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The Attitude of Faculty Members and PhD Students to Field of Study and Career Development in Hamadan University of Medical Sciences in 2017-2018

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Abstract

Background & Objective: This study aimed to determine the attitude of faculty members and PhD students at Hamadan University of Medical Sciences toward the field of study and career development in 2017-2018.

Materials and Methods: This cross-sectional study was performed on 133 faculty members and PhD students selected by relative-stratified sampling. Using questionnaires, the demographic characteristics, attitude to self-efficacy, mentoring function, the field of study and career development, were assessed. Data analysis was performed using SPSS version 16.

Results: In this study, most faculty members and PhD. students had a favorable attitude to the field of study. Students had an unfavorable attitude toward career development. A positive attitude toward career development was related to the permanent employment status of faculty members ($P<0.05$). In addition, a significant relationship was observed between students' attitude toward field of study, mentoring function, self-efficacy and career development ($P<0.05$). Furthermore, there was a significant, positive correlation between students' self-efficacy and their attitude toward field of study and career development ($P<0.05$).

Conclusion: According to the results of the study, the performance of faculty members affected the attitude of students toward field of study and career development. Faculty members can become role models for students and improve their attitude toward field of study and career development.

Introduction

Faculty members and PhD students are among the most important human capitals of universities and communities (1). Maintaining and improving the educational services of universities require attention to the career development of faculty members and the provision of job opportunities and professional activities for students. Interest in the field of study and work motivation are among the factors for career success and development of individuals. Work motivation is the tendency to work depending on one's ability, which motivates people to move toward their individual and organizational goals (2). Studies show that in our country, students are enrolled in universities without a scientific plan and regardless of job capacity in the community, which ultimately results in frustration and lack of work motivation in graduates (3). To achieve career success, it is important to have a positive motivation for the job, which is affected by environment conditions, organizational systems, and workplace relationships (4). Lack of interest in one's job leads to a tedious, and even impossible, job. On the other hand, a positive attitude toward future career is associated with work motivation, which results in career success (5).

Concerns about the future of careers exist in most professions today, and the department of medical sciences is no exception. In a research at the

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University of Minnesota, USA, the majority of medical students were concerned about the decline in the status and income of the field of medicine (6). Moreover, female faculty members in schools of medicine were not confident enough about their future career (7), and most medical students believed that the medical resources are more than the society's needs (8). Personal and environmental factors and job support (e.g., having a good role model) can lead to a positive attitude to the job (10, 11). A learning and training environment, universities are expected to provide conditions that lead to positive and effective changes in the attitude of students (1). In this regard, one of the necessities is focusing on faculty members, who, not only have positive effects on the improvement of scientific level of universities but also are able to increase motivation in students and the health and information level at the community level (9). Promotion and professional growth are, in fact, part of human resource development planning, which is a systematic effort to rationally use the talents of individuals to meet the demands of the environment and to provide the conditions for achieving organizational goals (10).

Career development refers to the sequence of job, status, and organizational position achieved by a person during his life. Going through stages of progress or reaching a higher level in a faculty job is considered as a vertical promotion in the job. One of the important aspects of the quality of the professional life of faculty members is the availability of equal opportunities for growth and professional development and going through the stages of professional development and regular scientific promotion (11). Limited studies have been conducted on professional development of faculty members in Iran, results of which show that individual, organizational, environmental, and cultural factors affect the career development of individuals (9-11). Identification of factors affecting the attitude of faculty members and students toward their field of study and career development can be used to change student enrollment capacity and eliminate or create new disciplines. With this background in mind, this study aimed to determine the attitude of faculty members and PhD students to the field of study and career development in Hamedan University of Medical Science, Hamedan, Iran, in 2017-2018.

Materials and Methods

This descriptive-analytical study was performed in 2017-2018, and the sample size was estimated using the Cochrane's formula in limited communities.

$$n = \frac{N\,z^2pq}{Nd^2 + z^2pq}$$

Since the faculty members had 75 PhD students, the sample size was estimated at 50 faculty members by estimating error d=0.08, z=2.96, and p=q=0.5. In addition, 150 PhD students were studying in fields of basic and clinical sciences, 75 of whom were selected with error estimation of 0.08, p=q=0.5, and z=1.96. However, given 20% attrition, 60 and 90 questionnaires were distributed among faculty members and students, respectively. In this study, the subjects were selected by proportional random sampling, in a way that faculty members and their PhD students (a faculty member could have more than one PhD student) were selected proportional to the fields of study of basic and clinical sciences. However, specialized medical and dental students and faculty members were not entered into the study due to differences in educational and clinical environments. Notably, sampling was carried out in medical, health and nursing and midwifery schools. The basic sciences fields included environmental health engineering, health education, biostatistics, ergonomics, parasitology, bacteriology, clinical biochemistry, molecular medicine, and biotech. In addition, clinical sciences fields were nursing and neurosciences. The faculty members and students were selected based on the list of names of individuals in each school using a random number table (Table 1).

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Table 1: Sampling of faculty members and PhD students in Hamadan University of Medical Sciences in 2017-2018

Schools	Faculty members			PhD students		
	Population (N)	Sample (n)	n/N %	Population (N)	Sample (n)	n/N %
Health	35	23	66%	95	47	50%
Midicine	30	20	66%	47	24	50%
Nursing	10	7	66%	8	4	50%
Total	75	50	66%	150	75	50%

The inclusion criteria of faculty members included having PhD students, having a minimum of two years of work experience, and having permanent, temporary-to-permanent, or contractual contracts. On the other hand, the inclusion criterion for students was studying in the second or higher semester of the PhD course. Moreover, the exclusion criterion was incomplete questionnaires. Envelops containing the questionnaires were distributed among the individuals willing to participate in the study in schools and training hospitals by education department of the centers. In case of lack of desire, the subjects would be replaced by another member of the same group. Individuals were required to complete the questionnaire within two weeks. After that, questionnaires were returned to the education department in envelopes and collected by the researcher. In total, 86% and 94% of questionnaires were returned by faculty members and students, respectively.

In addition, 5% of the questionnaires were eliminated due to a lack of completion. Ultimately, the questionnaires of 133 subjects (81 students and 52 faculty members) were analyzed. Data collection tool was a questionnaire, completed by self-report and containing information such as demographic characteristics, self-efficacy, mentoring function, attitude to the field of study, and career development. Self-efficacy can be effective in their success and attitude toward their field of study and career. Faculty members are role models of students and their mentoring function can affect the attitude of students to their field of study and future career. It is notable that demographic characteristics included gender, age, marital status, number of family members, occupational status and work experience.

Self-efficacy was assessed using a 10-item questionnaire by Schwarzer & Jerusalem (2010) scored based on a five-point Likert scale (1=completely disagree to 5=completely agree) (12). The score of the questionnaire was 10-50, where a higher score is indicative of higher self-efficacy, whereas scores below 21, in the range of 21-30, and above 31 are poor, moderate, and favorable, respectively. A psychometric evaluation of the questionnaire was carried out on university personnel by Delavar et al. (2013), where a Cronbach's alpha of 0.87 was reported (13). The questionnaire was also exploited by Hosseini Dolatabadi et al. (2014) and Parsa et al. (2014) in Iran, where reliability of the questionnaire was confirmed at a Cronbach's alpha above 0.70 (14, 15). In the current study, the questionnaire's reliability was reported favorable (0.78).

In addition, attitude to mentoring function was evaluated by nine items derived from the research by Pellegrini & Scandura in 2005 (16). This questionnaire has three dimensions of occupational support (items one-three), psychosocial support (items four-six), and role modeling (items seven-nine). The questionnaire is scored based on a five-point Likert scale (1=completely disagree to 5=completely agree), and the score range is 9-45, where higher scores are indicative of better mentoring function while scores of <18, 19-27, and >28 are interpreted as poor, moderate, and high, respectively. The reliability and validity of the scale were confirmed with Cronbach's alpha in national and foreign studies (17, 18). In the current research, the reliability of the questionnaire was reported to be acceptable (0.83). Attitude to the field of study was assessed using a questionnaire by Hedayati et al. (2012), encompassing nine items (19). The questionnaire is scored based on a five-point

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Likert scale, and the score range is 9-45. In this regard, scores below 18 are poor, whereas scores in the range of 19-27, and above 28 are moderate and favorable, respectively. The reliability of the questionnaire was confirmed at the Cronbach's alpha of 0.73 (19). In the present study, reliability of the questionnaire was also reported to be acceptable (0.71).

Attitude to career development was evaluated using a 15-item multiple-choice questionnaire (1=completely disagree to 5=completely agree) derived from the research by Wang et al. in 2008 (20). The questionnaire evaluates the realization of career goals, development of specialized abilities, speed of improvement, enhancement of financial situation, and perception of job improvement opportunities. The score range of the questionnaire is 15-75, where higher scores are indicative of a positive attitude toward the field of study and future career. In addition, scores <45, in the range of 46-55, and >65 are poor, moderate, and favorable, respectively. Notably, the reliability of the questionnaire was confirmed by Parsa et al. at the Cronbach's alpha of 0.89 (21).

Data analysis was performed in SPSS version 21 using descriptive statistics (to describe demographic variables), Kolmogorov–Smirnov test (for evaluation of normal distribution of quantitative data), the results of which were indicative of normal distribution of the data (P>0.05), t-test (to compare research groups), one-way ANOVA (more than two groups), post hoc (for comparison of groups), and Pearson's correlation coefficient (to evaluate the relationship between quantitative variables).

Results

According to Table 2, most faculty members were female (57.7%) and married (80.8%), had permanent contracts (53.8%), and were in clinical sciences fields (61.5%). In addition, the majority of students were female (59.3%), married (53.1%) and in basic sciences fields (91.4%). Moreover, most faculty members had a suitable level of self-efficacy (90%), attitude to the field of study (87%), and career development (78%). On the other hand, while self-efficacy (88%) and attitude to field of study (80%) were favorable in students, there was a moderate level of career development among these individuals (55%). According to the independent t-test results presented in Table 3, a significant difference was observed between faculty members in the departments of basic sciences and clinical sciences in terms of attitude to field of study (P=0.048) and self-efficacy (P<0.001). In addition, a significant difference was found between the students of the two clinical and basic sciences groups regarding attitude to field of study (P=0.009) and self-efficacy (P=0.01).

Table 2: Demographic Data Sheet of Study Subjects (Students n= 81, Faculty n= 52)

Variables	Group	Levels	Frequncy	Percent
Gender	Faculty member	Female	30	57.7
		Male	22	42.3
	Student	Female	48	59. 3
		Male	33	40.7
Marital Status	Faculty member	Single	10	19. 2
		Married	42	80.8
	Student	Single	43	53.1
		Married	38	46.9
Age (year)	Students	<30	25	33.3
		31-40	56	66.7
Employment status	Faculty member	Permanet	28	53.8
		Contractual contracts	18	34.7
		Temporary-to-permanent	6	11.5
Filed of study	Faculty member	Basic Sciences	32	61. 5
		Clinical Sciences	20	38. 5
	Student	Basic Sciences	74	91. 4
		Clinical Sciences	7	8.6

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Evaluation of variables based on the gender of faculty members and students determined a significant difference between female and male students in terms of attitude to mentoring function (P<0.001). Moreover, single students had a more positive attitude toward mentoring function, compared to married students (P<0.001). The one-way ANOVA results presented in Table 4 were indicative of a significant difference between employment status of faculty members and their attitude toward field of study (P=0.01) and career development (P=0.04). Furthermore, the post hoc test showed a significant difference between individuals with permanent contracts and other groups (P=0.01). According to Table 5, there was a significant, direct association between students' attitudes toward the field of study and faculty members' attitude toward the field of study, mentoring function of faculty members, as well as self-efficacy and career development of students (P<0.001). In addition, there was a significant, direct relationship between students' self-efficacy and mentoring of students and attitude toward their career development (P<0.001). Moreover, teachers' attitude to their field of study was directly and significantly related to their career development (P<0.001).

Table3: Comparison attitudes towards field of study, mentoring function, self-efficacy and career development according to field of study, marital status and gender in the study subjects

Variables	Group		Levels	Mean ± SD	Ststistic	P
Attitude towards field of study	Faculty member	Field	Basic Sci.	31.04 ± 6.34	4.09	0.04
			Clinical Sci.	34.06 ± 4.50		
		Marital status	Single	32.00 ± 4.47	0.03	0.53
			Married	33.24 ± 5.54		
		Gender	Female	33.80 ± 5.68	1.03	0.16
			Male	31.91 ± 4.76		
	Student	Field	Basic Sci.	24.23 ± 7.67	7.08	0.009
			Clinical Sci.	30.43 ± 3.15		
		Marital status	Single	22.95 ± 8.41	2.33	0.072
			Married	26.37 ± 6.45		
		Gender	Female	24.58 ± 8.11	0.57	0.45
			Male	25.03 ± 6.88		
Attitude towards mentoring function	Faculty member	Field	Basic Sci.	30.14 ± 10.15	0.55	0.46
			Clinical Sci.	30.21 ± 7.65		
		Marital status	Single	29.00 ± 10.41	0.40	0.84
			Married	30.56 ± 7.90		
		Gender	Female	28.54 ± 8.53	0.82	0.37
			Male	32.88 ± 7.69		
	Student	Field	Basic Sci.	19.33 ± 0.46	1.01	0.31
			Clinical Sci.	21.43 ± 0.53		
		Marital status	Single	18.53 ± 0.50	2.08	0.04
			Married	21.12 ± 0.32		
		Gender	Female	21.42 ± 0.49	3.96	0.01
			Male	17.15 ± 0.36		
Attitude towards self-efficacy	Faculty member	Field	Basic Sci.	36.44 ± 4.77	3.13	0.001
			Clinical Sci.	38.47 ± 2.12		
		Marital status	Single	37.20 ± 4.38	0.51	0.31
			Married	37.90 ± 3.16		
		Gender	Female	38.73 ±2.68	2.82	0.04
			Male	36.45 ± 3.80		
	Student	Field	Basic Sci.	32.65 ± 5.94	6.01	<0.001

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			Clinical Sci.	37.43 ± 2.44		
		Marital status	Single	33.42 ± 5.53	0.05	0.81
			Married	32.74 ± 6.72		
		Gender	Female	33.10 ± 6.13	0.04	0.84
			Male	33.00 ± 5.57		
		Field	Basic Sci.	56.89 ± 9.89	1.61	0.16
			Clinical Sci.	57.65 ± 6.74		
	Faculty member	Marital status	Single	56.89 ±9.89	1.49	0.18
			Married	55.56 ± 6.57		
		Gender	Female	58.47 ± 7.43	0.03	0.86
			Male	55.91 ± 8.08		
Attitude towards career development		Field	Basic Sci.	40.43 ± 13.08	1.71	0.19
			Clinical Sci.	53.71 ± 7.58		
	Student	Marital status	Single	38.81 ± 13.24	0.02	0.89
			Married	43.88 ± 12.67		
		Gender	Female	42.77 ± 12.22	3.14	0.008
			Male	40.10 ± 14.62		

Table 4: Comparison of attituds towards field of study, self-efficacy and career development according to the employment status of faculty members

Variables	Employment status	Mean ± SD	F	p
Atttude towards field of study	Permanet	63.75± 5.04	4.3	0.01
	contractual contracts Temporary- to-permanet	33.4 ±3.37		
		42.33± 4.03		
Atttude towards self-efficacy	Permanet	39.57±1.08	1.9	0.14
	contractual contracts Temporary- to-permanet	38.02 ± 1.68		
		34.00 ± 5.36		
Atttude towards career development	Permanet	62.29 ± 6.41	3.0	0.04
	contractual contracts Temporary- to-permanet	58.16 ± 7.96		
		46.67 ± 7.71		

Table 5: Correlation coefficients between domains of attitude toward field of study, mentoring function, self-efficacy and career development in study subjects

	Students' attitude towars field of study	Students' attitude towars mentoring function	Students' attitude towars self-efficacy	Students' attitude towars career development	Faculties' attitude towards field of study	Faculties' attitude towards career development
Students' attitude towars field of study	1					
Students' attitude towars mentoring function	0.325* ٠.015	1				
Students' attitude towars self-efficacy	0.331** 0.003	0.432** 0.001	1			
Students' attitude towars career development	0.635** 0.000	0.030 0.833	0.234* 0.045	1		
Faculties' attitude towards field of study	0.579** 0.000	-0.108 0/428	0.094 0.405	0.364** 0.001	1	
Faculties' attitude towards career development	0.190 0.352	0.117 0.678	0.153 0.455	0.124 0.563	0.661** 0.000	1

*p<0.05; **p<0.01

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Discussion

The present study aimed to evaluate the attitude of faculty members and PhD students at Hamedan University of Medical Sciences toward the field of study and career development. According to the results, faculty members with unstable employment status and PhD students were concerned about their career development. In addition, there was a relationship between attitude to field of study and career development in faculty members and students. Moreover, an association was found between career development of faculty members and their mentoring function with students' positive attitude toward career development. Faculty members play a major role in improving the quality of higher education. Therefore, faculty development has become an important issue in higher education in recent years. Our findings showed that clinical sciences faculty members were more interested in their field of study and career development, compared to the basic sciences group.

In contract, single faculty members with temporary employment status had a less positive attitude toward their career development, which might be due to their uncertainty about continuing their employment at the university. Consistent with our findings, other studies have shown that individual, organizational, and environmental factors affect the faculty members' attitude toward career development. Hejazi and Rostami evaluated the components affecting the career development of faculty members in school of agriculture at University of Tehran. In the mentioned study, 103 participants were assessed, and factor analysis of the relationship with variables affecting the career development process of faculty members led to the extraction of four infrastructure components, including organizational, managerial, individual and social factors. Results were also indicative of the interaction of these factors with each other (10).

The results of an integrative study by Pourkarimi (2011), performed on 248 faculty members in Academic Center for Education, Culture and Research, showed the importance of attention to six basic components (e.g., research development, development of special services, development of scientific publications, development of use of new communication and information technologies and networks, development of English language, and development of teaching) for career development of faculty members (1). In a study, Nourshahi evaluated the factors affecting the professional growth of full-time faculty members in universities affiliated to the ministry of science, research, and technology. From 531 subjects, 53 individuals were in successful faculty member groups, whereas 57 and 421 participants were in the unsuccessful and transiting faculty member groups, respectively. According to the results, a significant difference was observed between the successful and unsuccessful faculty members in terms of components of scientific and group interactions and relations, organizational socialization, decision-making in the related scientific group and structural factors. In this regard, the successful group had significantly higher scientific relations and interactions, compared to the unsuccessful group. However, one of the limitations of the mentioned study was lack of evaluation all factors for career development of faculty members. In addition, difference in the structure of medical schools and ministry of science can affect the attitude toward career development of faculty members in universities (22).

In the present study, most PhD students were concerned about their career development, which is in line with the results obtained by Khamrnia et al., who conducted a study on students in Zahedan University of Medical Sciences to determine their attitude toward the field of study and future career. In the aforementioned research, failure to find suitable jobs was the most important concern of students, which was more reported for students in school of health (23). In addition, studies performed in Neyshabur and

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Zanjan also showed that while students had a positive attitude toward their field of study, they were concerned about market saturation and lack of jobs (24, 25). To increase the motivation of PhD students, there is a need to reform student recruitment and curriculum and create suitable spaces for these young people to apply for entry into the labor market in the near future.

According to the results, there was an association between faculty members and students in the areas of attitude to the field of study and self-efficacy with the occupational group. In this context, subjects working in the clinical group had higher self-efficacy and a more positive attitude toward their future career, compared to the basic sciences group. Since increased self-efficacy is associated with a positive attitude and higher motivation to gain abilities and have a better future career, measures must be taken to improve self-efficacy in students. Some of the factors affecting this issue included certainty of ability to solve problems, satisfaction with one's ability against unpredictable problems, and efforts to achieve occupational desires. Adjusting educational goals to students' needs and in line with faculty members' opinions while adopting educational quality assessment strategies with an emphasis on perception of self-efficacy in students would improve the quality of academic educational processes (15). In contrast, reduced self-efficacy in student could be associated with academic burnout (26).

In a research by Ghadampour et al. in the Ilam University of Medical Sciences, academic burnout was above average in medical students, and there was a significant relationship between factors such as low self-efficacy, lack of interest and emotional frustration of students with their academic burnout. Given the considerable negative effect of academic burnout on academic performance, control of this issue will result in academic development, motivation and learning passion (26). In addition, use of proper educational methods, as well as social and family stability can improve self-efficacy and learning in students (27, 28). Gheybi et al. also marked a relationship between learning strategy and self-efficacy in students in different fields (29). Therefore, faculty members must be aware of learning methods for each field of study to be able to teach the curriculum and provide educational and occupational counseling for students in order to increase their self-efficacy. Furthermore, measures must be taken to develop teaching methods proportional to the field of study in order to realize favorable education. By doing so, students can better learn their specialized field of study and improve their self-efficacy.

According to the results of the present study, students reported a moderate mentoring function for faculty members. However, female students had a more positive attitude toward the mentoring function of their faculty members, compared to male students. Some of the factors affecting this area include the teaching ability of faculty members (instructors) and the mental-social support of students. In research by Asadollahi et al., the cause of students' low motivation and performance was reported to be instructors who were proper role models (30). On the other hand, Balmer indicated the effectiveness of instructors as clinical models, even in terms of thinking and speaking of residents (31). According to these results, career function and motivation of instructors or faculty members played an important role in the academic motivation and professional performance of students. In addition, attention to the impact of role models was higher in the education of students, especially those in the clinical group, and students more learned and imitated the behaviors and performance of their instructors, compared to their educational theoretical content (32). Therefore, instructors are expected to have clinical competencies, teaching skills, and appropriate personality traits to become a suitable role model for students (33). Therefore, developing sound educational programs and principles to optimize the modeling style has an important role in the development of student learning.

One of the major drawbacks of the present study

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was the completion of questionnaires through self-report and lack of use of more accurate instruments, such as evaluation of opinions of the university's managers. It is recommended that qualitative research be conducted to assess the perception and understanding of individuals about their career development. It is also suggested that more studies be performed on facilitating factors and barriers to career development.

Conclusion

According to the results of the present study, the attitude of faculty members had a significant, positive effect on the students' attitude toward the field of study and career development. In order to improve students' attitude toward field of study and career development, it is suggested that issues such as scientific mastery, science production, original research, ethical considerations, awareness and participation in social issues of faculty members be taken into account in considering them as suitable role models.

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