

Assessing the Impact of Early Childhood Health Interventions on Adolescent Mental Health Outcomes in Urban Nigeria

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ABSTRACT

The increasing anxiety about the rise of mental health issues in adolescents has put into focus the importance of early-life conditions in determining psychological development. The current study used descriptive survey research design, which involved adolescents in the Senior Secondary School III (SSS III) in urban secondary schools. A sample of 107 students was procured. The data were gathered through a structured questionnaire with a four-point Likert scale. Subject-matter experts validated the instrument and military reliability was ensured before its implementation. The process of data-collection was assisted by five trained research assistants and the resulting responses were analyzed using descriptive and inferential statistical methods. The results found out that most of the respondents belonged to the high (45.8 %) and middle (43.0 %) socio-economic classes, with women representing 78.5 percent of the sample. Evidence of high exposure to early childhood health interventions was displayed with nearly all respondents reporting receiving vaccination, healthcare services, proper nutrition, and frequent medical check-ups with a sub-section showing minimal exposure to community health interventions. In terms of mental health outcomes, the majority of adolescents reported to be emotionally stable, self-confident, that they possess effective stress-coping skills and that they feel satisfied with their life, but a significant percentage of adolescents also indicated experiencing anxiety. Inferential analysis showed a statistically significant effect of early childhood health interventions on adolescent mental health outcomes and the further significant effects of gender and family socio-economic status, all of which explain 82.7 per cent of the variance. The research concludes that strengthening health interventions in early children is promising in helping to improve the mental health outcomes of adolescents.

INTRODUCTION

Early childhood is a critical stage of development where physical well-being, mental ability, and emotional stability begin to develop. Moral interventions in this phase such as proper nutrition, immunisation and access to healthcare services play a crucial role in determining subsequent developmental outcomes, especially mental health in adolescence. Modern studies in the domains of public health and developmental psychology are categorical that childhood experiences have a far-reaching impact on psychological well-being later in life; therefore, childhood health conditions can be both protective and risk factors regarding adolescent mental health condition.

One urgent issue around the world is the increasing cases of mental disorders amongst adolescents. Anxiety, depression, and emotional instability conditions are gaining recognition as significant sources of disease burden among the youth worldwide. It has been empirically observed that mental health issues in adolescents may continue into adulthood and negatively impact educational achievements, social relations, and well-being (Kiuru et al., 2020; Okezie, 2022). However, with increased attention towards adolescent mental health, relatively little information has been given to explaining the role of early childhood health experiences in these outcomes. In many third world nations, such as Nigeria, children are often faced with poor healthcare services, low-quality food and preventable diseases in early childhood-situations that may have a disastrous effect on psychological development. It follows that the understanding of the nexus between early childhood health interventions and adolescent mental health is an urgent public-health agenda.

One of the major ways in which early childhood health experiences influence adolescent mental health is through neurodevelopment. The brain is highly vulnerable to environmental and health-related factors during the first years of life, making the brain susceptible to rapid development. Proper nutrition at this critical stage cannot be underestimated in terms of proper neurological growth and emotional control. Empirical research shows that healthy eating habits and nutrition at childhood are strongly related to increased psychological performance and reduced probability of mental illnesses in adolescence (Ezeogidi et al, 2020; Quintela & Paradella, 2026). On the other hand, the lack of nutrients in the early childhood can lead to impairment of cognitive functioning and emotional regulation, which enhances exposure to anxiety and depressive symptoms later in life.

Another very important determinant is access to preventive healthcare services in early childhood. Vaccination courses, early identification of diseases and regular health check-ups reduce the risk of exposure to disease causing organisms that can disrupt normal development. In addition, interventions in health early can be used in promoting healthier family practices and care giving environments, which facilitate emotional development. There is evidence that developmental risk-based early intervention programmes can significantly reduce the number of mental health issues and improve social and emotional

functioning in adulthood (Goodpaster et al., 2026). These results support the life-course viewpoint, which suggests that the health outcomes of adolescents are often influenced by the childhood experience precedents.

Moreover, adolescence health interventions during early childhood strengthen resilience making the children better able to handle stressors and social pressures. Adolescence is characterized by significant biological and social changes that expose youths to psychological stressors. However, children who have been exposed to sufficient healthcare and enabling developmental milieus at a tender age are more likely to achieve emotional steadiness and adaptive coping mechanisms. Studies also show that lifestyle changes, including a nutritious diet and physical exercise that should begin in childhood, can regulate mental health outcomes in adolescence (Centers for Disease Control and Prevention, 2024).

The rising prevalence of mental health challenges among adolescents has become a significant global public health concern. Adolescence is a critical developmental stage characterized by rapid emotional, cognitive, and social changes that increase young people's vulnerability to psychological disorders such as anxiety, depression, and stress. Research indicates that mental health conditions constitute a substantial proportion of the global disease burden among adolescents and often affect their academic performance, interpersonal relationships, and overall quality of life (Vigo et al., 2016; Molokwu et al., 2023). Despite the growing body of literature on adolescent mental health, limited attention has been given to how early childhood experiences and family environments shape later psychological outcomes, particularly in developing contexts. Studies highlight that parental guidance, counseling support, and family stability during childhood significantly influence adolescents' emotional wellbeing and resilience (Utomo et al., 2025; Iloakasia, 2024). Furthermore, self-esteem development, spirituality, and counseling interventions have been identified as important protective factors that enhance psychological stability and coping strategies among young people (Enwere & Iloakasia, 2024; Dzikra et al., 2025; Iloakasia, 2025; Riswanto & Iloakasia, 2025; Ajeli & Iloakasia, 2021).

Proper nutrition, immunisation coverage, and access to preventive care are some of the key elements of health intervention to promote optimal neurodevelopment and emotional regulation in the early stages of childhood. Recent studies indicate that the memories in early life create lasting effects of psychological health, as neural development takes place at high rates at that stage (Schneider, 2015). Similarly, empirically, it has been shown that good dieting and adequate nutrition in childhood are linked to a better emotional wellbeing and reduced likelihood of future mental-health disorders in adulthood (Ezenwaka et al., 2025). These results highlight the possible impact of early health interventions later mental-health paths.

However, most of the available research considers early childhood health and adolescent mental health as separate research fields. As an example, studies of early childhood development focus on the importance of health and nutrition to cognitive performance, typically with limited evidence on their long-term psychological consequences (Beathard et al., 2023). In contrast, studies that

examine adolescent mental health generally emphasise social and environmental risk indicators and underestimate the impact of health at an early stage of life (Vigo et al., 2016). In Nigeria, and especially in the fast-growing urban settings, there are few empirical research studies that have focused on the relationship between early childhood health intervention and adolescent mental-health outcomes. Therefore, there is a need to critically evaluate the effects of early childhood health interventions on adolescent mentalhealth outcomes in urban Nigerian environments because this study can provide the necessary evidence to inform health policy and early intervention programmes aimed at improving child health and adolescent psychological wellbeing.

1.1 Objectives

1. To assess the level of early childhood health interventions among adolescents living in urban Nigeria.
2. To determine the occurrence of mental-health outcomes among adolescents in the same population.
3. To determine the impact of early childhood health interventions on adolescent mental-health based on the adolescents' gender and family socioeconomic status.

LITERATURE REVIEW

The health intervention programs in the early childhood stage play a central role in improving the learning process and general school engagement of pupils. School feeding, immunisation, regular check-ups, and nutrition education can be added to the category of health programmes that will result in fewer illnesses, sick absences, and lack of concentration among young learners. Physically healthy children tend to go to school regularly and participate in learning. Experts stress that the health condition of children can have a significant impact on their education, and the empirical evidence suggests that such strategies as proper nutrition, vaccinations, and regular medical check-ups help to enhance the physical health of the pupils and their abilities to learn (Montoya et al., 2026). Early health needs addresses result in the reduction of sick days, reduced absenteeism and increased classroom time.

Studies have shown that children who are healthy show better cognitive growth, motivation, and performance at school (Okafor, 2019). Emotional stability and self-esteem are other factors that predict academic success, and early interventions also aid them (Ezeanyagu et al., 2023). Additionally, stress and other obstacles that hinder the performance and participation of students can be addressed through effective health programmes (Okafor, 2017). Educational strategies enable an integration of health awareness with learning activities that are related to the interest of the students and engagement in classroom activities (Muogbo et al., 2025). As a result, enhanced learning experiences and sustainable education efforts are a result of strengthening early childhood health interventions at schools.

Immunisation, proper nutrition, and better environmental conditions are the interventions that minimize developmental risks and enhance emotional and cognitive well-being in adulthood. Children are provided with safer

environments by environmental health factors, such as waste management and pollution control, which promote psychological development (Okafor et al., 2022; Onwuka et al., 2017). Moreover, the quality of neighbourhood and available housing influence the social life and the psycho-emotional well-being of children in cities (Okafor et al., 2022b; Ikeotuonye and Efobi, 2022). The access to health care and welfare services that help children develop also depends on urban infrastructure and technological systems (Anyakora et al., 2021). Global health studies also suggest that early health investments have a significant positive impact on the outcome of mental health in adolescence and fewer psychological risks in the long run (Patton et al., 2016; Richter et al., 2017).

Hence, adolescent mental health outcomes are gradually becoming vital in social stability and academic growth. According to scholars, supportive legal and institutional structures allow adolescents to avoid psychological stress, discrimination, and harmful practices (Okosa, 2022a). Human rights and equal opportunities are enforced through legal mechanisms, which provide a safer space where youths are able to grow as emotionally and socially (Udensi & Okosa, 2025). Research also underlines that the policies that focus on social justice and victim protection are vital in protecting adolescents against trauma and mental distress (Okosa, 2022b). Fairness and accountability is also promoted through ethical governance and compliance with legal norms, and indirectly contributes to the psychological well-being of adolescents (Okosa, Ibe & Ojimba, 2025). Elaborated constitutional and institutional policies reduce societal conflicts and uncertainties that could impact youth mental health (Okosa, 2018). Therefore, to achieve positive adolescent mental health outcomes and sustainable societal development, there is a need to strengthen legal structures and protective policies.

METHODOLOGY

The research design used in this study was descriptive survey design to examine the effects of early childhood health interventions on adolescent mental health outcomes in urban Nigeria. The population targeted was teenagers in Senior Secondary School III (SSS III) in selected urban secondary schools. The investigation was conducted on a sample of 107 students. A structured questionnaire developed by the researcher was used to collect data. The instrument included measures of early childhood health intervention, adolescent mental health consequences, and demographic factors, such as gender and family socio-economic status. The responses were recorded on a four-point Likert scale that indicated strongly agree to strongly disagree. In determining the content validity, the questionnaire was reviewed and evaluated by the experts in the relevant academic fields, who assessed the questionnaire items regarding their clarity, relevance, and suitability in the measurement of the study variables. Reliability has been achieved through a suitable psychometric test to ascertain the consistency of the measurement. The assistance in data collection was provided by five trained research assistants, who helped to administer and retrieve questionnaires amongst participants. The resultant data were presented in terms of descriptive statistics (frequency

and percentage) and inferential statistics to address the outcome of early childhood health interventions on adolescent mental health outcomes.

RESULT

4.1. Demographics

Table 1: Distribution of Respondents by Family Socio-Economic Status

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Low	49	45.8	45.8	45.8
Middle	46	43.0	43.0	88.8
High	12	11.2	11.2	100.0
Total	107	100.0	100.0	

The results in Table 1 show that most respondents come from low and middle socio-economic backgrounds. Specifically, 45.8% of the respondents reported low family socio-economic status, while 43.0% indicated middle socio-economic status. Only 11.2% reported high socio-economic status.

Table 2: Distribution of Respondents by Gender

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Male	23	21.5	21.5	21.5
Female	84	78.5	78.5	100.0
Total	107	100.0	100.0	

Table 2 shows the gender distribution of the respondents. The results indicate that the majority of respondents were female, accounting for 78.5% (84), while males constituted 21.5% (23) of the sample. This suggests that female adolescents were more represented in the study than their male counterparts.

4.2. Early Childhood Health Interventions

Table 3: Responses on Receiving Suggested Childhood Vaccines

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Agree	52	48.6	48.6	48.6
Strongly Agree	55	51.4	51.4	100.0
Total	107	100.0	100.0	

Table 3 shows that all respondents reported receiving suggested childhood vaccines. Specifically, 51.4% strongly agreed, while 48.6% agreed with the statement. This indicates universal acknowledgment of childhood vaccination among the respondents, suggesting a high level of exposure to early childhood immunization interventions within the sampled population.

Table 4: Responses on Frequent Medical Examinations in Early Childhood

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Disagree	1	.9	.9	.9
Agree	63	58.9	58.9	59.8
Strongly Agree	43	40.2	40.2	100.0
Total	107	100.0	100.0	

Table 4 indicates that most respondents had frequent medical examinations during early childhood. Specifically, 58.9% agreed and 40.2% strongly agreed with the statement, while only 0.9% disagreed. This suggests that the majority of respondents had access to regular medical check-ups during early childhood, reflecting a relatively high level of exposure to early health monitoring.

Table 5: Responses on Receiving Healthcare Services in Early Childhood

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Disagree	2	1.9	1.9	1.9
Agree	28	26.2	26.2	28.0
Strongly Agree	77	72.0	72.0	100.0
Total	107	100.0	100.0	

Table 5 shows that a large majority of respondents received healthcare services during their early years. Specifically, 72.0% strongly agreed and 26.2% agreed with the statement, while only 1.9% disagreed. This indicates that most respondents had access to healthcare services in early childhood, suggesting widespread exposure to early health interventions among the sampled adolescents.

Table 6: Responses on Adequate Feeding During Early Childhood

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Agree	53	49.5	49.5	49.5
Strongly Agree	54	50.5	50.5	100.0
Total	107	100.0	100.0	

Table 6 shows that all respondents indicated they were well fed during early childhood. Specifically, 50.5% strongly agreed and 49.5% agreed with the statement. This suggests that the respondents generally experienced adequate

nutrition during early childhood, which may support healthy physical and psychological development.

Table 7: Responses on Access to Child Health Programmes in the Community

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Disagree	6	5.6	5.6	5.6
Disagree	23	21.5	21.5	27.1
Agree	41	38.3	38.3	65.4
Strongly Agree	37	34.6	34.6	100.0
Total	107	100.0	100.0	

Table 7 shows that most respondents had access to child health programmes in their communities. Specifically, 38.3% agreed and 34.6% strongly agreed with the statement. However, 21.5% disagreed and 5.6% strongly disagreed. This indicates that while a majority benefited from community child health programmes, a notable proportion reported limited access.

4.3. Adolescent Mental Health Outcomes

Table 8: Responses on Emotional Stability

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Disagree	12	11.2	11.2	11.2
Agree	40	37.4	37.4	48.6
Strongly Agree	55	51.4	51.4	100.0
Total	107	100.0	100.0	

Table 8 indicates that the majority of respondents perceive themselves as emotionally stable. Specifically, 51.4% strongly agreed and 37.4% agreed with the statement, while 11.2% disagreed. This suggests that most respondents reported positive emotional stability, reflecting generally favorable adolescent mental health outcomes among the sampled population.

Table 9: Responses on Self-Confidence

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Disagree	9	8.4	8.4	8.4
Agree	37	34.6	34.6	43.0
Strongly Agree	61	57.0	57.0	100.0

Total	107	100.0	100.0	
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Table 9 shows that the majority of respondents reported having confidence in themselves. Specifically, 57.0% strongly agreed and 34.6% agreed with the statement, while 8.4% disagreed. This indicates that most adolescents in the study demonstrate a high level of self-confidence, reflecting a generally positive mental health condition among the respondents.

Table 10: Responses on Ability to Handle Stress

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Disagree	19	17.8	17.8	17.8
Agree	34	31.8	31.8	49.5
Strongly Agree	54	50.5	50.5	100.0
Total	107	100.0	100.0	

Table 10 shows that most respondents believe they can handle stress. Specifically, 50.5% strongly agreed and 31.8% agreed with the statement, while 17.8% disagreed. This indicates that a majority of the adolescents reported good stress-coping ability, suggesting a relatively positive level of psychological resilience among the respondents.

Table 11: Responses on Feeling Frequently Nervous or Anxious

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Disagree	7	6.5	6.5	6.5
Disagree	3	2.8	2.8	9.3
Agree	52	48.6	48.6	57.9
Strongly Agree	45	42.1	42.1	100.0
Total	107	100.0	100.0	

Table 11 shows that a large proportion of respondents experience nervousness or anxiety. Specifically, 48.6% agreed and 42.1% strongly agreed that they are frequently nervous or anxious. In contrast, 6.5% strongly disagreed and 2.8% disagreed. This suggests that many adolescents in the study experience notable levels of anxiety.

Table 12: Responses on Feeling Contented with Life

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Disagree	20	18.7	18.7	18.7
Agree	55	51.4	51.4	70.1
Strongly Agree	32	29.9	29.9	100.0

Total	107	100.0	100.0	
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Table 12 indicates that most respondents feel generally contented with their lives. Specifically, 51.4% agreed and 29.9% strongly agreed with the statement, while 18.7% disagreed. This suggests that a majority of the adolescents experience a sense of life satisfaction, reflecting relatively positive overall mental well-being among the respondents.

4.4 Impact of early childhood health interventions on adolescent mental-health based on the adolescents gender and family socioeconomic status.

Table 13: Tests of Between-Subjects Effects on Adolescent Mental Health Outcomes

Dependent Variable: Adolescent Mental Health Outcomes

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	750.673 ^a	23	32.638	17.229	.000
Intercept	10818.243	1	10818.243	5710.711	.000
H1	242.930	7	34.704	18.320	.000
Family_SocioEconomic_status	38.169	2	19.085	10.074	.000
Gender	19.597	1	19.597	10.345	.002
H1 * Family_SocioEconomic_status	21.608	8	2.701	1.426	.198
H1 * Gender	48.727	3	16.242	8.574	.000
Family_SocioEconomic_status * Gender	13.816	1	13.816	7.293	.008
H1 * Family_SocioEconomic_status * Gender	.000	0	.	.	.
Error	157.233	83	1.894		
Total	30353.000	107			
Corrected Total	907.907	106			

a. R Squared = .827 (Adjusted R Squared = .779)

Table 13 presents the results of the analysis examining the impact of early childhood health interventions on adolescent mental health outcomes based on gender and family socioeconomic status. The results show that early childhood health interventions significantly influenced adolescent mental health outcomes ($F = 18.320$, $p < .001$). Family socioeconomic status ($F = 10.074$, $p < .001$) and gender ($F = 10.345$, $p = .002$) also had significant effects. However, the interaction between early childhood health interventions and family socioeconomic status was not significant ($p = .198$). The interaction between early childhood health interventions and gender was significant ($F = 8.574$, $p < .001$). The model explained about 82.7% of the variance in adolescent mental health outcomes ($R^2 = .827$).

Table 14: Multiple Comparisons of Adolescent Mental Health Outcomes by Family Socio-Economic Status

Dependent Variable: Adolescent Mental Health Outcomes

	(I) Family Socio-economic status	(J) Family Socio-economic status	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
LSD	Low	Middle	-.4627	.28256	.105	-1.0247	.0993
		High	.3452	.44331	.438	-.5365	1.2270
	Middle	Low	.4627	.28256	.105	-.0993	1.0247
		High	.8080	.44615	.074	-.0794	1.6953
	High	Low	-.3452	.44331	.438	-1.2270	.5365
		Middle	-.8080	.44615	.074	-1.6953	.0794
Dunnett t (2-sided) ^a	Low	High	.3452	.44331	.587	-.6248	1.3153
	Middle	High	.8080	.44615	.113	-.1683	1.7843

Based on observed means.

The error term is Mean Square(Error) = 1.894.

a. Dunnett t-tests treat one group as a control, and compare all other groups against it.

Table 14 presents the multiple comparison results examining differences in adolescent mental health outcomes across family socio-economic status groups. The results indicate that there were no statistically significant differences between the low, middle, and high socio-economic status groups ($p > .05$). Although adolescents from middle socio-economic families showed slightly higher mean scores compared to the low and high groups, these differences were not significant. This suggests that family socio-economic status did not significantly differentiate adolescent mental health outcomes in the study.

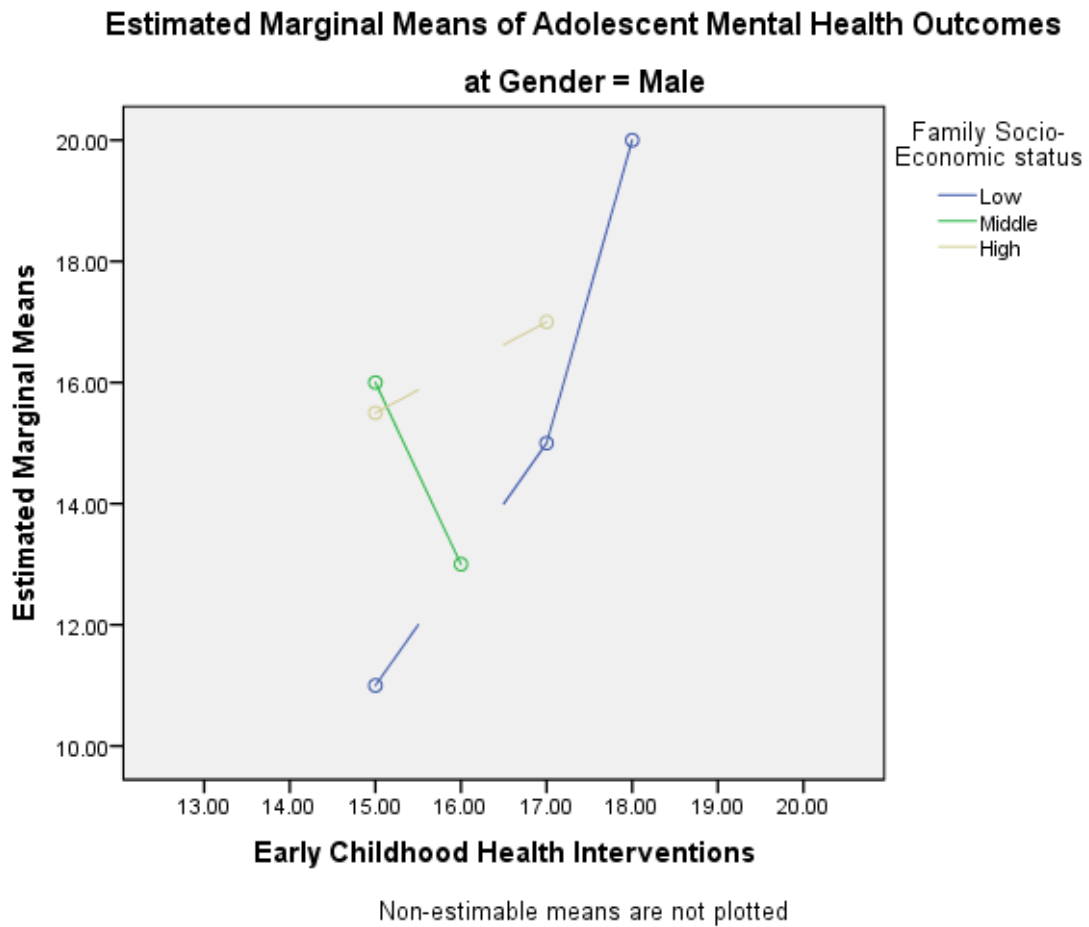


Figure 1: Estimated Marginal Means of Adolescent Mental Health Outcomes by Early Childhood Health Interventions among Male Adolescents across Family Socio-Economic Status

Figure 1 illustrates the relationship between early childhood health interventions and adolescent mental health outcomes among male adolescents across different family socio-economic status groups. The graph shows that increased early childhood health interventions are associated with higher adolescent mental health outcomes. Notably, adolescents from low socio-economic backgrounds exhibit the most pronounced improvement as intervention levels increase, indicating that early health support may significantly enhance mental health outcomes for males regardless of socio-economic status.

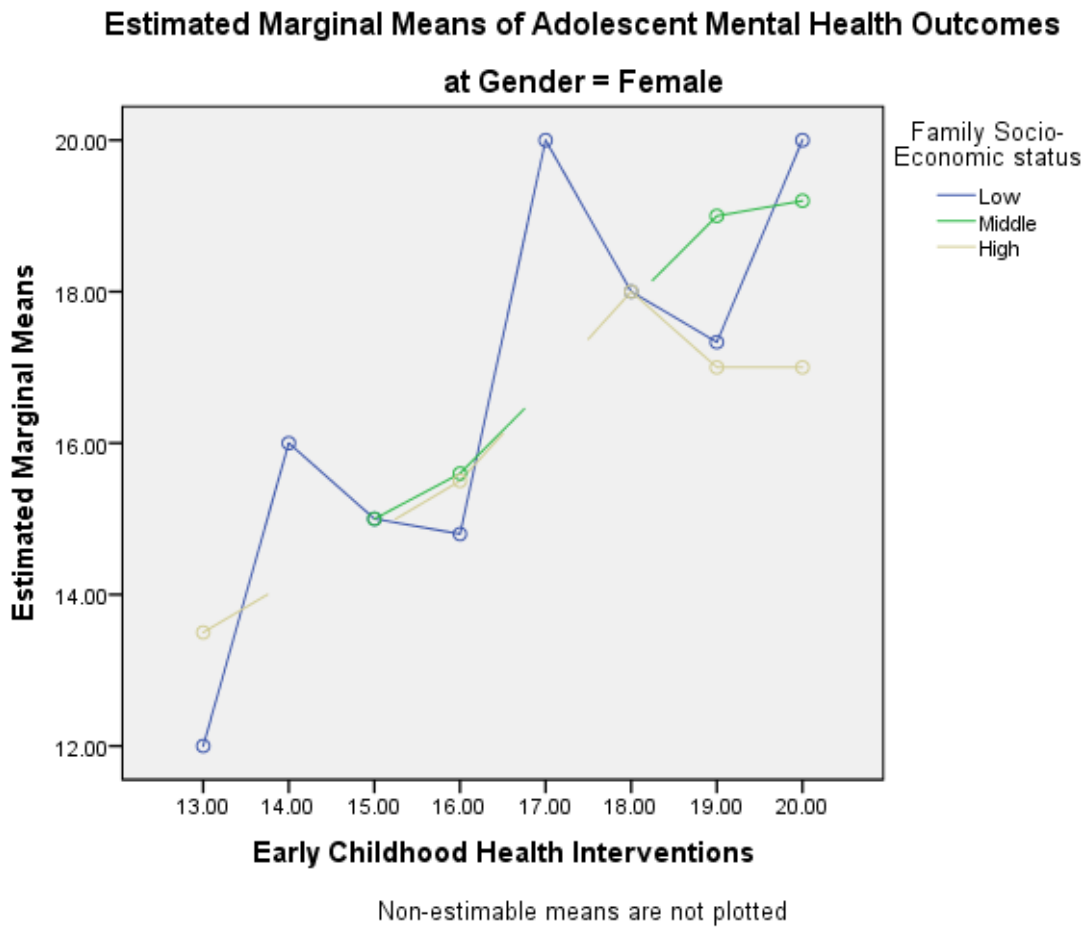


Figure 2: Estimated Marginal Means of Adolescent Mental Health Outcomes by Early Childhood Health Interventions among Female Adolescents across Family Socio-Economic Status

Figure 2 shows the relationship between early childhood health interventions and adolescent mental health outcomes among female adolescents across different family socio-economic status groups. The figure indicates that higher levels of early childhood health interventions are generally associated with improved mental health outcomes. Females from middle and low socio-economic backgrounds show noticeable improvements, suggesting that early childhood health support positively influences adolescent mental health regardless of socio-economic status.

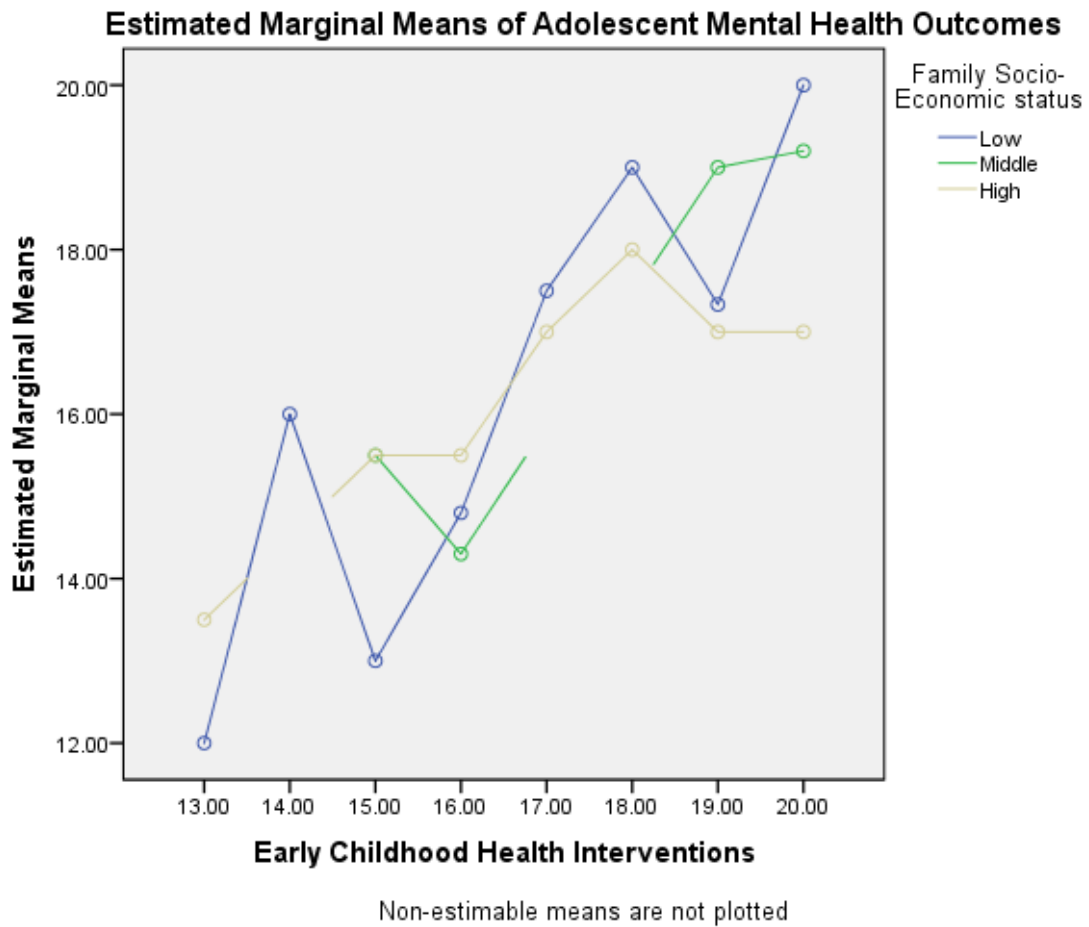


Figure 3: Estimated Marginal Means of Adolescent Mental Health Outcomes by Early Childhood Health Interventions across Family Socio-Economic Status

Figure 3 illustrates the relationship between early childhood health interventions and adolescent mental health outcomes across different family socio-economic status groups. The figure shows a general upward trend, indicating that higher levels of early childhood health interventions are associated with better adolescent mental health outcomes. Adolescents from low and middle socio-economic backgrounds appear to benefit more noticeably from increased early health interventions compared to those from high socio-economic backgrounds.

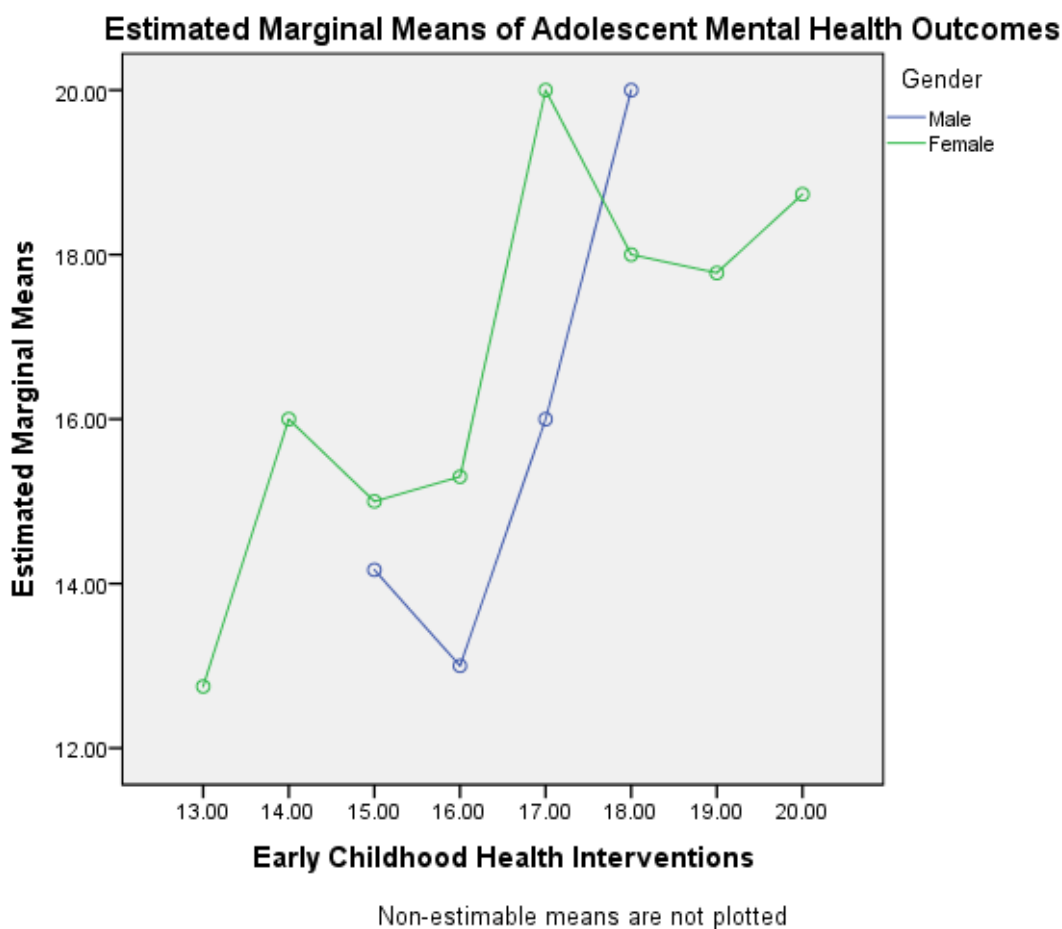


Figure 4: Estimated Marginal Means of Adolescent Mental Health Outcomes by Early Childhood Health Interventions across Gender

Figure 4 outlines the correlation between childhood health interventions in the early years and mental health outcome of adolescence, and the associations were stratified based on sex. The data indicate that the high exposure to early childhood health interventions is associated with better mental health effects among both male and female teenagers; but females tend to report higher mental health scores at most levels of intervention, which suggests they respond more positively to intervention compared to boys.

DISCUSSION

The demographic description showed that most respondents belonged to low- (45.8 %) and middle- (43.0%) socio-economic classes, with only 11.2% per cent having a high socio-economic status. This pattern corresponds to the new data that suggests that teenagers in many urban areas of low and middle-income nations are overrepresented among economically disadvantaged households, and this aspect affects childhood health trajectories and developmental outcomes (Mathiarasan & Hüls, 2021). In contrast, studies in a high-income setting indicate a more balanced socio-economic pattern between adolescent groups, which is explained by strong social support and weakened inequality (Reiss et al., 2019). The gender proportion of the sample was

significantly unbalanced, with 78.5 percent of respondents being female adolescents. Similar patterns of female prominence in surveys of adolescent health were also found by a parallel study by Murray et al. (2023), which also noted a tendency to participate in health-related studies as a predictor of higher willingness. Comparatively, European-based research has recorded equal rates in participation of both men and women in mental research (Reiss et al., 2019).

In terms of early childhood health interventions, reported childhood vaccinations were done to all the individuals who participated. This finding supports the fact that immunisation programmes have significantly enhanced child health gains, as well as growth and development opportunities at the global level (Stenberg et al., 2014). Likewise, the majority of the respondents (mostly) said that they were getting regular checkups and healthcare services at an early age, which is typical of high exposure to preventive care. A similar study (Colizzi et al., 2020) highlights the preventive role of the early health intervention and monitoring as the key to reducing the future mental health issues in children. The current results also reveal that the respondents tended to have sufficient nutrition in early childhood. It corresponds to the studies which emphasize that the diet in the early childhood plays an important role in cognitive development and emotional regulation in the adolescent stage (Nikalansooriya et al., 2025).

However, as much as majority of the respondents indicated access to community child health programmes, a small section indicated inaccessibility. However, Umeh and Feeley (2017) reported significant inconsistency in access to community-based child health programmes between different areas, which is especially high in low-income environments where health care infrastructure is unevenly scaled. About mental health outcomes among adolescents, most respondents indicated that they were emotionally stable, had self-confidence and were successful in managing stress, which is a positive indication of relatively good psychological health. This observation aligns with the study of understanding that nurturing early developmental conditions result in an increased degree of emotional stability and mental performance during adolescence (Halyna & Lyubov, 2021). On the other hand, a significant percentage of the respondents said they were nervous or anxious. The latter finding aligns with the international data showing the increase in anxiety and depressive symptoms among adolescents over the past few years (Shorey et al, 2022).

Additionally, the majority of the respondents reported life satisfaction, which is consistent with the literature that finds positive childhood experiences to increase life satisfaction in adolescence (Luo et al., 2024). The results of inferential analyses included that early childhood health intervention had a strong effect on the mental health outcomes of adolescence, and gender and family socio-economic status had also shown strong effects. These findings support the literature that early childhood health status and developmental experiences conclusively determine mental health lifecourse (Vigo et al., 2019). Despite that, the research found no statistically significant differences in mental health outcomes between socio-economic groups, which contrast with the

conclusions of studies that indicated that socio-economic inequalities often create disparities in adolescent mental health (Reiss et al., 2022). Taken together, the findings support the urgent significance of early childhood health interventions in enhancing favorable psychological health outcomes in adolescents.

CONCLUSION

This research study analyzed the effect of early childhood health interventions on the mental health outcomes of adolescents with Senior Secondary School III among students in urban Nigeria. The statistics show that the majority of adolescents enjoyed the major early childhood health interventions such as vaccination, health services, proper nutrition, and health checkups. It was demonstrated that such early health experiences were indeed very influential on adolescent mental health outcomes including emotional stability, self-confidence, stress management, and life overall satisfaction. The inferential analysis also confirmed that the notion that early childhood health interventions are important predictors of adolescent mental health outcomes also emerged as true, and so are gender and family socio-economic status, which further supports the impact of these demographic factors on adolescent mental health. Nonetheless, the multiple comparison analysis failed to show statistically significant differences in mental health outcomes among socioeconomic groups. In line with this, the extensive availability of early health services, proper nutrition, and community health programmes has a significant potential in improving the psychological wellness of adolescents. Therefore, in a bid to promote healthier developmental patterns in adolescents, the need to strengthen early childhood health policies and increase the coverage of child health programmes in urban Nigeria is urgent.

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