

## Fluoride Awareness among Health Students at Taif University

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### Abstract

**Aim:** The purpose of this study was to evaluate the awareness of Fluoride substance among health students at Taif University. This in turn would assist the dental community members to raise awareness among the population in Taif city.

**Objective:** The main objective was to know their knowledge about the fluoride substance and awareness of its role in prevention of dental caries.

**Methodology:** Structured questionnaire was distributed among students of five health colleges at Taif university. The questionnaire consisted of 16 questions in English language. This study involved 103 students. The students were requested to fill the questionnaire regarding knowledge and awareness about fluoride. the questionnaire was collected and the data was assessed and analyzed using (SPSS, v.21).

**Result:** The result of this study, presented in tables and figures shows the distribution frequency of responses to each question. Result of this study showed 31.66% (38.53% of males and 24.79% of females) of the students were aware, and had good knowledge about fluoride substance, while 68.34% (61.47% of males and 75.21% of females) of the total students were not aware and they have lacked knowledge about the fluoride substance. The result of awareness among each specialty showed that all specialties lacked knowledge and were not aware about fluoride, especially the preparatory year 78.33% and applied sciences 77.55%. While the dental students were the ones who have good knowledge about fluoride.

**Conclusion:** The outcome of this study shows that high percentage of health care students were not aware and had definitive lack of knowledge about fluoride and its role in caries prevention. This directs us to arrange with College Administration to conduct preventive dental courses for health students in Taif University.

**Keywords:** Dental Fluorosis; Periodontium; Health; Periodontitis; Sialic Acid; Chondroitin Sulfate

## Introduction

The fluoride is the protective mineral substance for teeth after acid attack and demineralization. It is derived from Fluorine, which considers as the 13<sup>th</sup> most abundant element in the earth's crust, represents nearly 0.3 g/kg [1]. The fluoride assists the teeth to be more resistant to the decay by strengthening the enamel and re-mineralizing early carious lesions. Although a small amount of the fluoride can significantly decrease dental caries without any side effect, the use of the fluoride is still controversial [2]. Caries is an infectious microbiologic disease that leads to local dissolution and destruction to the dental tissue as result of mineral transfer from tooth structure to surrounding environment [3]. Thus, the key role of the fluoride is to reduce this dissolution. Recently the dental caries has increased in many of developing countries due to change in lifestyle, dietary habits, high sugar Intake, consumption of soft drinks, and insufficient exposure to fluorides [4]. The Fluoride are present naturally in the food and drinking water and other many sources include medicaments, air, cosmetics, etc [5]. The WHO standardized the maximum concentration of the fluoride in drinking water to prevent excess intake of fluoride, which may lead to fluorosis. WHO accepted the maximum fluoride concentrations in drinking water as 1.5 mg/L. Thus the recommended level of fluoride intake which assists in reduce decay is 1 mg/L while the minimum level is 0.5 mg/L [6]. Excess intake of the fluoride (> 1.5 mg/L) it will cause dental and skeletal problems over a long period. Fluorosis is a disease caused as result of high fluoride intake manifested by mottling of teeth in mild cases and embrittlement of bones and neurological problems in severe cases [7].

## Aim of the Study

The aim of this study is to measure the awareness of Healthcare students about Fluoride which in turn they will help us to raise the awareness of the Taif community population through Volunteer campaigns and social networks.

## Methodology

A descriptive cross-sectional study conducted among Health students at Taif University. A structured questionnaire distributed randomly among 103 students male (n = 76) and female (n = 27) in health colleges at Taif University. Review and ethical committees in faculty of dentistry at Taif University approved the study. The questionnaire consisted of 16 questions divided into three parts as follow:

1. The first part of the questionnaire (Q1-Q9) was concerned about history of fluoride intake of the Students: (Did he/she drink fluoridated water for most of their water needs? Did he/she had written records documenting he/she being a customer of water utility/utilities that provided fluoridated water during your years 0 - 10 years old? Did he/she consume of well water during the period from 0 - 10? Did he/she consume bottled water for any more than 20% of water needs during the time from 0 - 10 years old? Was he/she given prescription of fluoride supplements during the period from 0 - 10? Did he/she use fluoridated toothpaste during the years 0 - 10? Did he/she use fluoridated mouthwash during the years 0 - 10?)
2. The second part of questionnaire (Q10-Q11-Q12) was concerned about knowledge of fluoridated water intake: (Did he/she have well water? Did he/she use bottled water? Was he/she using a water conditioner or filtration system in water?).
3. The third part of questionnaire (Q13-Q14-Q15-Q16) was concerned about knowledge about fluoride in terms of (level, sources, supplements forms and harmful effect of excess fluoride intake on the Enamel of the teeth).

The data collected was analyzed using Statistical Package for Social Sciences (SPSS, v.21) using descriptive statistics to calculate the frequency distribution and percentage.

## Result

The questionnaire included three parts of questions, the first part for assessing the history of fluoride intake, the second part for assessing knowledge about fluoridated water intake, third part about knowledge about fluoride in terms of (level, sources, supplements

forms and harmful effect of excess fluoride intake on the Enamel of the teeth). The self-reported result of the fluoride awareness among male and female students are presented in table 1 and 2 as well as, the overall percentages of total students' responses for each question are presented in figure 1-3.

**Q1:** 27.6% of males (n = 21) and 25.9% of females (n = 7) they didn't drink fluoridated water for most of their water needs. 35.5% of males (n = 27) and 22.2% of females (n = 6) they drank fluoridated water for most of their water needs. 36.8% of males (n = 28) and 51.9% of females (n = 14) they don't know if they drink fluoridated water for most of their water needs.

**Q2:** 48.7% of males (n = 37) and 44.4% of females (n = 12) they didn't have written records documenting for being a customer of the water utility that provided fluoridated water. 14.5% of males (n = 11) and 11.1% of females (n = 3) they had written records documenting for being a customer of the water utility that provided fluoridated water. 36.8% of males (n = 28) and 44.4% of females (n = 12) they didn't know if they had written records documenting for being a customer of water utility that provided fluoridated water.

Q. No.	Question	Gender	Male			Female		
		Answers	No	Yes	I don't know	No	Yes	I don't know
1	From Birth until age 18 did you drink fluoridated city water for most of your water needs?	Preparatory	10	5	11	2	0	1
			38.5%	19.2%	42.3%	66.7%	0%	33.3%
		Dentistry	5	18	6	0	0	0
			17.2%	62.1%	20.7%	0%	0%	0%
		Medicine	3	1	7	1	4	5
			27.3%	9.1%	63.6%	10.0%	40.0%	50.0%
		Pharmacy	2	3	1	1	0	3
			33.3%	50.0%	16.7%	25.0%	0%	75.0%
2	Do you have written records documenting your being a customer of your water utility that provided fluoridated water during your years 0 - 10 years old?	Preparatory	11	4	11	1	1	1
			42.3%	15.4%	42.3%	33.3%	33.3%	33.3%
		Dentistry	19	2	8	0	0	0
			65.5%	6.9%	27.6%	0%	0%	0%
		Medicine	5	3	3	2	1	7
			45.5%	27.3%	27.3%	20.0%	10.0%	70.0%
		Pharmacy	1	2	3	2	1	1
			16.7%	33.3%	50.0%	50.0%	25.0%	25.0%
		Applied science	1	0	3	7	0	3
			25.0%	0%	75.0%	70.0%	0%	30.0%

**Table 1:** Frequency distribution and percentage of student's responses.

Q. No.	Question	Gender	Male			Female		
		Answers	No	Yes	I don't know	No	Yes	I don't know
3	Did you consume well water during the period from 0 - 10 years old for any period more than three months?	Preparatory	7	8	11	1	1	1
			26.90%	30.80%	42.30%	33.30%	33.30%	33.30%
		Dentistry	4	10	15	0	0	0
			13.80%	34.50%	51.70%	0%	0%	0%
		Medicine	4	5	2	1	6	3
			36.40%	45.50%	18.20%	10.00%	60.00%	30.00%
		Pharmacy	3	2	1	4	0	0
			50.00%	33.30%	16.70%	100.00%	0%	0%
		Applied science	1	1	2	3	3	4
			25.00%	25.00%	50.00%	30.00%	30.00%	40.00%
4	Did you consume bottled water for any more than 20% of your water needs during the time from 0 - 10 years old?	Preparatory	6	13	7	1	2	0
			23.10%	50.00%	26.90%	33.30%	66.70%	0%
		Dentistry	6	12	11	0	0	0
			20.70%	41.40%	37.90%	0%	0%	0%
		Medicine	4	6	1	5	3	2
			36.40%	54.50%	9.10%	50.00%	30.00%	20.00%
		Pharmacy	2	2	2	1	3	0
			33.30%	33.30%	33.30%	25.00%	75.00%	0%
		Applied science	0	1	3	3	4	3
			0%	25.00%	75.00%	30.00%	40.00%	30.00%
5	As a child, were you given prescription fluoride supplements (pill, drops, etc)?	Preparatory	9	7	10	1	1	1
			34.60%	26.90%	38.50%	33.30%	33.30%	33.30%
		Dentistry	21	3	5	0	0	0
			72.40%	10.30%	17.20%	0%	0%	0%
		Medicine	8	1	2	6	1	3
			72.70%	9.10%	18.20%	60.00%	10.00%	30.00%
		Pharmacy	5	1	0	2	0	2
			83.30%	16.70%	0%	50.00%	0%	50.00%
		Applied science	1	0	3	6	1	3
			25.00%	0%	75.00%	60.00%	10.00%	30.00%
			10	9	7	1	2	0

6	Did you use fluoridated toothpaste during the years 0 - 10?	Preparatory	38.50%	34.60%	26.90%	33.30%	66.70%	0%
		Dentistry	7	17	5	0	0	0
			24.10%	58.60%	17.20%	0%	0%	0%
		Medicine	4	6	1	2	7	1
			36.40%	54.50%	9.10%	20.00%	70.00%	10.00%
		Pharmacy	2	2	2	1	2	1
			33.30%	33.30%	33.30%	25.00%	50.00%	25.00%
		Applied science	0	1	3	7	3	0
7	Did you given a prescription of fluoride supplements during the period from 0 - 10?	Preparatory	15	3	8	3	0	0
			57.70%	11.50%	30.80%	100.00%	0%	0%
		Dentistry	24	3	2	0	0	0
			82.80%	10.30%	6.90%	0%	0%	0%
		Medicine	7	3	1	6	2	2
			63.60%	27.30%	9.10%	60.00%	20.00%	20.00%
		Pharmacy	5	0	1	2	1	1
			83.30%	0%	16.70%	50.00%	25.00%	25.00%
8	Did he/she had medical records that provided the fluoride supplements, and the length of time the supplements were taken?	Preparatory	12	6	8	2	0	1
			46.20%	23.10%	30.80%	66.70%	0%	33.30%
		Dentistry	17	3	9	0	0	0
			58.60%	10.30%	31.00%	0%	0%	0%
		Medicine	8	2	1	7	2	1
			72.70%	18.20%	9.10%	70.00%	20.00%	10.00%
		Pharmacy	5	1	0	3	0	1
			83.30%	16.70%	0%	75.00%	0%	25.00%
		Applied science	3	0	1	8	0	2
			75.00%	0%	25.00%	80.00%	0%	20.00%

9	Did he/she use fluoridated mouthwash during the years 0 - 10?	Preparatory	13	5	8	1	2	0
			50.00%	19.20%	30.80%	33.30%	66.70%	0%
		Dentistry	17	10	2	0	0	0
			58.60%	34.50%	6.90%	0%	0%	0%
		Medicine	7	3	1	5	3	2
			63.60%	27.30%	9.10%	50.00%	30.00%	20.00%
		Pharmacy	3	2	1	1	1	2
			50.00%	33.30%	16.70%	25.00%	25.00%	50.00%
10	Do you have well water?	Preparatory	1	3	0	5	5	0
			25.00%	75.00%	0%	50.00%	50.00%	0%
		Dentistry	3	18	5	0	3	0
			11.50%	69.20%	19.20%	0%	100.00%	0%
		Medicine	6	20	3	0	0	0
			20.70%	69.00%	10.30%	0%	0%	0%
		Pharmacy	0	11	0	1	7	2
			0%	100.00%	0%	10.00%	70.00%	20.00%
11	Do you use bottled water?	Preparatory	0	6	0	1	3	0
			50.00%	33.30%	16.70%	25.00%	75.00%	0%
		Dentistry	1	3	0	2	7	1
			25.00%	75.00%	0%	20.00%	70.00%	10.00%
		Medicine	6	17	3	1	2	0
			23.10%	65.40%	11.50%	33.30%	66.70%	0%
		Pharmacy	4	25	0	0	0	0
			13.80%	86.20%	0%	0%	0%	0%
12	Do you use a water conditioner or filtration system?	Preparatory	0	11	0	1	9	0
			0%	100.00%	0%	10.00%	90.00%	0%
		Dentistry	0	6	0	0	4	0
			0%	100.00%	0%	0%	100.00%	0%
		Medicine	0	4	0	1	9	0
			0%	100.00%	0%	10.00%	90.00%	0%
		Pharmacy	9	12	5	1	2	0
			34.60%	46.20%	19.20%	33.30%	66.70%	0%
12	Do you use a water conditioner or filtration system?	Preparatory	10	19	0	0	0	0
			34.50%	65.50%	0%	0%	0%	0%
		Dentistry	5	6	0	5	3	2
			45.50%	54.50%	0%	50.00%	30.00%	20.00%
		Pharmacy	2	4	0	1	3	0
			33.30%	66.70%	0%	25.00%	75.00%	0%
		Applied Science	2	2	0	7	3	0
			50.00%	50.00%	0%	70.00%	30.00%	0%

13	Do you know the fluoride level of your water?	Preparatory	14	6	6	2	1	0
			53.80%	23.10%	23.10%	66.70%	33.30%	0%
		Dentistry	11	13	5	0	0	0
			37.90%	44.80%	17.20%	0%	0%	0%
		Medicine	7	2	2	7	3	0
			63.60%	18.20%	18.20%	70.00%	30.00%	0%
		Pharmacy	4	2	0	2	2	0
			66.70%	33.30%	0%	50.00%	50.00%	0%
14	Do you know the different sources of the fluoride?	Preparatory	18	2	6	3	0	0
			69.20%	7.70%	23.10%	100.00%	0%	0%
		Dentistry	6	22	1	0	0	0
			20.70%	75.90%	3.40%	0%	0%	0%
		Medicine	8	2	1	5	3	2
			72.70%	18.20%	9.10%	50.00%	30.00%	20.00%
		Pharmacy	4	2	0	3	1	0
			66.70%	33.30%	0%	75.00%	25.00%	0%
15	Do you know the different forms of the fluoride supplements?	Preparatory	18	3	5	2	0	1
			69.20%	11.50%	19.20%	66.70%	66.70%	33.30%
		Dentistry	11	17	1	0	0	0
			37.90%	58.60%	3.40%	0%	0%	0%
		Medicine	7	2	2	6	4	0
			63.60%	18.20%	18.20%	60.00%	40.00%	0%
		Pharmacy	4	2	0	3	0	1
			66.70%	33.30%	0%	75.00%	0%	25.00%
		Applied Science	2	1	1	10	0	0
			50.00%	25.00%	25.00%	100.00%	0%	0%

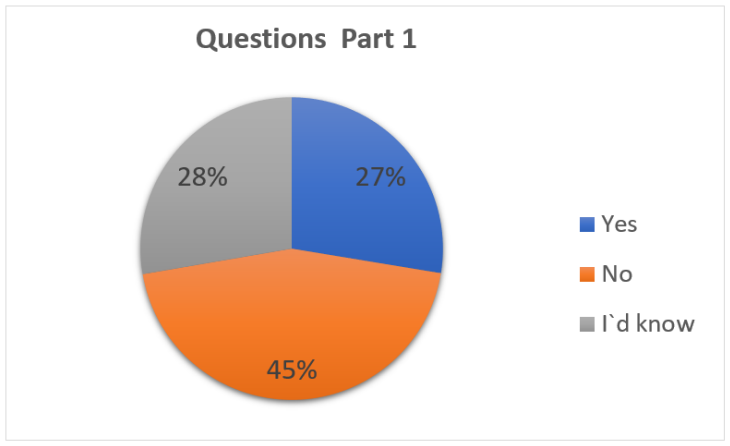
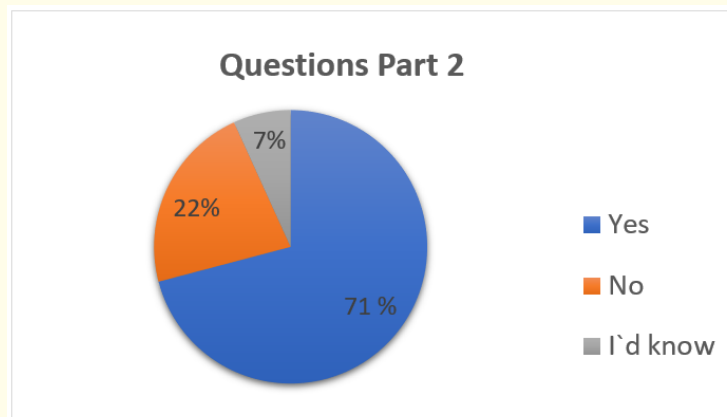
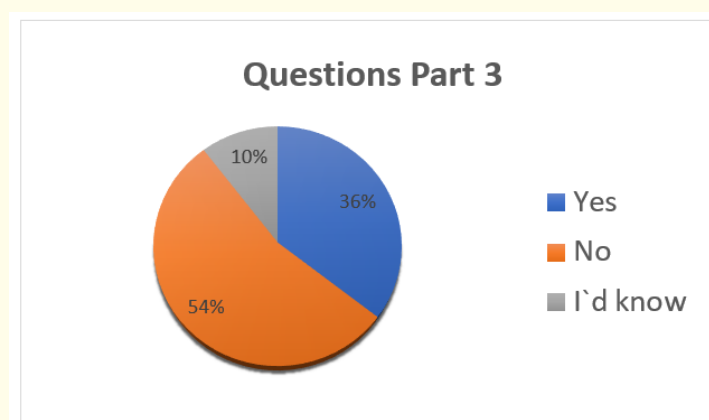


Figure 1: Students’ responses regarding history of fluoride intake.



**Figure 2:** Students' responses regarding knowledge of fluoridated water intake.



**Figure 3:** Students' responses regarding general knowledge about fluoride.

**Q3:** 25.0% of males (n = 19) and 33.3% of females (n = 9) they didn't consume well water during the period from 0 - 10 years old for more than three months. 34.2% of males (n = 26) and 37.0% of females (n = 10) they consumed well water during the period from 0 - 10 years old for more than three months. 40.8% of males (n = 31) and 29.6% of females (n = 8) they didn't know if they consumed well water during the period from 0 - 10 years old for more than three months.

**Q4:** 23.7% of males (n = 18) and 37.0% of females (n = 10) they didn't consume bottled water for any more than 20% of water needs during a time from 0-10 years old. 44.7% of males (n = 34) and 44.4% of females (n = 12) they consumed bottled water for any more than 20% of water needs during time from 0-10 years old and 31.6% of males (n = 24) and 18.5% of females (n = 5) they didn't know if they consumed bottled water for any more than 20% of water needs during time from 0-10 years old.

**Q5:** 57.9% of males (n = 44) and 55.6% of females (n = 15) they didn't have a prescription of fluoride supplement. 15.8% of males (n = 12) and 11.1% of females (n = 3) they had a prescription of fluoride supplement. 26.3% of males (n = 20) and 30.0% of females (n = 3) they don't know if they had a prescription of fluoride supplement.



**Q6:** 30.3% of males (n = 23) and 40.7% of females (n = 11) they didn't use fluoridated toothpaste during the years 0 - 10. 47.4% of males (n = 36) and 51.9% of females (n = 14) they use fluoridated toothpaste during the years 0 - 10. 22.4% of males (n = 17) and 7.4% of females (n = 2) they don't know if they use fluoridated toothpaste during the years 0 - 10.

**Q7:** 68.4% of males (n = 52) and 66.7% of females (n = 18) they didn't ask by health provider about a detailed prescription of fluoride supplements prior to prescribing a fluoride supplement, 13.2% of males (n = 10) and 14.8% of females (n = 4) they ask by health provider about a detailed prescription of fluoride supplements prior to prescribing a fluoride supplement and 18.4% of males (n = 14) and 20.0% of females (n = 2) they don't know if they ask by health provider about a detailed prescription of fluoride supplements prior to prescribing a fluoride supplement.

**Q8:** 59.2% of males (n = 45) and 74.1% of females (n = 20) they didn't have medical records that provided the fluoride supplements, and the length of time the supplements, 15.8% of males (n = 12) and 7.4% of females (n = 2) they had medical records that provided the fluoride supplements, and the length of time the supplements and 25.0% of males (n = 19) and 18.5% of females (n = 5) they don't know if they had medical records that provided the fluoride supplements, and the length of time the supplements.

**Q9:** 53.9% of males (n = 41) and 44.4% of females (n = 12) they don't use fluoridated mouthwash 30.3% of males (n = 23) and 40.7% of females (n = 11) they use fluoridated mouthwash and 15.8% of males (n = 12) and 14.8% of females (n = 4) they don't know if mouthwash which they used fluoridated or no.

**Q10:** 13.2% of males (n = 10) and 14.8% of females (n = 4) they didn't have well water 76.3% of males (n = 58) and 74.1% of females (n = 20) they have well water and 10.5% of males (n = 8) and 3.7% of females (n = 1) they do not know if water which they use is a well water or no.

**Q11:** 13.2% of males (n = 10) and 11.1% of females (n = 3) they doesn't use bottled water and 82.9% of males (n = 63) and 88.9% of females (n = 24) they use bottled water and 3% of males (n = 3) they don't know if they use bottled water or no and 0% of females (n = 0) they don't know if they use bottled water or no.

**Q12:** 36.8% of males (n = 28) and 51.9% of females (n = 14) they didn't use water conditioner or filtration system and 56.6% of males (n = 43) and 40.7% of females (n = 11) they use water conditioner or filtration system and 6.6% of males (n = 5) and 7.4% of females (n = 2) they don't know if they use water conditioner or filtration system.

**Q13:** 48.7% of males (n = 37) and 74.1% of females (n = 20) they don't know the fluoride level of their water and 34.2% of males (n = 26) and 22.2% of females (n = 6) they know the fluoride level of their water and 17.1% of males (n = 13) and 3.7% of females (n = 1) they answered I don't know the fluoride level of their water.

**Q14:** 51.3% of males (n = 39) and 77.8% of females (n = 21) they don't know the sources of the fluoride 38.2% of males (n = 29) and 1.9% of females (n = 2) they know the sources of the fluoride and 10.5% of males (n = 8) and 5.8% of females (n = 6) they answered I don't know the sources of the fluoride.

**Q15:** 55.3% of males (n = 42) and 77.8% of females (n = 21) they don't know the different forms of the fluoride 32.9% of males (n = 25) and 14.8% of females (n = 4) they know the different forms of the fluoride and 11.8% of males (n = 9) and 7.4% of females (n = 2) they answered I don't know the different forms of the fluoride.

**Q16:** 38.2% of males (n = 29) and 51.9% of females (n = 14) they don't know the consequences of excess fluoride intake the and 51.3% of males (n = 39) and 48.1% of females (n = 13) they know the consequences of excess fluoride intake and 10.5% of males (n = 8) and no females answered I don't know the consequences of excess fluoride intake.

## Discussion

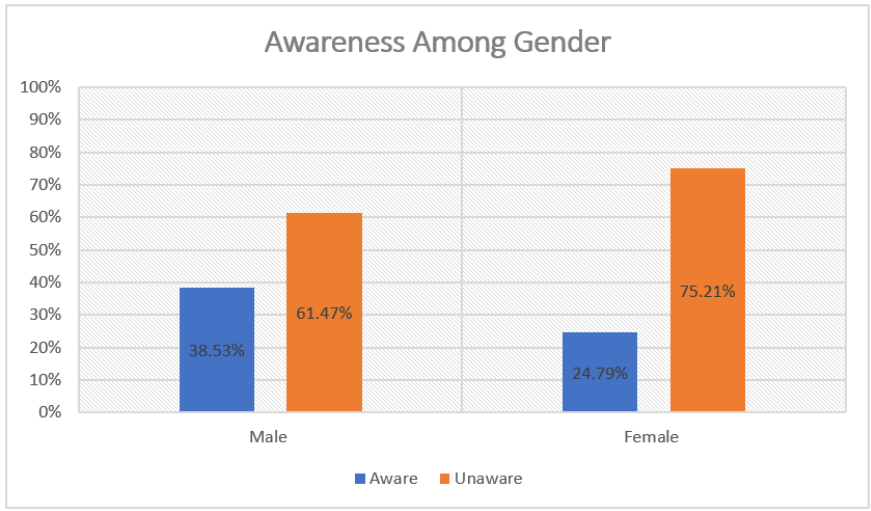
Caries has been affecting a greater amount of population in the recent years and become the most common dental problem. In cross-sectional study conducted by dental college in Taif university in July 2015 to measure the prevalence of the caries in both preschool, and school-aged children. The study reported proportion of caries-free 6-year-old children was 8.6% in boys, 9.5%, in girls, and the mean (DMFT) in 6 years old was (5.32). In 12 years old the proportion of caries free children was 23.7% of boys and 34.2% in girls. The mean (DMFT) was (3.71) for both boys and girls [8]. Thus, restorative treatment was the major treatment needed in this population. Also, meta-analysis study conducted in the dental collage of Dammam university In June 2010 present the prevalence of the dental caries among the children and adult teeth they reported a high decayed, missing, and filled teeth score in the deciduous and permanent teeth of Saudi population. The mean (DMFT) for primary teeth was (5.38) and the mean (DMFT) for permanent teeth is (3.34) [9]. The caries can affect the quality of the life. Therefore, the dentist and dental community members should BE concerned about this fact and take more effort in educating the patient about the importance of the fluoride in preventing the caries and the sources of the fluoride in order to emphasize the proper use of fluoride to prevent caries and avoiding moderate/severe fluorosis [10].

In this study we are measuring the awareness of the fluoride among the Health care students at Taif University in terms of knowledge and attitude toward the fluoride substance which in turn they will help them, as dental students to raise the awareness of the population in Taif city. The data included in this study is new and no researcher has measured the awareness of the fluoride in the Taif University or even in Taif city. Regarding to intake of fluoridated city water it revealed minor deficiency in the awareness of sampled students mean 34%, here we have to emphasize on the presence of the fluoride in city water and the 48.50% of sampled students they use Fluoridated toothpaste. This is a good indicator for awareness of health student, about the importance of the fluoridated toothpaste for preventing dental caries and it's better compared to the Indian study reported that the respondents who had low awareness about fluoride present in tooth paste [11]. Also 51.50% the sampled student revealed a clear negligence on the using of mouthwashes in routine oral hygiene. While the study conducted by Asim Al-Ansari in Qassim University represent 50% of respondents, they are using mouthwash in their oral hygiene daily routine [12]. It's mean more than half of sampled students didn't know or didn't use the fluoridated mouthwash and we have to concentrate on imparting the knowledge and role of the mouthwash on the teeth and surrounding oral tissue. Regarding to the Fluoride level awareness more than 50% did not know the fluoride level in their daily water needs, and this played an important role in increased risk of fluoride toxicity among the Health students. 58.30% of the sampled students they didn't know the sources of the fluoride and 61.20% expressed their lack in the knowledge about the supplemental forms of the fluoride. According to the awareness of consequences of high fluoride intake (Fluorosis), 50.50% of sampled student aware about fluorosis, in contrast it was still better compared to study conducted in the India on the Awareness about Fluorosis which reported 30.57% of participants were not aware about fluorosis [13].

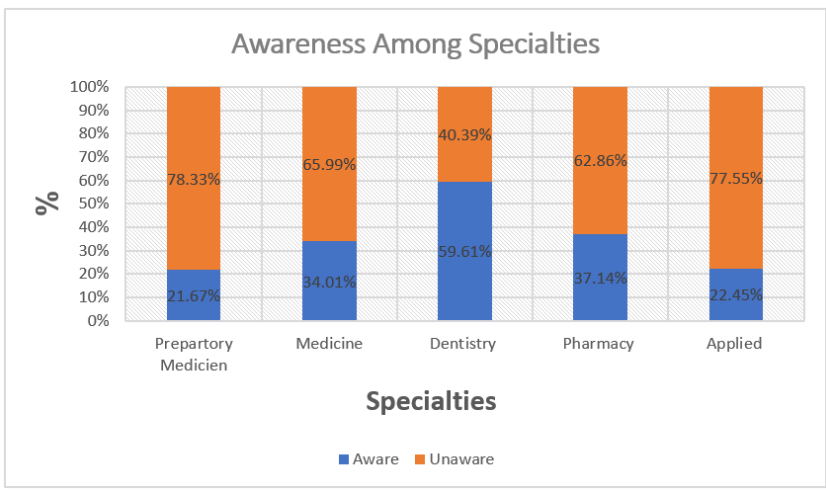
In this study, we also measured the awareness of fluoride between the male and female and among each specialty as health care student. We observed that the male students more aware than female students and the dental students were the most aware students among other specialties (Figure 4 and 5). This directed us to establish awareness courses about fluoride and its role in the caries prevention in order to assist dental community members in improving awareness of fluoride in Taif city.

## Conclusion

The findings of this study proved more than half of health care students (male and female) were unaware of using fluoride in daily practice and they lacked basic information regarding fluoride and its powerful effect to overcome dental caries and other oral problems. This alerts us to the importance of conducting fluoride awareness session among health care students, so that they in turn disseminate it's importance to the population of Taif city.



**Figure 4:** The Figure shows the percentage of fluoride awareness among male and female health students in Taif University. It shows male students more aware than the female students and this according to their answers on the following Questions: (Did you drink fluoridated city water for most of your water needs? Did you use fluoridated toothpaste? Did you use fluoridated mouthwash? Did you know the fluoride level of your water? Did you know the different sources of the fluoride? Did you know the different forms of the fluoride supplements? Did you know the consequences of the excess intake of fluoride on the teeth?).



**Figure 5:** The figure shows the percentage of fluoride awareness among each specialty of health students in Taif University. It's show that dental students more aware than the students in other specialties this according to their answers on the following Questions (Did you drink fluoridated city water for most of your water needs? Did you use fluoridated toothpaste? Did you use fluoridated mouthwash? Did you know the fluoride level of your water? Did you know the different sources of the fluoride? Did you know the different forms of the fluoride supplements? Did you know the consequences of the excess intake of fluoride on the teeth?).

**Limitation of the Study**

This study conducted among health care students in Taif University both gender male and female except the female dental students because the dental college do not have female students as of today. Another limitation that the information presented in this study limited to the health care students in the university. Thus, more comprehensive study which includes a large population sample is suggested.

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