

Research Paper: Knowledge and Attitude of Faculty Members Towards Integrated Curriculum in Dentistry and Its Related Factors



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ABSTRACT

Introduction: Integration of curriculum is currently performing in dental schools. Many factors such as proper and purposive planning, teachers' experience and attitude, optimal condition and facilities in the context can impact the integration process. This research aimed to investigate knowledge and attitude of dentistry faculty members towards integrated curriculum and its related factors.

Materials and Methods: In this descriptive cross-sectional study, knowledge and attitude of 51 faculty members of Guilan Dental School were assessed through a researcher-made questionnaire in 2016. Knowledge and attitude parts were assessed by 8 and 18 questions, respectively. Wrong answer to each question of knowledge part scores 0 and the right answer 1. In calculation of attitude score, score of 5 was given to complete agreement, 4 to agreement, 3 to no opinion, 2 to disagreement, and 1 to complete disagreement. The validity of questionnaire was confirmed through content validity test [Content Validity Index (CVI)=0.8, Content Validity Ratio (CVR)=0.86] and the reliability of questionnaire was examined by test-retest ($r=0.8$). The obtained data were analyzed by the Independent t-test, Mann-Whitney U, Pearson correlation, and Spearman rank tests in SPSS (version 20).

Results: Faculty members' Mean±SD score in knowledge was 3.2±0.273. About 7.8% of the faculty members had high level of knowledge, 27.5% good level of knowledge and 43.1% moderate level of knowledge. About 64.7% of the faculty members had negative attitude towards integrated education, but 27.5% of members had positive attitude towards integrated education. There were not significant relationships between age, gender and work experience with knowledge scores and also attitude.

Conclusion: Given the need for change in teaching methods, we hope to increase student's problem-solving skills, and deep sustainable learning with creation and preparation of curriculum integration requirements.

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1. Introduction

The term 'Integration' refers to creation of an integrated system by combining separate components [1]. Various studies on knowledge acquisition have pointed out to limited or inadequate time to teach a subject due to the large number of curricula, mismatch of educational content with practical application, and overlooking learning qualities in natural settings as reasons for necessity of curriculum integration. An integrated curriculum prevents repetition of unnecessary content details compared to problem-based programs, and it can produce high-level intellectual skills [2, 3].

Creation of unity and interdisciplinary relationship, higher student motivation, provision of more effective education (content retention), achievement of higher educational goals (problem solving skills and its application), increase in communication and collaboration between professors, and rationalization of educational resources are among the advantages of integration plan [2, 4, 5]. This approach can even increase learners' motivation, self-esteem, positive attitude, and learning ability [6]. In other words, in an integrated system, the students experience a disease-based approach instead of a patient-based approach [5, 7]. On the other hand, possibility of not covering all content and basic principles of any discipline, unwanted removal of some subjects due to neglect, teachers' higher mastery in traditional approaches, high cost of integrated education, and existence of adverse effects in guiding students in choosing future jobs and career are among the disadvantages of integration [4, 5].

There are two types of integration in medical education: horizontal and vertical [5]. To reach an integrated curriculum stage from a subject-based curriculum, we should pass 11 consecutive stages in which the subject-based planning is performed in the first four stages (isolation, awareness, synchronization, and nesting). The next six stages (temporal co-ordination, sharing, correlation, complementary program, multidiscipline program, and interdisciplinary curriculum) emphasize on multidisciplinary integration. The integration is fully accomplished in the final stage i.e. transdiscipline, which does not focus on learning a topic or subject, but exemplifying the real world [5, 8, 9].

Integration of curriculum is currently performing at dental schools. The integration is affected by many factors such as proper and purposive planning, optimal conditions and facilities, and especially teachers' experience and attitude on the context [1, 2, 8, 10]. Although

teachers often accept and agree with integration, some disagreement is also observed at some stages of integration, and smooth transition of integration stages depends on proper and purposive planning, teachers' experience and positive attitude, and existence of optimal conditions and facilities at dental schools [4, 6, 8]. Therefore, this research aimed to investigate knowledge and attitude of dentistry faculty members about integrated curriculum and its related factors.

2. Materials and Methods

This descriptive cross-sectional study was conducted on 51 (out of total 74) faculty members in Dental School, Guilan University of Medical Sciences. Membership in Guilan Dental School was the inclusion criterion, but faculty member's incomplete questionnaire was the exclusion criterion.

The study data collection tool was a researcher-made questionnaire consisting of three parts; demographic characteristics, knowledge, and attitude. Knowledge and attitude parts were consisted of 8 and 18 questions, respectively. In knowledge part, wrong answer to each question scores 0 and the right answer 1. The total knowledge scores were classified as follows: excellent (6-8), good (4-5), moderate (2-3), and weak (0-1). In calculation of attitude score, score of 5 was given to complete agreement, 4 to agreement, 3 to no opinion, 2 to disagreement, and 1 to complete disagreement. In another method of calculation, the subjects with scores <50% were put in the negative attitude group, and those with scores >50% were put in the positive attitude group [11].

Validity of the questionnaire was assessed through content validity (CVI=0.8, CVR=0.86) and its reliability was checked through test-retest ($r=0.8$). The questionnaires were completed through distant way by professors in Dental School of Guilan University of Medical Sciences, and they were collected a week after distribution. The obtained data were analyzed by using descriptive statistics, and inferential statistics of the Independent t-test, and Mann-Whitney U, Pearson correlation, and Spearman rank tests in SPSS (version 20).

3. Results

Out of 74 faculty members, 51 people participated in the present study. Mean±SD age of the subjects was 34.35±1.009 years (range: 27-54 y) and subjects' Mean±SD work experience was 4.49±0.877 years (range: 1-24 y). Table 1 presents distribution of demo-

Table 1. Distribution of demographic characteristics of faculty members participating in this study

Variable	Characteristics	No.	%
Gender	Male	13	25.5
	Female	31	60.8
	Not mentioned	7	13.7
Age group, y	<29	7	13.7
	30-39	30	58.8
	>39	6	11.8
	Not mentioned	8	15.7
Work experience, y	<5	33	64.7
	6-10	4	7.8
	>10	6	11.8
	Not mentioned	8	15.7
	Total	51	100



graphic characteristics of faculty members. A total of 33 subjects (64.7%) had not attended any workshop or journal club of integrated curriculum, also 44 subjects (86.3%) had not attended any workshop or journal club of evaluations.

Faculty members' Mean±SD score in knowledge was 3.2±0.273. Four (7.8%) faculty members presented high

levels of knowledge, 14 (27.5%) good levels of knowledge and 22 (43.1%) moderate levels of knowledge. A total of 11 (21.6%) members did not complete the integration knowledge part. **Table 2** presents the faculty members' answers to questions about knowledge towards integrated curriculum in dentistry.

Table 2. Distribution of faculty members' answers to questions about knowledge towards integrated curriculum in dentistry

Question Number	Incorrect		Correct		No Response	
	No.	%	No.	%	No.	%
1	40	78.4	9	17.6	2	3.9
2	28	54.9	21	41.2	2	3.9
3	32	62.7	14	27.5	5	9.8
4	14	27.5	30	58.8	7	13.7
5	27	52.9	21	41.2	3	5.9
6	35	68.6	11	21.6	5	9.8
7	32	62.7	15	29.4	4	7.8
8	26	51.0	22	43.1	3	5.9



Table 3. Distribution of faculty members' answers to questions about attitude towards integrated curriculum in dentistry

Question Number	Complete Disagreement		Disagreement		No Opinion		Agreement		Complete Disagreement		No Response	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1	6	11.8	14	27.5	19	37.3	9	17.6	1	2.0	2	3.9
2	4	7.8	27	52.9	13	25.5	5	9.8	0	0	2	3.9
3	6	11.8	11	21.6	17	33.3	13	25.5	3	5.9	1	2.0
4	8	15.7	17	33.3	17	33.3	8	15.7	0	0	1	2.0
5	2	3.9	3	5.9	26	51.0	16	31.4	2	3.9	2	3.9
6	2	3.9	3	5.9	25	49.0	16	31.4	3	5.9	2	3.9
7	6	11.8	7	13.7	25	49.0	12	23.5	0	0	1	2.0
8	6	11.8	14	27.5	21	41.2	8	15.7	0	0	2	3.9
9	8	15.7	15	29.4	20	39.2	4	7.8	2	3.9	2	3.9
10	5	9.8	11	21.6	28	54.9	5	9.8	1	2.0	1	2.0
11	10	19.6	20	39.2	16	31.4	4	7.8	0	0	1	2.0
12	8	15.7	16	31.4	10	19.6	14	27.5	2	3.9	1	2.0
13	9	17.6	18	35.3	15	29.4	6	11.8	1	2.0	2	3.9
14	4	7.8	10	19.6	20	39.2	14	27.5	1	2.0	2	3.9
15	5	9.8	14	27.5	22	43.1	7	13.7	1	2.0	2	3.9
16	1	2.0	3	5.9	23	45.1	21	41.2	1	2.0	2	3.9
17	1	2.0	6	11.8	28	54.9	14	27.5	0	0	2	3.9
18	1	2.0	0	0	16	31.4	15	29.4	18	35.3	1	2.0

A total of 33 (64.7%) faculty members had negative attitude, but 14 (27.5%) members had positive attitude towards integration plan, and 4 (7.8%) members did not complete the attitude questions. In total, 1 (2%) faculty member had complete disagreement attitude, 11 (21.6%) members had disagreement attitude, 5 (9.8%) members had agreement attitude, 30 (58.8%) were without any opinion, and 4 (7.8%) members did not express their attitude. [Table 3](#) presents faculty members' answers to questions about attitude towards integrated curriculum in dentistry.

There were not any significant relationships between age and knowledge scores based on Pearson correlation test ($P=0.990$), between gender and knowledge scores using Independent t-test ($P=0.923$), and between work

experience and knowledge scores using Spearman correlation test ($P=0.684$).

There were not any significant relationships between age and attitude scores using Spearman correlation test ($P=0.547$), between gender and attitude scores by Mann-Whitney U test ($P=0.822$), and between work experience and attitude scores based on Spearman correlation test ($P=0.077$). According to studied regression of predictive variables on knowledge score ([Table 4](#)) and also attitude scores ([Table 5](#)), none of variables of age, gender, and work experience or participation in workshops or journal clubs of integration, curriculum, and evaluation of student had any significant effects on these scores.

Table 4. The relationship between independent variables and knowledge score using regression model

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% CI for B	
	B	Std. Error	Beta			Lower	Upper
(Constant)	2.573	4.707		0.547	0.589	-7.102	12.248
Age	0.016	0.160	0.060	0.102	0.920	-0.312	0.345
Gender	0.132	0.786	0.036	0.168	0.868	-1.485	1.748
Work experience	-0.010	0.174	-0.036	-0.059	0.953	-0.367	0.347
Participation in integration workshops or journal club	-0.061	1.603	-0.011	-0.038	0.970	-3.356	3.235
Participation in course planning workshops or journal clubs	-0.135	0.811	-0.036	-0.166	0.869	-1.801	1.532
Participation in evaluation workshops or journal clubs	0.541	1.839	0.097	0.294	0.771	-3.239	4.321



4. Discussion

The necessity of change in teaching system and its integration has been emphasized by the American Society for Medical Education in 1982 and by the English Society for Medical Education in 1993 and 1994 [5, 8]. It has already been implemented in many countries [10-14], and recommended in our country, too.

Results of this study indicated that knowledge of dentistry faculty members about integration in education system was moderate. In the present study, basic concepts of knowledge were studied. This problem can be

due to the non-participation of many faculty members in integration workshops or journal clubs, low work experience, a little time after performance of integration plan, and the lack of experience in this field in addition to structural problems [9]. However, taxonomy of questions also has a great impact on knowledge score. According to conducted studies, this study is one of the few studies which investigate dental professors' knowledge and attitudes about integration in dentistry curriculum.

A total of 33 (64.7%) faculty members had negative attitude toward curriculum integration. In the present study, the main reasons for faculty members' disagree-

Table 5. The relationship between independent variables and attitude score using regression model

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% CI for B	
	B	Std. Error	Beta			Lower	Upper
(Constant)	35.18	14.33		2.45	0.020	6.02	64.34
Age	0.53	0.478	0.36	1.12	0.271	-0.44	1.51
Gender	2.76	4.01	0.13	0.69	0.496	-5.40	10.93
Work experience	-0.91	0.62	-0.52	-1.47	0.152	-2.17	0.35
Participation in integration workshops or journal club	4.34	7.26	0.14	0.60	0.554	-10.42	19.10
Participation in course planning workshops or journal clubs	1.27	4.19	0.06	0.30	0.764	-7.26	9.80
Participation in evaluation workshops or journal clubs	-5.04	9.16	-0.15	-0.55	0.586	-23.68	13.60



ment with integration of curriculum were their unawareness about it, lack of evaluation programs within departments, inappropriate planning and facilities, and educational experts' unawareness of curriculum integration which are the requirements of this process.

Regarding the disadvantages of integration plan, faculty members' reluctance for proper interaction can result in incomplete coverage of content and basic principles of a discipline and unwanted removal of some topics. In addition, professors should master modern teaching methods. However, integration of curriculum is a costly program, and integrated education can have adverse effects on the process of choosing specialty fields and occupation by the students [5, 8] as it is consistent with our study findings. The faculty members' main positive opinions included coordination between professors, school authorities' support of integration of curriculum, and adherence to curriculum for teaching lessons. In the study conducted by Hassanzadeh and Nasiri, the students' attitudes and opinions on team-based learning and presentation of integrated pharmacology courses was positive [15].

There was not any significant relationship between knowledge and the attitude scores with work experience in the present study. It was probably due to the fact that there was not any significant relationship between these scores and their age. There was not any significant statistical relationship between knowledge and also attitude of faculty members and their participation in workshop or journal clubs of integration, curriculum, and evaluation of students. This was probably due to the fact that most of them didn't participate in these workshops.

5. Conclusion

Based on the results of the present study, dentistry faculty members' knowledge about curriculum integration was moderate. About 65% of the faculty members had negative attitude about integrated curriculum. There were not significant relationships between age, gender and work experience with knowledge and also attitude scores. Given the need for change in teaching methods, we hope that by preparation of integration curriculum requirements and its implementation, the student's problem-solving skills increases and they gain deep sustainable knowledge. It is suggested that similar qualitative studies be conducted at other dental schools of Iran in order to promote dentistry education level of Iran by identification of obstacles to implement of this project.

Ethical Considerations

Compliance with ethical guidelines

The ethical approval code of the present study is IR.GUMS.REC.1394.

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Authors contributions

Responsible for the study concept and design, acquisition of data, drafting, and critical revision for important intellectual content: Maryam Basirat and Ideh dadgaran; Responsible for the administrative, technical, and material support as well as the study supervision: All authors.

Conflict of interest

The authors declared no conflict of interest.

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