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Research paper

Secondary school students knowledge toward oral health: a cross- sectional study

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Abstract

Background: Oral health is strongly tied to oral health behaviors and knowledge. It is critical to assess teenagers' oral health information, even if they have received education, with the goal of instilling good lifestyle patterns that will last a lifetime.
Objective: Tzhe objective of the study is to identify level secondary school students knowledge toward oral health
Methodology: A descriptive cross-sectional study of 384 secondary school students probability selected schools in AL-Qadisiya Governorate, Iraq during the period (October 12th 2023 to March 25th 2024). Data collection through a self-report questionnaire consisting of two Parts: Demographic Data Form (age ,gender ,class ,monthly income and residency) and questionnaire consist 18 multiple-choice questions secondary school students toward oral care .
Results: The study included 384 students who participated in study, most of the sample reported a poor level regarding oral health (51.04%), while less than a third (28.12%) reported an average level and the remaining percentage (20.83) of those who had knowledge about oral health,with a mean of score (1.32). Furthermore, a statistically significant association was revealed between level knowledge and gender ($p = 0.045$) and residency ($p = 0.000$).
Conclusions: The researchers concluded that level of knowledge of secondery school students regarding oral health is unacceptable and below the required level.
Recommendations: The study recommended that allocating professional cadres trained to spread awareness about oral health among school students and the need to involve parents in the health education process directed at school children.

Keywords: *Secondary School Students; Knowledge; Oral Health.*

1. Introduction

Oral health involves significantly more than only possessing straight, healthy teeth. It is vital for overall health and influences individual well-being and standard of living. A person's dental health influences their social interactions and oral capabilities. It is also strongly correlated with their overall health and enjoyment of life [1] .
The overall health and oral health are mutually influential. The primary risk factors for several oral illnesses include inadequate oral hygiene practices, tobacco use, alcohol intake, and incorrect nutrition. Dietary choices influence dental caries, dental erosion, periodontitis, oral cancers, and several other disorders affecting the soft tissues of the oral cavity [2]. Smoking is linked to oral cancer, gingival and periodontal diseases, peri-implantitis, tooth discolouration, halitosis, altered taste perception, and worse wound healing following surgery. Excessive alcohol consumption is correlated with an elevated prevalence of periodontitis, dental caries, xerostomia, and oral cancer, among other potentially lethal disorders. Poor oral hygiene is associated with diabetes, cancer, and heart disease, and can also lead to periodontitis and tooth cavities [3].
Education about risk factors can help prevent a lot of these oral disorders. Keeping your mouth healthy depends on practicing excellent oral hygiene, This then influences your comprehensive well-being and standard of living. The most efficacious approach to avert dental cavities or periodontitis is by consistent, proper mechanical teeth cleaning to eliminate dental plaque. This is a crucial aspect of maintaining oral health [4].
Comprehending oral health is essential for responsible conduct, empowering individuals to undertake preventive measures for their well-being. Multiple research have established correlations between enhanced oral cleanliness and health-related behaviors, as well as a deeper comprehension of oral health [5],[6].
Children who practice poor dental hygiene at school face a variety of negative effects, some more serious than others. Physical pain is one such consequence that causes dietary issues, behavioral issues, and sleep disturbances [7]. Maintaining good dental hygiene is said to be a lifelong habit. Furthermore, it is acknowledged that these oral habits commence early in life.. Adopting safe oral practices requires a positive attitude and level of understanding on oral health. To take measures related to oral health, one must have a clear understanding of oral health [8], [9] . This extensive study experience has prompted us to do research on oral hygiene awareness among high school students in AL-Qadisiah Governorate, Iraq. The goal of this project is to assess awareness about oral hygiene among secondary school students .

2. Methodology

A descriptive cross-sectional was employed to evaluate the level of understanding of oral health among secondary school students. The research was conducted in educational institutions inside Al-Qadisiah Governorate, Iraq, from October 12th 2023 to March 25th 2024. A sample of 384 students was established by Within the 421 schooles in Al-Qadisiah Governorate, The setting was chosen using probability cluster sampling technique. The study was conducted in Al-Noor and Al-Markazia secondary schools situated in Al-Diwaniyah City, Al-Qadisiah Governorate, Iraq. The two selected schools were picked probability using a cluster selection approach, as Al-Qadisiah Governorate is segmented into districts. The investigator employed cluster randomisation to create a list and subsequently picked Al-Diwaniyah City secondary schools, specifically Al-Noor and Al-Markazia secondary schools, from a total of 118 schools in Al-Diwaniyah City. The demographic, cultural, and geographical attributes of the selected schools were quite similar. A total of 384 high school students engaged in the study. They are chosen by cluster probability sampling. The sample size was calculated using the formula established by Steven K. Thompson (2012). To determine the effect of sample size on population size. $n = Nxp(1 - p) / [[N - 1x(d^2 \div z^2)] + p(1 - p)]$. Where: n: Sample size (384), N: Population size (35,000), Z: Confidence level at 95% (1.96), d: Margin of error (0.05), p: Probability (50%). The research population in Al-Diwaniyah City consisted of 35,000 individuals. Applying the formula to this number yields a sample size of 384 students. The researcher disseminated the questionnaire format to the study sample. The following criteria were used to compose the sample of 384 secondary school students:

Inclusion Criteria

- Students in this age group ranged from 13 to 18.

Exclusion Criteria

- Students under the age of thirteen and those above eighteen
- Thirty students took part in the study's preliminary implementation.
- Student at a private school.
- Students who declined to participate in the study and did not finish the survey

In order to measure the level of knowledge and after reviewing and reviewing studies related to oral health among school students, a questionnaire designed by (Shaheen et al., 2021) [10] was developed regarding oral health. The questionnaire comprises two components, the initial component pertains to demographic information (age ,gender ,class ,monthly income and residency) and The second section assesses high school students' oral health knowledge through eighteen multiple-choice questions on topics such as toothbrushing habits, the link between food and tooth decay, as well as oral and overall health, tooth loss and orthodontic treatment.

The overall knowledge score ranged from 0 to 18, with a maximum of 18 and a minimum of 0. The overall score was categorised as low, fair, or good according to the quantity of correct answers. The impoverished category received an overall score of 6 or lower, while the adequate category 6.1-12, and the good category 12.1-18.

The questionnaire was presented to 10 experts in order to validaty the tool. A pilot study was conducted that included 30 students to measure validity using Cronbach's alpha as well as to determine the appropriate time to answer the Survey instrument. The findings indicated the validity of the questionnaire was (0.77), which is an acceptable percentage, and that the appropriate time to answer the questionnaire is (10-15) minutes.

The researchers met with the students to explain the objectives of study and the importance of correct understanding and obtain written consent from each student to participate voluntarily in the research. The self-report form in Arabic was used in the sample collection process from October 12th 2023 to March 25th 2024. The SPSS and Excel programs were used in data analysis.

3. The results of the study

Table 1: Distribution of the Student by Their Demographic Characteristics (N=384)

Demographic data	Rating and intervals	Frequency	Percent
Age / Years	13-14	101	26.3
	15-16	127	33.07
	17-18	156	40.62
	Total	384	100
Gender	Male	256	66.67
	Female	128	33.33
	Total	384	100
Class	1st	60	15.6
	2nd	44	11.4
	3rd	80	20.8
	4th	56	14.4
	5th	60	15.6
	6th	84	21.8
	Total	384	100
Monthly income	Enough	96	25
	Certain limit enough	160	41.6
	Not enough	128	33.3
	Total	384	100
Residency	Rural	148	38.54
	Urban	236	61.45
	Total	384	100

% = Percent; Freq.= Frequency.

Table 2: Overall Level of Secondary School Students' Knowledge Toward Oral Health (N=384)

Levels	Frequency	Percent	Overall mean	Overall Assessment
Poor	196	51.04	1.32	Poor
Fair	108	28.12		
Good	80	20.83		
Total	384	100.0		

Table 3: The Relationship between the Overall Level of Students' Knowledge About Oral Health and Their Demographic Data

Demographic Data	Chi-Square Value	D.F.	P-Value
Age	4.532	4	0.535
Gender	8.871	2	0.045
Class	3.761	10	0.221
Monthly income	4.497	4	0124
Residency	9.345	2	0.000

4. Discussion

Children have the right to an education and the right to be in good health. The institution of school shapes children's behaviour, attitudes, and perspectives on life. Children who are raised with healthy behaviors tend to carry them into adulthood. Approximately one-third of a child's daily activities are spent in school. The importance of schools in fostering children's health has long been acknowledged. In order to establish a conducive environment for health, education, and employment, as stated by the World Health Organisation Global School Health Initiative supports "health-promoting schools." This effort intends to examine the degree of knowledge among secondary school students on oral care [11], [12].

According to the results attached in Table 2 regarding the overall assessment of secondary school students' knowledge regarding oral health, out of 384 students who participated in research, most of the sample reported a poor level regarding oral health (51.04%), while less than a third (28.12%) reported an average level and the remaining percentage (20.83) of those who had knowledge about oral health. With a mean score (1.32). Based on the results shown in Table 3 regarding the relationship between the general Assessment of Students' Knowledge about Oral Health and their demographic data. The results show a statistical relationship between gender and secondary school students' knowledge with statistical significance at P-Value(0.045) as well as between place of residency and level of knowledge statistical significance at P-Value (0.000). This result is attributed to the deficiency of information among secondary school students regarding oral health, which may indicate the absence of health education programs in the curricula, whether in primary or secondary school, in addition to the indifference of students regarding oral and dental health in particular.

Iraq's elementary and secondary school curricula still don't include a primary oral health education program. He pointed out that if oral health counseling and education—such as proper oral hygiene, Topical fluoride and regular dental examinations have been incorporated into the curricula of these universities.Regrettably, oral health education is not incorporated into the curriculum of elementary schools in Iraq, in contrast to Tanzania [13]. where dental health is incorporated into the primary school curriculum and subsequently addressed in secondary education by specialists.

Individuals will be able to pay greater attention to their dental health as disorders of the oral cavity can affect an individuals physical, mental, and social health if they are aware that oral health is an essential component of overall health.In this study, the female respondents outnumbered the male respondents in terms of knowledge, and the respondents who had appropriate information also used dental floss more frequently than the respondents who did not. This is consistent with research conducted in Qatar (Al-Darwish, 2016) [14] and Iran (Kamran et al., 2014) [15], which found that women knew more about oral health than men did. Nonetheless, gender equality in knowledge and practice was noted by (Darout et al., 2005) [16] among their participants.

This outcome aligns with the findings of prior investigations. that addressed the assessment of students' knowledge and practices towards oral and dental health. In a study conducted in Kirkuk by Ibrahim & Hussein (2015) [17] on the knowledge of secondary school students towards oral care and methods of preventing gum and dental diseases, the study found that female students had a low level of knowledge about oral care. In a study conducted in Pakistan on 370 students by Imran et al., (2015) [18], the results showed Among the total pupils, 18 (5%) possessed good knowledge, 170 (46%) exhibited moderate knowledge, and 182 (49%) shown low knowledge about oral health. The results are inconsistent with a research conducted by Carneiro et al., (2011) (19), which assessed the knowledge and habits related to oral health among secondary school students in Tangier, Tanzania. The study encompassed 785 students, of whom approximately 694 (88.4%) demonstrated a sufficient comprehension of the aetiology, prevention, and symptoms of dental caries; 760 (96.8%) grasped the causes and prevention of periodontal diseases; 695 (88.5%) identified cigarette smoking as a risk factor for oral cancer; and 770 (98.1%) recognised the significance of dental examinations. A total of 717 individuals (91.3%) shown proper practices for sweet food consumption, whereas 568 individuals (72.4%) adhered to an acceptable tooth cleaning frequency. Additionally, 19 (2.4%) brushed their teeth at twelve-hour intervals, and 313 (39.9%) attended for examinations.Conclusion

In this section you should present the conclusion of the paper. Conclusions must focus on the novelty and exceptional results you acquired. Allow a sufficient space in the article for conclusions. Do not repeat the contents of Introduction or the Abstract. Focus on the essential things of your article.

5. Conclusions

According to the findings of the study, the level of knowledge of secondary school students regarding oral health is unacceptable and below the required level. This may expose students to several diseases related to their health due to lack of awareness regarding oral and dental hygiene in particular.This study demonstrated a substantial correlation between students' general knowledge levels and (gender, residency) at ($p<0.05$).

6. Recommendations

- Allocating study periods in schools to spread health awareness in general, and awareness
- Related to oral health in particular.
- Allocating professional cadres trained to spread awareness about Dental health among students in educational institutions.
- They need enhance knowledge acquired by children through periodic visits to schools and provide children with toothbrushes and toothpaste to encourage them to apply this knowledge practically during their daily lives.
- Implementing health education programs directed at children managed to raise the level of oral health care through brochures.
- The need to involve parents in the health education process directed at school children.

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