

care system. The damage to the infrastructure and disruption in services will further contribute to the deterioration of the situation.

Health is a fundamental right of children. With half of the population children represent the future of the Iraq. Provision of health care and protection for the most vulnerable population has become an absolute priority. There is a need for concerted and prompt action by the international community to help safeguard children. Based on the population needs the goal should not only be an urgent, co-ordinated, flexible, effective intervention but should also reflect the interest and welfare of Iraqi children. Due to the recent outbreaks WHO has already set up a surveillance system which is conducting a survey of infectious diseases, and have established an outbreak committee that is implementing control interventions.^{1,2} Still robust efforts in the provision of major health services and for improving of child health are widely lacking. In line with the local policies and strategies, best child health care practices need to be adopted across the country. The most pressing health-related actions will be ensuring of adequate, safe drinking water and access to sanitation, providing medical supplies and treatment for children affected by infections; trauma and other war related injuries. Building a safe environment, prevention of diseases outbreaks, and making sure that adequate stocks of essential drugs are available and functional health facilities are in hand to provide coverage to the population.

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The oral hygiene habits of school students in Riyadh, Saudi Arabia

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People's oral health behavior is important for the prevention and care of oral diseases. Their views of being able to cope with oral health behavior relate to actual tooth brushing, inter dental cleaning and dental visiting. The oral hygiene habits of a particular population depends upon its cultural background, religious norms, awareness of the problems that a lack of hygiene causes, knowledge of the existence of particular cleaning tools, education levels and socio-economic status. Today the toothbrush has become a necessity, and no conscientious person in the Western world and in some parts of the developing world can think of spending a day without the involvement of a toothbrush. In the developing world, various plants are used for oral hygiene purposes. In the Kingdom of Saudi Arabia (KSA), a study on school children revealed that 83% used a toothbrush while 16% used miswak.¹ Another study on secondary school students from Riyadh, KSA confirmed that 10% of non-smoker students never brushed their teeth.²

The aim of this study was to find out the prevalence and frequency of oral hygiene habits among intermediate and secondary school male and female students from Riyadh, KSA.

The study was carried out on intermediate and secondary school students (male, female) from Riyadh, KSA, over a period of 2 months, using stratified cluster sampling technique. A questionnaire was developed and used in Arabic language having 15 questions. The questionnaire was tested before embarking on the study. The questionnaire was distributed to 2000 students (1000 male and 1000 female).

The data was entered by a Fox Pro Program and analyzed by using statistical package for social sciences version 10. The data was analyzed for frequency distributions and Chi-square test for comparisons. The *p* value was set 0.05%. One thousand seven hundred questionnaires were returned. Fifteen hundred and ninety-six questionnaires were acknowledged appropriately filled and were accepted for the analyses giving response rate of 80%. A total of 82% male (n=820) and 77.6% female (n=776) respondents were within the age range 12-20 years (mean age 15.39 and SD ± 2.08).

Among intermediate school students (age 12-15 years) 7% of male and 3% of female and in secondary schools 14% of male and 3.5% of female students never cleaned their teeth. The daily oral hygiene habit

Table 1 - Frequency of methods used for cleaning teeth.

Methods used	Age 12-15		Age 16-20	
	Male n (%)	Female n (%)	Male n (%)	Female n (%)
Toothbrush	106 (28.9)	167 (44.5)	130 (28.8)	254 (63.7)
Miswak	35 (9.5)	14 (3.7)	108 (23.9)	11 (2.8)
Toothbrush and Miswak	219 (59.7)	183 (48.8)	199 (44.1)	130 (32.6)
Finger	4 (1.1)	6 (1.6)	10 (2.2)	2 (0.5)
Others	3 (0.8)	5 (1.3)	4 (0.9)	2 (0.5)
Total	367 (100)	375 (100)	451 (100)	399 (100)
<i>p</i> value (Sig)	≤0.001		≤0.001	

was prevalent among 19% male and 20% female students in intermediate and 25.4% male and 19% female students in secondary schools. A toothbrush was most commonly used by both male and female students at intermediate (28.9% male, 44.5% female) and at secondary school (28.8% male and 63.7% female). The use of miswak was less prevalent as compared to brush and was used by almost 24% of secondary school male students (**Table 1**).

Toothpaste was commonly used with toothbrush in both groups of students. Eleven point three percent of male secondary school students did not use anything with a toothbrush. While toothpaste was used with miswak by 4% male and 11% female students in intermediate and 4.6% male and 8.3% female students in secondary schools. Once daily tooth brushing habit was prevalent among 42.6% male and 27.6% female at intermediate and 61.4% male and 26.8% female students at secondary schools. Up to 54.4% of the students spent up to 3 minutes per brushing time. The duration of brushing up to 3 minutes was almost similar in both groups. Miswak was used, more than 3 times a day by male students 53.1% and 55.8% in intermediate and secondary schools. Once daily use of miswak was common among female students ranging from 49.5%-55.2%. Majority of the students used miswak more than 3 minutes per day. Horizontal technique among miswak user was common among male and vertical among female intermediate school students and at secondary school unspecific technique of miswak was common. Majority of the students 58.5-63% used old miswak. Most of the students preferred using toothbrush due to their perception of more cleaning effect by toothbrush, ranging from 46-58%. Sunnah (Prophet Muhammed's (PBUH) way of Practice) was given the most common reason of using miswak by 58% male and 61.5% female intermediate school and 53% male and 47.2% female

secondary school students. Better cleaning was given the most common reason of using both miswak and toothbrush by both male and female students.

A recent consensus statement on oral hygiene concluded that bacterial plaque plays an important role in the etiology of dental caries, gingivitis and periodontitis; that effective removal of dental plaque can result in the prevention or reduction of these diseases.³ The present study was conducted to look into 2 aspects of oral hygiene habits among school students, firstly to assess the prevalence of oral hygiene habits and secondly, the frequency of these hygiene habits and then comparing among male and female students from intermediate and secondary schools in Riyadh, KSA. Though questionnaire approach is acceptable but it has inherent limitations regarding over or under estimation of the investigation, in the absence of clinical examination of the subjects.

In this study, the valid response rate of 80% shows keen interest of the students in their oral health matters. The prevalence of oral hygiene habits was interesting as 7% of male in intermediate and 14% in secondary schools never brushed their teeth while among female students this corresponded to 2.7-3.5%. That shows the increase in neglecting oral hygiene as higher age group is concerned. The frequency of daily brushing ranged from 19-25%. The trend shows that daily practice of oral hygiene method was decreased in secondary school female students as compared to male students. This trend is in agreement with a study of primary school children in Jubail.⁴ Toothbrush in combination with miswak was most commonly used in both male and female groups of students. Only toothbrush was used by 64% of the female students from secondary schools groups, while almost 24% of the male students from secondary schools, used miswak. Which shows more access to miswak and social and cultural norm of the society. Daily

toothbrushing habit varied from 42.6% in male and 27.6% female in intermediate to 61.4% male and 26.8% female in secondary schools.

Miswak was used more than 3 times a day by 53% male and 24% female student at intermediate schools, while this increased to 56% in male and decreased to 17% in female at secondary schools. The over all time spent on brushing was less as compared to miswak in average more than 3 minute per use, and it is in agreement with previous study. This shows that more time is being spent on miswak compared to toothbrush but that does not reflect the meaningful cleaning of teeth by miswak as most of the male chew the miswak as a cultural norm. The majority of the students in both groups of schools expressed that toothbrush clean better than miswak, while majority of the miswak user, use it due to Sunnah with second feeling of better cleaning. The combined users of miswak and toothbrush ranged 53-68% in expressing the understanding of better cleaning. Recently, Darout et al⁵ assessed and compared the periodontal status of adult Sudanese habitual miswak and toothbrush users. It was found that the periodontal status of the miswak users in the Sudanese population was better than that of toothbrush users and the efficacy of miswaks used for oral hygiene was comparable to or slightly better than that of the toothbrush.

All of the above-mentioned comparative studies are in favor of promoting traditional oral hygiene tool of miswak. This can be integrated for oral health promotion activities, and the target group of oral hygiene neglectors should be persuaded to start with miswak, which is socially and culturally accepted and religiously motivated as the finding of present study has highlighted. The other important finding in this study is that female students in secondary school groups have descending trend of oral hygiene practices. As we know that today's children or adolescent are tomorrow's parents, so the female students needed to be focused for effective orientation for toothbrushing, as before becoming mothers.

Almost 10% of intermediate school students and 17% from secondary schools never cleaned their teeth. Female students have better oral hygiene practices as compared to male students at intermediate level but trend shifts towards the male students at secondary school level. Toothbrushing was most commonly used by female students at both intermediate and secondary schools. Both groups of students and both groups expressed the common use of toothbrush due to better cleaning perception. Miswak was used by 24% secondary school male students. Majority of the students used old miswak, and unspecific technique was most commonly used. Sunnah was expressed as common motivation of using miswak.

Oral health educational activities at schools should be integrated with oral health promotional approach. Female students at schools should be given more knowledge and incentives to improve and develop oral hygiene practices on regular basis. The parents and

teachers should play a major role in promoting healthy oral habits among students. Further, research is needed to evaluate the effectiveness of oral hygiene habits and to compare the oral health status among the studied population.

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Comparison of PCR and disc diffusion methods in detecting methicillin resistance among *Staphylococcus* species from nosocomial infections

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Methicillin resistant *Staphylococcus aureus* (MRSA) and methicillin resistant coagulase negative *Staphylococcus* species (MRCON) have spread worldwide after the introduction of methicillin. Methicillin resistant *Staphylococcus aureus* (*S.aureus*) was first isolated in England in 1961 shortly after the introduction of methicillin. Resistance *Staphylococcus* species are an important cause of nosocomial and community infections. Nowadays, there is an increase in the prevalence of MRSA and MRCONS worldwide. This increase requires a rapid, accurate and sensitive method for isolation methicillin resistant isolates. Methicillin resistant *Staphylococcus* species are