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Psychological Determinants of Occupational Aspiration Among Students with Disabilities in Integrated Secondary Schools in Southwest, Nigeria

AUTHOR(S): OKE, CHIGOZIE CELESTINA

Abstract

This study investigated psychological determinants of occupational aspiration among students with disabilities in integrated secondary schools in Southwest, Nigeria. The descriptive research design of the survey type was used in this study. The population consisted of all 1,106 students with disabilities in integrated public secondary schools in Southwest, Nigeria. The sample for this study consisted of 349 students with disabilities from 12 integrated public secondary schools in Southwest, Nigeria. The sample was selected using multistage sampling procedure. An instrument tagged "Psychological Determinants and Occupational Aspiration Questionnaire (PDOAQ)" was used to collect relevant data for the study from the respondents. The face and content validity of the instruments were determined by Guidance and Counselling experts and experts in Tests and Measurement. The instrument was said to have facial relevance and concerned with the subject matter, they claimed to measure. The reliability of the instrument was determined through test re-test method. A co-efficient of 0.81 was gotten and this was considered high enough to make the instrument reliable and useful for the study. The responses obtained were collated and analysed using descriptive statistics, while the hypotheses postulated were subjected to inferential statistics of

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Pearson's Product Moment Correlation at 0.05 level of significance. The findings of the study revealed that decision-making ability and self-concept are related to occupational aspirations of students with disabilities in integrated secondary schools. It was recommended among others that parents in collaboration with school management should make available necessary support that could aid students with disabilities in making the right decision about occupational aspiration.

Keywords: Psychological Determinants, Occupational Aspiration, Disabilities,

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Introduction

Education is an indispensable tool for the development of an individual and the society at large. It is universally recognized as an instrument which is capable of providing solution to socio-economic problem when properly utilised. Olamide and Olawaye (2013) reported that both nations and individuals look up to education to provide a cure for poverty, ignorance, mental deficiency, joblessness, bad governance, poor communication system, hunger, inadequate shelter among other socio-economic problems.

Occupational aspirations are defined as the statement of desired occupational goal given ideal conditions. Occupational aspirations represent an individual orientation towards a desired occupational goal under ideal conditions. More simply stated occupational aspirations provide information about an individual's interests (Hewitt, 2010). Occupational aspiration is literally defined as the desire to achieve a particular occupation. In this study, occupational aspiration describes person's desired occupational aim.

Students especially those with disabilities seem to be ignorant about the occupation to which they aspire. Because of this problem of ignorance, which some are facing, it is difficult to plan and make occupational aspirations (Karacay, 2015). Some students aspire to do certain things because of some basic needs, whether these needs are real or imagined. In essence, one who does not have a need for a particular thing does not worry about such a thing. The researcher also observed that some students engage in some occupations, because they feel they lack something which if present would give them satisfaction in an anticipated direction, and the something they feel they lack may be in terms of material wealth such as money or influence, prestige and recognition. Occupational needs arise when an individual encounters difficulties engaging in their occupations of daily living. Operationally, occupational needs are skills students need to acquire to get into desired occupations or to achieve their occupational aspiration

The psychological factors considered in this study are decision making ability, problem solving skill, and self-concepts vis-à-vis occupational aspiration of students with disabilities in Southwest, Nigeria. Decision making is defined as the assessment of two or more options and the ability to choose between them. The decision-making process is a cognitive process that entails choosing the appropriate behaviour with a tendency (preference) to satisfy a need as soon as it arises and to eliminate accompanying tension (Budak, 2000). Luzzo, Hitchings, Retish, and Shoemaker (1999) found out that students with disabilities tend to display attitudes and beliefs about occupational decision-making that kept them from getting the most out of occupational development. They noted that these individuals felt as if they had little control over the decision-making situation and low confidence in their ability to affect and make decisions about their future occupations.

It appears that students with disabilities lack social and academic skills and as a result, they may exhibit low occupational decision-making skills. They might not learn the necessary skills to promote effective occupational decision-making skills. It is important for students with disabilities to obtain decision making skills in order to assist them with the occupational development and exploration process as well as helping them to determine their need for specific occupational accommodations.

Problem solving ability seems to be the result of thinking ability with efficiency of thought shown in the form of ability to solve the problem. It may be said that problem solving ability is the next step to reasoning skills. Lack of problem solving capability could affect students with disabilities. It has been observed that students with disability depend largely on their teachers, parents and even colleagues in order to find solution to their immediate

problems including school works (Agran & Wehmeyer, 2014). Problem solving skill is very significant in occupational aspiration decision making.

Problem solving is a skill and that the absence of this skill, which is related to limited opportunities for learning and poor socialization, can result in poor mental health and behavioural problems. Even though it has been noted that problem solving is a necessary skill for occupational development and exploration, Agran and Wehmeyer (2014) found that there are low expectations for student with intellectual and developmental disabilities to learn and develop strong problem solving skills. During adolescence, individuals become more autonomous and are expected to handle more complex problems on their own at a more frequent rate and because this is such an important part of occupational development and exploration and because studies have shown that individuals with disabilities lack this skill, it is important to note how this skill could be affected by disability and other psychosocial factors.

Research has shown that academic self-concepts have a significant impact on students' occupational aspirations, this is the major reason educators need to investigate students' academic self-concept so as to be able to foster learning in schools and improve their performance in choosing an occupation. Self-concept describes the totality of the individual's thoughts and feelings having reference to himself as a person.

According to Woolfolk (2006), self-concept is an agent of self-development especially among children. A child's development can be observed as they grow since each child is a unique person. As such, co-operation from different parties is required to ensure the development of a positive self-concept in a child. In a research, Hussien and Al-Qaryouti (2015) relates self-concept to self-assessment or self-perception. The concept largely represents the extent of an individual's faith in his/her own characteristics. This concept also reflects a person's judgment of himself based on the way he/she weigh the importance of success. Some students with disabilities could have lower confidence about themselves in relation to occupational aspiration.

This study explored psychological determinants of occupational aspiration among students with disabilities in integrated secondary schools in Southwest, Nigeria. The study specifically examined:

- i. the psychological determinants of occupational aspirations of students with disabilities in secondary schools;
- ii. the relationship between decision making ability and occupational aspirations of integrated secondary school students with disabilities;
- iii. the relationship between problem solving skill and occupational aspirations of integrated secondary school students with disabilities; and
- iv. the relationship between self-concept and occupational aspirations of integrated secondary school students with disabilities.

Research Question

This research question was raised to guide the study:

1. What are the psychological determinants of occupational aspirations of students with disabilities in secondary schools in South-west, Nigeria?

Research Hypotheses

The following null hypotheses were formulated for this study:

1. There is no significant relationship between decision making ability and occupational aspirations of integrated secondary school students with disabilities.
2. There is no significant relationship between problem solving skill and occupational aspirations of integrated secondary school students with disabilities.

3. There is no significant relationship between self-concept and occupational aspirations of integrated secondary school students with disabilities

Methodology

The descriptive research design of the survey type was used in this study. The population consisted of all 1,106 students with disabilities in integrated public secondary schools in Southwest, Nigeria (Source: States Ministry of Education, 2020). The sample for this study consisted of 349 students with disabilities from 12 integrated public secondary schools in Southwest, Nigeria. The sample was selected using multistage sampling procedure.

An instrument tagged "Psychological Determinants and Occupational Aspiration Questionnaire (PDOAQ)" was used to collect relevant data for the study from the respondents. PDOAQ consisted of three sections namely section A, B and C. *Section A* of the PDOAQ sought for information on demography about the respondents. *Section B* consisted of 12 items on psychological factors as it relates to occupational aspiration while *Section C* consisted of 20 items on occupational aspiration.

The face and content validity of the instruments were determined by Guidance and Counselling experts and experts in Tests and Measurement. The instrument was said to have facial relevance and concerned with the subject matter, they claimed to measure. The reliability of the instrument was determined through test re-test method. A co-efficient of 0.81 was gotten and this was considered high enough to make the instrument reliable and useful for the study. The responses obtained were collated and analysed using descriptive statistics, while the hypotheses postulated were subjected to inferential statistics of Pearson's Product Moment Correlation. All the hypotheses were tested at 0.05 level of significance.

Results

Research Question 1: What are the psychological determinants of occupational aspirations of students with disabilities in secondary schools in South-west, Nigeria?

In answering this question, data on psychological factors were collected from the responses of the respondents to items under Section B of PDOAQ (item 1 – 12) in the questionnaire. The data were collated and analysed using descriptive statistics such as frequency counts, percentage, mean and standard deviation. In table 1, the mean cut-off mark of 2.50 was derived by finding the average of the scoring system. Mean score of items greater than mean cut-off of 2.50 were accepted while those less than 2.50 were rejected.

Table 1: Mean Scores of psychological determinants of occupational aspirations of students with disabilities

S/N	ITEMS	Agreed (%)	Disagreed (%)	Mean
1	Decision Making Ability	272 (77.9)	77 (22.1)	2.94
2	Problem Solving Skill	286 (81.9)	63 (18.1)	2.87
3	Self – Concept	299 (85.7)	50 (14.3)	2.99

Mean Cut-off: 2.50

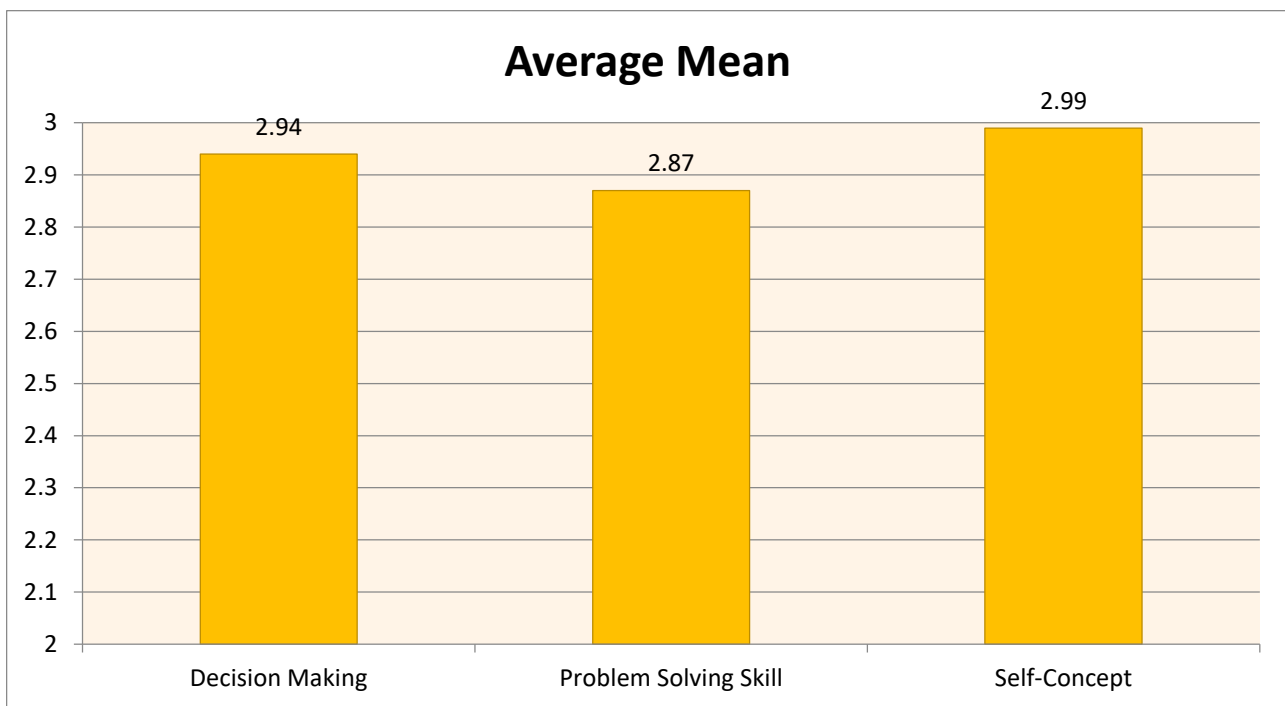


Figure i: Bar chart showing the psychological determinants of occupational aspirations of students with disabilities

Table 1 and figure i showed the psychological determinants of occupational aspirations of students with disabilities in secondary schools in South-west, Nigeria. Using the criterion mean score of 2.50 as cut-off to determine the affirmative of each statement, the respondents indicated that the average mean mark of decision making ($\bar{x} = 2.94$), problem solving skill ($\bar{x} = 2.87$) and self-concept ($\bar{x} = 2.99$). It is deduced from the above that the psychological determinants of occupational aspirations of students with disabilities are decision making, problem solving skill and self-concept.

Testing of Hypotheses

Hypothesis 1: There is no significant relationship between decision making ability and occupational aspirations of integrated secondary school students with disabilities.

In testing this hypothesis, data on decision making sub-variable of psychosocial factors were collected from the responses of the respondents to items under Section B of PDOAQ (item 1 – 4) in the questionnaire. Data on occupational aspiration were collected from the responses of the respondents to items under Section C of PDOAQ (item 1 – 20) in the questionnaire. Both were compared for statistical significance using Pearson Product Moment Correlation at 0.05 levels. The result is presented in table 2.

Table 2: Relationship between decision making ability and occupational aspirations

Variables	N	Mean	Stand Dev	r-cal	P-value
Decision Making Ability	349	11.75	1.72	0.534*	0.000
Occupational Aspirations	349	40.52	7.88		

*P<0.05

Table 2 showed that the r-cal value of 0.534 was significant at 0.05 level of significant because the P-value (0.000) < 0.05. The null hypothesis is rejected. This implies that there was significant relationship between decision making ability and occupational aspirations of

integrated secondary school students with disabilities. Decision making ability is moderately and positively related to occupational aspirations.

Hypothesis 2: There is no significant relationship between problem solving skill and occupational aspirations of integrated secondary school students with disabilities.

In testing this hypothesis, data on problem solving skill sub-variable of psychosocial factors were collected from the responses of the respondents to items under Section B of PDOAQ (item 5 – 8) in the questionnaire. Data on occupational aspiration were collected from the responses of the respondents to items under Section C of PDOAQ (item 1 – 20) in the questionnaire. Both were compared for statistical significance using Pearson Product Moment Correlation at 0.05 levels. The result is presented in table 3.

Table 3: Relationship between problem solving skill and occupational aspirations

Variables	N	Mean	Stand Dev	r-cal	P-value
Problem Solving Skill	349	11.48	1.10	0.099	0.066
Occupational Aspirations	349	40.52	7.88		

$P > 0.05$

Table 3 showed that the r-cal value of 0.099 is not significant at 0.05 level of significant because the P-value (0.066) > 0.05. The null hypothesis is not rejected. This implies that there is no significant relationship between problem solving skill and occupational aspirations of integrated secondary school students with disabilities.

Hypothesis 3: There is no significant relationship between self-concept and occupational aspirations of integrated secondary school students with disabilities.

In testing this hypothesis, data on self-concept sub-variable of psychosocial factors were collected from the responses of the respondents to items under Section B of PDOAQ (item 9 – 12) in the questionnaire. Data on occupational aspiration were collected from the responses of the respondents to items under Section C of PDOAQ (item 1 – 20) in the questionnaire. Both were compared for statistical significance using Pearson Product Moment Correlation at 0.05 levels. The result is presented in table 4.

Table 4: Relationship between self-concept and occupational aspirations

Variables	N	Mean	Stand Dev	r-cal	P-value
Self-Concept	349	11.94	1.01	0.460*	0.000
Occupational Aspirations	349	40.52	7.88		

* $P < 0.05$

Table 4 showed that the r-cal value of 0.460 was significant at 0.05 level of significant because the P-value (0.000) < 0.05. The null hypothesis is rejected. This implies that there was significant relationship between self-concept and occupational aspirations of integrated secondary school students with disabilities. Self-concept is moderately and positively related to occupational aspirations.

Discussion

The study revealed that the psychological determinants of occupational aspirations of students with disabilities are decision making, problem solving skill and self-concept. In line with this finding, Ajuwon (2008) submitted that many complex variables impact on occupational aspirations; these include problem solving skill, self-concept and decision making.

It was further revealed that there was significant relationship between decision making ability and occupational aspirations of integrated secondary school students with disabilities. This implies that decision making ability could determine the occupational aspiration of students with disabilities. The probable reason for this finding could be due to the fact that occupational aspiration involves the assessment of two or more options and the ability to choose between them. The researcher infers that choosing an occupation might be difficult for someone without ability to make decisions. In line with this finding, Lusk and Fazarro (2006) and Humes and Hohenshil (2004) concluded that a significant relationship existed between decision making ability and occupational aspirations.

The study however revealed that there was no significant relationship between problem solving skill and occupational aspirations of integrated secondary school students with disabilities. This implies that problem solving skill has no link with occupational aspiration of students with disabilities. The finding however contradicted the submission of Osoro (2012) who concluded that lack of problem solving skill during secondary school negatively affected their occupational aspirations.

In addition, the study revealed that there was significant relationship between self-concept and occupational aspirations of integrated secondary school students with disabilities. This implies that self-concept could determine the occupational aspiration of students with disabilities. The probable reason for this finding could be because the totality of the individual's thoughts and feelings might go a long way to determine occupational interest. In line with this finding, Evans (2008) concluded that self-concept influenced occupational aspiration of students with disabilities

Conclusion

Based on the findings of this study, it was concluded that decision-making ability and self-concept are related to occupational aspirations of students with disabilities in integrated secondary schools.

Recommendations

Based on the findings of this study, the following recommendations were made.

1. Parents in collaboration with school management should make available necessary support that could aid students with disabilities in making the right decision about occupational aspiration.
2. The government should provide necessary facilities that will help students with disabilities have confidence in their abilities and individual's faith in his/her own characteristics.

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Moderating Effects of Socio-Economic Status and Resilience On Academic Self-Efficacy of In-School Adolescents from Father-Absent Families in Ekiti State

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Abstract

This study examined the moderating effect of parental socio-economic status and resilience on academic self-efficacy of in-school adolescents from father-absent families in Ekiti State, Nigeria. Pretest-posttest control group quasi-experimental design of 3x3x3 factorial matrix was adopted for this study. Simple random technique was used to select one Local Government Area (LGA) from each of the three senatorial districts in Ekiti State, while one Senior Secondary School (SSS) was randomly selected from each LGA. The Father-Absence Involvement Screening Scale was used to select 166 senior school I and II students across the three schools. Participants were randomly assigned to Cognitive Restructuring (CR-57), Problem-Solving (PST-59) and control (50) groups. Treatment lasted 10 weeks. Instruments used were Ryff's Psychological Well-Being ($\alpha = 0.84$), and Resilience ($\alpha = 0.83$) scales, and Parental Socioeconomic Status Questionnaire ($\alpha = 0.73$). Data were subjected to Analysis of covariance and Multiple classification analysis at 0.05 level of significance. There was no significant main effect of parental socioeconomic status on academic self-efficacy ($F_{(2,140)} = .549$, $p > .05$, $\eta^2 = .008$) of in-school adolescents from father-absent families. There was no significant main effect of resilience on academic self-efficacy ($F_{(2,140)} = .069$, $p > .05$, $\eta^2 = .001$). There was no significant interaction effect of treatment and socio-economic status on academic self-efficacy ($F_{(4,140)} = .675$, $p > .05$, $\eta^2 = .019$). There was no significant interaction effect of treatment and resilience on academic self-efficacy ($F_{(4,140)} = .252$, $p > .05$, $\eta^2 = .007$) of in-school adolescents from father-absent families. Parental socio-economic status and resilience has no effect on academic self-efficacy of in-school adolescents and does not moderate the effect of treatment in enhancing academic self-efficacy. It is recommended that school counsellors and management

should organise academic seminars and workshop for parents and students on ways to facilitate academic self-efficacy.

Keywords: Father-absent families, Academic self-efficacy, In-school adolescents, Parental socio-economic status, Resilience,

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Introduction

Education is the best legacy a nation can give her citizens especially the youth. This is because the development of any nation or community depends largely on the quality of education of such a nation. It is generally believed that the basis for any true development must commence with the development of the human resources. Much then is said that formal education remains the vehicle for social, political, economic development and social mobilization in any society (Shittu, 2012). Education has been universally accepted as the bedrock and engine of growth. It serves like a child's passport out of poverty. The highly prized possession that anyone can have is education. It is the foundation for higher living standards and an important tool in the long term eradication of poverty. Education provides individual with knowledge and information which in turn brings about desirable changes in the way people think, feel and act. The importance of education cannot be over-emphasized (Shittu, 2012).

Academic self-efficacy refers to the level of confidence that a student feels with regard to his or her ability to successfully complete academic tasks or reach academic milestones. Academic self-efficacy beliefs are thus distinct from non-academic, social, emotional, or physical domains associated with general self-efficacy beliefs. Adolescents in father-absent families frequently suffer from poor academic self-efficacy as research has found that a father's academic support was positively related to adolescents' academic motivation to work hard in school, feel their grades were important, and to place a high value on education (Alfaro, Umana-Taylor & Bamaca, 2006).

Popenoe cited in Liazos (2015) believes that a father brings something unique to the family. The influence of fathers to children's well-being cannot be fully change by better programming, ensuring child support programs, or even by purposeful mentoring programs. One of the most famous findings concerning the significance of fathering and its role in averting juvenile delinquency and violence was first revealed by evidence in a cross-cultural study, which was drawn by anthropologists and comparative psychologists. Biller cited in Biller and Scioli (2009) explained this finding with the following statement:

"Males who are father-deprived early in life are likely to engage later in rigidly over- compensatory masculine behaviours. The incidence of crimes against property and people, including child abuse and family violence, is relatively high in societies where the rearing of young children is considered to be an exclusively female endeavour." Taking cognisance of the diverse nature of adolescent vulnerabilities from father-absent families and the risk they are exposed to and the dynamics of the relationship between them outlined above, this study therefore focused on adolescents from father-absent families; which in the context of this study is considered a very important aspect amenable to psychological intervention as contemporary behavioural research has shown (Aderanti & Hassan, 2011).

Self-efficacy enhances human accomplishment and well-being in various ways. It influences the choices people make and the courses of action pursued. Individuals tend to select tasks and activities in which they feel competent and confident and avoid those in which they do not. Unless people believe that their actions will have the desired consequences, they have little incentive to engage in those actions (Pajares, 2009). Academic self-efficacy refers to individuals convictions that they can successfully perform given academic tasks at designated levels.

Academic self-efficacy is grounded in self-efficacy theory (Bandura, 1977). According to self-efficacy theory, self-efficacy is an "individual's confidence in their ability to organize and execute a given course of action to solve a problem or accomplish a task" (Eccles & Wigfield, 2002). Self-efficacy theory suggests that academic self-efficacy may vary in strength as a function of task difficulty some individuals may believe they are most efficacious on difficult tasks, while others only on easier tasks.

A strong sense of academic efficacy enhances human accomplishment and personal well-being in many ways. People with high assurance in their capabilities approach difficult tasks as challenges to be mastered rather than as threats to be avoided. Such an efficacious outlook fosters intrinsic interest and deep engrossment in activities. They set themselves challenging goals and maintain strong commitment to them. They heighten and sustain their efforts in the face of failure. They quickly recover their sense of efficacy after failures or setbacks. They attribute failure to insufficient effort or deficient knowledge and skills which are acquirable (Bandura, 1994).

In contrast, people who doubt their capabilities shy away from difficult tasks which they view as personal threats. They have low wishes and weak commitment to the goals they choose to pursue. When faced with difficult tasks, they dwell on their personal deficiencies, on the obstacles they will encounter, and all kinds of adverse outcomes rather than concentrate on how to perform successfully. They slacken their efforts and give up quickly in the face of difficulties. They are slow to recover their sense of efficacy following failure or setbacks. Because they view insufficient performance as deficient aptitude it does not require much failure for them to lose faith in their capabilities. They fall easy victim to stress and depression (Bandura, 1994).

Thus, in academic settings, one should measure academic self-efficacy rather than generalized self-efficacy, where academic self-efficacy refers to students' confidence in their ability to carry out such academic tasks as preparing for exams and writing term papers. A large meta-analysis of studies of self-efficacy in academic environments concluded that the most specific academic self-efficacy indices had the strongest effect on academic outcomes, while the more generalized measures were less closely associated (Multon, Brown & Lent, 1991).

Parents are one of the most important and influential elements on the lives of their children. They have the power; ability to shape, sustain and develop their children's who will be interested, creative and tolerant, through their positive involvement in the academic self-efficacy process. Parents are the most immediate relation of a child. Their financial status and education do have an important influence on the personality of child. Educated parents can better understand the educational needs and their children's aptitude. They can help their children in their early education which affects their proficiency in their relative area of knowledge. Parental socio-economic factors are of vital importance in effecting students' academic efficacy also. They are like backbone in providing financial and mental confidence to students.

On the other hand, parents who do not involve in their children educational process are also considered to be capable of repressing and destroying the motivation and ability of their children through neglect and indifference to their achievement. Socio-economic status has a relatively strong impact on parental involvement compared to other factors. Socioeconomic status has also been linked to health, behavioural problems, and cognitive and socio-emotional developmental outcomes (Bradley & Corwyn, 2002). Socioeconomic status refers to a person's or family's social position or social standing (Graetz, 1995). Lower socioeconomic status has been linked to several health problems, including growth retardation, birth defects, fetal alcohol syndrome, depression, and stunting during the teenage years (Brooks-Gunn & Duncan, 1997; Cassady, 1997; Vrijheid, 2000; Wasserman, 1998).

The term resiliency is originally derived from Latin roots *resiliens* that is used to refer to the pliant or elastic quality of a substance (Greene, 2002). The term resilience refers to the ability to adapt to changing conditions and withstand and rapidly recover from disruption due to emergencies (The White House 2011). Resilience is defined as the ability to minimize the costs of a disaster, to return to a state as good as or better than the status quo ante, and to do so in the shortest feasible time. Resistance is used to mean the ability to withstand a hazard without suffering much harm. Resilience in this paper will include resistance but will also include the ability to recover after suffering harm from a hazard

(Gilbert 2010).

Resilience is the capacity to adapt well over time to life-changing or stressful situations. It is the successful adaptation to adverse circumstances (Ahern, Kiehl, Sole & Byers, 2006). For adolescents students, resilience is particularly important, as life at a university can be complex and demanding, requiring the capacity to cope with the academic/coursework demands, study/life balance, finances and money problems. As a result, university students experience increased levels of mental ill health compared with their non-university peers (Stallman, 2010). Resilience has been likened to a set of attributes that help people succeed and cope effectively in the face of adversity (Cyrulnik, 2009). Resilience is the capacity of a system to absorb disturbance, undergo change, and still retain essentially the same function and identity (The Resilience Alliance, 2011).

The traditional nuclear family which is the ideal family structure with its attendant benefits on the psycho-social development of children is considerably being threatened by the emergence of single parent households. Modern families have been indelibly altered by dramatic increases in the prevalence of non-marital childbearing, divorce, incarceration, abandonment and job transfer. However; the disintegration of the nuclear family and an increase in the number of female-headed families is a continuing trend globally as well as locally. This structure of the family unit can impact negatively on the academic self-efficacy of children especially adolescents.

Various studies have revealed that adolescents from father-absent homes in Nigeria have low academic self-efficacy as adolescents growing up in fatherless households are more likely to be at risk of experiencing a number of internalizing and externalizing problem behaviours such as sadness and depression, aggression, gender role difficulties, early initiation of sexual activities, poor social and adaptive functioning as most often times they are not able to cope in school and stay in school and subsequently become problem to themselves, families and finally the society at large. There are also empirical evidences that there is a high rate (15-50%) of psychological distress among adolescents from father-absent families (Akanni and Otakpor 2016, Taiwo 2011). This in turn led to hindrances to academic functioning.

Considering the magnitude of low academic self-efficacy of adolescents from father-absent home and the subsequent problems it leads to, there is need to investigate into some of the factors that can moderate the effect of the intervention designed. This research therefore investigated and explored the moderating effects of socio-economic status and resilience on treatment in enhancing academic self-efficacy of adolescents from father-absent families in Ekiti State, Nigeria.

The purpose of the study is to investigate the effects of socio-economic status and resilience on academic self-efficacy of adolescents from father-absent families in Ekiti State, Nigeria. The study will also investigate the main effects of parental socio-economic status on academic self-efficacy of in-school adolescents from father-absent families as well as the main effect of resilience on academic self-efficacy of in-school adolescents from father-absent families will be examined.

Research Hypotheses

The following hypotheses were tested at 0.05 level of significance

1. There is no significant main effects of the socio-economic status on academic self-efficacy of in-school adolescents from father-absent families.
2. There is no significant main effects of resilience on academic self-efficacy of in-school adolescents from father-absent families.
3. There is no significant interaction effects of the treatment and socio-economic status on academic self-efficacy of in-school adolescents from father-absent families.
4. There will be no significant interaction effects of socio-economic status and resilience on academic self-efficacy of in-school adolescents from father-absent families.

Research Design

This study adopted a pre-test, post-test, control group experimental design with 3x3x3 factorial matrix. It consisted of treatment and control groups at three levels, resilience at three levels and parental socio-economic status at three levels to evaluate the effect of two treatment packages on academic self-efficacy. The target population for the study comprised all in-school adolescents from father-absent families in Ado-Ekiti, Ifaki Ekiti, Ikere-Ekiti, Ekiti State, Nigeria. Ado, Ifaki and Ikere- Ekiti are three out of the 16 Local Government Areas (LGAs) in Ekiti State. Three public secondary schools were randomly selected for the study. This research adopted multi-stage sampling techniques in selecting the participants. Ekiti State has three (3) senatorial district; Ekiti north, Ekiti-south and Ekiti-central. At the first stage one local government was randomly selected from each of the senatorial district. The next stage was the selection of a senior secondary school from each of the local government selected. The total number of 166 participants was used for this study.

The following described instruments were used for this study

The Father-Absent Involvement Scale: The Father-absent Involvement Scale is a self-constructed questionnaire used to measure father involvement in this study. The items are twenty-seven (27) in numbers with 4 scale response format ranging from strongly agree, agree, disagree and strongly disagree. The items are both negatively and positively worded. The cronbach alpha of .92 was obtained after administering the instruments in a pilot study to a selected sample of fifty (50) students in Ekiti, Ekiti State, Nigeria.

Academic Self-Efficacy Scale: The items on the Academic Self-Efficacy Scale were drawn from Bandura's "Self-Efficacy for Self-Regulated Learning" subscale (2001) and Owen and Froman's (1988) College Academic Self- Efficacy Scale (CASES) were combined to create a 40- item Academic Self-Efficacy Scale. Bandura's "Self- Efficacy for Self- Regulated Learning" subscale is an 11- item Likert scale taken from his "Children's Self-efficacy Scale" (unpublished). The alpha coefficient (Rule & Griesemer, 1996) for this subscale is .81. The instrument was however re-validated and Cronbach alpha value of .84 was obtained after administering the instruments in a pilot study to a selected sample of fifty (50) students in Ekiti, Ekiti State, Nigeria.

Parental Socio-Economic Scale (PSES): The PSES by (Salami, 2000) was used to measure the socio-economic status of the participants' parents since adolescents' behaviours are significantly associated with parent's socio-economic status. The scale comprises eight opened ended questions on parents' occupation, (10 marks) parents' education (12 marks), parents' type of residence (5 marks), house furniture, type of cars, electronic gadgets and kitchen utensils (29 marks) giving the total of fifty marks maximum score of 56. The highest score obtainable is 56 while the least is 6. The internal consistence Cronbach's α was 0.73, with correlation coefficient of 0.64.

Resilience Scale: Resilience Scale was developed by Wagnild and Young in 1993. The scale comprises 25 items which measures the degree of individual resilience, considered to be a positive personality characteristic that increases an individual's adaptation. This scale was adapted to measure resilience level of the participants in this study. The scale items are scored on a 4-point scale ranging from from 1 (strongly disagree), to 4 (strongly agree). Scores on the RS can range from 25 to 100 with higher scores mean greater resilience. Wagnild (2003) categorizes the scores into high (75-100), medium (51-74), and low (less than 50) levels of resilience. Wagnild and Young report "high reliability with a coefficient alpha of .91, The scale was re-validated and cronbach alpha of .83 was obtained after administering the instruments in a pilot study to a selected sample of fifty (50) students in Ekiti, Ekiti State, Nigeria.

The data was analysed using the Analysis of Covariance (ANCOVA) at 0.05 level of significance.

RESULT

Ho₁ There is no significant main effect of treatment on academic self-efficacy of in-school adolescents from father-absent families

Table 1 Summary of 3x3x3 Analysis of Covariance (ANCOVA) showing significant main and interactive effect of Treatment Groups, Socio-Economic Status and Resilience of in-school adolescents from father-absent families

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Remarks
Corrected Model	42506.070 ^a	26	1634.849	4.374	.000	.450	
Intercept	30534.822	1	30534.822	81.691	.000	.370	
Pretest_e	1082.154	1	1082.154	2.895	.091	.020	
Main Effect							
Treatment	8652.444	2	4326.222	11.574	.000	.143	S
PSES	410.355	2	205.178	.549	.579	.008	NS
RES	51.761	2	25.881	.069	.933	.001	NS
2-Way Interaction							
Treatment * PSES	1009.198	4	252.299	.675	.610	.019	NS
Treatment * RES	376.335	4	94.084	.252	.908	.007	NS
PSES * RES	1144.210	4	286.053	.765	.550	.022	NS
3-Way Interaction							
Treatment * PSES * RES	1571.919	6	224.560	.601	.754	.029	NS
Error	51955.930	140	373.784				
Total	2176766.000	166					
Corrected Total	94462.000	165					

a. R Squared = .450 (Adjusted R Squared = .347)

*Significant at 0.05

Table 1 showed that there was no significant main effect of socio-economic status on academic self-efficacy of in-school adolescents from father-absent families ($F_{(2, 140)} = .549, p > .05, \eta^2 = .008$). Hence, the null hypothesis was accepted. This denotes that there is no significant difference in the academic self-efficacy of high, moderate and low socio-economic status of students. Table 1.2 further revealed the mean score of high socio-economic status students (estimated mean = 114.63), moderate socio-economic status (estimated mean = 112.41) and low socio-economic status (estimated mean = 105.22). The students with high socio-economic status have higher academic self-efficacy compared to their counterpart with moderate and low socio-economic status. Also, students with moderate socio-economic status have high academic self-efficacy more than their counterpart with low socio-economic status.

Table 2: Multiple Classification Analysis (MCA) showing the direction of the differences of the treatment Groups, Socio-economic status and Resilience in Academic Self-efficacy of Students

Variable + Category Grand Mean = 112.00		N	Predicted Mean		Deviation		Eta	Beta	
			Unadjusted	Adjusted for Factors					
Posttest	Treatment	Cognitive Restructuring Therapy	57	128.1579	128.5479	16.15789	16.54786	.612	.616
		Problem Solving Therapy	59	113.4915	113.0282	1.49153	1.02816		
		Control	50	91.8200	91.9222	-20.18000	-20.07778		
	Parental Socio-Economic Status	High	32	114.6301	114.6910	2.63014	2.69098	.145	.103
		Moderate	73	112.4098	109.3178	.40984	-2.68220		
		Low	61	105.2188	110.9741	-6.78125	-1.02585		
	Resilience	High	15	114.3804	112.3330	2.38043	.33299	.128	.017
		Moderate	59	113.5333	111.0384	1.53333	-.96163		
		Low	92	107.8983	111.7252	-4.10169	-.27476		
Multiple R Squared		.621							
Multiple R		.385							

The mean scores of socio-economic status differences are: high socio-economic status (Grand Mean (112.00 + 2.63) = 114.63, moderate socio-economic status (Grand Mean (112.00 + 0.41) = 112.41 and low socio-economic status (Grand Mean (112.00 - 6.78) = 105.22 respectively. The mean scores of different resilience category: High resilience (Grand Mean (112.00 + 2.38) = 114.38, Moderate resilience (112.00 + 1.53) = 113.53 and Low resilience (Grand Mean (112.00 - 4.10) = 107.90 respectively.

Ho₂ There is no significant main effect of resilience on academic self-efficacy of in-school adolescents from father-absent families

Table 1 demonstrated that there was no significant main effect of resilience on academic self-efficacy of in-school adolescents from father-absent families ($F_{(2, 140)} = .069, p > .05, \eta^2 = .001$).

Therefore, the null hypothesis was accepted. The MCA on Table 1.2 further indicates that the mean score of students with high resilience (estimated mean = 114.38), moderate resilience (estimated mean = 113.53) and low resilience (estimated mean = 107.90). This implies that students with high resilience have high academic self-efficacy more than their counterpart with moderate and low resilience. Also, students with moderate resilience have high academic self-efficacy more than their counterpart with low resilience but their differences is not statistically significant.

Ho₃ There is no significant interaction effect of treatment and socio-economic status on academic self-efficacy of in-school adolescents from father-absent families

Table 1 showed that there was no significant interaction effect of treatment and socio-economic status on academic self-efficacy of in-school adolescents from father-absent families ($F_{(4, 140)} = .675, p > .05, \eta^2 = .019$). Hence, the null hypothesis was accepted. This demonstrates that socio-economic status

did not significantly moderate the efficiency of the treatment in enhancing students' academic self-efficacy.

Ho₄ There is no significant interaction effect of treatment and resilience on academic self-efficacy of in-school adolescents from father-absent families

The result in Table 1 indicated that there was no significant interaction effect of treatment and resilience on academic self-efficacy of in-school adolescents from father-absent families ($F_{(4, 140)} = .252$, $p > .05$, $\eta^2 = .007$). Therefore, the null hypothesis was accepted. This implies that resilience did not influence the effectiveness of treatment in enhancing students' academic self-efficacy.

Discussion of findings

This study examined the effect of socio-economic status and resilience on the academic self-efficacy of in-school adolescents from father-absent families in Ekiti state. The hypotheses were tested at 0.05 level of significance using ANCOVA to analyse the data collected and the findings are discussed as follows.

Hypothesis one was accepted because the result presented in table 1.1 clearly shows that there was no significant main effect of socio-economic status on academic self-efficacy of in-school adolescents. This implies that socio-economic status has no significant impact on academics self-efficacy of in-school adolescents. This result corroborates the findings of Huang (2007) who confirmed that there is no correlation between parental socio-economic status and academic efficacy at upper secondary schools. Hansen and Masterkaasa (2006) discovered that students who originated in a farm household show the lowest academic self-efficacy while those who originated in academic household perform best and show highest academic self-efficacy. This finding negates the study of Unity, Osagioba and Edith (2013) who reported that a child is affected negatively if he/she comes from an economically disadvantaged family. They stressed further that such children are faced with overwhelming challenges that leads to poor academic self-efficacy. Moreover, Farooq, Chaudhry, Shafiq and Berhanu (2011) also observed that students whose parents are educated score higher on self-efficacy than those whose parents were not educated at secondary school level in a metropolitan city of Pakistan.

Hypothesis two was accepted because from the results of the findings displayed in table 1, it shows that there was no significant main effect of resilience on academic self-efficacy of in-school adolescents. This simply means that students with high resilience have high academic self-efficacy more than their counterpart with moderate and low resilience. Also, students with moderate resilience have high academic self-efficacy more than their counterpart with low resilience but their differences is not statistically significant. This finding corroborates the findings of Chemers, Hu and Garcia, (2000) who observed that academic self-efficacy has been found to be associated with decreased resilience. Jha, Stanley, Kiyonga, Wong and Gelfand (2010) found a negative relationship between academic self-efficacy and resilience in their study. The finding of this study also negates Chavers (2013) who reported that self-efficacy is associated with resilience. The explanation for no significant main effect of self-efficacy on resilience, the researcher draw inference from Hudson (2007) who reported that high self-efficacy can sometimes probably lead to high resilience in performance of a particular task. This is because high self-efficacy can lead to overconfidence in one's resilience skills which could create a false sense of ability.

Hypothesis three was accepted because there was no significant interactive effect of treatment and socio-economic status on academic self-efficacy of in-school adolescents as shown in table 1. This implies that socio-economic status did not significantly moderate the effect of treatment on the academic self-efficacy of in-school adolescents. In another word, the treatment effectiveness is not as a result of parental socio-economic status. The result of this finding is consistent with the findings of others such as Farooq, Chaudhry, Shafiq and Berhanu (2011), Unity, Osagioba and Edith (2013), that

cognitive restructuring and problem-solving therapy are potent tools in solving various challenges irrespective of one's socio-economic status. The outcome of this study could be probably because socio-economic status is not only issues of adolescents from father absent. To make a positive academic self-efficacy entails a process which socio-economic status could be successful or good

Hypothesis four was accepted because there was no significant interactive effect of treatment and resilience on academic self-efficacy of in-school adolescents. This implies that resilience did not significantly moderate the effect of treatment on the academic self-efficacy of in-school adolescents. The result of this finding negates some researches. Chemers, Hu, and Garcia, (2000) as well as Pajares, (1996) who investigated the importance of resilience and academic self-efficacy in adolescent from father absent families. The work examined the indirect effect of resilience and academic self-efficacy on adolescent from father-absent families. The findings of their study suggest that more comprehensive skills training to enhance resilience and self-efficacy would strengthen their performance. This outcome could be as a result of the level of self-efficacy of the participants under study. Majority of them had moderate self-efficacy and there is still higher degree of different between high and moderate self-efficacy. This however could make the effect of treatment and resilience on academic self-efficacy of in-school adolescents insignificant.

Conclusion and Recommendations

This study focused on investigating the moderating effect of parental socio-economic status of resilience on treatment in the process of enhancing academic self-efficacy of absent fathers in-school adolescents in Ekiti, Ekiti State. Based on the findings of this study, it was concluded that socio-economic status and resilience had no significant effect on academic self-efficacy of in-school adolescents. Also socio-economic status and resilience does not significantly moderate the effects of the treatment in enhancing academic self-efficacy. Meaning that the result of the treatment is basically not influenced by parental socio-economic status and resilience.

It was therefore recommended that adolescents should be aware of their strength and weaknesses as well as their peculiarities which could facilitate a clearer sense of self, knowledge and make life commitment and decision in relation to their emotional ability. Also, adolescents should learn different ways to increase their mental and emotional stability so as to have positive self-efficacy on their academic. Parents should always encourage their children in performing different task and showing immense interest in their academic pursuit and other extra-curricular activities. This could help in developing high self-efficacy. School counsellor can organise academic seminars and workshops for students and parents on ways to facilitate academic self-efficacy.

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Prevalent Errors in Senior Secondary School Science Practical as Perceived by Science Teachers in Ekiti State, Nigeria

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Abstract

The study identified prevalent errors in science practical as perceived by science teachers in senior secondary schools using descriptive research of the survey type. The participants were 243 science teachers selected from Ekiti State public senior secondary schools, through multi-stage sampling procedure. An instrument titled Perceived Prevalent Errors Questionnaire (PPEQ) was used to collect data from science teachers across the three senatorial districts of Ekiti State. The data collected were collated and analyzed using descriptive and inferential statistics involving frequency counts, percentages and Analysis of Variance. The results of the study revealed among others that Personal errors, Instrumental errors, Observation errors, Systematic errors, Random errors, Calculation errors, Graph errors, errors in Drawing and Gender related Errors were perceived as prevalent errors during science practical in senior secondary schools while Environmental errors appeared to be less prevalent across the three core-fields of science. The results further revealed that errors in science practical were most prevalent in physics. It was therefore recommended among others, that science teachers should ensure that sufficient time for practical classes is accommodated on the school time table on weekly basis and that more attention is paid to the individual student in the practical classes so as to help them develop interest in the mastery of science practical content which could help to reduce errors during practical and ensure accuracy of results of laboratory experiments in science.

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Introduction

Science is an inquiry oriented discipline to which practical work is very essential. According to Aina and Ayodele (2018), science education involves the teaching and learning of scientific knowledge with the purpose of sharing the knowledge with the society for sustainable development. The interplay between the process and product of science is what gives technology what it requires to provide for the daily needs of every individual. This implies that human existence is actually dependent mainly on science. This is in line with the submission of Bak (2010), that science has become more deeply embedded in our everyday life. This could be one of the reasons why it is generally believed that science makes life facilitating, interesting and comfortable to man. Ogunleye and Adepeju (2011) as well as Gracy (2016) concurred to the fact that science as a whole, shape the way we understand the universe, the planet, ourselves and other living things around us.

The importance of science to the advancement of a nation's technology cannot be overemphasized. Everything in the universe is a product of science hence the world is science. Physics, chemistry and biology are the three core fields of science that are being taught in Senior Secondary Schools. They are compulsory subjects that must be passed at credit level for any student who wished to pursue a career in science and technological fields in tertiary institutions. The importance of science to technological advancement has made it a practical oriented subject. Hence the importance of practical activities to the teaching and learning of science cannot be overemphasized. This is supported by Nzewi (2008) that active involvement of students in practical activities will give rise to more effective learning. Also, Liswaniso (2019) affirmed that complementing science teaching with practical activities helps learners to understand the contents well. The submissions of Nzewi and Liswaniso might not be far from the truth as investigations from several examiners across the country confirmed that the majority of students who usually failed science subjects in senior secondary school certificate examinations are those that are unable to accurately carryout experiments during the practical aspect of the examinations. In other word, students that are successful in the practical aspect will only need to put little efforts during the theoretical aspect of the examinations to get the needed grades that will qualify them for higher studies.

Errors are mistakes or omissions made during practical activities. Owolabi (2013) asserted that students commit errors which usually rendered their works useless because they do not pay good attention to vital areas of science practical. Errors could be personal due to imperfection of students' sense organs, parallax errors in reading of meter rule, students' inability to read accurately the meniscus of liquid in a measuring cylinder, making mistakes during dilutions, spilling chemicals during transfer, forgetting to check up whether the apparatus are in good condition or not, breaking of apparatus as a result of fear and examination consciousness among others. They could also be systematic errors because the student does not know how to use the apparatus properly. Errors could also be random because the power of concentration of the student is fading (Boundless, 2016). Observational errors such as inappropriate recording of observation or reliance solely on single reading in an experiment among others can also occur during practical activities in science. In addition, some researchers confirmed that students' performance in science varied with gender (Aniodoh & Egbo, 2013; Ajayi, 2016; Olu-Ajayi 2017; Azman, et al., 2018). Hence, errors can also occur based on students' gender.

The knowledge of science is required in the production of man's basic needs such as food, drugs, cotton and building materials. Emmanuel (2013) affirmed that science education is the vehicle that conveyed scientific knowledge and skills to the people who are in need of capacities and potentials for developing. Hence the need for its learning through effective practical activities that is devoid of errors. However, despite its important role in the advancement of the society, it appears that there is lack of awareness of the importance of science practical activities with little or no errors. Errors appear to have been on the increase in almost all practical activities in science. In view of this, the research was carried



out to investigate the prevalence of errors in science practical as perceived by teachers in senior secondary schools.

The purpose of the study was to investigate the errors that are prevalent in science practical activities in senior secondary schools and to find out in which of the three core fields of science (Physics, Chemistry and Biology) are errors most prevalent during practical activities.

Research Questions

Two research questions were raised for the study. They are:

1. What are the common errors committed by students during science practical as perceived by teachers?
2. In which of the three core fields of science (Physics, Chemistry and Biology) are errors most prevalent?

Research Hypothesis

One null hypothesis was postulated to guide the study and was tested at 0.05 level of significance:

1. There is no significant difference in the perception of male and female science teachers about the errors committed by students in physics, chemistry and biology practical.

Methodology

This research employed a descriptive research of the survey type. Descriptive survey research design is a procedure whereby a unit of the population is studied in details so as to generalise the result on the entire population. The population for this study comprised all the 1,563 teachers teaching physics, chemistry and biology in public senior secondary schools in Ekiti State, Nigeria as at the time of investigation. (Source: Ekiti State Teaching Service Commission). A sample of 243 senior secondary school science teachers was drawn from nine local government areas across the three senatorial districts of Ekiti State. The sample was selected using multi-stage sampling procedure. At the first stage, three local government areas were selected from each of the senatorial districts using simple random sampling by balloting. The second stage involved the selection of senior secondary school science teachers across the selected three local government areas in each of the senatorial districts using stratified random sampling technique where subject (physics, chemistry and biology) was used as stratification variable. Consequently, 81 teachers which comprised 27 physics teachers, 27 chemistry teachers and 27 biology teachers were randomly selected from each of the senatorial districts, making a total of 243 teachers across the three senatorial districts.

A questionnaire tagged "Perceived Prevalent Errors Questionnaire (PPEQ)" was the only instrument used for the study. The instrument was developed to measure the prevalent errors in science practical activities. The instrument consists of two sections A and B. Section A consists of the respondents' bio-data and preliminary information for science teachers while section B consists of a 40- item statements used to elicit information on the perceived prevalent errors in science practical. The responses were scored as follows: Very Prevalent (VP) – 4 points; Prevalent (P) – 3 points; Slightly Prevalent (SP) – 2 points; Not Prevalent (NP) – 1 point. The face and content validity of the instrument were ascertained by experts in the field of Science Education, Test, Measurement and Evaluation. A reliability coefficient of 0.91 was obtained through split half method.

The data collected were collated and analysed using descriptive and inferential statistics. The questions raised were answered using descriptive statistics involving frequency counts and percentages while the hypothesis postulated was tested using Analysis of Variance. Decision was taken at 0.05 level of significance.

Results

Research Question 1: What are the common errors committed by students during science practical as perceived by teachers?

In order to answer the question, the items on the questionnaire were grouped into 10 forms of errors. Respondents' scores were categorized into two – Below 50% and above 50% of the total score on each of the errors in science practical. Scores equal to or above 50% of the total score were considered as being common errors in science practical. The result is presented in Table 1.

Table 1: Common errors committed by students during chemistry practical as perceived by teachers

Errors Committed	Below 50%	50% and above	Ranking
Personal Errors	51(21.0)	192(79.0)*	2 nd
Environmental Errors	130(53.5)	113(46.5)	10 th
Instrumental Errors	47(19.3)	196(80.7)*	1 st
Observation Errors	51(21.8)	182(78.2)*	3 rd
Systematic Errors	64(26.3)	179(73.7)*	4 th
Random Errors	74(30.5)	169(69.5)*	5 th
Calculation Errors	79(32.5)	164(67.5)*	7 th
Graph Errors	75(30.9)	168(69.1)*	6 th
Errors in Drawing	85(35.0)	158(65.0S)*	8 th
Gender related Errors	112(46.1)	131(53.9)*	9 th

* = Common errors, Percentage responses are enclosed in parentheses

Using a cut-off point of 50% and above, the result reveals that all the errors are commonly committed by students during science practical except environmental errors. Ranking of common errors committed by students during science practical indicates that instrumental errors are the most common errors committed by students during science practical. This is closely followed by personal errors, observation errors, systematic errors, random errors, graphs errors, calculation errors, error in drawing and gender related errors, while environmental errors is the least in the ranking order.

Research Question 2: In which of the three core fields of science (Physics, Chemistry and Biology) are errors most prevalent?

In answering the question, respondents' scores in each of the three core fields were categorized into two – Below 50% and above 50% of the total score on each of the errors in science practical. Scores equal to or above 50% of the total score were considered as being prevalent errors in each of the core fields of science practical. The result is presented in Table 2

Table 2: Error prevalence in the three core fields of science

Errors Committed	Physics		Chemistry		Biology	
	Below 50%	50% and above	Below 50%	50% and above	Below 50%	50% and above
Personal Errors	17(21.0)	64(79.0)*	9(11.1)	72(88.9)*	17(21.0)	64(79.0)*
Environmental Errors	46(56.8)	35(43.2)	54(66.6)	27(33.3)	32(39.5)	49(60.5)*
Instrumental Errors	11(13.0)	70(87.0)*	23(28.7)	58(71.3)*	13(15.8)	68(84.2)*
Observation Errors	16(19.5)	65(80.5)*	18(22.5)	63(77.5)*	19(23.7)	62(76.3)*
Systematic Errors	20(24.7)	61(75.3)*	16(19.8)	65(80.2)*	31(39.5)	42(58.0)*
Random Error	15(18.2)	66(81.8)*	17(21.0)	64(79.0)*	41(50.6)	40(49.4)
Calculation error	22(27.3)	59(72.7)*	11(13.6)	70(86.4)*	47(58.0)	34(42.0)
Graph Errors	17(21.0)	64(79.0)*	21(26.0)	60(74.0)*	36(44.4)	45(55.6)*
Errors in Drawing	28(34.6)	53(65.4)*	20(24.7)	61(75.3)*	34(42.0)	50(60.5)*
Gender related Errors	28(34.6)	53(65.4)*	41(50.6)	40(49.4)	40(49.4)	41(50.6)*
Average	22(27.2)	59(72.8)	23(28.4)	58(71.6)	31(38.3)	50(61.7)

* = Prevalent errors, Percentage responses are enclosed in parentheses

Table 2 presents the errors that are prevalent during science practical as perceived by teachers. The result reveals that all the errors are prevalent during Physics practical except environmental errors. In Chemistry practical, errors such as personal, instrumental, observation, systematic, random, calculation, graph and drawing errors are prevalent except environmental and gender related errors. As regards Biology practical, nearly all the errors are prevalent except random and calculation errors. In general, errors that are prevalent across the three subjects as perceived by teachers include personal errors, instrumental errors, observation errors, systematic errors, graph errors and errors in drawing. However, errors in science practical are most prevalent in Physics.

Hypothesis Testing: There is no significant difference in the perception of male and female science teachers about the errors committed by students in physics, chemistry and biology practical.

In testing this hypothesis, Scores on errors committed by students and mean scores of male and female science teachers were compared for statistical significance in Physics, Chemistry and Biology practical using Analysis of variance (ANOVA) at 0.05 level of significance. The result is presented in Table 3, 4, 5 and 6

Table 3: 2 X 3 ANOVA showing perception of errors committed by students in Physics, Chemistry and Biology practical by gender and subjects

Errors	Source	SS	Df	MS	F	P
Personal	Corrected Model	450.340	5	90.068	5.794	.000
	Sex	215.944	1	215.944	13.892*	.000
	Subject	256.582	2	128.291	8.253*	.000
	Sex * Subject	242.763	2	121.382	7.809*	.001

Errors	Source	SS	Df	MS	F	P
	Error	3683.956	237	15.544		
	Total	62190.000	243			
	Corrected Total	4134.296	242			
Environmental	Corrected Model	514.806	5	102.961	15.230	.000
	Sex	300.683	1	300.683	44.477*	.000
	Subject	225.995	2	112.997	16.715*	.000
	Sex * Subject	330.129	2	165.065	24.416*	.000
	Error	1602.215	237	6.760		
	Total	15480.000	243			
	Corrected Total	2117.021	242			
Instrumental	Corrected Model	209.018	5	41.804	7.551	.000
	Sex	134.923	1	134.923	24.370*	.000
	Subject	115.620	2	57.810	10.442*	.000
	Sex * Subject	81.394	2	40.697	7.351*	.001
	Error	1312.126	237	5.536		
	Total	16066.000	243			
	Corrected Total	1521.144	242			

*p<0.05

Table 4: 2 X 3 ANOVA showing perception of errors committed by students in physics, chemistry and biology practical by gender and subjects (CONTD)

Errors	Source	SS	Df	MS	F	P
Observation	Corrected Model	225.430	5	45.086	10.157	.000
	Sex	103.154	1	103.154	23.238*	.000
	Subject	60.620	2	30.310	6.828*	.001
	Sex * Subject	170.818	2	85.409	19.240*	.000
	Error	1052.059	237	4.439		
	Total	15210.000	243			
	Corrected Total	1277.490	242			
Systematic	Corrected Model	176.560	5	35.312	16.784	.000
	SEX	80.942	1	80.942	38.472*	.000
	Subject	3.298	2	1.649	.784	.458

Errors	Source	SS	Df	MS	F	P
	Sex * Subject	89.727	2	44.863	21.324*	.000
	Error	498.625	237	2.104		
	Total	6165.000	243			
	Corrected Total	675.185	242			
Random	Corrected Model	205.508	5	41.102	15.466	.000
	SEX	83.748	1	83.748	31.514*	.000
	Subject	.546	2	.273	.103	.902
	Sex * Subject	83.128	2	41.564	15.640*	.000
	Error	629.834	237	2.658		
	Total	5924.000	243			
	Corrected Total	835.342	242			

*p<0.05

Table 5: 2 X 3 ANOVA showing perception of errors committed by students in physics, chemistry and biology practical by gender and subjects (CONTD)

Errors	Source	SS	Df	MS	F	P
Calculation	Corrected Model	2293.755	5	458.751	21.887	.000
	Sex	1256.860	1	1256.860	59.966*	.000
	Subject	66.740	2	33.370	1.592	.206
	Sex * Subject	860.318	2	430.159	20.523*	.000
	Error	4967.431	237	20.960		
	Total	70143.000	243			
	Corrected Total	7261.185	242			
Graph	Corrected Model	1070.912	5	214.182	5.766	.000
	Sex	539.418	1	539.418	14.521*	.000
	Subject	223.905	2	111.953	3.014	.051
	Sex * Subject	741.905	2	370.953	9.986*	.000
	Error	8803.813	237	37.147		
	Total	93134.000	243			
	Corrected Total	9874.724	242			
Drawing	Corrected Model	211.734	5	42.347	7.564*	.000

Errors	Source	SS	Df	MS	F	P
	Sex	15.284	1	15.284	2.730	.100
	Subject	40.669	2	20.334	3.632*	.028
	Sex * Subject	77.535	2	38.767	6.925	.001
	Error	1326.768	237	5.598		
	Total	13600.000	243			
	Corrected Total	1538.502	242			

*p<0.05

Table 6: 2 X 3 ANOVA showing perception of errors committed by students in physics, chemistry and biology practical by gender and subjects (CONTD)

Errors	Source	SS	Df	MS	F	P
Gender related	Corrected Model	125.789	5	25.158	10.651	.000
	Sex	39.775	1	39.775	16.839*	.000
	Subject	26.639	2	13.319	5.639*	.004
	Sex * Subject	100.207	2	50.103	21.212*	.000
	Error	559.800	237	2.362		
	Total	4494.000	243			
	Corrected Total	685.588	242			

*p<0.05

Table 3, 4, 5 and 6 revealed that there is significant difference in the perception of Personal errors ($F_{2,237}=8.253$, $p<0.05$), Environmental errors ($F_{2,237}=24.416$, $p<0.05$), Instrumental errors ($F_{2,237}=7.351$, $p<0.05$), Observation errors ($F_{2,237}=19.240$, $p<0.05$), Systematic errors ($F_{2,237}=21.324$, $p<0.05$), Random errors ($F_{2,237}=15.640$, $p<0.05$), Calculation errors ($F_{2,237}=20.523$, $p<0.05$), Graph errors ($F_{2,237}=9.986$, $p<0.05$), errors in Drawing ($F_{2,237}=6.925$, $p<0.05$) and Gender related errors ($F_{2,237}=21.212$, $p<0.05$) committed by students in Physics, Chemistry and Biology practical by male and female science teachers at 0.05 level of significance in each case.

Discussion

The study showed that personal errors, instrumental errors, observation errors, systematic errors, random errors, calculation errors, graph errors, errors in drawing and gender related errors were prevalent errors during science practical. This is an indication that errors do actually occur during science practical activities. This is in line with the submission of Allchin (2000) that errors cannot but occur in science practical. In the same vein, Owolabi (2003) agreed that it is almost impossible to obtain a result in science practical which is absolutely free from error.

Ranking of common errors committed by students during science practical indicates that instrumental errors were the most prevalent errors committed by students during science practical. This is not unexpected as most of the instruments for science practical activities in schools are grossly inadequate (Aina, 2013; Arokoyu & Charles-Ogan, 2017). The instrumental errors were closely followed by Personal errors, Observation errors, Systematic errors, Random errors, Calculation errors, Graphs errors, Errors in drawing and Gender related errors while Environmental errors are the least in the ranking order. This could be part of the reasons why Owolabi (2007) affirmed that errors can be traced to how apparatus are being handled, the method of observing and recording among others. In corroboration with Owolabi's affirmation, majority of the science teachers attested that most of the students do commit personal errors such as psychological problem as a result of phobia, inability to read accurately the meniscus of liquid in a measuring cylinder, forgetting to check up whether apparatus are in good condition or complete, breaking of apparatus as a result of fear and examination consciousness among others.

The study showed that errors in science practical were most prevalent in Physics. Analysis of the errors committed by students on subject basis showed that all the errors except environmental errors were prevalent during Physics practical. Prevalent errors in Chemistry practical ranged from personal errors to instrumental, observation, systematic, random, calculation, graph and errors in drawing. as regards biology practical, nearly all the errors are prevalent during practical except random and calculation errors. Therefore, errors commonly committed by students during practical which cut across the three core-fields of science include Personal errors, Instrumental errors, Observation errors, Systematic errors, Graph errors and Errors in drawing. This is in line with the findings of past researchers such as Nelkon (2000); Raymond (2011); Owolabi (2013); Gierlinski (2015) and Boundless (2016). For instance, Nelkon (2000) observed that personal errors such as imperfection of students' sense organs, breaking of apparatus due to phobia for practical examination among others are common occurrences during practical. In the same vein, Owolabi (2013) agreed that there are an endless number of potential mistakes in laboratory work, but some of the most common include observational errors, error due to parallax, systematic errors, random errors, error in drawing and error in graph among others. In addition, Gierlinski (2015) assert that random errors can be traceable to reading, sampling and counting errors. Also, Boundless (2016) found out that systematic errors are common during science practical because most of the experimenters do not know how to use apparatus properly. On the contrary, environmental errors which appear not to be prevalent across the three core-field of science (Physics, Chemistry and Biology) were among the three categories of common errors in science practical according to Assur and Filator in Bandele and Owolabi (2009).

Findings from the study also revealed that there was significant difference in the errors committed by students in Physics, Chemistry and Biology Practical as perceived by male and female science teachers. This corroborates the findings of Ogunleye and Babajide (2011) that science subjects are given masculine outlook by many educationists. This is in support of Oluwatelure (2015) that male find it less difficult in science to identify problem, gather information about the problem, formulate tentative statements, experiment, observe, interpret and make generalizations than the females. In relation to this, Ekwu (2016) submitted that gender has great impact on the effectiveness of teachers. Olu-Ajayi (2017) affirmed that there is a significant influence of teachers' gender on pupils' learning of science. On the contrary, Kolawole and Popoola (2011), Azman, et al (2018) affirmed that academic achievement is free of gender.

Conclusion

Considering the findings of this study, it was concluded that science practical activities in senior secondary schools were associated with different forms of errors with its negative effect on the performance of students in science subjects in both internal and external examinations. It was also concluded that perception of errors committed by science students varied with teachers' gender.

Recommendations

Based on the findings of this study, it was recommended that:

1. The Government in conjunction with the State Ministry of Education should organize appropriate training through workshops, conferences and seminars for science teachers to enhance professional competencies in their jobs. This will enable them to inculcate in their students, the right attitude towards science which could further reduce the rate at which they commit errors during practical.
2. Science teachers should ensure that sufficient time for practical classes is accommodated on the school time table on weekly basis and pay more attention to the individual student in the practical classes so as to help them develop interest in the mastery of science practical content which could help to reduce errors.

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Knowledge, Attitude and Perception On Anaemia in Pregnancy Among Pregnant Women in Lagos State, Nigeria

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Abstract

Anaemia is one of the most common nutritional deficiency illnesses and a global public health problem that affects both developing and industrialized countries, with severe implications for human health as well as social and economic development. The iron deficiency anaemia is one of the most shared type of anaemia which would regularly affect women of procreative age group, particularly pregnant women. The study investigated the knowledge, attitude and perception on anaemia in pregnancy among pregnant women in Ojo local government area Lagos state. A cross sectional study was conducted among pregnant women in Ojo local government, Lagos state. The assessment of the knowledge, attitude and perception on anaemia in pregnancy was done using questionnaire as the method of data collection. Three hundred completely filled responses were retrieved. The statistical package for social sciences (SPSS) version 25.0 was used in analysing the collected data so as to generate frequency, tables under the branch of descriptive statistics. The study revealed that 228(76%) of the respondents are aware of anaemia in pregnancy. Among the 228 respondents who are aware of anaemia in pregnancy, 143(62.7%) got the information from health Centre, 14(6.1%) got it from a friend, 71(31.2%) got it from the internet. Hence, most of the respondent heard about anaemia in pregnancy from the health Centre. 152(50.7%), agreed that regular antenatal check-up of blood tests are essential during pregnancy. However, majority of the respondents are aware of anaemia in pregnancy. Findings from this study revealed that respondents have a good knowledge on anaemia including the signs and symptoms associated with it. It was recommended among others that educative materials, posters and leaflets on anaemia prevention should be made available

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to convey messages on the dangers of anaemia especially in pregnancy.

Keywords: Knowledge, Attitude, Perception, Anaemia, Pregnancy,

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Introduction

Over the years the study on anaemia increased as it has been discovered to be a mutual health challenge for pregnant women mostly in developing countries. According to a study published by the World Health Organization (WHO) in 2020, anaemia afflicted 1.62 billion (24.8 percent) of the world's population (WHO, 2020). Anaemia was estimated to affect about 51% of pregnant women. Numerous studies have described anaemia as a condition in which the amount of haemoglobin (Hb) or red blood cells is lower than the normal value. This is a circumstance when the amount of red blood cells or the oxygen carrying ability of those cells are inadequate to satisfy bodily demands. The most common form of anaemia, iron deficiency anaemia, is caused by a lack of iron intake or absorption, as well as excessive iron loss (Soundarya, 2016). Anaemia can exist in two forms symptomatic or asymptomatic. Being dizzy, tremor and easy fatigue are some of the symptoms a person can display when having anaemia.

Anaemia is responsible for nearly 120,000 maternal deaths worldwide, accounting for nearly a fifth (18%) of all maternal deaths. Pregnancy anaemia is now a serious public health issue, predominantly in developing countries (Alem, et al, 2013). Some studies have found that anaemia is now a major cause of maternal death, especially in developing countries, where there is a clear link between severe anaemia and maternal mortality. Anaemia is harmful to both mothers and foetuses during pregnancy, raising maternal and perinatal mortality and placing babies at risk for long-term cognitive damage.

Anaemia has been linked to slowed brain growth as well as long-term behavioral and cognitive decline (Muriuki & Mentzer, 2020) Despite its negative health consequences, the true burden in African children is uncertain due to the diverse associations of biochemical markers with inflammation and infections such as malaria (Muriuki & Mentzer, 2020). In most developing countries, anaemia is four times more common than in developed countries. In less developed countries, anaemia affects more than half of pregnant women (World Health Organization, 2020) as women who are pregnant are affected in all the trimesters of pregnancy. The study is aimed to determine the knowledge, attitude and perception of pregnant women on anaemia in pregnancy in Ojo Local Government Area of Lagos State.

This study specifically:

- determined the knowledge of the respondent on anaemia during pregnancy;
- assessed the perception of the respondent regarding the predisposing risks factors associated with anaemia during pregnancy; and
- examined the attitude of the respondent towards anaemia during pregnancy.

Research Questions

The study provided answers to the following questions:

1. What is the knowledge of the respondent on anaemia during pregnancy?
2. What is the perception of the respondent regarding the predisposing risks factors associated with anaemia during pregnancy?
3. What is the attitude of the respondent towards anaemia during pregnancy?

Research Hypotheses

The following hypotheses were formulated for this study.

1. Socio demographic variables do not significantly influence respondent knowledge on anaemia in pregnancy.
2. Socio demographic variables do not significantly influence respondent perception on anaemia in pregnancy.
3. Socio demographic variables do not significantly influence respondent attitude on anaemia in pregnancy.

Methodology

A descriptive cross sectional survey design was adopted in this study to evaluate pregnant women's knowledge, attitudes, and perceptions about anaemia during pregnancy. The study population used for this research will include the pregnant women attending the Primary Health Centres in Ojo Local Government Area. The study adopted the convenient sampling technique to select 300 respondents, that is, whosoever attended the health centre antenatal clinic at the selected health facilities on the day of the distribution, until the sample size is reached, were considered.

The research instrument was self-designed by the researcher which consisted of four sections A – D. The face and content validity of the instrument was established by experts in the field of Nursing Science. Descriptive statistics such as frequency count and percentage was used to answer the research questions while multiple regression analysis was used to test the hypotheses at 0.05 level of significance.

Results

Research Question 1: What is the knowledge of the respondent on anaemia during pregnancy?

Table 1: Knowledge of Anaemia in pregnancy

Variables	YES {%}	NO {%}	I DON'T KNOW {%}
1. Anaemia is a decrease in concentration of red blood cells?	129 {43.0}	9 {3.0}	162 {54.0}
2. Do you believe anaemia in pregnancy is a serious health challenge?	143{47.7}	25{8.3}	132{44.0}
3. Do you know that anaemia can affect pregnancy?	151{50.3}	23{7.7}	126{42.0}
4. Being a sickle cell patient puts you at risk of anaemia in pregnancy?	130{43.3}	16{5.3}	153{51.0}
5. When a pregnant woman does not eat nutritious meal, she is at risk of anaemia in pregnancy?	161{53.7}	14{4.7}	125{41.7}
6. Can anaemia in pregnancy affect both mother and child?	88{29.3}	32{18.7}	180{60.0}
7. Does the intake of vitamin B12 help in preventing anaemia?	103{34.3}	19{6.3}	178{59.3}
8. Does having two closely spaced pregnancies put you at risk of anaemia in pregnancy?	3{1.0}	85{28.3}	188{62.7}
9. Is a woman at risk of anaemia if pregnant with twins?	79{26.3}	27{9.0}	194{64.7}
10. When a woman does not consume enough iron, she is at risk of anaemia in pregnancy?	177{59.0}	13{4.3}	110{36.7}

Table 1 revealed the respondent knowledge level of anaemia in pregnancy. From the table it could be deduced that most of the respondents are of the view that they do not know if Anaemia is a decrease in concentration of red blood cells [Yes= 129(43%); No-9(3%); Don't know-162(54%)]. Most of the respondents believe anaemia in pregnancy is a serious health challenge [Yes= 143(47.7%); No-25(8.3%); Don't know- 132 (44%)] and they also know that that anaemia can affect pregnancy [Yes= 151(50.3%); No-23(7.7%); Don't know- 126(42%)]. Most of them do not, however, know that being a sickle cell patient puts one at risk of anaemia in pregnancy [Yes= 130(43.3%); No-16(5.3%); Don't know- 153(51%)]. Majority of the respondents believe that when a pregnant woman does not eat nutritious meal, she is at risk of

anaemia in pregnancy [Yes= 161(53.7%); No-14(4.7%); Don't know- 125(41.7%)]. It could also revealed from the table majority of the respondent do not know if anaemia in pregnancy can affect both mother and child [Yes= 88(29.3%); No-32(18.7%); Don't know- 180(60%)]. and do not also if the intake of vitamin B12 helps in preventing anaemia [Yes= 103(19%); No-19(6.3%); Don't know- 178(59.3%)], do not also if having two closely spaced pregnancies can put one at risk of anaemia in pregnancy [Yes= 3(1%); No-85(28.3%); Don't know-188(62.7%)]., majority do not know if a woman it at risk of anaemia if pregnant with twins [Yes= 79(26.3%); No-27(9%); Don't know- 194(64.7%)]. But most of the respondents know that when a woman does not consume enough iron, she is at risk of anaemia in pregnancy [Yes= 79(26.3%); No-27(9%); don't know- 194(64.7%)]

Research Question 2: What is the perception of the respondent regarding the predisposing risks factors associated with anaemia during pregnancy?

Table 2: Perception on Anaemia in Pregnancy

S/N	QUESTIONS	A	D
1.	Tiredness and weakness are symptoms of anaemia?	123(41)	177(59)
2.	Does malaria in pregnancy result in anaemia in pregnancy?	106(35.3)	194(64.7)
3.	Worm infection can cause anaemia?	83(27.7%)	217(72.3)
4.	Inadequate intake of iron in diet during pregnancy can cause anaemia?	184(61.3)	116(38.6)
5.	Intake of diet rich in iron during pregnancy can prevent anaemia?	191(63.7)	109(36.7)
6.	Iron deficiency anaemia is considered to be dangerous during pregnancy?	181(60.3)	119(39.7)
7.	Pale face or tongue is a sign of anaemia?	95(31.7)	205(68.3)

Table 2 revealed the respondents' perception on anaemia in pregnancy. The table indicated that most of the respondents, 177(59%), disagreed that tiredness and weakness are symptoms of anaemia, while 123(41%) agreed. It was also revealed that majority of the respondents, 194(64.7%) disagreed that malaria in pregnancy result in anaemia in pregnancy and most of them, 217(72.3), were of the opinion that worm infection can not cause anaemia, while 83(27.7%) disagreed. It could be presumed from the table most of the respondents, 184(61.3%), agreed that Inadequate intake of iron in diet during pregnancy can cause anaemia, 116 (38.6%) disagreed and they mostly, 191(63.7%), agreed that Intake of diet rich in iron during pregnancy can prevent anaemia, while 109(36.7%) disagreed, most of them, agreed that Iron deficiency anaemia is considered to be dangerous during pregnancy, while 119(39.7%) disagreed, majority of the respondents, 205(68.3%), disagreed that Pale face or tongue is a sign of anaemia, while 95(31.7%) agreed.

Research Question 3: What is the attitude of the respondent towards anaemia during pregnancy?

Table 3: Attitude on Anaemia in Pregnancy

S/N	QUESTIONS	A	D
1.	Regular antenatal check-up of blood tests are essential during pregnancy	152(50.7)	148(49.3)

2.	Does receiving iron supplement in pregnancy prevent anaemia in pregnancy?	160(53.3)	140(46.7)
3.	Intake of folic acid can help reduce the risk of anaemia in pregnancy?	176(58.7)	124(41.3)
4.	Does the type of meal a woman consume result in anaemia in pregnancy?	112(37.3)	188(62.7)
5.	Will eating vegetables reduce the risk of anaemia in pregnancy?	108(36)	192(64)
6.	Spacing of pregnancies can help prevent anaemia in pregnancy?	98(32.7)	202(67.3)
7.	Pregnant women should take iron pills to prevent anaemia?	192(65.3)	108(34.7)
8.	Intake of citrus fruits such as lemon can help with absorption of iron?	185(61.7)	115(38.2)

Table 3 revealed the respondents attitude on anaemia in pregnancy. The table indicated that majority of the respondents, 152(50.7%), agreed that regular antenatal check-up of blood tests are essential during pregnancy, while 148(49.3%) disagreed. It was also indicated that most of the respondents, 160(53.3%) agreed that receiving iron supplement in pregnancy prevent anaemia in pregnancy, while 140(46.7%) disagreed. Most of the respondents, 176(58.7%), agreed that Intake of folic acid can help reduce the risk of anaemia in pregnancy, while 124(41.3) disagreed. However, most of the respondents, 188(62.7%), disagreed that the type of meal a woman consume result in anaemia in pregnancy, while 112(37.3%) disagreed. The table showed that majority of the respondents, 192(64%), disagreed that eating vegetables reduce the risk of anaemia in pregnancy, while 108(36%) disagreed. most of them, 202(67.3%), also disagreed that spacing of pregnancies can help prevent anaemia in pregnancy, 98(32.7%) agreed. It could be presumed from that table that most of the respondents, 192(65.3%), agreed that Pregnant women should take iron pills to prevent anaemia, while 108(34%) disagreed. 185(61.7%) of the respondent agreed that the intake of citrus fruits such as lemon can help with absorption of iron, while 115(38.2%) disagreed.

Test of Hypotheses

H₀1: Socio demographic variables do not significantly influence respondent knowledge on anaemia in pregnancy.

Table 4: Summary of multiple regression on the effect of socio-demographic influence on knowledge on anaemia in pregnancy

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	22.215	2.080		10.679	.000
Age	-.028	.062	-.028	-.449	.654
Marital Status	2.627	1.188	.138	2.212	.028
Ethnicity	-.066	.962	-.004	-.069	.945
Religion	1.252	1.015	.075	1.233	.219

Level Of Education	3.067	2.089	.091	1.468	.143
No Of Previous Pregnancy	.026	.396	.004	.067	.947

R= .149; R2= .022; Adj. R2= .002; Std. Error= 8.04165; F= 1.104; P>.05

Dependent Variable: Knowledge

Table 4 revealed that age has no significant influence on the knowledge on anaemia in pregnancy (Beta=-028; t=-.449; P>.05), marital status has a significant influence on knowledge on anaemia in pregnancy (Beta= .138; t= 2.212; P<.05), ethnicity (Beta=-.004; t=-.069; P>.05), religion (Beta= .075; t= 1.233; P>.05), level of education religion (Beta= .091; t= 1.468; P>.05), and number of previous (Beta= .004; t= .067; P>.05) have no individual significant influence on knowledge on anamia on pregnancy. Hence, it could be deduced from the analysis that among all the stated socio- demography, only marital status has a significant influence on knowledge on anaemia in pregnancy

H₀2: Socio demographic variables do not significantly influence respondent perception on anaemia in pregnancy.

Table 5: Summary of multiple regression on the effect of socio-demographic influence on perception on anaemia in pregnancy.

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	19.941	1.439		13.860	.000
Age	.036	.043	.053	.837	.404
Marital Status	1.810	.821	.136	2.203	.028
Ethnicity	.342	.665	.030	.515	.607
Religion	-.022	.702	-.002	-.031	.975
Level Of Education	-1.670	1.445	-.071	-1.156	.249
No Of Previous Pregnancy	-.373	.274	-.088	-1.364	.174

R=0.172; R2= .030; Adj. R2= .010; Std. Error= 5.56184; F= 1.489; P>.05

Dependent Variable: Perception

Table 5 revealed that age has no significant influence on the respondents perception on anaemia in pregnancy (Beta=.053; t= .837; P>.05), marital status has a significant influence on perception on anaemia in pregnancy (Beta= .136; t= 2.203; P<.05), ethnicity (Beta=-.030; t=-.515; P>.05), religion (Beta= -.002; t= -.031; P>.05), level of education religion (Beta= -.071; t= -1.156; P>.05), and number of previous pregnancy (Beta= -.088 ; t= -1.364; P>.05) have no individual significant influence on perception on anaemia on pregnancy. Hence, it could also be deduced from the analysis that among all the stated socio- demography, only marital status has a significant influence on perception on anaemia in pregnancy.

H₀3: Socio demographic variables do not significantly influence respondent attitude on anaemia in pregnancy

Table 6: Summary of multiple regression on the effect of socio-demographic influence on attitude on anaemia in pregnancy.

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	22.947	1.722		13.327	.000
Age	.056	.051	.068	1.088	.277
Marital Status	2.262	.983	.142	2.301	.022
Ethnicity	.644	.796	.048	.810	.419
Religion	-.563	.840	-.040	-.670	.503
Level Of Education	-3.439	1.729	-.122	-1.989	.048
No Of Previous Pregnancy	-.090	.327	-.018	-.276	.783

R=0.175; R2= .031; Adj. R2= .011; Std. Error= 6.65639; F= 1.542; P>.05

Dependent Variable: Attitude

Table 6 revealed that age has no significant influence on the attitude on anaemia in pregnancy (Beta=.053; t= .837; P>.05), marital status has a significant influence on attitude on anaemia in pregnancy (Beta= .142; t= 2.301; P<.05), ethnicity (Beta=-.048; t=-.810; P>.05), religion (Beta= -.563; t= -.670; P>.05), and number of previous pregnancy (Beta= -.018 ; t= -.276; P>.05) have no individual significant influence on attitude on anaemia on pregnancy. Level of education religion (Beta= -.122; t= -1.989; P<.05) has a significant influence on the attitude of the respondents on anaemia pregnancy. Hence, it could also be deduced from the analysis that among all the stated socio- demography, only marital status and level of education have significant influence on perception on anaemia in pregnancy.

Discussion

Findings from this study revealed that (76%) of the respondents are aware of anaemia and 62.7% of the respondents got the information on anaemia from health centre, The result of this study is higher compared to the result gotten from the study of Nivedita and Shanthini (2016) which was conducted in India, where just 39.87% of the respondents were aware of and recognized the word anaemia whereas, in contrast to this study, Chacko et al., (2016) revealed that 50% of the respondents knowledge and understanding of anaemia is significantly poor, which may be attributed to the cause of pregnancy-related problems. More also, result showed that 43% of the respondents are of the view that they do not know if Anaemia is a decrease in concentration of red blood. Furthermore, result also revealed that 47% of the respondents believe anaemia in pregnancy is a serious health challenge and 50.3% also know that that anaemia can affect pregnancy as well as the unborn baby. This result is in line with the findings of Nivedita and Shanthini (2016) where 66.1% of the respondents agrees that extreme anaemia would affect the fetus. 53.7% of the respondent believe that when a pregnant woman does not eat nutritious meal, she is at risk of anaemia in pregnancy. Result also revealed that 60% of the respondents do not know if anaemia in pregnancy can affect both mother and child.

Result revealed that most of the respondents, 177(59%), disagreed that tiredness and weakness are symptoms of anaemia. It was also revealed that (64.7%) of the respondents disagreed that malaria in pregnancy result in anaemia in pregnancy while 217(72.3) were of the opinion that worm infection can not cause anaemia. More also, 184(61.3%), agreed that Inadequate intake of iron in diet during pregnancy can cause anaemia, and 191(63.7%), agreed that Intake of diet rich in iron during pregnancy can prevent anaemia. This result agrees with

the study of Soundarya (2016), which suggests that eating the right amount of food rich in Iron, copper, zinc, folic acid, Vitamin B-12, and protein-rich diets helps in the production of haemoglobin which in turns prevents anaemia.

Findings from this study revealed 50.7% agreed that regular antenatal check-up of blood tests are essential during pregnancy while (53.3%) agreed that receiving iron supplement in pregnancy prevent anaemia in pregnancy. Result also revealed that (58.7%) of the respondents' agreed that Intake of folic acid can help reduce the risk of anaemia in pregnancy, which supports the findings of Qureshi et al (2014) and Nivedita and Shanthini (2016) that says that 74.36% took iron supplements on a regular basis. Lastly, 65.3% of the respondents agreed that Pregnant women should take iron pills to prevent anaemia and (61.7%) of the respondent agreed that the intake of citrus fruits such as lemon can help with absorption of iron.

Conclusion and Recommendation

From the findings of this study, it could be concluded that respondents have good knowledge of, good perception of and positive attitude towards anaemia in pregnancy among pregnant women. Based on the findings of this study, it is recommended that;

1. Health education intervention by health care workers will increase the knowledge of pregnant women attending antenatal on the benefits of eating a healthy diet so as to prevent anaemia.
2. Government should also make a policy on iron deficiency prevention, so as to prevent anaemia in pregnancy.
3. Educative materials, posters and leaflets on anaemia prevention should be made available to convey messages on the dangers of anaemia especially in pregnancy.

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Knowledge, Perception and Practice of Self-Medication Towards Covid-19 Prevention Among Residence of Felele Community, Ibadan, Oyo State

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Abstract

COVID-19 is a communicable respiratory disease caused by a new strain of coronavirus that causes illness in humans. Self-medication does not only include the use of un-prescribed drugs, one can also self-medicate with alcohol and other local herbs, which can weaken an individual's immune system and render such individual susceptible to contracting the COVID-19 virus. The absence of a recognized treatment for the disease and its constant progression requires a re-evaluation of self-medication practices in Nigeria. This study therefore assessed the level of knowledge, perception and practice of self-medication towards COVID-19 prevention among residence of Felele community Ibadan. A descriptive cross-sectional survey was used to assess the level of knowledge, perception and practice of self-medication towards COVID-19. The study population for this research comprised of individuals residing in the Felele community in Ibadan Oyo State. Stratified random sampling method was used in selecting 262 participants for this study. The instrument for data collection was a researcher-developed semi-structured questionnaire, which was administered on the individuals. The face and content validity of the questionnaire was established by experts in the field of public health. Test re-test method was used to determine the reliability of the instrument. The reliability co-efficient value was 0.811 which was considered high enough to make the instruments reliable. The data collected was subjected to descriptive statistics. The findings of the study revealed that the level of knowledge of self-medication towards covid-19 prevention was

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found to be relatively high while overall perception indicated that the respondents had a high perception of self-medication towards covid-19 prevention but the level of practice of self-medication among the respondents was low. It was recommended among others that that awareness campaigns through media should be intensified to highlight the need for medical consultations for the diagnosis and management of COVID-19.

Keywords: Knowledge, Perception, Practice, Self-medication, Covid-19,



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Introduction

The on-going pandemic, COVID-19 is a viral infection which was first reported on December, 2019, in Wuhan, China. Investigations suggested that the source of the viral outbreak was a market in Wuhan City, China. As of 4th January, 2021, over 85 million confirmed cases were reported globally (Statista, 2021). On January 30th, 2020, the World Health Organization (WHO) declared a public health emergency of international concern due to the advent in China of a disease called COVID-19 caused by a novel coronavirus, SARS-CoV-2, and its rapid spread (Al-Mandhari et al., 2020). Approximately 6 months later, almost 20 million cases and approximately 700,000 deaths have been reported worldwide (WHO, 2020).

According to the Nigeria Centre for Disease and Control (Nigeria Centre for Disease Control, 2020), Nigeria experienced its first case of coronavirus on the 25th of February, 2020. According to Nigeria Centre for Disease Control, 2021, as of 10th February, 2021, 141, 447 confirmed cases, 1,694 deaths, 23,993 active cases and 115,755 discharged cases were recorded. Individuals with the COVID-19 virus experiences flu-like symptoms such as cough, fever and shortness of breath, which can be misinterpreted as having the flu or common cold (WHO, 2020). Individuals showing such symptoms can never be too sure if he or she has the flu or the COVID-19 virus and may end up going for the flu medication.

According to Cambridge Dictionary, self-medication is the act of taking medicine or drug to help with a condition without asking a doctor. Self-medication does not only include the use of un-prescribed drugs, one can also self-medicate with alcohol and other local herbs, which can weaken an individual's immune system and render such individual susceptible to contracting the COVID-19 virus. As of then, there was no treatment or vaccine for this pandemic. Several studies have evaluated the efficacy of hydroxychloroquine-based treatment with or without azithromycin (Gao et al., 2020). However, the efficacy of these medicines has not been proven for curative treatment of the disease. Chloroquine and hydroxychloroquine were also evaluated for prophylaxis against COVID-19 in clinical trials among close contacts of individuals diagnosed with COVID-19 and health care workers. Although the preclinical results are promising, there is currently no evidence of the effectiveness of chloroquine/hydroxychloroquine in the prevention of COVID-19 (Shah et al., 2020).

Health literacy plays an important role in self-medication behavior (Shafaei et al., 2015). Concerning the COVID-19 pandemic and other coronaviruses, the level of knowledge is globally low according to a meta-analysis of 70 scientific articles. Indeed, the proportion of people with a low level of knowledge ranged from 4.3 to 57.9% among health professionals and from 4.0 to 82.5% in the rest of the population (Seng et al., 2020). The absence of a recognized treatment for the disease and its constant progression requires a re-evaluation of self-medication practices in Nigeria.

There had been rumours in 2020 where Madagascar claimed they found the solution to the COVID-19 virus, an herbal drink made from the Artemisia plant which resulted in some countries importing the said tonic to develop in their countries (Ifiok, 2020). Also, a Nigerian Biotechnology Professor also claimed he created a more potent treatment from the plant (Ifiok, 2020). But these said treatments have not been clinically tested and approved and so can cause more harm. In some other communities in Nigeria, certain the use of the local gin popularly known as 'ogogoro' and the mixture of some liquids and substances was claimed to help cure the virus. But the use and uncontrolled use of these substances can weaken one's immune system; this study therefore assessed the level of knowledge, perception and practice of self-medication towards COVID-19 prevention among residence of Felele community Ibadan. In view of the above, the study investigated. This study specifically:

- examined the level of knowledge of self-medication COVID-19 among residence of Felele community, Ibadan Oyo State;
- determined the perception of self-medication towards COVID-19 among residence of Felele community, Ibadan Oyo State; and
- assessed the level practice of self-medication towards COVID-19 among residence of Felele community, Ibadan Oyo State.

Research Questions

The following research questions were raised for this study

1. What is the level of knowledge of self-medication COVID-19 among residence of Felele community, Ibadan Oyo State?
2. What is the perception of self-medication towards COVID-19 among residence of Felele community, Ibadan Oyo State?
3. What is the level practice of self-medication towards COVID-19 among residence of Felele community, Ibadan Oyo State?

Methodology

A descriptive cross-sectional survey was used to assess the level of knowledge, perception and practice of self-medication towards COVID-19 among residence of Felele community Ibadan Oyo State. This study was carried out in Felele Ibadan, Oyo State, Nigeria. The study population for this research comprised of individuals residing in the Felele community in Ibadan Oyo State. Stratified random sampling method was used in selecting 262 participants for this study.

The instrument for data collection was a researcher-developed semi-structured questionnaire, which was administered on the individuals. The face and content validity of the questionnaire was established by experts in the field of public health. Test re-test method was used to determine the reliability of the instrument. The reliability co-efficient value was 0.811 which was considered high enough to make the instrument reliable. After the collection of data, the data collected was coded and analysed using the Statistical Package for Social Sciences (SPSS) version 26.0. The data collected was subjected to descriptive statistics.

Results

Research Question 1: What is the level of knowledge of self-medication COVID-19 among residence of Felele community, Ibadan Oyo State?

Table 1: Respondents knowledge of Self-Medication towards COVID-19 Prevention

Item	Respondents in this study=296	
	Frequency(n)	Percent (%)
Do you understand Self-Medication		
Yes	13	4.4
No	283	95.6
Self-medication is the use of over the counter or non-prescribed drug.		
Yes	271	91.6
No	25	8.4
There is no problem with self-medication if one use the drugs right		
Yes	193	65.2
No	103	34.8
One can use medications that are not approved for management of Covid-19 as long as they work		
Yes	129	43.6
No	167	56.4
Hydroxychloroquine is already approved in America, so we can also use it here in Nigeria without prescription		
Yes	60	20.3
No	236	79.7
Using Vitamin C for Covid-19 management is not self-medication because it boost immunity		

Yes	194	65.5
No	102	34.5
I can take the traditional medicine if it works		
Yes	223	75.3
No	73	24.7
There is something wrong with using medications without permission from the government		
Yes	194	65.5
No	102	34.5
One can go to a chemist/pharmacy to buy any drug on emergency		
Yes	202	68.2
No	94	31.8

Table 2: Proportion of Respondent's knowledge of Self-Medication towards COVID-19 Prevention

	Respondents in this study; N=296	
	Frequency	Percentage (%)
Low	139	47.0
High	157	53.0

As shown in table 1, virtually almost (94.6%) all of the respondents stated that they understand self-medication, similarly, almost all (91.6%) of the respondents also knew that self-medication is the use of over the counter drugs or non-prescribed drugs. Furthermore, more than half (65.2%) of the respondents indicated that there is no problem with self-medication if one uses the right drugs. more than half (56.4%) of the respondents indicated that one cannot use medications that are not approved for management of Covid-19 as long as they work. Even though hydroxychloroquine is already approved in America, most (79.7%) of the respondents highlighted that it should not be used in Nigeria without prescription. Additionally, more than (65.5%) half of the respondents highlighted that using Vitamin C for Covid-19 management is not self-medication because it boost immunity. Respondents (75.3%) stated that they could take traditional medicine for Covid-19 if it works. Although, most of the respondents (65.5%) recorded that there is something wrong with using medications without permission from the government yet more than half of the respondents' indicated that they can go to a chemist/pharmacy to buy any drugs they want on emergency.

The respondent's level of knowledge of self-medication towards Covid-19 prevention measured on a 9-point rating scale. This showed a mean score of 4.84 ± 1.75 . This translates to a prevalence of 53.7%. The proportion of the respondents with high level of knowledge of self-medication towards Covid-19 prevention is 53.0%. One can infer that the respondents had a relatively high level of knowledge of self-medication towards Covid-19 prevention (See Table 2).

Research Question 2: What is the perception of self-medication towards COVID-19 among residence of Felele community, Ibadan Oyo State?

Table 3: Respondents perceived susceptibility of Self-Medication towards COVID-19 Prevention

Item	Respondents in this study=296			
	Strongly Agree	Agree	Disagree	Strongly Disagree
I think I am at risk of contracting Covid-19 if I do not self-medicate				
Frequency(n)	56	66	68	109
Percent (%)	18.9	22.3	23.0	35.8
I am very comfortable with the drug I self-				

medicate on				
Frequency(n)	96	95	79	26
Percent (%)	32.4	32.1	26.7	8.8
Self-medication is the only way I can protect myself from Covid-19				
Frequency(n)	37	77	87	95
Percent (%)	12.5	26.0	29.4	32.1
Self-medicating on drugs for Covid-19 is not wrong				
Frequency(n)	54	102	65	75
Percent (%)	18.2	34.5	22.0	25.3
Self-medicating on drugs for covid-10 cannot weaken my immune				
Frequency(n)	42	91	94	69
Percent (%)	14.2	30.7	31.8	23.3

Table 4: Proportion of Respondent's perceived susceptibility of Self-Medication towards COVID-19 Prevention

	Respondents in this study; N=296	
	Frequency	Percentage (%)
Low	142	48.0
High	154	52.0

As shown in table 3, put together, more than half of the respondents disagreed (23.0%) and strongly disagreed (35.8%) that they think they are at risk of contracting Covid-19 virus if they do not self-medicate. Similarly, most of the respondents agreed (32.4%) and strongly agreed (32.1%) that they are comfortable on the type of drugs they self-medicate. More than half of the respondents also disagreed (29.4%) and strongly disagreed (32.1%) that self-medication is the only way they can be protected from Covid-19. A little fraction (34.5%) of the respondents agreed that self-medicating on drugs for prevention of Covid-19 is not wrong. Furthermore, a little fraction (30.7%) of the respondents also reported that self-medicating drugs for COVID-19 could not weaken the immune system.

The respondent's level of perceived susceptibility of self-medication towards Covid-19 prevention measured on a 15-point rating scale. This showed a mean score of 7.81 ± 2.69 . This translates to a prevalence of 52.1%. The proportion of the respondents with high level of perceived susceptibility of self-medication towards Covid-19 prevention is 52.0%. One can infer that the respondents had a relatively high level of perceived susceptibility of self-medication towards Covid-19 prevention (See, Table 4).

Table 5: Respondents perceived severity of Self-Medication towards COVID-19 Prevention

Item	Respondents in this study=296			
	Strongly Agree	Agree	Disagree	Strongly Disagree
Covid-19 is fatal and I believe self-medicating for the virus is best action				
Frequency(n)	38	57	111	90
Percent (%)	12.8	19.3	37.5	30.4
Self-medication cannot have serious adverse effects in my system				
Frequency(n)	30	65	111	90

Percent (%)	10.1	22.0	37.5	30.4
If I self-medicate, my immune system will be strong				
Frequency(n)	33	69	114	80
Percent (%)	11.1	23.3	38.5	27.0
If I self-medicate for covid-19, I will be less susceptible to the virus				
Frequency(n)	68	76	80	72
Percent (%)	23.0	25.7	27.0	24.3
I believe self-medication for covid-19 is safe				
Frequency(n)	36	65	112	83
Percent (%)	12.2	22.0	37.8	28.0

Table 6: Proportion of Respondent's perceived severity of Self-Medication towards COVID-19 Prevention

	Respondents in this study; N=296	
	Frequency	Percentage (%)
Low	100	33.8
High	196	66.2

As shown in table 5, a fraction of the respondents disagreed (37.5%) that although covid-19 is fatal, self-medicating for the virus is the best action. Likewise, a fraction of the respondents also disagreed (37.5%) that self-medication cannot have serious adverse effects in their body system. Similarly, respondents also disagreed (38.5%) that if they self-medicate for covid-19, their immune system will be strong. Respondents also disagreed (24.3%) that if they self-medicate for covid-19, they will be less susceptible to the virus. Lastly, respondents also disagreed (37.8%) that self-medication for covid-19 is safe.

The respondent's level of perceived severity of self-medication towards Covid-19 prevention measured on a 15-point rating scale. This showed a mean score of 8.90 ± 4.10 . This translates to a prevalence of 59.2%. The proportion of the respondents with high level of perceived severity of self-medication towards Covid-19 prevention is 66.2%. One can infer that the respondents had a high level of perceived severity of self-medication towards Covid-19 prevention (See, Table 6).

Table 7: Respondents perceived Benefit of Self-Medication towards COVID-19 Prevention

Item	Respondents in this study=296			
	Strongly Agree	Agree	Disagree	Strongly Disagree
I ensure social distancing instead of self-medicating for covid-19 because it is safe				
Frequency(n)	180	81	30	5
Percent (%)	60.8	27.4	10.1	1.7
I ensure the use of facemask instead of self-medicating for covid-19 because it is safe				
Frequency(n)	153	111	24	8
Percent (%)	51.7	37.5	8.1	2.7
I ensure the use of alcohol based hand sanitizer instead of self-medicating for covid-19 because it is safe.				

Frequency(n)	158	118	14	6
Percent (%)	53.4	39.9	4.7	2.0
I ensure self-quarantine when experiencing flu like symptoms instead of self-medicating for covid-19 because it is safe				
Frequency(n)	147	124	19	6
Percent (%)	49.7	41.9	6.4	2.0
I ensure healthy diet instead of self-medicating for covid-19 because it is safe				
Frequency(n)	197	76	16	7
Percent (%)	66.6	25.7	5.4	2.4

Table 8: Proportion of Respondent's perceived benefit of Self-Medication towards COVID-19 Prevention

	Respondents in this study; N=296	
	Frequency	Percentage (%)
Low	19	6.4
High	277	93.6

As shown in table 7, most of the respondents strongly agreed (60.8%) that they ensured social distancing instead of self-medicating for covid-19. Half of the respondents also strongly agreed (51.7%) that they ensure that they use a facemask instead of self-medicating for covid-19. Similarly, half of the respondents also strongly agreed (53.4%) that they ensured the use of alcohol based sanitizers instead of self-medicating for covid-19. Respondents also strongly agreed (49.7%) that they ensured self-quarantine when experiencing flu like symptoms instead of self-medicating for covid-19. Lastly, more than half respondents also strongly agreed (66.6%) that they ensured healthy diet instead of self-medicating for covid-19.

The respondent's level of perceived benefit of self-medication towards Covid-19 prevention measured on a 15-point rating scale. This showed a mean score of 12.25 ± 4.79 . This translates to a prevalence of 81.6%. The proportion of the respondents with high level of perceived benefit of self-medication towards Covid-19 prevention is 93.6%. One can infer that the respondents had a very high level of perceived benefit of self-medication towards Covid-19 prevention (See, Table 8).

Table 9: Respondents perceived Barrier of Self-Medication towards COVID-19 Prevention

Item	Respondents in this study=296			
	Strongly Agree	Agree	Disagree	Strongly Disagree
The hospital is too far, so I may still self-medicate				
Frequency(n)	78	89	76	53
Percent (%)	26.3	30.1	25.7	17.9
I may not have the time to go to the hospital I need to work instead				
Frequency(n)	35	72	127	62
Percent (%)	11.8	24.3	42.9	20.9
My family has been using traditional medicine since forever, I cannot be an exception				

Frequency(n)	34	60	133	69
Percent (%)	11.8	20.3	44.9	23.3
I want to go out, therefore I may self-medicate to protect me from covid-19				
Frequency(n)	50	64	114	68
Percent (%)	16.9	21.6	38.5	23.0
I do not have enough finance for test so I may self-medicate if I have symptoms				
Frequency(n)	48	113	83	52
Percent (%)	16.2	38.2	28.0	17.6

Table 10: Proportion of Respondent's perceived barrier of Self-Medication towards COVID-19 Prevention

	Respondents in this study; N=296	
	Frequency	Percentage (%)
Low	153	51.7
High	143	48.3

As shown in table 9, respondents agreed (30.1%) that the hospital is too far so they are likely to self-medicate. Close to half of the respondents disagreed (42.9%) that they may not have time to go to the hospital, instead they need to work. Similarly, close to half of the respondents also disagreed (44.9%) that their family has been using traditional medicine since forever and they cannot be an exception. Respondents disagreed (38.5%) that they may go out and self-medicate in order to protect them from covid-19. Lastly, most of the respondents agreed (38.2%) that they do not have enough finance for covid-19 test, so they may self-medicate if they have symptoms.

The respondent's level of perceived barrier of self-medication towards Covid-19 prevention measured on a 15-point rating scale. This showed a mean score of 8.02 ± 3.94 . This translates to a prevalence of 53.4%. The proportion of the respondents with low level of perceived barrier of self-medication towards Covid-19 prevention is 51.7%. One can infer that the respondents had a low level of perceived barrier of self-medication towards Covid-19 prevention (See, Table 10).

Table 11: Proportion of Respondent's Overall Perception of Self-medicating towards Covid-19 Prevention

	Respondents in this study; N=296	
	Frequency	Percentage (%)
Low	80	27.0
High	216	73.0

The overall respondent's level of perception of self-medicating towards covid-19 prevention measured on a 60-point rating showed a mean score of 37.05 ± 10.68 . This translates to a prevalence of 61.7%. The proportion of the overall respondents' with high level of self-medicating towards covid-19 prevention is 73.0%. One can infer that the respondents had a high level of overall perception of self-medicating towards covid-19 prevention (See Table 11).

Research Question 3: What is the level practice of self-medication towards COVID-19 among residence of Felele community, Ibadan Oyo State?

Table 12: Respondents Practice of Self-Medication towards COVID-19 Prevention

Item	Respondents in this study=296	
	Frequency(n)	Percent (%)
I self-medicate before covid-19 pandemic		
Always	89	30.1
Often	79	26.7
Rarely	97	32.8
Never	31	10.5
I self-medicate for covid-19 prevention		
Always	76	25.7
Often	59	19.9
Rarely	59	19.9
Never	102	34.5

Table 13: Proportion of Respondent's level of Practice of Self-medicating towards Covid-19 Prevention

	Respondents in this study; N=296	
	Frequency	Percentage (%)
Low	165	55.7
High	131	44.3

As described in table 12, most of the respondents (30.1%) indicated that they always self-medicate before covid-19 pandemic, but then respondents (34.5%) highlighted that they never self-medicate for covid-19 prevention. The respondent's level of practice measured on a 6-point rating scale. This showed a mean score of 2.86 ± 1.95 . This translates to a prevalence of 47.6%. The proportion of the respondents with low level of practice of self-medication towards Covid-19 prevention is 55.7%. One can infer that the respondents had a low level of practice of self-medication towards Covid-19 prevention (See, Table 13).

Discussion

The level of knowledge of self-medication towards covid-19 prevention was found to be relatively high among the respondents, which is similar to the findings of Wegbom et al (2021); Dilie et al (2017); Ayanwale et al (2017) and Babatunde et al (2016). Assessing and evaluating the level of knowledge of self-medication towards COVID-19 prevention, as well as related determinants, is critical due to their effect on the disease's ability to be controlled and mitigated. The high level of knowledge can also be attributed to the fact that majority of the respondents had tertiary level of education. Moreover, education plays an important role as a key determinant of knowledge of any particular disease or phenomenon (Diaz-Quijano et al, 2018). The result suggests that participants with low level of education may be susceptible and vulnerable to engaging in self-medication towards covid-19 prevention hence, prioritizing mass health education and awareness against self-medication among the general population is essential.

The level of perceived susceptibility on self-medicating towards covid-19 prevention among the respondents was relatively high level of perceived susceptibility. Sequel to this, majority of the respondents' indicated that they are not at risk of contracting covid-19 if they do not self-medicate which is parallel to the findings of Wegbom et al (2020). Self-medication has become an essential area within healthcare, but the provision of Self-medication is an overall major global concern, especially during the COVID-19 pandemic. Self-medication may facilitate better healthcare with reduced prescribing drug costs (Afridi et al, 2015; Noone & Blanchette, 2018). However, inappropriate Self-medication can lead to an incorrect diagnosis, serious adverse effects, drug interactions, drug dependence, and microbial resistance (Malik et al, 2020). Thus, there is a dire need to control and manage appropriate Self-medication practices by applying strong legislation and involving healthcare professionals and policy makers.

Respondents indicated a high level of perceived severity of self-medication towards covid-19 although respondents still indicated that if they self-medicate they would be less susceptible to virus. COVID-19 is likely going to escalate antimicrobial resistance and its consequences because of self-medication (Hsu, 2020). Therefore, the rational and appropriate use of antimicrobial agents must be strictly observed to avoid the consequences of Antimicrobial resistance (Hangoma et al., 2020; Lee et al., 2013; Saleem et al., 2018). Antimicrobial resistance (AMR) may occur because of self-medication, misuse, and abuse of antimicrobials (Kalonga et al., 2020; Mudenda et al., 2019; Zulu et al., 2020). Self-medication may pose consequences such as the escalation of antimicrobial resistance and toxicity (Phiri et al., 2020). Hence, health communications therefore need to highlight the importance of the individual's actions as part of the greater societal outcomes, and simultaneously communicate conviction in recommended measures and risk involved in self-medication.

Perceived benefit of self-medication toward covid-19 prevention was very high among the respondents. Respondents highlighted the need for social distancing instead of self-medicating. The results from studies (Alimohamadi et al, 2020, Nilsen et al, 2020; Fazio et al, 2021) showed that social distancing significantly reduced the incidence and mortality of COVID-19. The study therefore suggests that social distancing could decrease the incidence and mortality related to COVID-19. Thus, it is necessary to continue this measure. Similarly, the respondents also indicated that they will ensure the use of facemask and alcohol based hand sanitizer instead of self-medicating. It has been confirmed that a facemask may help to reduce the spread of infection in the community by minimising the excretion of respiratory droplets from infected individuals (Sikakulya et al, 2021). Chu et al. (2020) found that the facemask use and the use of alcohol based hand sanitizer reduced the risk of COVID-19.

Perceived barrier as found among the respondents was low; one of the reason is because of some of the findings in the study where respondents indicated that they might self-medicate due to the distance of the hospital. This is similar to the findings of Aziz et al (2018), Yousef et al (2008), and Khan et al (2014). Similarities in this studies is due to the fact that the respondents do not to like travel a longer distance for having health care services and prefer to purchase medicines of any pharmacological class from their nearby any medicines selling point. A study conducted by (Azami-Aghdash et al, 2015; and Bakhtiar et al, 2017) indicated that perceived barriers is a factor that predicts self-medication behaviours well. Similarly, studies have spotted out that the construct of perceived barriers is an important factor in predicting the prevention of unhealthy behaviours in any given setting (Carpenter, 2015).

Overall perception of the respondent indicated that the respondents had a high perception of self-medication towards covid-19 prevention. Therefore, respondents perception on self-medication is a as a major factor to evaluate the behavior of self-medication towards covid-19 prevention.

The result showed that the level of practice of self-medication among the respondents was low which indicate that the likelihood of the respondents to involve in self-medication is on the low. One of the issue related to self-medication is antimicrobial resistance (Bennadi, 2014); hence, health professionals should spend some extra time in educating the public regarding the same. Improved knowledge and understanding about self-medication may result in rationale use and thus limit emerging microbial resistance issues.

Conclusion

The study concludes that the level of knowledge of self-medication towards covid-19 prevention was found to be relatively high while overall perception indicated that the respondents had a high perception of self-medication towards covid-19 prevention but the level of practice of self-medication among the respondents was low.

Recommendations

Based on the outcomes of this study, it is hereby recommended that:

1. The media and the community-based should be engaged to create awareness on the dangers of self-medication and the need for positive health behaviour concerning COVID-19.
2. The study also suggests that awareness campaigns through media should be intensified to highlight the need for medical consultations for the diagnosis and management of COVID-19.
3. Governments should employ adequately trained healthcare workers who are, effective, and efficient in their provision of healthcare services

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Socio-Demographic Distribution of Hypertension Status Among Adult Traders in Oyo State, Nigeria

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AND
UKWUOMA, Sunday Ifeanyi (B.Sc., M.Sc., Ph.D in view)

Abstract

The study examined association between selected socio-demographic characteristics of traders and hypertension. A descriptive cross-sectional design was adopted in this study. The study population consisted of adult traders in the Ibadan metropolis, Nigeria. The sample consisted of 596 respondents from the three major tribes in six major markets in Ibadan metropolis. The sample for the study was selected using multi-stage sampling procedure. Demographic variables measures were taken using an inventory to determine respondent age, sex, marital status, ethnicity, religion, number of children and number of years in business while weighing scale and measuring tape for height were used to measure weight and height and sphygmomanometer was used to determine their hypertension status. The frequency distribution of socio-demographic characteristics of the respondents was tabulated while chi-square analysis was used to test the hypothesis at 0.05 level of significance. The findings of this study revealed that the socio-demographic characteristics related with hypertension are age, marital status, number of children, number of years in business, body mass index while sex and ethnicity were not related with hypertension. It was recommended that those at higher risk of hypertension should be adequately educated on what and what not to do. There is also an urgent need to educate traders to know their health status and to monitor their blood pressure regularly for early detection of hypertension and prompt treatment given.

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Introduction

Hypertension is an important global public health challenge and a major predisposing factor for heart failure, kidney failure and stroke in sub-Saharan Africa. It is also a major predisposing factor for coronary artery disease, which is currently evolving in sub-Saharan Africa. Uncomplicated essential hypertension is often an asymptomatic ailment, and affected persons in rural sub-Saharan Africa, where poverty and illiteracy are widespread, are often not aware of having hypertension. Such patients in Sub-Saharan Africa usually present for the first time in hospitals with major complications (Ajayi, et al., 2014). According to Oladoyinbo, et al (2015), market traders spend most hours of the day sitting down and involved in many other sedentary activities, conditions that increase the risk of chronic diseases as a result of obesity. They also stated that recent global figures indicate that the prevalence of obesity is not just a problem of the developed countries but is also on the increase in the developing world and that 65% of the world's populations live in countries where overweight and obesity kill more people than underweight (WHO, 2014). In Nigeria, the risk of hypertension is about two times higher among obese individuals than those with normal body weight (Ekanem, et al., 2013).

Several socio-demographic factors are predisposing to hypertension. These factors vary from country to country and even there is a difference between urban and rural regions of the same place. Realizing the effect of urbanization on our collective health, the World Health Organization has chosen "Urbanization and Health" as the theme for World Health Day 2010 (Vincent-Onabajo, et al. 2017). Urban people are more at risk of these diseases as compared to their rural counterparts. According to the findings of the National Family Health Survey (Oguizu, et al 2019), the prevalence of hypertension, obesity, and blood glucose in an urban area of Uttar Pradesh was 10.5%, 23.9%, and 9.9%, respectively. However, the prevalence of the same phenomenon was 8.3%, 10.8%, and 8.2%, respectively in rural areas. All the parameters are having a higher prevalence in urban areas as compared to rural areas. To take effective prevention measures, identification of the risk factors is an essential prerequisite.

With the economic downturn in Nigeria, market traders appear to be at the receiving end especially as their livelihood depends on the purchasing power of shoppers and buyers, in addition to their susceptibility to other adverse factors in the country's socio-economic environment. Thus, market traders often undergo a considerable amount of stress to make ends meet and constitute one of the groups of individuals with the highest work hours. Additionally, market traders in Nigeria, like many other workers in the country's informal sector, often do not have access to structured workplace preventive and curative health programs and services. It is instructive that these scenarios may all be implicated in the risk of developing hypertension (Vincent-Onabajo, et al, 2017).

According to Mayo Foundation for Medical Education and Research (MFMER) (2018), the risk of high blood pressure increases as you age. Until about age 64, high blood pressure is more common in men while women are more likely to develop high blood pressure after age 65. Some ethnic groups are more prone to hypertension (Isara & Okundia, 2015) while the lifetime risk is the same for males and females, but men are more prone to hypertension at a younger age. The prevalence tends to be higher in older women (Isara & Okundia, 2015). World Health Organization (2014) reported that the prevalence of raised blood pressure (Hypertension), in adults more than 25 years was 38.6% for males and 41.2% for females in Nigeria. Oguizu, Utah-Iheanyichukwu, and Ibejide (2019) conducted a study on the prevalence of hypertension among the adult traders in some selected market in Awka, their findings showed that the prevalence of hypertension at chronic stages (stage 2 and 3) was found to be slightly higher in males (13.6%) than in females (11.4%). The inconsistent findings prompted the researcher to examine association between selected socio-demographic characteristics of traders and hypertension.

Research Hypothesis

The following research hypotheses were postulated for this study:

1. There is no association between selected socio-demographic characteristics of traders and hypertension

Methodology

A descriptive cross-sectional design was adopted in this study. The study population consisted of adult traders in the Ibadan metropolis, Nigeria. The sample consisted of 596 respondents from the three major tribes in six major markets in Ibadan metropolis. The sample for the study was selected using multi-stage sampling procedure. Demographic variables measures were taken using an inventory to determine respondent age, sex, marital status, ethnicity, religion, number of children and number of years in business while weighing scale and measuring tape for height were used to measure weight and height and sphygmomanometer was used to determine their hypertension status. Four (4) research assistants per market were recruited for the study, making a total of twenty-four (24) research assistants. Data collected were analysed quantitatively and processed using Statistical Packages for Social Sciences (SPSS) version 25.0. The frequency distribution of socio-demographic characteristics of the respondents was tabulated while chi-square analysis was used to test the hypothesis at 0.05 level of significance.

Results

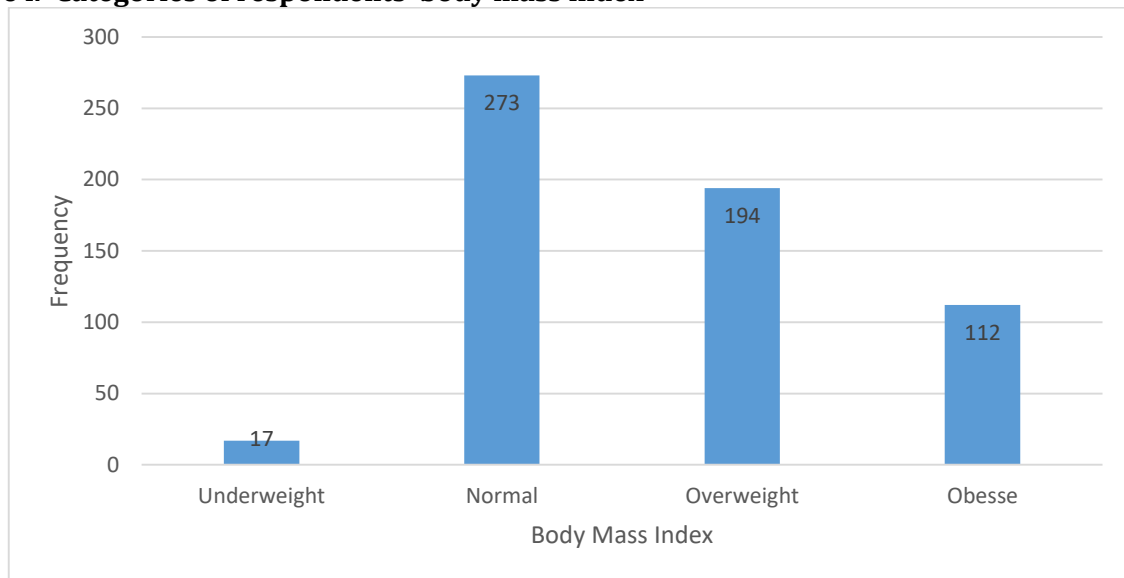
Table 1: Socio-demographic Characteristics of Respondents

Characteristics	Frequency 596 (%)
Age groups (Years)	
< 40	347 (58.2)
≥ 40	249 (41.8)
Sex	
Male	384 (64.4)
Female	212 (35.6)
Marital status	
Single	199 (33.4)
Married	387 (64.9)
Widow/er	10 (1.7)
Ethnicity	
Yoruba	260 (43.6)
Igbo	200 (33.6)
Hausa	136 (22.8)
Religion	
Christian	308 (51.7)
Islam	288 (48.3)
No of children	
< 4 children	376 (62.9)
≥ 4 children	221 (37.1)
No of years in business	
< 20 years	440 (73.8)
≥ 20 years	156 (26.2)

Table 1 above shows that 347 (58.2%) of respondents were below 40 years of age while 249 (41.8%) were 40 years and above. 64.4% were male while 35.6% were female. 33.4% of the respondents were single, 64.9% were married while 1.7% widow and widower. This shows that majority of the respondents are married. The distribution of the respondents based on educational status revealed that 14.9% did not attend formal education, 21.0% attended primary education, 54.0% attended secondary education while 10.1% attended tertiary institutions. This shows that the majority of respondents passed through secondary school. 43.6% of respondents were Yorubas, 33.6% were Igbos while 22.8% were Hausas. 51.7% were Christians while 48.3% Moslems. Respondents' distribution on family settings indicates that 67.1% were from monogamous families, 14.8% were from polygamous family while 18.1% did not respond to it. 62.9% of the respondents' have less than 4 children while 37.1%

have more than 4 children. 73.8% has been in the business for less than 20years while 26.2% has to be in it for 20years and above.

Figure i: Categories of respondents' body mass index



The figure i above shows that 17 (2.9%) of respondents were underweight, 273 (45.8%) has a normal weight, 194 (32.6%) were overweight while 112 (18.8%) were obese.

Test of Hypothesis

Hypothesis 1: There is no association between selected socio-demographic characteristics of traders and hypertension

Table 2: Association between respondents' socio-demographic characteristics and hypertension status

Variables	Hypertension Status		X ²	df	P-value	Remark
	Not hypertensive	Hypertensive				
Age group (Years)						
< 40	321 (92.5%)	26 (7.5%)	23.99	1	0.0001	Significant
≥ 40	196 (78.7%)	53 (21.3%)				
Sex						
Male	340 (88.5%)	44 (11.5%)	3.03	1	0.082	Not Significant
Female	177 (83.5%)	35 (16.5%)				
Marital status						
Single	183 (92.0%)	16 (8.0%)	17.46	2	0.0001	Significant
Married	329 (85.0%)	58 (15.0%)				
Widow/er	5 (50.0%)	5 (50.0%)				
Ethnicity						
Yoruba	226 (86.9%)	34 (13.1%)	2.93	2	0.231	Not significant
Igbo	168 (84.0%)	32 (16.0%)				
Hausa	123 (90.4%)	13 (9.6%)				
No of children						
< 4 children			10.10	1	0.001	Significant
≥ 4children	338 (90.1%)	37 (9.9%)				

	179 (81.0%)	42 (19.0%)				
No years in business						
< 20years	393 (89.3%)	47 (10.7%)	9.68	1	0.002	Significant
≥ 20years	124 (79.5%)	32 (20.5%)				
Body mass index						
Underweight	16 (94.1%)	1 (5.9%)	15.92	3	0.001	Significant
Normal	252 (92.3%)	21 (7.7%)				
Overweight	157 (80.9%)	37 (19.1%)				
Obese	92 982.1%)	20 (17.9%)				

Table 2 above, shows that there was statistically significant association between respondents' age group and hypertension status [$p < 0.05$, ($p = 0.0001$)]. The result further shows that a higher proportion of older traders 53 (21.3%) were found to be more hypertensive compared to younger traders 26 (7.5%) prevalence.

From the same table, it has been established that there was no statistically significant association between respondents' sex and hypertension status [$p < 0.05$, ($p = 0.082$)]. It was also observed that female respondents' 35 (16.5%) are more likely to be hypertensive than a male counterpart with 44 (11.5%) prevalence.

The table also revealed that there was a statistically significant association between respondents' marital status and hypertension [$p = 0.05$, ($p = 0.0001$)]. It further revealed that a higher proportion of widow/widower 5 (50.0%) was found to be more hypertensive compared to the single 16 (8.0%) and married traders 58 (15.0%). This suggests that the labor of two persons is handled by one person which leads to the risk of hypertension.

The result also affirmed that there was no statistically significant association between respondents' ethnicity and hypertension status [$p = 0.05$, ($p = 0.231$)]. Though a higher proportion of Igbo traders 32 (16.0%) are more hypertensive compared to other tribes, Yoruba 34 (13.1%) and Hausa 13 (9.6%) due to their socio-cultural belief. For example, a full grown-up Igbo man is expected to have his own house before he gets married. This prompted him to struggle harder to establish himself. This orientation is difference from other tribes in Nigeria.

The same table also revealed that there was a statistically significant association between the number of children given birth by the respondents and hypertension status [$p = 0.05$, ($p = 0.001$)]. The result further revealed that those respondents with ≥ 4 children 42 (19.0%) are more likely to be hypertensive than those respondents with < 4 children 37 (9.9%). The result of this study suggests that those traders with more number of children have more responsibilities.

This same table also established that there was a statistically significant relationship between some years a trader spent in the business and hypertension status [$p = 0.05$, ($p = 0.002$)]. The result also shows that the proportion of respondents' that spent ≥ 20 years in business 32 (20.5%) are more hypertensive compared to those that spent < 20 years with 47 (10.7%) prevalence.

It was also affirmed that there was a statistically significant relationship between the respondents' body mass index and hypertension status [$p = 0.05$, ($p = 0.001$)]. The result further shows that the proportion of respondents that are overweight 37 (19.1%) are more hypertensive compared to others with underweight 1 (5.9%), normal weight 21 (7.7%) and obese 20 (17.9%) prevalence.

Discussion

The findings revealed that the traders who were older ≥ 40 years were more hypertensive than the younger traders. This is because as individual progresses in age, the likelihood of becoming hypertensive is high. This study was consistent with Aghaji (2018) who found out that the hypertension rate among traders increased with increasing age. The study carried out by Ulasi et al (2011) supported these findings too.

The study also revealed that the gender of the traders was not statistically significant but the result further revealed that female traders have higher prevalence of hypertension compared to the male counterpart. This is in line with the finding of Oguizu et al (2019), who found out that female traders were more hypertensive than male traders. The reason is that women are more obese than men. The result of this study was not consistent with the finding of Wordu and Akusu (2018) who found out that hypertension was significantly higher in males than in female respondents. Wordu's finding was supported by Oladoyinbo et al (2015) who revealed that hypertension is more prevalent in male than female. The finding was not supported by Aghaji (2018) who also found out that the prevalence of hypertension among traders in Enugu was 39.5% and it did not vary by gender.

The result also revealed that marital status was statistically significant with hypertension as the widows and widowers have a higher prevalence of hypertension compared to single and married. This could be as a result of greater responsibilities which mount excessive stress on them. This finding was in agreement with Aghaji (2018) who affirmed that hypertension prevalence was highest in respondents who were separated, divorced or widowed and lowest in the unmarried.

The study further revealed that number of children was found to be statistically significant with hypertension as the traders with ≥ 4 children were found to be more hypertensive compared to those with < 4 children. This suggested that the traders with more number of children have more responsibility because the needs of children are highly demanding. Those who could not meet up with their needs are exposed to psychological problem which may eventually lead to hypertension. According to Onigbinde (2001), he affirmed that certain conditions such as obesity, diabetes mellitus, and psychological stress have been associated as risk factors for hypertension.

The result also showed that number of years was statistically significant as the traders who spent ≥ 20 years in business were found to be more hypertensive. This suggests they have undergone vigorous activities that exposed them to the risk of hypertension.

The study affirmed that overweight and obese traders had the higher prevalence of hypertension. The result was in line with Awosan, et al (2013) who revealed high prevalence of overweight and obesity in their study. Isara and Okundia (2015) also found out that in Nigeria, the risk of hypertension is about two times higher among obese than those with normal body weight. This study was compared with the report of 31.3% and 16.3% prevalence of overweight and obesity, respectively, among female traders in Ibadan, Nigeria according to Balogun and Owoaje (2007). This could be related to the high prevalence of unhealthy eating habits and sedentary lifestyle among the participants in the study. This finding was also supported by Oladoyinbo et al (2015) who found out that the prevalence of overweight and obesity among traders in Ijebu-Ode were 25.3% and 26.7%. Obesity and hypertension among market men and women constitute health issues of public health importance. Therefore, traders who were obese and overweight should be advised to avoid sedentary lifestyle by engaging in exercise, recreational activities and also reduce the number of hours sitting in a place. They should also check their body weight and blood pressure regularly.

Implications of the findings

The findings of this study are important for policy formulation and implementation. Findings demonstrated that there was statistically significant association between age group, marital status, number of children, number of years in business, body mass index and hypertension status. The older respondents were mostly affected by hypertension in ≥ 40 years. It means a regular check of blood pressure is very important to every adult.

Conclusion and Recommendation

The study concludes that the socio-demographic characteristics related with hypertension are age, marital status, number of children, number of years in business, body mass index while sex and ethnicity were not related with hypertension. Based on the findings of the study, it is recommended that traders should be educated by healthcare workers on socio-demographic characteristics predisposing the risk of hypertension. Those at higher risk of hypertension should be adequately educated on what and what not to do. There is also an urgent need to educate traders to know their health status and to monitor their blood pressure regularly for early detection of hypertension and prompt treatment given.

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Perceived Behavioural Control and Subjective Norms for Risky Sexual Behaviour Among Adolescents in Ogun State

AUTHOR(S): ODEYALE, Adedamola Rashidat (RN, BNSc. M.Sc. Nursing)

Abstract

The study examined perceived behavioural control and subjective norms for risky sexual behaviour among adolescents in Ogun State. This study specifically determined the subjective norms on risky sexual behaviour among adolescents; assessed the perceived behavioral control against risky sexual behaviour; examined the relationship between subjective norms and practice of risky sexual behaviour among adolescents; and determined the relationship between the perceived behavioural control of risky sexual behaviour and the practice. A descriptive cross sectional survey design was adopted in this study. The study was carried out among senior secondary school students in one Local Government Area of Ogun State, Nigeria. The sample size of 384 was calculated using Cochran's formula while the sample size was selected using multistage sampling procedure. The research instrument was self-designed by the researcher using information obtained from literatures on subjective norms on risky sexual behaviour, perceived behavioral control against risky sexual behaviour and practice of risky sexual behaviour. The face and content validity of the instrument was established by experts in the field of adolescents' sexual and reproductive health. Test re-test method was used to establish the reliability of the instrument with reliability coefficient of 0.813. This shows that the instrument was reliable and appropriate for the study. The findings of the study revealed that respondents' subjective norms of risky sexual behaviour by adolescents was good while the knowledge of perceived behavioural control against risky sexual behaviour of the respondents was also adequate. It was recommended that adolescents should be educated on the consequences of unsafe sexual acts at their age.

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Introduction

The importance of healthy sexual awareness and development among adolescents for their future health status cannot be overemphasized (Alemán-Díaz, et al, 2018). Healthy sexual development contributes significantly to the holistic personal well-being of the adolescents but when they become unaware of this, they will develop different risky sexual behaviors. Sexual behavior encompasses all activities which gratify an individual's sexual needs. Sexual behaviors have been studied in different contexts such as sexual practices, sexual relationships, reproductive health, sexually transmitted infections (STIs), and contraception. Though sexual behavior and expression of sexuality are normal phenomena, the context in which sexual behavior is expressed determines if the behavior is abnormal or risky (Chawla & Sarkar, 2019). There are different types of risky sexual behaviour which include premarital sex, abortion and multiple sex partners among adolescents.

Several studies have revealed that adolescents are at high risk of developing risky sexual behavior. According to Behulu, et al (2019), premarital sex is the most commonly practice risky sexual behaviour among adolescents. It involves penetrative vaginal intercourse performed between teenagers before formal marriage. Shahid and Wahab (2017) explained premarital sex as voluntary sexual intercourse between unmarried persons which is increasing worldwide. The world population of adolescents is estimated to be 1.2 billion while 85% live in developing countries (Salih, et al, 2015). Regassa, Chala and Adeba (2016) reported that 29% and 23% of boys and girls respectively have premarital sex during adolescence period. Meanwhile, many studies carried out in sub-Saharan Africa have shown high and increasing premarital sexual activities among adolescents (Teferra, Erena & Kebede, 2015). Studies have documented that early sexual initiators were more likely to report undesired consequences of sexual initiation such as teenage motherhood and sexually transmitted infections (STIs).

There is a link between the intention to perform behaviour and the actual performance of the behaviour (Davison, McLaughlin & Giles, 2019). It is important to identify adolescents who have the intention to engage in risky sexual behaviour as they are likely to perform the actual behaviour if the external conditions are favourable. They can then be included in interventions to promote safe sexual behaviour which can have positive impact on them. It is assumed that adolescents with good knowledge about sexually transmitted infection (STIs) and its prevention will not have intention of engaging in risky sexual behaviour (Crocker, et al, 2019).

Subjective norms among adolescents are referred to as behaviours expected or supported by people around them, such as family, peers, and colleagues (Fang, et al, 2017). Subjective norms are thoughts reflecting perceived social pressure from important personalities (parents and friends) to perform a behavior, which is majorly affected by one's motivation to comply with those behaviours.

Mengistie, et al (2015) found out that subjective norm exhibits a positive influence on a particular behaviour as well as has a significant influence in motivating adolescent toward risky sexual behavior. Behaviour is always influenced by three factors which are the individual's attitude, the influence of social factors (subjective norm) and perceived behavioural control. The perceived behavioral control and subjective norms of adolescents may have significant influenced on practice of risky sexual behavior.

Thus, the study examined perceived behavioural control and subjective norms for risky sexual behaviour among adolescents in Ogun State. This study specifically:

- determined the subjective norms on risky sexual behaviour among adolescents;
- assessed the perceived behavioral control against risky sexual behaviour;
- examined the relationship between subjective norms and practice of risky sexual behaviour among adolescents; and
- determined the relationship between the perceived behavioural control of risky sexual behaviour and the practice

Research Questions

The study provided answers to the following questions:

1. What are the subjective norms on risky sexual behaviour among adolescents?
2. What are perceived behavioral control against risky sexual behaviour?

Research Hypotheses

The following hypotheses were formulated for this study.

1. There is no significant relationship between subjective norms and practice of risky sexual behaviour among adolescents.
2. There is no significant relationship between the perceived behavioural control of risky sexual behaviour and the practice.

Methodology

A descriptive cross sectional survey design was adopted in this study. The study was carried out among senior secondary school students in one Local Government Area of Ogun State, Nigeria. The sample size of 384 was calculated using Cochran's formula while the sample size was selected using multistage sampling procedure.

The research instrument was self-designed by the researcher using information obtained from literatures on subjective norms on risky sexual behaviour, perceived behavioral control against risky sexual behaviour and practice of risky sexual behaviour. The face and content validity of the instrument was established by experts in the field of adolescents' sexual and reproductive health. Test re-test method was used to establish the reliability of the instrument by pre-testing it among forty (40) students in a similar population group. Pearson's Product Moment Correlation Statistics was used to analysed the data collected which yielded reliability coefficient of 0.813. This shows that the instrument was reliable and appropriate for the study.

Descriptive statistics such as mean, standard deviation, frequency and percentage was calculated from the data collected for this study. Chi-square was used to analyse the hypotheses at 0.05 level of significance.

Results

Table 1: The socio-demographic information of the respondents

Variable		Frequency	Percentage
Gender	Male	186	48.1
	Female	201	51.9
	Total	387	100.0
Age	13-15	144	37.2
	16-19	243	62.8

	Total	387	100.0
Class	SSS1	134	34.6
	SSS2	133	34.4
	SSS3	120	31.0
	Total	387	100.0
Religion	Christianity	245	63.3
	Islam	127	32.8
	Traditional	13	3.4
	Others	2	0.5
	Total	387	100.0
Ethnic group	Yoruba	323	83.5
	Hausa	26	6.7
	Igbo	35	9.0
	Others	3	0.8
	Total	387	100.0

Source: *Field survey, 2021*

The table 1 shows the Socio-demographic information of the respondents. The study showed that 186 (37.0%) of the respondents were male and the females were 201 (51.9%) while 144 (37.2%) of the respondents were in the age group 13-15 years, 243 (62.8%) were in the group 16-19 years with a mean age of 17.2 years. The class distribution of the respondents was SSS1, SSS2 and SSS3 and 134 (34.6%), 133 (34.4%) and 120 (31.0%) were in the classes respectively. The table also shows the religious distribution of the respondents, 245 (63.3%) practice Christianity, 127 (32.8%) practice Islam, while 13 (3.4%) of them were traditional worshippers and 2 (0.5%) practiced other religion. Also, 323 (83.5%) of the respondents were Yoruba, 35 (9.0%) of them were Igbo, while 26 (6.7%) of them were Hausa while 3 (0.8%) were of other ethnic groups.

Research Question 1: What are the subjective norms on risky sexual behaviour among adolescents?

Table 2: The summary of the respondents' subjective norms on risky sexual behaviour

Subjective norms level	Category of scores	Frequency	Percentages (%)
Negative	0-5	89	23.0%
Positive	6-13	298	77.0%
Total		387	100

Source: *Field survey, 2021*

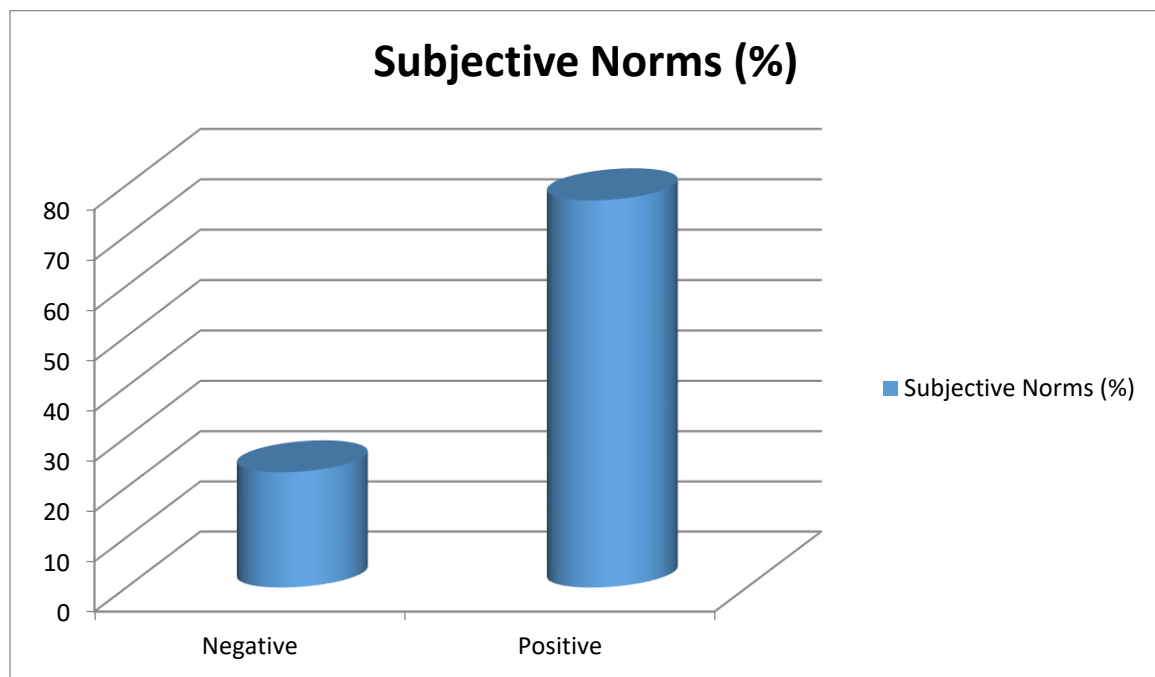


Figure i: Bar chart showing respondents' subjective norms on risky sexual behavior.

Respondents were asked 13 questions to assess their subjective norms on risky sexual behaviour. The level of subjective norms of respondents was shown by giving a score of 1 to respondents who had positive norms to the statement and 0 to respondents who had negative norms to the statements. The scores were categorized into the following:

Negative norms- respondents who score between 0-5

Positive norms -respondents who score between 6-13

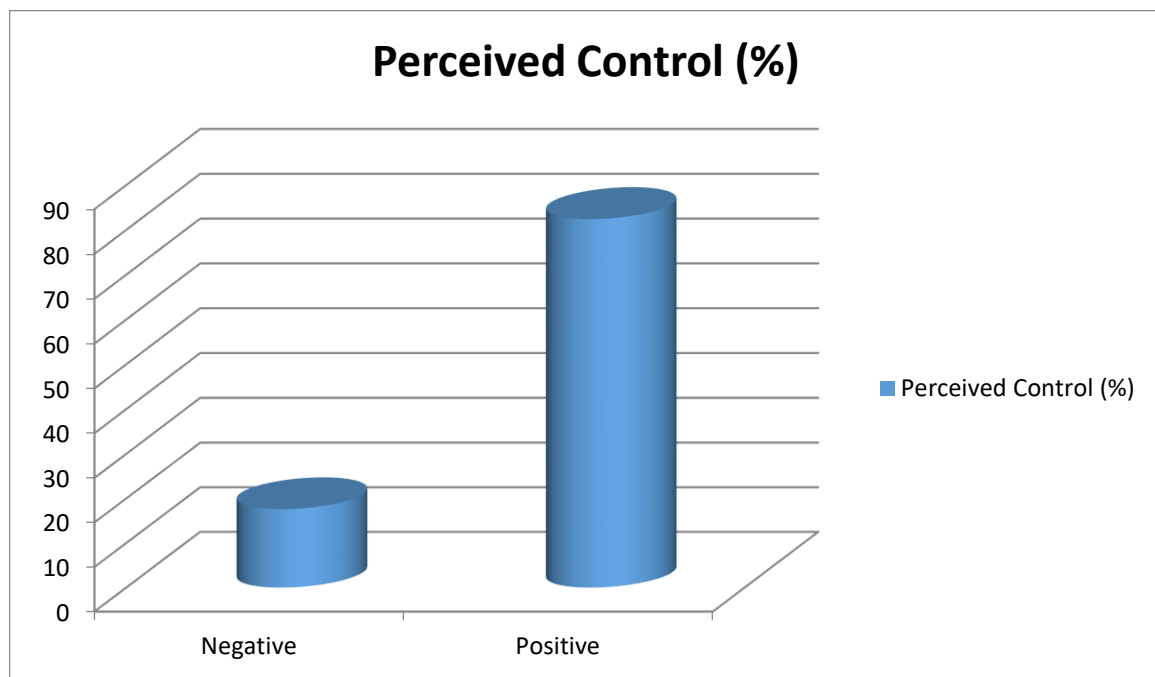
Table 2 shows the subjective norms of the respondents towards risky sexual behavior. Here, that majority of the respondents 298 (77.0%) had positive subjective norms about risky sexual behaviour while 89 (23.0%) had negative subjective norms about risky sexual behaviour.

Research Question 2: What are perceived behavioral control against risky sexual behaviour?

Table 3: The summary of the respondents' perceived control against risky sexual behavior.

Level of perceived control	Category of scores	Frequency	Percentages (%)
Negative	0-6	68	17.6%
Positive	7-14	319	82.4%
Total		387	100

Source: *Field survey, 2021*



Respondents were asked 14 questions to assess their perceived control against risky sexual behaviour. The level of perceived control of respondents against risky sexual behaviour was shown by giving a score of 1 to respondents who had positive perceived control to the statement and 0 to respondents who had negative perceived control to the statements. The scores were categorized into the following:

Negative perceived control- respondents who score between 0-6

Positive perceived control -respondents who score between 7-14

Table 3 shows the perceived behavioural control of the respondents towards risky sexual behavior. Here, that majority of the respondents 319 (82.4%) had positive perceived control against risky sexual behaviour while 68 (17.6%) had negative perceived control about risky sexual behavior.

Test of Hypotheses

H₀1: There is no significant relationship between subjective norms and practice of risky sexual behaviour among adolescents.

Table 4: Relationship between subjective norms and practice of risky sexual behaviour among adolescents

	Value	df	p-value
Pearson Chi-Square	10.459	2	0.005
Likelihood Ratio	10.154	2	
Linear-by-Linear Association	6.562	1	
Spearman correlation			0.142

The hypothesis testing in the table below shows that the Chi-square (χ^2) and the p-value. The p-value of 0.005 was recorded for the hypothesis of respondents which is less than the alpha (α) p-value

of 0.05. Hence, the null hypothesis (H_0) is rejected and the alternative hypothesis (H_1) is accepted. This shows that there is significant relationship between subjective norms and practice of risky sexual behaviour among adolescents. Also, there is a positive correlation between the subjective norms and practice of risky sexual behaviour among adolescents (0.142).

H_02 : There is no significant relationship between the perceived behavioural control of risky sexual behaviour and the practice.

Table 5: Relationship attitude towards risky sexual behaviour and perceived behavioral control

	Value	df	p-value
Pearson Chi-Square	1.731	2	0.421
Likelihood Ratio	1.882	2	
Linear-by-Linear Association	0.008	1	
Spearman correlation			-0.005

The hypothesis testing in the table below shows that the Chi-square (χ^2) and the p-value. The p-value of 0.421 was recorded for the hypothesis of respondents which is greater than the alpha (α) p-value of 0.05. Hence, the null hypothesis (H_0) is accepted and the alternative hypothesis (H_1) is rejected. This shows that there is no significant relationship between the perceived behavioural control of risky sexual behaviour and the practice of risky sexual behaviour. Also, there is a negative correlation between the perceived behavioural control of risky sexual behaviour and the practice of risky sexual behaviour (-0.005).

Discussion

Attaining the adolescent age comes with issues that must be addressed as this stage has implications on the reproductive and sexual health of the individual (Duru *et.al.*, 2010). This study shows the mean age of the respondents was 17.2 ± 2.1 years and this is similar to the study carried out by Baudouin, Wongsawat and Sudnongbua (2020) where the mean age of the participants was 16.5 years. In this study, more than half of the participants were females which is in comparison with the works of Famutimi and Oluwatoyin (2014). Also, most of the respondent were Yoruba, this support the findings of Babatunde et al. (2014) and Asekun-Olarinmoye & Oladele (2009) that reported more Yorubas in the study which could have been due to the fact that the study was carried out in a Yoruba dominating region. The majority of the participants in this study were Christians and this was supported by the findings of Daba (2016).

In this study, 77.0% of the participants have a positive subjective norms and values about risky sexual behaviour. Previous studies have shown that family norms and religion influence sexual behaviour among the adolescents (Faimau et al., 2016). Here, 23.0% of the respondents have negative subjective norms about risky sexual behaviour and this was also reported by Wusu et al. (2014).

A large number 82.4% of the sampled adolescents in this study had a generally high positive view towards the perceived behavioural control against risky sexual behaviour. This is consistent with the findings of Mkumbo (2013) and in contrast with that Faimau et al. (2016) who found that the respondents have a low behavioural control against risky sexual behaviours.

The study revealed that there was significant relationship between subjective norms and practice of risky sexual behaviour among adolescents in this study. Espada et al (2016) and Espada et al (2012) reported that individuals with positive subjective norms were less likely to engage in risky sexual behaviour and this was consistent with the findings of this study. As found in this study, Omoyeni, Akanni and Fatusi (2014) also reported a relationship between high subjective norms and the practice

of risky sexual behaviours where these acts were engaged in by the adolescents for fun and nonchalant disposition to the dangers of risky sexual acts. Positive subjective norms such as parental communication and religion have been found to have significant relationships with the practice of risky sexual behaviour (Faimua et al., 2006) and this is in line with the findings of this study. Also, societal norms as subjective norms have significant relationship on safe sex practice (Musizvingoza, 2015) and it is in line with this study.

This study also shows that there was no significant relationship between the perceived behavioural control of risky sexual behaviour and the practice among the respondents and Odeigah et.al. (2019) reported a similar finding in a study that the participants have a poor behavioural culture towards the practice of risky sexual behaviour. The result of this study also agreed with the reports of Fako et al., (2010) and Mkumbo (2013) that showed no significant relationship between the practice of risky sexual behaviour and the perceived behavioural control. However, this did not support the findings of Faimau et al. (2016) who reported that the participants' practice of risky sexual behaviour and the behavioural control.

Conclusion and Recommendation

Based on the findings of this study, the respondents' subjective norms of risky sexual behaviour by adolescents was good while the knowledge of perceived behavioural control against risky sexual behaviour of the respondents was also adequate. It was recommended that adolescents should be educated on the consequences of unsafe sexual acts at their age.

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The Role of Counselling in Management of Coronavirus

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Abstract

The first COVID-19 case in Africa, reaching the continent through travellers returning from Asia, Europe and the United States, was reported in Egypt on 14 February, 2020. There have been over 4 million confirmed cases, over 3 million recoveries and 108,064 deaths. Having the right knowledge of self-medicating during the COVID-19 pandemic and responsible self-medicating practices is important which could be achieved through counselling. Counselling is the process which helps individuals to know their abilities, interest and a capacity that will help in the encounter of problems faced by them. Counselling is pertinent to COVID- 19 because of the fact that it has no treatment yet but can be restrained via non pharmacological measures. This study therefore discussed the role of counselling in management of COVID-19.

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Introduction

The newness of Coronavirus infection makes it a bane that is sweeping across continent growing frequency of zoonotic spillovers leading to human infections and transmission. Coronavirus also known as COVID-19 fit in to the same family of viruses answerable for severe acute respiratory syndrome (SARS) and Middle East respiratory syndrome for which zoonotic and individual- to-individual transmission have been confirmed (WHO, 2020a).

Coronavirus generally known as Covid-19 was first stated in China, precisely in the city of Wuhan in late December 2019. World Health Organization (WHO) and Chinese authorities operated hand-in-hand and the etiological agent was proven to be a new virus and was named Novel Corona Virus (2019-nCoV). China broadcasted its first coronavirus related death of a 61-year-old man on 11th January (WHO, 2020a). The infection spread across the world in quick pace over a period of few weeks (WHO, 2020b).

History of COVID- 19

The new Corona virus originated from the human seafood market at Wuhan, China where dogs, bats, raccoon, snakes, and other animals are sold, and speedily spread to 109 countries. The zoonotic source of SARS-Cov-2 is not confirmed, however sequence based analysis proposed bats as key reservoir of COVID-19. Bhagavathula and Shehab (2020) submitted that COVID-19 is among the deadliest infectious diseases to have arisen in current history, like other pandemics, the mechanism of its emergence remains unknown. Nonetheless, a large body of epidemiologic, veterinary virologic, and ecologic data confirms that the new virus, SARS-Cov-2 evolved directly or indirectly from a Beta-Corona virus in the Sarbecovirus group (SARS like virus) group that obviously infects bats and pangolins in Asia and South –East Asia. Scientists have warned for decades that the Sarbeco viruses are dignified to arise again and again identified risk factors and reasoned for greater pandemic prevention and control efforts. Inopportunately, few of such self-justifying actions were taken leading to the latest emergence noticed in late 2019 which rapidly spread pandemically.

The jeopardy of similar corona virus outbreak in future remains in elevation, adding to the controlling of COVID -19 pandemic, we must commence vigorous scientific public health and societal movements including significantly increased funding for basic and applied research addressing disease emergence to avert this disastrous history from repeating itself.

Why is it named COVID-19

Authorized names have been broadcasted for the virus answerable for COVID-19 (previously known as 2019 novel Corona virus) and the disease it causes (WHO, 2020a). The official name is COVID-19 caused by SARS-Cov 2. The aim for the name of the virus is that the virus is genetically linked to the corona virus responsible for the SARS outbreak in 2003, though the two viruses are different.

Mode of spread

During scientific brief of WHO in March, mode of contact of COVID-19 was elucidated; respiratory infections can be transmitted through droplets of different sizes; when the drop particles are less than 5 micrometers in diameter, they are referred to as droplet nuclei, but when greater than 5 micrometers, they are referred to as respiratory droplets. Recent evidence showed it can be transmitted through contacts and respiratory droplets (WHO 2020a).

Droplets contact happens when a person is in close contact (within 1 metre) with somebody who has respiratory signs (e.g coughing and sneezing) and is therefore at danger of having his or her mucosae (mouth and nose) or conjunctiva (eyes) wide-open potentially to respiratory droplets, also through fomites in instant environment of the infected individual (Thomas, 2020). Direct contact with infected individual or indirect contact with substances used by the infected person can also be a mode of transmission. Airborne transmission of nuclei can happen in settings where procedures that support

aerosols are performed like endo-tracheal intubation, tracheostomy, cardio pulmonary respiration among others.

Coronavirus is a respiratory virus known to lead to illness such as headache, common cold, breathing problem and severe acute respiratory. Coronavirus can be spread from animal-to-human and human-to-human. The coronavirus is spread from human to human through feco-oral, droplets and direct contact with an incubation period of 2-14 days (Baud, et al, 2020). So far, no vaccine has been recommended clearly for coronavirus. Application of the defensive measure to regulate coronavirus is the paramount critical intervention.

Why is it a Pandemic?

With every natural outbreak, words like epidemic, pandemic, endemic are commonly used appropriately or inappropriately. When referring to an infectious disease, an outbreak is a sudden rise in cases especially when it is only or so far affecting a localized area. "Demic" are used for disease outburst but the prefixes are not exactly the same, though comparisons exist among them, the main difference however is in the scale. A widespread disease is the one affecting many persons at the same time and spreading from an individual to an individual in a locality where the disease is not prevalent before. WHO stipulates the disease occurring at level of a locality or a community or in a region?

Pandemic disease is an epidemic that has spread over a large area; it is predominant throughout the entire country, continent or the whole world. WHO says it is a global spread of a new disease. On March 11, WHO officially declared the COVID-19 outburst as a pandemic due to global spread and severity of the disease. Pandemic can be used for a disease that has spread across the entire country or a huge land mass, continents or the entire world. Endemic is used to describe a disease that is restricted to a particular location, region or population e. g malaria is said to be endemic in tropical regions.

Concept of Counselling

Counselling is the practice of helping individuals discover and grow their vocational, educational, and psychological potentialities and thereby to attain an optimal level of personal happiness and social usefulness. Counselling is the process which helps individuals to know their abilities, interest and a capacity that will help in the encounter of problems faced by them (Gustad, 1953). Counselling is a learning-oriented process, passed on in a simple, person to person social environment in which a counsellor skillfully competent in appropriate psychological abilities and knowledge seeks to assist the client by methods suitable to the latter's needs and within the context of the total personnel program, to learn more about himself and to accept himself, to learn how to put such understanding into effect in relation to more clearly apparent realistically defined goals to the end that the customer may become happier and be a more useful member of his society (American Psychological Association, 2020).

Counselling is the process of helping a person face their problem and overcome it, (Ndhlovu, 2015). Counsellors are people who carry out counselling process. Counselling is a service rendered by the trained, experts, in giving advice, direction, encouragement and other supportive and life-changing actions to the clients. Put otherwise, it can be described as an interpersonal cordial relationship between a counsellor and the counselee, who is in misperception in a certain condition(s) (Gibson & Mitchell 2007). Every counselling service is problem-focused i.e. providing likely ways to solving exact problems.

Counselling is a specialized field which has a comprehensive range of activities, programmes and services geared toward supporting individuals to comprehend themselves, their problems, their environment and their domain and also to develop adequate capacity for making wise choices and decisions.

Counselling can be of different types;

- Directive counselling
- Client centered counselling

- Short term counselling
- Long term counselling
- Psychological counselling
- Clinical counselling
- Student counselling
- Placement counselling

The objectives of counselling are to:

- to understand one's own problems clearly;
- to realize what he or she is able to do and what he should do this means to accept weakness and abilities;
- to develop insight and understanding in relation to self and environment, opportunities open to improve in respect to his potentials and goals he has chosen;
- to decide a course of action by making his own decision;
-

Relevance of Counselling to COVID-19

Counselling is pertinent to COVID-19 because of the fact that it has no treatment yet but can be restrained via non pharmacological measures, so that health of individuals, families and communities will be sustained. The groups at danger are the ageing because of low immunity and the frontline workers (doctors, nurses, ambulance workers and others). They are likely to experience downheartedness, stigmatization and anxiety. A National Health Commission of China back in January 2020 identified five additional groups which are targets: confirmed patients, individuals suspected of having COVID 19 and awaiting test result, persons who have been in contact with COVID 19, sick people who decline to pursue health care and susceptible members of the general public.

The counsellor-counselee rapport may be one on one/in groups or at community level depending on the goal. Skills of counselling are as follows; silence, reflecting attending, and paraphrasing, clarifying and use of questions, focusing, building understanding and summarizing.

Dos and Don'ts in Counselling

A good counsellor should develop good relationship with counselee

- Develop mutual understanding, respect for counselee
- Be patient
- Listen to the grievances carefully
- Develop cooperative attitude
- Be simple and have sympathy with counselee
- Do make attempts to know the background of worries, threats and anxieties
- Make himself available to help the counselee
- Be friendly with counselee and be frank

The counsellor should avoid the following;

- Developing conflict with the counselee
- Do not have vested interest in the counselee
- Do not be angry with the counselee
- Don't resist
- Avoid been impartial
- Do not exploit the employee for self interest
- Do not use pressure tactics

The Counsellor-Counselee's Problem Solving Path Assessment

The counsellor using the abilities of counselling identifies the harms of the individual, this may be that the person has been tested positive of COVID-19, or have samples already referred to the lab expecting COVID-19 result, or has a relation who has it or has a family member who just died from it or has just been sacked due to low economic performance of the company he or she works in. It may also be approximations of confirmed and mortality cases from ministry of health or news headlines drains the strong point of the individual, or the stay home policy, social distancing and no gathering makes the person sick.

It may be the health worker who is passionately exhausted from stress of work, insufficient personal protective tools and high mortality rate experienced at work and the incapability to bond at home for fear shown by immediate family members of contracting the disease. It may be the student who is in departure class and desired to go back to school, it may be the father who is emotionally exhausted from downscaling which affected his salaries or strained relationships between partners pointing to a need for separation or meeting a marriage therapist. It may be a psychiatric patient who is not in his right mind to understand the necessity for complying with precautionary measures. This may be the communal the individual lives have a high mortality rate than nearby communities.

Diagnosis Phase

After recognizing the problem, the counsellor uses his or her skills to make a diagnosis viz anxiety related to covid-19 diagnosis, grieving in relation to loss of a loved one to COVID-19, anxiety related to lockdown, inability to cope with stress at work as a front-liner among others.

Planning

What does this outbreak mean to our clients as counsellors (Sperandio & Moh 2020)? The more we recognize the consequence of this pandemic, the more ready we are to provide optimal care for our clients. Clients with racialism and genocide history may experience a lack of safety and trauma. Clients may even purposely quarantine themselves with the mistrust they are infected already. The pressure on employers of labour and shutting on private firms is a lot of stress too; the approach is distinctive to aim perseverance and wellbeing throughout the scourge.

The group of clients in under industrialized nation who has no health insurance poses a danger too. Indecision about what might happen next, the growing confirmed and casualty cases, financial restraints and loss of job and lack of social backing. The lockdown also led to gap in social contacts and interaction that aids succor stress earlier among individuals before the global Coronavirus pandemic.

The pre-pandemic regularity has been lost, only counsellors in teamwork with health workers will bring it back.

Action Needed

The counsellors assist client to know their worries and write them down. The client is aided to identify factors he can control and cannot control. With this the effect of the anxiety will be lessened. The clients should workout more; meet with friend via zoom, calls, video calls, personal hygiene and avoiding overcrowded places. Adaptive coping skills are to be recognized by the counsellor in conjunction with the client on issues that can be well-ordered; likewise, adherence to precautionary measure is suitable.

Information giving; only sites with reliable information amount COVID-19 should be visited, that has reader friendly info graphics and videos pertaining to defending oneself, protecting other and remaining safe during travelling. Culturally consistent practice by health workers and counsellors by safeguarding ethics of the profession; which are veracity, non-maleficence, autonomy, justice fidelity, and beneficence while working with clients. Sufficient psycho-education must be provided to the person and community at large. It must be recalled that some clients are more worried than others; hence counsellors should advocate and offer a voice for persons who may be marginalized and burdened.

Implementation

The counsellor should

- i. Remind the client the situation is temporary: The situation is temporary and it cannot last forever; the mortality rates of COVID-19, the waiting for the COVID-19 test result which may come out positive or negative, the lockdown, the dwindling economy as a result of the pandemic, the social isolation, and unemployment high rates among other (Blue 2020).
- ii. Cleaning up the mind from the problems identified and then distancing oneself from it: This disable the stressor from eating deep into the client. Harris (2009) termed this identifying-misidentifying process and its effect on the client is that the problem gets farther from impacting negatively on them.
- iii. Solution focused therapy: As its name implies, the counsellor helps the client to focus on likely solution to the current problem which is COVID-19. Though no cure yet, prevention is key and clinical trials are ongoing. The use of facemasks, respiratory etiquette, social distancing of 2 metres, avoiding crowded places, avoiding poking noses, touching mucosa or eye and mouth, proper hand washing with soap and water over 20-30 seconds are the only non-pharmacological measure in place. For the student, he may join online classes, the laid off worker may try to be creative and channel his strength to his untapped talents, the lonely individual may go into cycling, gardening, trekking, among others. The drained front-liner may return back to self-love, meditation, require off-days for rest and exercise at home.
- iv. The grieving individual may move from denial to acceptance phase so the grieving process would not last long. The aged who derives pleasure from travelling to see grandkids, religious gatherings and tourist sites now locked at home should fantasize; see the nature of the sky and the vegetations.

Individuals who find meaning, purpose and values in life in spite of this pandemic are able to be resilient, able to lessen grief and be beacons of light to others in this united fight against the pandemic spread. Looking for meaning, purpose and value (MVP) is a powerful remedy to virus of fear and panic sweeping across the world (Thomas, 2020). A checklist according to Thomas (2020) is outlined below intended at upholding self care

- i. Right fuel; adequate eating of balanced diet, taking enough rests and break.
- ii. Right rest; mental breaks for body and mind when exhaustion is perceived.
- iii. Right connections; it may not be possible to control who one spend with at work, but at work one can control it. Using the drains and radiators analogy, don't be somebody's drain but spend time more with people that nurture and make you feel good by yourself.
- iv. Right energy; it is important to switch off and recharge so bad energy will be released.
- v. Right focus; Excessive alcohol, junks, bad thoughts are unhelpful coping habits and must be avoided. Then asking for help from dedicated support groups.

Evaluation

At the end of the counselling process which may have taken more or less than the time allotted, the client will verbalize coping or displaying coping measure against the ravaging pandemic. Conclusively, prevention is one of the philosophical cornerstones of the counselling profession.

Conclusion

Counselling is pertinent to COVID-19 because of the fact that it has no treatment yet but can be restrained via non pharmacological measures. Having the right knowledge of self-medicating through proper counselling could go a long way to manage COVID-19 pandemic. It is important to fight against the misinformation concerning COVID-19 management through counselling.

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Knowledge of Sharp Waste Management Among Health Care Workers in Selected Primary Health Care Centres in Ogun State

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AND
ABARIBE, Chidinma E. (RN, RPHN, BNSc. M.Sc.)

Abstract

The study assessed the knowledge of health care workers on sharps waste management in selected primary health care centres in Ogun State. Cross-sectional survey design was adopted in the study. The study population was the health care workers in selected primary health care centres in two selected Local Government area of Abeokuta, Ogun State. The sample size of 182 was derived using Slovin's formula. Multistage sampling procedure was used in selecting the target samples. A well-structured questionnaire was designed to gathered information on the knowledge of the health care workers on the sharp waste management. The validity of the research instrument was done through face and content validity techniques. Descriptive statistics such as frequency counts and percentages was used to answer the objective of the study. The results revealed that there was high level of knowledge of the healthcare workers on sharp waste management and waste categorization. It was recommended among others that Nursing Administrators should develop policies that will ensure total compliance to sharp waste management and waste categorization in the health care centres.

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Introduction

Hospital waste is a potential reservoir of pathogenic micro-organisms and requires appropriate, safe and reliable handling. The main risk associated with infection is sharps contaminated with blood. There should be a person or persons responsible for the organization and management of waste collection, handling, storage and disposal. Waste management should be conducted in coordination with the infection control team (Dilnasheen & Naseem, 2018).

Solid contaminated and non-contaminated waste should be disposed of separately. Solid contaminated waste should be placed in a plastic or galvanized metal container with a tightly fitting cover and housekeeping staff should wear personal protective equipment when handling contaminated waste. Waste containers for both contaminated and non-contaminated waste should be collected on a regular basis and the burnable ones transported to the incinerator or area for burning. Solid contaminated and non-contaminated waste should be disposed of separately. Solid contaminated waste should be placed in a plastic or galvanized metal container with a tightly fitting cover and housekeeping staff should wear personal protective equipment when handling contaminated waste (Garcia, 2019).

The main risk that is associated with infection comes from sharps contaminated with blood. Sharps include all objects and materials that pose a potential risk of injury and infection because of their puncture or cutting properties and these include syringes with needles, blades, wires, and broken glass. Syringes and needles should be disposed of immediately after use. The needle should not be recapped or removed from the syringe thus the whole combination should be inserted into the safety box directly after use. Sharps should be disposed of in safety boxes that are resistant to punctures and leakage and are designed so that items can be dropped in using one hand and no item can be removed. Sharps should not be handled unnecessarily to prevent needle prick injuries (Dilnasheen & Naseem, 2018).

Waste reduction, segregation and disposal are all crucial in sustaining a healthy environment and reducing subsequent public health implications and financial costs such as additional costs related to the disposal of wastes if not segregated appropriately (RCN, 2011). In the hospital setting, the problem of waste management is improper segregation of infectious and non-infectious wastes (Sarani, 2014). Hospital wastes must be segregated at their point of origin in order to prevent the occurrence of hospital acquired infections (Tirthankar, 2013).

The result from a study on waste generation and disposal in Bench Maji Zone of Ethiopia revealed that 57.9% of the total health centre waste produced in major health centres of this zone was general and the remaining 42.1% was hazardous health care waste. Of the total hazardous waste stream sharps, infectious and pathological wastes constitute highest with mean (\pm SD) 0.267 ± 0.107 (23.3%), 0.2695 ± 0.124 (23.6%), 0.441 ± 0.157 (38.6%) respectively in all health centres. The norm, according to the WHO guidelines, is that health centres produce 75% to 85% general healthcare waste, and 10% to 25% hazardous healthcare waste. This difference was attributed to large numbers of attendants in healthcare facilities during data collection, lack of appropriate health centre waste segregation practice according to WHO guideline and absence of any reusing or recycling activities (Meleko, Tesfaye & Henok, 2018).

Another study revealed that the respondents in the various facilities where the study was done had adequate knowledge of waste categorization. About 69.5% of the respondents rightly categorized paper, food, plastics and bottles as general waste. Soiled cotton wool, swab and gloves were also classified by 69.5% of the respondents as infectious wastes. The majority of respondents also got it right by classifying body parts, body fluids and foetuses as pathological wastes. There was a significant association ($p < 0.05$) between the profession of the respondents and categorization of paper, bottles, food and plastic wastes. However, there were no significant differences ($p > 0.05$) between socio-demographic variables and categorization of soiled cotton wool, swab, specimen container, body parts,

foetuses, needles and scalpels. The respondents in the various facilities had adequate knowledge of waste categorization. 61.0% indicated that segregation should be done at the source, as against 39.0% who indicated otherwise and 88.6 % indicated the use of safety boxes for sharp collection. About 81.9 % of the respondents also indicated the need to segregate medical wastes. The responses however differed from hospital to hospital as 85.7% of the respondents' agreed that medical waste could be generated from diagnosis, immunization, and treatment. About 74.3 % of the respondents also knew that there are specific procedures for collection and handling of medical waste by (Awodele, Adewoye, & Oparah, 2016). This study therefore, assessed the knowledge of health care workers on sharps waste management in selected primary health care centres in Ogun State.

Methodology

This study adopted a cross-sectional survey design. It involves the collection of baseline data that allows researchers to be relatively have confident on the instrument by self-administration of the questionnaire to the respondents where the variables of interest are not manipulate. The study population was the health care workers in selected primary health care centres in two selected Local Government area of Abeokuta, Ogun State. Health care workers included in the study were nurses, doctors, CHEWs and laboratory officers, at the selected Primary Health Care centres of two Local Government Area of Abeokuta, Ogun State, who have been working in the facilities for more than 6 months, willing to participate and available at the time of data collection. All the health care workers on their annual or maternity leave at time of data collection, all students who are under supervision and health care personnel who had worked in the selected PHC centres for less than six months were excluded.

To obtain the sample size for the study Slovin's formula (1960) was applied.

$$n = \frac{N}{1 + N(R)^2}$$

The values used are

N= Study population (280),

R= 0.05 (margin of error)

n= sample size?

The computation for this is expressed below:

$$n = \frac{N}{1 + N(R)^2}$$

$$n = \frac{280}{1 + 280(0.05)^2}$$

$$n = \frac{280}{1 + 280(0.0025)}$$

$$n = \frac{280}{1 + 0.7}$$

$$n = \frac{280}{1.7}$$

n= 164.7 (approximately 165)

165+ 10% (due to inappropriate filling of questionnaires) = 182

Therefore, the sample size for this study is **182**. Multistage sampling procedure was used in selecting the target samples. A well-structured questionnaire was designed to gathered information on the knowledge of the health care workers on the sharp waste management. The validity of the research instrument was done through face and content validity techniques. Descriptive statistics such as frequency counts and percentages was used to answer the objective of the study.

Results and Discussion

Table 1: Level of knowledge of sharp waste management

Variable		Frequency	Percentage
How should healthcare waste be disposed?	Dump directly into garbage bins	26	14.3
	Handing it over to health care waste management agency	61	33.5
	Sort according to type before disposing	92	50.5
	I don't know	3	1.6
	Total	182	100.0
Sharps are to be disposed only in designated container sharps waste?	Yes	151	83.0
	No	29	15.9
	I don't know	2	1.1
	Total	182	100.0
Used sharps and needles are disposed of in?	Yellow bags	11	6.0
	Puncture proof container	143	78.6
	Red bags	9	4.9
	I don't know	19	10.4
	Total	182	100.0
What should be the correct sequence sharps waste disposal.	Segregation < collection and storage < transport < treatment and disposal	122	67.0
	Collection < transport < disposal	44	24.2
	I don't know	16	8.8
	Total	182	100.0

Table 1 presents the level of knowledge of the healthcare workers on the sharp waste management. 92 (50.5%) of them do sort to type before disposing while (1.6%) did not know how the sharp waste should be disposed. Majority of the respondents 151 (83.0%) of the respondents said different containers are used to dispose sharps waste. 122 (67.0%) of the respondents believed that the correct sequence of sharps waste disposal is segregation < collection and storage < transport < treatment and disposal, 44 (24.2%) believed that the correct sequence of sharps waste disposal is collection < transport < disposal, 16 (8.8%) did not know the correct sequence.

This study revealed that there is high level of knowledge of the healthcare workers on the sharp waste management (50.5%) and waste categorization (83%). This is similar to the study by Awodele et al. (2016) that revealed that the 69.5% of respondents in the various facilities had adequate knowledge of waste categorization in a study conducted to assess the medical waste management in seven hospitals in Lagos state, Nigeria. A total of 67.0% of the respondents in this study segregate waste at the source of generation and sort according to type before disposing. This has been shown to be the key to achieving a sound sharp waste management as supported by the findings of Asadullah et al. (2015) in a study conducted in to assess the knowledge, attitude and practices regarding biomedical waste management among nursing staff in private hospitals in Udipi city, Karnataka, India.

Conclusion and Recommendations

The study concludes that there is high level of knowledge of the healthcare workers on sharp waste management and waste categorization. Continuing education efforts aimed at improving sharp waste management and waste categorization should be accorded high priority. Hence, nursing educators should ensure that teachings on sharp waste management and waste categorization should be done in order to improve the knowledge and practices. Also, Nursing Administrators should develop policies that will ensure total compliance to sharp waste management and waste categorization in the health care centres.

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The Effects of Interactive-Engagement and Analogy-Enhanced Instructional Strategies On Secondary School Students' Self-Efficacy in Chemistry in Ekiti State, Nigeria

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Abstract

The study investigated the effects of interactive-engagement and analogy-enhanced instructional strategies on secondary school students' self-efficacy in Chemistry in Ekiti State, Nigeria. The study adopted a pre-test post-test control group quasi- experimental design. The population for the study consisted of all the 5,046 senior secondary school II students offering Chemistry in all the 187 public senior secondary schools in Ekiti State, Nigeria as at the time of the study. The sample for the study consisted of all the 198 SSS II students offering Chemistry found in intact classes of the six secondary schools selected for the study using multistage sampling procedure. Students' Self-Efficacy Rating Scale (SSERS) was used for data collection and validity was established by experts in the field of science education and psychology. Test re-test method was used to determine the reliability of the instrument which yielded coefficient of 0.86. The research question raised was answered using descriptive statistics while the postulated hypotheses were tested using inferential statistics involving Analysis of Covariance (ANCOVA) at 0.05 level of significance. The findings of the result revealed that there was significant difference in the self-efficacy of students exposed to interactive-engagement, analogy-enhanced and the conventional instructional strategies in Chemistry while the self-efficacy of students exposed to Interactive-Engagement, Analogy-Enhanced and conventional strategies of teaching do not differ by gender and school location. It was recommended among others that Chemistry teachers should embrace innovative instructional strategies by deliberate use

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of interactive-engagement and analogy-enhanced instructional strategies in the learning process in order to facilitate better self-efficacy in Chemistry.

Keywords: Interactive-Engagement, Analogy-Enhanced, Self-Efficacy, Chemistry,



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Introduction

Chemistry is a versatile science subject that deals with the composition, properties and uses of matter. Chemistry is the scientific study of interaction of chemical substances that constitute atoms of the subatomic particles; protons, electrons and neutrons. It is an integral part of the science curriculum both at the senior secondary school as well as higher institutions. One of the objectives of science education is to develop students' interest towards science and technology. Teachers are therefore expected to devise ways of motivating their students to develop positive attitudes towards science and science related disciplines (Adeyemo, 2012).

Self-efficacy is the perception of students about their own ability to perform well. Navarro and Santos (2013) defined self-efficacy as an impression that one is capable of performing in a certain manner or certain goals. They further defined it as one's belief in his/her capacity to perform a specific action successfully. Findings from various researches had shown that self-efficacy predicts students' performance both directly and indirectly across academic areas and levels (Pajares & Urdan, 2006; Usher & Pajares, 2005). Apart from being an indicator of academic performance, self-efficacy has been reported to be associated with resilience, motivation and goal orientation which are predictors of success in school work (Britner and Pajares, 2006).

Self-efficacy determines how people feel, think, motivate themselves and behave. Such beliefs produce these diverse effects through five major processes, which include cognitive, motivational, affective and selection processes. A strong sense of efficacy enhances human accomplishment and personal well-being in many ways such as academic achievement. Students might have different self-efficacy judgements in different types of task or domains. For instance, a student who has high self-efficacy in Biology might not be so efficacious in Chemistry. Self-efficacy influences people's choice of tasks, showing efforts and persistence at the task. No wonder, Britner (2008) submitted that it is a better predictor of performance and motivation when compared to other variables and that efficacious students look for new challenges, show persistence at tasks and have the ultimate success. Similarly, Kiran and Sungur (2011) have affirmed the relationship between self-efficacy and students' performance.

Ineffective teaching strategies lower students' self-efficacy and consequently, affect their performance negatively. Hence there is need for further research into some new teaching strategies that would enhance self-efficacy, improve academic performance, and at the same time, be simple enough for easy conveyance of instructions.

Several studies have been carried out to investigate the efficacy of new teaching strategies in Chemistry. Some of these strategies include among others; game-based learning strategies, concept mapping/problem solving strategies and the use of analogy in pictorial representation. However, observation revealed that not much has been done on interactive-engagement and analogy-enhanced instructional strategies.

The interactive-engagement instructional strategy is designed to promote conceptual understanding through minds-on and sometimes hands-on-activities which yield immediate feedback through discussion with peers and instructors. The study of Cahyadi (2007) indicated that an interactive approach to teaching has a number of positive effects on students' motivation and learning. He further observed that instructional model where students participate in the process of investigation and discoveries by interacting with one another and with the teaching and learning materials, have been shown to improve students' fundamental understanding in Chemistry.

The other strategy been used in this study is analogy-enhanced instructional strategy. Analogy enhanced instructional strategy adopts the concept of storytelling into teaching which according to Genden (2011), creates interest and reduce anxiety. This instructional strategy uses the concepts that students are familiar with to provide an analogical bridge to an unfamiliar concept thus motivating and provoking the interest of students (Orgil & Thomas, 2007). Samara (2013) defined analogy as a strategy that helps students form initial mental models of key science concept by facilitating introduction of concepts in ways that are concrete, meaningful and relevant to the students. According to Duniya (2009) an analogy is a comparison of something unfamiliar with something familiar in order to explain a shared

principle; for example, when a teacher wants a student to learn from what he/she already knows. An analogy is built on the framework of the learners' existing knowledge so they are not starting from scratch.

Many studies have shown that analogues-enhanced instructional strategy causes a better acquisition of scientific concepts than the conventional instructional strategy and help students to integrate knowledge more effectively (Aybuke & Omen, 2012). For the use of analogies to be effective, teachers need to prepare these analogues in details and make sure that there are comprehensible connection between the analogues and the targets they represent. It is against this background, therefore, that this study is poised to investigate the effects of interactive-engagement and analogy-enhanced instructional strategies on the self-efficacy of secondary school students in Chemistry in Ekiti State, Nigeria.

The purpose of the study was to investigate the effects of interactive-engagement and analogy-enhanced instructional strategies on secondary school students' self-efficacy in Chemistry in Ekiti State, Nigeria. The study specifically examined:

- i. secondary school students' self-efficacy in Chemistry before and after treatment;
- ii. the difference in the self-efficacy of students exposed to interactive-engagement, analogy-enhanced and the conventional instructional strategies in chemistry;
- iii. the difference in the self-efficacy of male and female students exposed to interactive-engagement, analogy-enhanced and the conventional strategies in chemistry; and
- iv. the difference in the self-efficacy of rural and urban students exposed to interactive-engagement, analogy-enhanced and the conventional strategies in chemistry.

Research Question

This research question was raised for the study:

1. What is secondary school students' self-efficacy in Chemistry before and after treatment?

Research Hypotheses

These hypotheses were postulated to guide the study and were tested at 0.05 level of significance:

1. There is no significant difference in the self-efficacy of students exposed to interactive-engagement, analogy-enhanced and the conventional instructional strategies in chemistry.
2. There is no significant difference in the self-efficacy of male and female students exposed to interactive-engagement, analogy-enhanced and the conventional strategies in chemistry.
3. There is no significant difference in the self-efficacy of rural and urban students exposed to interactive-engagement, analogy-enhanced and the conventional strategies in chemistry.

Methodology

The study adopted a pre-test post-test control group quasi- experimental design. The population for the study consisted of all the 5,046 senior secondary school II students offering Chemistry in all the 187 public senior secondary schools in Ekiti State, Nigeria as at the time of the study. The sample for the study consisted of all the 198 SSS II students offering Chemistry found in intact classes of the six secondary schools selected for the study using multistage sampling procedure.

Students' Self-Efficacy Rating Scale (SSERS) was used for data collection in the study. The validity of SSERS was established by experts in the field of science education and psychology while necessary corrections arising from their observations were effected in making the final draft of the instruments. To determine the reliability of the instrument, test re-test method was used, which yielded coefficient of 0.86 for SSERS. Hence, the instrument was adjudged to be consistent, stable and reliable enough for use. The research question raised was answered using descriptive statistics involving mean and standard deviation while the postulated hypotheses were tested using inferential statistics involving Analysis of Covariance (ANCOVA) at 0.05 level of significance. Multiple Classification Analysis

(MCA) and Scheffe Post-hoc analysis were applied where necessary.

Results

Research Question 1: What is secondary school students' self-efficacy in Chemistry before and after treatment?

In order to answer the question, mean scores of secondary school students' self-efficacy in Chemistry before and after treatment were computed and compared. The result is presented in Table 2

Table 1: Secondary Schools Students' Self-Efficacy in Chemistry Before and After Treatment.

Group	N	Pretest		Posttest		Mean Difference	% Mean Difference	Ranking
		Mean	SD	Mean	SD			
Interactive Engagement	62	43.71	4.61	64.00	3.05	20.29	31.70	2 nd
Analogy-Enhanced	72	42.99	5.61	69.67	4.30	26.68	38.30	1 st
Conventional	64	42.08	4.11	47.55	4.25	5.47	11.50	3 rd
Total	198	42.92	4.87	60.74	10.21	17.82	16.80	

Table 1 reveals that students in the Interactive-Engagement group had a mean score of 43.71 on self-efficacy in Chemistry while those in the Analogy-Enhanced and conventional groups were 42.99 and 42.08 respectively before treatment. On exposure to treatment, students in the Analogy-Enhanced group had the highest mean score of 69.67, closely followed by those exposed to Interactive Engagement (mean=64.00) while students exposed to conventional method had the least post-test mean score of 47.55. This implies that the secondary school students' self-efficacy in Chemistry before treatment was low but increased on exposure to treatment. The secondary school students' self-efficacy in Chemistry before and after treatment is further depicted in Figure i.

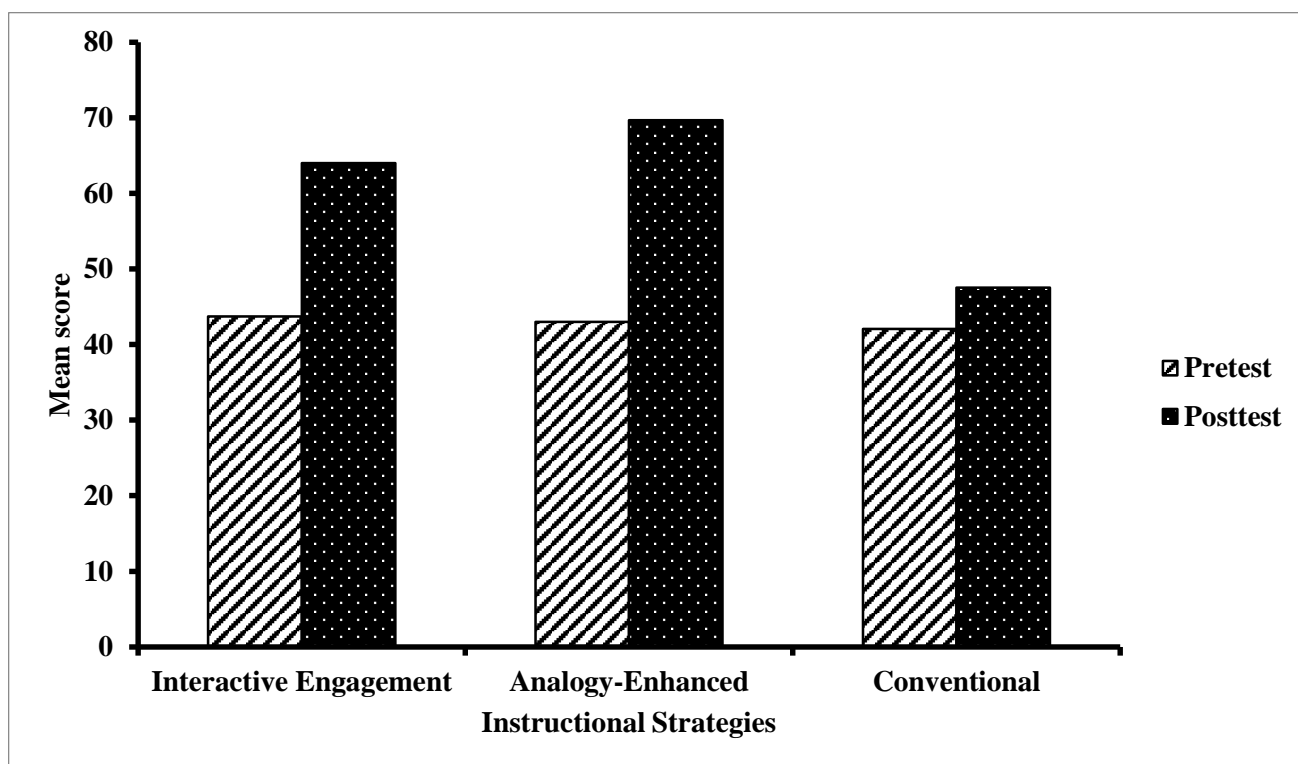


Figure i: Bar Chart Showing Secondary Schools Students' Self-Efficacy in Chemistry Before and After Treatment.

Hypotheses Testing

Hypothesis 1: There is no significant difference in the self-efficacy of students using interactive-engagement, analogy-enhanced and the conventional instructional strategy in Chemistry.

Post-test mean scores of students' self- efficacy using interactive- engagement, analogy-enhanced and the conventional instructional strategy were computed and subsequently compared for statistical significance using Analysis of Covariance (ANCOVA) at 0.05 level of significance. The result is presented in Table 2

Table 2: ANCOVA Showing Students' Self- Efficacy by Treatment

Source	SS	Df	MS	F	P
Corrected Model	17558.742	3	5852.914	379.612	.000
Covariate (Pretest)	22.737	1	22.737	1.475	.226
Group	17484.308	2	8742.154	567.004	.000
Error	2991.122	194	15.418		
Total	751099.000	198			
Corrected Total	20549.864	197			

$p < 0.05$

Table 2 shows that there is significant difference in the post-test mean scores of students' self-efficacy using interactive-engagement, analogy-enhanced and the conventional instructional strategy ($F_{2, 194} = 567.004$, $p < 0.05$). The null hypothesis is rejected.

Multiple Classification Analysis (MCA) was used to determine the effectiveness of treatment (Instructional strategy) at enhancing students' self-efficacy in Chemistry. The result is presented in Table 3.

Table 3: Multiple Classification Analysis (MCA) of Students' Self-Efficacy in Chemistry by Treatment

Grand mean=60.74					
Variable + Category	N	Unadjusted Devn'	Eta ²	Adjusted For Independent + Covariate	Beta
Interactive-Engagement	62	3.26	.85	3.16	.06
Analogy-Enhanced	72	8.93		8.92	
Conventional	64	-13.19		-12.74	
Multiple R					0.060
Multiple R ²					0.004

Table 3 reveals that, with a grand mean of 60.74, students exposed to Analogy-Enhanced had the highest adjusted mean score of 69.66 ($60.74 + 8.92$) on self-efficacy in Chemistry, closely followed by those taught with Interactive-Engagement instructional strategy with an adjusted mean score of 63.90 ($60.74 + 3.16$) while students in the conventional group had the least adjusted mean score of 48.00 ($60.74 + (-12.74)$). This implies that Interactive-Engagement and Analogy-Enhanced are effective instructional strategies for enhancing students' self-efficacy in Chemistry. The treatment accounted for about 85% ($Eta^2 = 0.85$) of the observed variance in students' self-efficacy in Chemistry. However about 15% of the observed variance in students' self-efficacy is not accounted for during treatment, because they are believed to be on the other hidden variables not checked in this study. Hence there is need for post-hoc analysis. In this case, Scheffe Post-hoc Test was carried out.

In order to locate the sources of pairwise significant difference among the groups, Scheffe post-hoc test was carried out. The result is presented in Table 4.

Table 4: Scheffe Post-Hoc Analysis of Students' Self-Efficacy in Chemistry by Treatment

Group	1	2	3	N	Mean
Interactive Engagement (1)		*	*	62	64.00
Analogy- Enhanced (2)			*	72	69.67
Conventional Method (3)				64	47.55

$p < 0.05$ * denotes pair of group significance

Table 4 reveals that there is significant difference between the self-efficacy of students exposed to interactive Engagement and Analogy-Enhanced instructional strategy at 0.05 level of significance. Similarly, the mean difference between the self-efficacy of students in Interactive Engagement and control, Analogy-Enhanced and control groups is statistically significant at 0.05 level in each case.

Hypothesis 2: There is no significant difference in the self-efficacy of male and female students exposed to interactive-engagement, analogy-enhanced strategies and the conventional method in Chemistry.

The mean scores of male and female students exposed to the interactive-engagement, analogy-enhanced strategies (experimental groups) and the conventional method (control group) in Chemistry in the students' Self-Efficacy Rating Scale were computed and subsequently compared for statistical significance using Analysis of Covariance (ANCOVA) at 0.05 level of significance. The result is presented in Table 5.

Table 5: 2 x 3 ANCOVA Showing Students' Self-Efficacy in Chemistry by Gender and Treatment

Source	SS	Df	MS	F	P
Corrected Model	17662.319	6	2943.720	194.716	.000
Covariate(Pretest)	21.452	1	21.452	1.419	.235
Sex	31.708	1	31.708	2.097	.149
Group	15187.556	2	7593.778	502.299	.000
Sex * Group	64.609	2	32.304	2.137	.121
Error	2887.545	191	15.118		
Total	751099.000	198			
Corrected Total	20549.864	197			

$p > 0.05$ * denotes interactive effects of sex on the group

Table 5 shows that there is no significant difference in the self-efficacy of male and female students using interactive-engagement, analogy-enhanced strategies and conventional method in Chemistry at 0.05 level of significance ($F_{2, 191} = 2.137$; $p > 0.05$). The null hypothesis is not rejected. Similarly, the main effect of sex ($F_{1, 191} = 2.097$, $p > 0.05$) on students' self-efficacy in Chemistry is not statistically significant at 0.05 level. However, treatment had significant effect on students' self-efficacy in Chemistry ($F_{2, 191} = 502.299$, $p < 0.05$).

Hypothesis 3: There is no significant difference in self-efficacy of rural and urban students exposed to interactive-engagement, analogy-enhanced strategies and the conventional method in Chemistry.

Self-efficacy mean scores of students in Chemistry exposed to interactive-engagement, analogy-enhanced strategies and the conventional strategy in urban areas and rural areas were computed and subsequently compared for statistical significance using Analysis of Covariance (ANCOVA) at 0.05 level of significance. The result is presented in Table 6.

Table 6: ANCOVA Showing Students' Self-Efficacy in School Location by treatment

Source	SS	Df	MS	F	P
Corrected Model	17626.907	6	2937.818	191.971	.000
Covariate(Pre-test)	28.071	1	28.071	1.834	.177
Location	4.694	1	4.694	.307	.580
Group	9562.475	2	4781.238	312.429	.000
Location * Group	68.068	2	34.034	2.224	.111
Error	2922.957	191	15.303		
Total	751099.000	198			
Corrected Total	20549.864	197			

p>0.05 * denotes interactive effects of location on the group

Table 6 shows that there is no significant difference in the self-efficacy mean scores of rural and urban students exposed to interactive-engagement, analogy-enhanced strategies and the conventional strategy in Chemistry at 0.05 level of significance ($F_{2,191} = 2.224$; $p > 0.05$). The null hypothesis is not rejected. Also, the main effect school location on students' self-efficacy in Chemistry is not significant at 0.05 level ($F_{1,191} = 0.307$; $p > 0.05$). However, treatment had significant effect on students' self-efficacy in Chemistry ($F_{2,191} = 312.238$; $p < 0.05$).

Discussion

The study revealed that the students' self-efficacy in chemistry before treatment was very low but improved tremendously after treatment. By implication, therefore the treatment has effect in improving the self-efficacy of students in chemistry. The study also showed there was significant difference in the self-efficacy of students using interactive-engagement, analogy enhanced and the conventional strategies. This result is in tandem with the work of Cheung (2015) who opined that individuals who possess a high degree of self-efficacy are more likely to attempt challenging tasks, persist longer at them, and exert more effort in the process. When the students master a challenging task with limited assistance, their level of self-efficacy beliefs affects how they approach new challenges and contributes well to their performance since these beliefs have been established to influence thought processes, motivation, and behaviour.

Self-efficacy is characterized by self-regulation especially in the use of effective instructional strategies. Britner (2008) also submitted that efficacious students look for new challenges, show persistence at tasks and have the ultimate success. This is also affirmed by the study of Kiran and Sungur (2011) which affirmed the relationship between self-efficacy and students' performance.

Another finding of this study showed that there was no significant difference between the self-efficacy of male and female students exposed to the two strategies and the conventional method in Chemistry. This finding contradicts that of Britner (2008) who submitted that male have a greater sense of self-efficacy, personal control and mystery than their female counterparts. This is not in tandem with the submission of Tenaw (2013) who reported that female students have lower self-efficacy in mathematics and other science subjects when compared to male students.

The result of the study also revealed that there was no significant difference between the self-efficacy of rural and urban students exposed to the two strategies and the conventional strategy in Chemistry. However, the finding contradicted the views of other researchers who share the belief that location influences the students' self-efficacy. Dalgety and Call (2006) opined that location and environment help students to interact effectively and positively, hence enhanced self-efficacy. Owoye and Yara (2011) and Onah (2011) in their separate studies concluded that students that were exposed to many laboratory materials and practical skills in Chemistry have better self-efficacy than their counterparts in the rural schools where these practical laboratories are absent or nearly absent.

Conclusion

The adoption of Interactive-Engagement and Analogy-Enhanced strategies helps learners to stimulate their interest in the subject, thereby leading to improved self-efficacy in Chemistry. The self-efficacy of students exposed to Interactive-Engagement, Analogy-Enhanced and conventional strategies of teaching do not differ by gender and school location. That is, the strategies are found suitable for male and female students in urban and rural schools.

Recommendations

Based on the findings of this study, it was recommended that:

1. Chemistry teachers should embrace innovative instructional strategies by deliberate use of interactive-engagement and analogy-enhanced instructional strategies in the learning process in order to facilitate better self-efficacy in Chemistry.
2. Seminars and workshops should be organized by schools for students to promote the development of positive self-efficacy in Chemistry

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Knowledge and Attitude of Babcock University Undergraduate Students Towards Sickle Cell Anaemia

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Abstract

Sickle cell anaemia is a major public health problem accounting for more than 300,000 babies born each year with the disease. Its highest burden is found in Nigeria with about 20-30 per 1000 births. The study examined knowledge and attitude of undergraduate students in Babcock University towards sickle cell anaemia. The purpose of the study was to assess the level of knowledge of undergraduate students in Babcock University about sickle cell anaemia and to assess their attitude towards sickle cell anaemia. A descriptive cross-sectional study design was adopted. Multi-stage sampling procedure was employed to select a sample size of 360. A validated questionnaire was administered to the respondents and data collected were subjected to descriptive and inferential statistics. Results showed a moderate level of knowledge 290(80.6%) and majority 267(74.2%) had a negative attitude towards sickle cell anaemia. Also a positive relationship between the level of knowledge and attitude towards the disease was observed. In conclusion, information dissemination about the disease should be intensified both by the government and private sectors as well as religious bodies and schools. In this way, intending couples will be encouraged to go for premarital genetic testing, newborn screenings and counselling and thus make better-informed decisions based on test results and promote the prevention of the disease.

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Introduction

Sickle cell anaemia is accepted as a global health issue as it has been reported to be the most prevalent monogenic disease in the world today. (Pule, et al, 2017). Its burden is on the increase with about 300,000 babies being born with severe forms of haemoglobinopathies on a yearly basis (Centre for Disease Control and prevention, 2015). In the United States alone, it was estimated that about 100,000 Americans are affected by sickle cell anaemia (CDC, 2019) while in Europe, a prevalence rate of 43.12 per 100,000 was reported (Wastnedge, et al, 2018). It predominates in sub-Saharan Africa, East Mediterranean areas, Middle-East, India and Nigeria being the most populous black nation in the world, bears its greatest burden (Ademola, 2015). About 24% of the Nigerian population are carriers of the mutant gene and a prevalence of about 20-30 per 1000 births is seen (Adegoke, Adekile & Adeodu, 2015).

In sickle cell disease, the normal round shape of red blood cells become like crescent moons, they interconnect and can result in blood clots which cause extreme pain in the back, chest, hands and feet. The majority of children with the most severe form of the disease die before the age of 5, usually from an infection or severe blood loss (World Health Organisation, 2017). The cause of the disease is mainly genetic where in a person receives one defective gene from both parents to develop the disease while a person that receives one defective and one healthy gene remains healthy even though he/she has the sickle cell trait (Ameen, et al, 2016). Its management and treatment modalities have greatly improved with increasing research over the past 10 years aimed at decreasing painful crises and improving the quality of life of patients with the disease and they include long-term treatment with hydroxyurea, imaging studies, bone marrow transplants, blood transfusion programmes as well as gene therapy which is still under study (WHO, 2017).

Ugwu (2016) further buttressed that knowledge about sickle cell anaemia is a way of controlling its scourge and stands as a method of preventing the condition but despite the large number of people affected by the sickle cell anaemia there still exists gaps in knowledge about the disease. In Babcock university, positive attitude towards sickle cell anaemia has been noticed based on several interactions held by the researcher with students but a good number of the undergraduate students still lacked knowledge about the disease even among those studying health related courses and the few who have negative attitudes, do not have good knowledge of the disease. This brought about the need for a study to assess the knowledge and attitude of Babcock university undergraduate students towards sickle cell anaemia.

An intervention study aimed at providing knowledge about sickle cell anaemia via health education, its effect on the knowledge and attitude of respondents towards the disease and its prevention was conducted by Olatona, et al. (2012), only 25.3% of respondents had good knowledge about sickle cell disease and screening pre-intervention but after the intervention, knowledge of the disease and screening increased by 64.1% significantly and a good number of respondents demonstrated better attitude towards the condition. It was shown in the above study that a lack of knowledge hereby could pose a threat to effectively curbing and reducing the prevalence of the disease. Several studies that assessed the knowledge of sickle cell anaemia have noted the presence of a low or high level of knowledge among respondents. Those who had good knowledge were seen to either have relatives or friends who had the disease or had a higher level of education (Boadu, 2018). Orish, et al (2014) found relatively high level of knowledge about sickle cell disease of about 93.4% while about 6.6% had no knowledge at all in a study conducted in Ghana. It is against this background that the researcher examines the knowledge and attitude towards sickle cell anaemia among undergraduate students in Babcock University. This study specifically:

1. determined the level of knowledge of undergraduate students in Babcock University about sickle cell anaemia;
2. assessed the attitudes of undergraduate students in Babcock University towards sickle cell anaemia; and
3. examined the relationship between the level of knowledge of sickle cell anaemia and attitude towards sickle cell anaemia.

Research Questions

The following research questions were raised for this study:

1. What is the level of knowledge of undergraduate students in Babcock University about sickle cell anaemia?
2. What are the attitudes of undergraduate students in Babcock University towards sickle cell anaemia?

Research Hypothesis

This hypothesis was postulated for this study:

1. There is no significant relationship between the level of knowledge of sickle cell anaemia and attitude towards sickle cell anaemia.

Methodology

The study utilised a descriptive cross-sectional study design to assess the knowledge and practices towards sickle cell anaemia among undergraduate students in Babcock University, Ilishan-remo, Ogun state. The population of interest included undergraduate students currently running a bachelor degree program. A multi-stage sampling procedure was employed in this study to select sample size of 360. In the first stage of sampling, the researcher used simple balloting to select four (4) schools out of eight (8). In the second stage, proportionate sampling was utilized in determining the number of students per school. Convenience sampling was used in the final stage to get to each participant based on those who were present during the data collection process.

Data collection was done using a self-structured questionnaire derived from literature review. The questionnaire was organized in accordance with the research objectives and hypotheses. It had 3 sections namely section A, B and C. To ensure validity, the instrument was validated by experts of Tests and Measurement and Nursing. Reviews and corrections were adequately carried out in restructuring the instrument before usage. The internal consistency method was used to determine the reliability of the instrument. The instrument was administered on 10% of the sample size in order to test the reliability of the instrument. Cronbach's Alpha statistics was used to analysed the collected data which yielded coefficient value of 0.811 for the reliability.

Data were collected with the aid of the questionnaire. The researcher ensured that the respondents were adequately informed about the purpose of the study and assured them of their confidentiality and anonymity. This was explained before the questionnaires were distributed and the period of data collection was estimated to be 5 days. The researcher collected data with the aid of research assistants who were trained on the method of data collection and the distribution took place in classrooms and halls of residence. Statistical

analysis was done using Statistical Package for Social Sciences (SPSS) version 25.0 software. The data collected were subjected to descriptive and inferential statistics. Pearson Correlation Coefficient was used to test the hypothesis at 0.05 level of significance.

Results

Research Question 1: What is the level of knowledge of undergraduate students in Babcock University about sickle cell anaemia?

Table 1: Respondents' Knowledge of Sickle cell anaemia **n = 360**

Variables	Yes	No
	Frequency (%)	Frequency (%)
A genetic disorder inherited from only a single parent	96(26.7)	261(72.5)
A genetic disorder inherited from both parents	334(92.8)	26(7.2)
Results from deficiency of red blood cells	298(82.8)	62(17.2)
The red blood cells in sickle cell anaemia are shaped like a sickle	310(86.1)	50(13.9)
A person who has sickle cell anaemia has the SS genotype	333(92.5)	27(7.5)
Can be contracted from someone who has the disease	86(23.9)	274(76.1)
Is gotten from bad food	23(6.4)	337(93.6)
Is caused by infection from microorganism	66(18.3)	294(81.7)
Is associated with frequent pain episodes	299(83.1)	61(16.9)
Can cause partial or complete blindness	105(29.2)	255(70.8)
A sickle cell carrier is a person who inherited the gene from one parent	214(59.4)	146(40.6)
I know about sickle cell anaemia because I have a relative/friend who has it	214(59.4)	146(40.6)
There is a cure for sickle cell anaemia	122(33.9)	238(66.1)
Drugs can cure sickle cell anaemia	64(17.8)	296(82.2)
Bone marrow transplants are the most effective cure for sickle cell anaemia	234(65.0)	126(35.0)
Sickle cell anaemia can be prevented	296(82.2)	63(17.5)

Table 1 above illustrates the knowledge of the respondents of sickle cell anaemia. The findings show that majority 261(72.5%) knew that Sickle cell anaemia is a genetic disorder that cannot be inherited from only a single parent, more so 334 (92.8%) correctly indicated that Sickle cell anaemia is a genetic disorder that can be inherited from both parents. Also, 298(82.8%) knew that in sickle cell anaemia, there is deficiency of red blood cells, 310(86.1%) indicated that the red blood cells in sickle cell anaemia are shaped like a sickle, 333(92.5%) of

the respondents knew that a person who has sickle cell anaemia has the SS genotype.

Subsequently about 105(29.2%) confirmed that Sickle cell anaemia can cause partial or complete blindness, 214(59.4%) revealed that a sickle cell carrier is a person who inherited the gene from one parent, about 214(59.4%) indicated that they know about sickle cell anaemia because they have a relative/friend who has it and 238(66.1%) stated that there is no cure for sickle cell anaemia, about 296(82.2%) indicated that drugs cannot cure sickle cell anaemia, about 234(65.0%) indicated that bone marrow transplant is the best cure for sickle cell anaemia and 296 (82.2%) indicated that sickle cell anaemia can be prevented. Aside the emphasized findings here regarding the knowledge of the respondents on sickle cell anaemia, all the findings are as depicted in table 1 above.

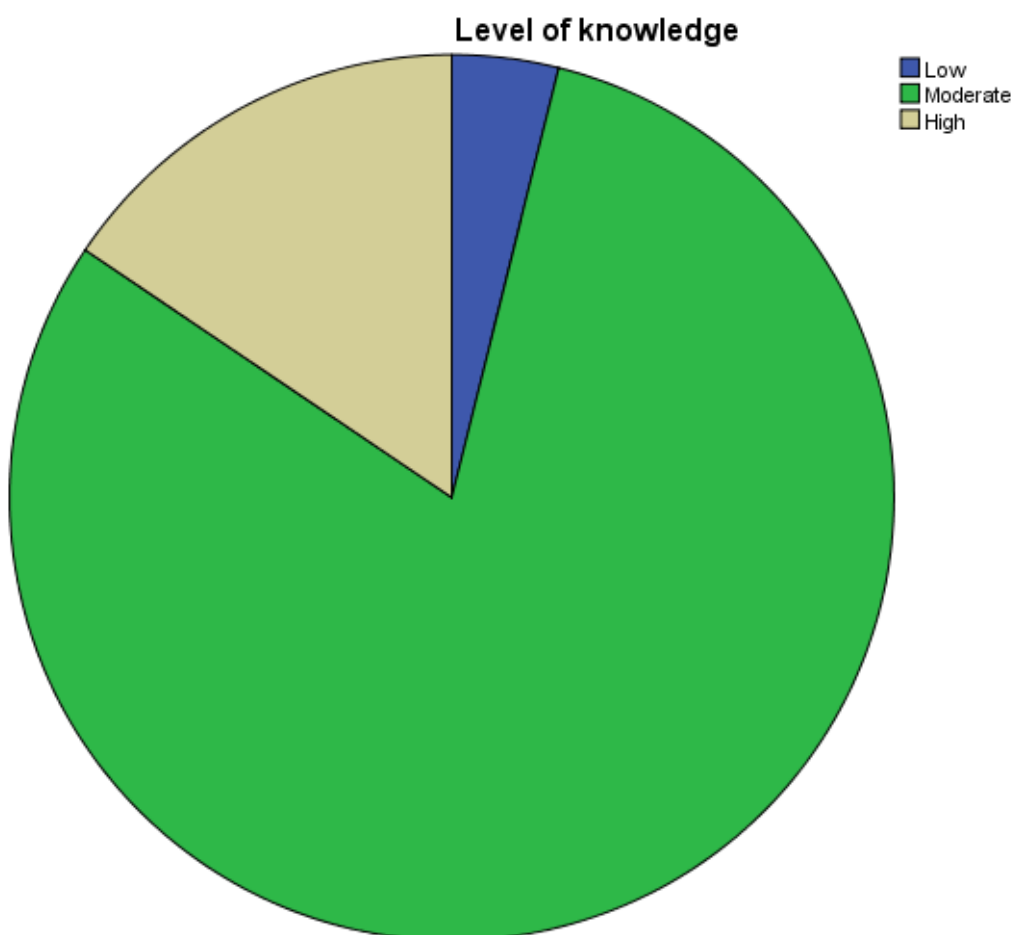


Figure i: Level of knowledge

Figure i shows the level of knowledge of respondents on sickle cell anaemia. Overall, it is seen that majority 290 (80.6%) had moderate knowledge of sickle cell anaemia, only 14 (3.9%) had a low level of knowledge while only 56 (15.6%) had a high level of knowledge.

Research Question 2: What are the attitudes of undergraduate students in Babcock University towards sickle cell anaemia?

Table 2: Attitude towards sickle cell anaemia

Variable	SA (%)	A (%)	D (%)	SD (%)
Sickle cell anaemia is a death sentence	42(11.7)	67(18.6)	122(33.9)	129(35.8)
Sickle cell anaemia is not the worst genetic disorder	79(21.9)	143(39.7)	59(16.4)	79(21.9)
I don't want to know my genotype status	20(5.6)	32(8.9)	85(23.6)	223(61.9)
I am aware of my genotype status	212(58.9)	90(25.0)	15(4.2)	43(11.9)
I am too young to be bothered about my genotype as I am not ready for marriage	16(4.4)	26(7.2)	92(25.6)	226(62.8)
I will carry out genotype testing before marriage	217(60.3)	92(25.6)	10(2.8)	41(11.4)
I would advise a friend to get genotype screening before marriage	237(65.8)	74(20.6)	12(3.3)	37(10.3)
All would be couples should undergo genetic screening	239(66.4)	76(21.1)	5(1.4)	40(11.1)
I will terminate my pregnancy if the pre-natal screening confirms that the baby has sickle cell anaemia	53(14.7)	49(13.6)	75(20.8)	183(50.8)
I don't believe genotype status should be hidden	206(57.2)	110(30.6)	9(2.5)	35(9.7)
Because my partner and I hardly fall sick, we are healthy and do not need to check our genotype status	25(6.9)	14(3.9)	107(29.7)	214(59.4)
Sickle cell anaemia is too costly to maintain	111(30.8)	149(41.4)	15(4.2)	85(23.6)
A person with Sickle cell anaemia is possessed and should not be near me	21(5.8)	21(5.8)	61(16.9)	257(71.4)
Sickle cell anaemia patients should be isolated from everyone else	16(4.4)	19(5.3)	61(16.9)	284(73.7)
Sickle cell anaemia patients are drug addicts and should be treated as such	19(5.3)	17(4.7)	54(15.0)	270(75.0)
I would spread rumours about my friends/relatives who has sickle cell	14(3.9)	16(4.4)	59(16.4)	271(75.3)
I can be friends with someone who has sickle cell anaemia	228(63.3)	83(23.1)	14(3.9)	35(9.7)
I can tell others that my friend has sickle cell anaemia	46(12.8)	47(13.1)	94(26.1)	173(48.1)
I will invite a sickle cell patient for lunch, to chat or for a party	193(53.6)	119(33.1)	11(3.1)	37(10.3)
I can be in a relationship with someone who has sickle cell anaemia	65(18.1)	51(14.2)	70(19.4)	174(48.3)
I will end my relationship if I find out that my partner has sickle cell anaemia	72(20.0)	64(17.8)	54(15.0)	170(47.2)
Someone who has sickle cell anaemia can live a perfect life	102(28.3)	109(30.3)	47(13.1)	102(28.3)

I would assist a sickle cell anaemia patient financially only if they ask for help	91(25.3)	139(38.6)	58(16.1)	72(20.0)
I can marry someone who has sickle cell anaemia irrespective of genotype status because all that matters is love	26(7.2)	24(6.7)	94(26.1)	216(60.0)
I cannot marry a sickle cell patient because it will cause problems in future	157(43.6)	68(18.9)	37(10.3)	98(27.2)

Findings from table 2 above showed that about (35.8%) of the respondents strongly disagree that sickle cell anaemia is a death sentence, while (39.7%) agree that sickle cell anaemia is not the worst genetic disorder with about (21.9%) strongly disagreeing. While more than half of the respondents 226(62.8%) strongly disagreed that they are too young to be bothered about their genotype as they are not ready for marriage, similarly 217(60.3%) of the respondents agreed that they will carry out genotype testing before marriage. Also, 237(65.8%) of the respondents reported that they would advise a friend to get genotype screening before marriage and majority 239(66.4%) of the respondents agreed that all couples should undergo genetic screening. More so, a minimal 53(14.7%) strongly agreed that they would terminate their pregnancy if the prenatal screening confirms that the baby has sickle cell anaemia and about 206(57.2%) of the respondents agreed that genotype status should not be hidden. Furthermore, 214(59.4%) strongly disagreed that because he or she and his or her partner hardly fall sick, that they are healthy and do not need to check their genotype status.

Majority of respondents 257(71.4%) also strongly disagreed that a person with sickle cell anaemia is possessed and should not be near them and 284(73.7%) strongly disagreed that Sickle cell anaemia patients should be isolated from everyone else. The results further revealed that 270(75.0%) strongly disagreed that sickle cell anaemia patients are drug addicts and should be treated as such, also 271(75.3%) strongly disagreed that they would spread rumors about friend/relatives who has sickle cell anaemia. It was also disclosed that 228(63.3%) strongly agreed that they will be friends with someone who has sickle cell anaemia, about 173(48.1%) strongly disagreed that they will tell others that their friend has sickle cell anaemia and 170(48.3%) strongly disagreed with ending their relationship if they find out that their partner has sickle cell anaemia.

These, amongst other things as shown in the table 2 above are the attitudes of the respondents towards sickle cell anaemia.

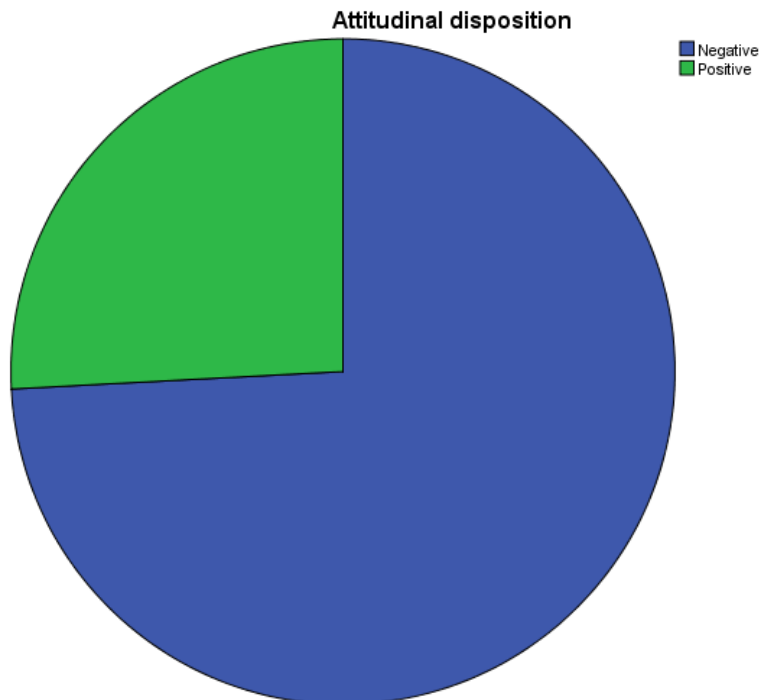


Figure ii: Attitudinal disposition

Figure ii shows the attitudinal disposition of respondents towards sickle cell anaemia. Overall, it is seen that majority 267 (74.2%) had a negative attitude toward sickle cell anaemia and only 93 (25.8%) had a positive attitude irrespective of the responses gotten in Table 2.

Test of Hypothesis

Hypothesis 1: There is no significant relationship between the level of knowledge of sickle cell anaemia and attitude towards sickle cell anaemia.

Table 3: Pearson Product Moment correlation showing the relationship between knowledge and attitude towards sickle cell anaemia

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

Correlations		Knowledge	Attitude towards sickle cell anaemia	Remarks
Knowledge	Pearson Correlation	1	.113	Reject null hypothesis
	Sig. (2-tailed)		.032	
	N	360	360	
Attitude towards sickle cell anaemia	Pearson Correlation	.113*	1	
	Sig. (2-tailed)	.032		
	N	360	360	

Results in Table 3 revealed a significant relationship between the level of knowledge of sickle cell anaemia and attitude towards sickle cell anaemia patients at ($r=0.113$, $p =0.032 <0.05$). Hence, the null hypothesis (H_1) is hereby rejected which implies that there is significant relationship between the level of knowledge of sickle cell anaemia and attitude towards sickle cell anaemia patients.

Discussion

The findings of the study showed that majority of the respondents had moderate knowledge of sickle cell anaemia, and minority of them had high knowledge of sickle cell anaemia, with fewer that had a low knowledge. However, these findings correlated with the findings of Uche, et al (2017) who assessed the knowledge, awareness and attitude of undergraduates towards sickle cell disease in Lagos, Nigeria, the study showed a fair or moderate knowledge of sickle cell anaemia. The researchers positioned that the level of knowledge was still low when compared with the percentage who had good knowledge of the condition, they ascribed the difference in the level of knowledge to indices used in knowledge assessment. Similarly, the study by Adewoyin, et al (2015) on knowledge, attitude and control practices of sickle cell disease among youth corps members in Benin city, Nigeria noted a moderate level of knowledge.

The finding also showed that most of the respondents knew about sickle cell anaemia because they had a relative or friend who has it. From the researchers' point of view, this is one of the factors promoting their knowledge of sickle cell anaemia and this view was further exposed by Boadu and Addoah (2018) who conducted a study in the university of Ghana and noted that higher levels of education and knowing a relative with sickle cell disease was significantly associated with the high knowledge of the disease among respondents. Another factor could be their course of study as more than half were from the schools of science and technology, nursing and public and allied health in which a background of sciences and health is present. This view was supported in the study by Adewoyin, et al (2015) in which it was noted that those who studied courses related to medical sciences had significantly higher mean knowledge scores. The researcher is also of the opinion that at least a moderate level of knowledge was expected of respondents considering that they were university students owing to the fact that a high/moderate level of knowledge has been largely associated with tertiary institutions as exposed by Ugwu (2016) and Orish, et al (2014).

Findings from the study showed that the respondents had a negative attitude to sickle cell anaemia regardless of positive responses observed in the study. The findings are in consonance with the study of Carroll, Porter and Zhao (2015), who reported that sickle anaemia patients face stigma from different aspects or persons; peers, family, as well as health-care professionals which may come in various ways including; labelling them drug seekers, not believing that their pain experience is genuine and refusing them medication.

On the contrary, Uche, et al (2017) showed a positive attitude by respondents in spite of low knowledge as most of them (77%) agreed that haemoglobin phenotype will play a significant role in their choice of marriage partners and would consent to premarital genetic counselling. About 23% of respondents reported a fear of losing potential life partners. More so, majority of the respondents (79%) also reported an unwillingness to continue a relationship that carries the risk of having offspring with sickle cell anaemia which is also contrary to the findings from this study where majority strongly disagreed with ending their relationship if they find out that their partner has sickle cell anaemia.

Also, in the study by Anie, Egunjobi and Akinyaju (2010), a positive attitude towards respondents were noted; fair treatment by the medical staff was reported, no bullying or teasing during their education in school, college or university and no discrimination was also reported. From the researchers' point of view, this positive attitude was greatly influenced by the nature of the participants as all of them were sickle cell patients, had attained a level of education and therefore were more informed about the disease even then, they still experienced depression imposed by their perception of the disease itself. The researchers also think that, sickle cell anaemia is seen to be very costly to maintain and as a disease that affects the quality of life of the individual affected, this could promote the negative attitude and misconceptions seen amongst undergraduates and the general public towards the disease and a negative attitude towards sickle cell anaemia affects recovery and coping with the disease on the part of the individual, family and relatives affected by it.

From the results, a significant relationship existed between the level of knowledge of sickle cell anaemia and attitude towards sickle cell anaemia patients. This finding agrees with the findings of Aboagye and Aboagye (2019) on sickle cell disease: awareness, depth of knowledge and attitude towards premarital screening among students in Ghana in which an increased level of knowledge transformed into a positive attitude towards premarital counselling and also with the study of Ugwu (2016) in which majority of those who had a positive attitude towards the disease were seen to have adequate knowledge about sickle cell anaemia while the reverse was the case for those who had negative attitude.

Conclusion

In conclusion, most of the respondents had moderate knowledge of sickle cell anaemia in Babcock University. Information dissemination about the disease should be intensified both by the government and private sectors as well as religious bodies. In this way, intending couples will be encouraged to go for premarital genetic testing, newborn screenings and counselling and thus make better-informed decisions based on test results and promote the prevention of the disease.

Recommendations

Based on the findings in this study, the following recommendations are made:

1. More awareness creation should be intensified to ensure that everyone has good knowledge of sickle cell anaemia especially by Babcock University and other educational institutions as the involvement of educational institutions in raising awareness and education on sickle cell anaemia is still low and should be strengthened
2. Couples intending to get married should endeavour to go for test to ensure that they are compatible so as to avoid producing kids with the HbSS genotype.
3. Government, schools and religious organization should discourage stigmatization being mated to sickle cell anaemia patients.
4. Government attention should be diverted to provision of comprehensive sickle cell anaemia centres with the capacity to render multi-specialist care at subsidized rates for its affected populace.

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