Saudi Journal of Oral and Dental Research (SJODR) **ISSN 2518-1300 (Print)**
Scholars Middle East Publishers **ISSN 2518-1297 (Online)**
Dubai, United Arab Emirates
Website: http://scholarsmepub.com/

Knowledge and Practice of Undergraduate Dental Students and Interns toward Preventive Dentistry in Qassim University

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Original Research Article

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Article History
Received: 28.10.2018
Accepted: 07.11.2018
Published: 30.11.2018

DOI:
10.21276/sjodr.2018.3.11.1

Abstract: To investigate knowledge and practices towards preventive dentistry among undergraduate dental students and interns in Qassim university. 1. To assess the level of knowledge of preventive measures in dentistry among undergraduate dental students and interns in Qassim university. 2. To evaluate the practices of undergraduate dental students and interns in Qassim university in preventive dentistry. A ninety seven participants were involved in this study 28 third year students, 25 fourth year students, 24 fifth year students and 19 dental interns. The questionnaire was adopted from previous similar studies carried out in Nairobi dentists and Iranian dentists. Conclusions Based on the findings of this study, the following was concluded: 1. Undergraduate students and dental interns in Qassim University had vast knowledge towards preventive dentistry. 2. Undergraduate students and dental interns in Qassim University carried out most of the practices involved in preventive dentistry.
Keywords: knowledge, undergraduate, dental students, interns.

INTRODUCTION

Preventive approach in dental practice has been cited as a reason for caries decline in recent decades [1], and as a predominant part of the service-mix of dental practices in the future [2]. Clinical and public health research have shown a number of individual, professional, and community preventive measures which are effective in preventing most oral diseases [3].

The reorientation of oral health services toward prevention and health promotion is one of WHO's priority action areas for the continuous improvement of oral health [4].

However, emphasis on primary prevention of oral diseases poses a considerable challenge for many countries, particularly the developing countries and countries with economies and health systems in transition [3].

A need thus exists to develop sustainable prevention- oriented approach, especially in countries with developing health care systems [5].

Dental caries is a major public health problem among people in Saudi Arabia. It is the main cause of tooth mortality (loss), represents the majority of dental emergencies and tooth extraction among population. There are many causes of dental caries include poor dietary habits and poor oral hygiene. According to many study conducted before, the prevalence of dental caries among Saudi population approximately exceed 90% which is consider as very high rate worldwide [6-9].

The potential to be able to prevent dental caries as a major oral health problem is great because, of all oral diseases, dental caries is at present the most nearly preventable. Three factors must be present for dental caries to occur: (1) a susceptible host--inasmuch as any tooth will develop caries if challenged sufficiently, all persons with teeth must be considered susceptible; (2) the presence in dental plaque of bacteria that can produce acids which attack the teeth; and (3) a diet suitable for bacterial fermentation [7, 8].

Efforts to prevent dental caries have focused upon attempts to: (1) increase the resistance of teeth with various fluorides and adhesive pit and fissure sealants; (2) lower the number or reduce the cariogenic activity bacteria in contact with the teeth by mechanical means or with chemical agents [10, 11] and (3) modify dietary practices by urging people to eat sweets, cookies and soft drinks less frequently [12, 13].

Although some studies have explored knowledge and attitudes concerning prevention among

medical faculties and dentists, orientation regarding preventive aspects is a rarely investigated field among dental faculties. In a study of dental educators' own oral health behavior, it was shown that there is room for improvement in this area [14, 15].

RESULTS

Knowledge toward preventive dentistry

MATERIALS AND METHODS

A ninety seven participants were involved in this study 28 third year students, 25 fourth year students, 24 fifth year students and 19 dental interns. The questionnaire was adopted from previous similar studies carried out in Nairobi dentists and Iranian dentists.

A survey questionnaire was designed containing 12 statements to assess the level of knowledge toward preventive dentistry and 10 questions to assess the level of practice toward preventive dentistry. We used google documents in our survey by sending the forum of questionnaires to our target groups, We got 97 responses from all different groups.

The data were analyzed using the SPSS computer software (Statistical Package for the Social Sciences, version 19.0, SPSS Inc., Chicago, IL, USA).

Aspects of undergraduate dental students and intern's' knowledge		Level								P value
		3th Year		4th Year		5th Year		Intern		
		No	%	No	%	No	%	No	%	
Oral hygiene alone is more important than diet in reducing caries.	Yes	11	39.3%	9	36.0%	4	16.7%	3	15.8%	.375a
	No	15	53.6%	14	56.0%	19	79.2%	15	78.9%	
	Not Sure	2	7.1%	2	8.0%	1	4.2%	1	5.3%	
If an individual consumes sugar containing food frequently and also brushes his teeth frequently, he will not get caries	Yes	11	39.3%	13	52.0%	8	33.3%	9	47.4%	.786a
	No	11	39.3%	10	40.0%	11	45.8%	7	36.8%	
	Not Sure	6	21.4%	2	8.0%	5	20.8%	3	15.8%	

Undergraduate dental students and intern's knowledge was most accurate regarding importance of diet, the fifth year students had the higher rate of knowledge about importance of diet followed by interns 79.2% and 78.9% respectively, and there is no statically significant difference between different student's level of education regarding importance of diet and sugar consuming .

Level of knowledge of preventive dental care among undergraduate dental students and interns, assessed by ten statements on a 5-point Likert-scale, scored as: 1=Fully agree and 2=Agree, 3=Don't know, 4=Disagree, 5=Fully disagree; the greater scores being for higher levels of knowledge. And statements divided to caries related statements and fluoride related statements Caries- related.

Knowledge toward preventive dentistry		Level								P value
		3rd Year		4th Year		5th Year		Interns		
Caries-related		No	%	No	%	No	%	No	%	
Brushing Without toothpaste is of no value and has no effect on caries and periodontal health.	Fully Agree	2	7.1%	3	12.0%	2	8.3%	1	5.3%	.674a,b
	Agree	8	28.6%	6	24.0%	7	29.2%	7	36.8%	
	Don't Know	1	3.6%	0	0.0%	1	4.2%	0	0.0%	
	Disagree	11	39.3%	10	40.0%	13	54.2%	10	52.6%	
	Fully Disagree	6	21.4%	6	24.0%	1	4.2%	1	5.3%	
For tooth decay, frequency of sugar consumption plays a greater role in	Fully Agree	14	50.0%	17	68.0%	11	45.8%	6	31.6%	.195a,b
	Agree	11	39.3%	6	24.0%	9	37.5%	11	57.9%	
	Don't Know	3	10.7%	1	4.0%	3	12.5%	0	0.0%	
	Disagree	0	0.0%	1	4.0%	1	4.2%	2	10.5%	
Producing caries than does the total amount of sugar consumed.	Fully Disagree	0	0.0%	0	0.0%	0	0.0%	0	0.0%	

Knowledge was most accurate regarding value of brushing with toothpaste [interns=57.9%, 5thyear=58.4%, 4thyear=64%, 3rdyear=60.7%] and there is no statically significant difference between different student's level P>0.67. Regarding caries-related knowledge, the fourth year had higher rate of knowledge about role of sugar consumption and there is no statically significant difference between different students P=0.195. There is consensus regarding the importance of fissure sealant in protection of newly erupted molars and importance of isolation during its application.

Knowledge toward preventive dentistry	Level									P value
	3rd Year			4th Year		5th Year		Interns		
Caries-related	No		%	No	%	No	%	No	%	
fissure sealant is effective in the prevention of pit and fissure caries in newly erupted molar.	Fully Agree	20	71.4%	16	64.0%	14	58.3%	10	52.6%	.704a,b
	Agree	8	28.6%	7	28.0%	9	37.5%	8	42.1%	
	Don't Know	0	0.0%	0	0.0%	0	0.0%	0	0.0%	
	Disagree	0	0.0%	2	8.0%	1	4.2%	1	5.3%	
	Fully Disagree	0	0.0%	0	0.0%	0	0.0%	0	0.0%	
The most important factor determine the success in pit and fissure sealant application is moisture control.	Fully Agree	11	39.3%	11	44.0%	10	41.7%	13	68.4%	.307a,b
	Agree	11	39.3%	10	40.0%	10	41.7%	6	31.6%	
	Don't Know	4	14.3%	3	12.0%	2	8.3%	0	0.0%	
	Disagree	0	0.0%	1	4.0%	2	8.3%	0	0.0%	
	Fully Disagree	2	7.1%	0	0.0%	0	0.0%	0	0.0%	

All groups had a poor knowledge about the damaging effect of explorer on newly erupted teeth. And the diagnosis of white or brown spot also was not relevant.

Knowledge toward preventive dentistry	Level									P value
	rd 3 Year			th 4 Year		th 5 Year		Interns		
Caries-related	No		%	No	%	No	%	No	%	
Examining a newly erupted tooth by using a sharp explorer will damage enamel rods and predispose tooth to caries.	Fully Agree	1	3.6%	9	36.0%	1	4.2%	4	21.1%	.000a,*
	Agree	3	10.7%	9	36.0%	6	25.0%	8	42.1%	
	Don't Know	11	39.3%	3	12.0%	4	16.7%	0	0.0%	
	Disagree	10	35.7%	4	16.0%	10	41.7%	7	36.8%	
	Fully Disagree	3	10.7%	0	0.0%	3	12.5%	0	0.0%	
A brown or white spot lesion that is visible on a wet tooth surface has penetrated all the way through enamel.	Fully Agree	3	10.7%	6	24.0%	1	4.2%	2	10.5%	.222a
	Agree	8	28.6%	4	16.0%	6	25.0%	6	31.6%	
	Don't Know	7	25.0%	9	36.0%	5	20.8%	4	21.1%	
	Disagree	5	17.9%	3	12.0%	11	45.8%	5	26.3%	
	Fully Disagree	5	17.9%	3	12.0%	1	4.2%	2	10.5%	

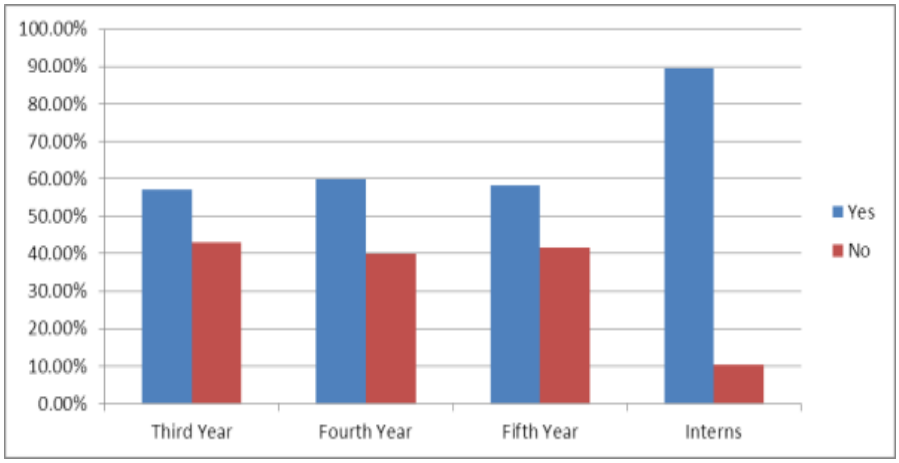
Fluoride-related

Knowledge toward preventive dentistry		Level								P value
		rd 3 Year		th 4 Year		th 5 Year		Interns		
Fluoride-related		No	%	No	%	No	%	No	%	
Fluoridation of water in region with low fluoride is an effective, safe and efficient way in preventing dental caries.	Fully Agree	16	57.1%	12	48.0%	6	25.0%	3	15.8%	.005a,b,*
	Agree	9	32.1%	11	44.0%	11	45.8%	16	84.2%	
	Don't Know	0	0.0%	0	0.0%	2	8.3%	0	0.0%	
	Disagree	2	7.1%	0	0.0%	4	16.7%	0	0.0%	
	Fully Disagree	1	3.6%	2	8.0%	1	4.2%	0	0.0%	
Topical fluoride application for children is a good caries preventive aids:	Fully Agree	19	67.9%	20	80.0%	19	79.2%	10	52.6%	.184a,b
	Agree	9	32.1%	5	20.0%	4	16.7%	9	47.4%	
	Don't Know	0	0.0%	0	0.0%	0	0.0%	0	0.0%	
	Disagree	0	0.0%	0	0.0%	1	4.2%	0	0.0%	
	Fully Disagree	0	0.0%	0	0.0%	0	0.0%	0	0.0%	

The majority of students believe in importance of fluoridation of water supply with percent ranging from 70- 100 % with lowest percent related to fifth year students.

There is consensus between all students regarding the positive role of topical fluoride application in prevention of dental caries.

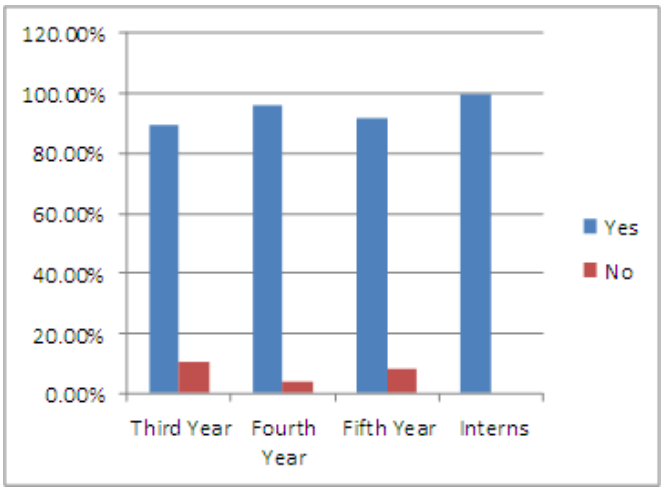
Knowledge toward preventive dentistry		Level								P value
		3rd Year		4th Year		5th Year		Interns		
Fluoride-related		No	%	No	%	No	%	No	%	
Rinsing teeth with less water after tooth brushing will increase the effect of fluoride that is in the toothpaste.	Fully Agree	8	28.6%	11	44.0%	10	41.7%	0	0.0%	.177a
	Agree	8	28.6%	6	24.0%	9	37.5%	7	36.8%	
	Don't Know	4	14.3%	2	8.0%	2	8.3%	5	26.3%	
	Disagree	6	21.4%	4	16.0%	2	8.3%	6	31.6%	
	Fully Disagree	2	7.1%	2	8.0%	1	4.2%	1	5.3%	
The use of fluoride toothpaste is more important than brushing technique in preventing caries.	Fully Agree	0	0.0%	1	4.0%	2	8.3%	0	0.0%	.591a,b
	Agree	6	21.4%	3	12.0%	3	12.5%	4	21.1%	
	Don't Know	1	3.6%	0	0.0%	2	8.3%	0	0.0%	
	Disagree	11	39.3%	15	60.0%	10	41.7%	9	47.4%	
	Fully Disagree	10	35.7%	6	24.0%	7	29.2%	6	31.6%	



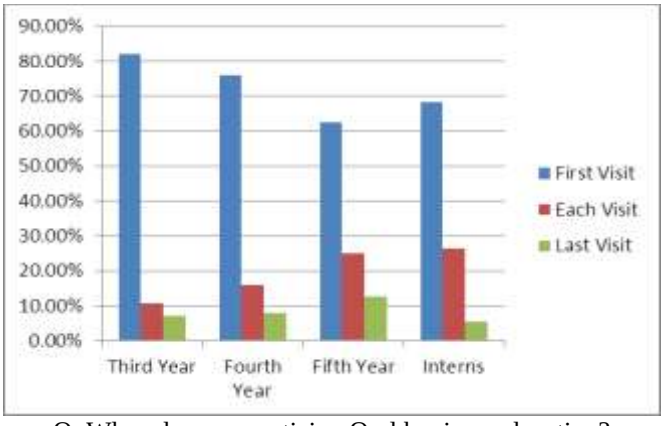
There is no significant difference between groups regarding the amount of water rinsing the teeth after tooth paste application.

The role of fluoride was under estimated compared with that of technique of brushing in all groups with no significant difference.

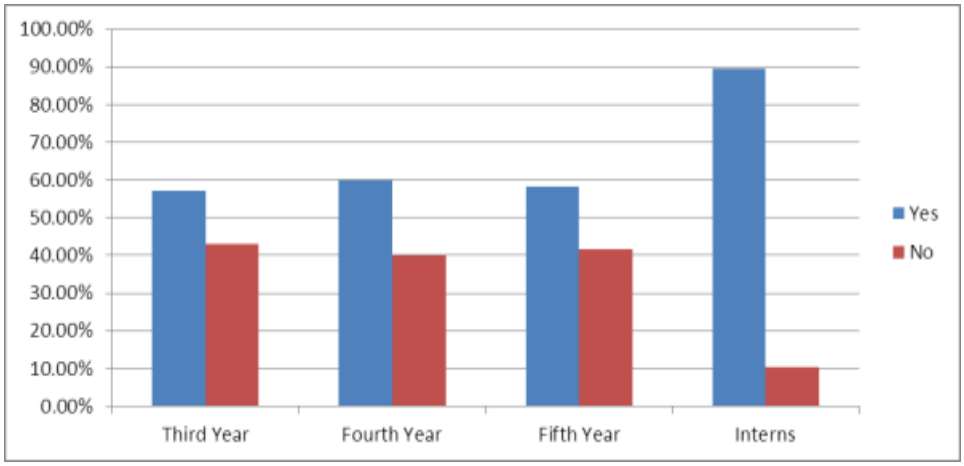
Practice towards preventive dentistry



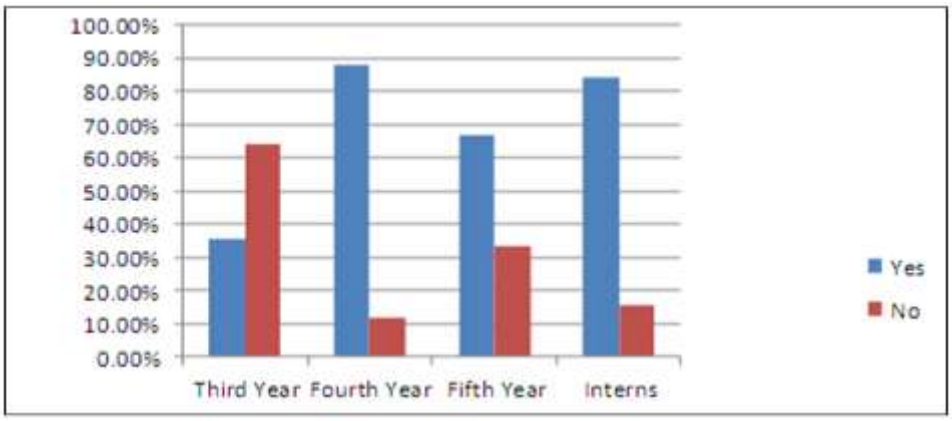
Q1: Do you practicing Oral hygiene education in your clinic?



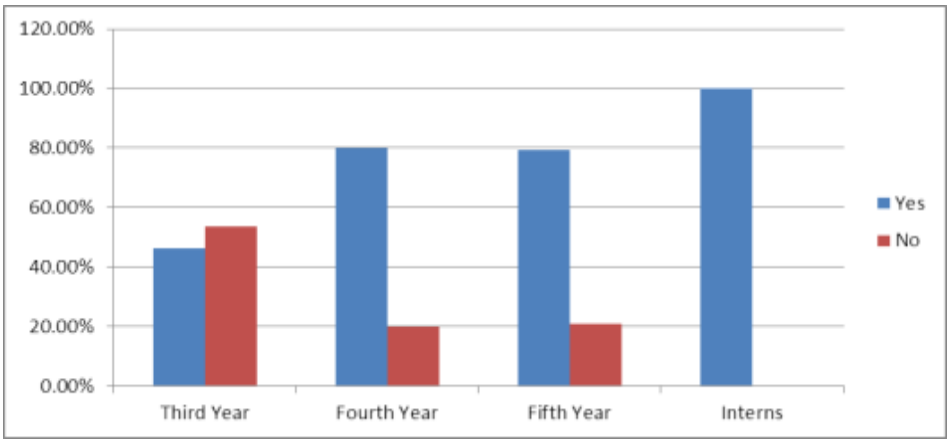
Q: When do you practicing Oral hygiene education?



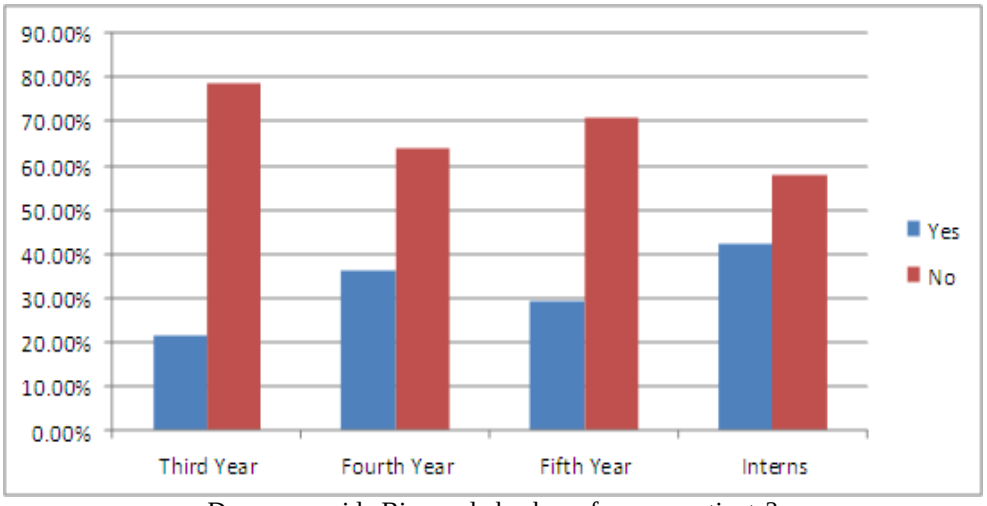
Do you explain to your patients the right way of brushing their teeth on a model?



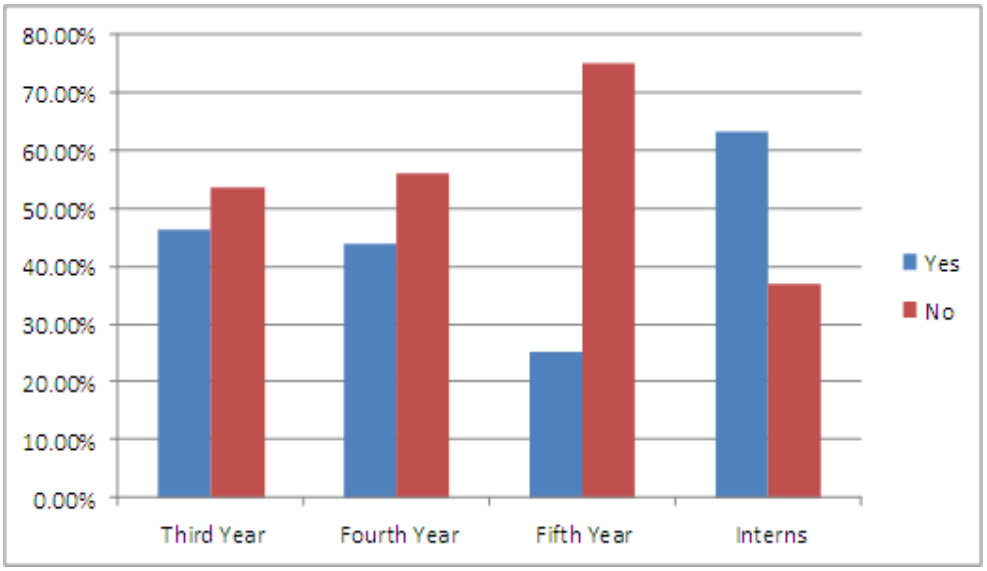
Do you use Application of fissure sealants?



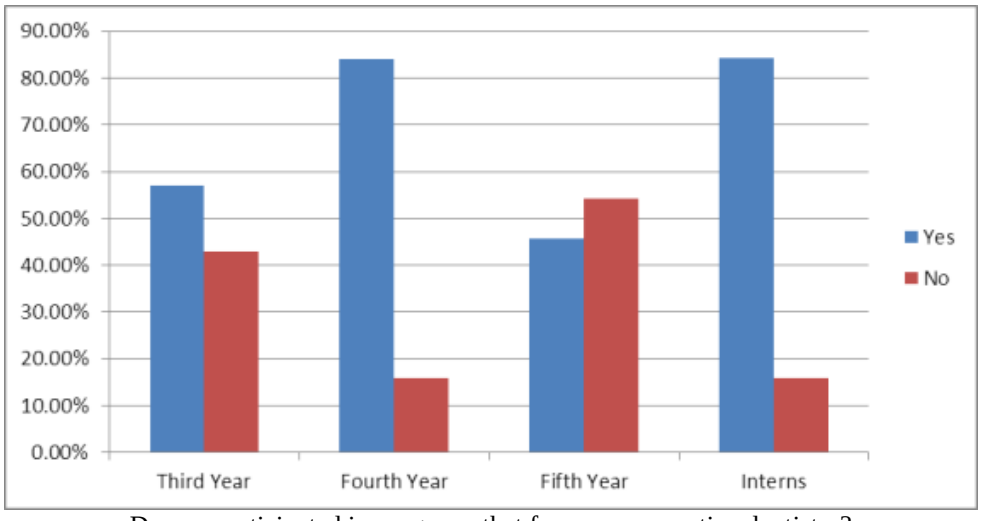
Do you use topical fluorides for children as preventive method?



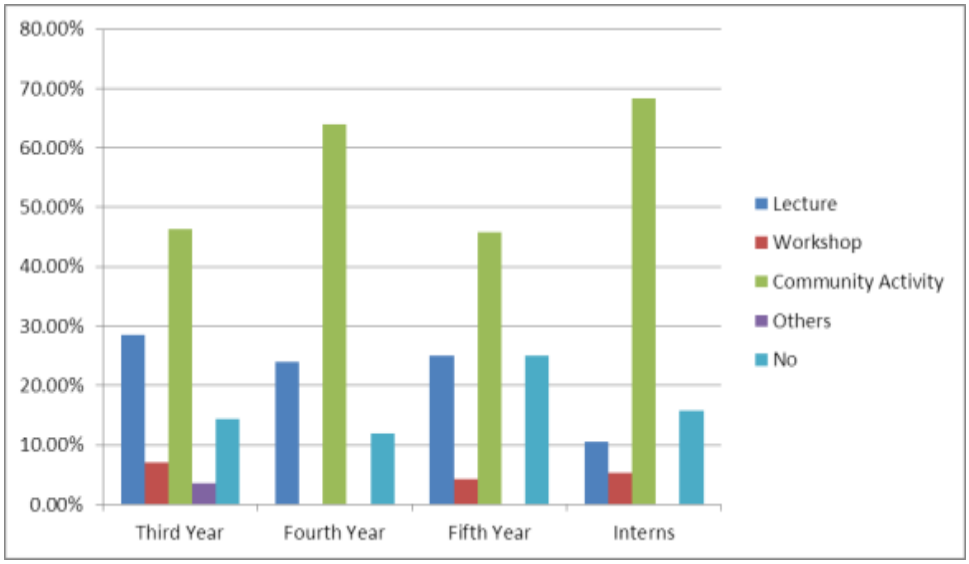
Do you provide Biannual checkups for your patients?



Do you provide dietary advice to your patients?



Do you participated in programs that focus on preventive dentistry?



Which program you participated?

DISCUSSION

The results of the present study showed that undergraduate students and dental interns in Qassim University are generally aware of the effect of sugar, fissure sealants and water fluoridation on dental caries, but they underestimate the role of fluoridated toothpaste.

Accurate knowledge will enable dentists to make appropriate decisions on their patients' the present results indicate that the majority of undergraduate students and dental interns in Qassim university have acquired adequate knowledge regarding the influence of sugar, fissure sealants, and water fluoridation on dental caries.

On the other hand, deficiencies were evident in the dentists' knowledge of the role of fluoride in caries prevention and of some aspects of caries initiation and progression. The dentists in the present study, like Mongolian dentists, 14 underestimate the role of fluoride in caries prevention in comparison to brushing technique. This is contrary to the opinion of a group of experts16 that fluoride plays an important role in caries prevention. Furthermore, new recommendations suggest that rinsing after brushing should be minimized so that teeth can maximally benefit from the fluoride in toothpaste. 17 unfortunately, some undergraduate students and dental interns in Qassim university may be unaware of the importance of this simple and useful oral health message.

The diversity of dentists' knowledge of preventive dental care may be due to differences in the general approach to the management of dental diseases in different countries. The dentists in this study, along with Korean11 and Mongolian dentists, 20 tend to underestimate the role of fluoride in caries prevention while in Finland, with a long history of caries prevention, dentists regard fluoride as an important caries preventive measure. 21 Accordingly, the important role of fluoride in caries prevention 22, 23 should be emphasized in dental curricula and continuing education programs.

The present questions about dentists' knowledge of preventive dental care were planned to cover the very basic information and to be comparable with the previous similar studies among Korean11 and Mongolian dentists. 20 Questioning about additional aspects of preventive dentistry, in more details, would be an interesting task regarding the further studies.

From the study the participants carried out preventive dentistry practices such as oral hygiene instructions, application of fissure sealants, fluoride therapy and biannual checkups. The least done practice of preventive dentistry was biannual checkups in all different groups in general by scoring less than 25% , with the other practices scoring more than 60%. This is in line with a study carried out among dentists in Iran18 which demonstrated the increased practice of preventive dentistry among modern day dentists.

CONCLUSIONS

Based on the findings of this study, the following was concluded:

- Undergraduate students and dental interns in Qassim University had vast knowledge towards preventive dentistry
- Undergraduate students and dental interns in Qassim University carried out most of the practices involved in preventive dentistry.

Knowledge of and practice towards preventive dentistry should be improved and updated to enable and encourage them to provide their patients with preventive care.

ACKNOWLEDGEMENT

We would like to thank our doctor Dr. Tarek halwa who provided insight and expertise that greatly assisted the research.

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