IMPACT OF DENTAL HEALTH EDUCATION ON ORAL HEALTHCARE SEEKING BEHAVIOUR AND SELF-REPORTED DENTAL CONDITIONS AMONG PUBLIC SERVANTS IN OGUN STATE

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Abstract
Positive oral healthcare-behaviour is crucial in promoting optimal health amongst human, because any delay in the diagnosis or poor treatment of oral condition predisposes an individual to both local and systemic ill-health conditions. Available data on oral healthcare-seeking behaviour and reported oral conditions revealed that the percentage of Nigerians that seek oral healthcare and reported oral disease conditions are low compared to the world dental federation's standard. The study adopted pretest–posttest control group quasi-experimental design A sample of One Hundred and Sixty (160) participants was gleaned using multi-stage sampling procedure. Validated instruments: Reported Oral ill-Health Condition Inventory (ROIHCI) with r = 0.842, Modern Dental Services Patronage Inventory (MDSPI) with r = 0.817, Self-medication/Self Care Inventory (SMSCI) with r = 0.741, were used to collect data and Dental Care Seeking Education and Training (DCSEAT), as instructional guide. Three hypotheses were tested. Analysis of Covariance (ANCOVA) was used to test the hypotheses at 0.05 level of significance. Findings revealed the following amongst others: that dental health education had significant outcome ($F_{(1,151)}$ =623.481, $p < 0.05$) on oral healthcare-seeking behaviour and reported oral ill-health condition, meaning that the intervention of dental care seeking education and training improved health-seeking behaviour and oral ill-health conditions of participants. Results also showed that there was no significant effect of gender ($F_{(1,151)}$ =861, $p >0.05$) and educational status ($F_{(1,151)}$ =.120, $p >0.05$) on oral healthcare-seeking behaviour and oral ill-health conditions of participants in Ogun State. Based on the findings, it was concluded that dental health education intervention is a potent tool to improve oral health-seeking behaviour and utilization of the available oral health services effectively. It was recommended that dental health education should be incorporated into school curriculum which will improve oral healthcare-seeking behaviour right from childhood.

***Key Words*:** Dental health education, Oral healthcare -seeking behaviour, Public servants, Self-reported oral conditions.

Introduction

The mouth as a major doorway to the body is a very important part of the body because whenever the health of the mouth is affected, the general health of the body may also be

affected. Also mouth health is an essential part of our general health as the mouth is gateway to the body, oral health has become increasingly important due to its aesthetic and socialworth. Oral health as defined by the World Health Organization (2012) is a state of being free from mouth and facial pain, oral and throat cancer, oral infection and sores, periodontal (gum) disease, tooth decay, tooth loss and other disorders that limit an individual's capacity in biting, chewing, smiling, speaking and psychosocial wellbeing. The restriction of biting and chewing means that the individual will not be able to eat foods rich in nutrients necessary for the body's growth. Man, as a social organism can interact freely with others, but with oral disorders affecting the individual's physical and psychosocial well-being, the ability to smile, speak and sometimes love can be significantly hindered.

Health care seeking behaviour (HCSB) is a decision or action taken by an individual to achieve, maintain, or restore good health and to avoid disease. Choices are made regarding all available health care options such as going to modern or traditional, a public or private health care facility, self-medication, and using remedies at home or without using existing health care services (Chauhan et al., 2015). Utilization of healthcare services is the expected or ideal endpoint of healthcare -seeking behaviour at which the ill person goes to utilize healthcare services provided usually by the formal healthcare system. It can therefore be said that healthcare- seeking behaviour is connected with the use of health services for any health problem. Oral Healthcare-seeking behaviour can be described as activity undertaken by person that seemingly suffers oral ill-health condition and embarks on seeking appropriate solutions to the problem. The desired Healthcare-Seeking Behaviour is taking action against illness by seeking help from qualified personnel in accredited healthcare facilities. Inappropriate HCSB has been connected to more terrible health results, increased mortality and morbidity, finally worse health statistics (Mwase, 2015). Ogbebor and Azodo (2016) submitted that beliefs which influence healthcare-seeking behaviour include perceptions on causes of diseases which is primarily determined by methods to treatment choices.

Self-reported oral ill-health is an illness or condition identified by a person which is often based on self-reported physical symptoms. Oral ill-health are conditions that are presented in a person's mouth which makes the victim less capable of the use of the mouth and related accessory organs optimally, this reported condition ranges from; halitosis, dental caries, gingivitis, periodontitis, pericoronitis, noma, tonsillitis/ovulitis, pulpitis dento-alveolar abscess, tooth fracture, mandibular fracture, cellulitis, all these have led many to resolve in self-medication practice. Evidence from the available literature suggests that many who practice self-medication derive their knowledge from proprietary drug dealers, neighbours, relatives, and print and electronic media. (Shah et al., 2011). In developing countries like Nigeria, self-care for oral condition is disheartening, especially due to the poor availability of medical/dental services and inadequate control of pharmaceuticals by the relevant government agencies.

Oral health education is a process of providing oral health information and encouragement to utilize the information for wise health decisions in daily living. Health education helps individual to develop a positive oral health attitudes and practices for dental hygiene, and provides people with reliable information about their oral health and helps

them maintain proper oral hygiene. Oral health education is aspect of oral health promotion which help in equipping individuals with the required knowledge to improve oral health and recognize healthy choices for healthy lifestyle. Therefore, Olusile (2010) submitted that oral health education offers complete knowledge on how to take care of your oral health. Oral health education enables persons to avoid mouth disorders, help to diagnosis and care for mouth diseases. Shinetal (2014) found that majority that suffer from poor oral hygiene are unaware of their condition, which adversely affects food chewing, digestion and quality of life. They further reported that oral health of a person depends on his attitudes and behaviours, this may be as a result of reflection on family beliefs, cultural perceptions, experiences and other living conditions. Because oral health is vital part of general health, therefore, oral health knowledge is very important for healthy oral practices (Carneiro, et al., 2011). Carneiroet al. (2011) explained further the bond between improved knowledge (oral health education) and good oral health, because those who have understanding of oral health knowledge most likely have a sense of individual control over his oral health, and his is likely to accept self-care practices and promptly report oral ill-health conditions to the appropriate therapist. Oral health knowledge is considered important for the development of healthy behaviours and it has been documented that there is a link between better oral health and improved knowledge. (Haque et al. 2016).Therefore, this study assessed impact of dental health education on oral health seeking behaviour and self-reported oral ill-health conditions among public servants in Ogun State.

Statement of Problem

Oral health care seeking behaviour and Self-Reported oral ill-health conditions has been major public health issues worldwide with enormous consequences. According to Global Burden of Disease study 2016 by the World Health Organization, it was estimated that 3.58 billion people worldwide suffer one or more dental diseases. In Nigeria, Self-reported of oral ill-health condition to dental care facilities are sometimes undertaken only for symptomatic treatment of acute conditions. Consequently, oral health cares that are aimed at curative, preventive, promotive and rehabilitative have been observed to be neglected. In Ogun State, report has it that only 2,950 people sought dental health care between January to December 2018. Also, it was reported that 98% of oral ill-Health cases reported were rated as either severe or acute in nature and most of the patients were reported to default in their subsequent follow-up care appointment. This indicates that dental health issues are poorly reported which calls for concern among practitioners and researchers in the field of health. Based on the figure above, it shows that oral health care seeking behaviour and Self-reported oral ill-health conditions by the people of Ogun State with an estimated population of 5,270,000 is rather very poor and the reasons for this scenario might not be far from: lack of knowledge on the importance of early diagnosis of oral ill-health conditions, fear-related conditions, low self- esteem, perceived high cost of dental treatment, inaccessibility to dental care services, self- medication, over dependence on herbal medicine, and homemade remedies, which eventually lead to poor health care seeking behaviour and poor reporting system. Hence, this study is assessing the impact of oral health education on oral health care seeking behaviour and self-reported ill-health conditions.

Hypotheses

The following hypotheses guided the study:

1. There will be no significant main effects of treatment on oral health care seeking behaviour and self- reported oral ill-health conditions of public servants in Ogun State.
2. There will be no significant effects of gender on oral health care seeking behaviour and self- reported oral ill-health conditions of public servants in Ogun State.
3. There will be no significant effects of educational status on oral health care seeking behaviour and self- reported oral ill-health conditions of public servants in Ogun State.

Methodology

This study used pretest- posttest control quasi-experimental design. Factorial design used is 2x2x2 matrix, this explains the two levels of treatment (experimental and control), the two levels of gender (male and female) and the two levels of educational status (Basic and higher) used as independent and moderator variables in this study. This study used public servants (Public Secondary School Teachers and Local Government Staff which are far away from each other for the avoidance of contamination) in Ogun State as the population of study

Sample size used for this study was one hundred and sixty participants (160), who were divided into experimental (80) and control (80) groups. The samples were selected using the multi-stage sampling procedure. in the first instance, purposive sampling techniques was used to select Ogun East Senatorial District from the three existing senatorial districts of the state since it can favourably represent the state as an homogeneous district having all the necessary characteristic variables of culture, language, age, gender and religion amongst the public servants and it has the highest number of Local Government Areas in the State (9). Secondly,two (2) secondary schools and two Local Government Area were randomly selected from the district for the study, also, the schools and Local Governments Areas selected were far away from each other for the purpose of avoiding contamination. Thirdly, simple random sampling techniques was used to select forty (40) teachers in each of the schools as well as forty (40) staff members in each of the Local Government Area offices sampled for the study. Simple random sampling techniques was used to select eighty (80) study participants because every member of staff of both school and Local Governments chosen had equal chances to participate in the study. Data were collected for period of 12 weeks using well-structured questionnaire to elicit responses from the participants on Modern Dental Services patronage, Self medication and Reported Oral ill-Health Conditions. In determining the internal consistency of the questionnaire, Cronbach alpha reliability technique was used. The reliability coefficient of the instruments were as follows: Modern Dental Service Patronage Inventory (MDSPI) with r = 0.817. Oral healthcare-seeking behaviour-Self-medication Inventory (SMI) with r = 0.741, Self-reported Oral ill-Health Conditions Inventory (TCOCI) with r= 0.732.

Results

Result of the analysis of the demographic characteristics of the participants are presented in the table below.

Table.1: Participants demographic data

S/N	Categories	Frequency (f)	Percentages(%)
1	**Age**		
	20-30 yrs	08	10%
	31-40 yrs	20	25%
	41yrs and above	52	65%
	TOTAL	**80**	**100**
2	**Marital Status**		
	Single	06	7.5%
	Married	74	92%
	TOTAL	**80**	**100**
3	**Gender**		
	Male	33	42%
	Female	47	58%
	TOTAL	**80**	**100**
4	**Public Servants**		
	Teachers	40	50%
	Local Government staff.	40	50%
	TOTAL	**80**	**100**

Table 4.1.above revealed that majority of the participants (65%) were 41 years above followed by those who were between 31 and 40 years (25%) while the remaining (10%) were within 20 -30 years in age. Also, marital status of the participants reviewed that (7.5%) were single and (92%) were married. The study also shows that majority of participants were female (58%) while (42%) were male. Lastly, (50%) of the participants were Local Government staff and the remaining (50%) were teachers.

Ho1: There is no significant main effect of treatment on oral health care seeking behaviour and self-reported oral ill-health conditions of public servants in Ogun State.

Table.2: **Main effect of treatment on oral health care seeking behaviour and self-reported oral ill-health conditions of public servants in Ogun State**

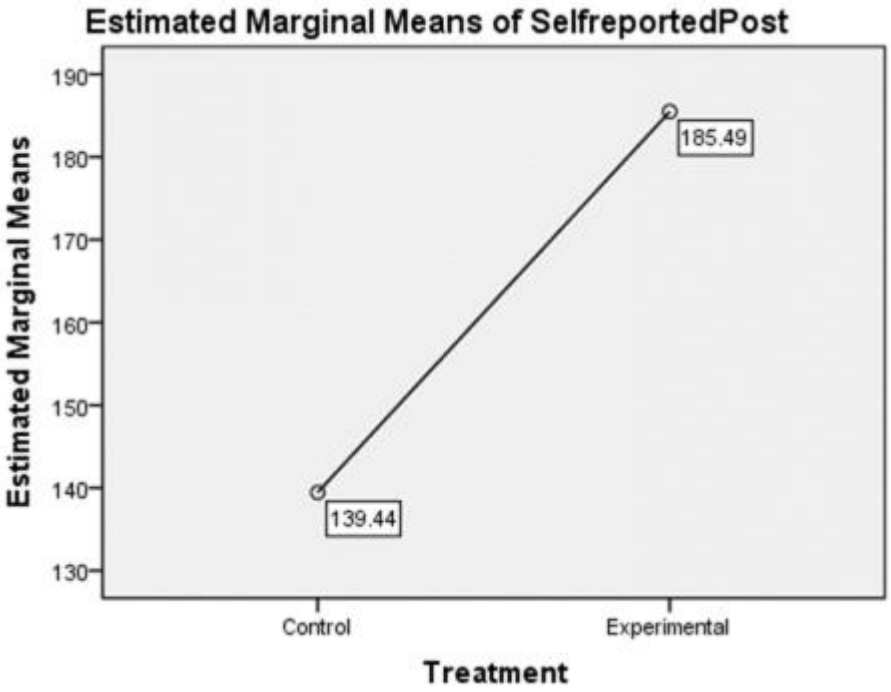
Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Treatment	Pillai's Trace	.368	42.762[b]	2.000	147.000	.000	.368
	Wilks' Lambda	.632	42.762[b]	2.000	147.000	.000	.368
	Hotelling's Trace	.582	42.762[b]	2.000	147.000	.000	.368
	Roy's Largest Root	.582	42.762[b]	2.000	147.000	.000	.368

Table.2 shows the four significant tests and they are all significant at 0.05, (P<0.05). Since the hypothesis df is greater than 1, Pillai's trace is not powerful to determine the effect of gender on the dependent variables and therefore other three tests are considered. Since the three tests are significant, it follows that there is significant main effect of treatment on oral health care seeking behaviour and self-reported oral ill-health conditions of public servants in Ogun State. Since the Roy's Largest Root is the largest eigenvalue of the test matrix, the partial Eta Square (0.368) is considered which shows that the effect is a bit large. The table from Tests of Between-Subjects Effects below shows the dependent variable that is more affected by the treatment.

Table.3: **Tests of between-subjects effects of the treatment on oral health care seeking behaviour and self-reported oral ill-health conditions.**

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Treatment	Healthcare seeking	5619.392	1	5619.39	76.80	.000	.342
	Self- reported	8240.358	1	8240.358	13.78	.000	.085

Table 3 reveals that the treatment has significant effect on both oral health care seeking behaviour (F = 76.80) and self-reported oral ill-health conditions (F=13.78), P<0.05. The partial Eta square 0.342 for oral health care seeking behaviour and 0.085 for self-reported oral ill-health conditions indicates that the effect of treatment is more on oral health care seeking behaviour than self-reported oral ill-health conditions. The pairwise comparison tables below reveal the treatment with the best effect on each of the dependent variables.



The chart reveals that while the marginal means for experimental is 185.49, that of control is 139.44.

Ho 2: There is no significant effect of gender on oral health care seeking behaviour and self-reported oral ill-health conditions of public servants in Ogun State.

Table 5: **Effect of gender on oral health care seeking behaviour and self-reported oral ill-health conditions of public servants in Ogun State**

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Gender	Pillai's Trace	.001	.110[b]	2.000	147.000	.896	.001
	Wilks' Lambda	.999	.110[b]	2.000	147.000	.896	.001
	Hotelling's Trace	.001	.110[b]	2.000	147.000	.896	.001
	Roy's Largest Root	.001	.110[b]	2.000	147.000	.896	.001

Table 5 shows the four significant tests and they are all not significant at 0.05, (P>0.05). Since the hypothesis df is greater than 1, Pillai's trace is not powerful to determine the effect of gender on the dependent variables and therefore other three tests are considered. Since

the three tests are not significant, it follows that there is no significant main effect of gender on oral health care seeking behaviour and self-reported oral ill-health conditions of public servants in Ogun State. Since the Roy's Largest Root is the largest value of the test matrix, the partial Eta Square (0.001) is considered which shows that the effect is a very small.

Table 6: Tests of Between-Subjects Effects of gender on oral health care seeking behaviour and self-reported oral ill-health conditions

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Gender	Healthcare Post	5.335	1	5.335	.073	.788	.000
	Self reported Post	98.221	1	98.221	.164	.686	.001

Table 6 reveals that gender has no significant effect on both oral health care seeking behaviour (F = 0.073) and self-reported oral ill-health conditions (F=0.164), P>0.05. The partial Eta square 0.000 for oral health care seeking behaviour and 0.001 for self-reported oral ill-health conditions indicates that the effect of gender is more on self-reported oral ill-health conditions than oral health care seeking behaviour. The charts below reveal the gender with the best effect on each of the dependent variables.

Ho 3: There is no significant effect of educational status on oral health care seeking behaviour and self-reported oral ill-health conditions of public servants in Ogun State.

Table 7: **Effect of educational status on oral health care seeking behaviour and self-reported oral ill-health conditions of public servants in Ogun State**

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
EDUSTATUS	Pillai's Trace	.004	.307[b]	2.000	147.000	.736	.004
	Wilks' Lambda	.996	.307[b]	2.000	147.000	.736	.004
	Hotelling's Trace	.004	.307[b]	2.000	147.000	.736	.004
	Roy's Largest Root	.004	.307[b]	2.000	147.000	.736	.004

Table 7 shows the four significant tests and they are all not significant at 0.05, (P>0.05). Since the hypothesis df is greater than 1, Pillai's trace is not powerful to determine the effect of educational status on the dependent variables and therefore other three tests are

considered. Since the three tests are significant, it follows that there is no significant main effect of educational status on oral health care seeking behaviour and self-reported oral ill-health conditions of public servants in Ogun State. Since the Roy's Largest Root is the largest eigenvalue of the test matrix, the partial Eta Square (0.004) is considered which shows that the effect is very small. The table from Tests of Between-Subjects Effects below shows the dependent variable that is more affected by educational status.

Table 8: **Tests of Between-Subjects Effects of educational status on oral health care seeking behaviour and self-reported oral ill-health conditions**

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
EDUSTATS	Healthcare seeking Post	23.028	1	23.028	.315	.576	.0021
	Self-reported Post	153.760	1	153.760	.257	.613	.0017

Table 7 reveals that educational status has no significant effect on both oral health care seeking behaviour (F = 0.073) and self-reported oral ill-health conditions (F=0.315), P>0.05. The partial Eta square 0.0021 for oral health care seeking behaviour and 0.0017 for self-reported oral ill-health conditions indicates that the effect of educational status is more on oral health care seeking behaviour than self-reported oral ill-health conditions. The charts below reveal the educational status with the best effect on each of the dependent variables.

Discussions

The finding of Ho_1 reveals that there is agreement with the alternative hypothesis which stated there is significant main effect of treatment on oral healthcare-seeking behaviour and reported oral ill-health conditions. Therefore, the null hypothesis is not accepted because the outcome revealed that the treatment has significant effect on the participants based on the six weeks treatment given to them. This confirmed that intervention made the participants to have a change of behaviour in seeking oral health after twelve weeks of intervention. This study is in line with Nakre and Harikiran (2013) conclusion that oral health education is better when it comes to the improvement of attitude, knowledge and practice related oral health and biofilm decreasing, bleeding on probing of gingivae, tooth decay reduction and improving the gingival health, including oral care seeking. This review indicated that oral health education is better in the improvement of target populace knowledge and oral health-related practices when other key stakeholders are involved. Involving key stakeholders such as teachers and parents in school children, dental health education will give a bigger difference in the improvement of dental health of children. The outcome of this study also is in conformity with a study conducted on oral health education intervention in Igboora, Oyo State, Nigeria by Lawal (2013), which concluded that participants in the intervention group had a better dental care seeking behaviour than the

control group and were less likely to mention that they did not know where a dental centre was located could be reason for not visited dentist. Knowledge about location and availability of a dental centre by the intervention group came from the oral health education programme conducted for this group thus sporting the increased level of awareness that comes with education. Reporting of oral health is based on the suffering experienced by the person especially those conditions with severe pain and discomfort. The need to appreciate the implications of few non-invasive oral health issues is very important because some of these symptoms may lead to severe systemic effects as complications (Igbokoyi, 2023).

Finding showed that gender has no significant effect on both oral health care seeking behaviour and self-reported oral ill-health conditions. This study result disagreed with Uguru, et al. (2016) whose report was that there is influence of gender on oral healthcare-seeking, whereby females visit to dental centre for treatment are more than that of males. Based on the analysis of their study it shows that females developed more interest in visiting dental centre compare to males. Because women are natural carers, as such, they tend to seek care for all family members. Due to their frequent visits of female to health care facilities, they are often conscious of their oral health than male and gives more support to oral hygiene behaviours for tooth decay treatment. finding of this study was inconsistent with Uguru et al. (2021), who observed the effect of gender on dental care seeking, with female reporting to the dental clinic for treatment more often than men, the outcome of this study is ad-variance with the submission of Abbas Ali et al. (2020) who found that geographical location, educational level, traditional oral practices and gender were significantly related with patients' dental seeking behaviour.

Conclusion

From result of this study, it was concluded that (DCSEAT) has significant effect on oral healthcare-seeking behaviour and self-reported oral conditions of public servants in Ogun State. This means that the intervention has caused a significant change in the behaviour of public servants towards improving their oral health attention. Also, this study revealed that moderating variables of gender and educational status have no significant effect on oral healthcare-seeking and self-reported oral conditions of the public servants. This means that oral healthcare-seeking has nothing to do with whether you are a male or female, that you have basic or high educational status. Hence, more still needed to be done on Oral Health-seeking Behaviour by dental health practitioners through the use of DCSEAT so that people's behaviour towards oral care seeking could be improved. It is therefore recommended that:

1. Dental health education programme (DCSEAT) should be delivered to workers to improve their Dental health-seeking behaviour and this can be achieved through the action of Local Government health educators who can pick and use the package in delivering lectures and adopting interventions that will increase health seeking behaviour of the citizenry.
2. Dental health education unit should be created in the Ministry of Health and other levels of our healthcare. When this unit is created by the authority in charge, it will

help dental practitioners to use in propagating the gospel of oral health to people in all nook and crannies

3. Oral health personnel should be equipped with logistic and financial support by employers to educate public servants and community members on the effects of self-medication and prompt reporting of oral conditions to the appropriate personnel.
4. Dental visits frequency and allocation of oral health resources are not satisfactory amongst public servants. Therefore, researcher suggest that there is a need to improve quality oral health awareness through oral health education and promotion, and expansion of health insurance coverage for dental care, including preventive dentistry should be put in place.
5. It is recommended to conduct dental outreach with mobile dental clinics, oral health education and promotion in rural areas so as to spread awareness among the rural population.

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