An exploration of approaches and difficulties in prevention of dental diseases in Saudi Arabia.

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Abstract

Aim: Dental caries and periodontitis are the most common oral diseases in Saudi Arabia. Oral health awareness is very low and prevention of oral diseases is not a high priority in this region. A national survey was conducted to assess the dentists’ attitudes and challenges in implementation of preventive dental programmes in Saudi Arabia.

Materials and methods: A questionnaire based national cross-sectional survey among 500 dentists was conducted under the auspices of Directorate of Dentistry, Ministry of Health. The data was analyzed using Microsoft excel 2010 program and descriptive statistics were obtained.

Results: The response rate was 87.8% (n=439). 72.4% believed that preventive dental services are beneficial, social factors (62.5%) are the most challenging factors in implementing preventive dental programs, followed by inadequate work force (41.6%), 64% felt dental auxiliaries are important, 68.35% felt mobile dental units play active role in providing on-site preventive treatments and 95.4% felt the need for receiving regular updates on preventive dentistry.

Conclusion: Dentists’ attitudes and challenges in implementation of preventive dental programs were identified. The survey highlighted the need for implementation of extensive and continuous community oral health education programmes in KSA.

Key words: Preventive dental programmes, Dentists, Dental auxiliaries

Introduction

Kingdom of Saudi Arabia (KSA) is a developing country [1] and has undergone a rapid change in its socio-economic situation, food consumption patterns, life style and health status during the past four decades [2]. According to the Ministry of Health (M.O.H) statistics, the most common oral diseases are Dental Caries (DC) and Periodontitis[3]. Knowledge and awareness of oral health is very low in KSA, and oral hygiene routines are introduced relatively late in life[4]. Furthermore, prevention of oral diseases is not a high priority in the region and majority of the individuals visit dental clinics only when they experience toothache [5]. Incidence of DC in young children is rising in KSA. According to a study, DC in Jeddah, now, has increased to 96 percent as compared to 74 percent in the year 2008. Currently, KSA has one of the highest rates of DC in the world [6]. A total of 31.69% of the citizens are under 15years of age. With a population birth rate of about 2.3.3% per year, and hence an ever increasing number of children, the social and economic burden associated with the rising incidence of dental disease in childhood requires serious consideration[7]. Prevention is the main objective of any health planning strategy [8]. Clinical and public health research has shown that a number of individual, professional and community preventive measures are effective in preventing common oral diseases like dental caries and periodontal diseases [8]. Opportunities exist for oral health promotion and disease prevention through preventive dental programmes (PDP) [8]. Dentists are the professionals who educate the public about the oral health care [9] and they can influence their patients’ oral health related behavior by integrating oral health education, nutritional counseling and preventive dental care into their
Materials and methods

A questionnaire based cross sectional survey was conducted under the auspices of Directorate of Dental services, Ministry of Health (M.O.H), Kingdom of Saudi Arabia. 500 dentists from all the 20 health provinces of the country working for the M.O.H dental facilities were selected by systematic random sampling to form the study group. The questionnaire (Table 1),written in English had questions on dentists’ opinions about preventive dental care, role of dental auxiliaries and mobile dental units in preventive dental programmes and challenges in implementation of preventive dental programmes. Questionnaires were distributed and then collected by official mail. Participants were given a time frame of four weeks to return the questionnaires and no attempts were made to send reminder mails. Participation was voluntary and questionnaires were filled and returned anonymously. Completed questionnaires were returned by 439 dentists and those 61 who did not return were excluded. The data was analyzed using Microsoft Excel 2010 programme and descriptive statistics were obtained. If the questionnaire was not filled completely, it was not excluded as a whole, but only the answered questions were taken into consideration in statistical analysis.

Table 1: Questionnaire

1. Do you believe that preventive services would be effective in decreasing the prevalence of dental diseases in the country?
   - Yes □  No □  To some extent □

2. Do you believe dental hygienists & other Para-dental staff play an active role in preventive dental programs?
   - Yes □  No □  To some extent □

3. Are mobile dental Units important in providing on-site dental treatment and preventive services to the community?
   - Yes □  No □  need more information □

4. Identify the challenges in implementation of preventive dental programs and Rank them in the order of difficulty? (From 1-4, 1 being the most challenging)
   - □ Inadequate work force
   - □ Lack of cooperation from schools
   - □ Lack of motivation of dental staff
   - □ Social factors

5. Do you want regular updates about Preventive dentistry?
   - □ Yes  □ No, will ask when needed □ No
Results

A total of 439 questionnaires were received and analyzed, giving a response rate of 87.8%. The region-wide distribution of respondents is summarized in Figure 1.

Majority of the respondents (72.4%, n=318) agreed that preventive dental services are effective in decreasing the prevalence of dental diseases in the country, 2.2% of them (n=10) replied as ‘no’ and 25.4% of the dentists (n=111) answered as ‘to some extent’. When enquired about the role of dental hygienists and other Para-dental staff in preventive dental programs, majority of them (64%, n=277) believed that they play an active role, 31.8% (n=138) answered as ‘to some extent’ and 4.2% (n=18) replied as ‘no’. (Figure 2)

68.3% of the respondents (n=300) believed that mobile dental units are important in providing on-site dental treatments and preventive services to the community, followed by 15.3% (n=67) who ‘needed more information’ and 16.4% (n=72), who replied as ‘no’. (Figure 3)

In identifying the challenges in the implementation of PDP, 62.5% of the respondents cited social factors as the most challenging, followed by inadequate work force (41.6%), lack of cooperation from schools (40%) and lack of motivation of dental staff (33.3%). 95.4% (n=419) felt the need of receiving regular updates about preventive dentistry, 2% (n=9) of them answered as ‘would ask later’ and 2.6% (n=11) replied as ‘no’.

Discussion

The M.O.H is the biggest provider of dental services in the Kingdom and employs dentists qualified from Saudi universities as well as expatriate dentists from other countries. According to several studies reported in literature, DC is a major health concern in KSA, with prevalence ranging as high as 90 - 96% [10-13]. It is next followed by periodontitis, which is highly prevalent in this population [14-16]. This is the first study that has analyzed data from a national random sample of dentists in Saudi Arabia. Our results provide valuable perspectives towards dentists’ opinions on implementation of PDP.

Preventive approaches in dental practice and community oral health awareness programmes have been helpful in controlling these two preventable diseases in recent decades, globally [17]. Accordingly, 72.4% of the respondents (n=318) believed that preventive dental services are effective in decreasing the prevalence of dental diseases in the country. Contrary to the developed countries, the caries...
experience appears to be higher in Saudi children with higher socioeconomic status [18]. In addition, the difference in caries experience in urban and rural areas often reported for developing countries does not appear to apply for KSA [18,19]. The most challenging aspects in the implementation of PDP, as identified by 62.5% of the respondents, are 'social factors', that include, lack of awareness of oral health care and hygiene practices, lack of parental guidance with the late introduction of oral health care, a minimal interest in regular dental visits, poor dietary habits with the excessive consumption of sweets and junk foods, presence of isolated and mobile communities that do not have access to oral health promotion programmes, little attention to child's regular brushing due to more number of children in the family, practicing only traditional oral hygiene practices even with changing food consumption habits.

In support of this, are the reported studies by Al-Shalan [20], who stated that Saudi parents' knowledge and attitude about different methods of caries prevention are influenced by their level of education and family income and Al-Sadhan[21], who reported that children in public schools and children of mothers with lower school education consumed more sweet snacks and drinks than other children. In a similar Finnish study, Honkala et al reported that adolescents with parents of higher occupational and educational levels consumed less sugar containing products[22].

In Saudi Arabia there are large variations in oral hygiene habits, related mainly to age and socioeconomic status. The chewing stick, or Miswak, is commonly used as a traditional and spiritual custom [4] and about half the population in Saudi uses it regularly [23]. Miswak releases fluoride when chewed upon, exerts antimicrobial effect on streptococcus mutans and is proved to be effective in decreasing dental plaque, gingivitis and DC [23]. In comparison to a conventional tooth brush, the only disadvantage of Miswak is, because of its straight shape, cannot reach and clean lingual surfaces of teeth and inter dental spaces[23]. Oral hygiene may be improved by complementing traditional Miswak use with toothbrushing and by tailoring oral hygiene recommendations to educational level [24]. A recent study reported a significant improvement in plaque score and gingival health when Miswak was used as an adjunct to tooth brushing [25].

41.6% of the respondents cited that inadequate work force is second most challenging barrier to overcome in the implementation of PDP. Supporting this finding is the dentist / people ratio (2.2850) in KSA, which is inadequate to effectively implement PDP at national level[26]. Inclusion of dental auxiliaries into the PDP team can help address the workforce inadequacy. 64% (n=277) of the respondents believed that dental hygienists and other para -dental staff can play an active role in community and school dental health education programmes, when properly trained. Preventing and treating oral disease requires a team effort. The dental auxiliary can be trained to play a key role in the comprehensive patient examination, gathering data, educating patients on risk factors for disease, and collaborating with the dentist for an effective preventive and therapeutic treatment plan [27].

Outreach programs using mobile dental units (M.D.U) are beneficial, as they take oral care directly to the people. Accordingly, 68.3% (n=300) of the respondents felt that M.D.U play an important role in providing on-site dental treatments and preventive services to the community. The M.D.U are valuable in providing preventive oral healthcare services like topical fluoride application, pit and fissure sealants and oral prophylaxis[28].

A vast majority of them (95.4%, n=419) were interested in receiving regular updates on preventive dentistry. It is a positive finding and suggests that dentists in KSA have sufficient preventive orientation. Active learning opportunities should be created through the Continuing education programs and workshops to enable them to implement effective preventive dental programs.

In interpreting the findings of the present study, it is important to acknowledge the possible limitations. Cross-sectional studies are often limited by respondent bias, but can serve as impetus for further studies in this area. There is limited research conducted in this area; therefore, it was difficult to make comparisons.

Conclusion
This study has provided baseline information on dentists' attitudes and identified challenges in the implementation of preventive dental programs. The results will be useful for comparison in future research within the country as well as in the middle- east region. The findings have highlighted the need for implementation of extensive and continuous oral health education programmes tailored to the educational levels of individual communities, complementing traditional Miswak use with toothbrushing, more usage of mobile dental units and training programs for dentists and dental auxiliaries to collaborate and work as a team.

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References
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