, it is expected that middle adolescents will report statistically significant lower self-esteem compared to their younger and older counterparts. However, these differences are expected to be moderate or small in magnitude. When it comes to gender, it is expected that girls will report slightly lower, yet statistically significant, self-esteem compared to boys across all three age groups.

Method

Participants

The research sample consisted of 305 elementary school students (125 males and 180 females), 324 high school students (129 males and 195 females), and 281 university students (122 males and 159 females). The average age of participants was $M = 12.57$ ($SD = .63$) in the younger adolescent group, $M = 16.49$ ($SD = .57$) in the middle adolescent group, and $M = 20.51$ ($SD = 1.16$) in the older adolescent group.

Instruments

General Information Questionnaire was specifically designed for the purposes of this study and includes several questions aimed at collecting data on participants' gender, age, school/faculty, and grade/year of study. In addition to this information, participants were asked to provide details about the age and educational level of their parents, the number of siblings they have, and their birth order.

Self-esteem was assessed using the *Rosenberg Self-Esteem Scale*⁴⁶ which is a widely used self-report measure. The scale consists of 10 items and measures general self-esteem. Responses are rated on a 4-point Likert scale, ranging from 1 (strongly disagree) to 4 (strongly agree). The total score is calculated

by summing the responses to the relevant items and dividing by the number of items, with higher scores indicating higher overall self-esteem. The internal consistency coefficient of the scale has been satisfactory in various studies, ranging from .74 to .90^{47,48}. The internal consistency coefficient obtained in this study is $\alpha = .82$.

Procedure

The research was conducted during regular class sessions in groups of up to 25 pupils and up to 45 students, respectively. Ethical principles and standards relevant to psychological research were upheld throughout the data collection process. Participation in the research was voluntary, data were collected anonymously, and written informed consent was obtained from parents or legal guardians for participants who were under 18 years of age.

Results

To assess whether the data met the assumptions for parametric analysis, the distribution of self-esteem scores was tested for normality using the Kolmogorov-Smirnov test. Although a significant deviation from normality was observed ($p < .01$), this can be attributed to the large sample size, as large samples (200 or more) tend to yield statistically significant results even for minor deviations⁴⁹. Based on established recommendations in the literature^{50,51}, the next step entailed a visual inspection of the distribution shape and an examination of the absolute values of the skewness and kurtosis indices. The Q-Q plot showed no substantial deviations from normality, and both skewness and kurtosis indices fell within commonly accepted critical values (below 3.0 for skewness and 10.0 for kurtosis)⁵², thereby supporting the retention of the original scores for further analysis. The mean self-esteem scores, standard deviations, and the total number of participants for each subgroup of adolescents are presented in Table 1.

Table 1

Descriptive statistics for self-esteem across all subgroups of adolescents

Age group	Gender	M	SD	N
Younger adolescents	Males	3.33	.42	125
	Females	3.36	.49	180
	Whole sample	3.35	.47	305
Middle adolescents	Males	3.24	.49	129
	Females	3.20	.50	195
	Whole sample	3.21	.50	324
Older adolescents	Males	3.32	.47	122
	Females	3.28	.49	159
	Whole sample	3.29	.48	281

The effects of gender and age on self-esteem among adolescents were analyzed using a two-way analysis of variance (ANOVA), with gender and age group as the independent variables and self-esteem as the dependent variable. Regarding gender, participants were divided into two groups (males and females), and regarding age, they were divided into three age groups: younger adolescents (ages 12–14), middle adolescents (ages 15–18), and older adolescents (ages 19–24). As Levene’s test for equality of variances confirmed that the assumption of homogeneity of variance for the dependent variable was not violated ($F(5, 904) = 1.32, p = .25$), the main analysis was subsequently performed. The obtained results are presented in Table 2.

Table 2

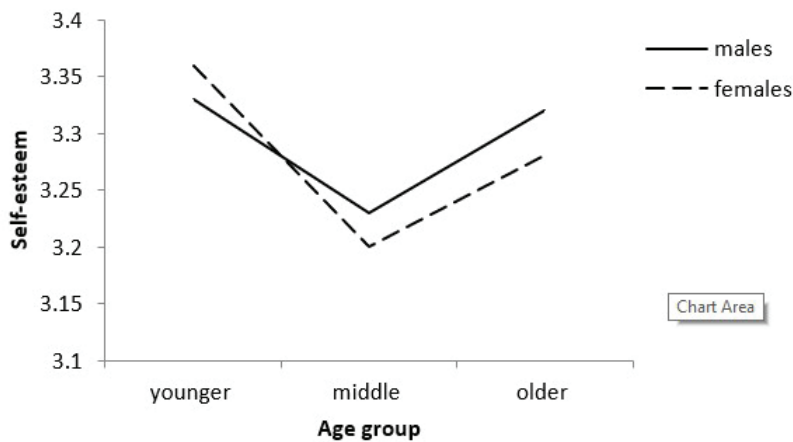
Results of the two-way ANOVA on self-esteem, with gender and age group as independent variables

	df	MS	F	p	η^2
Gender	1, 904	.09	.37	.55	.00
Age group	2, 904	1.33	5.77	.00	.01
Gender x Age group	2, 904	.10	.44	.64	.00

The results displayed in Table 2 show a statistically significant main effect of age group on self-esteem ($F(2, 904) = 5.77, p = .00$), although the effect size is small ($\eta^2 = .01$). The main effect of gender and the interaction effect between gender and age group are not statistically significant. This implies that self-esteem levels do not differ significantly between males and females within any age group. The post hoc analysis conducted using Tukey's HSD test revealed that the mean self-esteem score in the middle adolescent group ($M = 3.21, SD = .50$) significantly differs from that in the younger adolescent group ($M = 3.35, SD = .47, MD = .14, p < .01$), indicating that middle adolescents report significantly lower self-esteem than younger adolescents. No statistically significant differences in mean self-esteem scores were found between the other age groups (middle vs. older and younger vs. older). The results are graphically presented in Figure 1.

Figure 1

Graphical representation of mean self-esteem scores across gender and age groups



Discussion

Prior studies on the developmental trajectories of self-esteem during adolescence have yielded inconsistent results. Some researchers have reported an increase in self-esteem^{53,54,55,56,57,58,59}, while others have indicated that self-esteem either remains stable^{60,61} or even declines^{62,63,64}. The results of this study revealed a statistically significant difference in self-esteem between younger and middle adolescents, with middle adolescents reporting significantly lower self-esteem compared to younger adolescents. On the other hand, no significant differences were found between the other age groups.

The observed difference in self-esteem between younger and middle adolescents is in line with the proposed hypothesis and some prior empirical findings, which indicated that self-esteem declines from early to middle adolescence^{65,66}. However, contrary to expectations, no significant difference was found between middle and older adolescents. This result may indicate that self-esteem either remains stable from high school through the college period, which is also noted by some other researchers^{67,68}, or that the anticipated rebound in self-esteem follows a more gradual developmental trajectory during this period of adolescence, making it less detectable in a cross-sectional design.

The identified disparity in self-esteem between younger and middle adolescents may be interpreted in the context of the developmental specificities that characterize these two stages of adolescence. In other words, while early adolescence represents a period in which identity exploration, increased self-awareness, and social comparison are just beginning to unfold, middle adolescence represents a stage in which these processes are already significantly intensified, which could potentially lead to a decline in self-esteem. Also, middle adolescence is often characterized by increased academic demands, intensified peer comparisons, and growing expectations for social responsibility^{69,70}. These developmental challenges test adolescents' competencies both in academic and social domains, placing them in situations where they may be more vulnerable to negative self-evaluations, particularly when they perceive themselves as failing to meet the standards set by parents, peers or society.

Furthermore, one of the most prominent shift during middle adolescence is the growing need for autonomy, which is often expressed through emotional distancing from parents, an increased desire for privacy, and a more critical attitude toward authority figures⁷¹. Although this process is a necessary part of identity development, it can also create emotional vulnerability, especially when the negotiations with parents are marked by conflicts or misunderstandings. At the same time, it is commonly believed that peer influence reaches its peak at the beginning of middle adolescence and remains prominent throughout this entire period^{72,73,74}. While positive peer interactions can enhance self-esteem, negative comparisons, exclusion, or perceived social inadequacy can significantly diminish self-worth. Given their heightened sensitivity to peer evaluations, even minor setbacks in social acceptance can have a substantial impact on self-esteem^{75,76}. Taken together, the emotional distancing from parents and the increased reliance on peers for validation could create a developmental context in which middle adolescents might be particularly vulnerable to fluctuations in self-esteem, as these shifts in social dynamics could contribute to both internal and external pressures on self-worth.

In line with previous explanations, it is important to note that from a developmental-cognitive perspective, adolescence is also a period of rapid cognitive changes and self-discovery, and the development of a coherent self-image is a critical part of this process. During adolescence, self-image becomes more abstract, organized, and coherent, while also becoming more differentiated across various social contexts⁷⁷. A central developmental task in this stage of life involves the integration of various aspects of the self into a coherent and stable self-concept and this process, as pointed out by Harter⁷⁸, unfolds in three distinct phases. In the first phase, which coincides with the period of early adolescence, adolescents begin to recognize certain contradictions within their self-image, but they do not perceive these contradictions as potentially conflicting. In the second phase, which coincides with the period of middle adolescence, adolescents start to perceive conflicts between the roles they occupy and the behaviors associated with these roles. However, they struggle to integrate these differences into a cohesive self-concept, which is why the

conflict is perceived as stressful. Only in the third phase, which encompasses late adolescence, adolescents are able to integrate these contradictions into a coherent self-image, so that, although still exist, they no longer cause worry or stress⁷⁹. This heightened awareness of inconsistencies in self-concept in middle adolescence, combined with an undeveloped ability to reconcile them in a coherent self-image may lead to emotional turmoil and a temporary decline in self-esteem during this stage of adolescence⁸⁰.

However, it is worth noting that the obtained effect size of age group on self-esteem is small in magnitude. This suggests that the observed difference in self-esteem between younger and middle adolescents, although statistically significant, is relatively modest and should be interpreted within the broader context of adolescents' growth and adaptation. This nuanced finding underscores the notion that while self-esteem may fluctuate between early and middle adolescence, these fluctuations tend to be slight and may be part of a broader, more complex developmental trajectory, which includes factors such as increased social comparison, changing peer dynamics, and evolving personal goals.

When it comes to gender differences, based on some previous research^{81,82,83,84,85}, it was expected that girls will report statistically significant lower levels of self-esteem compared to boys across all three adolescent groups. However, the results revealed no significant gender differences in self-esteem in any of the groups. Despite these unconfirmed expectations, the obtained results are consistent with the findings of some other researchers^{86,87,88,89}, who also reported no significant gender differences in self-esteem among adolescents.

The obtained results can be interpreted in several ways. First, it is reasonable to assume that societal changes, such as an increased emphasis on gender equality, are reflected in the perception of adolescents' self-worth, thereby narrowing the gender gap that was once more noticeable. In other words, while gender differences were more prominent in earlier studies, such differences may be diminishing over time as societal attitudes toward gender roles evolve, and as the recognition of women's rights continues to grow.

In line with this perspective, adolescence as a developmental period may be becoming less gender-differentiated in terms of self-esteem, due to shifts in gender norms, the growing visibility of female role models in public life and the increased participation of girls in activities traditionally seen as male-dominated. These changes may have contributed to a reduction in the gender differences previously observed in self-esteem during adolescence. Furthermore, as the development of adolescent identity and self-esteem is increasingly influenced by a broader array of social factors, such as peer relationships, social media, and individual experiences, gender may no longer play the central role it once did in shaping self-esteem, as evidenced by some previous research.

In addition to these interpretations, another potential explanation for the observed nonsignificant gender differences could lie in the methodological aspects of the research. Specifically, it is important to note that these differences may be more sensitive to various contextual factors, such as family dynamics and personal experiences, that may not be fully captured by broad demographic divisions like gender alone, and were not controlled in this study. Furthermore, given that the study design is cross-sectional, it may be more challenging to detect gender differences that evolve over time. In other words, it could be the case that such differences (if they actually exist) are likely to become more apparent in longitudinal studies, where changes in self-esteem between girls and boys can be traced across various developmental stages over a longer period of time.

This study has several strengths worth highlighting. A key advantage is the inclusion of participants from all three stages of adolescence (early, middle, and late), which facilitates a comprehensive examination of age and gender differences in self-esteem from a broader developmental perspective. Furthermore, the use of the same measurement instrument to assess self-esteem across all age groups ensured consistency and enabled direct comparisons between groups.

However, there are also certain methodological limitations that should be taken into account when interpreting the findings. First, a cross-sectional design of

the study limits the ability to draw conclusions about developmental changes in self-esteem over time. Second, although the study included participants from a diverse range of educational institutions (6 elementary schools, 5 high schools, and 5 faculties) and a variety of educational backgrounds, such as technical high schools, gymnasiums, and diverse faculties (e.g., social sciences, humanities, and technical fields), the sampling approach was convenience-based. This should be taken into account when generalizing the results to the broader adolescent population. Finally, the study did not control for certain contextual variables, such as socioeconomic status, family background, or academic achievement, which may also contribute to variations in self-esteem during adolescence.

Taken together, the findings of this study support the view that self-esteem does not follow a uniform pattern of decline or growth throughout adolescence, but rather fluctuates in response to age-specific developmental tasks and contextual demands. The observed decline in self-esteem among middle adolescents, compared to younger adolescents, highlights this life stage as potentially sensitive and developmentally complex. However, the small effect size of the age group suggests that the difference in self-esteem between these two adolescent groups, while statistically significant, remains relatively modest and should be viewed within the broader context of growth and adaptation during adolescence. Moreover, the absence of significant gender differences in self-esteem across all three adolescent groups suggests that traditional gender disparities in self-esteem may be less pronounced in contemporary adolescent populations, possibly due to evolving social norms and increased gender equality.

Overall, while the obtained results provide valuable insights that contribute to a more nuanced understanding of how self-esteem varies across different stages of adolescence, the study also underscores the importance of continued investigation into age-related fluctuations in self-esteem during this developmental period. In this context, further longitudinal research is needed to clarify the developmental trajectories of self-esteem throughout adolescence and to determine whether the observed age-related patterns reflect enduring trends or temporary adaptations to transitional challenges.

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