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Brief Report

Investigating the Relationship between Research Anxiety and Academic Self-Concept in Master's and Doctoral Students

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Abstract

Background: Research anxiety and academic self-concept are among the factors that can be effective in improving the level of students' capabilities in research in the field of medical education.

Objectives: The present study was conducted to determine the relationship between research anxiety and academic self-concept in master's and doctoral students of Shahrekord University of Medical Sciences.

Methods: This cross-sectional descriptive-analytical research was conducted on 102 graduate students of Shahrekord University of Medical Sciences in the master's and doctoral degrees in 2019. Sampling was performed using a convenience method. The data collection tool included the Higgins Research Anxiety Inventory and the Academic Self-Concept Questionnaire (ASCQ). The data were analyzed by calculating the mean and standard deviation, the independent t-test, and the Pearson correlation coefficient in SPSS software.

Results: In master's students, research anxiety was inversely and significantly correlated with academic self-concept ($r = -0.339$, $P = 0.002$) and academic self-confidence ($r = -0.425$, $P < 0.001$). Also, academic self-concept was directly and significantly associated with academic self-confidence ($r = 0.876$, $P < 0.001$) and academic effort ($r = 0.821$, $P < 0.001$). In doctoral students, academic self-concept also showed a direct and significant association with academic self-confidence ($r = 0.835$, $P < 0.001$) and academic effort ($r = -0.753$, $P < 0.001$).

Conclusion: Research anxiety was associated with academic self-concept in master's students of Shahrekord University of Medical Sciences, but such a relationship was not found in doctoral students.

Keywords: Research, Self-Concept, Students

Background

Today, researchers face many challenges in the way of research, which impose a lot of stress and anxiety on them and may even affect their jobs, family responsibilities, and even health (1). Research anxiety refers to the characteristics during which the student feels uncomfortable, and this feeling is to the extent that lowers his/her efficiency (2).

Another factor that plays an important role in the development of research is self-concept. Academic self-concept refers to an individual's self-assessment regarding specific academic aspects or his/her abilities in this field (3). Academic self-concept refers to the comprehensive perception or idea of one's competence concerning learning, which simultaneously both affects and is affected by the individual's academic progress (4).

Regarding the importance of academic self-concept, it should be said that this notion is seriously one of the determinants of self-efficacy and encouraging motives to gain academic achievements (5). Also, it can be helpful in giving structural feedback and expanding students' capabilities (6) and academic progress at higher levels (7).

Given the mentioned materials, evaluating research anxiety and academic self-concept and solving related problems can play an important role in the development of scientific skills and the academic progress of students. Therefore, the present research was conducted to investigate the relationship between research anxiety and academic self-concept in master's and doctoral students of Shahrekord University of Medical Sciences.

Objectives

The present study was conducted to determine the relationship between research anxiety and academic self-concept in master's and doctoral students of Shahrekord University of Medical Sciences.

Methods

This cross-sectional descriptive-analytical study was conducted on all master's and doctoral students of Shahrekord University of Medical Sciences in 2019. The samples were selected through the convenience sampling method. One hundred and forty-six students were studying in the master's degree, and 26 were studying in the doctoral degree at Shahrekord University of Medical Sciences, of which 102 people agreed to cooperate. All master's and doctoral students who were doing a research project or their theses and were willing to participate in the study were included. The exclusion criterion included students' unwillingness to participate in the research.

The data collection tool was a three-part questionnaire, the first part of which was a demographic questionnaire.

The second part of the questionnaire was the research anxiety inventory first designed and used by Higgins and Kotrlik in 2006 (2). This scale includes 15 items on a 5-point Likert scale from "very disagree" (score 1) to "very agree" (score 5). Scoring in this questionnaire is reversed in questions 6, 12, 13, 14, and 15. This tool has good validity and reliability, and its Cronbach's alpha coefficient was found to be 0.85 in Rezaei et al.'s study (8).

The third part of the questionnaire was an academic self-concept measurement tool. This tool was first used by Liu and Wang in 2005 (9) with two subscales of academic self-confidence and academic effort, each of which includes 10 questions involving positive and negative spectrums and prevents uniform response from the respondents. Academic self-confidence includes questions 1, 3, 5, 7, 9, 11, 13, 15, 17, and 19, and academic effort involves questions 2, 4, 6, 8, 10, 12, 14, 16, 18, and 20. This questionnaire has a 5-point Likert scale from "completely disagree" (score 1) to "completely agree" (score 5). The validity and reliability of the mentioned scale were validated by Matovu on university students in Malaysia, which had acceptable validity and reliability (10).

The data were analyzed by calculating the mean and standard deviation and the independent t-test to compare the mean scores of research anxiety and academic self-concept and its dimensions in two groups of students and the Pearson correlation coefficient to investigate the relationship of research anxiety to academic self-concept and its dimensions using SPSS software version 18 (version 18, SPSS Inc., Chicago, IL). The mentioned tests were used due to the normal distribution of the data. In the current study, the confidence coefficient was 95%, and $P < 0.05$ was considered the significant level.

Results

This study was conducted on 102 graduate students, of whom 82 were master's and 20 were doctoral students. The mean age of master's and doctoral students was 30.40 ± 5.85 and 31.60 ± 4.37, respectively.

According to Table 1, the mean score of research anxiety in doctoral students was significantly higher than that in master's students ($P = 0.013$). Also, the mean score of academic self-concept in master's students was reported to be higher than that in doctoral students ($P = 0.041$). The dimensions of academic self-concept, including academic self-confidence and academic effort, were higher in master's students than in doctoral students, but this difference was not statistically significant ($P > 0.050$).

According to the results of the correlation coefficient matrix (Table 2), research anxiety was inversely and significantly correlated with academic self-concept ($r = -0.339$, $P = 0.002$) and academic self-confidence ($r = -0.425$, $P < 0.001$) in master's students. Academic self-concept also showed a direct and significant association with academic self-confidence ($r = 0.876$, $P < 0.001$) and academic effort ($r = 0.821$, $P < 0.001$). In the current research, age had no significant association with research anxiety and academic self-concept and its dimensions ($P > 0.050$).

Based on the results of the correlation coefficient matrix (Table 2) in doctoral students, no correlation was observed between research anxiety and academic self-concept and academic self-confidence. Academic self-concept also was directly and significantly associated with academic self-confidence ($r = 0.835$, $P < 0.001$) and academic effort ($r = 0.753$, $P < 0.001$). In the present study, age showed an inverse and significant correlation with academic self-concept ($r = -0.511$, $P = 0.021$) and academic effort ($r = -0.493$, $P = 0.027$).

Discussion

The present study was conducted to determine the relationship between research anxiety and academic self-concept in master's and doctorate students of Shahrekord University of Medical Sciences.

Accordingly, research anxiety was inversely and significantly correlated with academic self-concept and academic self-confidence in master's students.

Table 1. Comparison of the mean scores of research anxiety, academic self-concept, and its dimensions (academic self-confidence and academic effort)

Variable	Master	Doctoral	t	Mean Difference	95% Confidence Interval		P-Value
	Mean (SD)	Mean (SD)			Lower limit	Upper limit	
Research anxiety	40.06 (7.77)	45.10 (8.96)	-2.52	-5.03	-9	-1.07	0.013
Academic self-concept	44.64 (8.35)	40.50 (6.43)	2.07	4.14	0.17	8.11	0.041
Academic self-confidence	21.21 (5.32)	18.70 (4.39)	1.95	2.51	-0.03	5.07	0.053
Academic effort	23.42 (4.50)	21.80 (3.67)	1.49	1.62	-0.52	3.78	0.138

Table 2. Correlation coefficient matrix of age, research anxiety, and academic self-concept and its dimensions in master's and doctoral students

Group	Variable	Pearson Correlation Coefficient	Statistical Significance (p-value)
Research anxiety	Master	-0.339**	0.000
Academic self-concept	Doctoral	-0.343	0.139
Research anxiety	Master	-0.425**	0.000
Academic self-confidence	Doctoral	-0.331	0.154
Research anxiety	Master	-0.126	0.258
Academic effort	Doctoral	-0.205	0.386
Research anxiety	Master	0.146	0.190
Age	Doctoral	0.212	0.370
Academic self-concept	Master	0.876**	0.000
Academic self-confidence	Doctoral	0.835**	0.000
Academic self-concept	Master	0.821**	0.000
Academic effort	Doctoral	0.753**	0.000
Academic self-concept	Master	0.087	0.534
Age	Doctoral	-0.511*	0.021
Academic self-confidence	Master	0.444**	0.000
Academic effort	Doctoral	0.267	0.256
Academic self-concept	Master	0.78	0.484
Age	Doctoral	-0.336	0.148
Academic effort	Master	0.070	0.533
Age	Doctoral	-0.493*	0.027

**significant at the 0.01 level, *significant at the 0.05 level

The results of a study conducted to examine research anxiety among faculty members of Isfahan University of Medical Sciences showed that the mean score of research anxiety among faculty members was higher than the average so that the level of research anxiety was evaluated as 3.270 ± 0.536 and this issue needs to be addressed by the officials in this regard (1).

In the current study, research anxiety was not found to correlate with academic self-concept and academic self-confidence in doctoral students (P > 0.050). In this regard, the results of Rezaei et al.'s study showed that the mean score of research anxiety in master's and doctoral students was at an average level, and no significant relationship was found between students' research anxiety and self-efficacy (8). The mean score of academic research anxiety in doctoral students was significantly higher than that in master's students (P = 0.013).

In the current research, no relationship was found between gender and the dimensions of self-efficacy and research anxiety, but the results of some studies conducted to investigate gender differences in academic self-concept showed that boys had more self-concept regarding mathematics and science, while in girls, academic self-concept was more in English language course (11).

In the present research, the mean score of academic research anxiety in doctoral students was significantly higher than that in master's students (P = 0.013), but the mean score of academic self-concept in master's students was reported to be higher than that in doctoral students. In this regard, Wouters et al.'s study showed that academic self-concept was one of the main determinants of the learners' academic progress. They concluded that academic compatibility and success in higher education depended on higher academic self-concept (7).

Conclusion

Research anxiety was related to academic self-concept in master's students of Shahrekord University of Medical Sciences, but no such association was found in doctoral students. Therefore, it is suggested to take measures to reduce the anxiety of master's students. The results of the present study can be used in developing and formulating better policies and policymaking in the research and education department of the University of Medical Sciences.

Supplementary material(s): is available here [To read supplementary materials, please refer to the journal website and open PDF/HTML].

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Conflict of interests: The authors declared no conflict of interest.

Ethical approval: All the principles related to ethics in the research were followed in this study and the ethical protocol of the study was approved by the ethics committee of Shahrekord University of Medical Sciences (code of ethics: IR.SKUMS.REC.1398.083).

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