Factors influencing patients' time of presentation to a dental clinic and pattern of sociodemographic influence in a tertiary health facility

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Abstract

Healthcare professionals should always encourage their patients to present early to the health facility for prompt treatment. Despite public health education on this matter, many patients still present late to the hospital. The study aimed to determine the factors influencing the time of presentation to a dental clinic and the sociodemographic effects of such factors. A total of 257 questionnaires were administered, of which 243 were correctly filled and returned, representing a response rate of 94.5%. The majority, 59.3%, presented because of pain, while 91.4% felt they presented late. Most of the respondents, 94(42.3%), cited trying other treatments as the reason for coming late. There were strong associations between reasons for coming late and some sociodemographic characteristics of respondents. Most patients seeking dental care present late and only do so when the pain is becoming unbearable, having tried other alternatives. Some sociodemographic characteristics of individuals showed a strong association with some reasons for presenting late.

Introduction

Healthcare professionals should always encourage patients on early presentation to the health facility for prompt treatment. Despite public health education on this matter, many patients still present late to the hospital. This problem appears to be more prevalent among dental patients who often have under-rated dental care. The attendant consequence is usually very heavy. It is an unpleasant experience for clinicians to see patients presenting very late to a dental health facility with the associated complications.[1] This is even more painful when the initial dental condition could have been managed simply and at a minimal cost.[1] The patients often only consider seeking dental care after exhausting other alternative forms of treatment.[2,3] The delay in seeking dental treatment is a global health problem with a reported prevalence of as high as 98%.[1,4,5] Factors that have been attributed to the delay in seeking early dental treatment include dental fear, ignorance, limited access to dental clinics, a busy work schedule, and poverty.[1,4-7] In Nigeria, previous studies have shown that these are key factors that have been found to be responsible for delays in patients presenting to the dental clinic.[9-13]

There is a paucity of studies in this subject area, especially in Edo State and in the South-South region. In fact, we are unaware of any studies in this region that have investigated factors or reasons for late presentation by patients to the dental clinic. Considering the importance of early presentation, one expects more studies to have been done in this area in Nigeria. This will provide adequate literature from our local environment for references and further information. The absence of many studies, even in the country as a whole, about late presentation to dental clinics is perhaps a reflection of the little importance Nigerians place on oral health, and it can be attributed to the fact that patients often commonize dental care. Therefore, this study aims to determine what factors in our environment influence patients' time of presentation to dental clinics and the sociodemographic effects of such factors.

Materials and Methods

This descriptive cross-sectional study was carried out at the Dental Center of the University of Benin Teaching Hospital, Benin City, which provides specialist care for patients within the city and

surrounding cities/towns as well as neighboring states like Delta, Ondo, and Kogi, in the region. The study was conducted between March and November 2022. The study population included patients presenting to the Dental Centre within the study duration.

The Inclusion Criteria were all consenting dental patients presenting at the time of the study with one form of complaint or the other, while the exclusion criteria were dental patients who were below 17 years at the time of presentation and those who did not consent.

Sample size determination

A sample size of 232 was determined using the Cochran statistical formula:

$$N = Z^2Pq$$

where
Z = 1.96, corresponding to a 95% confidence level.
P = 18.5% Prevalence[14]
q = 1-P (1-0.185)
d = 5% minimum acceptable degree of error.
N = 1.96^2 x 0.185(1-0.185)
N = 0.57921724
N = 232

A convenience sampling technique was used. Only participants who met the inclusion criteria and were present at the dental center during the time of the study were selected.

To address possible attrition, 10% of the sample size was added to give 255.

Pre-testing

The questionnaires were pre-tested using 10 random patients who fit the criteria of the study to provide feedback for necessary adjustments to the questionnaire. These patients were excluded from the actual study.

Data collection

Closed-ended structured questionnaires were administered to participants. As adapted from similar studies.[2,5] The questionnaire was divided into three sections. Section A was on social demographic/personal data, Section B was on oral health practices, and Section C was on factors influencing the presentation time. All sections were self-administered. Only patients who presented late to the dental clinic were eligible to answer the question on why they came late, they were also free to choose multiple factors.

Data management and analysis

The data were entered and analyzed using IBM Statistical Package for Social Sciences (SPSS) version 21 (IBM Corp., Chicago, USA). Frequency tables were generated. Pearson Chi-square test of association was used to identify the relationship between social demographics and perception of time of presentation as well as the relationship between reasons for late presentation and sociodemographic variables. The critical level was set at 5%, and p-values of less than 0.05 were considered to be statistically significant. Responses on why patients presented late were grouped and analyzed as multiple responses. Statistically significant variables were subjected to multivariate analysis-logistic regression.

Results

A total of 255 questionnaires were administered, out of which 243 were correctly filled and returned, representing a response rate of 95.3% (Table 1). The patients' ages ranged from 17 to 98, with a mean age of 39.5±1 years (Figure 1). Of the entire respondents, 123 (50.6%) were females, while 120 (49.4%) were males, yielding a female-to-male ratio of 1:1 (Figure 2). Majority of respon-

Table 1. Socio-demographic characteristics of respondents.

Variable	Frequency (n=243)	Percentage (%)
Gender		
Male	120	49.4
Female	123	50.6
Age group in years		
≤20	18	7.4
21-30	73	30.0
31-40	55	22.6
41-50	39	16.0
51-60	29	11.9
≥61	29	11.9
Ethnicity		
Bini	119	49.0
Igbo	38	15.6
Esan	33	13.6
Yoruba	17	7.0
Urhobo	13	5.3
Other	23	9.5
Marital status		
Single	103	42.4
Married	123	50.6
Divorced	6	2.5
Widowed	11	4.5
Occupation		
Employed	83	34.2
Self-employed	84	34.6
Unemployed	16	6.6
Student	53	21.8
Retired	7	2.9
Level of education		
Primary	18	7.4
Secondary	52	21.4
Tertiary	170	70.0
None	3	1.2
Religion		
Christian	228	93.8
Muslim	7	2.9
Traditional	8	3.3
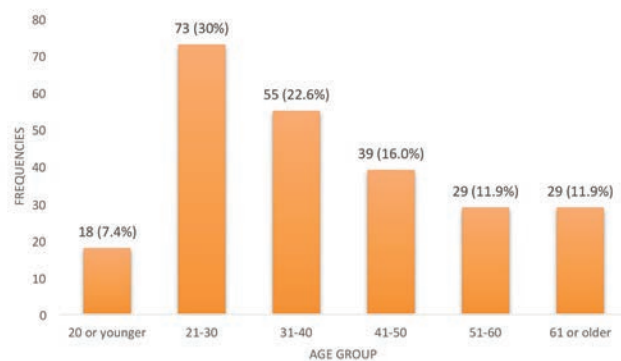
Figure 1. Age group of study participants.

dents had a tertiary level of education (70%). Respondents were either employed 83(34.2%) or had a business of their own 84(34.6%).

Figures 3, 4, and 5 show that pain (59.3%) was the predominant reason for presenting to the clinic.

From Figure 6, we observed that before seeing the dentist, the majority of patients (42.3%) reported having attempted other types of treatment. A sizable portion (23.9%) said they delayed coming to the clinic out of fear. Others (20.7%) reported that they were unable to attend a clinic due to their busy schedules or obligations at work.

Table 2 depicts the association between sociodemographics and perception of the time of presentation. The majority, 65 (26.8%) of respondents in the age group, 21-30, agreed to presenting late. This was, however, not statistically significant (χ^2=8.175, p=0.612).

More male respondents (44.9%) reported coming late compared to female respondents (46.5%), while 2 (0.8) males and 3 (1.2) females said they did not know if they presented early or not. The relationship between sex and perception of the time of presentation was not statistically significant (χ^2=0.485, p=0.785).
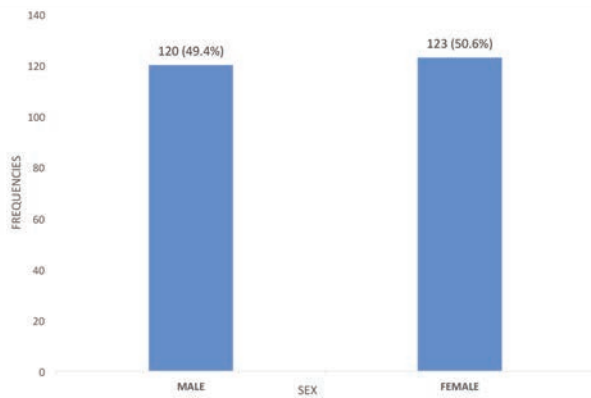
No strong association was found between other sociodemo-

Figure 2. Sex of study participants.
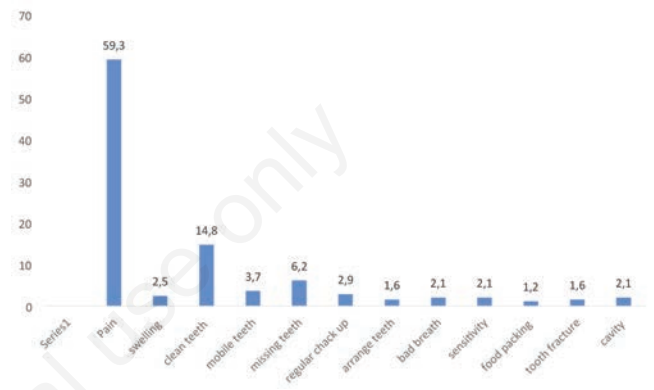
Figure 3. Time of presentation: why are you here today?

Table 2. Association between social demographics and perception of time of presentation.

n=243	Frequency (percentage%)			Test statistic	p
	Yes	**No**	**I don't know**		
Age					
≤20	0 (0.0)	18 (7.4)	0 (0.0)	8.175	0.612
21-30	6 (2.5)	65 (26.8)	2 (0.8)		
31-40	2 (0.8)	51 (21.0)	2 (0.8)		
41-50	3 (1.2)	36 (14.8)	0 (0.0)		
51-60	1 (0.4)	27 (11.1)	1 (0.4)		
≥61	4 (1.7)	25 (10.3)	0 (0.0)		
Sex					
Male	9 (3.7)	109 (44.9)	2 (0.8)	0.485	0.785
Female	7 (2.9)	113 (46.5)	3 (1.2)		
Ethnicity					
Bini	10 (4.1)	106 (43.6)	3 (1.2)	9.005	1.00
Igbo	4 (1.6)	32 (13.2)	2 (0.8)		
Esan	1 (0.4)	32 (13.2)	0 (0.0)		
Yoruba	1 (0.4)	16 (6.6)	0 (0.0)		
Urhobo	0 (0.0)	13 (5.3)	0 (0.0)		
Other	0 (0.0)	23 (9.5)	0 (0.0)		
Employment status					
Employed	7 (2.9)	76 (31.3)	0 (0.0)	6.886	0.549
Self-employed	5 (2.1)	76 (31.3)	3 (1.2)		
Unemployed	2 (0.8)	13 (5.3)	1 (0.4)		
Student	2 (0.8)	50 (20.6)	1 (0.4)		
Retired	0 (0.0)	7 (2.9)	0 (0.0)		
Education					
Primary	0 (0.0)	18 (7.4)	0 (0.0)	11.000	0.088
Secondary	7 (2.9)	42 (17.3)	3 (1.2)		
Tertiary	9 (3.7)	159 (65.5)	2 (0.8)		
None	0 (0.0)	3 (1.2)	0 (0.0)		
NHIS					
Yes	3 (1.2)	61 (25.1)	1 (0.4)	0.699	0.705
No	13 (5.3)	161 (66.3)	4 (1.6)		

graphics and perception of the time of presentation.

Concerning seeking alternative care before presentation, Table 3 shows that more females, 22.5%, presented late because they were trying other treatment types. This was, however, not statistically significant (p=0.524). The age groups 21-30 (14.7%) and 31-40 (9.0%) accounted for the majority of respondents who sought alternative care before presentation at the dental facility. This was statistically significant (p=0.025). Level of education also presented a statistically significant association with the use of alternative treatment options before the presentation.

There were strong associations between not being able to afford treatment and some sociodemographic variables such as age group (p=0.014) and occupation (p=0.019).

More men (5.4%) than women admitted to having had a painful dental treatment in the past. This was, however, not statistically significant.

Table 4 shows that of those who claimed they were unaware treatment was possible, female respondents (5.9%), age group 31-40 (3.2%), self-employed respondents (4.9%), and respondents with tertiary level of education made up the majority, though no statistically significant association observed.

There was a statistically significant (p=0.003) association between the busy schedule and occupation of the respondents.

From Table 5, more males claimed they were hindered by their spouses (1.8%). Age group 31-40 (3.2%) had the highest number of respondents who had this claim. Those with a tertiary level of education also had the highest number of respondents (1.3%), while the relationship between occupation and being hindered by a spouse was statistically significant (p=0.023).

The use of alternative healthcare such as "native" medicine and the level of education of the respondents had a strong statistical association (p=0.000).

On predictors of presentation time to the dental clinic in Table 6, there were no significant predictors of presentation time to the dental clinic among study participants.

Discussion

Delayed presentation by patients to health facilities has remained unabated and continues to be a global health issue demanding robust attention.[14,3] Late presentation to the health facility is witnessed in practically every aspect of medicine, including dentistry.[7,15,16] No doubt a lot still needs to be done to discourage this habit which is capable of having great consequences on both human and economic resources. Therefore, continuous assessment and evaluation of the factors influencing late presentation cannot be over-stressed.

In the current study, more than 90% of the respondents presented late to the dental clinic. This is consistent with a previous study conducted in another country.[4] This is surprising because, in spite of the continuous oral health education and the need for patients to present early, the habit has persisted. Our present study showed that pain was the major reason patients presented to the dental clinic and that those who came early to the clinic did so because the pain was unbearable and because the pain may have defiled alternative treatment options. This finding was also corroborated by another study[17] which found that some patients presented early to the dental clinic because the pain became unbearable. This is not unconnected with the known fact that patients only present to the clinic when they have pains and have, perhaps, suffered a certain degree of complication.[14,18]

The use of other treatment options before visiting the dental facility was reported by our present study as the most common reason adduced for coming late. Various other studies have also alluded to this in their reports.[7,14,17] This high level of self-medication by patients may be attributed to the fact that patients are scared of dental treatment, the cost of the treatment, and have busy work schedules. However, a study carried out in Birnin Kebi[1] in Northwest Nigeria, and another study by Thompson *et al.*,[18] reported dental anxiety as the most common reason patients presented late to the dental clinic. This may be ascribed to possible
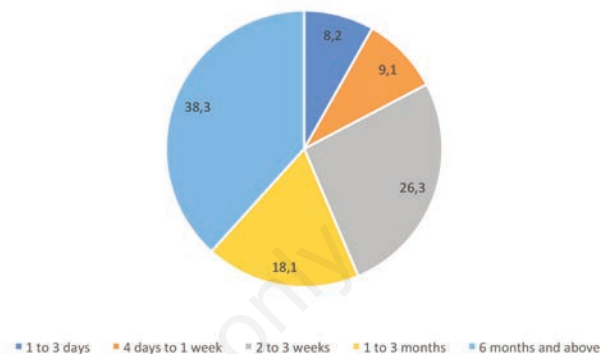

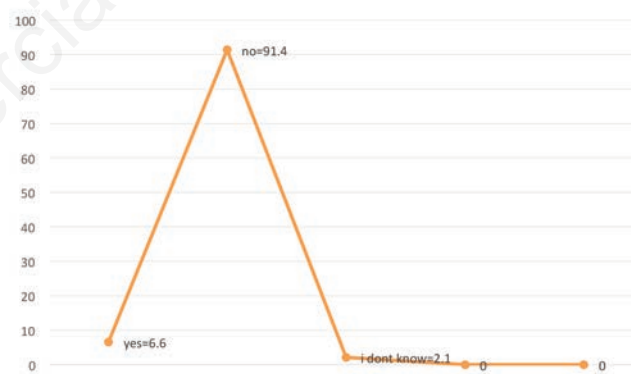**Figure 4.** Time of presentation: for how long have you had this complaint?

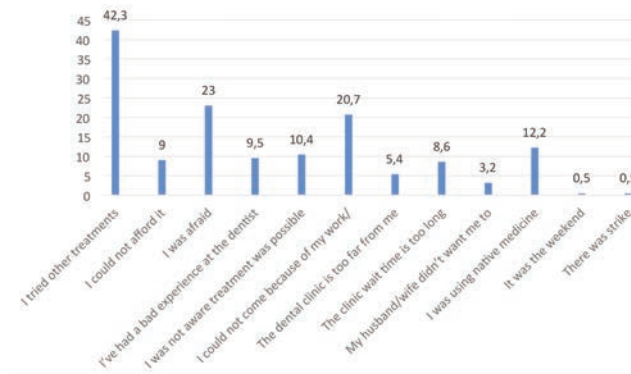**Figure 5.** Time of presentation: do you think you have come early to see the dentist?

Figure 6. Reasons for coming late.

Table 3. Association between socio-demographics and reasons for presenting late.

I tried other treatments	Yes	No	p
Gender			
Male	44	19.8	
Female	50	22.5	0.524
Age group in years			
≤20	4	14	
21-30	33	40	
31-40	20	35	
41-50	18	21	
51-60	8	21	
≥61	11	18	0.295
Occupation			
Employed	31	52	
Self-employed	28	56	
Unemployed	8	8	
Student	23	30	
Retired	4	3	0.487
Level of education			
Primary	10	8	
Secondary	12	40	
Tertiary	71	99	
None	1	2	0.036*

I could not afford it	Yes	No	p
Gender			
Male	13	107	
Female	7	116	0.221
Age			
≤20	2	16	
21-30	10	63	
31-40	4	51	
41-50	4	35	
51-60	0	29	
≥61	0	29	0.025*
Occupation			
Employed	3	80	
Self-employed	4	80	
Unemployed	2	14	
Student	11	42	
Retired	0	7	0.032*
Level of education			
Primary	3	15	
Secondary	2	50	
Tertiary	15	155	
None	0	3	0.313

I was afraid	Yes	No	p
Gender			
Male	21	99	
Female	30	93	0.187
Age			
≤20	7	11	
21-30	15	58	
31-40	14	41	
41-50	6	33	
51-60	9	20	
≥61	0	29	0.014*
Occupation			
Employed	11	72	
Self-employed	27	57	
Unemployed	4	12	
Student	9	44	
Retired	0	7	0.019*
Level of education			
Primary	3	15	
Secondary	12	40	
Tertiary	36	134	

past unpleasant dental treatment experienced by patients or erroneous belief that dental procedures are painful. It is also noteworthy that there exists, in the current study, a strong association between dental anxiety and the respondents' age group, with a p-value of 0.013. There was no statistically significant association between the sociodemographic characteristics of the respondents with respect to the time of presentation. This is in agreement with a similar study by Tatheer *et al.*[17] and Msolla *et al.*[15] showing that time of presentation was not influenced by the sociodemographics of the respondents.

The current study found an association between the level of education and self-medication. Although a few other studies[17,19-23] reported similar reasons for the delay in patients' presentation to the clinic, none reported an association between such reasons and the sociodemographic variables.

In the present study, we observed a strong association between occupation (p=0.025) and level of education (p=0.032) with the cost of treatment. This association is indicative of the fact that occupation and level of education may influence the time of presentation to the dental clinic. Perhaps, those with secondary and tertiary levels of education and those with better-paying jobs may be more concerned about their health and thus present early.

Busy work schedules were some of the reasons patients presented late in this study. There was a statistically significant relation between occupation and busy work schedule. This may mean that certain kinds of jobs have a strong influence on the time of presentation by dental patients to the clinic. In another study,[1] a statistically significant relationship was observed between the respondents' age group and late presentation to the clinic. A similar finding was recorded in this study, where there was an association between the age group in patients who claimed their spouse was the reason they delayed seeking dental care.

Study limitations

This study had a few limitations. First, the study was conducted in one center. The study did not capture other public health facilities as well as privately owned dental centers in order to be

Table 3. Association between socio-demographics and reasons for presenting late.

I've had a bad experience at the dentist before	Yes	No	p
Gender			
Male	9	111	
Female	12	111	0.531
Age			
≤20	0	18	
21-30	5	68	
31-40	5	50	
41-50	6	33	
51-60	3	26	
≥61	2	27	0.340
Occupation			
Employed	9	74	
Self-employed	7	77	
Unemployed	2	14	
Student	3	50	
Retired	0	7	0.721
Level of education			
Primary	3	12	
Secondary	2	50	
Tertiary	15	155	
None	0	2	0.212

*Statistically significant

Table 4. Association between socio-demographics and reasons for presenting late.

I was not aware treatment was possible	Yes	No	p
Gender			
Male	10	110	
Female	13	110	0.552
Age			
≤20	2	16	
21-30	2	71	
31-40	7	48	
41-50	3	36	
51-60	4	25	
≥61	5	24	0.141
Occupation			
Employed	7	76	
Self-employed	11	73	
Unemployed	2	14	
Student	3	50	
Retired	0	7	0.526
Level of education			
Primary	2	16	
Secondary	5	47	
Tertiary	14	156	
None	2	1	0.103

I could not come because of my work/busy schedule	Yes	No	p
Gender			
Male	25	95	
Female	21	102	0.454
Age			
≤20	2	16	
21-30	12	61	
31-40	13	42	
41-50	10	29	
51-60	6	23	
≥61	3	26	0.467
Occupation			
Employed	26	57	
Self-employed	14	70	
Unemployed	0	16	
Student	6	47	
Retired	0	7	0.003*
Level of education			
Primary	3	15	
Secondary	8	44	
Tertiary	35	135	
None	0	3	0.558

The dental clinic is too far from me	Yes	No	p
Gender			
Male	7	112	
Female	5	118	0.515
Age			
≤20	2	16	
21-30	3	69	
31-40	4	51	
41-50	0	39	
51-60	1	28	
≥61	2	27	0.304
Occupation			
Employed	1	82	
Self-employed	6	78	
Unemployed	0	15	
Student	4	49	
Retired	1	7	0.187
Level of education			
Primary	1	17	
Secondary	3	49	
Tertiary	8	161	
None	0	3	0.939

Table 4. Association between socio-demographics and reasons for presenting late.

The clinic wait time is too long	Yes	No	p
Gender			
Male	9	111	
Female	10	113	0.855
Age			
≤20	0	18	
21-30	3	70	
31-40	5	50	
41-50	5	34	
51-60	4	25	
≥61	2	27	0.214
Occupation			
Employed	9	74	
Self-employed	7	77	
Unemployed	2	14	
Student	1	52	
Retired	0	7	0.314
Level of education			
Primary	4	14	
Secondary	3	49	
Tertiary	12	158	
None	0	3	0.207

*Statistically significant

Table 5. Association between socio-demographics and reasons for presenting late.

My husband/wife didn't want me to come for treatment	Yes	No	p
Gender			
Male	4	116	
Female	3	120	0.677
Age			
≤20	2	18	
21-30	2	73	
1-40	7	54	
41-50	3	36	
51-60	4	29	
≥61	5	26	0.023*
Occupation			
Employed	1	82	
Self-employed	2	82	
Unemployed	2	14	
Student	0	53	
Retired	2	7	0.103
Level of education			
Primary	2	16	
Secondary	2	50	
Tertiary	3	167	
None	0	3	0.287

I was using native medicine	Yes	No	p-value
Gender			
Male	12	108	
Female	15	108	0.586
Age			
≤20	2	16	
21-30	3	70	
31-40	6	49	
41-50	5	34	
51-60	2	27	
≥61	9	20	0.018*
Occupation			
Employed	5	78	
Self-employed	12	72	
Unemployed	4	12	
Student	3	50	
Retired	3	4	0.016*
Level of education			
Primary	7	11	
Secondary	13	39	
Tertiary	7	163	
None	0	3	0.000*

*Statistically significant

Table 6. Predictors of presentation time to the dental clinic.

Variables	B (regression coefficient)	p	Odds ratio	95% C.I. for Odds ratio	
				Lower	Upper
Age (years)	0.034	0.134	1.035	0.990	1.082
Sex					
Male	0.571	0.305	1.771	0.594	5.277
Female*			1		
Occupation					
Unemployed/Student/Retired	-0.661	0.335	0.516	0.135	1.979
Employed/Self-employed*			1		
Marital status					
Single	0.122	0.935	1.130	0.061	21.015
Married	-0.400	0.756	0.671	0.054	8.379
Divorced	0.434	0.790	1.544	0.063	37.650
Widowed*			1		
Level of education					
No formal education/Primary	-1.100	0.347	0.333	0.034	3.288
Secondary/Tertiary/Other*			1		
Use health insurance					
No	0.906	0.194	2.474	0.630	9.711
Yes*			1		

*Reference category, R2 (coefficient of determination) = 2.6% to

able to compare findings. Secondly, the study was purely hospital-based; therefore, data of persons in the community were not surveyed.

Conclusions

In conclusion, the majority of patients presented late for dental treatment. Several factors were identified to influence late presentation amongst patients; however, the cost of treatment, fear of dental treatment, the practice of self-medication, and ignorance play vital roles. Delay in seeking dental care was found to be strongly related to some sociodemographic characteristics of individuals.

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