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The relationship between anxiety and academic identity and the motivation to study nursing and midwifery in the covid-19 pandemic: A structural model

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Abstract:

BACKGROUND: The coronavirus disease (COVID-19) pandemic had a great psychological effect on health service providers and students of related fields. The study aimed to investigate the relationship between COVID-19 anxiety and academic identity and the motivation to study nursing and midwifery during the COVID-19 pandemic.

MATERIALS AND METHODS: In a cross-sectional study 221 nursing and midwifery students at—University of Medical Sciences in 2020 using census sampling were studied. The questionnaires were GADQ-7, the student's academic identity standard questionnaire, the coronavirus anxiety scale, and academic motivation in nursing and midwifery. Pearson's correlation coefficient, regression coefficient, and path analysis were used in statistical software AMOS (version 21) and SPSS (version 22).

RESULTS: The results showed that motivation and anxiety with a significant overall effect of 0.43 and -0.36 were the main determining variables of academic identity respectively ($P < 0.001$). COVID-19 anxiety was recognized as responsible for 24% of the changes in motivation to study nursing ($P < 0.001$).

CONCLUSIONS: Academic identity and motivation to study nursing and midwifery have been affected by the COVID-19 pandemic. The need for psychological attention in this situation is required for nursing and midwifery students.

Keywords:

Anxiety, COVID-19, identity, midwifery, motivation, nursing, pandemic, student

Introduction

Healthcare workers are on the front lines of the pandemic as well as susceptible to its psychological consequences. Healthcare students have many common experiences with healthcare workers.^[1-3] Previous studies showed that students of health-related courses experienced many problems during COVID-19 such as changes in diet and sleep, reduction in exercise, and changes in appetite. Also, psychologically, a high percentage of students experienced stress, anxiety, inability

to stop worrying, and difficulty in calming down.^[4,5] Furthermore like other students, healthcare students faced problems with the closure of universities, such as interruption of studies, loss of peer support network, and challenges of volunteering to work in hospitals during the crisis.^[1-3] At this time, there were many reports of negative feelings and lifestyle changes among students, and the feeling that now is not the time to be a student found a general reflection.^[4]

The above challenges require serious attention to various aspects of the

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psychological and academic status of nursing and midwifery students during crises such as COVID-19.^[6] One of the most concerns for the directors of nursing and midwifery schools is the possibility of the negative impact of the COVID-19 pandemic and its consequences on the academic identity and educational motivation of nursing and midwifery students. Ozkan *al.* concluded that the COVID-19 pandemic had negative effects on the academic and professional identity of nursing students.^[7] In their study, more than half of the nursing students reported a lack of motivation as an important personal barrier to nursing education.^[7] It has been stated that the challenges of working in the conditions of COVID-19 can lead to a loss of motivation to study nursing and a disturbance in the professional identity.^[8,9]

Studies have well shown the relationship between academic identity and educational motivation with desirable educational results that reflect a person's goals and values. In contrast, students who are either not fully engaged in identity exploration or not committed to their choices on the one hand, or who base their choices on controlled motivations, may be more prone to adverse educational outcomes.^[10]

Various profiles and components are provided for academic identity. Meens *et al.*^[10] determined five new combined motivation-identity profiles (i.e., "autonomously achieved," "controlled and troubled diffused," "amotivated," "moderately positive" and "moderately negative") that predict academic achievement. Five components are provided for the professional identity of nursing students, including remaining benefits and leaving risks professional self-concept, social comparison, and self-reflection, the autonomy of career choice, and social persuasion.^[2] In a qualitative study, Arianpour *et al.* identified five components of academic identity in Iranian students including academic self-concept, academic commitment, belonging to the university, future thinking, and personal agency.^[11] The self-concept component deals with the concepts of self-description, evaluation of others, social status, feelings about oneself, distinctiveness, usefulness, and efficacy beliefs. The component of future thinking includes general hope for the future, mental preoccupation with the future, thinking about the future job, and thinking about future income. The component of personal agency is about the feeling of existence or lack of personal influence, freedom of action, decision-making, and individual choice. Academic commitment is adherence to goals, values, and beliefs. The component of belonging to the university refers to the level of interest, satisfaction, and pride of the students toward the university where they study.^[11]

It seems that all the components of academic identity, especially personal agency, future thinking, and academic self-concept, are affected by the conditions of the COVID-19 pandemic, the anxiety caused by it, and the motivation to work in the nursing profession.

Previous studies investigated various motivational factors for studying nursing and midwifery. In this context, factors such as an opportunity to obtain higher education degrees, interest in course content, meeting financial needs, creating job opportunities for the future, special learning opportunities, and being proactive in emergencies were mentioned.^[10,12,13] The dimensions of internal motivation, external motivation, and negative motivation as well as autonomous motivation, and controlled motivation have been considered to measure motivation. From another point of view, the student's motivation in studying nursing and midwifery is determined by three material, social and spiritual dimensions.^[13]

Previous studies showed that psychological stress had a significant negative correlation with the professional identity of nursing students during the COVID-19 pandemic. Also, the reason for choosing the nursing profession was found to be an effective factor in academic identity.^[9] According to the results of the Jafarianamir *et al.* study, one of the factors that was related to the stronger professional identity score of nursing students during the COVID-19 period was their motivation to work in the nursing profession.^[14]

In their study, Sheng *et al.*^[8] concluded that the professional identity of nurses has been affected by working in the conditions of COVID-19. Gadi *et al.*^[4] concluded that the impact of the COVID-19 pandemic on students studying healthcare-related courses was influenced by their motivational strategies. Several studies have addressed the prevalence of anxiety in health-related professions and students during COVID-19 and the psychological effects of this pandemic on them.^[4,6,12,15] However, there are not enough studies on the impact of the pandemic on academic identity and motivation to study. In a study in Iran, the professional identity and resilience of nursing students were studied during the COVID-19 pandemic, although in this study, high scores of professional identity were reported in nursing students,^[14] in this study, professional identity was studied, not academic identity and on the other hand, the relationship between anxiety levels and motivation to study in nursing and academic identity was not investigated. So, this study was done to investigate the relationship between anxiety and academic identity and motivation to study nursing and midwifery during the COVID-19 pandemic.

Materials and Methods

Study design and setting

A cross-sectional descriptive study was conducted on nursing and midwifery students of Qom University of Medical Sciences in February 2020.

Study participants and sampling

Online research questionnaires were presented to all nursing and midwifery students of the nursing faculty who had completed at least one semester, had not experienced a life crisis such as the death of a parent in the past six months, had no mental disorders such as post-traumatic stress disorder and had no history of mental disorders such as generalized anxiety according to the individual's own report, and were not taking psychiatric medications. Statistical analysis was done on 221 questionnaires that were completely completed.

Data collection tool and technique

Student's academic identity standard questionnaire (ISAI)

The questionnaire on students' academic identity was designed and compiled during the research of Arianpour, Hijazi, Ajhe-ai, and Lavasani (2017) in Iran to measure the academic identity of students. This questionnaire has 39 questions and five components of educational commitment, future-thinking, educational self-concept, attachment, and personal agency, and is based on a five-point Likert scale with questions such as (I don't consider studying at university a waste of time). Obtaining a higher score indicates a higher educational identity. Cronbach's alpha coefficient was calculated to be above 0.7.^[16]

Generalized Anxiety Disorder Questionnaire - Seventh Edition (GADQ-7): The 7-item Comprehensive Anxiety Disorder Scale by Spitzer *et al.* 7-GAD was designed and developed in 2006 by Spitzer *et al.*^[17] This scale has a total of 7 items that are scored from 0 to 3 and the final score of a numerical person will be between 0 and 21, a higher score means more anxiety. In the Iranian version of this questionnaire, the internal consistency of the questionnaire was calculated using Cronbach's alpha and the number 0.92 was obtained.^[18] Also, Cronbach's alpha was estimated to be 0.76 in this study.

COVID-19 anxiety scale (CDAS)

This scale has been prepared and validated by Alipour *et al.*^[19] to measure the anxiety caused by the spread of the coronavirus in Iran in 2018. The final version of this tool has 18 items and 2 components. Items 1 to 9 measure psychological symptoms and items 10 to 18 measure physical symptoms. This tool is on a 4-point Likert

scale (never = 0, sometimes = 1, most of the time = 2, and always = 3). Therefore, the highest and lowest scores obtained by respondents are between 0 and 54. High scores indicate a higher level of anxiety. The reliability of this scale was determined using Cronbach's alpha method for the entire questionnaire as 0.919.

Academic motivation in nursing and midwifery

It is a 14-item questionnaire in the form of three categories of material, spiritual, and social motivational factors in the 5-option Likert scale, which was designed and validated by Pouladi *et al.*^[13] in 2016 in Iran. The first version of the student motivation questionnaire was designed with 41 items. In the psychometric process, no item was removed during content validity. Based on the exploratory factor analysis, the final version of the questionnaire with 41 items in the form of 3 motivational factors includes material, spiritual, and social motivational factors with the ability to predict 55% of construct validity. With a Cronbach's alpha value of 0.81, it has an acceptable level of accuracy.

Data analysis

Descriptive statistics (calculation of mean, standard deviation, Pearson's zero-order correlations, and simultaneous regression) were used for data analysis. Then, analyzes related to the underlying assumptions of structural equation modeling were carried out. Also, more complex analyzes were performed to evaluate the proposed model, all through structural equation modeling using the Statistical method of maximum likelihood estimation was applied. Data analysis was done using statistical software AMOS (version 21) and SPSS (version 22) and statistical tests of Pearson's correlation coefficient, regression coefficient, and path analysis *P* value of less than 0.05 was considered significant.

Ethical considerations

This study was approved by the ethics committee of Qom University of Medical Sciences (IR.MUQ.REC.1399.093). After being informed about the purpose of the study, all participants voluntarily gave their informed consent to participate in the study. The procedures of this study were in accordance with the provisions of the Declaration of Helsinki on research involving human participants.

Results

In Table 1, the demographic and selected characteristics of the study population are shown. According to this table, most of the participants were female, aged between 21 and 30 years, single, studying nursing, were living with family. In Table 2, the correlation between the

variables is reported. It can be seen that all the reported correlations except the correlation between anxiety and educational motivation had a significant *P* value. Based on the background of model A [Figure 1], it was fitted to data and based on this model, the coefficient of COVID-19 anxiety and academic identity had no significant relationship, the other coefficients in the model were significant.

After removing this coefficient from the model, the initial model was fitted again and the results were reported in Figure 2. In Table 3, the results of the initial and final model coefficients are reported. The overall explanation coefficient of the model was calculated as 34%. The results further showed that educational motivation

with a significant overall effect of 0.43 and anxiety with a significant overall effect of -0.36 were the two main variables of academic identity, respectively. COVID-19 anxiety explained 24% of the changes in educational motivation.

Discussion

In a cross-sectional study, the relationship between anxiety and academic identity and the motivation to study nursing and midwifery during the COVID-19 pandemic was assessed. The results showed that the motivation to study and general anxiety predict 43% and 36% of the changes in academic identity, respectively. Coronavirus disease anxiety accounted for 24% of the changes in the motivation to study nursing and midwifery.

Also, according to the approved final model [Figure 2], COVID-19 anxiety has a significant effect on academic identity by affecting academic motivation, while COVID-19 anxiety without the mediating role of academic motivation does not show a significant impact on academic identity. This finding firstly states that the motivation to study plays an important role in the formation of academic identity, and secondly, the motivation to study has a mediating role in the relationship between COVID-19 anxiety and academic identity. Previous studies have shown that the motivation to study in a field affects the formation of academic identity.^[20,21] Zhao *et al.*^[9] reported that the students who chose nursing because of their interests had a higher level of professional identity. According to self-determination theory, students' intrinsic motivation depends on satisfying basic psychological needs for competence, autonomy, and relatedness.^[22] Also, students with internal motivation feel a driving force for learning and are interested in success and good academic achievements. These students usually consider education as an opportunity to progress, satisfy curiosity, and a path to get a suitable job and income. On the contrary, the basis of extrinsic motivation is environmental incentives, facilities, and environmental support and pleasing others. Extrinsically motivated students strive to gain the approval and gratitude of others. Payments and work facilities are a priority for them, so they become discouraged in harsh and

Table 1: The frequency distribution of demographic variables

Variables	Levels	n	%
Gender	Male	51	23%
	Female	170	77%
Age	≤20	87	39%
	21–30	97	44%
	31–40	21	10%
	40>	16	7%
Marriage	Married	52	24%
	Single	169	77%
Academic Discipline	Nursing	134	61%
	Midwifery	87	39%
Residence	Dormitory	67	30%
	Private house	27	12%
	With family	127	58%
History of COVID-19 Infection	No	162	73%
	Yes	59	27%

Table 2: The correlation between study variables

	Educational Identity	COVID-19 Anxiety	Educational Motivation
COVID-19 Anxiety			
Correlation	-0.15		
<i>P</i>	0.026		
Motivation to study nursing			
Correlation	0.45	0.18	
<i>P</i>	<0.001	0.007	
Anxiety			
Correlation	-0.39	0.41	-0.05
<i>P</i>	<0.001	<0.001	0.453

Table 3: The path regression beta for the first and final model

Independent	→	Dependent	First Model			Final Model		
			B±SE	Standard β	<i>P</i>	B±SE	Standard β	<i>P</i>
COVID-19 Anxiety	→	Motivation	0.23±0.07	0.24	<0.001	0.23±0.07	0.24	<0.001
Anxiety	→	Motivation	-0.26±0.12	-0.15	0.038	-0.26±0.12	-0.15	0.038
COVID-19 Anxiety	→	Educational Identity	-0.28±0.17	-0.10	0.094	-	-	-
Anxiety	→	Educational Identity	-1.58±0.3	-0.32	<0.001	-1.79±0.27	-0.36	<0.001
Motivation	→	Educational Identity	1.31±0.16	0.46	<0.001	1.25±0.16	0.43	<0.001

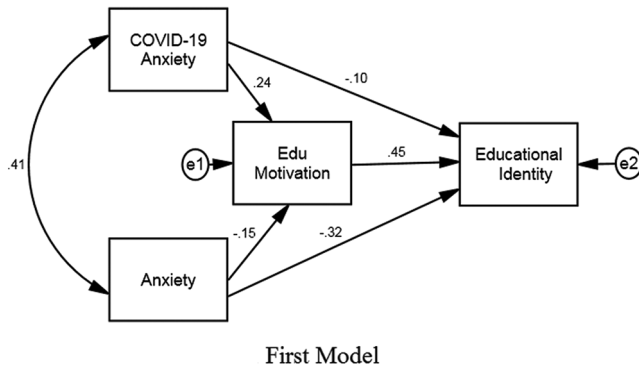


Figure 1: First structural model. * $P < 0.05$

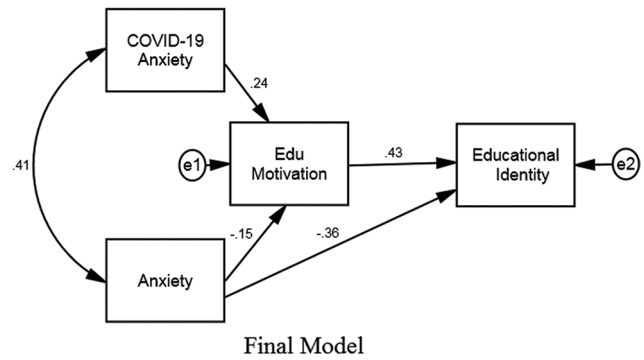


Figure 2: Final structural model. * $P < 0.05$

unsupportive environments, and in such environments their motivation drops.^[23,24]

Based on what was mentioned, the conditions of COVID-19 had adverse effects on extrinsic motivation in nursing and midwifery students. In the COVID-19 pandemic, nursing and midwifery students witnessed the lack of antiviral medicine for the treatment of COVID-19. Also, they saw the staff feel incompetent in treating their patients. Observing these conditions induced a feeling of incompetency and decreased motivation in students too. This sense of incompetency also puts students' academic identity at risk. It has been well demonstrated that the feeling of not being able to fulfill the responsibilities and duties damages the formation of a professional identity.^[8] Other studies also state that environments that weaken individual autonomy have a negative effect on students' external motivations to be involved in curricula.^[25,26] Messineo *et al.*^[25] argues that environments that undermine independence in students reduce intrinsic and autonomous motivation. Previous studies reported that in the condition of COVID-19 some motivational aspects such as finances and welfare may be degraded.^[9] Dos Santos reported some students left the nursing profession in the difficult situation of COVID-19.^[15]

On the contrary, internal motivations such as social motivations of altruistic service, God-loving help were less affected by the conditions of COVID-19.^[15] So that Zhao *et al.*^[9] stated students who had higher social motivations engaged in voluntary work in the hospitals during the difficult conditions of COVID-19.

Other findings showed that students' general anxiety has a significant relationship with motivation to study and academic identity (both directly and indirectly). In confirmation of this finding, Zhi *et al.*^[27] reported that general stress has a negative and significant correlation with the degree of professional identity of nursing students. Also, Sun *et al.* confirmed that during the COVID-19 epidemic anxiety gives an adverse effect

on the professional identity of nursing students.^[28] In explaining this, it seems that the high level of general anxiety prevents the correct orientation towards the various material, spiritual, and social motivations of the future career field. It has already been proven that students' anxiety has a significant negative impact on academic motivation^[29]. It can be said that in inherently anxious students, various motivational aspects are affected by anxiety, and this is not unique to the conditions of COVID-19, although the conditions of COVID-19 intensify it. For example, an anxious student, even with a desire for altruistic service, is worried about performing this service correctly, which ultimately affects their academic identity. Some previous researches confirm this finding. Zhao *et al.*^[9] showed that nursing students who were more aware and worried about their future careers showed a lower level of academic identity. They reported the understanding of risks, uncertainty, and concern about values and abilities were seen to have an impact on academic identity. Also, Sheng *et al.*^[8] stated "Image of fatigue and fear," "feeling of injustice," "perception of incompetence in saving," and "unexpected professional benefits" all of which increase the level of anxiety and hurt the professional identity of nursing during COVID-19. One of the reasons for high anxiety was the possibility of transmitting the disease to the family, which had negative effects on motivation to work in nursing and the formation of academic identity. Unexpected exposure to online education in nursing education was another factor that increased the level of anxiety because the students did not have enough confidence in the effectiveness of this educational method, especially in their skills courses. According to the results of Son *et al.*^[30] study, the students were concerned about sudden changes in curriculum, quality of courses, technical problems with online programs, and difficulty in learning online that led to anxiety about academic performance. Additionally, critical shortages of masks and sanitizers, dramatic headlines, and misreported news are fueling anxiety and fear.^[31]

The emergency situation in the period of COVID-19 pandemic and the sudden need to change habits and routines affected the students' perception of safety and readiness to adapt to new learning methods, working in challenging clinical situations, and thus led to an increase in the level of their anxiety.^[32,33]

Limitations and recommendation

There may be potentially related factors affecting academic identities and motivation to study such as personality traits, and cognitive, and emotional factors that were not included in the scope of the study, and therefore further research is needed.

This cross-sectional study cannot prove the causal relationship between the variables. Also, since the questionnaires were distributed at once and there is no information about the academic identity and motivation of the students before the pandemic, so it cannot be definitively concluded that the observed results were due to COVID-19.

Another limitation of the study was related to the exclusion criteria of psychiatric disorders such as generalized anxiety disorder or post-traumatic stress disorder. We removed students with psychiatric disorders by self-reporting. The diagnosis of the above cases with the opinion of a psychiatrist could provide more accuracy, which was not possible due to the conditions of COVID-19, and completing the questionnaires virtually.

It is suggested that the research be done on students in other countries with different development statuses and different cultures.

Conclusion

It is generally accepted that professional identity is an important predictor for continuing the nursing profession.^[34] It is necessary to pay attention to social and spiritual motivations and the development of internal motivations in nursing and midwifery education. Also, organizational support in crisis conditions that empower nurses in performing their professional duties is important along with psychological support for this group. Nursing students need psychosocial support in crisis conditions, although attention to the nursing job position and valuing the nursing profession in societies play an important role in the motivation to study nursing and midwifery even in difficult crisis conditions.

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Conflicts of interest

There are no conflicts of interest.

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