

INFLUENCE OF MENTAL HEALTH ON SENIOR SECONDARY STUDENTS' MATHEMATICS ACHIEVEMENT IN EDUCATIONAL DISTRICT IV LAGOS STATE

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Abstract

Mathematics is a crucial subject in many academic programs and students' performance in this subject can have long-term implications for their future academic and career prospects. Mental health issue has become prevalent among youth people and if care is not taken could become an important driver of their performance in school. This paper however investigated the influence of mental health on senior secondary students' mathematics achievement in Educational district IV Lagos state. Three research questions were formulated to guide the study. A sample of two hundred and forty students drawn using simple random sampling technique was used in the study. The instruments used for data collection were validated close-ended questionnaire and test. Results showed that there is good level of awareness on mental health among students whereas there are no provisions for students going through mental health issues, furthermore it was observed that family crisis, among other factors largely contribute to poor mental health issues among the senior secondary mathematics students. The paper recommends that necessary provision be made available by schools and relevant authorities for students with poor mental health, and that parents should shield their children from family crisis to avoid any negative influence.

Keywords: *Mental Health, Mathematics, Parental Involvement, Awareness*

Introduction

Mental health is defined as a state of harmony among emotional, social, and psychological well-being. World Health Organization (2005) defined mental health as a state of well-being in which individuals use their potentials to perform their duties properly, use the coping skills to deal with the stressors of life, and become an influential member of his community. Goldstein cited in Yaghoob, et al. (2014) defines mental health as the balance between organs and environment in the progress towards self-actualization. Chauhanss (2019) considers mental health as a state of psychological maturity defined as the maximum effectiveness and satisfaction

obtained through individual and social opposition including positive feedback and feelings towards self and others. In recent years, issues related to mental health are often propaganda in mass media not only in a country and even around the world. Mental health is a way of thinking, feeling and behavior in a person's daily lives. A person with a healthy mental health can recognize himself on the ability, willing to accept failure, able to control his/her emotions and appreciate himself / herself (Madlan, 2018). Mental health may deteriorate and its negative effects will affect the daily lives without treatment.

Mathematics is a subject that impacts every elements of human lifestyles at different levels. It is seen by society as the foundation of scientific technological knowledge that is important in social-economic development of a nation. This important role in scientific and technological development of any nation cannot be over emphasized as stated in the National policy of Education, (FRN 2006). Mathematics an important subject occupies a central position in the school curriculum which is from primary through junior secondary to senior secondary school levels of our educational system with great importance over and above the application of basic numeracy skills. It is also the prime vehicle for developing student's logical thinking and higher-order cognitive skills.

Mathematics also plays a major role in a number of other scientific fields, such as Physics, Engineering and Statistics. According to Adeneye & Abisola (2020) 'mathematics not only enhances problem solving and analytical skills of students but promotes their logical, functional and aesthetic skills. In general, human beings engage in daily usage of mathematics and this daily application of mathematics induces the human brain to articulate problems, theories and their solutions for the survival of human race. There is no gainsaying that mathematics at school prepares students to acquire functional and coping skills for adult life. Mathematical skills serve as catalyst for genuine invention, improved productivity, and expansion in social well-being of citizens. Therefore, for any nation to be globally

competitive, its citizens must display high mathematical and scientific literacy as a strong base for technological prowess. In spite of the benefits that the study of Mathematics offer, it is commonly perceived that Mathematics is difficult, obscure, and of little interest to certain people. In this country students' achievement in mathematics is at low ebb when compared to high achieving countries despite their adoption of mathematics as a filter of students into science, technology, engineering, and mathematics careers at the university level (Adeneye & Abisola, 2020). Several factors such as attitude of students and teachers, study habit, teachers' qualification, teaching methods, school environment, government policy, school location, family types, class size, culture/beliefs, Mathematics anxiety, among many have been identified in several studies as factors influencing students' academic achievement (Asikhia, 2010; Akomolufe & Olorunfemi-Olabisi, 2011). To our knowledge, not much have been done in literature on mental health as a factor capable affecting senior secondary mathematics students' performance in the study area.

Drum et al. (2009) conducted a study on 26,000 students from 70 colleges and universities. Its results revealed that mental health problems such as suicidal thoughts, intent, and actions influence students' professional and personal lives. On the professional front, it includes poor academic performance, dishonesty, lack of compassion, and morality, whereas personally, students

suffer from edgy relationships, drug abuse, and poor physical health.

Therefore, mental health is associated with the promotions of well-being, prevention of mental disorder, treatment and rehabilitation of those that are affected by mental disorders. According to the findings of National Health and Morbidity Survey (2019) conducted by the Ministry of Health Malaysia, a total of 1.8 % is faced with depression and 1.7 % experienced anxiety among the adults. In additions, that study also found that mental health problem among children and adolescents have increased from 19.4 % from year 2006 to 20.0 % in year 2011.

The report by the World Health Organization (WHO, 2005) mentioned that issues of mental health are expected to increase with 15 % and the adolescents are in the highest risk group who might be experiencing this problem. The findings by the National Morbidity Survey 2019 also showed that, 1.7 % of the respondents had suicidal thoughts, 0.9 % had planned to commit suicide, and 0.5 % had attempted suicide. Worse still, the percentage indicated above is inclusive of secondary school students who are the future leaders of the country. poor mental health level will lead to increased rates of suicide, depression, school dropouts, unproductivity if it not carefully taking care of from the beginning. In Nigeria, a few of recent studies on mental health among students includes perception and attitudes of Nigerian students towards access to mental health services with samples drawn from osun state-owned tertiary

institutions (Ijiwole et al, 2021), and a descriptive study of mental health and burnout among Nigeria medical students (Olatunde et al, 2021) plus Influence of Mental health status on academic achievement of public secondary school students in Anambra state (Nneka and Uju, 2021).

Therefore, it is important to raise the awareness of mental health and to promote positive mental health practices and study its inter-connectedness with academic performance among senior secondary students in the study area.

Statement of the Problem

The issue of low or poor performance of senior secondary students in mathematics has been a major concern to schools, stakeholders and government. Many factors has been attributed to be the possible reasons for the struggles such as non- conducive environment, learning styles, attitude, interest, age, parental involvement, intellectual quotient (IQ) etc. However not much attention has been paid to mental health status of students as a possible factor capable of affecting senior secondary mathematics students in subject like mathematics which requires more mental abilities. There is a need therefore to access the level of awareness of mental health among the students as a possible factors contributing to poor mental health state and the extent of its influence on achievement of students in mathematics

Purpose of the Study

The objective of the study was to investigate the influence of mental health on the

academic achievement of secondary school students in mathematics in educational district IV. Specifically, the study sought to;

1. Examine the level of awareness of mental health among senior secondary school students in mathematics
2. Identify factors responsible for students' mental health as a correlate of their academic achievement in mathematics.
3. Examine the relationship between students' mental health and their academic achievement in mathematics.

Research Questions

1. What is the level of awareness of mental health among senior secondary students in mathematics?
2. What is the mean difference in factors responsible for the students' mental health in mathematics?
3. What is the relationship between students' mental health and their achievement in mathematics?

Methodology

A descriptive survey research design was adopted for this study. The population of the study comprised of all public Senior Secondary school students in Educational district IV, Lagos state. The study employed a two-stage sampling technique. In the first stage, Simple random sampling was used to select six public senior secondary schools within Educational District IV. In the second stage, forty senior secondary students were randomly selected from each school to make two hundred and forty students which were used in this study. The instrument used for

this study are questionnaire and a test to measure performance. The questionnaire titled "Mental Health and Students' Achievement" (MHSA) is made up of two sections. Section A contains information of the personal data of respondent while section B contains 14 items used to measure the level of awareness, 7 items each for relating the factors that has more influence on the students' mental health such as family factors, students or personality factor and school related factor respectively and 11 items for measuring the emotional well-being and lastly 8 items for measuring physical wellness of the students which the students have to respond to. The 4 – point likert scale was used to construct the questionnaire items with each item having four options of either (Always A= 4, Sometimes S= 3, Rarely R= 2, Never N= 1) or (Strongly Agree SA= 4, Agree A= 3, Disagree D= 2, Strongly Disagree SD= 1). The test consists of ten mathematics questions. The Instruments was validated by expert in related fields such as Mathematics Education, Measurement and Evaluation and In-Service Mathematics teachers. It was evaluated based on the simplicity of language and appropriateness of the constructed items in respect of the objectives of the study. Based on the recommendations of the validators, necessary modifications were made to the instrument. The comments, opinions, and suggestions was further used to design the instruments in its final form.

Reliability of the instruments was gotten via Pilot-testing, questionnaires were administered to thirty students who are not

part of the main study. It was further analyzed by Gutman's Split-half test with coefficient of 0.65 which shows its suitability. The researchers with permission of the principals

and cooperation of the teachers and students, administer copies of the instruments which was immediately filled and collected upon completion to ensure high return rate.

Analysis and Presentation of Results

Research Question 1: What is the level of awareness of mental health among senior secondary school students in mathematics?

Table 1: Level of Awareness of Mental Health among Senior Secondary Students.

S/N	Statements	A(%)	S(%)	R(%)	N(%)	Mean
1	I have heard about mental health	177(73.8)	45(18.8)	9(3.8)	9(3.8)	3.63
2	My school management orientate us on mental health	82(34.2)	76(31.7)	37(15.4)	45(18.8)	2.81
3	My school made provisions for student's with poor mental health	37(15.4)	43(17.9)	46(19.2)	114(47.5)	2.01
4	Mental health only deals with people that are of the sound health	29(12.1)	44(18.3)	23(9.6)	144(60.0)	1.83
5	Mental health only deals with people that are facing challenges	45(18.8)	83(34.6)	33(13.8)	79(32.9)	2.39
6	Mental health deals with one's emotional stability	112(46.7)	78(32.5)	29(12.1)	21(8.8)	3.17
7	Drug addiction may affect one's mental well-being	188(78.3)	31(12.9)	12(5.0)	9(3.8)	3.66
8	One can tell whether an individual has a mental health disorder through his/her physical appearance	86(35.8)	97(40.4)	39(16.3)	18(7.5)	3.05
9	Anyone can suffer from a mental illness	161(67.1)	48(20.0)	16(6.7)	15(6.2)	3.48
10	People who experience poor mental health cannot make friends	31(12.9)	58(24.2)	80(33.3)	71(29.6)	2.20
11	Only people with good mental health can perform well in class	72(30.0)	97(40.4)	24(10.0)	47(19.6)	2.81
12	An individual with good mental health relates well with his/her society and environment	156(65.0)	59(24.6)	17(7.1)	8(3.3)	3.51
13	People with mental health problem tends to be blame for their conditions	47(19.6)	119(49.6)	30(12.5)	44(18.3)	2.70
14	People with mental health condition have difficulty with learning	92(38.3)	106(44.2)	26(10.8)	16(6.7)	3.14

Note: Decision Rule - > 2.5 – Accepted < 2.5 Declined

Note: A – Always, S - Sometimes, R – Rarely, N - Never

Table 1 shows the response of the students in respect to the level of awareness on mental health. It was observed that there was good

level of understanding on the mental health issues among the students. They are familiar with mental health and its effect on them.

However, the students disagree that their school make necessary provisions for the student's with poor mental health, an

indication that the school does not pay apt attention to mental health issues.

Research Question 2: What is the mean difference in factors responsible for the students' mental health in mathematics?

Table 2: Mean difference in factors responsible for Students' Mental health

Factors	Mean
Family factor	3.01
Students or personality factor	2.99
School related factor	2.75

Table 2 above shows the factors responsible for students' mental health. The Factors were group into three which are Family factor, Student or Personality factor, School related factor. It was observed that there was a significant difference in the mean of factors affecting students' mental health. The family factor have the highest mean, 3.01, showing that the students tends to suffer from mental health issues due to family crisis and

problems. This is subjected to further research (that is finding the best way to help students with family crisis). Personality factor with mean of 2.99, shows that students' personality can also be another reason for poor mental health, that is, students with low self-esteem, introvert, shyness etc are more vulnerable to these issues. The school related factor has mean of 2.75.

Research Question 3: What is the correlation between students' mental health and their achievement in mathematics?

Table 3: Correlational study between students' mental health and their performance in Mathematics

	Correlation	ACH_TEST	MENTAL HEALTH
ACHIEVEMENT TEST	Pearson correlation	1	- 0.244**
	Sig (2-tailed)		0.000
	N	240	240
MENTAL HEALTH	Pearson correlation	-0.244**	1
	Sig (2-tailed)	0.000	
	N	240	240

****Correlation is significant at the 0.05 level (2-tailed)**

Table 3 above shows the relationship between students' mental health and their achievement in mathematics. It was observed from above correlational study that there is a significant

low relationship between mental health and the students' achievement in mathematics. This further indicates that the influence of mental health on students' performance and

life generally cannot be underestimated and should be given maximum attention by all.

Discussion of Findings

It was observed from the result in Table 1 that students had proper understanding of what mental health entails, but agrees there is no provision made by the school to help students have a better or stable mental health status. This study is in line with Drum et al, (2009) which also indicated that apt attention should be paid to students' mental health. Therefore, schools and teachers should remain observant and make adequate provisions for students with poor mental health issues as this can go a long way to help such students' all-round performance.

Results from Table 2 further revealed the factors that tend to affect students' mental health status, with the students accepting that all the factors are capable of affecting their mental health however the family and personality factor were rated the highest of the factors. This implies that, student facing family crisis e.g. separated parent, conflict or domestic violence within the home, low or inadequate supports from the parent can go a very long way to affect students' mental health, hence influencing their performance in mathematics or academic pursuit. Consequently necessary helps should be provided to students' facing family crisis and more seminars can be provided towards grooming and sharpening students' personality.

Finally, result from Table 3 shows that there is a relationship between students' mental health and achievement in mathematics. This is an indication the role of mental health as a factor can not be underestimated and should be top of the log when considering factors that can affects students' performance in mathematics.

Conclusion

Based on the findings of this study, it can be deduced that mental health has a role to play in students' mathematics achievement. Students who are mentally disturbed have an increased chance of long-lasting mental illness. An increase in mental illness will decrease the students' capabilities and efficiency in their academic careers. Therefore, for a student to perform well in his/her studies most especially in mathematics the student must take good care of his/her mental health. Further research should look into discovering more factors likely to influence students' mental health and methods of improving mental health among senior secondary school students.

Recommendations

Taking into consideration, the importance of the study with the view that it could be used outside the area of study, the researcher has deemed it necessary to give the following recommendations:

1. The schools administrator should organize more programs, seminars that can orientate students on mental health issues, factors also on sharpening and grooming of personality.
2. The management of the school should make provisions like therapy sessions, fun trips etc, for students that are facing poor mental health.
3. Parents should make sure that they avoid or prevent family issues that will affect their children mental health status. Such as dispute among the parents, this should never happen in the presence of the child.
4. Parents should as well make provisions that can enhance their children well-being in order to bring about better the performance of the children. Parental involvement is highly necessary.
5. Teachers should have a good and professional relationship with the students in order to know when students are going through mental health challenges.
6. Curriculum planners and educational administrators should create or expand the

scope of the students' curriculum in order to allow creativity and reduces unnecessary pressures.

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