Assessment of knowledge, attitudes and self-care practice of adolescent regarding oral health in Karbala city

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Abstract
Oral health is one of the most unsecured health care needs for adolescents. Oral health in children and adolescents is often overlooked. The mouth can be one of the most common ways to transmit diseases and therefore have a profound impact on overall health. Therefore, we are interested in the problem, especially for teenagers. This study aimed to evaluate the knowledge, attitudes, self-care practice of adolescents towards oral care, and the actions they take to maintain oral health. Methodology: The target group was adolescents aged 12 to 18 years of school students who were randomly selected as a sample for research in Iraq's holy province of Karbala. The samples were collected using the Susan Romano Rust fold tool after modification. Results: The results of the study showed that 66% of the sample have poor information about the importance of oral health care, while 64% of adolescents have positive attitudes towards oral care, and despite the high positive attitude, they are moving towards the importance of oral care. Healthcare. We found that 51% of them are interested in poor oral hygiene in terms of folding. The conclusion, more than half adolescents in this study have poor information about the importance of oral health care. Recommendations focused on the creation of an educational program and courses on the importance and methods of oral health care for school students, especially for those who are teenagers, as well as the inclusion in their curricula of oral health attention and the methods used for it, emphasizing the educational and economic role of parents in supporting their adolescents in this direction.
Keywords: self-care practice; oral health; knowledge

1. Introduction

One of the most unmet medical issues among teenagers is oral health. The oral health of kids and teenagers is frequently disregarded. The mouth has a significant impact on public health because it is one of the most common routes for the transmission of disease. Teenagers typically experience the same issues with lifelong teeth decay. In addition to dental recommendations and sports injuries. Due to increased sugar intake, nicotine beginning, and disregard for orthodontic issues, adolescence is the most likely time for dental problems to increase. Teenagers require a special strategy to motivate them about oral health issues. During these formative years, it is crucial to instill good behaviors, and it is during this time that dental hygiene maintenance techniques are taught. [1, 2]

According to Steptoe et al., "health behavior" refers to the acts people do to protect, promote, or preserve their health and prevent sickness. [3] With diligent application of oral self-care practices, a person can get rid of oral illness. [4] It is advised to use fluoride toothpaste on a regular basis, clean your teeth more than once every day, and consume sugar-free diet items. To encourage the public to practice oral self-cleanliness, dentists should emphasize the value of oral hygiene and set an example for others by maintaining excellent dental health. [5]

Untreated dental caries is the most common disease in the world, impacting around 35% of all human populations in 2010, and the third most expensive and difficult to cure long-term illness. [6, 7] Caries is seen as a challenging, complex, and lifestyle-dependent issue. Unhealthy habits include regularly eating sweets, forgoing routine dental care, and neglecting oral hygiene procedures all play a big part in the progression of caries. It has been proven that even a small reduction in sugar intake might worsen the epidemiology of caries. [8]

Careers outside of oral health could increase the prevention and recurrence of dental disorders. [9] Every health worker should possess the fundamental abilities to promote oral health and identify oral illnesses in order to reduce social risk factors for oral diseases and enhance both individual and societal health. According to the most recent WHO study, health professionals should have both global and local relevance. [10] The third group of abilities in a Competency Matrix for Global Oral Health included nurses alongside doctors, physician assistants, and pharmacists. [9] School nurses in particular can help students' oral health. [11,12]

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Comparing adolescents from developing countries like Iraq to those from developed ones, little is known about their attitudes toward and behaviors when it comes to their oral health. Despite this, the value of realistic dental health teaching strategies can be seen in this information. This study provides information for future studies and enables assessments of adolescent attitudes about oral health in other countries.

This study aims to:

Assesse of knowledge, attitudes and self-care practice of adolescent regarding oral health in Karbala city.

Study question:

What are the knowledge, attitudes and self-care practice of adolescent regarding oral health in Karbala city?

2. Methodology

Materials

Research Design

A descriptive research design used in present study.

Setting

The study carried out at the secondary school in Karbala.

Subjects

The researcher will take 100 students aged between 12-18 years, which be chosen from Karbala Schools randomly (cluster sampling). **Inclusion criteria:**

1) Age: 12 to < 18 years of both sexes.
2) Agreed to participate in the current study.
3) Able to communicate verbally.

Tools:

Tool I: Biosocio-demographic data structured interview:

This includes the following data as age, area of residence, sex, client's level of education, income status.

Tool II: oral health knowledge, attitudes, behaviors; by Susan Romano Rustvold[13]**:**

To collect data for the study's objective, which includes the following, the researcher modifies these tools:

1. Part 1: Rustvold Oral Health Knowledge Inventory.
2. Part 2: Oral Health Attitudes and practice Questionnaire **METHOD**

The study design accomplished as follow:

1. After explaining the study's goal to the relevant authorities in the aforementioned research settings, official authorization to conduct the study obtained. To collect data for the study's objective, which includes the following, the researcher modifies the tools collage of Nursing and changes introduced accordingly.
2. To test the tool's applicability, pilot research conducted with 10% of the students.
3. The researcher gather data by interviewing the pupils.
4. Each student receives a structured interview lasting 5 to 10 minutes, using the tools.
5. Data collection begin after the administrative authorization had obtained. 100 students were chosen at random and must meet the requirements for the chosen course.
6. To evaluate knowledge, attitudes, and practice of oral health, , the researcher conduct one-on-one interviews with each student while using bio sociodemographic data (Tool I), the Rustvold Oral Health Knowledge Inventory, and the Oral Health Attitudes and Practice Questionnaire (Tool II). Each Interview taken approximately from 5-10 minutes.
7. Once data collection was complete, the proper statistical analysis performed to examine the results.

Ethical considerations:

- The study subjects assured about the confidentiality.
- The study subjects assured about the privacy of their data and of the anonymity of the record.
- Verbal consent of the students obtained after explanation of the aim of the study.
- Student's rights to withdrawn at any time of research participate it were considered and respected.

3. Result

The following statistical tests were used:

1. Frequency (N), mean (M), standard deviation (SD), percentage (%).

Knowledge Levels category:

- The levels of correct Knowledge of adolescents about oral health were categorized based on the sum of their correct answers to the items of Knowledge; the wrong response receives a score of 0, whereas the right response receives a score of 1. Three levels of correct Knowledge are determined as follows:
- Poor level of Knowledge (total correct answers from 0-4)
- Medium Knowledge level (total correct answers from 5 - 7)
- Good level of Knowledge (total correct answers from 8-10).

Attitudes Levels category:

- The axis of adolescents' attitudes towards oral health consists of 14 statements, some of which have a positive direction, and some of them have a negative direction. The adolescent answers them by one of four options, where each option is given a score according to the direction of the statement as follows: In affirmative statements, the notation is: (I agree completely =4, I agree partly =3, I disagree partly =2, I disagree completely =1), In positive statements the notation is: (I agree completely =1, I agree partly =2, I disagree partly =3, I disagree completely =4).

- Adolescents' attitudes toward oral health are categorized based on their total responses to trend items ranging between 14 and 56 degrees. two trends are identified as follows:
- Negative trend (total answers from (14 - 35)
- Positive trend (total answers from (36 – 56)

Behaviors Levels category

- The axis of adolescents' behaviors related to oral health contains 3 phrases, representing their healthy behaviors for oral and dental care,
- Numbers 15 and 16 are related to how frequently you should brush and floss your teeth. Number 17 have to do with frequency of visit a dentist.
- The five categories were coded 1 through 5, with a lower number indicating more frequent oral health-related beneficial habits, for the sake of data entry and analysis. Adolescents' behaviors related to oral health are categorized based on their total responses to phrases ranging between 3 and 15 degrees. Three Behaviors Levels are identified as follows:
- Good behavior (total answers from (3 – 6)
- Bad behavior (total answers from (7 – 11)
- Very bad (total answers from (12 – 15)

Part 1: Demographic data

Table1: distribution of the sample according to their demographic data

Variables		*n = 100	
		N	%
Gender	Male	44	44.0
	Female	56	56.0
Age (Years)	12-14 y	18	18.0
	15-16 y	56	56.0
	17-18 y	26	26.0
Place of residence	City	81	81.0
	The countryside	19	19.0
Educational level	Preparatory	78	78.0
	High School	22	22.0
Income Status	Income is higher than expenditure	10	10.0
	The income equals the expense	67	67.0
	Income is less than expenses	23	23.0

* n: number of sample

Phrases	Correct		Wrong	
	N	%	N	%
1. Sugar, when combined with salivary proteins, causes a hard coating to form on teeth, which leads to tooth decay.	17	17.0	83	83.0
2. A bacterial material called plaque builds up on the surface of teeth.	48	48.0	52	52.0
3. By reducing cavities, fluoride in toothpaste has significantly improved oral health.	33	33.0	67	67.0
4. The reality about flossing is that it's safe to do so as long as your gums aren't bleeding.	62	62.0	38	38.0
5. Gum inflammation known as gingivitis includes swelling and bleeding.	71	**71.0**	29	29.0
6. The most "tooth-friendly" moment to have a sweet dessert is during a meal	19	19.0	81	81.0
7. Other than removing bacteria or food particles, brushing our teeth has another purpose.	8	8.0	92	92.0
8. Studies have shown a link between periodontal (gum) disease and diabetes, and premature newborns, low birth weight infants, diabetes, heart disease, and stroke.	17	17.0	83	83.0
9. The two most crucial dental hygiene practices are twice-daily brushing and once-daily flossing.	56	56.0	44	44.0
10. Cigarette smoking causes half of all cases of periodontal disease and one-fourth of all oral cancers.	55	55.0	45	45.0

Table No. 1 shows the distribution of adolescent participating in the study according to their demographic data, as it showed that 56% of them were female and 44% were male. Adolescents in the age group (15-16 y) were the highest percentage at 56%, followed by the age group (17-18 y) at 26%, then 18% for age group (12-14 y). Majority of them 81% resided in the city, 19% in the countryside. In terms of the educational level, the highest percentage was 78% of the Preparatory level, and 22% of the High School level. The income equals the expense was The income statues for 67% of them, followed by 23% who had Income is less than expenses, and 10% had income is higher than expenditure.

Part 2: Oral Health Knowledge:

Table 2: distribution of the sample according to their answers on Oral Health Knowledge phrases.

Table No. 2 Shows the distribution of the adolescent participating in the study according to their answers about Oral Health Knowledge phrases, Where it showed that the highest percentage of them 71% were correct answers about "the gingivitis is an inflammation of the gums that involves swelling and bleeding", followed by 62% who had a correct answer about " the truth about flossing: it is OK to floss, but you should stop immediately if your gums start bleeding". On the other hand, majority of them 92% gave wrong answers about "the goal when we brush our teeth is some other reason than to remove

germs or food", followed by 83% gave wrong answers about " Sugar contributes to tooth decay because Sugar combines with proteins in saliva to create a hard layer on teeth" and " Periodontal (gum) disease has been linked to Low Birth Weight Babies (premature babies), Diabetes, Heart Disease, and Stroke in studies. Then 81% gave wrong answers about "The most common way to enjoy a sugary treat is "tooth-friendly" time is along with a meal".

Table 3: Distribution of the sample according to their knowledge about oral health levels						
Oral Health Knowledge level	Poor		Medium		Good	
	N	%	N	%	N	%
	66	66.0	34	34.0	0	0

Table No. 3: show the distribution of adolescent participating in the study according to their knowledge levels. We notice that the highest percentage of them 66% had poor level of knowledge about oral health, and 34% were at medium level.

Part 3: Oral Health Attitudes:

Table 4: distribution of the sample according to their answers on Oral Health Attitudes phases								
phases	I agree completely		I agree partly		I disagree partly		I disagree completely	
	N	%	N	%	N	%	N	%
1. I think cavities can only be avoided by visiting the dentist.	23	23.0	29	29.0	29	29.0	19	19.0
2. I firmly feel that brushing and flossing will not benefit my teeth if my parents have poor oral health.	10	10.0	25	25.0	22	22.0	43	43.0
3.I think that by flossing and brushing my teeth, I can prevent tooth decay.	59	59.0	29	29.0	8	8.0	4	4.0
4. I think losing teeth comes with becoming older.	11	11.0	29	29.0	34	34.0	26	26.0
5. In the next year or two, I'm probably going to develop gingivitis or gum disease.	17	17.0	31	31.0	35	35.0	17	17.0
6. I think it's up to me to keep my teeth from falling out.	79	79.0	6	6.0	10	10.0	5	5.0
7. I firmly believe that dental floss can help me avoid gingivitis.	15	15.0	36	36.0	30	30.0	19	19.0
8. I feel that maintaining my natural teeth is more work than maintaining dentures.	27	27.0	29	29.0	23	23.0	21	21.0
9. I think I know how to properly brush my teeth.	50	50.0	35	35.0	13	13.0	2	2.0
10. When I floss, if my gums bleed, it usually signifies that I am injuring my gums and I should stop.	7	7.0	14	14.0	25	25.0	54	54.0
11. If I had more knowledge about dental health, I might be able to keep my teeth from falling out.	47	47.0	26	26.0	21	21.0	6	6.0
12. I think that I should only go to the dentist if I am in pain.	22	22.0	25	25.0	21	21.0	32	32.0
13. In the next year or two, I'm probably going to develop teeth decay.	15	15.0	29	29.0	31	31.0	25	25.0
14. When I brush, if my gums bleed, it usually implies that I am brushing too vigorously and should stop	22	22.0	31	31.0	31	31.0	16	16.0

Table No. 4 shows the distribution of the adolescent participating in the study according to their answers on Oral Health Attitudes phases, as it show that highest percentage of adolescent were "agree completely" in phases "I believe that I am responsible for preventing the loss of my teeth", "I believe that by brushing and flossing my teeth I am less susceptible to tooth decay", "I believe I know how to brush my teeth correctly" with rate 79%, 59%, 50% respectively.

In other hand it show that highest percentage of adolescent were "dis agree completely" in phases "If my gums bleed when I floss, this usually means that I am hurting my gums and I should stop flossing my teeth", "I believe visiting the dentist is only necessary when I am experiencing pain" with rate 54%, 32% respectively.

Table 5: Distribution of the sample according to their Oral Health Attitudes				
Oral Health Attitudes	Negative		Positive	
	N	%	N	%
	36	36.0	64	64.0

Table No. 5: show the distribution of adolescent participating in the study according to their Oral Health Attitudes. We notice that the highest percentage of them 64% had positive Attitudes about oral health, and 36% had negative Attitudes.

Part 4: Oral Health Practice

Table 6: distribution of the sample according to their answers on Oral Health Practice phases										
phases	>twice a day		twice a day		Once a day		2–3 times a week		less frequently	
	N	%	N	%	N	%	N	%	N	%
1. When did you last wash your teeth?	17	17.0	41	41.0	29	29.0	6	6.0	7	7.0
2. How frequently do you use dental floss, toothpicks, or an interdental brush to clean in between your teeth?	Once a day or more		2–3 times a week		Once a week		less frequently		Never	
	N	%	N	%	N	%	N	%	N	%
	45	45.0	14	14.0	12	12.0	14	14.0	15	15.0
3. How frequently do you go to the dentist?	More than once a year		Once a year		Every two years		Every three years		less frequently	
	N	%	N	%	N	%	N	%	N	%
	21	21.0	25	25.0	8	8.0	32	32.0	14	14.0

Table No. 6 shows the distribution of the adolescent participating in the study according to their answers on Oral Health Practice phases, as it shows that highest percentage of adolescent 41% were brushing their teeth " twice a day", 29% "once a day", and the lowest percentage of them 6% were brushing their teeth 2–3 times a week". For cleaning between teeth that 45% of them were "once a day or more" cleaning between their teeth (by dental floss, toothpick or interdental brush),15% "never" and the lowest percentage of them 12% were "once a week". As for visiting the dentist, 32% visiting him "every three years", 25% "once a year", but 8% "every two years"

Table 7: distribution of the sample according to their Oral Health Practice levels						
Oral Health Practice	Very Bad		Bad		Good	
	N	%	N	%	N	%
	12	12.0	51	51.0	37	34.0

Table No. 7: show the distribution of adolescent participating in the study according to their Oral Health Practice levels. We notice that the highest percentage of them 51% had bad level, 37% had good level, and 12% had very bad Oral Health Practice level.

Part 5: Relationship between knowledge attitudes and Practice

Table 8: relationship between Oral Health knowledge attitudes and Practice			
	Knowledge	Attitudes	Practice
Knowledge	1	R:0.120 P:0.234	R:-0.017 P:0.864
Attitudes	R:0.120 P:0.234	1	R:-0.076 P:0.453
Practice	R:-0.017 P:0.864	R:-0.076 P:0.453	1

Table No. 8 shows the relationship between Oral Health knowledge attitudes and Practice, It showed that there was no statistical significance (P value more than 0.05) for the relation between practices, trends and practices for oral health.

4. Discussion

This study assessed the knowledge, attitudes, and behaviors related to oral health for 100 adolescent students and the sample was collected from secondary schools in Karbala, they were randomly selected.

Table 3 shows that the biggest percentage of adolescents (66%), compared to 34% who had intermediate knowledge, had inadequate knowledge of oral health. This finding is in line with one from a study done in Jeddah, Saudi Arabia, which revealed that pupils there scored lower on tests measuring their awareness of oral health. [14]

According to this study's Table 5, the majority of adolescents absolutely agree that they are responsible for preventing tooth loss, with the highest percentage of the sample (64%), having good views toward oral health.

In their study, conducted in China by Ling Zhu and others, it was discovered that half of kids and teenagers wash their teeth twice a day or more, as is advised. This outcome echoes that of some industrialized Eastern European nations. [15, 16] But in our research, as shown in table No. 7, we discovered the majority of teenagers—51%—had poor oral health practice levels, while 37% had good levels.

The findings of a study on 12-year-old pupils in Galicia, Spain, showed that there is a strong correlation between this area's knowledge, attitudes, and habits about oral health. [17] This finding conflicts with the finding of our study, which showed that there was no statistically significant correlation between practices, trends, and practices for teenagers' dental health (see Table No. 5).

5. Conclusion

The study's findings revealed that 66% of the sample lacked adequate knowledge regarding the significance of oral health care, compared to 64% of teenagers who had favorable views toward oral care but did not fully understand its significance. We discovered that only 51% of them were interested in practicing good dental hygiene, which is low.

Recommendations

We recommended the following points

1. Holding an instructional program regarding dental care techniques and highlighting the significance of these procedures for school-age pupils, especially teenagers.
2. To encourage preventive oral care, it is important to educate parents and incorporate them in the process. If the school administration agrees to let us inform them about parent-teacher conferences, it can be done.
3. Teachers need to be educated so they can convey the value of oral health and how to maintain it.
4. To ensure that students and teachers understand the significance of oral preventative care, it should be incorporated into the curriculum.

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