

Toothache-Associated Illness Behaviour among Adults in Ondo State

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ABSTRACT

Background: Illness behaviour is the actions or reactions of an ailing individual trying to define his state of health with a view of obtaining physical or emotional relief from the illness. Toothache is the major symptom of dental caries and periodontal diseases. Understanding behavioural tendencies of the society will help public health practitioner and policy maker to know appropriate interventions in minimizing its impact on quality of life.

Objective: To determine toothache-associated illness behaviour among adult population in Ondo State.

Methods: This was a descriptive cross-sectional study conducted to determine toothache-associated illness behaviour among adults population in Ondo State. A self-administered questionnaire was used to recruit 400 respondents by a simple random sampling technique. Data was analysed using Statistical Package for Social Science version 26 (SPSS). Descriptive statistics, Chi-square were used. p-value <0.05 was considered significant.

Results: The survey revealed the average age of respondents was 30.39±9.8, with majority of the respondents were in the age group of 21-30years. More males were surveyed than females and majority having tertiary education. Respondents surveyed generally have poor toothache related illness behaviour. The major predictors of their illness behaviour were the intensity of the toothache (p=0.023); the age (p=0.018) and the type of intervention (p=0.017).

Conclusion: This study highlighted the general poor illness behaviour in these communities, which was influenced by age, severity of toothache and socio-cultural belief. The necessity of timely intervention through community engagement by dental public health practitioners is paramount.

Keywords: Toothache, Illness behaviour, Adults, Ondo

INTRODUCTION

Toothache (Odontalgia), also called Dental pain is defined as pain in the teeth and the supporting structures, caused by dental diseases or referred pain to the teeth by non-dental diseases (Adekunle et al. 2019). It is the most prevalent acute experience in the orofacial region which frequently indicates the presence of oral illness like ulcers, tooth decay or periodontitis (Honkala et al. 2001).

Besides, toothache is one of the major reasons individuals seek dental care (Osuh et al., 2023) and the phobia of which may hinder people from seeking proper oral care (Aranha et al. 2020).

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Toothache is a sequel of dental caries causing suffering, illness, discomfort while eating, sleep disturbances and impaired social interaction. Subsequently leading to nutritional deficiency, sleep deprivation, impaired concentration and reduced ability to work which impacts negatively on the quality of life the patient (Azodo et al., 2013; Chukwuma et al., 2015; Paredes et al., 2021). Toothache significantly influences the rating of oral health as poor in self-reported oral health rating system (Pattussi et al. 2010). It has been proposed as a potential quality indicator reflecting the disparities in the oral health for a population. The intensity and severity of which trigger different forms of health seeking behaviours. Individuals experiencing toothache have been known to use a combination of self-care and formal strategies; the self-care strategies are in form of nonprescription medicine, home remedies and prayers before finally resorting to the dentist for ultimate treatment (Cohen et al., 2009). Kelkar et al., (2018) reported that an average of 92.4million working hours were lost annually in the United States of America to unplanned dental visits in the emergency room as a result of dental pain.

Illness behaviour is the way in which symptoms are perceived, evaluated and acted upon by a person who recognizes some pain, discomfort or other organic malfunction (Young, 2004; Siri et al., 2013). This may include dismissal symptoms, self-help strategies like visiting a chemist antibiotic abuse, use of herbal concoction and also visit to approve hospitals (Adekunle et al. 2019). Studies have shown that individual illness behaviour is predicated on factors like socioeconomic variables, sex, age, race and ethnicity; education, marital status, religion, type of illness, access to services, geographic location, family size, cultural factors and perceived quality of service (Adekunle et al. 2019; Uguru et al. 2023; Young, 2004).

This study aims to determine the factors influencing toothache illness behaviour of this urban population due to paucity of data in literature, and may further enlighten dental professionals as well as policy makers on appropriate and effective public health strategies to minimizing its impacts thus improving quality of life.

MATERIALS AND METHODS

This was a descriptive cross-sectional study was conducted to determine toothache-related illness behaviour of adult-population in Ondo State. The sample size was calculated using Taro Yemane formula, giving a total sample size 400 participants. All eligible adults that met the

inclusion criteria selected and participants were randomly recruited by balloting. Inclusion criteria included: All adults who were 18 years and above, living in Ondo and Akure cities and had experienced toothache at one time or the other. Participants whose age were below 18 years, living in other towns apart from Akure and Ondo towns or rural areas of Ondo state and had not had toothache experience were excluded. Ethical approval was sought and obtained from University Medical Science health research and ethical committee.

Study Instrument and Procedure

A self-administered questionnaire was used to generate requisite data from participants. The questionnaire was divided into 4 sections: section 1 assessed with the demographic information of the respondents; section 2 assessed the individual history of toothache; its frequency and intensity; section 3 assessed the interventions taken during toothache episodes and section 4 assessed the effectiveness of the above treatments.

Data Management

Data was entered into SPSS version 26 software. Frequency tables were generated for categorical variables. Means and standard deviations were computed for continuous variables. Chi-square was used to compare categorical variables and p-value < 0.05 was considered significant.

A score of one (1) point was awarded to each correct answer and zero (0) for every wrong answer giving a total obtainable score of 13 points adapted from a previous study (Castano et al., 2024). The points were converted to percentages and the median (60%) score of the total score of the group was collated. Each respondent's aggregate score was categorized as poor illness behaviour if it was below 60% of the median score of the group or good illness behaviour if it was median (60%) or more of the group. The median dichotomy into good and poor illness behaviour was adapted from previous studies (Folayan et al., 2014; Castano et al., 2024).

RESULTS

The socio-demographic analysis (Table 1) revealed that majority of respondents were males and in the 21-30years age group with the mean age 30.39±9.8years. Majority surveyed had their tertiary education. There is generally poor illness behaviour (80.5%) among the respondents (Figure 1). Females reported severe discomfort due to toothache than males and this was statistically significant (P=0.023) About two thirds (67.3%) of

the participants reported that tooth ache ever prevented you from eating well (Table 2) A total of 81.0% considered Consider toothache a serious condition that require the attention of dentist (Table 3) The significant toothache illness

behaviour predictor in this sampled surveyed were the intensity toothache experiences ($p=0.023$), the type of respective intervention ($p=0.017$) and the socio-demographic characteristics of respondents ($p=0.018$) (Table 4).

Table 1: Socio-demographic characteristics of participants

Variable	Frequency (n=400)	Percentage
Age group (Years)		
≥20	38	9.5
21-30	216	54.0
31-40	86	21.5
41-50	40	10.0
51-60	17	4.3
>60	3	0.8
Mean±SD	30.39±9.8	
Gender		
Male	213	53.3
Female	187	46.8
Education status		
Primary	39	9.8
Secondary	92	23.0
Tertiary	269	67.3

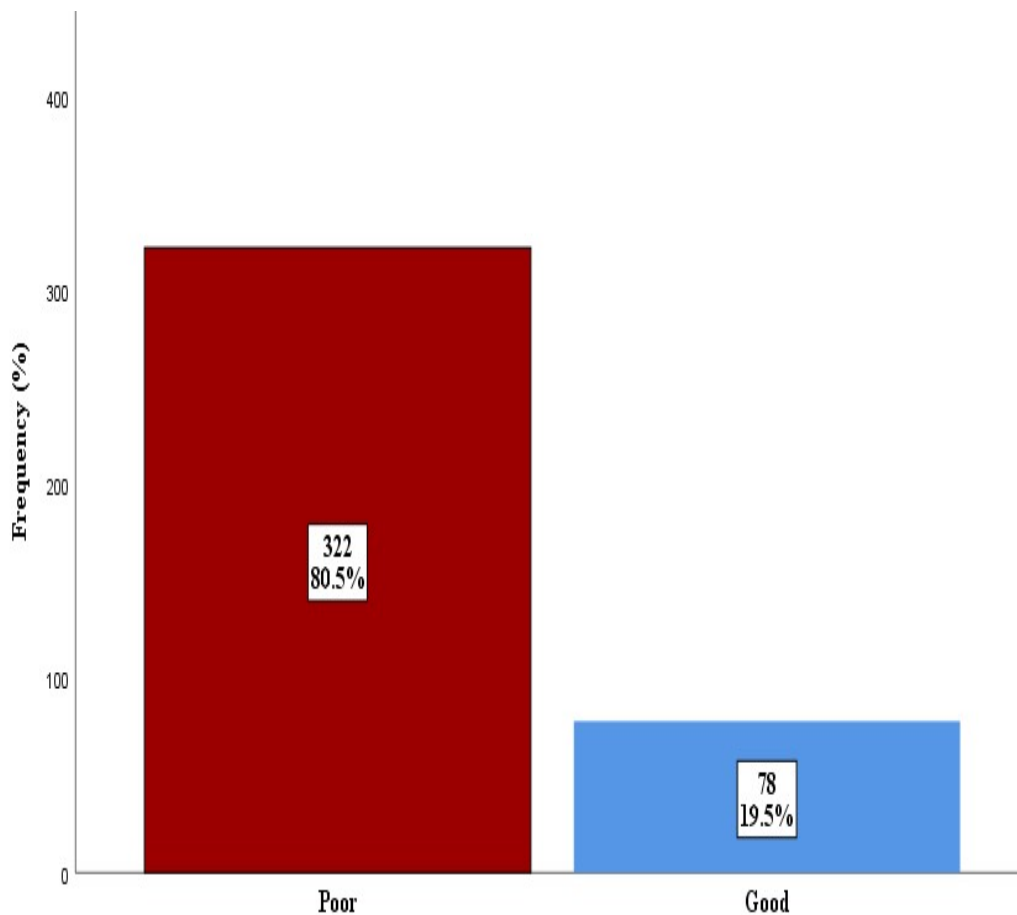


Figure 1: Overall illness behaviour among participants

Table 2: Toothache-illness experienced among participants

Variables	Overall (n=400)	Male (n=213)	Female (n=187)	p- value
Ever had a toothache	319(79.8)	173(81.2)	146(78.1)	0.435
Discomfort due to toothache				
Mild	39(12.2)	27(15.6)	12(8.2)	0.023*
Moderate	110(34.5)	65(37.6)	45(30.8)	
Severe	170(53.3)	81(46.8)	89(61.0)	
Number of toothaches in the past				
1	104(32.6)	54(31.2)	50(34.2)	0.243
2	107(33.5)	65(37.6)	42(28.8)	
3 or more	108(33.9)	54(31.2)	54(37.0)	
Tooth ache ever prevented you from eating well	269(67.3)	143(67.1)	126(67.4)	0.959
Tooth ache ever prevented you from sleeping well	196(49.0)	107(50.2)	89(47.6)	0.546
Tooth ache interfere with Your ability to carry out daily activities	164(41.0)	86(40.4)	78(41.7)	0.786
Afraid of developing toothache	260(65.0)	140(67.7)	120(64.2)	0.745
Upset you to talk to a Dentist about toothache	88(22.0)	55(25.3)	33(17.6)	0.086
Have access to a dental clinic	299(78.7)	156(76.5)	143(81.3)	0.375

Table 3: Respondents interventions (Reactions) to Toothache Illness

	Overall (n=400)	Male (n=213)	Female(n=187)	p-value
Type of illness behaviour				
Visit the Chemist	71(17.8)	34(16.0)	37(19.8)	0.017*
Visit Religious/Healing Centers	2(0.5)	2(0.9)	0(0.0)	
Self-Meditation	52(13.0)	32(15.0)	20(10.7)	
Touch and Go	33(8.3)	26(12.2)	7(3.7)	
Use Pain Reliever	94(23.5)	47(22.1)	47(25.1)	
Antibiotics	27(6.8)	13(6.1)	14(7.5)	
Warm Saline mouth rinse	14(3.5)	9(4.2)	5(2.7)	
Present to the clinic Immediately	23(5.8)	10(4.7)	13(7.0)	
Mouth Wash	6(1.5)	2(0.9)	4(2.1)	
Hot Alcoholic drink	5(1.3)	4(1.9)	1(0.5)	
Herbal Concoction	14(3.5)	6(2.8)	8(4.3)	
Others	5(1.3)	0(0.0)	5(2.7)	
Didn't have pain	54(13.5)	28(13.1)	26(13.9)	
Who influenced illness behaviour				
Parent	96(27.7)	53(26.9)	43(28.7)	0.140
Friends	163(47.0)	91(46.2)	72(48.0)	
Media	27(7.8)	21(10.7)	6(4.0)	
Others	61(17.6)	32(16.2)	29(19.3)	
Method effective in making the toothache/pain subside				0.547
Yes	244(59.6)	127(59.6)	117(62.6)	
No	156(39.0)	86(40.4)	70(37.4)	
Consider toothache a serious condition that require the attention of dentist				
Yes	324(81.0)	170(79.8)	154(82.4)	0.518
No	76(19.0)	43(20.2)	33(17.6)	

Table 4: Association between illness behaviour and socio-demographic characteristics

	Poor (n=322)	Good (n=78)	X ²	p-value
Age group (Years)				
≥20	32(84.2)	6(15.8)	13.667	0.018*
21-30	174(80.6)	42(19.4)		
31-40	71(82.6)	15(17.4)		
41-50	25(62.5)	15(37.5)		
51-60	17(100.0)	0(0.0)		
>60	3(100.0)	0(0.0)		
Gender				
Male	175(82.2)	38(17.8)	0.799	0.371
Female	147(78.6)	40(21.4)		
Education status				
Primary	33(84.6)	6(15.4)	0.720	0.698
Secondary	72(78.3)	20(21.7)		
Tertiary	217(80.7)	52(19.3)		

DISCUSSION

The concept illness behaviour was first introduced by Mechanic in 1962 and was categorized into self-care and health utilization behaviours (Gellman & Turner, 2013). This concept is predicated by psychological theories of perception, cognition, meaning attribution and social relationships which are further modified by psychological, social and cultural factors; irrespective of the genetic, physiological or other biological basis of disease. Illness behaviour is neither a disease nor diagnosis but rather a process that unfold over time as people struggle to achieve some accommodation or mastery over their health problems (Osterweis et al., 1987). Illness behaviour varies on the complex interactions of factors like illness-related, patient-related and physician-related. Illness behaviour shape recognition of illness, selection of patients into care, the degree of compatibility between patients and physician attributions; pattern of health care practice, adherence with medical advice, the course of illness and treatment process; the aggregations of these, influence healthcare costs and doctors' workload (Siri et al, 2013).

In this present study, respondents generally have poor toothache-related illness behaviour (80.5%; Fig1) and plausible reason may be the predominance of male respondents which evidence reportage had indicated to have poor health-seeking behaviour than their female counterparts (Adekunle et al., 2019). About 67% of the respondents had University degree which should have been value-added to good toothache-illness behaviour but this survey revealed a contrary observation which is consistent with study by Adekunle et al., (2019); in a semi-urban

community where respondents with secondary certificate had better illness behaviour than those with tertiary education; pointing to the fact that higher education does not automatically translate to good illness behaviour and that continuous strategic dental public health enlightenment is crucial for behavioural and attitudinal change. However, this study contradicts reports by Ernest et al., 2022 and Siri et al., 2013; that tertiary education positively significantly influenced good illness behaviour. Adducible reason for this observation may be the socio-cultural beliefs that might have modified the respondents' illness behaviour by shaping the perception, recognition, mean attribution and social relationship of the illness in these communities thus exerting a greater influence on the respondents. Also, the unaffordable cost of treatment in these low income communities and the deficient oral health care financing through health insurance scheme may be another reason for this observation since dental treatments are mainly financed through 'out of pocket spending' thus, straining the already lean income (Osuh et al., 2023).

The intensity of the toothache is a significant predictor of illness behaviour in this present study (Table 2). This corroborates studies by Azodo & Ololo; 2013; Ernest et al., 2019; Mwanza et al., 2023; Osuh et al., 2023; that toothache was the major factor making respondents to seek oral health care either from the dentists, the local chemists or outright self-medication to relief their perceived discomfort. This may be expected because of the detrimental impact its severity exerts on the respondent's nutrition, sleep, social interactions, productivity at school and workplace

causing food avoidance, irritability, disruption of daily activities and absenteeism from work (Azodo & Ololo; 2013; Kelkar et al., 2018). Another probable reason for this observation in this study may be the low female pain threshold which enhances their health-seeking behaviour than male, who naturally tends to have greater pain threshold (Oniyide & Owoyele; 2019); and also socio-culturally, men are expected to endure more pain than women, and in some culture is sign of masculinity and a proof of man's maturity (Peacock & Patel; 2008).

The type of illness intervention is another significant predictor in this study (Table 3), majority of the respondents took to self-care by ingesting analgesic for relief their toothache rather than dental centre care utilization which is prevalent among the age group 21-30years. This is consistent with previous studies (Azodo & Ololo, 2013; Anyanechi & Saheeb; 2014); that it is the prevalent practice among dental patients to first engage in self-care of analgesic use before reporting to the dental centre. This may be due to the prevailing socioeconomic hardship occasioned by high rates of unemployment and under-employment of average Nigerians, especially those living outside big cities like Lagos and Abuja; may account for this observation despite the fact that majority of respondents had tertiary education, but still engaged in self medication practices. This is point is further reinforced the number of respondents (17.8%) visiting chemists for relief of their ailments which may be due to unaffordability of dental treatment (Ajayi & Arigbede, 2012). Furthermore, the phobia associated with dental treatment, where it is the general belief that all treatments in dentistry is with harrowing experiences and as such should be avoided as much as possible (Anyanechi & Saheeb; 2014; Ajayi & Arigbede; 2012). Besides, the socio-cultural belief of removing "worms" from carious lesions in some culture may impact negatively on the illness behaviour of these respondents.

Age is another significant predictor of toothache illness behaviour in this present study (Table 4). Majority of the respondents are young adult between 21-30years, this may be an indication that there is high prevalence of toothache among this cohort which may be as a result of increased consumption cariogenic diet, hence, high dental caries experience, the leading cause of toothache. This is consistent with studies by Azodo & Ololo; 2013 and Omitola & Arigbede; 2010. In this same age group, more respondent had poorer illness behaviour (80.6%); plausible reason may be the larger male respondents in this study who are

known to have poor health seeking behaviour. Besides, this study revealed worsening illness behaviour with age and this is consistent with observation by Adeniyi & Oyapero; 2020 but is contrary to report by Mwanza et al., 2013 who reported dental utilization to improve with age of respondents.

In this present study, the social relationship influencing illness behaviour though, was not statistically significant but revealed the impact of peer-group pressure on the respondents as majority were influenced by their friends (Table 3). This goes to show that dental service utilization is still very low in these communities as there will need for both attitudinal and behavioural changes.

CONCLUSION

This study highlights the poor illness behaviour of these respondents which was influenced significantly by the complex interactions of toothache severity, socio-demographic factor (age) and the culture of self-medication practice. The dental public health practitioners as well as policy makers will need to embark on regular dental public campaigns through community engagements targeted at enlightening the populace on toothache perception, dental service utilization and attitudinal change.

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Conflicts of interest

None declared

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