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KNOWLEDGE, ATTITUDE AND PRACTICE OF MEDICAL DOCTORS AT KENYATTA NATIONAL HOSPITAL IN KENYA TOWARDS ORAL DISEASES

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ABSTRACT

Objective: To assess medical doctors' knowledge, attitude and practice towards oral diseases.

Design: Descriptive cross-sectional study

Setting: Kenyatta National Hospital

Subjects: 80 medical doctors, including pre-interns, interns, medical officers, registrars, and consultants currently practising at the Kenyatta National Hospital, were recruited in the study.

Material and Methods: A convenience sampling technique was employed to obtain participants who completed structured self-administered questionnaires. Responses were analyzed using SPSS.

Results: A total of 80 doctors, 22 (28%) females and 58 (72%) males, were recruited in this study. The majority, 31/80 (38.75%), had been practising < 5 years. Regarding knowledge, 97.5% of the doctors knew there was a direct correlation between oral and systemic health, the primary source of oral health information being the internet. Regarding attitude, 90% responded positively towards all the parameters assessed, and 87.5% recognized that they have a role to play in their patients' oral health. Regarding practice, 73.75% of doctors had consulted a dentist on their patient's oral health, with an average referral rate of 1 patient/doctor/year. Only 6% of the doctors regularly visited a dentist.

Conclusion: Although most participants demonstrated basic knowledge of the aetiology of oral disease and the relationship between general and oral health, some gaps remain in the awareness and practice of oral health among medical practitioners. The potential for medical doctors as active players in oral health must be emphasized, and continuing medical education in oral health should be adequately provided.

INTRODUCTION

Oral health is the absence of disease, coupled with optimal function of the mouth to conserve the oral cavity and the individual's highest level of self-esteem. It is a state that allows an individual to eat, speak and socialize with minimal discomfort or embarrassment.¹ Oral diseases affect the physiology of the oral cavity and negatively influence personal relationships, self-confidence, school and work attendance and performance, typically due to severe pain.² Therefore, the importance of treating these cases is not only from a functional aspect but also from a psychosocial health aspect.³

The current belief is that oral diseases are limited to the scope of dental practice, while good oral health is a significant part of general health. The dichotomy between medical and dental training has resulted in infrequent integration between dentists and other healthcare professionals in clinical practice, academics and research.⁴ Patients are more likely to visit medical practitioners regularly than dentists since they are readily available in rural and underserved areas.⁵ To achieve Kenya's health care agenda, Universal Health Coverage, increased knowledge of medical doctors on the oral diseases encountered is paramount for early referrals and intervention by dentists. In this way, patients can receive proper treatment and early correction of wrong practices, preventing needless morbidity and mortality.⁶

In modern medicine, significant changes in the model for health care have been set in motion, moving towards holistic care of patients. Separate training has resulted in poor communication and a lack of integration in these disciplines.⁵ Many oral diseases encountered are preventable through oral health awareness and promotion. Most

medical doctors may be unaware of these oral diseases and therefore miss the opportunity for early diagnosis and referral which largely determines their prognosis. Scarcely any information exists in our local setting on the awareness and perception of medical doctors towards oral health and diseases.

Knowledge refers to medical doctors' information, understanding, and awareness about causes, symptoms, and methods of diagnosing and treating oral diseases. Assessing doctors' knowledge helps identify any gaps or misconceptions they might have regarding oral diseases, which impact the quality of care provided to patients. Attitude encompasses the doctors' perspectives, including feelings, beliefs, and opinions towards oral health and oral diseases. This aspect explores their view about the importance of oral health in overall well-being, the significance of oral disease prevention, and their willingness to prioritize and address oral health concerns in their clinical practice. Positive attitudes towards oral health can lead to better management of oral diseases. Practice refers to medical doctors' actions, behaviours, and clinical approaches when dealing with patients' and personal oral health. It includes their management and referral measures and personal oral health seeking. Assessing doctors' practices can provide insights into whether evidence-based guidelines for oral health are being followed and whether there are opportunities for improvement in patient care related to oral diseases.

This study, therefore, aimed to assess the knowledge, attitude and practice of medical doctors towards oral diseases. The study's specific objectives were to assess the knowledge and understanding of doctors' knowledge towards oral diseases, evaluate their attitudes towards oral health, and determine their current practices in managing

oral health issues in patients. The study's findings can help identify areas where additional education or training might be beneficial and potential strategies for enhancing oral healthcare delivery and promoting oral health awareness among medical professionals.

MATERIAL AND METHODS

We conducted a descriptive cross-sectional study at the Kenyatta National Hospital (KNH), a public tertiary (level 6) hospital in Nairobi, Kenya which receives referrals from all levels of healthcare providers within East and Central Africa for highly specialized care. KNH is also the teaching hospital of the University of Nairobi, Faculty of Health Sciences.

Using convenience sampling, 80 medical doctors currently practising in KNH, including pre-interns, interns, medical officers, registrars and consultants from the University of Nairobi, were recruited for the study. Convenience sampling was used since it allowed researchers to access and recruit medical doctors at Kenyatta National Hospital more efficiently, considering doctors' limited availability and shift changes. Since doctors' availability at the hospital was variable, convenience sampling was a convenient and practical way to gather data. Since a non-probability sampling method was employed, no statistical calculation was done for the sample size. The sampling frame for the study was the list of medical doctors working at Kenyatta National Hospital.

Data was collected after approval for the study was obtained from the Kenyatta National Hospital - University of Nairobi Committee of Ethics and Research (KNH-UON ERC), reference number UP899/11/2019. Informed verbal consent was gained from subjects used

for the study, and confidentiality was maintained as no personal information was collected before or during the study. The doctors were free to decline to participate in the study and to withdraw at any given time without victimization.

Data collection

Self-administered structured questionnaires were distributed physically to the targeted group that was readily available within KNH. The questionnaires only applied to medical doctors who were currently in active service and willing to participate in the study. The structured questionnaires included three sections to assess the doctors' knowledge, attitude, and practice. The questionnaires included multiple-choice questions, Likert-scale items, and open-ended questions. Open-ended short-response and multiple-choice questions were used to collect demographic information. Multiple choice questions were also used to collect information about knowledge of specific oral health conditions. Likert scales were used to gauge doctors' attitudes, whereby doctors would be asked to rate their level of agreement or disagreement with statements related to oral health and its importance. To determine practice, the questionnaires had a section in which doctors would be asked about their typical approaches to recommending dentist visits, conducting oral examinations, dental referrals and personal dental practices.

Data handling and analysis

Collected quantitative data obtained from the questionnaires and Likert-scale items were coded, entered into a computer and analyzed using the Statistical Package for Social Sciences (IBM SPSS Statistics Version 25.0.0.0) data analysis software and presented in charts and tables. All the data was kept confidential throughout the study. Before analysis, the collected data underwent thorough cleaning to

ensure accuracy and consistency. This process involved checking for missing or incomplete responses, identifying and handling outliers, and verifying data entry accuracy. Any data discrepancies were addressed, and records with significant missing information were omitted from the analysis.

Descriptive statistics were employed to summarize the quantitative data and provide a clear overview of the medical doctors' knowledge, attitudes, and practices. The following descriptive measures were used. Frequencies and percentages were calculated for each knowledge item to assess the doctors' knowledge of oral diseases. For assessing attitudes, Likert-scale items were coded and transformed into numerical values. The mean and standard deviation of the responses were calculated to understand the doctors' general attitudes towards oral health. The reported

practices of the medical doctors were analyzed using frequencies and percentages for each practice item. As this study used a convenience sampling method, inferential statistics were not conducted since they rely on random sampling and assumptions about population characteristics. For data visualization, bar charts or histograms were generated for each subsection of the responses.

RESULTS

A total of 80 medical doctors were recruited in this study. According to the medical doctors' cadre, most respondents were registrars (post-graduate students), accounting for 53 (66.25%). Most participants had been practising between 1 – 5 years, while the least number of medical doctors had been practising for less than a year, as summarised in Table 1.

Table 1

Results of medical doctors under the biodata category; gender, cadre of medical doctors, level of education and years in clinical practice

Variable	Categories	Frequency (n=8)	Percentage (%)
Gender	Male	58	72.50%
	Female	22	27.50%
Cadre of Medical Doctors	Pre-intern	1	1.25%
	Intern	10	12.50%
	Medical Officer	8	10%
	Registrar	53	66.25%
	Consultant	8	10%
Level of Education	Undergraduate	19	23.75%
	Graduate	53	66.25%
	Post-graduate	8	10%
Years in clinical practise	< 1 year	9	11.25%
	1 - 5 years	31	38.75%
	6 – 10 years	30	37.50%
	>10 years	10	12.50%

Knowledge

Regarding knowledge of oral diseases, 74 (92.5%) correctly reported that a high sucrose diet causes dental caries. Fifty-three medical doctors (66.25%) correctly defined fluorosis as permanent discolouration of teeth due to high fluoride exposure during tooth development. According to the results shown in Figure 1, 46 (57.5%) correctly identified plaque and calculus as the most common cause of gingivitis. However, despite smoking being

strongly associated with periodontal disease, a more significant number of the medical doctors, 24, believed that Vitamin C deficiency was the most common cause of gingivitis, while only 4 (5%) medical doctors associated smoking with gingivitis as depicted below (figure 1). Periodontal diseases as a common risk factor associated with diabetes were correctly identified by 56 (70%) of the participants.

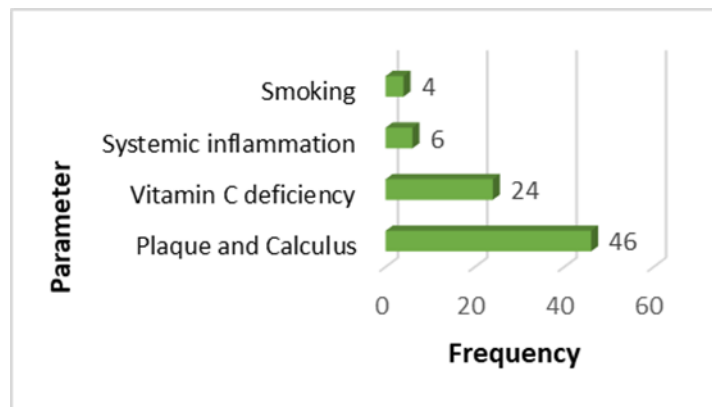


Figure 1: Medical doctors' knowledge on the most common causes of gingivitis

With regards to oral mucosal lesions, the majority of the medical doctors, 47 (58.5%), associate a non-healing ulcer with progression towards oral cancer more willingly than

blanching and stiffness of the oral mucosa, which was the lesion of choice for only 6 medical doctors (figure 2).

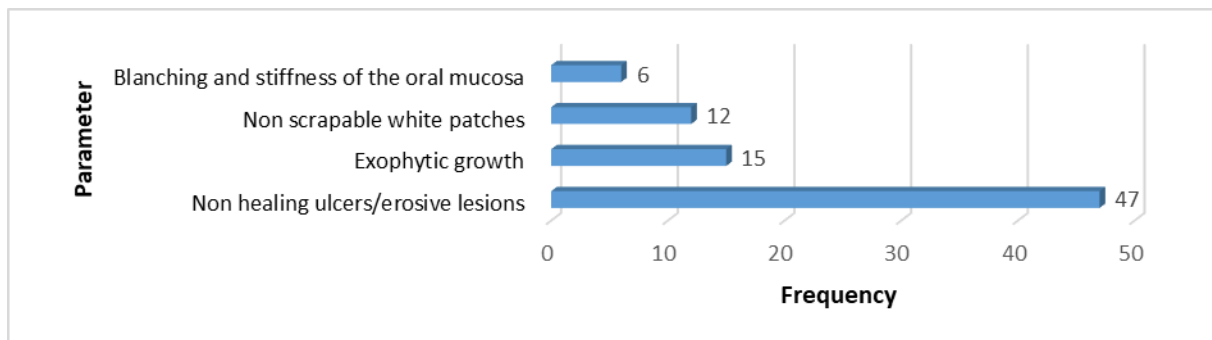


Figure 2: Medical doctors' knowledge on pre-malignant conditions and their progression to oral cancer

As shown in Figure 3, most medical doctors (41.25%) use the internet as the primary source of information on oral health which is expected in this digital era. Television and continuous medical education were equally ranked as the least-used resource for oral health knowledge.

It was anticipated that 100% of medical doctors would recognize the medical school curriculum as one of their sources of oral health information. However, only 23.75% of the medical doctors stated it.

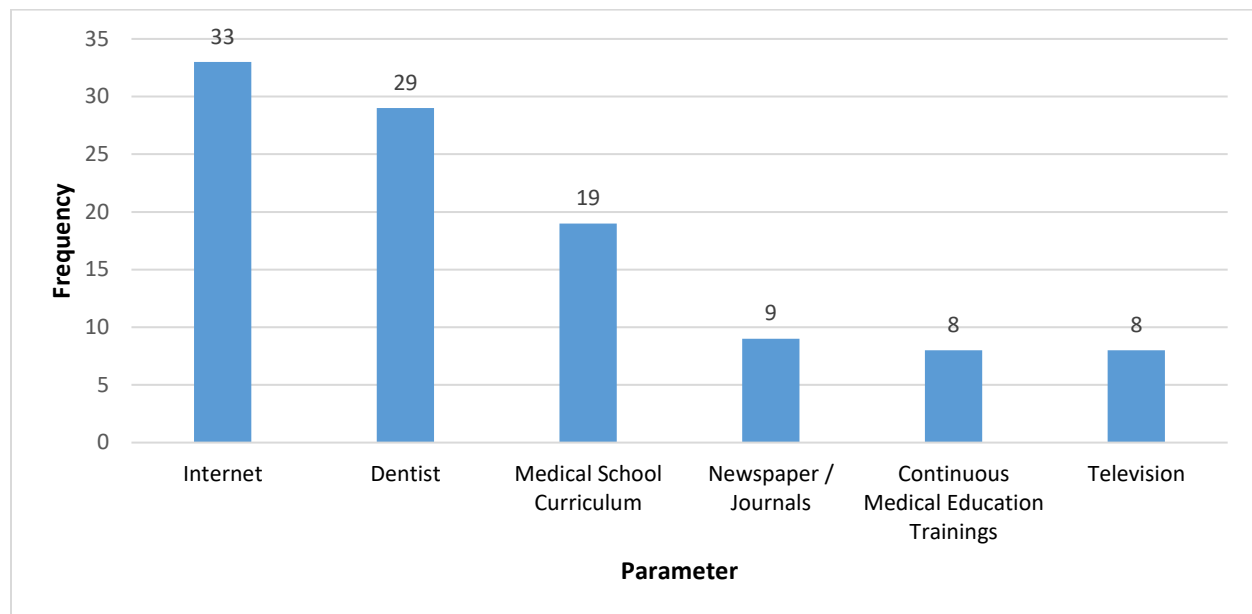


Figure 3: Medical doctors' sources of information on oral health

Attitude

More than 90% responded positively towards all the parameters assessed. All but 2 medical doctors recognized a direct correlation between oral health and general health. Exactly 47% (38) of the medical doctors believed that individuals should visit the dentist every 6 months, while 40% (32) believed in having a visit once a year. About 70/80 (87.5%) of medical doctors also recognized their role in their patient's oral

health and the need for pregnant women and children to have regular dental check-ups.

Practice

Despite the 48% response rate that individuals should visit the dentist once every 6 months, most medical doctors (68%) reported that they visit the dentist only when necessary. In comparison, only 6% (5 medical doctors) visited the dentist per the recommended guidelines once every 6 months (Figure 4).

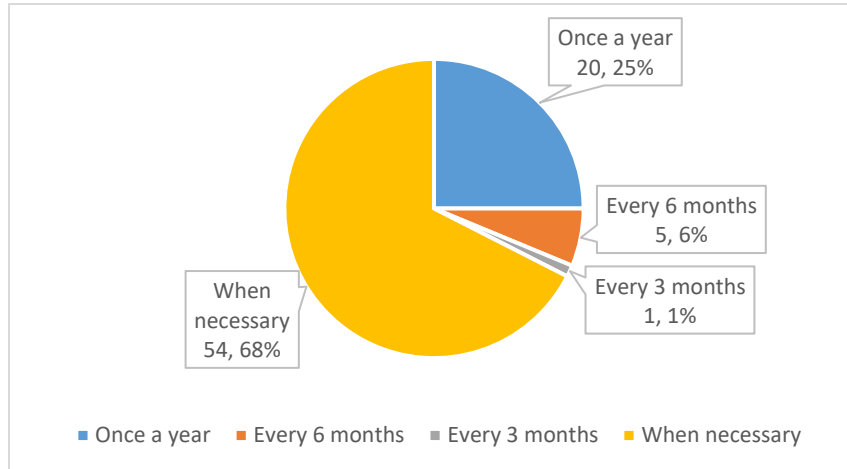


Figure 4: Pie chart showing frequency of medical doctors' personal visits to a dentist

On the main reason for their last dental visit, 35 (49%) visited the dentist due to dental caries, corresponding with the 92.5% correct response rate on the cause of dental caries. On the other hand, only 10% (7 medical doctors) have visited the dentist due to gingivitis or periodontitis, which is also evident with the lower correct response rate of 57.5% regarding the common cause of gingivitis.

Of the 80 medical doctors, 57 (71.25 %) had conducted an oral examination for their patient, 59 (73.75%) had consulted a dentist about the oral health of their patient (figure 5), and 81.25% had referred a patient to a dentist, with the most common reason for their referral being dental caries at 53.03%.

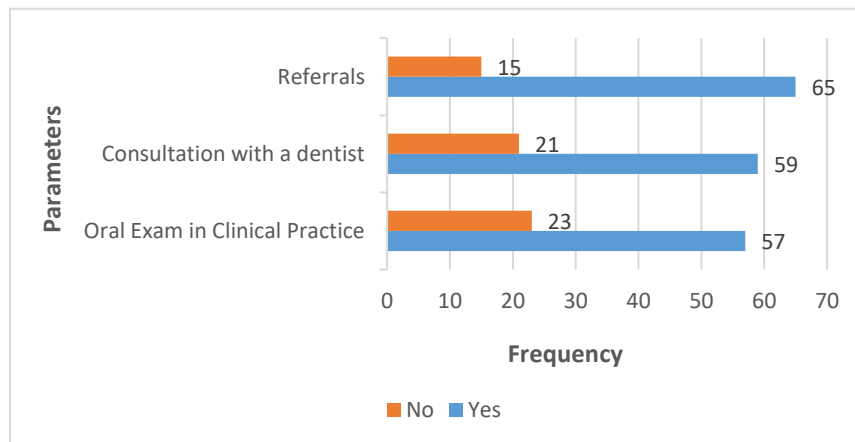


Figure 5: Practice of medical doctors' towards oral disease

DISCUSSION

Medical and dental care operate in different professional spheres within the health sector, which has contributed to gaps in oral health knowledge and practices among medical doctors.⁷ Despite this, the significance of oral health cannot be overstated, as it also plays a massive role in an individual's psychological, emotional, physical, and socioeconomic well-being. Scarcity of dental services results in many patients seeking dental care in hospital emergency departments making medical doctors the first point of contact for advice and management in cases of dental-related pain.⁸ The relationship between oral and general health has been increasingly recognized during the past two decades.⁹ As a result of this, examination of the oral cavity, despite having been an accepted part of the physical examination for over a century, is now being taken more seriously and, if done regularly, can considerably reduce the prevalence of oral diseases.⁵

With the integration between the University of Nairobi, the Faculty of Health Sciences and the Kenyatta National Hospital, it was expected that most medical doctors currently practising within the hospital would have less than 10 years of work experience. Medical doctors' knowledge of oral diseases in our study was comparable to a cross-sectional study done in Chennai and Coimbatore, India. Among the study subjects, 92.5% correctly identified a high sucrose diet as the most common cause of dental caries, while Deeksheetha and Priyadashoni¹⁰ reported that only 83 (64%) of 129 medical doctors knew the most common cause of dental caries was frequent food intake and snacking¹⁰.

Only 57.5% of the medical doctors in this study correctly associated plaque and calculus as a significant causes of gingivitis. A similar study

conducted around Kanpur City, India, by Mehrotra et al.¹¹ showed that among the study subjects, 200 (80%) answered correctly that the factor responsible for gingival and periodontal diseases is the presence of plaque and calculus. In a study conducted by Umeizudike et al.¹², where internal medicine residents were assessed on their knowledge of periodontal disease as a risk factor for diabetes, only 13.7% (15) gave the correct response. In our setting, a higher proportion (70%) of the medical doctors in KNH demonstrated good knowledge regarding this association.

A study conducted in the Nellore district in India showed that the dentist was the most common source of oral health information (59.5%) among medical doctors.⁵ In comparison, only 1% reported using the internet, which contrasts with the results obtained in this study, where 41.25% of the medical doctors relied on the internet as a source of information for oral health. This striking difference maybe be due to better multidisciplinary practices in the Nellore district that have not yet been implemented locally. However, it was noted that for both studies, information from continuous medical education was low at 3% in Nellore⁵ and 10% in KNH.

Among the study subjects, 200 (80%) answered correctly that the factor responsible for gingival and periodontal diseases is the presence of plaque and calculus Deeksheetha and Priyadashoni (2019) reported that 159 (98.5%) of the medical doctors were aware of the relationship between general health and oral health¹⁰ which was very similar to the 97.5% result obtained from this study. The same study by Deeksheetha and Priyadashoni showed that most doctors agreed that pregnant women need dental check-ups and that doctors should be encouraged to refer pregnant patients and children for oral health

examinations.¹⁰ The positive attitude may be due to understanding a direct correlation between general and oral health.

A survey conducted in the UK by Bater et al.¹³ showed that among 114 General Practitioners, 46% were seeing between two and five patients with oral symptoms/conditions weekly.¹³ Dental or denture problems were seen by 42% of the General Practitioners every week, while other pathology seen at least monthly included oral mucosal lesions.¹³ However, this could not be compared to the low referral rate in KNH, where 51.25% of the medical doctors have referred only 1-10 patients during their practice, most of whom have been practising for 6-10 years. The established difference may result from a high patient-to-doctor ratio in our setting compared to developed countries such as the UK, where medical doctors have adequate time per patient. The difference could also be attributed to a lack of a well-established referral system in most developing countries healthcare systems.

Only 6% (5 medical doctors) visit the dentist per the recommended guidelines once every 6 months. Correspondingly, a study done among medical doctors practising in the Nellore district by Nagarakanti et al.⁶ showed that while knowledge of the relation between oral health and general health was high, adoption of regular dental check-ups was low among the medical practitioners, despite most of the dental clinics being within 1 km from their workplace.⁶

We acknowledge the limitations of this study. Our study's use of convenience sampling means that the sample may not fully represent all medical doctors in all other settings. Therefore, caution should be exercised in generalizing the findings beyond the study participants. Additionally, self-reported data from questionnaires might be subject to

response bias, and observed practices may not fully capture clinical behaviours in all contexts.

CONCLUSION

This research aimed to assess the knowledge, attitude and practice of medical doctors towards oral disease. Although most medical doctors demonstrated good knowledge of the causes of oral disease and the relationship between general and oral health, a gap remains in the knowledge level of oral health and diseases. The findings of this study also show that this awareness was not matched by adequate clinical practice. The potential benefits of medical doctors as active players in oral health must be emphasized in medical schools, where curriculum contents in oral health may be largely insufficient. There is a need to have regular integrated discussions on the relationship between oral health and general health as part of continuous medical education programs. Furthermore, research should be conducted to identify any challenges or obstacles in the referral system that may be encountered by medical doctors in Kenya. Improving doctors' knowledge, attitudes, and practices towards oral diseases can improve oral health outcomes for patients and the community.

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