Empirical Survey of Oral Health Information Exposure to Obafemi Awolowo University Students

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Abstract

The aim of this paper is to determine the nature and degree of oral health-related information the students were exposed to in the last one year. A multistage stratified random sampling technique was used to recruit 212 volunteers from the students' residential hostels of Obafemi Awolowo University. Information retrieved includes; "Exposure to oral health information in the last one year", "Sources of Oral health related

information", "Perceived usefulness of the oral health information received" and "Oral health risk awareness". 212 participants; 85 females, 127 males were analyzed. The result shows that the mean value of the degree of oral health information received by the participants within a year was 2.4 (48%). Information about tooth brushing had the highest score with inadequate information about tooth decay and gum diseases. Oral health information received showed no gender variation. Television shows had the highest score. Information received from medical doctors, dentists and health talks were perceived to be most useful. Participants overall oral health risks awareness was 74%. It was discovered that oral health information received within a year was slightly low and mostly through the mass media. Contrarily, oral health risks awareness was above average.

Introduction

Information was said to denote factual data or advice or opinion, a physical object, such as a book or journal, or the channel through which a message is conveyed, for example, oral or written communication (Rohde, 1986). Mchombu (2001), in an article on how information affects development points out that "every society requires a basic minimum stock of usable information to survive" and notes that the need for information has been called a "basic human need".

According to Kaniki (1989), information is "potentially useful in decision making, question answering and problem solving." Therefore, accessing and putting information to use can help improve people's lives at a physical, economic, psychological and social level (Kaniki 2001).

The first step to every health choice is information. Improvements in our health depend on our taking control over, and responsibility for health as an important component of our everyday lives. This active participation requires full and continuing access to health information.

Health information has been defined as information about our bodies, their workings in health and illness, and the services available to us in treatment and care, support and co-operation (Gann, 1986). It has also been described to include those facts, materials or news communicated to people, which help them in the attainment of complete physical, mental and social-well being (Mabawonku, 1998).

Presently, dentistry and oral health issues are not receiving priority attention in Nigeria. Research has shown an increase in the prevalence of some preventable conditions such as dental caries, periodontal diseases, noma (a gangrenous disease leading to tissue destruction of the face, especially the mouth and cheek as a result of compromised immune function), oral cancers, and oral manifestations of HIV infection, among others. (The Punch, 2011)

There is generally low awareness and inadequate access to oral health care. (Olusile 2010) When there is low oral health awareness, there is a direct effect on the health seeking behaviour of the individual and population. People are not well informed about steps to take both in preventing as well as in the treatment of these diseases. Subsequent underutilization of oral health facilities and late presentation at the clinic leads to resultant complications.

To address the gap occasioned by low oral health awareness in Nigeria, oral education has at various times been suggested (Ibiyemi, 2009; Olusile 2010) There are three main levels of oral health education (Ibiyemi, 2009): (a) Individual/Family Oral Health Education: consulting room, dental oral health education unitand the home; (b) Group Oral Health Education: lectures, group discussion, panel discussion, workshop, symposium, sociodrama/roleplaying, demonstration and simulation exercise; (c) Oral Health Education for the General Public: in this, the mass media is used; television, radio, the Internet, newspapers, traditional or folk media, films, posters, billboards and signs. Others are Mobile Dental Health Exhibition, Dental Health Museums and Exhibition and Dental Clinic visit. Effective communication is seldom achieved through the use of one method alone; therefore attempt is usually made to combine a variety of methods to accomplish the educational purpose. Health education uses a variety of methods to help people understand their own situations and choose actions that will improve their health.

Materials and methods

The population for the study was made up of two hundred and twelve (212) voluntary students of Obafemi Awolowo University, Ile-Ife. The Obafemi Awolowo University is a comprehensive public institution established in 1962. The University is situated on a vast expanse of land totaling 11,861 hectares in Ile-Ife, Osun State, southwest of Nigeria. The University comprises the central campus, the student residential area, the staff quarters

and a Teaching and Research Farm. The central campus comprises the academic, administrative units and service centers. The student residential area is made up of 10 undergraduate hostels and a postgraduate hall of residence. There also exist on the university's campus a health services center and the dental hospital unit of the Obafemi Awolowo University Teaching Hospital Complex.

The scope of this work covers the undergraduate students excluding the first year students. This is because the first year students were just resuming as new students at the time of this research. A multistage stratified sampling technique was used to recruit the volunteers from the residential hostels. Firstly, male and female hostels (excluding first year hostels) with similar student distributions were identified as two research sites. A systematic random sampling method was used to select the hostel rooms from which all the bonafide occupants were recruited: starting with the first room, every forth room was selected.

A structured questionnaire was employed for the data collection. The questionnaire has five sections with tabulated variables:

Firstly, the volunteers were asked to provide information that includes (i) Sex (ii) Age (iii) Faculty and (iv), Area of specialization.

In section A: Exposure to oral health information was assessed by asking "How much of information about these oral health-related conditions have you received in the last one year". Their responses to seven (7) listed conditions ranged from "Very much" to "None at all"

In section B, the sources of Oral health related information was assessed. They were asked to assess and rate all the listed sources of oral health information as "Excellent" to "Poor" and "None at all".

Perceived usefulness of the oral health information received was assessed in section C. Response ratings include: (I) Very useful (ii) Useful (iii) Fairly useful (iv) Poorly useful (v) Not useful.

Section D assessed the oral health risk awareness by using eight oral health statements, for example; "Use of Sugar and sugary products can cause tooth decay" The volunteers were to rate each statement as (i) Correct (ii) Incorrect and (iii) Don't know.

The questionnaire form was face validated. To determine the validity of the content of the instrument, it was presented to a senior researcher who is the second author of the work. Based on his assessment and recommendations, the researcher made modifications to enhance the validity of the instrument. Reliability was ensured by presenting the instrument to respondents who did not participate in the research. The result of their responses was further used to modify the questionnaire. The questionnaire forms were completed anonymously and retrieved immediately.

After collecting the data, it was analyzed based on the information provided by the respondents. To analyze the data, SPSS Software Version 16.0 was employed to run some of the statistics; frequencies and means. The ratings for the level of information received (section A), sources of information (section B) and the perceived usefulness of oral health information (section C) were assigned weight values of 5, 4, 3, 2 and 1 while sections D was assigned weight values of 3, 2 and 1.

The total weight value (TWV) for each variable ie information received on tooth decay (section A.1.) was obtained through the summation of the product of the frequency of responses for each rating of the condition and the respective weight value. This is also expressed mathematically below:-

$$\text{TWV} = \sum_{i=1}^{5} Pi.Wi$$ (where TWV is the total weight value, Pi is the frequency

of respondents that rated the variable i; and Wi the corresponding weight assigned to the rating i.

The score for each variable was arrived at by dividing the TWV for each item by the total number of respondents (212). The values obtained ranged from 1 to 5 for sections A, B, C; and 1 to 3 for sections D. The closer the value to 5 for sections A, B, C, and 3 for sections D, the higher the degree of variable being measured.

Variable score (VS) = $\dfrac{TWV}{N}$ where N=number of study population (212).

The mean value for all the variables in each section $\overline{MVS}$ was calculated by the summation of the values generated for each variable divided by the number of variables assessed in the section.

Results and discussion

A total of 212 university students completed the questionnaires and were analyzed; there were 85 females (40.1%) and 127 males (59.9%). The ages of the participants ranged from 16 to 30 years (mean; 21.43, SD; 3.1). Ninety one of them were between 15 and 20 years, 86 were between 21 to 25 years and 18 were between 26 to 30 years. 27 (12.7%) were in year II, 54 (25.5%) in year III, 59 (27.8%) in year IV, 54 (25.5%) in year V and 11 (5.2%) in year VI. Thirty participants (14.2%) specialized in Sciences, 21 (9.9%) in Humanities; 91(42.9%) in Technology; 40 in Social sciences and 21 in Health sciences/Pharmacy.

The result shows that the mean value of the degree of oral health information received by the participants within a year was 2.4 which can also be expressed as 48% (Table 1). It follows that oral health information received was slightly low. This might not be unconnected with the fact that the health center, which is the first port of call for the students lack dental health facilities and staff. Alternatively, the teaching hospital dental center in the university which would have been a potent source of oral health information may not have been adequately utilized by the students.

Table 1: Determination of the nature and the degree of oral health information received

S/N	Oral health related conditions	Very Much (5)	Much (4)	Fair (3)	Poor (2)	None at all (1)	Total	Information Received (IR)	(IR- $\overline{IR}$)
1	Tooth decay	60	136	168	36	87	487	2.30	-0.1
2	Gum diseases	20	80	159	54	100	413	1.95	-0.45
3	Toothache	100	156	153	92	72	573	2.70	0.3
4	Tooth sensitivity	75	144	150	58	76	503	2.37	-0.03
5	Tooth brushing	330	208	96	24	44	702	3.31	0.91
6	Fluoride toothpaste	130	176	126	40	68	540	2.55	0.15
7	Oral cancer	45	40	75	58	132	350	1.65	-0.75
	Total							16.83	
	Mean							2.40	

Calculation: Mean of information received $\overline{IR}$ = 16.83/7 = 2.4.
Oral health information received expressed in percentage 2.4/5 = 48%

Information about tooth brushing had the highest score followed by toothache and fluoride toothpaste respectively. Tooth decay, gum diseases, tooth sensitivity and oral cancer were below the calculated mean value for this section. Of note is that the students admitted to have received inadequate information about tooth decay and gum diseases, this is quite significant because these are the two major dental diseases and often the lead cause of dental pain. Substantial information received on tooth-brushing and toothpaste might probably be explained by the unrelenting media advertisement of the homecare products manufacturers and the major dentifrice manufacturers. They are ardent product advertisers and sponsors oral health care programmes and events.

The results presented in Table 2 shows that the extent of oral health information received was almost equal among the participants; mean value of 2.45 and 2.44 for female and male respectively. A difference of 0.01 was not statistically significant different. (p = 0.9). This shows that the students were exposed equally to oral health information in the university campus.

This is not unexpected because they were exposed to the same academic and social environment and the diverse socio-cultural factors which may have played a role inside the town has no influence whatsoever in the university campus. The degree of oral health information received had the highest mean value among the 16 to 20 years of age and lowest among the students that were more than 25 years of age. The differences between the groups were not statistically significant.

This signifies that the age group of 16 to 20 years had the greatest exposure to oral health information. This finding can be explained by the fact that this age group is that of the adolescence stage. It is the developmental stage when youths move from parental control to establishing their own separate relationships with peers and other sources of health information in order to make their own choices. (Klein and Wilson, 2002)

Table 2: Determination of the extent and degree of oral health information received according to gender

S/N	Oral health related conditions	Female	Male
1	Tooth decay	2.45	2.29
2	Gum diseases	2.05	2.01
3	Toothache	2.6	2.49
4	Tooth sensitivity	2.43	2.44
5	Tooth brushing	3.49	3.35
6	Fluoride toothpaste	2.5	2.81
7	Oral cancer	1.64	1.71
	Mean	**2.45 (SD=0.57)**	**2.44 (SD=0.53**

P<0.05

The results for sources of oral health information presented in Table 3 show that television shows had the highest score followed by medical doctors, newspapers/magazines/journals, and radio programmes respectively. Although it was in the US, Schwitzer (2004) reported that many people get most of their health news and information from television. Other sources such as dentists, internet browsing, chemist/pharmacist, posters, government agencies and health talks/seminars were all below the calculated mean for the group. This trend was observed also in the gender distribution for various oral health information sources. These findings were in contrast to western studies, indicating that dentists are the main source of oral health information. (O'Neil, 1984) This result points to underutilization of dental personnel in and around the university campus or alternatively, inadequate oral health information emanating from them. Rather, the mass media seems to be the primary source of oral health information among the students. These findings are encouraging in terms of continuing the promotion of oral health education through television, radio, newspapers, magazines and journals.

The finding, that dental health workers are infrequent sources of oral health information relative to their medical counterpart and mass media might be explained by the fact that students have less contact with the former as a source of general health information vis-à-vis oral health information.

Furthermore, the dentists may not have taken students' consultation as an opportunity to provide not only treatment but oral health related counselling.

Table 3: Sources of oral health information received by the students

S/N	Oral health related conditions	Very Much (5)	Much (4)	Fair (3)	Poor (2)	None at all (1)	Total	IS	(IS- $\overline{IS}$)
1	Medical Doctors/Other Hospital workers	225	244	123	16	51	659	3.11	0.26
2	Dentists/ Other Dental workers	120	168	168	34	66	556	2.62	-0.23
3	Television shows	230	284	144	24	27	709	3.34	0.49
4	Internet browsing	190	172	117	48	58	585	2.76	-0.09
5	Radio programs	170	248	138	40	41	647	3.0	0.15
6	Newspapers/Magazines	140	288	153	36	34	651	3.07	0.22
7	Chemists/Pharmacists	85	176	129	70	63	523	2.47	-0.38
8	Posters displayed in public places	80	160	168	70	54	532	2.51	-0.34
9	Government /National agencies ie NAFDAC	120	176	150	58	56	560	2.64	-0.21
10	Health talks/seminars	155	268	120	40	47	630	2.97	0.12
	Total							28.49	

$$\overline{IS} = 28.49/10 = 2.85$$

Although television programmes had the highest mean value as a source of oral health information, it was only among the 16-25 years of age group. The students that were more than 25 years of age indicated radio programmes as their major source of oral health information. It has been explained that as a child moves through the teen years, his or her choice of media may change. Young teens watch more TV than older children. As a teen's TV watching starts to lessen, the use of music (radio) increases. (Mounts, ND)

According to Psychologist Lason (1994), one of the reasons why television viewing declines and listening to music increases, is that television viewing is far less satisfying to old adolescents as far as their developmental needs are concerned.

Information received from medical doctors, dentists and health talks were perceived to be most useful (exceeding the mean score). Information received from internet browsing, radio programmes, newspapers/magazines, chemists/pharmacist, posters and government agencies were all below the mean value as presented in Table 4. Oral health Information from posters displayed in public places was the lowest. The perceived usefulness of information from medical and dental personnel was not surprising and can simply be explained by the possibility that direct contacts might have been made with these personnel compare with internet browsing, radio, newspapers and posters. Direct contact allows a two-way interaction and a question and answer session.

Table 4: The perceived usefulness of oral health information received from the different sources

S/N	Oral health related conditions	Very Much (5)	Much (4)	Fair (3)	Poor (2)	None at all (1)	Total	Perceived Usefulness (PU)	(PU- $\overline{PU}$)
1	Medical Doctors/Other Hospital workers	520	268	54	12	7	861	4.06	0.44
2	Dentists/ Other Dental workers	445	300	66	10	8	829	3.91	0.29
3	Television shows	335	376	87	10	6	814	3.84	0.22
4	Internet browsing	245	304	153	14	14	730	3.44	-0.18
5	Radio programs	220	376	117	22	10	745	3.51	-0.11
6	Newspapers/Magazines	230	376	117	20	8	751	3.54	-0.08
7	Chemists/Pharmacists	220	316	141	28	14	719	3.39	-0.23
8	Posters displayed in public places	215	236	177	46	12	686	3.24	-0.36
9	Government /National agencies i.e. NAFDAC	295	296	93	32	12	728	3.43	-0.19
10	Health talks/seminars	425	280	75	20	14	814	3.84	0.22
Total								36.2	
Mean								3.62	

$$\overline{IU} = 36.2/10 = 3.62$$

Finding from the study shows that the students' overall oral health risks awareness was above average (74%) as seen in Table 5. They were well informed that use of sugar and sugary products can cause tooth decay; bacteria in the mouth causes tooth decay; gum diseases occur when teeth are not brushed; and use of tobacco might contribute to development of oral cancer. This might not be unconnected with the students acknowledging (Ref. Table 1) that information was well received about toothache, tooth-bushing and fluoride toothpaste. Nevertheless, abound was the misinformation about the causes of gum disease. They knew that bacterial in the mouth causes gum disease, but a relatively low score was observed for plaque and calculus (which harbour the bacteria) as causes of gum disease. This misconception can be explained by the fact that information was not received majorly through dental personnel who may have likely offered detail information about the condition. Of note is that the students were not informed that acidic drinks causes tooth sensitivity which possibly might still be explained by inadequate information received about tooth sensitivity (Ref. Table 1).

Table 5: Determination of the degree of oral health risks awareness

S/N		Correct (3)	Incorrect (2)	Don't know (1)	Total	Risks Awareness (RA)	(RA-$\overline{RA}$)
1	Use of Sugar and sugary products can cause tooth decay	510	24	17	551	2.60	0.38
2	Bacteria in the mouth causes tooth decay	525	26	9	560	2.64	0.42
3	Tooth decay occur on susceptible teeth	306	52	69	427	2.01	-0.21
4	Gum diseases occur when teeth are not brushed	414	42	32	488	2.30	0.08
5	Plaque and Calculus cause gum disease	219	36	105	360	1.70	-0.52
6	Use of acidic drinks causes tooth sensitivity	324	36	71	431	2.03	-0.19
7	Use of tobacco might contribute to development of oral cancer	432	18	45	495	2.33	0.11
8	Use of non-fluoride toothpastes accelerate tooth decay	363	28	63	454	2.14	-0.08
	Total					17.75	

$$\overline{RA} = 17.75/8 = 2.22 \qquad\qquad 2.22/3 = 0.74 = 74\%$$

Of note was the finding that the overall risks awareness of male students was more than females (Table 6); the difference was not statistically significant (p = 0.06). This is a significant finding because the result in Table 2 shows that oral health information received was comparable.

Table 6: Gender distribution of oral health risk awareness

s/n		Female	Male
1	Use of Sugar and sugary products can cause tooth decay	2.78	2.76
2	Bacteria in the mouth causes tooth decay	2.9	2.86
3	Tooth decay occur on susceptible teeth	2.13	2.19
4	Gum diseases occur when teeth are not brushed	2.3	2.55
5	Plaque and Calculus cause gum disease	1.72	1.91
6	Use of acidic drinks causes tooth sensitivity	2.13	2.23
7	Use of tobacco might contribute to development of oral cancer	2.51	2.52
8	Use of non-fluoride toothpastes accelerate tooth decay	2.34	2.26
	Mean	2.35 (SD=0.38)	2.41 (SD-0.32)

This is contrary to the report of Addy (1990) who suggested that females have better overall healthcare and oral hygiene awareness.

Harmonizing the observed associations is the fact that exposure to a particular information about oral health is related to the awareness of its health risks. Further intervention and regression studies need to confirm this.

Conclusion

Oral health information received within a year was slightly low and mostly through the mass media. Contrarily, oral health risks awareness was above average. The tendency that the oral health information received was especially beneficial for males illustrate the importance of taking gender into consideration in any evaluation.

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