

Socio-demographic Factors as Correlates of Academic Achievement of Students with Hearing Impairment in Federal College of Education (Special) Oyo, Oyo State, Nigeria

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Abstract

The students with hearing impairment exhibit language and communication deficit significant enough to interfere with their academic achievement. This has being of great concern to researchers over the years. This study examined the relationship between socio-demographic factors and the academic achievement of students with hearing impairment in the Federal College of Education (Special), Oyo. The Descriptive survey research design of correlational type was adopted. Peer Pressure Scale ($r=0.75$), Teacher-Student Relationship Inventory ($r=0.85$), and Student Cumulative Grade Point Average (CGPA) were used for data collection. A multistage sampling procedure was used to select eighty (80) participants drawn from 200 and 300 level students with hearing impairment, while purposive sampling technique was used to select the institution. The finding revealed that there was a significant relationship between socio-demographic factors (interpreter-students relationship and age of onset) and the academic achievement of students with hearing impairment. Interpreter-students ($r = .228$, $p < .05$) and Age onset ($r = .764$, $p < .05$) have significant relationship with the academic achievement of students with hearing impairment while school environment and peer influence have no significant relationship with the academic achievement of students with hearing impairment. Also, there was a multiple correlations (R) of 0.768 a multiple R square of 0.590, ($Adj. R^2=0.556$) which means that 55.6% of the variance in the academic achievement of students with hearing impairment was accounted for by the independent variables. The significance of the joint contribution was tested at $p < 0.05$ using the F -ratio at the degree of freedom (df - 6/73). The analysis of variance for the regression yielded a F -ratio of 17.480. Special educators and other professionals in the education of

students with hearing impairment should take cognizance of these factors for decision-making to foster better academic achievement of students with hearing impairment.

Keywords: *Hearing Impairment, Interpreter-student relation, Peer Influence, School environment, Socio-demographic factors*

Introduction

The effects of hearing loss are not always straightforward to identify from afar. Hearing impairment leads to generalised learning difficulties and difficulties in specific areas. Hearing impairment affects not only the language development of the child, but also many aspects of the child's social, emotional and educational development. Individuals with hearing difficulties may also have difficulties in many socio-demographic fronts like peer relations and school environment. Different research findings have shown that, students with hearing impairment are likely to have difficulty in the classroom learning experience as a result of inadequate social skills (Bolaji, 2020). The low levels of academic achievement common for deaf individuals, according to Marschark (2006), may also have a basis in psychosocial processes. Some researchers have highlighted some socio-demographic variables as being responsible for poor academic achievement among students with hearing impairment. According to Roebuck (2020), social factors are those factors within the realm of human interactions and are concerned with social structures and social processes that impinge on individuals. Linking these variables with demographic variables gave rise to the socio-demographic variables under study. They are school environment, peer influence, interpreter-student relationship, age of onset of hearing loss, level, and gender.

It is important to study the relationship between academic achievement of students with hearing impairment and the availability of interpreters, because the interpreters are the most common accommodation provided to deaf student, and the most used means of communication in the classroom. The dynamics of the student-interpreter relationship could influence the deaf students' connection to the school environment, connection to peers, academic success, and overall success in college (Harrington, 2005). This study is also needed as interpreters have a tremendous amount of power to influence peer and school perceptions about the deaf students together with the capacity to control information to and from the deaf students.

Interpreter-students' relationship is an important factor in the education and subsequent academic achievement of students with hearing impairment. However, the cordiality or otherwise of the relationship will dictate to a large extent the outcome of the mutual venture. Berge and Ytterhus (2015) asserted that they assume are that the students'

involvement in interpreter-mediated learning activities will depend in part on how they experience the presence of the interpreter, and they will also find that some role performance strategies will be more agreeable, supportive and effective than others.

The Interpreters play crucial roles in the developmental trajectory of students with hearing impairment, and a supportive interpreter-student relationship is a very important determinant of students' psychosocial and behavioural adjustment (Mason, Hajovsky, McCune and Turek 2017). Effective interpreters typically have close and satisfactory relationships with students, provide instrumental help and care about students with hearing impairment. Different dimensions of the interpreter-student relationship have also been found to be differentially associated with academic and behavioral outcomes. Early studies have found a significant association between interpreters' instrumental help and students' engagement in the classroom (Oyawole and Isaiah, 2022).

Peer influence is one of the major characteristics of the period of adolescence which makes adolescents to seek out one another and copy habits, attitudes and lifestyle from one another. The influence of friends could be so strong, especially during adolescence, to the extent of dictating the student's lifestyle which includes attending classes and assignments. A student may attend classes just because a friend did so or to suit the whims and caprices of the clique he/she belongs. In most cases, this is done for social relevance not minding the academic implications. Peer influence may have a positive influence and help to challenge or motivate one to do best. Peer group influence may also result in one doing things that may not fit with one's sense of what is right or wrong. In other words, when peer influence makes one do things that people frown at, it is a negative peer influence. Operationally peer influence is a force exerted by people that is pressured by ideas, values and behaviour either positively or negatively and always associated with adolescents (Shah, 2019). Peer relationships are important predictors of academic and life skills in children and young people (Michael, Attias, and Raveh, 2018). Peer relationships are particularly salient during adolescence when young people spend much of their time with peers, often turning to peers rather than parents for intimate disclosures, and seeking feedback from peers as an important input to the development of their sense of self (Prinstein and Giletta, 2016).

Some studies show that the school environment can have a dramatic effect on academic achievement and wellbeing (Determan, Akers, Albright, Browning, Martin-Dunlop, Archibald, and Caruolo, 2019). Design interventions in academic classrooms and study spaces can improve students' academic achievement. When a school environment is designed with the students in mind, having most of the natural or near natural trappings to students, it will influence their academic achievement.

Roebuck (2020) asserted that the environments you grow up in, such as school, have great influence on your development and identity. For example, if a school building is dilapidated, consequently, the students might experience lower feeling of self-worth. From their early childhood onward, children spend an immense amount of time in school. Hence, school environment can have either positive or negative influence on students' academic achievement. A recent study found that when a school building is run down, students felt undervalued by the community, stressed, and unsafe in school (Maxwell, 2016). When students feel undervalued, it can be difficult for them to value themselves or their education and decreases their sense of belonging within the school and community as a whole (Maxwell, 2016). Learning takes place effectively only when a proper and congenial environment is provided for students in the classroom. Their learning environment plays important role in molding the innate potentials (Roebuck, 2020). As the building quality decreases, attendance issues and dropout rates increase (Branham, 2004). Maxwell (2016) stated that as school building's structural and aesthetic quality drops, so does student's learning, achievement, and attendance.

Some studies have shown that female students have a better perception of the school environment than the male students. For instance, Harinarayanan and Pazhanivelu (2018) asserted that it is because female students are by nature, calm and quiet. So they feel school environment is very convenient for their studies. Female students make use of the library and the lab much better than the male students.

Students with hearing impairment, in most cases, exhibit communication deficit significant enough to interfere with their academic achievement. Their academic achievement may be so poor that some of them may find it difficult to progress in their academic pursuit. Consequently, students with hearing impairment easily experience complexes and issues with self to the extent of dropping out of school. It has been established that some of those factors are not only extrinsic to the students but poses a more potent impediment to the academic achievement of students with hearing impairment.

The challenges of hearing loss have made quite a number of students with it to become academic underachiever, despite the multiple efforts of researchers in ameliorating the plight of students with hearing impairment. It is still causing frustration for diverse number of students in Nigeria as its effects transcend the confines of academics to social relationship. This is because of the strong relationship between socio-demographic factors and the academic achievement of students with hearing impairment.

Previous researches on socio-demographic variables were found to either concentrate on hearing students alone or study the variables under study in isolation. Unfortunately, there are paucity of researches on the contribution of socio-demographic

factors (school environment, peer influence, interpreter-student relationship, age of onset, level and gender) on the academic achievement of students with hearing impairment. Therefore, this study investigated the socio-demographic factors as correlates academic achievement of students with hearing impairment in Federal College of Education (Special) Oyo.

Research Questions

The following research questions were answered in the study:

1. What is the relationship between socio-demographic factors (school environment, peer influence, interpreter-student relationship, age of onset, level and gender) and the academic achievement of students with hearing impairment in Federal College of Education (Special) Oyo?
2. What is the joint contribution of socio-demographic factors (school environment, peer influence, interpreter-student relationship, age of onset, level and gender) to the academic achievement of students with hearing impairment in Federal College of Education (Special), Oyo?
3. What is the relative contribution of socio-demographic factors (school environment, peer influence, interpreter-student relationship, age of onset, level and gender) to the academic achievement of students with hearing impairment in Federal College of Education (Special), Oyo?

Methodology

Research Design

The study adopted a descriptive research design of correlational type. In this design, the researcher did not manipulate the variables under investigation. The population for this study comprises all students with hearing impairment in Federal College of Education (Special), Oyo, Oyo state, Nigeria.

The sample for the study consisted of eighty (80) participants drawn from 200 and 300 level students with hearing impairment. Multistage sampling procedure was used to select the participants as follows:

Stage I: At the first stage, purposive sampling technique was used to select the Federal

College of Education (Special) Oyo. This selection was based on the fact that the institution was the only higher institution with the highest number of students with hearing impairment in Oyo state.

Stage II: Stratified sampling technique was used to group the population according to academic levels of 200 and 300 levels.

Stage III: Simple random sampling technique was used to select forty (40) students of twenty (20) males and twenty (20) females from the 2 levels of education of the institution to make up eighty (80) participants for the study.

Instrumentation

The instruments for this study were Peer Pressure Scale, Student Version of the Teacher-Student Relationship Inventory (S-TSRI) and Students' Cumulative Grade Point Average (CGPA).

Method of Data Analysis

Data collected were analysed using descriptive statistics of Frequency Count and Percentage and inferential statistics of Pearson Product Moment Correlation (PPMC) and Multiple Regression Analysis. Frequency Count and Percentage were used to analyse the demographic characteristics of the respondents, while Pearson Product Moment Correlation was used to examine the relationship between the socio-demographic factors (school environment, peer influence, interpreter-student relationship, age of onset, level of education and gender) and the academic achievement of students with hearing impairment in Federal College of Education (Special), Oyo. Multiple Regression Analysis was used to determine the composite and relative contributions of the independent variables to the dependent variable.

Results

Research Questions

Rq1: What is the relationship between socio-demographic factors (school environment, peer influence, interpreter-students relationship, age of onset, level of education and gender) and the academic achievement of students with hearing impairment in Federal College of Education (Special), Oyo?

Table 1: Inter-correlation Matrix of independent and dependent variables

	1	2	3	4	5	6	7
Academic Achievement	1						
School environment (P value)	.043 .704	1				1	
Peer influence (p value)	.020 .861	.058 .611	1				1
Interpreter-students relationship (p value)	.228* .042	.258* .021	.042 .714	1			
Age onset (p value)	.764** .000	.014 .905	.053 .639	.281* .012	1		
Level (p value)	.053 .640	.244* .029	.376** .001	.075 .510	.083 .462	1	
Gender (p value)	.027 .815	.130 .250	.300** .007	.056 .621	.042 .713	.000 .900	1
Mean	2.75	26.70	28.93	27.10	1.88	2.50	1.5
Standard Deviation	.948	1.546	1.675	1.346	.603	.503	.503

** Significant at $p < 0.05$, * significant at $p < 0.01$

Table 1 showed that: there was a significant relationship between socio-demographic factors (interpreter-students relationship and age of onset) and the academic achievement of students with hearing impairment. That is, Interpreter-students ($r = .228$, $p < .05$), and Age onset s ($r = .764$, $p < .05$) has significant relationship with the academic achievement of students with hearing impairment. While, school environment ($r = .043$, $p < .05$), peer influence ($r = .020$, $p < .05$), level of education ($r = .053$, $p < .05$), and gender ($r = .027$, $p < .05$) have no significant relationship with the academic achievement of students with hearing impairment

Rq2: What is the joint contribution of socio-demographic factors (school environment, peer influence, interpreter-students relationship, age of onset, level of education and gender) to academic achievement of students with hearing impairment in FCES, Oyo?

Table 2: Summary of Regression Analysis of prediction of the socio-demographic factors (school environment, peer influence, interpreter-students relationship, age of onset, level and gender) and the academic achievement of students with hearing impairment

.R	R Square	Adjusted R Square		Std. Error of the Estimate		
0.768	0.590	0.556		.632		
SUMMARY REGRESSION ANOVA						
	Sum of Squares	Df	Mean Square	F	P	Remark
Regression	41.863	6	6.977	17.480	0.000	P<0.05 Sig.
Residual	29.137	73	.399			
Total	71.000	79				

Table 2 showed there that was joint contribution of socio-demographic factors (school environment, peer influence, interpreter-students relationship, age of onset, level of education and gender) to the academic achievement of students with hearing impairment in FCES, Oyo. The table shows coefficient of multiple correlations (R) of 0.768 a multiple R square of 0.590. This means that (Adj. $R^2=0.556$) 55.6% of the variance in the academic achievement of students with hearing impairment is accounted for by the independent variables, when taken together. The significance of the joint contribution was tested at $p<0.05$ using the F-ratio at the degree of freedom (df- 6/73). The table also shows that the analysis of variance for the regression yielded a F-ratio of 17.480.

RQ3. What is the relative contribution of socio-demographic factors (school environment, peer influence, interpreter-students relationship, age of onset, level of education and gender) to the academic achievement of students with hearing impairment in FCES, Oyo?

Table 3: Relative contribution of the independent variables to the dependent variables (Test of significance of the regression coefficients)

Variable	Unstandardised Coefficients		Standardised Coefficients			
Model	(B)	Std. Error	Beta	T	Sig.	Remark
Constant	2.255	2.260	-	.998	.322	-
School Environment	.015	.050	.024	.294	.770	P>0.05(Not Sig.)
Peer Influence	.048	.049	.085	.980	.330	P>0.05(Not Sig.)
Interpreter-students	.004	.057	.005	.062	.951	P>0.05(Not Sig.)
Age Onset	1.211	.125	.771	9.718	.000	P<0.05(Sig.)
Level	.069	.161	.037	.432	.667	P>0.05(Not Sig.)
Gender	.052	.152	.028	.344	.732	P>0.05(Not Sig.)

Table 3 reveals the relative contribution of the independent variable (Age onset hearing loss) to the dependent variable, expressed as beta weights. Using the standardised regression coefficient to determine the relative contributions of the independent variables. Age onset hearing loss ($\beta = 0.771$, $t = 9.718$, $p < 0.05$) indicates most potent contributor to the prediction and has relative contribution to the academic achievement of students with hearing impairment, while others school environment ($\beta = 0.024$, $t = .294$, $p > 0.05$), peer influence ($\beta = 0.085$, $t = .980$, $p > 0.05$), Interpreter-students relationship ($\beta = 0.005$, $t = .062$, $p > 0.05$), level ($\beta = 0.037$, $t = 432$, $p > 0.05$) and gender ($\beta = 0.028$, $t = .344$, $p > 0.05$), have no relative contribution to the academic achievement of students with hearing impairment.

Discussion

The finding of the study shows that there was a significant relationship between socio-demographic factors (interpreter-students relationship and age of onset) and the academic achievement of students with hearing impairment. While, school environment, peer influence, level and gender do not have significant relationship with the academic achievement of students with hearing impairment. The above finding is in consonance with the findings of Cerney (2005) and McCray (2019) who reported that the best accommodations for students with hearing impairment is the provision of a sign language interpreter in regular education classrooms to provide them access to the classroom. Further, Kelly (2008) reported that in order to foster language and cognitive development among students with hearing impairment, there is need for a sign language interpreter to bridge the

communication gap in and outside the classroom. However, King (2018) found that just because an interpreter is in the classroom does not mean that the students suddenly understand everything that is stated. Sign language is a visual language that requires strong cognitive levels especially for those who are working to acquire education through it (King, 2018).

The finding of the study also shows that there was joint contribution of socio-demographic factors (school environment, peer influence, interpreter-students relationship, age of onset, level of education and gender) to the academic achievement of students with hearing impairment. It implies that there is a joint contribution of socio-demographic factors (school environment, peer influence, interpreter-students relationship, age of onset, level and gender) to the academic achievement of students with hearing impairment. This finding is in agreement with Barrett, Davies, Zhang, and Barrett (2015) who reported that classroom complexity is equally important. A plain room might disengage students, whereas a complex room might function as a distraction. A room needs a balance of blank and engaged space. Shah (2019) reported that peer relationships are important predictors of academic and life skills in children and young people. Michael, Attias, and Raveh, (2018) reported that peer relationships are particularly salient during adolescence when young people spend much of their time with peers, often turning to peers rather than parents for intimate disclosures, and seeking feedback from peers as an important input to the development of their sense of self. This developmental period, according to Prinstein and Giletta (2016) and Brice and Strauss (2016) reported that the period is especially challenging for those who are deaf as they face significant changes associated with puberty and adolescence in a hearing world where communication and access to information and peers can be compromised by their hearing loss.

The result of the study conducted reveals that there a significant relative contribution of the independent variable (Age onset hearing loss) to the dependent variable, expressed as beta weights. There is relative coefficient of socio-demographic factors (Age onset hearing loss) and the academic achievement of students with hearing impairment. Using the standardised regression coefficient to determine the relative contributions of the independent variables. Age of onset of hearing loss indicates most potent contributor to the prediction and has relative contribution to the academic achievement of students with hearing impairment, while others like school environment, peer influence, Interpreter-students relationship, level of education and gender has no relative contribution to the academic achievement of students with hearing impairment. It implies that there is a significant relative contribution of socio-demographic factors (age of onset) to the academic achievement of students with hearing impairment which corroborated the findings of

Wentzel, Barry, and Caldwell (2014) and Olalekan (2016), who reported that through observing and imitating the behavior of others, learners can avoid much wasteful random behaviour and come close to reproducing the behaviours of which members are recognized. In support of the findings of this study is Roebuck (2020) reported that building conditions influence wellbeing and performance both directly and indirectly, such as through impacting development, social dynamics, and students' feelings of self-worth, belonging, ownership, and value. Hanafi and Noor, (2016) also reported that it is the influence buildings have on social dynamics and academic ability which makes them so powerful in improving academic achievement.

Conclusion

It was discovered that interpreter-students relationship and age of onset of hearing loss have greater relationship with the academic achievement of students with hearing impairment and should be given priority in the education of students with hearing impairment as they go a long way to determine their academic achievement. Whereas, socio-demographic factors like school environment, peer influence, level of education and gender were discovered not to have significant relationship with the academic achievement of students with hearing impairment.

The results obtained from this study have demonstrated that interpreter-students relationship and age of onset of hearing loss should be given serious consideration in the education of students with hearing impairment as they go a long way to determine their academic achievement. However, socio-demographic factors like school environment, peer influence, level of education and gender do not have significant relationship with the academic achievement of students with hearing impairment.

Recommendations

The following are recommended based on the findings of this study:

1. Government and non-governmental organisations should pay close attention to the training and recruitment of sign language interpreters for students with hearing impairment to ensure that the best hands are employed to render the interpreting service in order to improve the academic achievement of students with hearing impairment.
2. Stakeholders in the education of students with hearing impairment should support and encourage the sign language interpreters to go for in-service training to enhance their service delivery.

3. Sign language interpreters should ensure a cordial relationship with students with hearing impairment so as to earn their trust.
4. The school environment of the students with hearing impairment should be conducive for learning. This will go a long way to improve their academic achievement.
5. Pediatric audiology should be made compulsory to help in early identification of hearing impairment for early intervention in order to remove or reduce the effect of hearing loss on the academic achievement of school-aged children.

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