

Prevalence of Self-Reported Medical Conditions among Dental Patients in a South-West Hospital in Nigeria

¹ Oluwarotimi C. A., ² Abah A. A., ³ Ogundana O. M.

ABSTRACT

Objective: This study aims to determine the prevalence of self-reported medical conditions amongst patients attending the Lagos State University Teaching Hospital's (LASUTH) Dental clinic.

Methods: This was a cross-sectional analytical study conducted among patients attending the Oral diagnostic clinic of LASUTH from June 2017- August 2018. After detailed explanation, well-structured questionnaires were distributed to consenting patients during the clinic hours. The questionnaires captured bio-data and the medical conditions. Data analysis was by Statistical Package for Social Sciences (SPSS). Quantitative analysis was done and frequency distribution was used for categorical variables; mean and standard deviation for continuous variables. Statistical significance was inferred at P-value ≤ 0.05 .

Results: Prevalence of self-reported medical conditions was 25.9%. Of the total number of 269 patients with medical conditions, 96(35.7%) were males and 173(64.3%) were females, with a male: female ratio of 1:1.8. Medical conditions were more frequent among participants within the age group of 50-59 (19.3%), followed by 40-49 (16.7%). Hypertension 134(49.8%), gastrointestinal diseases 83(30.9%) and diabetes mellitus 34(12.6%) were the most common conditions and there was a significant association with the age of patient. More than two-thirds 165(61.3%) of all patients were on medications for their respective conditions.

Conclusion: More than a quarter of the patients had at least a medical condition. The most common being hypertension, followed by gastrointestinal diseases and diabetes mellitus. More females self-reported medical conditions; while the male sex was statistically associated with bleeding disorder and neurological problems.

Keywords: Dental patients, Medical conditions, Oral diagnostic clinic

INTRODUCTION

Oral health is an integral part of overall health and patients attending the dental clinics may have other health issues beyond their presenting oral complaints.¹⁻³ Consequently, a disease affecting the oral cavity may be referred to other parts of the body and vice versa, thereby keeping the patient away from work and generally affecting productivity.⁴⁻⁵

Patients with an array of medical conditions

known or unknown to them may also seek dental treatment. About 40.21% had a medical condition in a study carried out in Saudi Arabia by Javal et al⁶ and 44% in Trinidad according to a study by Balkaran et al⁷.

Correspondence: Oluwarotimi C. A. clementoluwarotimi@gmail.com, LUTH, Lagos.

Received: 11/05/2020

Accepted: 30/11/2022

<https://dx.doi.org/10.4314/ajoh.v11i1.1>

In addition, dental treatments may be complicated by a patient's underlying medical condition/conditions or the medications prescribed to them by their physicians.⁴ The goal of an optimal dental management is to provide safe and effective treatment to the patient without causing medical crisis⁶. Dental treatment may have to be modified accordingly to align with a patient's medical constraints and physician's consultation may sometimes be warranted to effectively manage some patients. Knowledge of the medical status of patients obtained through proper medical history is fundamental to safe patient management. In the developing countries, the prevalence of underlying medical conditions has been reported to be higher, when compared to that in developed countries⁸⁻⁹, where access to good health facilities like modern diagnostic equipment are readily available to patients. This invariably increases their life expectancy and the number of elderlies found in such communities¹⁰.

Medical conditions manifesting in the oral cavity are mainly referred to the Oral Medicine specialists, invariably; a lot of medical conditions are seen by oral medicine specialists when compared with other dental specialties. Nevertheless, every specialist in the dental profession must be knowledgeable of the signs and symptoms of these medical conditions and their management⁷.

In order to elicit these common medical conditions, a thorough history which includes; history of presenting complaints, medical history, drug history, social and family history must form an integral part of a good management scheme for dental patients^{11,12}. Missed information by the dentists about the medical condition of a patient is not acceptable, as this may modify the diagnosis, affect treatment plan and may even lead to dental emergencies¹³. **Medical conditions manifesting in the oral cavity are mainly referred to the Oral Medicine specialists,**

invariably; a lot of medical conditions are seen by them when compared with their contemporaries in other dental specialties. Nevertheless, every specialist in the dental profession must be knowledgeable on the symptoms of these medical conditions and their management. In order to prevent untoward complications, it is very important that the dental specialists know what to do to prevent an emergency, what to do when there is an emergency and when to refer patients to prevent a medical emergency in the dental setting¹⁴. For instance, a patient with a prosthetic heart valve seen scheduled for an invasive conservative procedure such as root canal therapy and without adequate antibiotics coverage may develop infective endocarditis and possibly die from it¹⁵.

A survey of the frequency of medical conditions in dental patients will give the dentist an idea of such patient's inflow to the clinic, see the need to have a functional recovery room for emergency with a view to guard against complications or mortality. This will help in better patients' management, control of underlying medical conditions and improve the quality of life of patients. This study, therefore sets to investigate the prevalence of self-reported medical conditions among patients attending the Dental clinic of Lagos State University Teaching Hospital (LASUTH), Ikeja, Lagos State.

METHODS

Study design and location: This was a cross-sectional analytical study conducted in the Oral Diagnostic Clinic of the Lagos State University Teaching Hospital, Ikeja, Lagos state, Nigeria.

Study population: This was made up of all consenting patients who attended the Oral Diagnosis clinic from June 2017 to August 2018.

Data collection: The purpose of the study was explained to the patients after which, a signed consent form was obtained from them before being recruited. Each consenting patient was given a copy of the study questionnaire by one of the investigators during routine clinic hours. The questions were explained in details to all the patients and interpreted in their mother tongue for those that couldn't understand English. Patients were thereafter requested to answer them as promptly as possible. Confidentiality was maintained by assigning code numbers on the questionnaire for each participant. The questionnaire was structured and the first part captured the respondents' bio-data which included; age, sex, marital, level of education, occupation and marital status. The second part of the questionnaire consisted of a close ended questions to elicit a Yes or No to identify the medical conditions known by the patients.

Data analysis: Data analysis was carried out using Statistical Package for the Social Sciences (SPSS) software for windows (version 20, Chicago IL, USA). Descriptive and Inferential statistics were done. Frequency distribution and percentages were performed. Frequency distribution was used for categorical variables and mean and standard deviation for continuous variables. Chi square test and fisher exact were done. P-value was set at $P \leq 0.05$.

Ethical consideration: Ethical approval was obtained from the Health Research Committee of Lagos State University Teaching Hospital and written informed consent was obtained from each patient.

RESULTS

A total of 1039 patients attended the Oral Diagnosis Clinic during the study period and gave their consent to participate in the study. Of these patients 449(43.2%) were males and 590(56.8%) were females, with a male: female ratio of 1:1.3. Age of the patients spanned from 12-86 years, and the

mean age was $40.6(\pm 14.6)$ years. Majority of the patients were in the sixth decade of life 52(19.3%).

In this study, the prevalence of self-reported medical condition was 269(25.9%), out of these males constituted 96(35.7%) and females 173(64.3%), with a male: female ratio of 1:1.8. Table 1 shows other demographic characteristics of the patients.

Generally, females had a significantly higher prevalence of self-reported medical conditions than males ($P=0.004$). However, there was a statistically significant association between male gender and bleeding tendencies ($P \leq 0.001$) and neurological conditions ($P=0.004$) (Table 2).²

The age of patients with medical conditions ranged from 12 to 87 years with a mean age of $48.90 (\pm 17.95)$ years. Most of the patients were in the sixth decade of life (50-59), followed by the fifth decade (40-49) (Table 1). The most common self-reported medical conditions were; hypertension 134(49.8%), this was followed by gastrointestinal diseases 83(30.9%), and diabetes mellitus 34(12.6%). There were no cases of HIV/AIDS self-reported in this study (Table 2). The age group 50 to 59 years presented with the most medical conditions, followed by age 60 to 69 years (Table 3).

There was a highly significant effect of age on patients developing the three most common medical conditions in this series. ($P < 0.001$; Table 3).³

Majority of the patients 190(70.6%) had only one underlying medical condition whereas 79(29.4%) had more than one medical problems (Figure 1).

Only 165(61.3%) of the patients with self-reported medical conditions were on medications for the conditions.

Table 1: Socio-demographic characteristics of patients with self-reported medical conditions.

Variable	Frequency N=269 n (%)
Age group (Years)	
<20	8(3.0)
20-29	44(16.3)
30-39	36(13.4)
40-49	45(16.7)
50-59	52(19.3)
60-69	44(16.4)
70-79	35(13.0)
≥80	5(1.9)
Gender	
Male	96(35.7)
Female	173(64.3)
Marital status	
Single	63(23.4)
Married	181(67.3)
Others	25(9.3)
Level of Educational	
No formal education	7(2.6)
Primary	14(5.2)
Secondary	61(22.7)
Tertiary	135(50.2)
Post tertiary	52(19.3)

Table 2: Prevalence of self-reported of medical conditions among patients according to gender

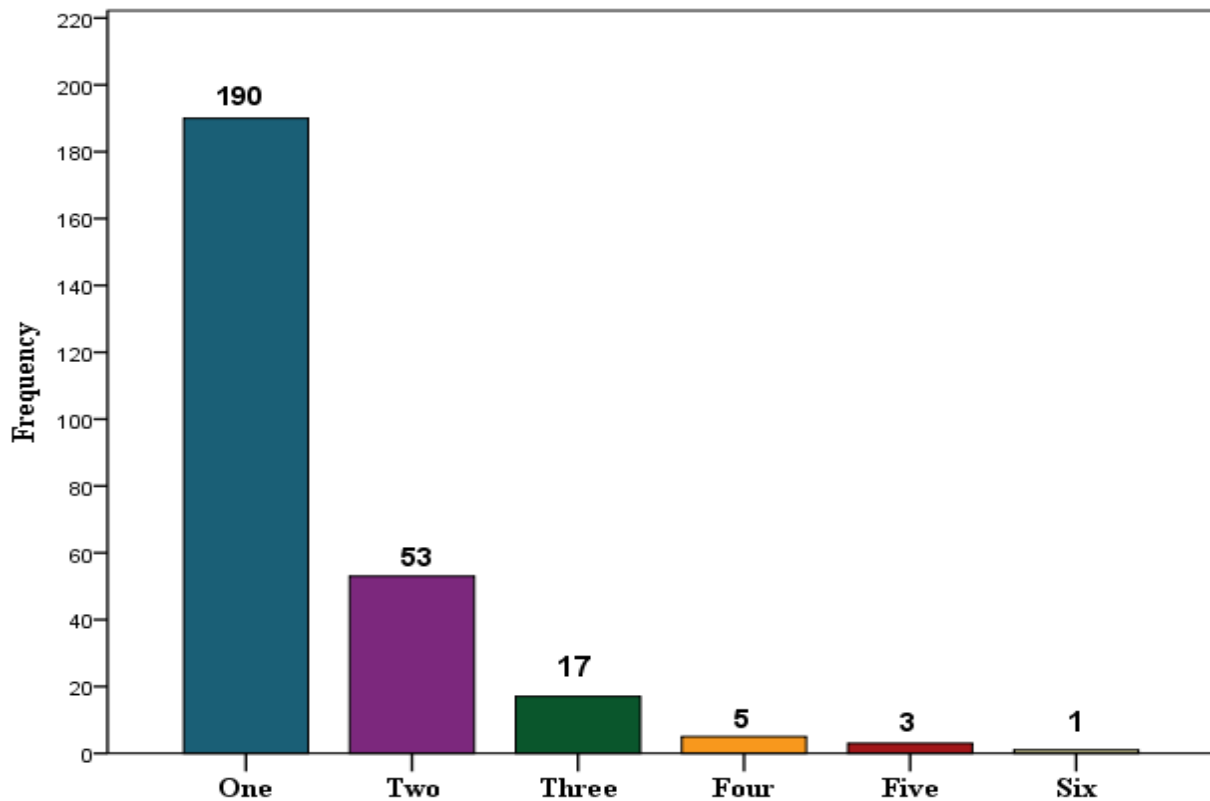
Common medical conditions	Male N=96 n (%)	Female N=173 n (%)	Total N=269 n (%)	P-value
Hypertension	48(35.8)	86(64.2)	134(49.8)	0.964
Gastrointestinal diseases	23(27.7)	60(72.3)	83(30.9)	0.074
Diabetes mellitus	16(47.0)	18(53.0)	34(12.6)	0.139
Arthritis/Joint pain	11(35.5)	20(64.5)	31(11.5)	0.980
Respiratory	9(34.6)	17(65.4)	26(9.7)	0.904
Allergy	10(40.0)	15(60.0)	25(9.3)	0.637
Bleeding tendencies	12(80.0)	3(20.0)	15(5.6)	0.000*
Anaemia	3(33.3)	6(66.7)	9(3.3)	0.881
Other heart problems	5(62.5)	3(37.5)	8(2.9)	0.108
Neurological/nerves problems	6(100.0)	0(0.0)	6(2.2)	0.002*
Hormonal problems	3(50.0)	3(50.0)	6(2.2)	0.670
Orthopedics/Bone problems	3(50.0)	3(50.0)	6(2.2)	0.670
Hepatic/Liver problems	0(0.0)	2(100.0)	2(0.7)	0.539
Cancer	0(0.0)	2(100.0)	2(0.7)	0.539
Epilepsy	1(100.0)	0(0.0)	1(0.4)	0.357
Alzheimer's	0(0.0)	1(100.0)	1(0.4)	1.000

*Significant association

Table 3: Prevalence of self-reported of medical conditions among patients in accordance to age.

Medical conditions	Frequency	<20	20-29	30-39	40-49	50-59	60-69	70-79	80-89	P-value
Hypertension	134	1(0.75)	1(0.75)	14(10.4)	17(12.7)	41(30.6)	32(23.9)	25(18.7)	3(2.2)	0.000*
Gastrointestinal diseases	83	3(3.6)	23(27.7)	11(13.3)	20(24.2)	9(10.8)	9(10.8)	5(6.0)	3(3.6)	0.000*
Diabetes mellitus	34	0(0.0)	1(2.9)	1(2.9)	5(14.7)	5(14.7)	9(26.5)	12(35.3)	1(2.9)	0.000*
Arthritis/ Joint pain	31	0(0.0)	3(9.7)	4(12.9)	3(9.7)	10(32.3)	5(16.1)	6(19.4)	0(0.0)	0.242
Respiratory	26	3(11.5)	6(23.1)	5(19.2)	6(23.1)	2(7.7)	1(3.9)	2(7.6)	1(3.8)	0.071
Allergy	25	1(4.0)	5(20.0)	6(24.0)	4(16.0)	5(20.0)	3(12.0)	1(4.0)	0(0.0)	0.592
Bleeding tendencies	15	0(0.0)	5(33.3)	4(26.7)	5(33.3)	0(0.0)	1(6.7)	0(0.0)	0(0.0)	0.008
Anaemia	9	2(22.2)	2(22.2)	2(22.2)	0(0.0)	0(0.0)	1(11.1)	2(22.2)	0(0.0)	0.094
Other heart problems	8	1(12.5)	3(37.5)	1(12.5)	0(0.0)	0(0.0)	1(12.5)	2(25.0)	0(0.0)	0.203
Neurological/nerves	6	0(0.0)	0(0.0)	2(33.3)	1(16.7)	1(16.7)	1(16.7)	1(16.7)	0(0.0)	0.800
Hormonal problem	6	0(0.0)	1(16.7)	2(33.3)	0(0.0)	0(0.0)	1(16.7)	2(33.3)	0(0.0)	0.379
Orthopedics/ Bone	6	0(0.0)	2(33.3)	1(16.7)	0(0.0)	1(16.7)	1(16.7)	1(16.7)	0(0.0)	0.818
Hepatic/Liver	2	0(0.0)	0(0.0)	0(0.0)	1(50.0)	1(50.0)	0(0.0)	0(0.0)	0(0.0)	0.755
Cancer	2	0(0.0)	0(0.0)	2(100.0)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	0.340
Epilepsy	1	0(0.0)	0(0.0)	1(100.0)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	0.787
Alzheimer's	1	0(0.0)	0(0.0)	0(0.0)	1(100.0)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	0.815
Total	389	11	52	56	63	75	65	59	8	

*significant association

Figure 1: Number of medical conditions per patient

Running title: Medical conditions of dental patients.

DISCUSSION

Over a quarter (25.9%) of the patients seen in this study self-reported at least one medical condition. This result is comparable to studies done by Fernández-Feijoo et al., 2012, where a prevalence of 28.1% was observed¹⁶. Gaphor and Abdullah however, reported a slightly higher prevalence (35.24%) compared to the present study¹⁷. Maryam et al., 2015 reported a prevalence of 73.7% which is much higher than the present finding. The marked difference in prevalence can be attributed to the selection criteria used in the study which was not stated clearly¹⁸. However, the topic seems to indicate that the study participants were referred to the centre.

The finding that female dental patients have more underlying medical conditions (64.3%) than their male counterparts is in agreement with studies by Khader et al.¹⁰, Balkaran et al.⁷, Sachdeva et al.¹³, Fernández-Feijoo et

al.¹⁶ and Gaphor & Abdullah¹⁷ but differs from the male preponderance reported by other authors^{6, 19}. This female predilection may be attributed to reports from literature that females tend to attend to their medical challenges more promptly than their male counterparts especially when it involves the orofacial region and concern with their beauty¹³.

Medical conditions increase with increasing age and this attributed to age changes and accumulation of genetic errors²⁰. In this study, most of the systemic diseases were detected in the sixth and seventh decades of life, this is in contrast with previous studies where medical conditions were more common in relatively younger population^{6, 10, 18} but this finding is in agreement with the study by Mohammad¹². The reason for this age group predilection may be attributed to the fact that the middle aged and the elderly in our

environment are plagued with more systemic diseases including dental issues thus provoking them to visit the dentist.

In this study, hypertension, gastrointestinal diseases and diabetes mellitus in descending order of occurrence were the three most common medical conditions reported which could invariably compromise a patient's dental management. This result is in alignment with previous studies from this environment where hypertension was the leading cause of medical ailments, this is followed by diabetes mellitus and gastrointestinal diseases²¹. Results from this study are also in concordance with those from Trinidad⁸, India¹⁷ and West Indies²² where the two most common medical conditions were hypertension and diabetes mellitus. Our findings however differ from those authors who reported the three most common medical conditions in decreasing order of occurrence to be: diabetes mellitus, hormonal disorders and respiratory disorders from the study by Javali et al. 2017⁶. Gastrointestinal disorders, bleeding tendencies and renal diseases were reported by Khader et al. in 2007¹⁰; diabetes mellitus, cardiovascular diseases and respiratory diseases were reported by Mohammad et al. 2016¹². Gaphor and Abdullah reported gastrointestinal disorders, skeletal disorders and hypertension as the three most common medical conditions¹⁷. A recent meta-analysis to estimate the prevalence of hypertension in Nigerian by Adeloye et al. revealed a value of 28.9% and they concluded that the prevalence of hypertension in Nigerian is high²³. The finding from this study might be a reflection of what obtains nationally and hence the resultant high number of patients with hypertension attending the dental clinic. This study reports a statistically significant association between the male gender and the likelihood of presenting with bleeding tendencies and neurological conditions. These findings are extremely important in the dental setting and this is especially so

for bleeding disorders. Hence, the importance of taking very good history which will not only result in modifying dental treatment but most importantly will lead to appropriate referral of patients for management. It was discovered in this series that some of the patients with underlying medical conditions were not on any form of medications or therapy for these conditions. This could be attributed to ignorance of the consequences of not receiving medical attention for these conditions.

CONCLUSION

In conclusion, more than a quarter of the patients studied had at least a medical condition. The most common being: hypertension, gastrointestinal diseases and diabetes mellitus. These are diseases that must be put in cognizance as the dental treatment is being planned and executed in order to have the best outcome. The dental practitioner must also be aware that a subset of dental patients has a compromised medical state without being aware of it. Thus, history that may disclose undiagnosed medical condition is of essence and at times some investigations may be required before the dental patient is treated. This will greatly reduce the risk of complications during dental treatments.⁷

CONFLICTS OF INTEREST

The author declares that there are no conflicts of interest.

AUTHORS CONTRIBUTIONS

OAC: was involved in conception of the idea, data collection, data analysis, data interpretation and drafting of the manuscript.

AAA: was involved in data collection, data analysis, data interpretation and drafting of the manuscript.

OOM: was involved in data analysis, data interpretation and revision of the final manuscript.

All authors approved the final manuscript.

REFERENCES:

1. Sofola O.O. Implications of low oral health awareness in Nigeria. *Niger Med J.* 2010; 51:131-133.
2. Institute of Medicine. 2011b. Improving access to oral health care for vulnerable and underserved populations. Washington, DC: The National Academies Press.
3. Abdul Razak P, Jose Richard K.M, Thankachan R.P, Abdul Hafiz K.A, Nanda Kumar K, Sameer K.M. Geriatric Oral Health: A Review Article. *J Int Oral Health.* 2014;6(6):110-116.
4. Southerland J.H, Gill D.G, Gangula P.R, Halpern L.R, Cardona C.Y, Mouton C.P. Dental management in patients with hypertension: challenges and solutions. *Clin Cosmet Investig Dent.* 2016;8:111-120.
5. Bhardwaj N, Dubin S, Cheng H, Maurer M.S, Granieri E. Cardiovascular Cerebrovascular Diseases, Diabetes Mellitus: Co-morbidities that Affect Dental Care for the Older Patient. In: Lamster I.B., Northridge M.E. (eds). *Improving Oral Health for the Elderly.* Springer, New York, NY; 2008.
6. Javali M.A, Khader M.A, Al-Qahtani N.A. Prevalence of Self-reported Medical Conditions among Dental Patients. *Saudi J Med Med Sci.* 2017;5(3):238-241.
7. Balkaran R, Harracksingh A, Rajcoomar N, Jackson K, Deosaran S, Gaffoor N, et al. Prevalence of Medical Conditions among Dental Patients at a Community-based Dental Clinic, Trinidad: A Preliminary Investigation. *J Oral Health Comm Dent.* 2018;12(2):51-55.
8. Islam SM, Purnat TD, Phuong NT, Mwingira U, Schacht K, Fröschl G. Non-communicable diseases (NCDs) in developing countries: a symposium report. *Glob. Health.* 2014 ; 10: 81: 1-7.
9. Robinson HM, Hort K. Non-communicable diseases and health systems reform in low-and-middle-income countries. *Pac Health Dialog.* 2012; 18(1):179-190
10. Khader Y.S, Alsaeed O, Burgan S.Z, Amarin Z.O. Prevalence of medical conditions among patients attending dental teaching clinics in northern Jordan. *J Contemp Dent Pract.* 2007; 8(1):60-67.
11. Greenwood M. Essentials of medical history-taking in dental patients. *Dent Update.* 2015; 42(4):308-315.
12. Mohammad S.H, Syed K.B, Al Harthi S.M.H, Al Qahtani K.M, Abohasel S.A.S, Bagi A.M. Prevalence of medical conditions among patients visiting dental school in Asir region, Saudi Arabia: a retrospective study. *GMJ.* 2016; 5(1):21-26.
13. Sachdeva S.K, Raj S.S, Kaushik A, Sharma D, Verma K.G, Dutta S, et al. Prevalence of medical problems among patients attending a dental school in India - A cross sectional study. *OHDM.* 2015;14(6):429-434.
14. Seymour R.A. Dentistry and the medically compromised patient. *Surgeon.* 2003;1(4):207-214.
15. Woods C.D. Self-reported mental illness in a dental school clinic population. *J Dent Educ.* 2003;67(5):500-504.

16. Fernández-Feijoo J, Garea-Gorís R, Fernández-Varela M, Tomás-Carmona I, Diniz-Freitas M, et al. Prevalence of systemic diseases among patients requesting dental consultation in the public and private systems. *Med Oral Patol Oral Cir Bucal*. 2012;17:89-93.
17. Gaphor S.M, Abdullah M.J. Medical Status and Medication Use in Patients Attending Shorish Private Dental Specialty in Sulaimani City, Iraq. *J Interdiscipl Med Dent Sci*. 2014;2(4):1-5.
18. Maryam A, Atessa P, Mozafari Pegah M, et al. Medical Risk Assessment in Patients Referred to Dental Clinics, Mashhad, Iran (2011-2012). *Open Dent J*. 2015;9:420-425.
19. Aggarwal A, Panat S.R, Talukder S. Self-reported medical problems among dental patients in Western Uttar Pradesh, India. *J Dent Educ*. 2011;75(12):1635-1640.
20. Jaul E, Barron J. Age-Related Diseases and Clinical and Public Health Implications for the 85 Years Old and Over Population. *Front Public Health*. 2017;5:335
21. Olojede A.C.O, Adeyemo W.L, Gbotolorun O.M, Runsewe O, Oluseye S.A.B, Goncalves F.T. The prevalence of medical conditions among patients attending oral and maxillofacial clinics at a secondary and a tertiary health institution in Lagos, Nigeria. *Am J Med Dent Sci*. 2013;1(1):1-4.
22. Al-Bayaty H.F, Murti P.R, Naidu R.S, Mathews R, Simeon D. Medical problems among dental patients at the school of dentistry, the University of West Indies. 2003;73:1408-1414.
23. Adeloje D, Basquill C, Aderemi A.V, Thompson J.Y, Obi F.A. An estimate of the prevalence of hypertension in Nigeria: a systematic review and meta-analysis. *J Hypertens*. 2015;33:230-242.