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Evaluation of Intrinsic Motivation of Nursing Students Based on Perceived Motivational Climate

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Abstract

Background and Objective: The study aimed to determine the intrinsic motivation of undergraduate nursing students based on their perceived motivational climate.

Materials and Methods: This cross-sectional research was conducted on 165 students, who were selected through simple random sampling. Data collection tools were standard intrinsic motivation and perceived motivational climate (consisting of perceived mastery and performance climates) questionnaires. Moreover, data analysis was performed in SPSS using Pearson's correlation coefficient, analysis of variance, and linear regression.

Results: In this research, a significant and positive relationship was observed between intrinsic motivation and perceived mastery and motivational climates ($P<0.01$). In addition, a significant and positive correlation was found among the perceived mastery, performance and motivational climates ($P<0.01$). Results of the linear regression demonstrated that the perceived mastery and motivational climates predicted the intrinsic motivation of students while the perceived performance climate failed to do so.

Conclusion: According to the results of the study, it seems that improvement and modification of the perceived mastery and motivational climates in learning environments can increase intrinsic motivation for learning in students.

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Introduction

One of the most important issues that affect academic achievement is motivation. This is a strong concept in the teaching-learning process in a way that even the best organized internships and training programs will not be beneficial for learners in the absence of motivation. In fact, motivation justifies the behavior boosters, the orientation of behavioral goals, and determinants of the amount of time spent on various activities. In addition, it is an important factor in the academic achievement of students (1). Motivation is one of the intrinsic dimensions of a person that stimulates, directs, and sustains the individual's effort to perform various acts (2). Among the many factors that have been studied by experts and researchers, motivation is defined as the strongest force in academic hard work (3).

Generally, there are 2 types of intrinsic and extrinsic motivation in learning. Intrinsic motivation is the innate tendency to deal with and dominate tendencies, use abilities in performing the tendencies, and search for optimal challenges (4). Individuals with intrinsic motivation for performing a task experience pleasure and have a sense of mastery and control (5). Extrinsic motivation, such as earning a reward or avoiding punishment, forces people to perform activities due to the relevant outcomes. In this type of motivation, an external factor motivates the individual to perform a specific task (6).Researchrelatedto motivation requires more focus onthe field of medical education, emphasized by White and Gruppen (7).

Motivation in medical education may be affected by a series of factors related to students, the learning environment and the curriculum. The learning environment can stimulate the intrinsic motivation in students by taking into account the supportive and self-directed behaviors of professors, supporting the feelings of students toward skills by providing constructive and regular feedbacks and increasing communication through counseling, positive role playing, working in small groups, and having early contacts with patients (8). One of the variables affecting the learning environment and intrinsic motivation of students is motivational climate. As mentioned in scientific contexts, motivation in students depends on a high level of perceived motivational climate in classes (5).

Motivational climate is defined as the situational structure of objective, through which success or failure are judged in the social environment (9). Assignment-oriented individuals feel that their success depends on

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extensive efforts and regular performing of the assignments. On the other hand, self-oriented individuals feel successful when their performance is more efficient, compared to others, or when they are able to properly perform a task with fewer efforts and by emphasizing their skills (10). Quoting from Ames, Quinlan wrote that the more self-oriented motivational climate is performance climate and the more assignment-oriented climate is recognized as mastery climate. Therefore, the motivational climate created by others can be perceived in two forms of "mastery" and "performance" climates (10). Similar to assignment-oriented individuals, the mastery climate emphasizes learning, skill development, endeavor, and participation. On the other hand, performance climate focuses on socialcomparison,norm-oriented evaluation andcompetitioninsteadof participation,similar toself-oriented individuals (11).

One of the most important problems in nursing profession is the high rate of dropout by students in this field (12). Studies show that many nursing students lack the necessary motivation for studying. In addition, the desire of nurses to continue working in this profession has been reduced, and the quality of nursing services has decreased (13). Insufficient nursing workforce and any defects in nursing performance affect the quality and quantity of health care, threatening the health of all society members (14). Various studies have demonstrated a relationship between proper performance and motivation, meaning that high motivation level is associated with academic and occupational success and job satisfaction.

Studies conducted on the motivation of nursing students in Iran indicated the low tendency of these students toward learning. In a research by Vahedi et al. on 181 nursing undergraduate students in Tabriz University of Medical Sciences in 2011-2012, results were indicative of decreased motivation in seniors and the necessity of increasing motivation in students to improve their occupational performance (15). In addition, Bakhshandeh Bavarsad et al. marked that the academic motivation of students was at a moderate level and motivation decreased with increased academic absence count report. It seems that motivation of nursing students can be enhanced by modification of attitude of the society and healthcare teams (16).

Evidently, recognition of the relevant and effective factors for motivation of learning in nursing students can contribute to increased academic motivation of students. In this regard, Hanifi et al. showed that professional

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difficulties, cultural and social conditions, organizational weakness in nursing appointments, knowledge-based practice, decision-making authority against daily routine, and observance of rights of patients or violations of legal privacy of patients indirectly affect the learning motivation of students. Meanwhile, the association between nurses and students directly affects the learning motivation of students (17). According to Kusurkar, identification of the factors affecting motivation can help the professors of the school of medicine efficiently design educational curriculum or improve the educational and learning environment of medical schools (8).

Therefore, we hope that determining the intrinsic motivation of nursing students and its association with perceived motivational climate by students in Zanjan University of Medical Sciences and the predictive factors of their intrinsic motivation be associated with increased knowledge about nursing students' motivation in Iran, providing beneficial information for educational planners of this discipline.

Materials and Methods

This cross-sectional research was conducted on 165 nursing students in Zanjan University of Medical Sciences, who were selected through simple random sampling using the equation below:

$$n = \frac{\frac{z^2 pq}{d^2}}{1 + \frac{1}{N}\left(\frac{z^2 pq}{d^2} - 1\right)}$$

Inclusion criteria were obtaining a written informed consent and passing a minimum of an academic semester. It is notable that participation in the research was voluntary and students were allowed to withdraw from the research at any time. Data collection tools were the intrinsic motivation inventory (IMI) and L'Echelle de Perception du Climat Motivational (EPCM), both of which were translated and standardized by Soltani Arab Shahi et al. (18).

Intrinsic motivation inventory (IMI): the intrinsic motivation of nursing students was assessed using the Iranian version of IMI. This questionnaire was evaluated by Tammen and Duncan (19) and was entered into the area of physical education of students by Gutiérrez et al., used after confirmatory factor analysis (5). Validity and reliability of this tool have been evaluated and confirmed in several studies (Cronbach's alpha=0.90). This 18-item questionnaire has been designed to be used in education area of nursing students. Generally, IMI has three subscales, including value/usefulness, interest/enjoyment, and

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perceived choice. The inventory is scored on a 5-point Likert scale, and its validity and reliability are assessed using confirmatory factor analysis and Cronbach's alpha coefficient (0.85), respectively (18).

L'Echelle de Perception du Climat Motivational (EPCM): the motivational climate perceived by students from the educational environment was assessed using the Farsi translation of EPCM. This survey was first published with the title of EPCM and a French content (20), which was then translated into English by Gutiérrez et al. and undergone confirmatory factor analysis (5). This 16-item questionnaire evaluates four factors, including follow up of achievement of students (perceived mastery climate), improvement of learning by students (perceived mastery climate), concern about mistakes (perceived performance climate) and promotion of comparison by a professor (perceived performance climate). This survey is scored on a 5-point Likert scale and its validity and reliability are evaluated using confirmatory factor analysis and Cronbach's alpha (0.89), respectively (18).

Data analysis was performed in SPSS version 23 using Chi-square test, Pearson's correlation coefficient, analysis of variance, and linear regression. Ethical considerations included obtaining a written informed consent from the students and a letter of consent from the university. The study protocol was approved by Ethics Committee of the university and the study was registered under the code ZUMS.REC.1394.338.

Results

In this research, minimum and maximum GPA (grade point average) of the subjects were 13 and 20, respectively. In addition, mean GPA of students was 16.56±1.3. Students of all semesters (with the exception of the first semester) participated in the study. In total, there were 59 (35.8%) males and 81 (49.1%) females. Moreover, mean age of the participants was 21±2.6 years with minimum and maximum ages of 19 and 35 years, respectively. The total scores of perceived motivational climate, perceived performance climate, perceived mastery climate and intrinsic motivation were divided into three categories of high, moderate and low, which are shown in Table 1.

According to the results of the linear regression, while the perceived mastery climate and motivational climate predicted the intrinsic motivation of students (P=0.000), perceived performance climate failed in this regard (P=0.613).

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Table 1: Perceived Motivational Climate, Perceived Performance Climate, Perceived Mastery Climate and Intrinsic Motivation Score's Acquired by Students

Variable	Upper (persons) Percent	Moderate (persons) Percent	Low (persons) Percent
Perceived motivational climate	70 (%42.2)	78 (%47.3)	-
Perceived performance climate	45 (%27.3)	110 (%66.7)	1 (%0.6)
Perceived mastery climate	102 (%61.8)	51 (%30.9)	-
Intrinsic motivation	98 (%59.4)	39 (%23.6)	15 (%9.1)

Table 2: Results of Pearson Correlation Test

	Gender	intrinsic motivation	perceived motivational climate	perceived mastery climate	perceived performance climate
Gender	0				
intrinsic motivation	-0.51 0.05	0			
perceived motivational climate	0.39 0.51	0.21 0.01	0		
perceived mastery climate	0.42 0.90	0.36 0.01	0.66 0.01	0	
perceived performance climate	0.20 0.61	0.24 0.74	0.47 0.01	0.37 0.01	0

Table 3: The results of linear regression test

Variable	Beta	T	P<	R^2	F	df	P<
perceived mastery climate	0.53	7.57	p=0.000	0.49	42.41	138	0.000
perceived motivational climate	0.49	6.51	p=0.000				
perceived performance climate	0.04	3.02	p=0.613				

Evaluation of the difference between the variables in males and females demonstrated a significant difference in terms of variables of intrinsic motivation, perceived mastery climate and perceived performance climate across genders (P=0.000). Meanwhile, no significant difference was observed between the male and female subjects regarding the perceived motivational climate (P=0.511). Results of the ANOVA test demonstrated no

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significant difference between mean scores of perceived mastery climate (P=0.20), perceived performance climate (P=0.56), and perceived motivational climate (P=0.53) across genders. However, a significant difference was observed between the male and female subjects regarding mean score of intrinsic motivation (P=0.03). Moreover, no significant difference was found between mean scores of the intrinsic motivation and the variables of perceived mastery climate, perceived performance climate and the perceived motivational climate in total based on age, academic semester and GPA of the previous semester (P>0.05).

Discussion

Motivation is the heart of learning, which is the goal of education. Motivation is the driving force and trigger of human acts that guides the behaviors until achieving the desired goal. The importance of motivation in education is indisputable and this concept is one of the important and permanent factors for improved student performance. According to the results of the current research, a positive and significant correlation was found between intrinsic motivation and perceived motivational climate. In a research by Hanifi et al., three concepts of scientific and practical qualifications of professors (with subthemes of scientific literacy, method of knowledge transfer, and practical skill of professors), behavior of professors (with subthemes of support, encouragement, interaction between professor and student, authority and unofficial interviews), and attitude to professors toward the field of nursing were among the important features of professors in motivation of students. These features can attract students to or turn them away from the clinical work and nursing profession (21). In fact, it can be inferred that the motivational climate, which is the characteristics of professors, affects and improves the intrinsic motivation of the students. Therefore, our findings are in line with the results obtained by Hanifi. Moreover, several researchers have reported a significant relationship between motivational climate and intrinsic motivation. In this regard, Oudi et al. conducted a research with the title of "evaluation of viewpoint of nursing students toward factors affecting their academic motivation" in 2007, concluding that modification of the perspective of the society toward the nursing field and improving the scientific level of students and interactions between nurses and other medical groups were associated with increased academic motivation of students (22).

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Furthermore, Mitchell found that the perceived motivational environment was a valid predictor of intrinsic motivation for junior high school students (23). Similar results were obtained in the research by Hein and Koka on learning environment and intrinsic motivation (24). In 2014, Bakhshandeh Bavarsad et al. conducted a study with the title of "evaluation of academic motivation and its relevant factors from the point of view of nursing students", reporting that while these individuals entered the university with a relatively acceptable motivation level, their motivation decreased over time. In addition, it was indicated that recognition of various factors that affect the increase and decrease of academic motivation of students and strengthening the positive factors and modifying and mitigating the decreasing factors can lead to the training of motivated and willing students (16).

In a study by Roberts and Kavussanu, the relationship between perceived motivational climate and intrinsic motivation and self-efficacy was assessed. According to their results, a positive and negative association was found between perceived mastery climate and positive (pleasure, effort, perceived skill) and negative (tension) aspects of intrinsic motivation, respectively. The tendency to situational goals and the perceived motivationalclimatewereidentifiedasimportant and equal predictors of intrinsic motivation, whereas the perceived mastery climate was significant only in prediction of self-efficacy. In women, the performance motivational climate was the most powerful predictor of intrinsic motivation and self-efficacy. On the other hand, the obtained results demonstrated a relationship between the perceived mastery climate and pleasure, effort, perceived skill and low level of tension during participation in an activity. Meanwhile, a relationshipwas found between the perceived performance climate and high tension level (25).

Given the positive association between motivational climate and intrinsic motivation, it could be stated that interest and pleasure, perceived skills and importance of students can be elevated by improving learning by professors, being concerned about the errors and having tendency to compare the learners by professors. In other words, correction and enhancement of the learning and teaching environment by professors can increase intrinsic motivation in students for learning. According to the results of the present study, while perceived mastery climate and motivational climate predicted intrinsic motivation, the perceived performance

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climate failed to do so. In a research by Gutiérrez et al, the most important predictors of intrinsic motivation of students were the perceived mastery climate and emphasis of teachers on internal causes of maintaining order in class (5).

In terms of the relationship between intrinsic motivation and the tendency toward achievement goals and perceived motivational climate, Brunel reported that the perceived motivational climate was the best predictor of all indicators of motivation toward goal orientation (26). Similar results were obtained by Gaodas and Biddle in this regard, who marked that mastery climate significantly increased the prediction of intrinsic motivation. These scholars regarded the dimensions of mastery climate of class the main predictors of intrinsic motivation of students (20). Therefore, it could be concluded that following up progress by students and promoting learning by professors can increase interest and pleasure, perceived skill and effort in students for learning. On the other hand, concerns about errors and tendency toward the comparison of learners by professors have no significant impact on increasing the intrinsic motivation of students. According to results, no significant difference was observed between male and female students in terms of the mean score of intrinsic motivation. However, a significant difference was found between the mentioned individuals regarding the mean score of motivational climate. According to Patrick et al., intrinsic motivation has different effects on health goals owing to the impact of gender in this respect. For women, higher intrinsic motivation predicted a greater chance of performing physical activities but had no association with the duration of the activity. In contrast, while higher intrinsic motivation predicted a lower chance of physical activities in men, it predicted a longer duration. In addition, it was concluded that gender differences in intrinsic motivation might be due to differences in perceived barriers, such as taking care of children (27).

Furthermore, Rastgar Khaled pointed out a stronger association between intrinsic motivation and academic performance of female students. Reversely, extrinsic motivation increased in male students by academic achievement. In other words, academic motivation for females is more internal and focuses on the inherent rewards of education, whereas it is more external for males and concentrates on the obtained rewards (28). Evaluating gender differences in subscales of approval motivation scales

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(AMS), Ebrahimi et al. concluded that women were superior in intrinsic motivation and both subscales (comprehension and stimulation experience) and adjustedregulationof extrinsic motivation, whereas men were superior in externalregulationandlackof motivation (29). Given the difference between males and females regarding motivational climate, it could be stated that the impact of the learning environment is different due to the differences between the two genders. In fact, following up the progress by students, improving learning by professors, being concerned with errors and having a tendency to compare learners by professors are different across genders. However, according to the results of the current research, pleasure/interest, perceived skill and effort and importance, all of which form intrinsic motivation, are equal in male and female individuals. One of the major drawbacks of the research was lack of participation of students in filling the questionnaire and their mental state, which might have affected their responses. Given the fact that all of the subjects in the present study were undergraduates, the results cannot be generalized to all students.

Conclusion

Identification of effective factors for motivation can help medical professors design a training program or improve the educational and learning climate of faculties of universities of medical sciences. Considering the significant relationship between intrinsic motivation and perceived mastery climate and motivational climate and the ability to predict intrinsic motivation by these 2 variables, it seems that the correction and improvement of the perceived mastery and motivational climates in learning environments can increase the intrinsic motivation of students for learning. Therefore, it is recommended that unmotivated students be recognized and necessary educational courses be hold to increase their motivation. In addition, our findings can help education managers to design interventional education programs to maintain and improve motivation in students, especially seniors, by taking effective measures in this regard.

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