

Evaluation of the unified pre-health sciences program by dental students and interns in the College of Dentistry, King Saud University, Riyadh, Saudi Arabia

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يتطلب من طلاب طب الأسنان إنهاء البرنامج الموحد للكليات الصحية والذي يشتمل على دوره في اللغة الإنجليزية، الكيمياء العضوية، الكيمياء العامة، فيزياء، احصاء حيوي وحتى الآن لا يوجد دراسة لتقييم مدى الاستفادة من هذا البرنامج وهذه الدراسة تهدف الى تقييم البرنامج الموحد ومدى الاستفادة منه من قبل طلاب وطالبات طب الأسنان بالسنة الرابعة والخامسة واطباء وطبيبات الامتياز في كلية طب الأسنان بجامعة الملك سعود حيث شارك في هذه الدراسة ٨٩ طالب وطالبة و ٥١ طبيب وطبيبة امتياز قاموا بتعبئة الاستبانة التي تقيم رأيهم في البرنامج الموحد. أظهرت النتائج ان ٦٠,٧% من المشاركين من الطلاب والطالبات و ٥٨,٨% من اطباء وطبيبات الامتياز يعتقدون ان البرنامج الموحد مهم واكثر من ٦٠% من المجموعتين ذكروا بان البرنامج الموحد كان ضروريا وليس هناك اختلاف احصائيا بين الطلاب والطالبات واطباء وطبيبات الامتياز ولكن الاختلاف الاحصائي الواضح كان بين الذكور والاناث حينما سالوا عن محصله ما تعلموه وعدد وحدات البرنامج الموحد. يستنتج من هذه الدراسة ان البرنامج الموحد ضروري لطلاب وطالبات كلية طب الاسنان وكذلك ان جنس الطلاب يؤثر على تقييمهم للبرنامج الموحد. دراسات اخرى ضرورية لتقييم اماكن القوه والضعف في البرنامج الموحد لجعله اكثر فائدة.

Newly admitted dental students in the College of Dentistry, King Saud University (CDKSU) are required in their first year to complete a unified core program consisting of courses in english, organic and general chemistry, physics, biostatistics, and biology. The purpose of this study was to analyze the evaluation of the unified program by the junior and senior dental students and interns in CDKSU. Eighty-nine dental students and fifty-one interns were asked to complete a questionnaire that assessed their opinion and attitudes toward the unified program. Results showed that 60.7% of the students and 58.8% of the interns thought the unified program was important. Also, more than 60% of both groups reported that the unified program was necessary. No statistical differences were found between dental students and interns. A significant difference was found between the male and female students in their response to the learning outcomes and the number of the unified program courses. It is concluded that the unified program is beneficial to dental students. Furthermore, the gender of the students and interns appeared to influence their attitudes toward the unified program. Further studies are needed to assess the strengths and weaknesses of the unified program as they are important to optimize its benefits.

Introduction

Saudi Arabia is a large country with a population of 23 million.¹ Medical and dental care is provided largely by governmental institutions and, to a lesser extent, by private hospitals and clinics. The number of Saudi physicians and dentists is low and because of this, most of the medical and dental practitioners in Saudi Arabia are non-Saudis from different parts of the world. To meet the future needs of the country, five medical colleges and two dental colleges have been established. The two dental colleges are in Jeddah (King Abdul-Aziz University) and Riyadh (King Saud University).

The College of Dentistry in King Saud University (CDKSU) was established in 1976. Students are admitted into the college after they have successfully completed their high school program. The students spend one year in the unified program and five years in the dental college. After they graduate, they are required to complete a one-year training program of internship. In the Internship program, graduates treat patients under the supervision of faculty members in

different disciplines.

The unified program is designed for all students admitted into the medical, applied medical health, pharmacy and dental colleges. The program consists of common core courses in english, physics, biostatistics, organic chemistry, general chemistry and biology. The purpose of the unified program is to provide common preparation for health care students for their respective colleges.

The purpose of evaluating any program is to ensure a continuing quality of the program and to ascertain that its stated objectives are being achieved. Previous studies have indicated that evaluation is part of success. Ramsden² stated "evaluation is not at heart about collecting evidence to justify oneself, nor about increasing the relative worth of courses and teachers. It is about coming to improve student learning."

At present, there are no reported studies that have evaluated the students' attitudes and opinions about the unified program. The purpose of this study was to analyze the evaluation of the unified program by the junior and senior dental

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students and interns in CDKSU.

Materials and Methods

A questionnaire was designed and structured with questions about the unified program and to obtain information about the age, sex and the matriculation level of each participant. The questionnaire consisted of five questions on the respondents' opinions about the unified program. An additional question requested participants to rank modified program courses according to their perceived benefit.

The questionnaire was distributed to junior (fourth year) and senior (fifth year) students as well as the interns. Junior and senior dental students and interns were involved because they had more immediate exposure to the dental courses. Hence, they might give a more accurate opinion about the unified program. Subjects' names were not required to ensure the respondents' confidentiality.

Data were analyzed using the SPSS program. Statistical significance was set at $P < 0.05$. Frequency distribution was generated for descriptive analysis. Chi-square test was utilized to show the relationship between gender and level of studies with the responses.

Table 1. Distribution of participants by gender, status (level) and age.

Status	Number		Total	Age (SD) years	
	M	F		M	F
Fourth year students	17	22	39	22.7 (0.9)	21.7 (0.7)
Fifth year students	31	19	50	23.7 (0.9)	22.7 (0.9)
Interns	24	27	51	24.6 (1.0)	23.4 (0.8)
Total	72	78	140		

Results

The results are summarized in Tables 1-5.

A total of 89 dental students (M=48, F=41) and 51 interns (M=24, F=27) were included in the study. The response rate was 100 percent. Table 1 shows the distribution of the subjects based on their status (school level) and age (SD).

Table 2 shows the comparison between dental students and interns regarding their response to questions about the unified program. No significant difference was found between dental

students and interns regarding their response to the questions about the unified program. A good percentage of the students (60.7%) and interns (58.8%) thought the unified program was important while 64.4% of the students and 62% of the interns considered the program as necessary.

Table 2. Assessment of the unified program by dental students and interns.

No.	Question	Answer	Students (%)	Interns (%)	P Value
1	What do you think about the unified program?	Important	60.7	58.8	0.830
		Not important	39.3	41.22	NS
2	Do you think the unified program is:	Necessary	64.4	62.0	0.782
		Not necessary	35.6	38.0	NS
3	Do you think the unified courses are:	Too little	13.5	13.7	0.328
		Adequate	44.9	56.9	
		Too much	41.6	29.4	
4	Do you think your learning outcome from the unified program is:	Below average	21.3	24	0.837
		Average	57.3	52.0	NS
		Above average	13.5	18.0	
		Excellent	7.9	6.0	
5	Do you think the unified program courses helped you in the dental college?	Yes	11.6	15.7	0.563
		No	29.1	21.6	NS
		Some helped	59.3	62.7	

NS: Not significant

Table 3 shows the comparison between dental students and interns regarding their opinion about different courses given in the unified program. Statistically significant difference was found between dental students and interns for the biostatistics course ($p = 0.016$). Only 25% of the interns saw biostatistics as beneficial compared to undergraduate students (46.1%). A statistical significance was also found between dental students and interns regarding physics course. Physics was perceived by dental students (46%) to be less beneficial than interns (67%) respectively ($p = 0.019$).

Statistically significant differences were found between male and female participants (Table 4) in their response to the questions asked. Male dental students and interns rated the unified program courses to be too little ($p = .008$). In addition, male participants rated their learning outcome to be below average ($p = .001$). No statistical difference was found between male and female participants based on their answers to questions 1, 2 and 5.

No statistical difference was found between male and female participants in their response to the importance, necessity, adequacy and rating of the unified program (Table 5).

Table 3. Evaluation of the unified program courses by dental students and interns.

No.	Subject	Answer	Students (%)	Interns (%)	P Value
1	English is beneficial	No	71.9	82.4	0.166 NS
		Yes	28.1	17.6	
2	Biology is beneficial	No	88.8	82.4	0.286 NS
		Yes	11.2	17.6	
3	Biostatistics is beneficial	No	53.9	74.5	0.016*
		Yes	46.1	25.5	
4	Organic Chemistry is beneficial	No	57.3	51.0	0.469 NS
		Yes	42.7	49.0	
5	General Chemistry is beneficial	No	44.9	47.1	0.809 NS
		Yes	55.1	52.9	
6	Physics is beneficial	No	53.9	33.3	0.019*
		Yes	46.1	66.7	

Table 4. Frequency distribution among students' and interns' evaluation of the benefits of six courses in the unified program.

Question	Answer	Male (%)	Female (%)	P value
1. What do you think about the unified program?	Important	61.1	58.8	0.782 NS
	Not Important	38.9	41.2	
2. Do you think the unified program is:	Necessary	63.4	63.6	0.975 NS
	Not Necessary	36.6	36.4	
3. Do you think the unified courses are:	Too Little	22.2	4.4	0.008*
	Adequate	43.1	55.9	
	Too much	34.7	39.7	
4. Do you think your learning outcome from the unified program is:	Below average	29.2	14.9	0.001*
	Average	61.1	49.3	
	Above average	4.2	26.9	
	Excellent	5.6	9.0	
5. Do you think the unified program courses helped you in the dental college?	Yes	15.5	10.6	0.698 NS
	No	25.4	27.3	
	Some helped	59.2	62.1	

* Statistically significant
NS No significance

Table 5. Frequency distribution and gender comparison between students' and interns' evaluation of the unified program courses.

No.	Subject	Answer	Male (%)	Female (%)	P Value
1	English is beneficial	No	73.6	77.9	0.550 NS
		Yes	26.4	22.1	
2	Biology is beneficial	No	81.9	91.2	0.111 NS
		Yes	18.1	8.8	
3	Biostatistics is beneficial	No	59.7	63.2	0.670 NS
		Yes	40.3	36.8	
4	Organic Chemistry is beneficial	No	59.7	50.0	0.248 NS
		Yes	40.3	50.0	
5	General Chemistry is beneficial	No	43.1	48.5	0.516 NS
		Yes	56.9	51.5	
6	Physics is beneficial	No	48.6	44.1	0.594 NS
		Yes	51.4	55.9	

NS No significance

Discussion

Evaluation of dental students' attitude towards many aspects of college courses is important. Previously, it had been reported that the formation of negative attitudes toward many aspects of college life is a problem that may reduce student motivation and, more importantly, may instill in students dissatisfaction with their major course of study.^{3,4} In this study, the purpose of obtaining feedback from dental students and interns about the unified program was to enable dental educators and planners in the CDKSU to gain an insight into students' views on the teaching they received and use these views as a basis for improvements.

Subjects of this study were recruited from the fourth year and fifth year undergraduate dental students and interns. First, second and third year dental students were not included because they had not yet been exposed to all the dental courses and they might not have fully known the benefit of the unified courses. In addition, it has been shown that dental students' career aspiration is a poor prediction of initial career activity.⁵ However, after the first three years of professional practice, career aspiration shifted back. One might therefore argue that dental students in their first, second and third years with a more recent exposure to the unified program, could possibly give a better assessment of the courses. This might be true

especially if the emphasis on and the contents of the courses in the unified program are changed every year.

Results from this study indicated that the unified program is beneficial to dental students. This finding is important because it is a concern for dental educators at CDKSU. In addition, results should be of interest to dental educators and planners in Saudi Arabia whenever a new dental school is being planned like the one at King Faisal University (Eastern Province). Furthermore, results showed that no significant differences were found between dental students and interns when asked about the unified program. This may indicate that attitudes and opinions about the unified program are not affected by the passage of time. Although not significant, dental students viewed the number of the unified program to be too much as compared to interns. This could be attributed to the fact that dental students do not look at the courses critically during the five years of their dental education.

Majority of participants agreed that some unified program courses benefited them. When participants were asked about specific courses, significant differences were found between dental students and interns regarding biostatistics and physics. Interns tended to underestimate the benefit of the biostatistics course compared to dental students. This might be due to the fact that during the undergraduate years, interns as dental students were not exposed to research where biostatistics is mainly needed and therefore were not aware of the benefit of the biostatistics given to them in the unified program. Another explanation is that interns might not have used the entire biostatistics course given to them in the unified program. Future studies are needed to explore the reason(s) behind the difference in perceptions.

Since differences between male and female dental students have been reported previously,⁶ statistical comparisons between male and female participants were performed. Results showed significant differences between male and female participants. Male participants tended to underestimate the importance of the unified program courses. In addition, female participants rated their learning experience more favorably than males. No significant differences were found between male and female subjects when asked about the unified program courses.

This study is the first of this type in CDKSU. Further studies are recommended to identify other areas that require improvement in the future to optimize the benefits of the unified program.

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