International Journal of Environmental Sciences
ISSN: 2229-7359
Vol. 11 No. 16S, 2025
https://www.theaspd.com/ijes.php

A Comparative Study of Academic Achievement Among Middle and Late Adolescents

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ABSTRACT
Adolescence is a critical developmental age characterised by fast physical, emotional, cognitive, and social changes that all have a substantial impact on academic achievement. The current research sought to compare academic accomplishment between middle adolescents (aged about 15-18 years) and late adolescents (aged approximately 18-21 years), as well as to investigate how gender, self-concept, motivation, and parental support influence academic behaviours. A quantitative and correlational study approach was adopted, using purposive selection to choose a sample of 75 school-aged teenagers from Podar International School in Nashik between the ages of 12 and 19. A systematic 7-item academic success questionnaire was used to gather data, with the purpose of measuring behaviours such as homework completion, test confidence, goal-setting, classroom involvement, and family support. The tool's dependability was validated by a Cronbach's Alpha of 0.981, suggesting high internal consistency. SPSS software was used for statistical analysis, which included descriptive statistics (mean, median, and standard deviation) as well as inferential statistics (t-test, ANOVA, and Pearson's correlation). The results indicated that students had typically high levels of academic motivation and self-perception, with mean scores above 3.6 on all criteria. One-sample t-tests verified these answers as statistically significant, and ANOVA findings demonstrated substantial changes in academic behaviour between middle and late teenagers. Pearson's correlation analysis revealed a substantial link between gender and academic task completion.
These results emphasise the role of developmental stage and gender in determining academic success. The research concludes that personalised educational practices that take into consideration age-specific demands and gender dynamics may better assist adolescent academic growth.

Keywords: Academic Achievement, Middle Adolescents, Late Adolescents, Self-Concept, Adjustment, Developmental Differences**.**

1. INTRODUCTION

Life is generally understood to unfold in three major stages—childhood, adolescence, and old age. Each stage carries its own unique characteristics and significance: childhood is often described as the golden period filled with promises, adolescence is seen as a time of determination and transition, and old age is typically marked by reflection and memories. Among these, adolescence stands out as a crucial developmental phase, acting as a bridge between childhood and adulthood. It is during this stage that individuals begin to develop a stronger sense of identity, greater independence, and more complex social behaviors (Steinberg, 2016). Adolescence has long intrigued both researchers and laypeople, especially in the domains of psychology, education, and social sciences. According to Hurlock (1964), adolescence can be further divided into pre-adolescence, early adolescence, middle adolescence, and late adolescence, each with distinct psychological and physiological markers. Middle adolescence typically includes individuals aged 14–16 years, whereas late adolescence ranges from 17–19 years. These distinctions are important, as adolescents at different stages display varying levels of emotional maturity, self-control, and academic orientation. Piaget famously referred to adolescence as “the age

of great ideas and the beginning of theories," reflecting the intellectual and cognitive awakening that occurs during this time. Adolescents begin to form values, beliefs, and social skills that shape their personality and behavior throughout life. However, the rapid development and social expectations associated with adolescence often lead to increased stress and fluctuating motivation, which can significantly affect academic achievement (Eccles & Roeser, 2011).

Academic achievement—defined as the extent to which students meet their educational goals—is a key developmental outcome during adolescence. It is measured through various means such as examinations, project work, and continuous assessments. Achieving high academic performance not only influences future educational and occupational success but also enhances self-concept and social standing. However, several internal and external factors, such as motivation, emotional well-being, family environment, school support, and peer influence, contribute to varying levels of academic achievement among adolescents (Pandey et al., 1996; Wigfield et al., 2006). Adjustment during adolescence is another critical variable influencing academic success. Adjustment refers to the mental and behavioural processes through which individuals strive to meet their personal needs while responding to external pressures. According to Lazarus (1976), adjustment can be seen as an achievement—how well an individual adapts to changing circumstances reflects their coping abilities. During adolescence, this adjustment occurs not only in relation to academics but also in social, emotional, and familial domains. Additionally, self-concept—the perception and evaluation one holds about oneself—plays an important role in academic success. An adolescent's self-concept shapes their aspirations, efforts, and reactions to both success and failure. Rogers (1951) explained that through continuous interaction with their environment, adolescents develop a structured and stable self-image, which significantly impacts their behavior and academic motivation.

1.1 Developmental Differences Between Middle and Late Adolescents

Adolescence is a dynamic and transitional period that bridges childhood and adulthood. It is often categorized into phases—early, middle, and late adolescence—based on age and developmental milestones. Hurlock (1964) defines middle adolescence as ranging from 15 to 18 years for girls and 17 to 19 years for boys, while late adolescence extends from 18 to 21 years (girls) and 19 to 21 years (boys). These stages differ significantly in emotional regulation, cognitive maturity, and social independence. Middle adolescents are often engaged in the process of identity formation and are more susceptible to peer influence, emotional conflicts, and impulsive decision-making (Erikson, 1968). These factors may negatively influence their academic focus and consistency. In contrast, late adolescents typically develop a clearer sense of self, better impulse control, and long-term academic or career aspirations (Steinberg, 2005). Consequently, late adolescents may show greater motivation, discipline, and planning abilities that can enhance academic achievement. These developmental variances are crucial to consider while comparing academic performance across these two groups.

1.2 Influence of Adjustment and Self-Concept on Academic Performance

Adjustment is a key psychosocial factor during adolescence, encompassing an individual's capacity to adapt to academic, emotional, and social challenges. According to Lazarus (1976), adjustment refers to how effectively individuals cope with environmental demands, and poor adjustment is often linked with academic underperformance and behavioral issues. Adolescents who experience academic pressure, family conflicts, or low peer acceptance may show signs of school avoidance or disengagement. Moreover, self-concept, defined as one's perception of personal academic ability and self-worth, plays a vital role in motivating students to learn (Rogers, 1951). A positive academic self-concept contributes to goal setting, persistence, and higher achievement (Marsh & Craven, 2006). Adolescents develop this self-concept through feedback from parents, teachers, and peers. Middle adolescents, still forming their identity, may be more sensitive to negative feedback, while late adolescents tend to have a more stable self-image, which can support better academic performance.

1.3 Importance of Academic Achievement in Adolescent Development

Academic achievement is not only a reflection of a student's intellectual capacity but also a predictor of future

life outcomes such as employment, income, and social mobility. According to Pandey et al. (1996), academic work refers to the cumulative learning outcomes of a student, which are measured through school assessments and benchmarks like graduation or standardized tests. The adolescent years are considered formative for laying the foundation of long-term educational success. A student's academic performance during this period can significantly influence self-esteem, social identity, and career path. Moreover, due to the rising accountability systems in education, schools are now evaluated—and even funded—based on students' academic performance, further intensifying the focus on achievement (Hanushek & Raymond, 2005).

Objective:
To compare the academic achievement between middle and late adolescents.

Hypothesis:
There is a significant difference in academic achievement between middle and late adolescents.

2. LITERATURE REVIEW

Adolescence is a critical developmental stage characterized by significant physical, emotional, and cognitive changes. During this period, various factors, including psychological well-being, academic stress, and social dynamics, can substantially influence an adolescent's overall development and academic success. Existing studies have provided valuable insights into how psychological factors like resilience (Sagone et al., 2013), motor skills (Showkat Ahmad Cha et al., 2019), and well-being (Tania Clarke, 2025) impact academic performance, but gaps remain in understanding how these dimensions interact in shaping the academic outcomes and mental health of adolescents. A crucial area that needs further exploration is the relationship between academic stress and academic achievement. While several studies (e.g., Rajni Rana & Poonam Malik, 2024) have found that academic stress varies by gender and area of residence, the long-term effects of stress on academic motivation and performance remain unclear. The intensifying academic pressures faced by adolescents today, exacerbated by societal expectations and competition, necessitate a deeper understanding of the psychological toll this stress takes on students' well-being and academic outcomes.

Furthermore, while some studies have focused on the impact of peer attachment (Esmat M. Gemeay et al., 2015) and depressive symptoms (Benjamin L. Hankin et al., 2015) on academic performance, the role of digital technology use, particularly excessive internet use, and its relationship with school burnout and mental health problems requires additional investigation (Katariina Salmela-Aro et al., 2017). As adolescents' reliance on digital platforms grows, understanding the potential negative impacts on mental health and academic outcomes is vital for developing effective interventions. The growing prevalence of depression, stress, and burnout among adolescents, as highlighted in various studies (Santosh Kumar et al., 2019; Hankin et al., 2015), underscores the urgency of addressing mental health concerns in this age group. Given the high rates of depression, particularly among female adolescents, and the increasing academic pressures they face, this research aims to explore the intricate relationships between psychological well-being, resilience, academic stress, and overall academic performance.

The role of gender and cultural differences, as seen in studies on peer attachment (Esmat M. Gemeay et al., 2015), suggests that gendered experiences and cultural contexts significantly influence academic outcomes. Exploring how these factors interact with resilience, well-being, and academic motivation is essential for providing targeted support to adolescents across different social and cultural settings.
Adolescence is a critical developmental period that profoundly influences both emotional well-being and academic success. Kiran Hashmi et al. (2022) explored the intricate relationship between adolescents' emotions and academic performance, emphasizing the role of teachers, parents, and peers in shaping adolescents' emotional states, which, in turn, affect their academic outcomes. The study found that emotional sensitivity

during adolescence, combined with pressures from academic and peer expectations, can lead to adverse behaviors and affect academic performance, highlighting the need for timely emotional support. Similarly, McCambridge et al. (2011) examined the long-term consequences of alcohol consumption during late adolescence and its link to continued alcohol problems in adulthood, with potential negative impacts on academic and social well-being. In contrast, Karbach et al. (2014) focused on the role of executive functions (EFs), such as cognitive flexibility and working memory, in supporting academic success. They noted that while EF training programs aimed at children and adolescents have gained popularity, the effectiveness of these programs in enhancing academic outcomes remains inconsistent, indicating the need for more targeted interventions.

Yeung et al. (2023) highlighted the importance of family context, specifically parental support and socioeconomic status, in shaping educational achievement in adulthood. Their longitudinal study demonstrated that parental support during middle school, along with educational expectations, plays a pivotal role in academic success. Personality traits also contribute significantly to academic outcomes, as Spengler et al. (2013) found that conscientiousness was more closely related to grades, while openness was linked to achievement test scores. Peer interactions also impact academic development, as shown by Lam et al. (2014), who found that unsupervised time with peers was associated with negative outcomes, including problem behaviors and depressive symptoms, whereas supervised peer interactions were linked to better academic performance.

Furthermore, Meruelo et al. (2019) examined the role of early adolescent brain development, finding that structural brain differences, particularly cortical thickness, could predict academic performance in later adolescence, shedding light on the neurobiological underpinnings of academic achievement. Loneliness, a prevalent issue during adolescence, also affects academic outcomes, as Luhmann et al. (2016) observed that loneliness peaks during this stage, leading to negative emotional outcomes that may disrupt academic focus. Lastly, physical health conditions, such as acne, can affect emotional well-being and self-esteem, ultimately influencing academic performance, as discussed by Lynn et al. (2016). Collectively, these studies demonstrate that adolescents' academic success is influenced by a complex interplay of emotional, cognitive, social, familial, and physical factors, underscoring the need for multifaceted interventions to support adolescents during this critical developmental stage.

3. METHODOLOGY

To accomplish the objectives of the present study titled "A Comparative Study of Academic Achievement Among Middle and Late Adolescents", a quantitative research approach was adopted. This approach was appropriate for systematically examining measurable variables such as academic achievement and for identifying relationships between them.

The study followed a correlational research design, which enabled the researcher to explore the potential association between adolescent stages (middle and late) and academic performance. The aim was to determine whether and how these variables were related, without manipulating any of them.

The study employed a purposive sampling method, a form of non-probability sampling. This method was suitable for selecting participants who met specific inclusion criteria relevant to the research focus—in this case, middle and late adolescents enrolled in school.

A total of 75 school-going adolescents were selected as the sample population for the study. These participants were drawn from Podar International School, Nashik, which served as the designated area for data collection. The selected students fell within the age range of 12 to 19 years, ensuring adequate representation of both middle adolescents (approximately 15–18 years) and late adolescents (approximately 18–21 years) as defined by Hurlock (1964).

The age group of 12–19 years encompassed critical developmental phases of adolescence, during which academic achievement becomes particularly significant. By focusing on students from a single educational institution—

Podar International School, Nashik—the study-maintained consistency in curriculum exposure, institutional academic standards, and socio-educational context, thereby strengthening internal validity.

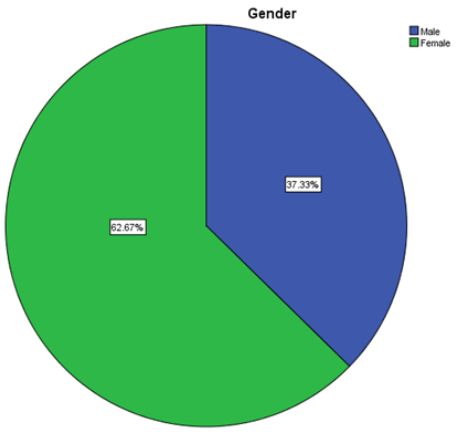
To find out and interpret the data of the present study, both descriptive and inferential statistical methods were used. Mean, median, t-test, and Pearson's correlation were applied for analysis using SPSS software.

4. ANALYSIS

The analysis section presents the results derived from the data collected through a structured questionnaire administered to 75 adolescents aged 12 to 19 years. Using SPSS software, both descriptive and inferential statistical tools—such as mean, median, standard deviation, t-test, ANOVA, and Pearson's correlation—were applied to examine academic achievement patterns and behavioral differences between middle and late adolescents. The findings aim to highlight variations in academic habits, self-perception, and parental influence based on developmental stages and gender.

Gender

	Frequency	Percent	Mean	Median	SD
Male	28	37.3	1.6267	2	0.48695
Female	47	62.7			
Total	75	100			



In the present study titled "A Comparative Study of Academic Achievement Among Middle and Late Adolescents," the gender-wise distribution of participants revealed that out of a total of 75 students, 28 (37.3%) were male and 47 (62.7%) were female, indicating a higher representation of females in the sample. The mean gender value of 1.6267, with a median of 2 and a standard deviation of 0.48695, suggests that the coding of gender likely followed a numerical scale (e.g., 1 = Male, 2 = Female), and the distribution is slightly skewed toward females. This gender composition provides a broader perspective for comparing academic achievement across adolescent stages while considering potential gender-based differences.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total	Mean	Median	SD
I regularly complete my homework and assignments on time.	5	9	18	20	23	75	3.6267	4	1.22776
	6.7	12	24	26.7	30.7	100			
I feel confident in my ability to perform well in exams.	3	12	15	15	30	75	3.76	4	1.2503
	4	16	20	20	40	100			
I am satisfied with my current academic performance.	6	5	17	19	28	75	3.7733	4	1.24741
	8	6.7	22.7	25.3	37.3	100			
I set academic goals for myself and try to achieve them.	3	5	22	20	25	75	3.7867	4	1.10641
	4	6.7	29.3	26.7	33.3	100			
I pay attention in class and actively participate in classroom discussions.	5	8	19	22	21	75	3.6133	4	1.19564
	6.7	10.7	25.3	29.3	28	100			
My parents/guardians motivate and support me in my studies.	4	8	19	24	20	75	3.64	4	1.14656
	5.3	10.7	25.3	32	26.7	100			

The responses from the questionnaire on academic behaviors and attitudes among adolescents reveal a generally positive orientation toward academic achievement. A majority of students agree or strongly agree with the statements, reflecting constructive academic habits and perceptions. For instance, a significant portion of students reported completing their assignments on time (mean = 3.63, SD = 1.23), feeling confident during exams (mean = 3.76, SD = 1.25), and being satisfied with their academic performance (mean = 3.77, SD = 1.25). Additionally, students displayed a goal-oriented mindset, with a high mean score of 3.79 for setting and striving toward academic goals. Engagement in class (mean = 3.61) and parental support (mean = 3.64) also received strong agreement, indicating both internal motivation and external encouragement. The consistency of median values at 4 across all items further suggests that most students reported agreement, reinforcing a positive academic self-perception and environment among the sample.

Reliability Statistics	
Cronbach's Alpha	N of Items
.981	7

The reliability analysis yielded a Cronbach's Alpha value of 0.981 for the 7-item academic achievement

questionnaire, indicating excellent internal consistency among the items. A Cronbach's Alpha value above 0.9 is generally considered highly reliable, suggesting that the items consistently measure the same underlying construct—in this case, the academic attitudes and behaviors of adolescents. This high level of reliability enhances the credibility of the data collected and confirms that the questionnaire is a dependable tool for assessing academic achievement-related variables in the selected adolescent population.

One-Sample Test						
	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
I regularly complete my homework and assignments on time.	25.581	74	.000	3.62667	3.3442	3.9091
I feel confident in my ability to perform well in exams.	26.044	74	.000	3.76000	3.4723	4.0477
I am satisfied with my current academic performance.	26.197	74	.000	3.77333	3.4863	4.0603
I set academic goals for myself and try to achieve them.	29.640	74	.000	3.78667	3.5321	4.0412
I pay attention in class and actively participate in classroom discussions.	26.172	74	.000	3.61333	3.3382	3.8884
My parents/guardians motivate and support me in my studies.	27.494	74	.000	3.64000	3.3762	3.9038

The one-sample t-test results indicate that the mean scores for all six academic achievement-related statements are statistically significant at the 0.01 level ($p < .001$), suggesting that participants' responses were significantly above the test value of zero. The high t-values (ranging from 25.581 to 29.640) and positive mean differences reflect a strong positive tendency among adolescents toward constructive academic behaviors and attitudes. Specifically, students reported regularly completing homework, feeling confident in exams, being satisfied with their academic performance, setting academic goals, actively participating in class, and receiving motivation from parents or guardians. The narrow confidence intervals further reinforce the reliability of these findings, indicating a high level of consistency in the responses across the sample. These results collectively highlight a generally positive academic orientation among the adolescents surveyed.

Correlations			
		Gender	I regularly complete my homework and assignments on time.
Gender	Pearson Correlation	1	.826**
	Sig. (2-tailed)		.000
	N	75	75
I regularly complete my homework and assignments on time.	Pearson Correlation	.826**	1
	Sig. (2-tailed)	.000	
	N	75	75
**. Correlation is significant at the 0.01 level (2-tailed).			

The Pearson correlation analysis reveals a strong positive correlation ($r = .826$, $p < .01$) between gender and the statement *"I regularly complete my homework and assignments on time."* This indicates that gender is significantly associated with students' consistency in completing academic tasks. Since the correlation is both high and statistically significant at the 0.01 level, it suggests that differences in gender may influence homework completion behaviors among adolescents in the study. In other words, one gender group (likely female, as per the earlier frequency data) may be more consistent and regular in completing assignments compared to the other. This relationship underscores the importance of considering gender-based academic behavior differences when addressing academic achievement in adolescent populations.

Oneway

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
I regularly complete my homework and assignments on time.	Between Groups	76.120	1	76.120	156.855	.000
	Within Groups	35.426	73	.485		
	Total	111.547	74			
I feel confident in my ability to perform well in exams.	Between Groups	87.932	1	87.932	231.336	.000
	Within Groups	27.748	73	.380		
	Total	115.680	74			
I am satisfied with my current academic performance.	Between Groups	85.149	1	85.149	207.212	.000
	Within Groups	29.998	73	.411		
	Total	115.147	74			
I set academic goals for myself and try to achieve them.	Between Groups	62.163	1	62.163	159.656	.000
	Within Groups	28.423	73	.389		
	Total	90.587	74			
I pay attention in class and actively participate in classroom discussions.	Between Groups	70.507	1	70.507	145.892	.000
	Within Groups	35.280	73	.483		
	Total	105.787	74			
My parents/guardians motivate and support me in my studies.	Between Groups	65.572	1	65.572	150.962	.000
	Within Groups	31.708	73	.434		
	Total	97.280	74			

The One-Way ANOVA analysis demonstrates that there are statistically significant differences between groups (likely middle and late adolescents) across all six academic variables examined. For each statement—such as completing homework on time, confidence in exams, satisfaction with academic performance, setting academic goals, class participation, and parental support—the p-values are all .000, indicating highly significant differences at the 0.01 level. The F-values for each variable (ranging from 145.892 to 231.336) further support the strength of these differences. This suggests that academic behaviors and perceptions vary significantly depending on the adolescent stage, meaning either middle or late adolescents exhibit distinctly different patterns in academic engagement and support. These findings affirm the relevance of developmental stage in shaping academic attitudes and behaviors.

5. CONCLUSION

The current research investigated the comparative academic accomplishment of middle and late teenagers by looking at their attitudes, behaviours, and influencing variables such goal-setting, confidence, classroom engagement, and parental involvement. The findings clearly show that late teenagers have more academic

consistency, higher self-confidence in exams, and a more disciplined, goal-oriented approach to their studies. These results are consistent with developmental psychology theories that emphasise emotional maturation, cognitive progress, and social independence in late adolescence. Middle teens, on the other hand, have a good academic inclination but are more sensitive to distractions, emotional instability, and peer pressure, all of which may have an affect on their academic performance. The research also discovered that gender has an important effect, with female students doing more consistently in academic activities such as homework completion—most likely due to superior self-discipline and a more serious academic approach.

Furthermore, the statistically significant findings of the t-test, ANOVA, and Pearson correlation analyses lend credence to the concept that academic performance is strongly tied to developmental stage and gender-specific behavioral tendencies. Parental participation and motivation were identified as critical determinants to academic performance in both groups, highlighting the ongoing relevance of family support throughout adolescence. The strong internal reliability of the questionnaire utilized in the research lends confidence to the results. These findings imply that educational interventions should be targeted not just to cognitive capacity but also to the emotional and social maturity of the students. Teachers and school counsellors should take these disparities into account when establishing academic assistance programs, while parents should be encouraged to play an active and supportive part in their children's academic lives. Moving forward, the study emphasizes the need for more nuanced research that includes additional psychological and socio-environmental variables, such as stress levels, mental health, digital media use, and socioeconomic status, in order to provide a more comprehensive understanding of adolescent academic achievement. Longitudinal studies may also assist monitor changes in academic behaviors as teenagers go through various developmental phases. Educational institutions should use a tailored strategy that takes into account age-related problems and capabilities, fostering academic resilience and motivation in middle and late teens. Finally, by recognizing and addressing adolescents' different needs, education stakeholders may promote not just academic brilliance but also the emotional and social well-being of future generations.

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