ASSESSMENT OF ORAL HEALTH ATTITUDE AND BEHAVIOR OF COMMUNITY PHARMACISTS IN RIYADH CITY BY USING HIROSHIMA UNIVERSITY DENTAL BEHAVIORAL INVENTORY (HU-DBI)

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ABSTRACT:

Aim: assess the oral health attitude and behavior of community pharmacists in Riyadh city, Kingdom of Saudi Arabia using Hiroshima University Dental Behavioral Inventory (HU-DBI)

Materials and Methods: A cross-sectional survey was conducted in various community pharmacies located in Riyadh city, Kingdom of Saudi Arabia. Self-administered HU-DBI English version of the questionnaire (20 items) developed by Kawamura has been administered to the study subjects. Oral hygiene status was measured by using gingival and plaque indices. Mean and standard deviations scores of HU-DBI were calculated. Data Analysis was performed using SPSS. Differences between groups were examined using non-parametric tests.

Results: All the 360 participants in the present study were males with a mean (±SD) age of 34.39±4.01 years. There was a statistically significance difference in the mean HU-DBI score with nationality and smoking status. Statistically significance difference in the mean OHI-S score was found with education level, nationality, and smoking status. Furthermore, a statistically significant negative correlation was found between HU-DBI score and OHI-S score.

Conclusion: The community pharmacists participated in the study showed poor oral health attitude and behavior as measured by using HU-DBI. Extensive educational campaigns are needed to improve the attitude and practice.

Keywords: Pharmacist, Attitude, Behavior, Oral health

INTRODUCTION:

Community pharmacies are generally recognized as being one of the most accessible health providers. They are often the first point of interaction for individuals and patients seeking health advice.[1] They offer free and fair health information to all members of the community. However, their services are often undervalued and underutilized.[2] Pharmacists are able to disseminate oral health facts based on request by the patients and few did it voluntarily. Most of them believed that giving oral health advice is part of their professional obligation.[3] On the other hand, people with lack of access to dental care and those from economically disadvantaged conditions are more likely to seek oral health advices from pharmacists.[4]

A study conducted to identify attitudes of the dental hygiene and general nursing students in Japan reported that

they were more concerned about the color of their teeth and having bad breath over the conditions of their gums.[5] Another study conducted to compare oral health attitudes and behavior between British and Chinese dental students using the Hiroshima University-Dental Behavioral Inventory (HU-DBI) concluded that Chinese students were significantly more worried about the oral health factors over British students.[6]

Many factors influence individuals attitudes and health behaviors; one through learning and the other is more culturally determined through the use of subjective or social norms. These factors may help explain why Chinese and Japanese students held higher concern for their oral hygiene.[5-6] However, in Asia, many health beliefs and behaviors are imparted in the home.[7] Hence it can be concluded that the educational background and other factors such as learning through the use of social norms being of family, friends, or colleagues in their academic program could influence the attitudes and health behavior.

Nowadays, a range of products effective of curing several oral health ailments are available in the pharmacies. Presently people have easy access to certain dental treatments because of the availability of numerous over the counter dental remedies.[8] Statistics from Kingdom of Saudi Arabia (KSA) pointed out that nearly 34% of the pharmacists reported 10 requests for oral health advice routinely. These advices were mainly concerned with toothache, mouth ulcers, and mouth malodor. Majority of the recommendations of oral health care products made by the community pharmacists in Riyadh city were mainly based on their personal experience and or patient stories, rather than scientific information.[9] thus, suggesting some deficiencies in self-perceived oral health attitudes and behaviors among pharmacists. Hence this study aimed to assess the oral health attitude and behavior of community pharmacists in Riyadh city, KSA using HU-DBI.

MATERIALS AND METHODS:

A cross-sectional survey was conducted during November-December 2016 in various community pharmacies located in Riyadh City, KSA. Ethical approval for this study was obtained from Riyadh colleges of dentistry and pharmacy ethics committee. Sampling was carried out in two stages: first stage, list of community pharmacies registered with online directory was obtained; second stage, community pharmacists working in these facilities were then selected into the study. A sample size of 360 pharmacists was decided based on access and local contacts. Purpose of the study was explained to the pharmacists and informed consent obtained to participate in the study.

Self-administered HU-DBI English version of the questionnaire (20 items) developed by Kawamura in Japan has been administered to the study subjects.

Oral hygiene status was measured by using gingival and plaque indices. Data was collected and analyzed using SPSS Version 21. Frequency distribution tables were generated. Mean and standard deviations scores of HU-DBI were calculated. Non-parametric test was used for assessing statistical significance. Level of significance was set below 0.05.

RESULTS:

Table 1 shows the demographic characteristics of the community pharmacists. All the participants in the present study were males. The mean (±SD) age of the pharmacists was 34.39±4.01 years. The majority agreed that they advise oral healthcare products (86.4%, n=311). Just over half reported that pain (52.2%, n=188) as the patients main reason for seeking advice on oral health (Figure 1). The majority reported toothpaste (84.2%, n=303) as a major oral health product sold in pharmacy. However, only 38% referred patients to the dentist.

Figure 2 shows the mean (±SD) oral hygiene index score and figure 3 shows the mean (±SD) HU-DBI score for the 12 items. Responses of the study participants for the 20 items of HU-DBI are shown in table 2. There was a statistically significance difference in the mean HU-DBI score with nationality and smoking status (p<0.05) (Table 3). Statistically significance difference in the mean OHI-S score was found with education level, nationality, and smoking status (p<0.05) (Table 4). However, only mean OHI-S score showed a statistically significant difference with the age group. Furthermore, a statistically significant negative correlation was found between HU-DBI score and OHI-S score (p<0.05) (Table 5).

DISCUSSION:

To the best of our knowledge, there were few reports of similar studies which explored the oral health attitudes and practices among community pharmacists in Riyadh city, KSA. However, none of the studies have reported oral health attitude and behaviors of community pharmacists by using HU-DBI developed by Kawamura. In view of limited publications of oral health attitudes and behaviors of community pharmacists, the comparison of our findings has been made with other related studies conducted among other health professionals and students by utilizing HU-DBI.

Overall, community pharmacists considered in the present study showed mean HU-DBI score (3.14) which is lower than that reported among pharmacy students from Jazan University (4.74) KSA. [10] Additionally, this mean HU-DBI score was lower as compared to other professionals like dental hygiene students and interns. This mean HU-DBI score was lower than that of American and Japanese dental hygiene students, Korean dental hygiene students, and Jordanian dental hygiene/dental technology students.[5, 11, 12]

Some limitations can be identified in this study. Only those community pharmacists working in private sector were considered. Cautions must be taken while generalizing the results of the study due to the convenient sampling methodology, limited sample size with some reduced response rate, sample clustering from single city, and statistical errors due to multiple significance tests.

CONCLUSION:

Within the limitations of the study it can be concluded that community pharmacists participated in the study showed poor oral health attitude and behavior as measured by using HU-DBI. Extensive educational campaigns are needed to improve the attitude and practices. It is highly desirable for relevant pharmacy profession organizations to emphasize occupational and educational campaigns to increase awareness towards oral health among community pharmacists.

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TABLES:

Table 1. Demographic characteristics of the community pharmacists			
Characteristics		**n**	**%**
Gender	Male	360	100.0
	Female	0	0.0
Education	Diploma	115	31.9
	Bachelors	245	68.1
	Masters	0	0.0
Experience	0-5 years	58	16.1
	6-10 years	244	67.8
	11-15 years	40	11.1
	16-20 years	18	5.0
Nationality	Saudi	6	1.7
	Non-Saudi	354	98.3
Smoker	Yes	244	67.8
	No	116	32.2
Last visit to dentist	Before 6 months	103	28.6
	Before 1 year	239	66.4
	Never visited	18	5.0
Reason for last visit	Regular Check-up	42	11.7
	Dental problem	318	88.3
Mean age of the pharmacists	34.39±4.01 years		
Average number of patients seeking oral health advice per week	20.74±14.26		

Table 2. Responses of the study participants			
Items of HU-DBI		Agree	Disagree
I don't worry much about visiting the dentist	n	239	121
	%	66.4	33.6
My gums tend to bleed when I brush my teeth	n	317	43
	%	88.1	11.9
I worry about the color of my teeth	n	333	27
	%	92.5	7.5
I have noticed some white sticky deposit on my teeth	n	3	357
	%	0.8	99.2
I use a child sized toothbrush	n	3	357
	%	0.8	99.2
I think that I cannot help having false teeth when I am old	n	219	141
	%	60.8	39.2
I am bothered by the color of my gums	n	309	51
	%	85.8	14.2
I think my teeth are getting worse despite my daily brushing	n	24	336
	%	6.7	93.3
I brush each of my teeth carefully	n	141	219
	%	39.2	60.8
I have never been taught professionally how to brush	n	360	0
	%	100	0
I think I can clean my teeth well without using toothpaste	n	206	154
	%	57.2	42.8
I often check my teeth in a mirror after brushing	n	167	193
	%	46.4	53.6
I worry about having bad breath	n	335	25
	%	93.1	6.9
It is impossible to prevent gum disease with toothbrushing alone	n	309	51
	%	85.8	14.2
I put off going to the dentist until I have tooth ache	n	360	0
	%	100	0
I have used a dye to see how clean my teeth are	n	0	360
	%	0	100
I use a toothbrush with hard bristles	n	308	52
	%	85.6	14.4
I don't feel I have brushed well unless I brush with strong strokes	n	314	46
	%	87.2	12.8
I feel I sometimes take too much time to brush my teeth	n	43	317
	%	11.9	88.1
I have had my dentist tell me that I brush very well	n	167	193
	%	46.4	53.6

Table 3. Comparison of mean HU-DBI score between different groups

Variables		n	Mean	SD	Mann-Whitney U	p value
Educational level	Diploma	115	3.278	1.260	12610.5	0.097
	Bachelors	245	3.078	1.027		
Nationality	Saudi	6	2.000	0.000	396.0	0.006*
	Non-Saudi	354	3.161	1.109		
Smoking status	Yes	244	2.954	0.994	10094.5	0.001*
	No	116	3.534	1.233		
Referral	Yes	136	3.301	1.098	13470	0.057
	No	224	3.045	1.108		
Reason for last visit	Regular Check-up	42	3.571	1.252	5227.5	0.018
	Dental problem	318	3.084	1.078		
indicates statistical significance						

Table 4. Comparison of mean OHI-S score between different groups

Variables		n	Mean	SD	Mann-Whitney U	p value
Educational level	Diploma	115	1.962	0.560	9502.5	0.001*
	Bachelors	245	2.484	1.125		
Nationality	Saudi	6	4.650	0.164	103.5	0.001*
	Non-Saudi	354	2.278	0.970		
Smoking status	Yes	244	2.608	1.028	6643.5	0.001*
	No	116	1.705	0.624		
Referral	Yes	136	2.671	1.486	13439	0.060
	No	224	2.103	0.425		
Reason for last visit	Regular Check-up	42	2.621	1.855	6033	0.018
	Dental problem	318	2.277	0.833		
indicates statistical significance						

Table 5. Correlations between HU-DBI score and OHI-S score			HUDBI score	OHI-S score
Spearman's rho	HUDBI score	Correlation Coefficient	1.000	-.272**
		Sig. (2-tailed)	.	0.001
		n	360	360
	OHI-S score	Correlation Coefficient	-.272**	1.000
		Sig. (2-tailed)	0.001	.
		n	360	360
**. Correlation is significant at the 0.01 level (2-tailed).				

FIGURES:
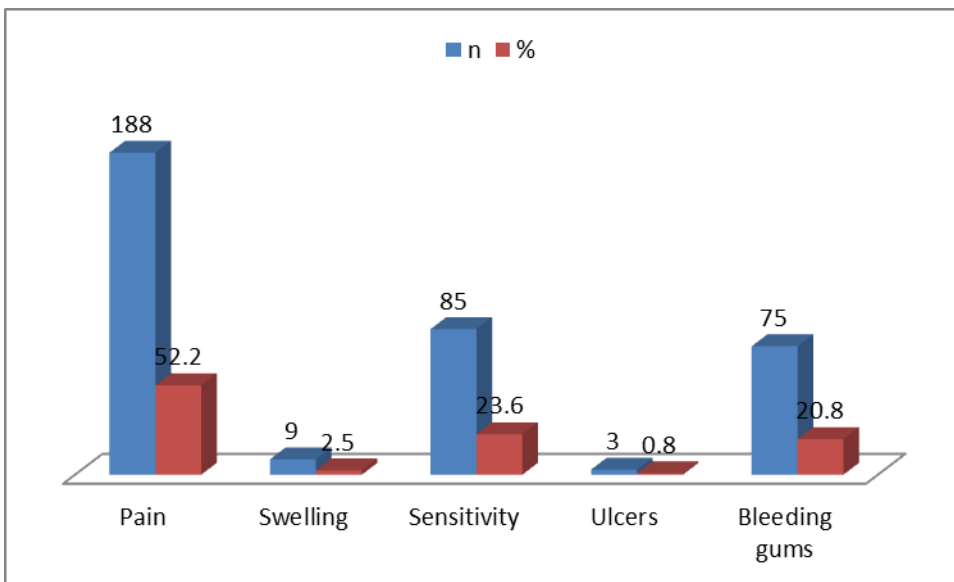
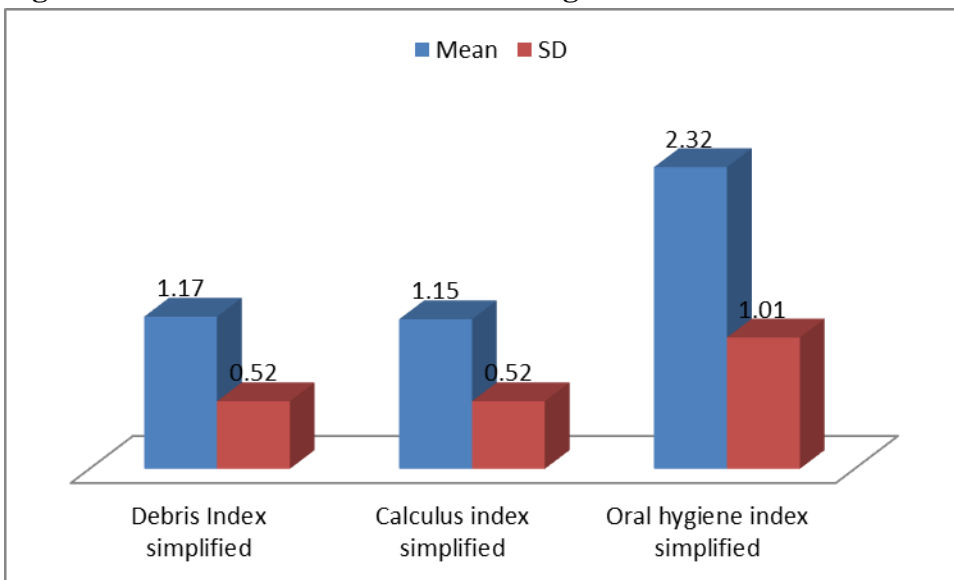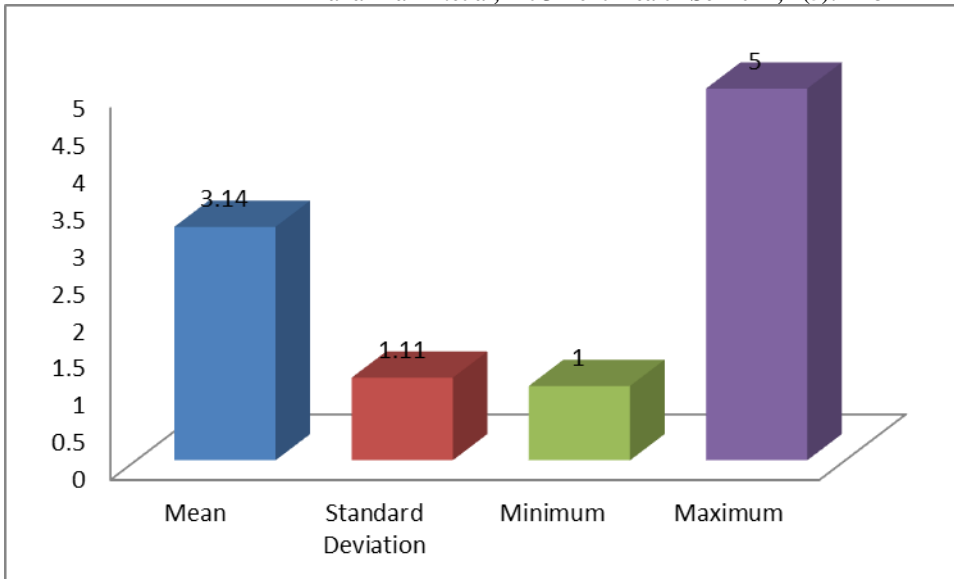**Figure 1. Patients main reason for seeking advice on oral health**

Figure 2. Oral hygiene index score

Figure 3. HU-DBI score (12 items)