

**KNOWLEDGE, ATTITUDE AND PRACTICE OF PHARMACISTS REGARDING ORAL
HEALTHCARE AND ORAL HYGIENE PRODUCTS IN KHARTOUM STATE, SUDAN**Ola Yasir Mahmoud¹ and Elhadi Mohieldin Awooda^{1*}¹Department of Restorative Dentistry, Faculty of Dentistry, University of Medical Sciences and Technology, Sudan.***Corresponding Author: Dr. Elhadi Mohieldin Awooda**

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ABSTRACT

Background: Community pharmacists can play an important role in the oral health education and can act as role model for patients, friends, families and the community at large. Also they can play a role in oral disorder prevention, identification and referral. **Aim:** To assess the knowledge, attitude and practice of clinical pharmacists regarding oral healthcare and oral hygiene products. **Material and Methods:** A cross-sectional study among 323 out of 2009 pharmacists working within Khartoum State. Self-administered, close-ended questionnaire divided into 3 sections, section 1: assess their knowledge of oral health care, section 2: assess their practice of oral health education and section 3: assess their attitude toward oral hygiene products. Comparison between variables by Chi square test with the level of significant set at $P < 0.05$. **Results:** The response rate was 100%. Majority (69.7%) of the respondents had met a dentist practicing close to their pharmacies. Most of the pharmacists stocked and dispense oral health-related products. Toothpaste was the most common among the oral healthcare products stocked, followed by toothbrushes and mouth rinses. Toothache was the most common dental problem for which patients approached the pharmacists for advice followed by oral ulcer. Pharmacists advised patients complaining of dental pain to consult a dentist in 65.3% of cases, dispensed pain killer in 88.9% of cases. **Conclusion:** pharmacists working within Khartoum state; have a good knowledge, attitude and practice regarding oral health care and oral hygiene products. There is a need for training and providing them with access to information on available dental service and oral health products.

KEYWORDS: oral health, oral hygiene products, pharmacists, toothache.**INTRODUCTION**

Oral health touch every aspect of our lives, which is not only concern about healthy teeth, also the mouth should be free from any pulpitis, periodontal disease, tooth loss and decays.^[1] Of course we know Mouth looks like a window of our body, it can show sign of nutritional deficiencies or general infection.^[2] General infection could affect the entire body and become apparent because of oral lesions or others mouth problems.^[3] Most people today enjoy excellent oral health and are keeping their natural teeth throughout their lives.^[4] Use of tooth brushes with correct techniques, tooth paste containing fluoride, control of diet and Xylitol gum all these will help people to improve their oral hygiene, beside regular check up in dental clinic will help in early detection of any problems.^[5]

People believe that they need to see a dentist only if they are in pain or thinking something is wrong because most of them they have phobia from dentist.^[6] Patient's anxiety might be in relation to fear of injection, or could be fear of gagging or thought of blood. Patients might have concerns about perceived problems with getting

numb, might have a low pain threshold or might have issues with trusting dentist.^[7]

Community pharmacist can play an important role in the oral health education of individuals and groups and can act as role models for patients, friends, families and the community at large.^[8] Before they are trained as oral health educators, there is a need to determine the status of their own oral health knowledge and behaviors. Also they can play a role in oral disorder prevention, identification and referral. They can give advice for the patients beside of dispensing of drugs and medications.^[9] It's also being confident in one's capability to recognize in which to search for the excellent records.^[10] Also pharmacist should be incorporated into oral health team to meet the need of population.^[11]

Assessing knowledge, behaviors and oral hygiene practices in Sudan will help in the development of oral health promotion programs among pharmacists and their patients. To our knowledge, there are no reported studies regarding this issue in Sudan. The present study was undertaken to assess the level of information and practice of community pharmacists on oral health care products

among a group of pharmacists in. The aim of this study was to assess Knowledge, Attitude of Pharmacists working within Khartoum state regarding Oral Healthcare of them self and their patients. Also to assess the level of information and practice of counter dental drugs without prescription and oral Hygiene Products they commonly sailed.

MATERIAL AND METHODS

A descriptive cross-sectional study among 323 pharmacists out of 2009 working within Khartoum state, those whom are working in pharmacies dispensing drugs for patients were included and pharmacists working on companies were excluded. The study was carried during period from March 2016 –June 2016.

Sample size collected using formula $n = N * X / (X + N - 1)$, where, $X = Z_{\alpha/2}^2 * p * (1-p) / MOE^2$ and $Z_{\alpha/2}$ is the critical value of the Normal distribution at $\alpha/2$ (e.g. for a confidence level of 95%, α is 0.05 and the critical value is 1.96), MOE is the margin of error, p is the sample proportion, and N is the population size. Permission was obtained from the Ministry of Health Khartoum State and the list of the pharmacists working within Khartoum State was provided to select eligible participants by systematic random sampling technique.

Self-administered, close-ended questionnaire designed by Sharda & Shetty^[9] with some modifications. The questionnaire was divided into 3 sections; section one deal with knowledge of oral health care among pharmacists, section two deals with attitude and section three deals with practice and oral product. Pilot study

was conducted among 20 randomly selected pharmacists to ensure comprehensibility, reliability, relevant and accuracy in the Sudan context. Cronbach's alpha test showed the reliability coefficient of 0.85, which was found to be satisfactory for conducting the study. These 20 questionnaires were not included in the final data.

The study was approved by the Ethical committee of the University of Medical Sciences and Technology. Participants were requested to participate voluntary and they signed informed written consent.

Data were analyzed by SPSS statistical software package (SPSS for Windows, Rel.20.0. 2011. Chicago: SPSS Inc. Comparison between different variables by Chi square test with level of significant set at P value < 0.05 .

RESULTS

The response rate was 100%, descriptive statistic of the result as displayed in table (1&2) and figure (1-3). Regarding pharmacist complaint when visit a dentist for the last time, the result revealed that almost half (48.6%) complained of toothache, while 29.40% never got an appointment before (figure 1). While the most common patient's complaints when coming to a pharmacist was found to be toothache (figure 2). When they were asked about most drugs prescribed for toothache, majority (88.9%) (figure 3) said pain killer. Pharmacists were asked about the reasons behind patients consulted them instead of treatment by a dentist and compared their answers based on their previous dental experiences. The results showed insignificance association with P value of 0.012 (table 1).

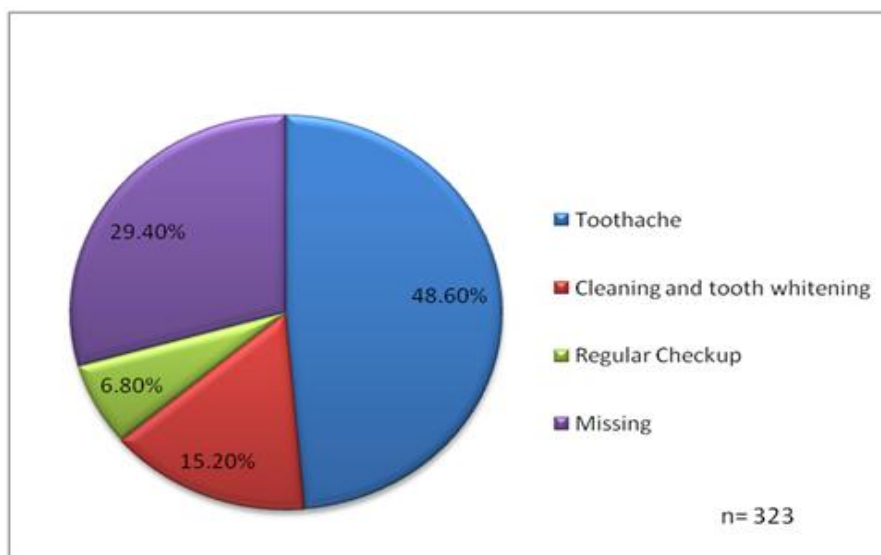


Figure1: Pharmacists reasons behind visiting a dentist.

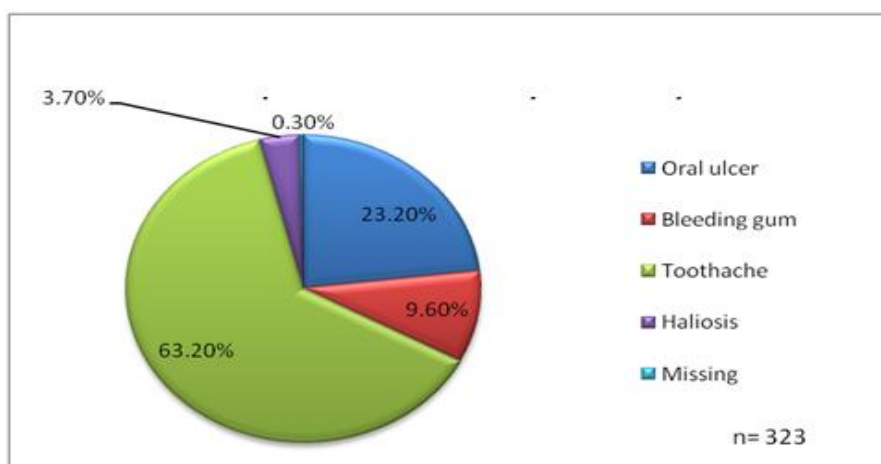


Figure2: Most common patient's complaints when coming to a pharmacist,

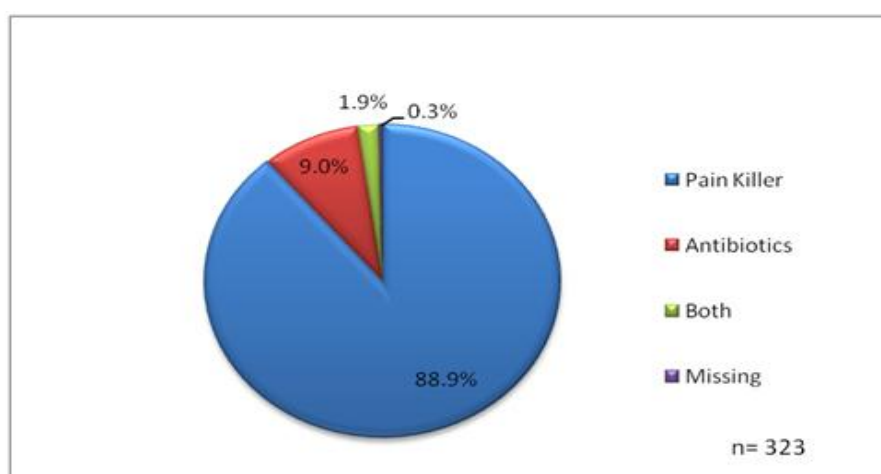


Figure3: common counter drug prescribed for toothache.

Table1: association between pharmacist's opinion about patient's consultation and their own previous experience with dentist.

Pharmacists' opinion about patients seeking dental treatment from a pharmacy.	Pharmacists previous history of visiting dentist		Total
	Yes	No	
They have no time	37 (11.46%)	9 (2.79%)	46
High cost of the treatment in dental clinic	130(40.25%)	48 (14.86%)	178
Patients have phobia from dentist	56 (17.34%)	41 (12.69%)	97
High Cost + Phobia	2 (.62%)	0 (0.0%)	2
Total	225	98	323

P = 0.012.

The relation between knowledge of pharmacist about techniques of tooth brushing and type of tooth brush prescribed; there is no significant difference between

best type of tooth brush prescribed by pharmacist and technique of teeth brushing as shown in (table 2).

Table 2: knowledge of pharmacist about techniques of tooth brushing and type of tooth brush prescribed.

Best technique for teeth brushing	Type of tooth brush prescribed				Total
	Hard	Medium	Soft	The Type available	
Vertical	0 (0%)	86 (26.71%)	33 (10.25%)	10 (3.11%)	129
Horizontal	2 (.62%)	36 (11.18%)	14 (4.35%)	6 (1.86%)	58
Roll techniques	4 (1.24%)	91 (28.26%)	25 (7.76%)	15 (4.66%)	135
Total	6	213	72	31	322

P value = .357.

DISCUSSION

The practice played by pharmacists should not be underestimated. The performance of them has expanded significantly in late decades from dispenser of medication to recognized minister of the health cooperation team. Rather than going to dentist or specialist, multiple individuals mutually oral problems need help from their pharmacists.^[8] This study was conducted to find out the knowledge, attitude and practice of pharmacists regarding oral health and oral hygiene products.

The study was cross sectional, including pharmacists from different localities in Khartoum state, so generalization of the results was possible. The pharmacists included in the study were graduated from different universities and different year of graduation, no human intervention and ethical issue was manageable. Limitations of this study were some pharmacists claimed and questioning directly to the investigators or we heard about their worried from others; if the study can affect their reputation. We convinced them about the nature of study and the purposes were explained and they signed informed written consent.

Overall, the response rate of the pharmacists who participated in this study was good and most of them had a positive outlook regarding their knowledge and attitude to the provision of advice relating to oral health and were confident in their ability to do, this was similar to the findings of the north of England study^[12] and Indian study.^[19] However, more than half of the respondents in the present study had met the dentists practicing close to their pharmacies and this result not similar to other observation of other studies.^{[18] [19]}

Toothache was on the top of the list of the common dental problems for which patients seek advice from the pharmacists. This is similar to the findings of the previous studies^{[12][18][19]} and the most counter drugs prescribed for toothache without prescription from dentist was pain killer which is 88.9%. Most of the pharmacists, similar to the Indian study^[19], referred the patients to the nearby dentist after dispensing medications for short-term pain relief. However, it is interesting to note that nearly 33.8% of the pharmacists dispense antibiotics, painkillers and advice for mouth rinses and do not refer the patient to a dentist or physician. That's mean patient will not go to dentist with the short pain relief and this will affect the correct diagnosis of the disease.

Our research showed that most of the respondents felt that high cost of dental clinics were the main reason for patients approaching the pharmacist for advice and show high significant in relation to pharmacists who have an appointment before with dentist, this result similar to Indian study also^[19] While 30% agree with patients have phobia from dental clinics and this should be kept on our mind and try to solve this problem.

Stocks of oral health care products in the pharmacies were also assessed in this study, Tooth pastes and tooth brushes were the most common oral health care product stocked similar to previous studies, also it shows that only 8.65% of pharmacies stocked dental floss and that's might be because most of the oral health care products are sold not just in pharmacies but also available in all markets in Sudan.

The present study showed that personal experience and knowledge about the product was the basis for recommendation of specific oral health care by pharmacists. a majority of them aware of the benefits of fluoride in toothpastes, While the previous studies^{[19][20]} showed lack of knowledge about it and that's may be Sudanese pharmacist have more exposed to the dentists and they have experience of dental treatment more according to our result and that's may affect their knowledge and get improved. It's interesting to know that our pharmacist have no idea about function of xylitol gum, and that's may be we don't have programs or courses to improve their knowledge because; most of them get their knowledge from their experience with patients and dentist or during studying in the university.

CONCLUSION

Pharmacists have provided some good amount of oral health knowledge and patients regularly ask for their advice on both general and oral health care issues, so the integration between dentists and pharmacists should be kept on our mind to improve the health of our society, also There is a definitive need for training of pharmacists and providing them with access to information on available dental services and products through courses and programs and Government should promote the pharmacists to take an integrated role as part of a primary oral healthcare team.

REFERENCES

1. Iwanowicz SL, Marciniak MW, Zeolla MM. Obtaining and providing health information in the community pharmacy setting. *Am J Pharm Educ.*, 2006; 70(3): 57.
2. Emmanuel A, Chang'endo E. Oral health related behaviour, knowledge, attitudes and beliefs among secondary school students in Iringa municipality. *DMSJ.*, 2010; 17: 24-30.
3. Watson MC¹, Bond CM, Grimshaw JM, Mollison J, Ludbrook A, Walker AE. Educational strategies to promote evidence-based community pharmacy practice: a cluster randomized controlled trial (RCT). *Fam Pract.*, 2002; 19(5): 529-36.
4. Ghalamkari HH, Saltrese-Taylor A, Ramsden M. Evaluation of a pilot health promotion project in pharmacies:1 Quantifying the pharmacist's health promotion role. *Pharm J.*, 1997; 25(8): 138-43.
5. Chestnutt IG, Taylor MM, Mallinson EJM. The provision of dental and oral health advice by community pharmacists. *Br Dent J.*, 1998; 11: 532-534.

6. Harman RJ. London: Pharmaceutical Press; 2001. Handbook of Pharmacy Health Education.
7. JM Armfield, LJ Heaton. Management of fear and anxiety in dental clinics. *Australian Dental Journal.*, 2013; 58(4): 390-407.
8. Saleh S. El-Qaderi, M.D., M.H.P.Ed. Oral Health Knowledge and Self-Reported Practices among a Sample of University Students in Jordan, 2003; 22(1): 59-75.
9. Archana J Sharda^{1,*} and Srinath Shetty¹ Relationship of Periodontal Status and Dental Caries Status with Oral Health Knowledge, Attitude and Behavior among Professional Students in India. *Int J Oral Sci.*, 2009; 1(4): 196–206.
10. Kenneth J. Anusavice, Ph.D., D.M.D. Present and Future Approaches for the Control of Caries. *Journal of Dental Education*, 2005; 69(5): 538-554.
11. Susan L. Iwanowicz, MLS, Macary Weck Marciniak, PharmD and Mario M. Zeolla, PharmD. Obtaining and Providing Health Information in the Community Pharmacy Setting. *Am J Pharm Educ.*, 2006; 70(3): 15 -57.
12. Maunder PE, Landes DP. An evaluation of the role played by community pharmacies in oral healthcare situated in a primary care trust in the north of England. *Br Dent J.*, 2005; 199(4): 219–23. 211.
13. VO Amuh, OH Okojie, AO Ehizele .Dental care knowledge and practice of a group of health workers in Benin city, Niger. *AJOL.*, 2014; 4(4): 3-5.
14. Omar A Bawazir knowledge and attitudes of pharmacists regarding oral healthcare and oral hygiene products in Riyadh city, Saudi Arabia. *J Int Oral Health.*, 2014; 6(6): 10-13.
15. B. J. Steel1 & C. Wharton2 Pharmacy counter assistants and oral health promotion: an exploratory study. *British Dental journal.*, 2011; 19(2): 211-219.
16. Buxcey AJ, Morgaine KC, Meldrum AM, Cullinan MP An exploratory study of the acceptability of delivering oral health information in community pharmacies. *The New Zealand Dental Journal.*, 2012; 108(1): 19-24.
17. Mohammad Abdul Baseer,¹ Mohammed Suliman Alenazy,¹ Mohammad AlAsqah,¹ Mansoor AlGabbani,¹ and Aleemullah Mehkari¹. Oral health knowledge, attitude and practices among health professionals in King Fahad Medical City, Riyadh. *Dent Res J (Isfahan).*, 2012; 9(4): 386–392.
18. Cohen la, Bonito AJ, Manski RJ, Edwards RR. Role of pharmacists in consulting with the underserved regarding toothache pain *JAPhA.*, 2009; 49(1): 38-42.
19. Priya S¹, Madan Kumar PD, Ramachandran S. Knowledge and attitudes of pharmacists regarding oral health care and oral hygiene products in Chennai city. *Indian J Dent Res.*, 2008; 19(2): 104-8.
20. Kingston Rajiah , Chow Jun Ving. An assessment of pharmacy students' knowledge, attitude and practice toward oral health: An exploratory study. *J Int Soc Prev Community Dent.*, 2014 Nov; 4(1): S56–S62.