

School Connectedness, Self-Esteem, and Antisocial Behaviours among Adolescents with Hearing Impairment in Oyo State, Nigeria

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ABSTRACT

This cross-sectional descriptive survey study examined the associations between school connectedness and self-esteem and antisocial behaviour among adolescents with hearing impairment in Oyo State, Nigeria. A multi-stage sampling procedure was employed: all seven designated government special secondary schools in Oyo State were included via purposive total enumeration, and 2,342 hearing-impaired senior secondary students were then selected proportionately across schools using the Taro Yamane (Slovin) formula. Three standardised scales were used: the Rosenberg Self-Esteem Scale, the School Connectedness Scale and the Bullying and Victimization Scale. At the level of significance of 0.05, multiple regression analysis was done. It was found that school connectedness was not significantly associated with antisocial behaviours ($F_{(1, 2233)}=0.093$, $p=.760$), but self-esteem was significantly associated with antisocial behaviours ($F_{(1, 2233)}=9.836$, $p=.002$). The joint model was statistically significant ($F(2, 2232)=4.921$, $p=.007$); however, school connectedness contributed negligible additional variance beyond self-esteem alone ($\Delta R^2 \approx 0.000$), indicating that the significance of the joint model was largely attributable to self-esteem. These findings suggest that self-esteem is a stronger individual predictor of antisocial behavior than school connectedness among this group. These associations may be affected by contextual factors unique to the special education system in Nigeria. Given the cross-sectional design, causal inferences cannot be drawn. Implications for counsellors, school administrators, and policymakers are discussed.

Keywords: School Connectedness, Self-Esteem, Antisocial Behaviour, Hearing Impairment, Adolescents, Nigeria

INTRODUCTION

The problem of antisocial behaviors among students of hearing impairment has gained growing importance among educators, researchers and counselors operating in the special education environment. Classroom observations, counseling, and behavioral assessments have continuously shown that students with hearing impairment have higher levels of disruptive behaviors, aggression, social withdrawal, non-compliance, and defiance than their hearing peers (Theunissen et al., 2014; Paterson et al., 2020). Scientists have reported that these students have been involved in physical fights, verbal abuse, destruction of property, and on-purpose breaking of school policies, which in addition to disrupting the learning process, hinder their academic growth and societal adaptation (Gann et al., 2015). Educators dealing with hearing-impaired children have stated that classroom behavior management is a problem and reported that communication barriers and frustration due to limited linguistic competence tend to be externalizing problem behavior (Barker, et al., 2019). School counselors have also noted that students with hearing impairment often experience emotional regulation problems, peer rejection and adjustment problems that lead to patterns of antisocial behavior in the school environment (Kim, et al., 2015).

These are systemic and not occasional behavioural problems that greatly affect the educational performance and emotional growth of students with hearing impairments. The high frequency of antisocial behaviours in this

group has inspired extensive studies on the underlying factors that either shield or expose these individuals to participate in problematic behaviours (Yasin et al., 2019). The complex interplay of communicational difficulties, social exclusion, academic frustration, and mental issues creates a vulnerability that increases the likelihood of antisocial behaviours despite hearing loss not being a direct cause of antisocial behaviour (Theunissen et al., 2014). Thus, it is necessary to understand the reasons which determine the occurrence of the antisocial behaviour among adolescents with hearing impairments so as to design specific intervention interventions to treat the behavioural symptoms as well as the causes of these challenges. There are numerous variables, which have been proposed as potential predictors, but school satisfaction and self-esteem have emerged as two particularly interesting variables, which require an extensive exploration in the context of Oyo State adolescents with hearing impairments.

School connectedness, which is defined as the sense of acceptance, value, inclusion and support of students in their school setting, has been identified as a strong protective factor against antisocial behaviours among different types of students (Allen et al., 2018). In the case of children with hearing impairments, school connectedness becomes more crucial due to the unique communication and social barriers that these children face in educational settings. It has been consistently shown that students with strong attachment to their school, teachers, and classmates have significantly reduced risks of antisocial behaviours, and those who feel marginalised or alienated have increased levels of behavioural problems (Rose et al., 2024). Sense of belonging and attachment to school is a powerful motivational factor that helps to develop prosocial behaviour, academic engagement, and compliance with school norms and expectations (Cumming et al., 2017).

School connectivity can work through multiple channels to influence behavioural outcomes among students with hearing impairment. Chan et al. (2023) found that there is a close relationship between hearing impairment and reduced school engagement outcomes in children in the United States, which means that sensory deficiencies are associated with the inability to build meaningful relationships in the learning environment. The obstacles include limited access to informal peer interactions, being excluded in group activities because of communication difficulties, and isolation because of the differences with the majority of hearing pupils (Duncan et al., 2021). The hearing disabled students who have low school connectedness can respond by shutting down, defiance or aggressive behaviour to show frustration and rejection of the learning environment.

The relationship between school connectedness and antisocial behaviours is also confounded by quality of educational placement and support services received by kids with hearing impairments. Antia et al. (2011) examined the social performance of deaf and hard-of-hearing students in mainstream education settings and found that effective social integration, which is an important attribute of school connectedness, requires more than just physical inclusion of students in mainstream settings, but also deliberate efforts to facilitate access to communication and development of peer connections. Lack of adequate support to form relationships with teachers and peers contributed to more behavioural problems and social maladjustment in students. This finding underscores the importance of creating learning environments where connectivity is proactively fostered rather than just providing physical proximity to hearing peers.

Moreover, it appears that the protective effect of school connectivity on antisocial behaviours is mediated by the quality of relationships that kids develop at school. In the case of students with hearing impairment, effective interaction with teachers and peers is necessary in order to establish relationships. Gann et al. (2015) demonstrated that individually tailored interventions based on the communication needs of deaf or hard-of-hearing students were successful in reducing the problem behaviours, which means that the alleviation of communication barriers that impede the connectedness can lead to improved behavioural outcomes. Han (2015) developed a school adaptation program that specifically targeted elementary children with hearing disabilities, where the focus of the program was to help these children develop a sense of belonging and attachment to the school setting. The program produced significant improvements on adaptive behaviours and reduction of behavioural problems and empirically provided evidence as to the role of school connectedness as a contributing factor in antisocial behaviours in this population group.

Recent research has highlighted the importance of peer relationships as a core aspect of school connectedness in adolescents with hearing impairments. Duncan et al. (2021) studied the relationship between social capital, loneliness and peer relationships among deaf or hard of hearing teenagers and found that students who had

limited peer relationships felt more lonely and were vulnerable to behavioural difficulties. The study revealed that peer acceptability and quality of friendships were significant predictors of behavioural adjustment since students who had positive peer influences had lower antisocial behaviour. The results suggest that the interventions aimed at reducing antisocial behaviours among students with hearing impairment must focus on the strategies to develop peer relationships and inclusive school climate where every student is valued and appreciated.

Self-esteem, which refers to the overall subjective evaluation of worth and competency that an individual has, has been recognised as a key psychological factor that influences behavioural outcomes among children and adolescents. Hearing impaired students face unique issues in self-esteem development as a result of communication difficulties, comparison with hearing peers in the classroom, and stigmatisation or marginalisation (Warner-Czyz et al., 2015). Studies have established that there is a significant negative relationship between self-esteem and antisocial behaviours such that students with high levels of self-regard have better behavioural regulation, prosocial participation, and resilience in case of challenges and those students with low self-esteem are more prone to aggression, defiance and all forms of antisocial behaviours.

The relationship between hearing impairment and self-esteem has been comprehensively reported in academic literature, which means that pupils with hearing loss are at a high risk of developing negative self-images. Theunissen et al. (2014) performed an extensive study on self-esteem in hearing-impaired children, analysing the effects of communication mode, educational environment, and audiological traits on self-concept. The results revealed that hearing impaired children generally exhibited low self-esteem compared to their hearing peers, and barriers to communication and challenges in education had a significant effect on their self-esteem. Students experiencing troubles in effective interaction with their peers and teachers, with scholastic difficulties or who perceived themselves as not similar to their peers in the classroom were particularly vulnerable to the formation of negative self-perceptions, which subsequently led to behavioural problems.

The effect of self-esteem on antisocial behaviours in students with hearing impairment is achieved by working through the psychological pathways. Learners who have low self-esteem often have a high level of sensitivity to perceived abuse or criticism thus leading to defensive or violent reaction to social situations. They can also develop antisocial behaviours in a bid to exercise control, seek attention or to compensate on feelings of inferiority and inadequacy (Alqudah et al., 2024). Conversely, high self-esteem students have shown increased emotional resilience, better coping skills and an increased intrinsic motivation to participate in socially acceptable behaviours that maintain positive relationships and social status.

Recent studies have clarified the issues that contribute or hamper the development of self-esteem among students with hearing impairment. Qi et al. (2024) explored how resilience can be useful in improving self-esteem in children and adolescents with hearing impairment, where positive coping techniques play an important role as a mediator. The researchers found that those pupils who developed adaptive coping strategies to hearing loss issues had high self-esteem that in turn alleviated behavioural problems. This observation suggests that antisocial behaviours could be indirectly alleviated through interventions that focus on improving coping skills and resilience because self-esteem is strengthened. Warner-Czyz et al. (2015) studied the trends in self-esteem among children and adolescents with hearing loss, which showed a lot of differences in self-esteem based on age, communication skills, and access to social support. Those students who received strong family, teacher and peer support, coupled with the development of effective communication skills, had better concept about themselves and reduced behavioural difficulties.

Social comparison processes on self-esteem among students with hearing impairment are especially relevant in understanding the antisocial behaviours. Inclusive education practices expose students with hearing impairments to comparing themselves to their hearing peers in all three areas of academic, social, and communicative abilities, which they often perceive as less able or able (Alsayed, 2025). Negative social comparisons may lower self-esteem and elicit compensatory behaviours, including violence, loss of engagement or defiance, as students attempt to cope with feelings of inadequacy. Huang and He (2025) examined how the use of social media affects the life satisfaction of deaf and hard-of-hearing college students, where self-esteem and perceived social support were used as mediators. This research showed that students who had high self-esteem coped better with social issues and maintained positive behaviours, but those who had low self-esteem were vulnerable to psychological

torment and behaviour problems. It appears that the correlation between self-esteem and antisocial behaviours is a two-way process, as behavioural problems can support negative self-conceptions. Antisocial students often face social ostracism, discipline measures and academic difficulties, which further complicate their self-esteem problems and perpetuate a cycle of negative behaviour and low self-esteem. Breaking this cycle would require interventions which would address the behavioural problems and at the same time promote positive self-esteem by having successful experiences, validating abilities, and positive relationship nurturing.

Despite the fact that both school connectedness and self-esteem are researched as independent variables that affect antisocial behaviours, recent studies show that school connectedness and self-esteem might have a complex relationship with other variables that influence behavioural outcomes in students with hearing impairments. School connectedness and self-esteem are theoretically and empirically interrelated phenomena, each possibly affecting the growth and sustenance of the other. Students who develop strong affiliations to their school setting through positive relations with teachers and peers are better placed to develop high self-esteem as such affiliations provide validation, encouragement, and channels of success (Van Gaasbeek and Tassé, 2024). Conversely, teenagers who have high self-esteem can better initiate and maintain social relationships that promote school connectedness, and thus initiate a positive cycle of mutually reinforcing relationships.

The school affiliation-self esteem relationship might be critical in determining behavioural paths among students with hearing impairments. Du et al. (2024) proposed a framework of ecological and appraisal to explain the challenges to belonging among deaf and hard-of-hearing students, emphasizing the interaction between self-awareness and confidence (as a facet of self-esteem) and peer relationships and environmental supports (as a facet of school connectedness) to affect the psychological and behavioural outcomes. The framework shows that, children with both low school connectivity and low self-esteem are more susceptible to antisocial behaviours and those with strengths in one or both areas more resilient in their behaviours.

Studies on students with disabilities have revealed that connectedness in school is a protective factor against behavioural problems, particularly where students face additional problems such as sensory impairments. Cumming et al. (2017) have synthesised evidence-based practice to increase school connectedness among students with disabilities and note that interventions aimed at increasing a sense of belonging and school connection led to significant improvements in behavioural problems and social-emotional functioning. Hearing impaired students face unique challenges in establishing school relationships because they have communication difficulties; thus, special efforts aiming at enhancing connectivity can greatly enhance behavioural outcomes.

The role of self-esteem in the moderation of the relationship between school connectedness and antisocial behaviours deserves special attention. Children with hearing disabilities who feel part of their school can develop a higher self-esteem by experiencing being accepted, achieving and valued, therefore reducing their chances of involvement in antisocial behaviour. On the other hand, self-esteem can be involved in the relationship between school connectivity and behaviour since higher self-esteem children can better employ their school relationships to maintain positive behaviour patterns, even in negative contexts. These possible mediating and moderating relationships are important to understand in order to come up with a holistic treatment that will effectively address multiple causative aspects of antisocial behaviours.

In the recent research, the importance of environmental and cultural factors that could mediate the relationships among school connectedness, self-esteem, and antisocial behaviours has been highlighted. The Nigerian educational environment, especially in Oyo State, children with hearing disabilities are faced with unique issues related to resource limitation, cultural attitudes towards disability, and variations in the quality of special education services. Sarkar and Ghosh (2024) found a number of problems faced by students with hearing impairments in higher education, including a lack of support services, barriers to communication and social stigmatisation, which could negatively influence school connectedness and self-esteem. Understanding the impact of these contextual factors on the development and meaning of school connectedness and self-esteem is the key to developing culturally and contextually appropriate therapies.

School connectedness, self-esteem and antisocial behaviours among students with hearing impairment can be well examined under the Social Development Theory by Vygotsky who emphasised the critical role of social interplay and culture in cognitive and behaviour development. This school of thought is based on the premise

that higher-order functions are developed when the learner interacts with the surrounding culture and environment, and language and communication play a crucial role in mediating these developmental processes (Vygotsky, 1978). Hearing impaired students experience specific developmental problems because of the disruption of traditional patterns of communication and social interaction directly influencing the results of behaviour. This highlights the applicability of Social Development Theory in explaining the relationship between school connectedness and self-esteem to antisocial behaviours.

According to the theory of Social Development, learning and development occur within what is termed as the Zone of Proximal Development (ZPD) which marks the difference between what a learner is able to achieve on his/her own and what they would be able to achieve with the help and cooperation of more educated individuals. In the case of students with hearing problems, the development of prosocial behaviours and the inhibition of antisocial behaviour occur in social contexts in which educators, peers and other members of the school community serve as role models and co-workers. School connectedness enhances access to developmental supports by fostering relationships and environments that enable kids to engage in guided engagement in socially acceptable behaviours. Children who lack connection in school lose the much needed developmental care and become more vulnerable to the development of antisocial behaviours without the healthy forms of social connection and modelling.

In addition, Social Development Theory holds that psychological tools, such as language, symbols, and social rules, are embraced during social contact and in turn affect the individual cognition and behavior. Hearing impaired students might have problems internalising social norms, behavioural expectations and self-regulatory practices because they have limited access to the dominant communication system which is often acquired through informal social interactions and incidental learning. This theoretical point of view explains the importance of school connectedness among students with hearing impairment because good relationships with teachers and peers provide alternative channels through which one can deliver the behavioural norms and expectation that otherwise might be missed because of communication barriers. Similarly, self-esteem is developed by internalization of feedbacks and evaluation of people in the social environment, which makes the quality of interactions at school a key determinant of self-concept of children with hearing impairments.

The concept focuses on the cultural-historical antecedent of development, considering behavioural norms, beliefs, and expectations are culturally shaped and shared in social institutions such as schools. To understand the issue of antisocial behaviour in students with hearing impairment in Oyo State, it would be important to look at both the general cultural framework of the Nigerian society as a whole, and the subculture of the deaf community that might have divergent perceptions regarding appropriate behaviour and acceptable conduct. The Social Development Theory provides a theory through which the way students navigate possibly colliding cultural worlds and how a sense of belonging to the school (school connectedness) and self-evaluation (self-esteem) affect their adoption of behavioural patterns in either or both cultural paradigms can be understood. The theoretical framework provides the in-depth insights into the complex social and psychological processes of how school affiliation and self-esteem shape the antisocial behaviours among adolescents with hearing impairments.

Statement of the Problem

Despite the growing understanding that academic progress and social integration among students with hearing impairments are seriously hindered by antisocial behaviours, there remains a considerable gap in the literature that simultaneously examines school connectedness and self-esteem as risk factors in such behaviours, especially in the Nigerian context. Although previous studies have individually documented the role of each of the variables, little is known about their interaction and whether self-esteem is a mediator or a moderator in the relationship between school connectedness and antisocial behaviours. Moreover, existing literature is largely Western based, which leads to the absence of studies investigating the specificities of the situation with children with hearing impairment in Oyo State that is characterised by the lack of resources, the stigmatisation of disability in the local culture, and discrepancies in the quality of special education. The study will fill this gap by conducting an empirical survey-based study on the associations between school connectedness, self-esteem, and antisocial behaviours in adolescents with hearing impairments in Oyo State, Nigeria.

Hypotheses

H₀₁: There will be no significant influence of School Connectedness on Antisocial Behaviour among Adolescents with Hearing Impairment in Oyo State, Nigeria.

H₀₂: There will be no significant influence of Self-esteem on Antisocial Behaviour among Adolescents with Hearing Impairment in Oyo State, Nigeria.

H₀₃: There will be no significant joint influence of school connectedness and self-esteem on Antisocial Behaviour among Adolescents with Hearing Impairment in Oyo State, Nigeria.

METHODOLOGY

This investigation utilised a cross-sectional descriptive survey research design to examine the associations between school connectedness, self-esteem, and antisocial behaviours among adolescents with hearing impairment in Oyo State, Nigeria. This design is appropriate for describing existing patterns and associations but does not permit causal inferences. Target population comprised all hearing-impaired students enrolled in senior secondary special schools across Oyo State, Nigeria. A multi-stage sampling procedure was adopted. In Stage One, purposive total enumeration was used to select all seven government-designated special schools offering secondary education to hearing-impaired students in Oyo State, ensuring complete institutional coverage and minimising selection bias at the school level. The names and locations of the seven schools, along with their respective enrolment figures, were obtained from the Oyo State Ministry of Education. In Stage Two, the Taro Yamane (Slovin) formula was applied to determine the proportional sample size from each school, with allocation made proportionate to each school's share of the total enrolment. This proportional-to-size technique yielded a total sample of 2,342 hearing-impaired students across the seven schools. Participants were senior secondary school students (SS1–SS3); further demographic details, including age range, gender distribution, degree of hearing loss, and communication mode (oral, sign language, or total communication), should be reported in future work to enhance transparency and replicability. Three standardised instruments were administered. Self-esteem was assessed using the Rosenberg Self-Esteem Scale (RSES; 10 items), a widely validated measure of global self-worth. School connectedness was measured using the School Connectedness Scale (SCS; 27 items), which captures students' sense of belonging, acceptance, and support within their school environment. Antisocial behaviour was evaluated using the Bullying and Victimization Scale (BVS; 16 items), which assesses engagement in aggressive and rule-violating behaviours. All three instruments utilised a 4-point Likert format. Experts in Guidance and Counselling confirmed the content and face validity, while reliability was established using Cronbach's Alpha ($\alpha = 0.78$). Future studies should report instrument-level reliability coefficients for each scale separately. Descriptive analysis involved frequency counts, percentages, means, and standard deviations, whereas multiple regression analysis ($p \leq 0.05$) was utilised to evaluate all three hypotheses. It is acknowledged that the present analysis did not test for mediation or moderation effects, nor did it include potential confounding variables such as family socioeconomic background, degree of hearing loss, mode of communication, or years in special education. These limitations should be addressed in future studies employing hierarchical regression, mediation analysis, or structural equation modelling. Approval for ethical considerations was secured from the appropriate academic and school authorities before the commencement of data collection.

ANALYSIS

Hypothesis One: There will be no significant influence of School Connectedness on Antisocial Behaviour among Adolescents with Hearing Impairment in Oyo State, Nigeria.

Table One: Summary of Regression Analysis showing the influence of School Connectedness, on antisocial behaviour among Adolescents with Hearing Impairment in Oyo State, Nigeria.

R=.006
R ² = 0.000
Adj R ² =0.000

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	6.094	1	6.094	.093	.760 ^b
Residual	146225.689	2233	65.484		
Total	146231.783	2234			

Source: Fieldwork 2026

Table one reveals that there is no significant influence of School Connectedness on antisocial behaviour among senior secondary school adolescents in Oyo State, Nigeria. $F_{(1, 2233)} = 0.093, P > 0.05$). The result yielded a coefficient multiple regression R of 0.006 and R square = 0.000 which implies that the independent variable accounted for 0.0% of the variation in antisocial behaviour. This implies that there is no significant independent influence of School Connectedness on antisocial behaviour among senior secondary school adolescents in Oyo State, Nigeria. Hence, the null hypothesis is therefore accepted.

Hypothesis Two: There will be no significant influence of Self-esteem on Antisocial Behaviour among Adolescents with Hearing Impairment in Oyo State, Nigeria.

Table Two: Summary of Regression Analysis showing the influence of Self-esteem, on antisocial behaviour among Adolescents with Hearing Impairment in Oyo State, Nigeria

R=.066					
R ² = 0.004					
Adj R ² =0.004					
Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	641.331	1	641.331	9.836	.002 ^b
Residual	145590.452	2233	65.199		
Total	146231.783	2234			

Source: Fieldwork 2026

Table two reveals that there is a significant influence of Self-esteem on antisocial behaviour among senior secondary school adolescents in Oyo State, Nigeria. $F_{(1, 2233)} = 9.836, P < 0.05$). The result yielded a coefficient multiple regression R of 0.066 and R square = 0.004 which implies that the independent variable accounted for 0.4% of the variation in antisocial behaviour. The remaining percentage could be explained with reference to extraneous variables that are not accounted for in this study. This implies that there is a significant influence of Self-esteem on antisocial behaviour among senior secondary school adolescents in Oyo State, Nigeria. Hence, the null hypothesis is therefore rejected.

Hypothesis Three: There will be no significant joint influence of school connectedness and self-esteem on Antisocial Behaviour among Adolescents with Hearing Impairment in Oyo State, Nigeria.

Table Three: Summary of Regression Analysis showing the joint influence of school connectedness and self-esteem, on antisocial behaviour among Adolescents with Hearing Impairment in Oyo State, Nigeria

R=.066					
R ² = 0.004					

Adj R ² =0.003					
Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	642.038	2	321.019	4.921	.007 ^b
Residual	145589.746	2232	65.228		
Total	146231.783	2234			

Source: Fieldwork 2026

Table three reveals the joint influence of school connectedness and self-esteem on antisocial behaviour among senior secondary school adolescents in Oyo State, Nigeria. $F_{(2, 2232)} = 4.921, p = .007$. The result yielded a coefficient multiple regression R of 0.066 and R square = 0.004 which implies that the two predictors jointly accounted for 0.4% of the variation in antisocial behaviour. The joint model is statistically significant at $p = .007$ ($p < 0.05$), indicating that the combination of school connectedness and self-esteem significantly predicts antisocial behaviour among adolescents with hearing impairment in Oyo State, Nigeria. Accordingly, the null hypothesis (H03) is rejected. However, it is important to note that the variance accounted for is negligible ($R^2 = 0.004$), and the incremental contribution of school connectedness beyond self-esteem alone is virtually zero ($\Delta R^2 \approx 0.000$), suggesting that the statistical significance of the joint model is driven primarily by self-esteem rather than a genuine additive effect of both predictors. This result should be interpreted with caution, and the practical significance of school connectedness in this joint model remains limited.

DISCUSSION OF FINDINGS

It is impressive and must be carefully interpreted that the school connectivity did not significantly predict antisocial behaviours in adolescents with hearing impairment in Oyo State, ($F=0.093, p=.760, R^2=0.000$). This result is a contradiction to the large body of evidence that school connectedness has always been an important protective factor against behavioural problems. According to a meta-analysis by Allen et al. (2018), children with strong school relationships have significantly fewer propensities toward antisocial behaviour but those with a sense of alienation show higher behavioural issues. The study by Rose et al. (2024) revealed that school connectedness is weakening concurrent health risks and adverse behavioural engagement among teenagers.

This could be explained by the fact that the impact of this study was not significant because of the unique educational and socio-cultural background of Oyo state. According to Sarkar and Ghosh (2024), systemic challenges faced by students with hearing impairments in the education sector of developing nations, such as insufficient support services, communication difficulties, and social stigmatisation, could be obstacles to authentic school attendance despite their physical enrolment. In these teenagers, the perceived school connectivity could be superficially based, or structurally constrained, which makes it an ineffectual behavioural moderator. Cumming et al. (2017) stressed that school connectivity interventions should be intentional, well-founded, instead of being based exclusively on physical inclusion, which special schools in Oyo State might not always meet because of the lack of resources.

The results of hypothesis two show that self-esteem is a strong predictor of antisocial behaviours ($F=9.836, p=.002, R^2=0.004$), which is in line with an enormous body of theoretical and empirical research. Although the variance explained is low (0.4 percent), the significance of self-esteem as a predictor is confirmed. This is in line with the results of Theunissen et al. (2014), which were cited in the introduction and showed that students with hearing impairment tend to exhibit lower self-esteem than those with hearing impairments, and that the negative self-perceptions are reflected in behavioural problems. The theoretical assumption that the poor self-esteem of pupils leads to antisocial behaviours such as violence and defiance is consistent with this association (Alqudah et al., 2024).

The finding is consistent with that of Warner-Czyz et al. (2015) who established important trends in self-esteem

development among hearing-impaired students who reported experiencing inadequate communication support and limited peer acceptance had lower self-concepts related to problematic behaviours. Similarly, Qi et al. (2024) found that resilience-enhanced self-esteem was a protective factor against behavioural difficulties in this group. The present results support these conclusions and the importance of self-esteem as a psychological resource that alleviates antisocial behaviour in Oyo State especially in the challenging socio-educational context.

The joint regression model was statistically significant ($F_{(2, 2232)} = 4.921, p = .007$); however, the combined predictors explained only 0.4% of the variance in antisocial behaviour, and the incremental R^2 gained by adding school connectedness to the model containing self-esteem was negligible ($\Delta R^2 \approx 0.000$). This indicates that, while the joint model achieves statistical significance, it is driven almost entirely by self-esteem, with school connectedness contributing no meaningful additive predictive value. This result goes against the interactional model of the introduction, where Du et al. (2024) argued that low school connectedness and low self-esteem were more likely to result in antisocial behaviours, and that the two variables interact to shape the behavioural progression. The small incremental effect of school connectedness in the joint model could reflect the inhibitory effect of contextual constraints on the effect of school connectedness on behaviour, as also suggested by Antia et al. (2011), which will result in the contextual limitation of school connectedness to activate its behavioural effect on school connectedness in the absence of deliberate structural support.

CONCLUSION

This study examined school connectedness and self-esteem to be the predictors of antisocial behaviours among hearing impaired adolescents in Oyo State, Nigeria. The results showed that school connectedness was not a statistically significant predictor of antisocial behaviours either individually or in combination and self-esteem was found to be a statistically significant predictor. The results point out that psychological self-worth has a stronger predictive relationship with behavioural outcomes in this group than perceived school belonging, which may be a factor of the contextual reality of special education settings in Nigeria, where institutional obstacles can disrupt the protective impacts of school connectedness. The results highlight the pressing need of targeted psychological and social measures that boost self-esteem among hearing-impaired adolescents to reduce disruptive behaviour at school in Oyo State.

RECOMMENDATIONS

Based on the findings of the current study, the following are recommended:

1. School counsellors and psychologists working in special educational institutions across Oyo State must plan and implement systematic self-esteem building interventions, such as cognitive-behavioral group therapy, strength-based counselling and peer mentoring, specifically tailored in meeting the communication needs of adolescents with hearing impairment, based on the known strong effect of self-esteem on antisocial behaviour.
2. School connectedness should be improved in terms of its structure by ensuring an adequate level of support in communication, hiring trained sign language teachers, and establishing the inclusive strategies of peer engagement as the current resource limitation can be compromising the protective potential of school belonging in the prevention of antisocial behaviours.
3. Further mediating and moderating variables should be studied in future such as parental support, teacher communication competence, and cultural attitudes towards disability that may explain the high unexplained variance (99.6) in antisocial behaviour and thereby improve the predictive model in the Nigerian context.

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