International Journal on Integrated Education (IJIE)

e-ISSN: 2620 – 3502
p-ISSN: 2615 – 3785

Volume: 8 Issue: 2 | June 2025

https://journals.researchparks.org/index.php/IJIE

Article

Factors, and Impact of Bullying on Self-esteem and Interest of Senior Secondary School Science Students in North Central, Nigeria

Ojelade I.A*[1], Ubom, A.E.B[2], Olamoyegun, S.O[3]

1,2,3. Department of Science and Environmental Education, Faculty of Education, University of Abuja, Abuja, Nigeria

* Correspondence: nikeojelade@gmail.com

Abstract: This study examined factors and impact of bullying on self-esteem, and interest of senior secondary school science students in North Central, Nigeria. The study used descriptive survey design. Population of the study was made up of all SSS science students in all the government senior secondary schools in North Central, Nigeria. The sample of the study was made of three hundred and eight four (384) students and teachers. Krejcie and Morgan table was use to select the sample size. This study employed the use of various questionnaires to collect information on all aspects of the study. The questionnaire was structured on a four-point type likert scale: Strongly Agreed, Agreed, Disagreed, Strongly Disagreed (SA, A, D, SD). The instrument was validated by my supervisors and another expert, who is an educationist. A test-retest reliability method was used to evaluate instrument stability, assessing temporal consistency, identify instrument bias, and establishing instrument validity. The reliability was measured using Chronbach's alpha coefficient for calculation of internal consistency and was found to be 0.814. The time frame was good enough to measure the stability of the instrument. Mann-Whitney, and T-Test statistical analytical technique using SPSS Version 21 statistical package was used to analyze the data. The study revealed that male and female students have the same opinion on factors causing bullying, which are bully wants to gain dominance on others, jealousy and lack of empathy amongst others make students to become bullies. The opinions of male and female students on impacts of bullying on self-esteem was not different also which are bullying has made me feel worse about myself, the result also revealed that bullying has serious negative effect on academic performance of the bullied. Based on the findings, the following are measures that need to be put in place by the stakeholders in education in other to curb bullying among senior secondary school science students in North Central, Nigeria: develop and implement anti-bullying policies; establish a bullying reporting system; create a safe and supportive school climate that fosters open communication among students, teachers and parents and provide teacher training on bullying prevention and response and assign classroom mentors and advisors.

Citation: Ojelade I..A. Ubom, A.E.B. Olamoyegun, S.O. Factors, and Impact of Bullying on Self-esteem and Interest of Senior Secondary School Science Students in North Central, Nigeria. International Journal on Integrated Education (IJIE) 2025, 8(2), 77-90.

Received: 20th Mar 2025
Revised: 27th Apr 2025
Accepted: 21th May 2025
Published: 30th Jun 2025

Copyright: © 2025 by the authors. Submitted for open access publication under the terms and conditions of the Creative Commons Attribution (CC BY) license (https://creativecommons.org/licenses/by/4.0/)

Keywords: Bullying, Interest, Self-esteem, Secondary School Science Students

1. Introduction

Bullying behaviour has been defined in various ways by various authors. Centre for Disease Control and Prevention, defined bullying as any unwanted aggressive behaviour(s) by a person or group of persons that involves an observed or perceived power imbalance and is repeated multiple times or is likely to be repeated [1]. According to Olweus, , bullying is an aggressive behaviour that is intentional, repeated, and involve

imbalance of power between the perpetrator and the victim. American Psychological association, also stated that bullying is a form of aggressive behaviour that is intended to cause harm, intimidate and humiliate another person, often repeatedly and over time .

Also, Hinduja and Patchin, stated that, wilful and repeated harm inflicted through words or actions, often through a power imbalance, and with the intent to cause fear, intimidation, or emotional distress is bullying [2]. The unwanted and aggressive behaviour can be in form of threat, rumours spreading, physical attack, repeated harm, intimidation, body shaming, and lots more. Bullying has a significant impact on a nations educational system, affecting not only the individual involved but also the overall learning environment and society as a whole. According to UNESCO, all forms of violence and bullying in schools infringe the fundamental right to education, create unsafe learning environments and reduce the quality of education for all learners. Bullying have strong relationship with personality's traits like self-esteem, interest, emotion and level of academic achievement [3].

Self-esteem is the feeling of self-worth, self-respect and self -confidence. According to American Psychological Association self-esteem refers to an individual's overall evaluation of their own worth, value and abilities, which in turn influence overall well-being of an individual. Self -esteem research Centre, defines it as the sum of self-confidence, self-worth, and self-respect, influencing overall well-being [4]. It is the degree to which one value and respect his/herself, which affect motivation, resilience, and relationship which also serves as gauge for social acceptance. According to Lee and Kim, students with higher self – esteem tend to have better academic performance, increased motivation and greater resilience [5]. Self-esteem is positively correlated with academic performance while students with low self-esteem may experience decreased motivation, lower academic achievement and increased dropout rates [6].

Interest in science subjects (physics, chemistry and biology) is influenced by personal factors such as curiosity and motivation, as well as contextual factors, such as teaching method and learning environment. Students with high interest in science subjects tend to be curious, motivated, engaged and more likely to pursue careers in science, technology, engineering and mathematics [7]. For students to have sustained interest in science subjects, autonomy-supportive learning environment that promote curiosity, creativity, and self-expression should be provided.

According to Hertz etal, A science student in a hostile environment characterised by bullying may likely experience decreased motivation, leading to loss of interest in science subjects and be disconnected from the learning environment [8]. Interest is a positive and emotional state that accompanies engagement in an activity, and is characterized by feelings of enjoyment, curiosity, involvement, and is influenced by both internal and external factors [9]. According to Deci, interest is a fundamental aspect of human motivation, and is characterised by a sense of autonomy, competence, and relatedness. According to Hidi, Students with high interest in science subjects tend to be curious, motivated, engaged and more likely to pursue careers in science, technology, engineering, and mathematics. Krapp, was of the opinion that students with high interest in science subjects tend to experience a sense of enjoyment, fascination, and curiosity and are more likely to develop a deep understanding of scientific concepts [10].

Bullying has been identified as an antisocial behaviour capable of causing low self-esteem, loss of interest in science subjects like physics, chemistry and biology, and in turn poor academic performance, with repercussions ranging from drop out, depression, psychological trauma, withdrawal, suicidal attempt by the victim and death. Federal Capital Territory Education Secretariat and other stake-holders in education in North Central warned the students against bullying, cultism, harassment, and other social vices in schools as academic activities resumed in the year 2022. In spite of that, much still need to be done in finding out the factors and impact of bullying on self -esteem, interest and

academic performance. This study seeks to examine factors and impacts of bullying on self -esteem, interest and academic performance of secondary school science students in North Central Nigeria. The study would also examine the gender that bully the more and the gender that is bullied the more including various ways to curb bullying in senior secondary schools in North Central, Nigeria.

1.2 Purpose of the Study

The aim of this study is to examine factors and impact of bullying on self-esteem, and interest of senior secondary school science students in North Central, Nigeria.

Specifically, the objectives are to:

1. Find out the factors causing bullying among male and female science students in senior secondary schools in North Central, Nigeria.
2. Examine the impact of bullying on self-esteem of male and female science students in senior secondary schools in North Central, Nigeria.
3. Find out how bullying affects the interest of male and female students in science subjects in senior secondary schools, north central Nigeria.

1.3 Research Questions

The following research questions will guide this research work in line with the stated objectives of the study;

1. What are the opinions of male and female science students on factors causing bullying in senior secondary schools in North Central, Nigeria?
2. What are the opinions of male and female science students on the impact of bullying on self-esteem of the bullied students in senior secondary schools in North Central, Nigeria?
3. What are the opinions of male and female students on impact of bullying on interest in science subjects among bullied students in senior secondary schools, North Central, Nigeria?

1.4 Hypotheses

The following null hypotheses were formulated to answer the research questions:

H01: There is no significant difference in the opinion of male and female science students on the factors causing bullying in secondary schools in North Central Nigeria.

H02: There is no significant difference in the opinion of male and female science students on the impact of bullying on self-esteem of secondary school students in North Central Nigeria.

H03: There is no significant difference in the opinion of and female science students on the impact of bullying on interest in science male subjects of senior secondary school students in North Central, Nigeria.

2. Materials and Methods

Descriptive survey design was adopted for this study. The population of the study consisted of all SSS science students in all the government senior secondary schools in North Central, Nigeria. The sample of the study comprised of three hundred and eight four (384) students and teachers drawn from all the government co-educational senior secondary schools in Niger State and Federal Capital Territory. The sample size was selected using Krejcie and Morgan table for calculating sample size. A purposive sampling technique is a non- probability sampling technique where participants are selected based on specific criteria or characteristics relevant to the research study. This study employed the use of various questionnaires to collect information on all aspects of the study namely:1. Factors Causing Bullying Questionnaire. 2. Self-Esteem Questionnaire. 3.Interest Inventory Questionnaire. The questionnaire was structured into two sections A and B. Section A dealt with information on personal data of the respondents while section B dealt

with items from the research questions. The questionnaire was structured on a four-point type likert scale: Strongly Agreed, Agreed, Disagreed, Strongly Disagreed (SA, A, D, SD). The instrument was validated by my supervisors another expert, who is an educationist. A test-retest reliability method was used to evaluate instrument stability, assessing temporal consistency, identify instrument bias, and establishing instrument validity. The reliability was measured using Chronbach's alpha coefficient for calculation of internal consistency and was found to be 0.814. The time frame was good enough to measure the stability of the instrument. In analysing the data that was obtained from the respondents, Mann-Whitney, and T-Test statistical analytical technique was used using SPSS statistical package. Mann-Whitney mean score was used for research questions 1-5 and to analyse and test the hypothesis while T-Test was used to check the effect of bullying on academic performance in comparison with the un-bullied. For the purpose of interpreting the results of the research questions, the following boundary limits was set: 1.00 - 1.49. Strongly Disagreed; 1.5 - 2.49. Disagreed; 2.50 - 3.49, Agreed and 3.5 - 4.00, Strongly Agreed.

3. Results

Answer to Research Questions

Research Question One: What are the opinions of male and female science students on factors causing bullying in senior secondary schools in North Central, Nigeria? To answer the research question, mean and standard deviation were used as shown in Tables 2a & b.

Table 1. Female Students' Opinions on Factors Causing Bullying Among Senior Secondary School Science Students in North Central Nigeria.

S/N	ITEMS	SA	A	D	SD	Mean	Std. Dev.	Decision
1	Bully wants to gain dominance on others	20	17	2	0	3.46	0.59	Agree
2	Bully intends to gain respect and recognition	14	15	6	4	3.00	0.96	Agree
3	Students from hostile neighbourhood tends to become bully	4	25	9	1	2.82	0.64	Agree
4	Students from broken/violent home tend to be bullies	12	20	4	3	3.05	0.85	Agree
5	Improper parental upbringing/over pampering make students to become bullies	15	16	7	1	3.15	0.80	Agree
6	Students from rich family tends to become bullies	16	16	4	3	3.15	0.89	Agree
7	Exposure to drugs early makes students to become bullies	15	19	3	2	3.21	0.79	Agree
8	When someone else is bullying them, they try to bully back in revenge	16	12	9	2	3.08	0.92	Agree
9	Bullies are often jealous of or frustrated with their peer	14	10	9	6	2.82	1.08	Agree
10	Bullying behaviour get rewarded	2	11	7	19	1.90	0.98	Disagree
11	Students bully because they lack empathy/ do not care how others feel	14	21	1	3	3.18	0.81	Agree
12	Students bully because of inability to control self and emotion.	11	18	8	2	2.97	0.83	Agree
13	Students bully because they are feeling powerless in their own way	13	11	9	6	2.79	1.07	Agree
14	Students from dysfunctional family/environment become bullies	10	19	7	3	2.92	0.86	Agree
15	Low self -esteem makes students to become bullies	14	13	9	3	2.97	0.95	Agree
16	Students from poor background tend to become bullies	0	7	12	20	1.67	0.76	Disagree
	Section Mean					**2.88**	**0.98**	**Agree**

Table 1 shows the female students' opinions on causes of bullying among senior secondary school science students in North Central Nigeria. From the table, it was recorded that the female students generally agreed that most of the listed items are the factors causing bullying in senior secondary schools in North Central, Nigeria (section mean = 2.88). However, the students disagreed with the following statements: Bullying behaviour get rewarded (mean = 1.90, S.D = 0.98), Students from poor background tend to become bullies (mean = 1.67, S.D = 0.76). On the overall, the section mean and the standard deviation were found to be 2.88 and 0.98 respectively. This indicated that the majority of the students agreed that the listed causes are responsible for bullying among senior secondary school students in North Central Nigeria.

Table 2. Male Students' Opinions on Factors Causing Bullying Among Senior Secondary School Science Students in North Central Nigeria

S/N	ITEMS	SA	A	D	SD	Mean	Std. Dev.	Decision
1	Bully wants to gain dominance on others	33	22	2	0	3.54	0.56	Agree
2	Bully intends to gain respect and recognition	24	24	7	2	3.23	0.80	Agree
3	Students from hostile neighbourhood tends to become bully	10	25	9	3	2.89	0.81	Agree
4	Students from broken/violent home tend to be bullies	20	28	6	3	3.14	0.80	Agree
5	Improper parental upbringing/over pampering make students to become bullies	25	22	7	3	3.21	0.85	Agree
6	Students from rich family tends to become bullies	18	20	15	4	2.91	0.92	Agree
7	Exposure to drugs early makes students to become bullies	27	23	7	0	3.35	0.69	Agree
8	When someone else is bullying them, they try to bully back in revenge	27	9	17	4	3.04	1.03	Agree
9	Bullies are often jealous of or frustrated with their peer	26	9	21	1	3.05	0.94	Agree
10	Bullying behaviour get rewarded	2	7	11	37	1.54	0.84	Disagree
11	Students bully because they lack empathy/ do not care how others feel	22	30	2	3	3.25	0.76	Agree
12	Students bully because of inability to control self and emotion.	20	17	17	3	2.95	0.93	Agree
13	Students bully because they are feeling powerless in their own way	16	18	16	7	2.75	1.00	Agree
14	Students from dysfunctional family/environment become bullies	16	27	11	3	2.98	0.83	Agree
15	Low self -esteem makes students to become bullies	8	24	18	7	2.58	0.88	Agree
16	Students from poor background tend to become bullies	1	6	26	24	1.72	0.72	Disagree
	Section Mean					**2.88**	**0.99**	**Agree**

Table 2 shows the male students' opinions on causes of bullying among senior secondary school science students in North Central Nigeria. From the table, it was recorded that the male students generally agreed that most of the listed items are the causes of bullying in senior secondary schools in North Central, Nigeria (section mean = 2.88). However, the students disagreed with the following statements: Bullying behaviour get rewarded (mean = 1.54, S.D = 0.84), Students from poor background tend to become bullies (mean = 1.72, S.D = 0.72). On the overall, the section mean and the standard deviation were found to be 2.88 and 0.99 respectively. This indicated that the majority of the students agreed that the listed causes are responsible for bullying among senior secondary school students in North Central Nigeria.

Research Question Two: What are the opinions of male and female science students on the impact of bullying on self-esteem of the bullied students in senior secondary schools in North Central, Nigeria? To answer the research question, mean and standard deviation were used as shown in Table 3 & 4.

Table 3. Female Students' Opinions on the Impact of Bullying on Self-Esteem.

S/N	ITEMS	SA	A	D	SD	Mean	Std. Dev.	Decision
1	Bullying has made me feel worse about yourself	51	28	16	7	3.21	0.94	Agree
2	Bullying makes me feel like I am not good enough	51	45	4	2	3.42	0.66	Agree
3	Bullying has affected my relationship with others	24	57	19	2	3.01	0.71	Agree
4	Bullying made me feel like avoiding school or social gatherings	36	42	22	2	3.10	0.80	Agree
5	I use to feel like I am like walking on eggshell around others because of bullying.	33	40	20	9	2.95	0.93	Agree
6	Bullying makes me feel like I am not worthy of love or acceptance.	71	13	12	6	3.46	0.91	Agree
7	Bullying has made me question my own abilities.	63	23	14	2	3.44	0.80	Agree
8	Bullying made me feel like I am not attractive or desirable	61	31	6	4	3.46	0.78	Agree
9	I often feel sad or depressed because of bullying.	52	49	10	0	3.38	0.64	Agree
10	I often feel like wanting to hurt yourself because of bullying.	41	45	10	6	3.19	0.84	Agree
11	Bullying made me feel afraid around others.	50	40	6	6	3.31	0.83	Agree
12	I do feel like I am noy as good as others because of bullying	49	40	7	6	3.29	0.84	Agree
13	Bullying has made me feel isolated or alone.	64	26	10	2	3.49	0.75	Agree
14	Bullying makes me feel like I am not part of the crowd or outside peeping in.	58	29	7	8	3.34	0.91	Agree
15	Bullying makes me feel like I am a failure.	41	34	19	8	3.06	0.95	Agree
	Section Mean					**3.14**	**0.83**	**Agree**

Table 3 shows the female students' opinions on impacts of bullying on self-esteem among science students in North Central Nigeria. From the table, it was recorded that the female students generally agreed that all the listed items are the impacts of bullying on self -esteem of science students in North Central, Nigeria with section mean = 3.14 and Standard Deviation of 0.83. This indicated that majority of the students agreed that all the items listed are the impacts of bullying on self-esteem of the bullied students in senior secondary school in North central, Nigeria.

Table 4:. Male Students' Opinions on the Impact of Bullying on Self-Esteem.

S/N	ITEMS	SA	A	D	SD	Mean	Std. Dev.	Decision
1	Bullying has made me feel worse about yourself	36	27	22	5	3.04	0.93	Agree
2	Bullying makes me feel like I am not good enough	37	47	4	2	3.32	0.66	Agree
3	Bullying has affected my relationship with others	21	45	22	2	2.94	0.75	Agree
4	Bullying made me feel like avoiding school or social gatherings	27	38	23	2	3.00	0.80	Agree
5	I use to feel like I am like-walking on eggshell around others because of bullying.	28	35	23	2	3.01	0.82	Agree
6	Bullying makes me feel like I am not worthy of love or acceptance.	56	19	9	6	3.39	0.92	Agree
7	Bullying has made me question my own abilities.	56	22	10	2	3.47	0.78	Agree
8	Bullying made me feel like I am not attractive or desirable	47	33	6	4	3.37	0.80	Agree
9	I often feel sad or depressed because of bullying.	40	41	9	0	3.34	0.65	Agree
10	I often feel like wanting to hurt yourself because of bullying.	36	37	11	6	3.14	0.88	Agree
11	Bullying made me feel afraid around others.	50	28	6	6	3.36	0.87	Agree
12	I do feel like I am noy as good as others because of bullying	48	32	4	6	3.36	0.85	Agree
13	Bullying has made me feel isolated or alone.	50	28	10	2	3.40	0.77	Agree
14	Bullying makes me feel like I am not part of the crowd or outside peeping in.	46	30	6	8	3.27	0.93	Agree
15	Bullying makes me feel like I am a failure.	30	33	19	8	2.94	0.95	Agree
	Section Mean					**3.06**	**0.81**	**Agree**

Table 4 shows the male students' opinions on impacts of bullying on self-esteem among science students in North Central Nigeria. From the table, it was recorded that the male students generally agreed that all the listed items are the impacts of bullying on self -esteem of science students in North Central, Nigeria with section mean = 3.06 and Standard Deviation of 0.81. This indicated that majority of the students agreed that all the

items listed are the impacts of bullying on self-esteem of the bullied students in senior secondary school in North central, Nigeria.

1. Research Question Three: What are the opinions of male and female students on impact of bullying on interest in science subjects among bullied students in senior secondary schools in North Central, Nigeria? To answer this research question, mean and standard deviation were used as shown in the Table 3a & b.

Table 5. Female Students' Opinions on The Impact of Bullying on Interest in Science Subjects.

S/N	ITEMS	SA	A	D	SD	Mean	Std. Dev.	Decision
1	I lose confidence in my ability to learn science after being bullied	32	43	16	11	2.94	0.95	Agree
2	I feel unsafe to participate in science activities after being bullied	27	59	6	10	3.01	0.85	Agree
3	Bullying has affected my enjoyment of science learning	20	60	16	7	2.90	0.78	Agree
4	Bullying has affected my interest in science class	35	45	17	5	3.08	0.84	Agree
5	I often consider myself inadequate for science	38	44	14	6	3.12	0.86	Agree
6	I cannot pursue a career in science because of bullying	39	36	18	9	3.03	0.95	Agree
7	I am not confident in science class	46	32	19	5	3.17	0.90	Agree
8	I do not participate I science class activities after being bullied	40	45	4	13	3.10	0.97	Agree
9	I do not ask questions in science class after being bullied	37	41	9	5	3.20	0.82	Agree
10	I am very confident in learning science after being bullied	7	5	28	62	1.58	0.87	Disagree
	Section Mean					**3.01**	**0.86**	**Agree**

Table 5 shows the female students' opinions on impacts of bullying on interest in science subjects among the bullied students of senior secondary schools in North Central Nigeria. From the table, it was recorded that the female students generally agreed that most of the listed items are the impacts of bullying on interest in science subjects in North Central, Nigeria with section mean = 3.01 and Standard Deviation of 0.86. However, the students disagreed with this statement: I am very confident in learning science after being bullied (Mean = 1.58, S.D = 0.87). On the overall, the section mean and Standard Deviation were found to be 3.01 and 0.86 respectively. This indicated that majority of the students

agreed that all the items listed are the impacts of bullying on interest in science subjects among the bullied students in senior secondary schools in North central, Nigeria.

Table 6. Male Students' Opinions on The Impact of Bullying on Interest in Science Subjects.

S/N	ITEMS	SA	A	D	SD	Mean	Std. Dev.	Decision
1	I lose confidence in my ability to learn science after being bullied	37	30	8	15	2.99	1.08	Agree
2	I feel unsafe to participate in science activities after being bullied	28	48	1	13	3.01	0.95	Agree
3	Bullying has affected my enjoyment of science learning	32	38	11	8	3.06	0.92	Agree
4	Bullying has affected my interest in science class	34	34	15	7	3.06	0.92	Agree
5	I often consider myself inadequate for science	35	37	11	7	3.11	0.90	Agree
6	I cannot pursue a career in science because of bullying	26	41	15	8	2.94	0.90	Agree
7	I am not confident in science class	37	30	17	6	3.09	0.93	Agree
8	I do not participate I science class activities after being bullied	30	44	3	13	3.01	0.97	Agree
9	I do not ask questions in science class after being bullied	32	43	9	6	3.12	0.84	Agree
10	I am very confident in learning science after being bullied	8	7	14	61	1.58	0.97	Disagree
	Section Mean					**3.04**	**0.96**	**Agree**

Table 6 shows the male students' opinions on impacts of bullying on interest in science subjects among the bullied students of senior secondary schools in North Central Nigeria. From the table, it was recorded that the male students generally agreed that most of the listed items are the impacts of bullying on interest in science subjects in North Central, Nigeria with section mean = 3.04 and Standard Deviation of 0.96. However, the students disagreed with this statement: I am very confident in learning science after being bullied (Mean = 1.58, S.D = 0.97) . On the overall, the section mean and Standard Deviation were found to be 3.04 and 0.96 respectively. This indicated that majority of the students agreed that all the items listed are the impacts of bullying on interest in science subjects among the bullied students in senior secondary schools in North central, Nigeria.

Testing of Hypotheses

H01: There is no significant difference in the opinion of male and female science students on the factors causing bullying in secondary schools in North Central Nigeria. To test this hypothesis, Mann-Whitney Mean Rank Nonparametric statistic was used and the result is shown in table 9 below

Table 7. Summary of Mann Whitney Results of the Opinion of Male and Female Science Students on Factors Causing Bullying in Senior Secondary Schools.

Gender	N	Sum of Ranks	Mann Whitney U	Z	Sig@0.05	Remark
Female	39	1921.50	1081.500	-0.224	0.822	Not Significant

Male	57	2734.50

From table 7, the result of the Mann Whitney nonparametric test shows that the computed sum of rank scores are 1921.50 and 2734.50 by female and male respectively. The computed Mann Whitney U value is 1081.500 and the Z score is -0.224. The calculated p – value of 0.822 is greater than the 0.05 level of significance. Even though the male students obtained higher sum of rank of 2734.50 than the female counterpart of sum of rank 1921.50. This difference is however not significant. Hence, hypothesis 1 is not rejected and it is concluded that there is no significant difference in the opinion of male and female science students on the causes of bullying in secondary schools in North Central Nigeria.

H02: There is no significant difference in the opinion of male and female science students on the impact of bullying on self-esteem of secondary school students in North Central Nigeria.

To test this hypothesis, Man-Whitney Mean Rank Nonparametric statistic was used and the result is shown in table 10 below

Table 8. Summary of Mann Whitney Results of the Opinion of Male and Female Science Students on Impacts of Bullying on Self-Esteem of Senior Secondary School Students.

Gender	N	Sum of Ranks	Mann Whitney U	Z	Sig @0.05	Remark
Female	102	10229.50	4203.500	-1.008	0.313	Not Significant
Male	90	8298.50				

From table 8, the result of the Mann Whitney nonparametric test shows that the computed sum of rank scores is 10229.50 and 8298.50 by female and male respectively. The computed Mann Whitney U value is 4203.500 and the Z score is -1.008. The calculated p – value of 0.313 is greater than the 0.05 level of significance. Even though the female students obtained higher sum of rank of 10229.50 than the male counterpart of sum of rank 8298.50. This difference is however not significant. Hence, hypothesis 2 is not rejected and it is concluded that there is no significant difference in the opinion of male and female science students on the impact of bullying on self-esteem of secondary school students in North Central Nigeria.

H03: There is no significant difference in the opinion of male and female science students on the impact of bullying on interest in science subjects of senior secondary school students in North Central, Nigeria. To test this hypothesis, Man-Whitney Mean Rank Nonparametric statistic was used and the result is shown in table 6 below.

Table 9. Summary of Mann Whitney Results of the Opinion of Male and Female Science Students on Impacts of Bullying on Interest in Science Subjects of Senior Secondary School Students

Gender	N	Sum of Ranks	Mann Whitney U	Z	Sig @0.05	Remark
Female	102	9777.00	4524.000	-0.173	0.863	Not Significant
Male	90	8751.00				

From table 9, the result of the Mann Whitney nonparametric test shows that the computed sum of rank scores 9777.00 and 8751.00 by female and male respectively. The computed Mann Whitney U value is 4524.000 and the Z score is -0.173. The calculated p –

value of 0.863 is greater than the 0.05 level of significance. Even though the female students obtained higher sum of rank of 9777.00 than the male counterpart of sum of rank 8751.00. This difference is however not significant. Hence, hypothesis 3 is not rejected and it is concluded that there is no significant difference in the opinion of male and female science students on the impact of bullying on interest in science subjects of senior secondary school students in North Central, Nigeria.

Summary of Findings

The following are the summary of the findings of the study:

a. Gender of students has no significant influence on the factors causing bullying among secondary school science students,
b. Gender of students has no significant influence on the impact of bullying on self-esteem
c. Gender of students has no significant influence on the impact of bullying on interest of students.

4. Discussion

The findings from research question one revealed an overall sectional mean to be 2.88 for male and female respectively the students generally agreed to the 16 items as causes of bullying in secondary schools. The findings revealed that following are the major factors causing bullying: Bully wants to gain dominance on others, bully intends to gain respect and recognition, students from hostile neighbourhood tends to become bully, improper parental upbringing makes students to become bullies and exposure to drugs early make students to become bullies However, on specific note, students disagreed to the following statements: Students from poor background tend to become bullies and bullying behaviour get rewarded. The associated hypothesis states that: There is no significant difference in the opinion of male and female science students on the factors causing bullying among students in secondary schools in North Central Nigeria. The Mann Whitney Z – Score is -0.224 which is however not significant. Hence hypothesis 1 is not rejected and it is concluded that there is no significant difference in the opinion of male and female science students on the factors causing bullying in secondary schools in North Central Nigeria.

The above finding agreed with Payne and Denise, who observed that bullying whether physically, verbally is one-way students claimed a sort of power in their lives. They seek those students who seemed vulnerable and attacks some elements of their personality that make them stand out. Those students who have old shoes, too dumb, short, feminine or smart are mostly the target. The reason for bullying doesn't matter, and their only aim is to pull others down to pull themselves up. Awkwardly, the approach more often never works out [11].

Hostile neighbourhood or family issues accelerated the feeling of powerlessness [12]. For instance, youth from families where a family member is suffering from drug addiction, parents get divorced, or excessive fighting in the home, this situation leads most student to exaggerate frustration to the point of bullying. Kudenga, in his study of causes of bullying among Zimbabwe high school students identified the following as the leading causes: Early socialisation, peer pressure, lack of strict school rules on bullying, influence from movies and films, bully are attention seekers, bullying is inherited from violent parents, lack of proper upbringing amongst others [13]. Greener, while analysing the causes of bullying among teenager in schools noted that those students who were unable to control their feelings did things that injured others. When youth become frustrated and angry, usually they stop being themselves and does things that inflict pain on their peer. When students can't control their emotions, little irritations provoked them and caused them to overreact harshly, directing their pain to their peers [14].

The findings from research question two revealed an overall sectional mean to be 3.06 for male and 3.14 for female. This indicated that the students, generally and strongly agreed to all the items as impact of bullying on self -esteem. Some of the items are: bullying

makes me feel like I am not good enough, bullying made me feel like avoiding school, bullying has affected my relationship with others, bullying makes me feel like I am not desirable or attractive enough, bullying has made me feel like I am a failure, bullying has made me question my own ability, bullying has made me feel like I am walking on eggshell around others because of bullying and I feel like wanting to hurt myself because of bullying.

The related hypothesis states that: There is no significant difference in the opinion of male and female science students on the impact of bullying on self-esteem of secondary school science students in North Central Nigeria. The Mann Whitney result shows a negligible Z- Score of -1.008 which is not significant and therefore, hypothesis 2 is not rejected and it is concluded that here is no significant difference in the opinion of male and female science students on the impact of bullying on self-esteem of secondary school students in North Central Nigeria. This is in line with the findings of Lee and Kim , who states that students with higher self – esteem tend to have better academic performance, increased motivation and greater resilience. Self-esteem is positively correlated with academic performance while students with low self-esteem may experience decreased motivation, lower academic achievement and increased dropout rates.

According to the American Psychological Association bullying can lead to significant decrease in self-esteem, life satisfaction and social support. Bullying can have severe and long- lasting effects on a child's self-esteem, emotional well-being, and social relationship leading to depression and anxiety. National Bullying Prevention Centre concluded that bullying can have lasting impact on mental health, self-esteem, which can transcend to adulthood [15].

A science student is expected to demonstrate unusually high levels of motivation, concentration, with ability to integrate information and concepts into existing knowledge, he/she possesses a good memory with ability to comprehend abstract concepts beyond age level expectation, Bullying on the other hand has been identified to result to lower self-esteem, increased anxiety, depression, emotional distress, loss of confidence, social withdrawal, negative self -image, mental health, and relationship problem relationship problem, which in turn will affect overall well-been of individual and academic achievement. When a science student experience bullying in the learning environment, he / she is liable to experience low self-esteem which in turn affect the academic achievement of the student.

Findings from research question three revealed an overall sectional mean of male to be 3.04 and female to be 3.10 respectively. This shows that majority of the students agreed to the items as impact of bullying on interest in science subjects. The following items were perceived to be the impact of bullying on interest in science subjects: I lose confidence in my ability to learn science after being bullied, I feel unsafe to participate in science activities, bullying has affected my enjoyment of science learning. I consider myself inadequate for sciences, I cannot pursue career in science because of bullying.

The related hypothesis states that: There is no significant difference in the opinion of male and female science students on the impact of bullying on interest in science subjects of senior secondary school students in North Central, Nigeria. Mann Whitney result shows a negligible Z- Score of -0.173 in the opinion of male and female science students on the impact of bullying on interest in science subjects. The table shows that the difference is not significant. Hence, hypothesis 3 is not rejected and it is concluded that there is no significant difference in the opinion of male and female science students on the impact of bullying on interest in science subjects of senior secondary school students in North Central, Nigeria.

This corroborates with the findings of Wang and Sheikh-Khalil, who stated that, interest in school work refers to a student's cognitive, emotional and behavioural engagement in academic activities which is characterised by curiosity and inquiry, motivation and enthusiasm, active participation and involvement, positive attitude

towards learning, relevance and connection to real-life experiences. They further mentioned type of interest to be situational, individual and developing interest. They identified teachers support and encouragement, relevant curriculum, positive classroom engagement and parental support as factors influencing students' interest in class [16].

According to the National Research Council, interest in school work is a critical factor in motivating students to learn. Recognising and supporting learners' interests is crucial for promoting motivation and engagement. Bullying can significantly affect student's interest in science classroom leading to decreased motivation, lower academic achievement, disengagement, absenteeism, emotional distress, loss of confidence, and social withdrawal which in turn can result to academic underachievement, increase dropout and even extend to adulthood.

5. Conclusion

The findings from this study showed that male and female students have the same opinion on factors causing bullying, which are bully wants to gain dominance on others, students from hostile neighbourhood and broken home tend to be bullies, early exposure to drugs make students to become bullies, inability to control emotion, jealousy and lack of empathy amongst others make students to become bullies. The opinions of male and female students on impacts of bullying on self-esteem was not different also which are bullying has made me feel worse about myself, bullying has made me feel like avoiding school, it has made me question my own ability, I often feel sad and depressed because of bullying, it has made me feel like I am a failure, I feel like I am not as good as others because of bullying. Also the study revealed that bullying has serious impact on interest in science subjects as many responder concluded that they consider themselves inadequate for science after being bullied.

Based on the findings, the following are measures that need to be put in place by the stakeholders in education in other to curb bullying among senior secondary school science students in North Central, Nigeria: develop and implement anti-bullying policies; establish a bullying reporting system; create a safe and supportive school climate that fosters open communication among students, teachers and parents and provide teacher training on bullying prevention and response and assign classroom mentors and advisors.

REFERENCES

[1] Centers for Disease Control and Prevention, "Youth Risk Behaviour Surveillance, United States," *Morb. Mortal. Wkly. Rep.*, vol. 69, no. 1, pp. 1–83, 2020.

[2] S. Hinduja and J. W. Patchin, "Cyber Bullying Prevention and Response," *J. Adolesc. Health*, vol. 70, no. 2, pp. 30–38, 2022.

[3] UNESCO, "Insecurity impacting negatively on Nigeria's Education. As NCCE train 300 educators on new curriculum," 2021. [Online]. Available: https://tribuneonlineng.com/insecurity-impacting-negativelt-on-nigerias-education-%E2%80%95-unesco.

[4] E. L. Deci, R. Koestner, and R. M. Ryan, "Self-Esteem," in *The Oxford Handbook of Human Motivation*, Oxford University Press, 2020, pp. 345–358.

[5] M. Lee, M. Mackay, L. Blackbourn, and F. E. Babl, "Emotional Impact of Bell's Palsy in Children," *J. Paediatr. Child Health*, vol. 50, pp. 245–246, 2014.

[6] L. Wang, F. Li, and J. Brown, "Digital customer relationship management and its impact on firm performance," *Ind. Mark Manag.*, vol. 85, pp. 123–134, 2020, doi: 10.1016/j.indmarman.2020.01.005.

[7] S. Hidi, "Interest and Motivation in Learning," in *Handbook of Learning and Performance*, vol. 3, New York: Routledge, 2020, pp. 231–244.

[8] M. Hertz, A. E. Jelan, and K. Wilfert, "The Relationship Between Bullying and Academic Achievement in Middle School Students," *J. Adolesc. Health*, vol. 66, no. 3, pp. 347–353, 2020.

[9] P. J. Silvia, *Exploring the Psychology of Interest*, New York: Oxford University Press, 2019.

[10] A. Krapp, "Interest and Enjoyment," in *Handbook of Competence and Motivation*, vol. 2, New York: Guilford Press, 2020, pp. 145–158.

[11] A. A. Payne and G. C. Denise, "Causes, Consequences, and Effects of Bullying." [Online]. Available: https://www.academia.edu.

[12] R. Shetgiri, "Bullying and Children's Academic Performance," *Acad. Pediatr.*, vol. 17, no. 8, pp. 797–798, 2017, doi: 10.1016/j.acap.2017.08.011.

[13] M. Kudenga, "Causes of Bullying in Boarding High Schools in Zimbabwe," *Int. J. Sci. Res. Publ.*, vol. 7, no. 12, pp. 1–12, 2017.

[14] K. W. Green, D. Whitten, and R. A. Inman, "The impact of logistics performance on organizational performance in a supply chain context," *Supply Chain Manag. Int. J.*, vol. 13, pp. 317–327, 2008.

[15] N. B. P. Centre, "The Impact of Bullying," 2022.

[16] C. Wang and S. Sheikh-Khalil, "Self-Esteem and Academic Engagement: A Systematic Review," *J. Adolesc. Res.*, vol. 35, no. 3, pp. 349–375, 2020.