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PATIENTS' ATTITUDES TO WEARING OF GLOVES BY DENTISTS IN NIGERIA

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**ABSTRACT**

**Objective:** To evaluate patient's attitudes to the use of gloves by dentists.

**Design:** This consisted of a four-item questionnaire administered to 445 consecutive patients attending our dental clinic.

**Setting:** Obafemi Awolowo University Teaching Hospitals' Complex, Ile-Ife, Nigeria.

**Subjects:** Four hundred and forty five patients above the age of fifteen years attending the dental clinic for the first time.

**Results:** Majority of the patients were in the 20-30 year age group and over 93% had formal education. Most of the respondents (88.8%) stated that glove wearing was essential and over 63% considered that glove wearing protected both the operator and the patient. Whilst about one-third of respondents would attend for treatment when gloves were not worn, 81.3% felt that gloves should be changed after each patient. There were statistically significant differences ( $p < 0.05$ ) in responses in relation to age-groups and educational attainment, however no sex differences ( $p > 0.05$ ) were reported.

**Conclusion:** This survey showed a high level of awareness by patients on the use of gloves by dentists. It also found that age-groups and levels of educational attainment influenced patients attitude to glove use.

**INTRODUCTION**

In recent years, there has been increasing emphasis on the importance of good infection control in dental practice(1-4). This issue has become more pertinent with the growing threat of infectious diseases such as hepatitis B (HBV) and Human Immunodeficiency Virus (HIV) worldwide (5,6). Reports indicate that these diseases have become major health problems in many developing countries including Nigeria(7,8).

Many authorities have issued comprehensive guidelines on infection control in dentistry(9-12). One important recommendation common to all these guidelines is the routine use of gloves by dental practitioners. Universal infection control procedures require that dentists must wear gloves for all procedures resulting in physical contact between the patient and the practitioner, to prevent disease transmission from the symptomatic as well as the asymptomatic disease carrier. Such practice serves a dual role; to protect the operators from infectious micro-organisms present in patients' oral cavities as well as protecting patients mainly by preventing possible spread of infectious micro-organisms from other patients via operators' hands.

An increasing number of dentists now routinely use gloves for clinical examination and treatment(13). In a study(14) conducted among dentists in the Lothian region of Scotland, the proportion of dentists who never used gloves fell from 56% in 1981 to one percent in 1991. In a more recent study, almost 97% of orthodontists said they always wear gloves, and none reported never wearing gloves(15).

While several studies have investigated dentists' compliance with recommended infection control procedures(16-20), studies on patients' awareness of glove use by dentists are still very limited(21,22). In Nigeria, very little attention has been focused on this subject. Therefore the purpose of this survey was to evaluate the level of awareness of Nigerians on the importance of glove wearing by dentists.

**MATERIALS AND METHODS**

A survey was made of patients attending the Dental Outpatient Clinic of the Obafemi Awolowo University Teaching Hospitals Complex (OAUTHC), Ile-Ife, Nigeria. A four-item questionnaire was designed to assess the patient's attitudes to the use of surgical gloves by Nigerian dentists. The questions asked were: Do you consider that dentists should wear gloves while treating patients?; Are gloves worn to protect the dentist or the patient? Would you be attended by a dentist who did not wear gloves? and; Do you consider that the dentist should change gloves between patients, or is washing the gloved hands sufficient?

Other information sought on the questionnaire were the age, sex and educational attainment of the patients. This questionnaire was based on one used in an earlier study of patients attending a dental hospital(22). The questionnaires were distributed to all the patients that attended the clinic for the first time during the study period. Each patient completed the questionnaire in the clinic and replies were anonymous to encourage unbiased responses.

Information collected was entered on a database for analysis. Chi-squared tests were employed to assess relationships between attitudes and socio-demographic variables. The critical level of

statistical significance was set at  $p < 0.05$ . Statistical calculations were done by using the Arcus Prostat DOS version 3 (Medical Computing, West Lancashire, UK) and the Epi Info version 6.04 software packages (23).

**RESULTS**

Four hundred and forty five consecutive patients were surveyed. There were 234 (52.6%) males and 211 (47.4%) females aged from 18 to 87 years with a mean age and standard deviation of 30.95 and 14.30 years respectively. Whilst 64% were in 20-30 year age group, over 93% had formal education. Majority (88.8%) of the respondents stated that glove wearing was essential (Table 1).

**Table 1**

*Patients' response on whether dentists should wear gloves while treating patients*

	Yes No (%)	No No (%)	Don't know* No (%)
<b>Sex:</b> Male	209 (52.9)	8 (40.0)	17 (56.7)
Female	186 (47.1)	12 (60.0)	13 (43.3)
Total	395 (100.0)	20 (100.0)	30 (100.0)
	$\chi^2=0.15, df=1, p>0.05$		
<b>Age group</b>			
<20	32 (8.1)	2 (10.0)	1 (3.3)
20-30	263 (66.6)	11 (55.0)	11 (36.7)
31-40	34 (8.6)	2 (10.0)	4 (13.3)
41-50	25 (6.3)	0 (0.0)	4 (13.3)
>50	41 (10.4)	5 (25.0)	10 (33.3)
Total	395 (100.0)	20 (100.0)	30 (100.0)
	$\chi^2=18.12, df=4, p>0.05$		
<b>Educational attainment</b>			
No formal education	21 (5.3)	1 (5.0)	7 (23.3)
Formal education	374 (94.7)	19 (95.0)	23 (76.7)
Total	395 (100.0)	20 (100.0)	30 (100.0)
	$\chi^2=8.32, df=1, p>0.05$		

\* For the purpose of analysis, the "Don't know" were combined with the "No" answers due to the small number of responses in the former category.

**Table 2**

*Patients' response on whether gloves are worn to protect dentist or patient*

	Dentist and patient No (%)	Dentist only No (%)	Patient only No (%)
<b>Sex:</b> Male	149 (52.5)	43 (58.1)	42 (48.3)
Female	135 (47.5)	31 (41.9)	45 (51.7)
Total	284 (100.0)	74 (100.0)	87 (100.0)
	$\chi^2=1.55, df=2, p>0.05$		
<b>Age group</b>			
<20	21 (7.4)	5 (6.8)	9 (10.3)
20-30	194 (68.3)	38 (51.4)	53 (60.9)
31-40	26 (9.2)	10 (13.5)	4 (4.6)
41-50	17 (6.0)	5 (6.8)	7 (8.0)
>50	26 (9.2)	16 (21.6)	14 (16.1)
Total	284 (100.0)	74 (100.0)	87 (100.0)
	$\chi^2=15.99, df=8, p>0.05$		
<b>Educational attainment</b>			
No formal education	7 (2.5)	10 (13.5)	12 (13.8)
Formal education	277 (97.5)	64 (86.5)	75 (86.2)
Total	284 (100.0)	74 (100.0)	87 (100.0)
	$\chi^2=21.16, df=2, p>0.05$		

The "Don't know" responses were excluded from the analysis due to the small number of samples.

Over sixty three per cent of the patients surveyed considered that the wearing of gloves protected both the operator and the patient. Only 19.6% and 16.6% believed they were meant to protect only the dentist and patient respectively (Table 2).

**Table 3**

*Patients' response on whether they would be attended by a dentist who does not wear gloves.*

	Yes No (%)	No No (%)	Don't know No (%)
<b>Sex</b>			
Male	85 (55.6)	148 (51.6)	1 (100.0)
Female	68 (44.4)	139 (48.4)	4 (80.0)
Total	153 (100.0)	287 (100.0)	5 (100.0)
	$\chi^2=0.64, df=1, p>0.05$		
<b>Age group</b>			
<20	11 (7.2)	24 (8.4)	0 (0.0)
20-30	85 (55.6)	199 (69.3)	1 (20.0)
31-40	20 (13.1)	20 (7.0)	0 (0.0)
41-50	5 (3.3)	3 (8.0)	1 (20.0)
>50	32 (21.0)	21 (7.3)	3 (60.0)
Total	153 (100.0)	287 (100.0)	5 (100.0)
	$\chi^2=26.05, df=4, p>0.05$		
<b>Educational attainment</b>			
No formal education	13 (8.3)	12 (4.2)	4 (80.0)
Formal education	140 (91.5)	275 (95.8)	1 (20.0)
Total	153 (100.0)	287 (100.0)	5 (100.0)
	$\chi^2=3.47, df=1, p>0.05$		

Whilst about one third of the patients would attend for treatment when gloves were not worn, the remaining two-thirds would not attend (Table 3).

**Table 4**

*Patients' response on whether a dentist should change gloves, or washing is adequate*

	Change gloves No (%)	Washing adequate No (%)	Decision by dentist No (%)
<b>Sex</b>			
Male	185 (51.1)	29 (59.2)	20 (58.8)
Female	177 (48.9)	20 (40.8)	14 (41.2)
Total	362 (100.0)	49 (100.0)	34 (100.0)
	$\chi^2=1.70, df=2, p>0.05$		
<b>Age group</b>			
<20	26 (7.2)	6 (12.2)	3 (8.8)
20-30	252 (69.6)	23 (46.9)	10 (29.4)
31-40	32 (8.8)	5 (10.2)	3 (8.8)
41-50	20 (5.5)	3 (6.1)	6 (17.6)
>50	32 (8.8)	12 (35.3)	12 (35.5)
Total	362 (100.0)	49 (100.0)	34 (100.0)
	$\chi^2=42.41, df=8, p>0.05$		
<b>Educational attainment</b>			
No formal education	11 (100.0)	7 (100.0)	11 (100.0)
Formal education	351 (100.0)	42 (100.0)	23 (100.0)
Total	362 (100.0)	49 (100.0)	34 (100.0)
	$\chi^2=69.53, df=2, p>0.05$		

The majority (81.3%) of the patients felt that gloves should be changed after each patient, eleven per cent believed that washing of gloved hands was adequate and only 7.6% would rather leave the decision to the dentist

(Table 4). Generally there were no statistically significant differences ( $p > 0.05$ ) in responses between male and female patients. However, significant differences in responses were found in different age groups and educational attainment (Tables 1-4).

## DISCUSSION

In the present study, majority of the respondents agreed that dentists should routinely wear gloves. This finding is in agreement with that of Yoder(21) where 87% of patients considered that dentists should routinely wear gloves. Similarly, Kearns and Burke(24) reflected a higher perception of glove wear (97%) amongst British patients attending orthodontic clinics. This is not surprising since the present study site is located in a university environment where majority of the respondents had formal education. In Nigeria, dental services are not readily available and accessible to the general population, as the dental centres are located mostly in urban and semi-urban centres. Furthermore, those who seek oral health care are usually of the higher educational and socio-economic ranking(25).

Although majority of the respondents support the routine use of gloves by dentists, some dentists may be reluctant to use gloves for certain clinical procedures as it is thought to compromise the required tactile sensitivity in certain patients(26). Furthermore, the risk of allergy to latex gloves has been of major significance in recent years(27,28). The extraordinary increase in glove use in dentistry within the past decade has created a potential occupational hazard in the form of adverse reactions to components found in these gloves, especially latex. The role of rubber gloves in the prevention of HIV infection has played a part in recognising this allergenic potential. Field and Fay(29) reviewed the irritant and allergic reactions which may be associated with latex products, particularly gloves and found that the prevalence of reported reactions to natural rubber latex products in both the general population and in dental personnel appears to parallel the rise in glove wearing by health professionals.

The present study showed that a greater percentage (34.4%) of patients would attend for treatment when gloves were not worn when compared with the report of Kearns and Burke(24) which reported a figure of fifteen per cent. This disparity may be due partly to the levels of public awareness of the importance of cross-infection control in the two communities. However, this figure conflicts with the fact that only 4.5% felt that gloves wearing was unnecessary.

The finding of this study which showed that majority (81.3%) felt that gloves should be changed after each patient closely matched the results of Burke *et al*(22) and Kearns and Burke(24) who reported 85.6% and 86.5% respectively.

In conclusion, our study has found that age-groups and levels of educational attainment influenced patients attitudes to glove use. One other factor responsible for the high level of public awareness to glove use amongst

Nigerians is the increased knowledge of the ravaging threat of infectious diseases such as HIV infection.

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