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Oral Health Knowledge, Attitude and Behavior of Neyshabour Primary Health Care System Personnel

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ABSTRACT

Health care personnel are the first line of contact for public with the health care system and therefore, can have an important role in public's oral health promotion. The aim of this study was to evaluate oral health knowledge, attitude and behavior of Health Care centers personnel in Neyshabour, Iran. One hundred and thirty four health care personnel in Neyshabour participated in this cross sectional study. A researcher-led questionnaire was used to evaluate oral health knowledge, attitude and behavior of participants. Oral hygiene examination was carried out by a qualified dentist using simplified oral hygiene index. Then the association between knowledge, attitude and behavior of health care personnel with age, gender, occupation and education level were assessed by Mann-Whitney and Kruskal-Wallis tests. The results showed that 56% of participants had good knowledge, 80% reported positive attitude and 86% of personnel reported tooth brushing once daily. Average score for oral hygiene index was 1.26±1.66. Personnel with higher educational level had more knowledge ($p = 0.007$) and people with higher education and income had more positive attitude ($p = 0.001$ and 0.04, respectively). The oral hygiene index of people with higher education was better than others ($p = 0.001$). It seems that level of knowledge and behavior of studied Health Care employees regarding oral health needs improvement. Enhancement and continuation of oral health educational courses is mandatory.

Key words: Knowledge, attitude, behavior, health center employees, oral health

INTRODUCTION

In Iran, oral health training is performed by different people and organizations. Mass media, schools, teachers and health care personnel are participated in that. Among them the health care personnel in Primary Health Care System (PHCS) has a special place in health education and improving public knowledge because the first and the widest level of people contact with health care

services occurs in PHC (Primary Health Care) centers (Parsay *et al*., 2010). For this reason the personnel of this health care network should have high knowledge in different aspects of health including oral health.

Primary health care network have been established in Iran since 1971 and presently provide health services in three levels.

In first level, provides preventive health services to people. This includes rural health houses and urban health care sub centers. Auxiliary health workers known as "Behvarz" work in rural health house. Family health technicians, health volunteers (visitors), nurse assistants and midwives work in urban health care sub centers.

In second level, provides preventive and treatment services and include rural and urban health care centers. In urban health care centers besides above staff in first level, environmental health technicians, general practitioner and dentist or oral hygienist also attend.

In third level specialized health services in hospitals and clinics are provided to people. Most of medical and dental specialists are working in this level Anonymous (1998) oral and dental health; Samadzadeh and Bayat (1999).

According to integrating oral health to PHCS in Iran, health care personnel mainly auxiliary health workers, health volunteers (visitors) and family health technicians are responsible to give primary oral health care services including educational services, screening for oral diseases and also referring target groups (pregnant women, children from birth to 12 year-old) in partnership with dental professionals' personnel (Anonymous, 1994 (Integrating oral health)).

Moreover, Petersen and Kwan (2004) emphasized on role of health personnel on public oral health promotion (Petersen and Kwan, 2004). Numerous studies concerning the oral health related knowledge, attitude and behavior of PHCS personnel has been done in different developing and even developed countries (Helderman *et al*., 1999; Moon *et al*., 1998). It seems that any research on recognizing level of knowledge, kind of attitude and practice of PHCS personnel regarding oral health can help and strengthen the link between dental professionals' personnel and other members of the health sector.

Neyshabour is a city in North East of Iran in Binaload Hillside. This area has population of 452184 which 218921 of them are resident in rural areas. The neyshabour PHCS with 539 personnel provides health services across 9813 km^2 (Anonymous, 2012 (Neyshabour health network)).

The aim of present study was to evaluate level of knowledge of, attitude toward and behavior of Neyshabour PHCS personnel regarding oral health and assess their relation with factors like age, gender, occupation, education level and monthly income of subjects in 2012.

MATERIALS AND METHODS

The personnel of urban and urban-rural health care centers of Neyshabour who were willing to participate in the study were recruited. A self administered questionnaire was filled out by 134 participants in their work place. Three urban health centers in Nyshabour and Doroud and 11 urban-rural health centers in Ghadamgah, Kharvin, Eshghabad, Chakaneh and Bar with census method were studied. The study tool was a two-part questionnaire; the first part contained demographic questions including age, gender, occupation, education level, monthly income, contract type (continuous or periodic recruitment) and work place (rural or urban). The second part of questionnaire contains 43 questions on oral health knowledge (24 questions), attitude (8 questions) and behavior (11 questions). Reliability of questionnaire was assessed by test-retest method, 20 subjects re-completed the questionnaire with 3 weeks span. Questionnaire validity was

confirmed by 10 academic members of Dental School of Mashhad University of Medical Sciences. The actual performance of participants regarding oral health was evaluated by determining Simplified Oral Hygiene Index (OHI-S) through clinical exam with mirror, explorer and room light. Based on this index the score between 0-1.2 considered as good oral hygine, 1.3-3 as fair and 3.1-6 as poor oral hygiene (Greene and Vermillion, 1964).

In scoring the knowledge and behavior questions each correct answer received a one score and each incorrect answer a zero score. For attitude questions with positive nature the option "agree" received one score and disagree zero score and for questions with negative nature the option "disagree" received one score and "agree" zero score. The final scores were calculated based on correct answers percent; employees who responded correctly to less than 50% of questions received poor score. The employees who had correct answers for 50-70% questions, obtained average score and staff who had more than 70% correct answers received good score.

Statistical Package for the Social Sciences (SPSS) software (version 15) was used for data handling. The data were analysed using chi-square, t-test and one-way ANOVA. Non-normal distributed variables were analysed by Mann-Whiteny and Kruskal-Wallis tests.

RESULTS

The mean age of participants was 35.2±6.9 years. The total number of participants was 134, including 51 male (38.1%) and 83 female (61.9%). Regarding occupation, Family health technician had the highest frequency and the least were nurses and nurse assistants (Table 1). In regard to education level the most common belonged to associate degree and bachelor degree and the least frequency belonged to under diploma (Table 2). Twenty seven persons (20.1%) worked in urban centers and remainders worked in urban-rural areas. In respect to contract type most of participants were periodic recruitment (45%).

In evaluating income, the most common range was 2000000-5000000 Rials (51%) and the least common was 1000000-2000000 Rials monthly. Forty three percent of participants had income higher than 5000000 and 5 participants did not report their income.

Only 56% of personnel had good knowledge and approximately 80% of personnel reported positive attitude toward oral health (Table 3). In self-reported behavior domain, about 95% of participants stated that they brushed their teeth at least once a day (Fig. 1). Furthermore, nearly 80% of them used dental floss daily and 66% had dental check up over the past year. The mean score of OHI-S was 1.26±1.66. Neither of participants had poor OHI-S score (Table 3).

Table 1: Participants distribution based on occupation

Occupation	No.	Percentage
Family health technician	22	16.40
General practitioner	21	15.70
Midwife	21	15.70
Disease control technician	18	13.40
Receptionist	11	8.20
Environmental health technician	10	7.50
Health volunteers	17	12.70
Laboratory technician	4	3.00
Occupational health technician	3	2.20
Behvarz	3	2.20
Nurse	2	1.50
Nurse assistant	2	1.50
Sum	134	100.00

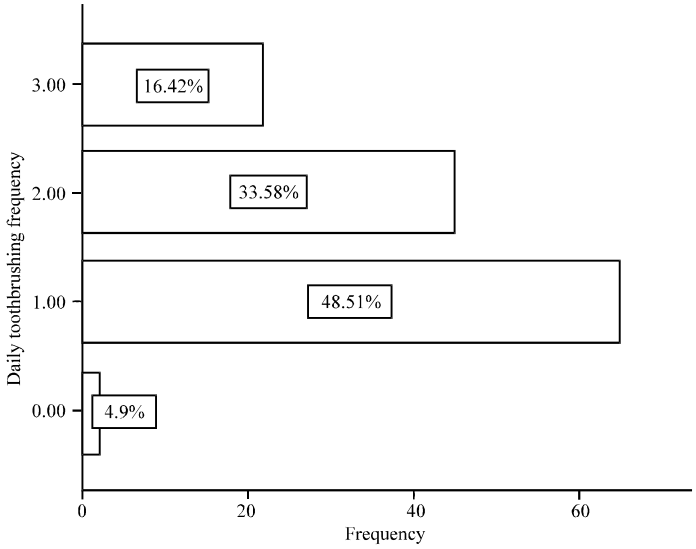

Fig. 1: Reported frequency of daily tooth brushing

Table 2: Participants distribution based on education

Degree	No.	Percentage
Under high school diploma	16	11.9
High school diploma	26	19.4
Associate degree	39	29.1
Bachelor	32	23.9
Doctorate	21	15.7
Sum	134	100.0

Table 3: Frequency distribution of knowledge, attitude, self-reported and actual behavior score (OHI-S) of health care staff of neyshabour regarding oral health

	Score: No. (percentage)		
Variable	Good	Average	Poor
Knowledge	75 (56.0)	46 (34.3)	13 (9.7)
Attitude	107 (79.9)	23 (17.1)	49 (0.3)
Self-reported behavior	49 (36.6)	61 (45.5)	24 (17.9)
OHI-S[a]	52 (39.7)	79 (60.3)	0 (0.0)

[a]Simplified oral hygiene index

There was no significant relation between knowledge, attitude, self-reported and OHI-S scores and variables like age, gender, occupation, contract type and work place (urban or rural). However, a significant relation was found between education level and knowledge, attitude and OHI-S score ($p = 0.04$, 0.01 and 0.04, respectively). Income had also significant association with knowledge, attitude and OHI-S; higher income level was associated with higher knowledge level, more positive attitude and better OHI-S score ($p = 0.07$, 0.01 and 0.04, respectively). Neither of variables showed significant relation with self-reported behavior.

DISCUSSION

In this study, level of knowledge, kind of attitude and behavior of urban and urban-rural Nyshabour PHC centers personnel about oral health were evaluated. Based on results 56% had good knowledge and 80% reported positive attitude. Although 95% of personnel reported that they brushed their teeth at least once a day, only 40% had good oral hygiene. It seems that organising continuing professional education programs regard to oral health is required to increase knowledge level of personnel. The importance of increasing health care staff knowledge about oral health is more evident when considering the fact that pregnant and lactating women with their children have regular visits at PHC centres where in the majority of them, dental personnel are not readily available. Since PHCS personnel are health counselors for people so they had to have appropriate knowledge for consultation in different health topics including oral health.

Among evaluated variables only education and income level had significant relation with personnel knowledge, attitude and behavior.

In Iran, Oral Health Bureau has been published a useful book in field of oral health as a reference for Auxiliary Health Worker known as Behvarz (Anonymous, 2004 (Oral health for Behvarzan)). It is useful to provide similar books for other personnel especially who involved in oral health integration plan in PHCS. These personnel included: Auxiliary Health Worker, Health Visitors and Family Health Technician (Pakshir, 2004). Similarly manual guidance is available in Norway for nurses and this manual clarify health topics which has to be explained for people in consultation sessions (Skeie *et al*., 2011). Evaluation of integrating oral health care in to PHCS has been shown some deficiencies (Hajizamani *et al*., 2012). It seems that a national unity based on scientific evidences is needed to help oral health integration plan and perform an oral health promotion program in PHCS. Holding workshop across the country is necessary to reach this national unity and planning a systematic program for promoting oral health (NOHPCH, 2011 (Oral health messages)). Reinforcing partnership of involved PHCS personnel in oral health integration plan can be considered as a part of this systematic program. Findings of this study showed that education level and income influenced PHC centers personnel knowledge significantly; higher education and income level were associated with more knowledge about oral health.

Pourhashemi (2004) found significant relation between education and knowledge level of personnel who are working in PHC centers, in Qom Province which were similar to our results. Dissimilar to our results he found significant relation for age and gender, with knowledge level; older staff and women had higher knowledge. In Pourhashemi (2004) study the women average age was 10 years younger than men average age which can be the reason for difference in knowledge level. He also did not evaluate the effect of income. Pourhashemi (2004) concluded that overall knowledge level of health care staff is in acceptable range however emphasized on performing retraining classes. Moon *et al*. (1998) study in evaluated the knowledge level of Korean oral health technicians about etiology of dental caries, mechanism of fluoride action and effective preventive methods, as low (Moon *et al*., 1998). In study of Ajami *et al*. (2008) only 23.1% Mashhad PHC centers personnel had good level of knowledge. Their questionnaire was very similar to ours; probably organising continuing professional education programs regard to oral health in last few years has been improved knowledge level of PHC centers personnel in present study. Ajami *et al*. (2008) also showed that level of oral health knowledge has significant relation with education level which is similar to this study results.

In present study 80% of participants had positive attitude toward oral health issues. The education level and income had significant relation to their attitude; with increasing education level the score of positive attitude increased. Also the lower score of positive attitude was observed in personnel with lower income. On the other hand these personnel accepted being impotent against oral diseases, a situation called fatalism in articles (Finlayson *et al*., 2005).

Current study in agreement with Pourhashemi (2004) showed direct association between education level and attitude. In Ajami *et al*. (2008) study health care staff attitude towards oral health was evaluated as negative. Kawamuram and Iwamoto (1999) assessed Japanese employees attitude toward oral health as weak.

Considering present study findings, the knowledge level and attitude of participants about oral health was better than their behavior. Only 40% had good oral hygiene. Ajami *et al*. (2008) evaluated the Mashhad PHCS personnel behavior in oral health as poor. In Ajami *et al*. (2008) study only self-reported behavior was evaluated but we assessed both self-reported and actual oral health behavior (OHI-S score). According to current results participant's actual oral health behavior was not as good as their self-reported behavior.

Based on the findings we suggest followings:

- Developing educational books and manuals by Ministry of Health, Treatment and Medical Education based on scientific evidence especially for involved PHCS personnel in oral health
- Organizing continuing Professional Educational programs especially for involved personnel in oral health by PHCS managers
- Developing evaluation programs by PHCS managers for periodical assessment of their staff knowledge, attitude and performance in regard to oral health education

CONCLUSION

This study showed that knowledge level of Neyshabour PHCS personnel about oral health, their attitude and actual behavior had significant relation with their education level and income level. Our findings revealed that knowledge level and attitude of health care staff were better than their behavior.

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