



# Research self-efficacy in relation to educational motivation in students of Mazandaran University of Medical Sciences

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## ABSTRACT

**Objective:** This study aimed to explore status of research self-efficacy in relation to educational motivation in students of Mazandaran University of Medical Sciences. **Methods:** This descriptive correlative study was performed on 341 BSc students of Mazandaran University of medical sciences. The data were collected through the questionnaires of research self-efficacy and educational motivation. Obtained data were analyzed in software of SPSS (16) using descriptive statistics and independent T-test, Pearson correlation coefficient, one way variance analysis and regression. **Results:** The mean and standard deviation of research self- efficacy total score was  $176.23 \pm 32.14$ . the mean and standard deviation of all the students' educational motivation was  $153.89 \pm 24.73$ . The total score of research self-efficacy and educational motivation between male and female students was not significantly different and the girls got higher score in both variables. The average scores of research self- efficacy and educational motivation of the students in different faculties were significantly different and in both variables of research self- efficacy and educational motivation, the faculty of nursing and midwifery had the highest score then the faculty of medical sciences and finally the faculty of health respectively. Self-efficacy and educational motivation were highly correlated and the regression results showed that 28% of the changes in research self- efficacy is stated by the variable of educational motivation. **Conclusion:** According to findings, the BSc students of Mazandaran University of medical sciences dose not revealed high scores for research self- efficacy and educational motivation. Also there is significant relationship between research self- efficacy and educational motivation. The authors suggested that the students' beliefs toward their capabilities should be reinforced and boosted and facilities and needed instruction should be offered for them.

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## INTRODUCTION

Research, learning and teaching are basic component of student's especially in higher levels and they have critical roles in improving educational processes to develop scientific products in society. The first academic evolution, taking off in the late 19th century, made research a university function in addition to the traditional task of teaching. Research, learning and education is essential part of studying in post graduate levels of education. The beliefs and attitudes toward research is related to research self-efficacy [1].

The main factor in determining a country's capacity to compete worldwide in global markets is the development level of technical and research sciences. The countries which have no parts in process of the global technological, attain scientific knowledge, teachings and without clear defined goals to executive programming will not be able to use other countries' findings and also can not have any opportunities to participate in international, development and administrative fields.[2] Students who are not confident of their capabilities to conduct a research assignment are often anxious with no confidence and feel not deserved when they are evaluate. Instead, students who are confident of their competence can do researches, they are more successful- one of the most important influencing factors in, making student researches

is their belief in their capabilities in this field. [3,4] Scientific products are as the issues of scientific communities including the outputs and products of these communities and as one of the main criteria and factors of the scientific development in each country which achievement of it and promotion of its quantities level sets the main goals and objectives of countries. In the other word, the main factor of determining a country's capacity to compete in global level and in global markets depends on its technical and research science development level. [5]

Mullikin and Coworkers stated that research self- efficacy, which shows the rate of people's confidence to their competence in conducting a research project, causes to follow the research jobs. Self- efficacy is defined as a motivation level for the highest learning level, self setting up. This competence is obvious in higher level students. It is assumed in the theory of social learning that if a person wants to reach to self- setting up from other people's observational learning level, he or she should have a revolution in his or her motivational sources and reach to the highest source of a motivational source which means self- efficacy beliefs. [6]

Turner and Mairesse investigated the significance level of the personal factors on research efficiency. Their findings showed that personal variables have much more effect on

research efficiency and people's efficiency first promotes with age and then reduces.

From the aspect of gender, women make less researches and have fewer articles published and also have fewer references. Personal efficiency in modern labs and participating in foreign networks are motivated by coworker. [7]

Promotion plays the role of encouragement in making a research. Mean while, working for a long time in a job position especially in higher levels puts negative effects on research efficiency. [8] Self-efficacy is concerned with choosing activities, merely efforts, stability in doing assignment and the learners' effective function. Student with positive beliefs in their competence had much better educational function while students with negative attitudes to their competence with lower self-efficacy had poor educational motivation and function.

Nilsen also showed that educational motivation and self-efficacy have positive effect on students' function. Zimmerman and coworkers showed in their study that student's positive attitudes to their capabilities of learning self setting up promotes their educational self-efficacy and eventually censes to have a better educational function which means that student's self motivated educational activities are affected by their self-efficacy beliefs. [9] This study was done to investigate the level of research self-efficacy and educational motivation and determining the relation of self-efficacy and educational motivation of the B.S students of Mazandam University of medical sciences.

## METHODS

### Sampling

This is a descriptive correlative study. The statistical population included the B.S students of Mazandarn University of medical sciences in academic year 2014-2015 who were 2922 people. The sampling was made through stratified sampling method, based on the students' gender and faculty. The samples were measured by Kokeran formula and Morgan table for 341 B.S students. After calculating the samples, the samples were chosen randomly from all the students based on their sex and faculties of nursing and midwifery, health and medical sciences. Data collecting scale were the questionnaires of research self-efficacy and academic motivation.

### Tools

The research self-efficacy questionnaires were validated by MS. Monireh Salehi and Coworkers in post graduate students of Ferdosi University of Medical sciences in Mashhad City, Iran and the questionnaire validity was confirmed by Cronbach Alpha coefficient ( $\alpha=0.97$ )

This 55 question scale included the 5 degrees Licrete scale from low to high or the scores 1 to 5, which included 7

factors of statistical and analytical self-efficacy with 13 items, the sores at least 13 and at most 65, self-efficacy in conceptualization with 12 items, from the scores 12 to the most 60, self-efficacy in methods and performance with 11 items scores from 11 to 55, self-efficacy in qualitative research with 5 items scores from 5 to at most 25, self-efficacy in report writing with 6 items the scores from 6 to at most 30, self-efficacy in skills and specialties with 5 items the scores from 5 to at most 25, ethics with 3 items the scores from 3 to at most 15. For all the questionnaire, the least obtained score was 55 and at most 275. To measure the academic motivation, academic motivation scale was used which is a self performing questionnaire scale was 28 expressions that measures academic motivation from three aspects of internal motivation with 12 questions, External motivation with 12 questions and lack of motivation with 4 questions and the samples choose the choices on a 7 degree Likret scale from absolutely agree to absolutely disagree. The score change ranges vary from 28 to 196 and higher scores represent the high academic motivation of the samples. In an Iranian study, its content validity was confirmed and its reliability was measured by test re-test method in two weeks ( $r=0.73$ ) and its internal stability was measured with Cronbach Alpha of all the scale (0.88). [8]

### Statistics

The data were analyzed with SPSS software version 16 by descriptive statistics and also independent statistical T tests, person correlation coefficient, one way variance analysis and regression. In on the tests, a significant level of %5 was considered.

## RESULTS

In this study, %65 of the participants were female and %35 were male. The average and standard deviation of the participating students' age were  $21.09 \pm 2.39$ . The average and standard deviation of the total score of research self-efficacy was  $176.23 \pm 2473$ .

The average total score of research self-efficacy in male and female students was significantly different due to using independent T test. The average score of research self-efficacy of the girls was 191.99 and that of the boys was 156.33 which became significant with ( $P<0.05$ ). Of the seven components, the qualitative, analytical and statistical average ( $P<0.05$ ) in boys and girls was not significant. In research self-efficacy and its all components except obtained higher average scores that males.

The average total score of motivation and its all component including internal motivation, external motivation and lack of motivation in males and females were significantly different using independent T test. Also, in both the total score of motivation and all the components, girls and better condition than the boys and also had higher scores than males.

**Table 1.** The difference between research self- efficacy and its components in boys and girls.

	Boys	Girls	P. value
Research self- efficacy	156.33	191.99	0.001
Analytical and statistical	35.7	34.52	0.06
Conceptualization	40.4	46.12	0.03
Method and performance	28.6	46.5	0.000
Qualitative	18.92	210.1	0.068
Report Writhing	18.19	28	0.003
Skills	17.45	21.81	0.03
Ethics	7.94	12.33	0.01

**Table 2.** The difference between research self- efficacy and its components in boys and girls.

Variable	Boys	Girls	P. value
Internal motivation	55.43	71.99	0.002
External motivation	47.19	69.89	0
Lack of motivation	23.49	19.39	0.06
Motivation total score	143.45	169.88	0.001

**Table 3.** The difference between research self- efficacy and its components in boys and girls.

Variable	Health	Medical sciences	Nursing and midwifery	P. Value
Research self- efficacy	156.98	166.73	180.9	0.01
Academic motivation	141.13	152.99	159.43	0.03

**Table 4.** The difference between research self- efficacy and its components in boys and girls.

Predicting Variable	Regression Coefficient	Standard deviation	P. Value
Fixed number	. 51.24	22.93	0
Analytical and statistical	0.22	0.45	0.2
Conceptualization	0.38	0.63	0.27
Method and performance	0.88	1	0.003
Qualities	0.039	0.82	0.32
between r	0.04	0.86	0.94
between r	1.32	0.33	0.002
between r	. 0.077	0.96	0.7

The average scores of research self- efficacy and academic motivation of the students in different faculties were significantly different from ( $P < 0.05$ ) using variance analysis test, and in both variables of research self- efficacy and academic motivation, the faculty of nursing and midwifery, the faculty of medical sciences and finally the faculty of health obtained the highest average scores respectively. Pearson correlation coefficient showed that there were correlation coefficient of ( $P = 0.01$  and  $r \times y = 0.6$ ) between the whole scale of research coefficient of ( $P = 0.3$  and  $r \times y = 0.01$ ) between components of statistical self- efficacy and academic motivation, ( $P = 0.04$  and  $r \times y = 0.2$ ) between self- efficacy in conceptualization and academic motivation self- efficacy in performance and academic motivation had correlation coefficient of ( $P = 0.004$  and  $r \times y = 0.5$ ), self-

efficacy in qualitative research and academic motivation had ( $P = 0.84$  and  $r \times y = 0.02$ ), correlation coefficient of self- efficacy of report writing and academic motivation ( $P = 0.77$  and  $r \times y = 0.04$ ), Self- efficacy in skills and skillfulness and academic motivation ( $P = 0.01$  and  $r \times y = 0.45$ ), and finally the correlation coefficient of ethical self- efficacy and academic motivation was ( $P = 0.95$ ,  $r \times y = 0.001$ ). to investigate or realize if is possible to predict students' academic motivation by research self- efficacy and its components the regression coefficient was used. The results obtained from regression showed that the scale of research self- efficacy can forecast the academic motivation.

The regression results showed that  $R = 0.28$  means that %28 of the changes in academic motivation is stated and

represented by the variable of self- efficacy.

The standard regression co-efficient showed that of the seven predicting variables of analytical and statistical self- efficacy, self- efficacy in conceptualization, self- efficacy in methods and performance, self- efficacy in qualitative research, self- efficacy in report writing, self- efficacy in the skills needed in researching and self- efficacy in considering ethical principles only the variable of self- efficacy on methods and performance and skills can be a good predictor for academic motivation.

## DISCUSSION AND CONCLUSION

The results of this study showed that the total score of research self- efficacy in male and female students was different which was not just like the study of Hoshang Geravand and coworkers,[11] but it was the same as Turner's and coworkers' and Gedags' researches. [12-13] Gedags and coworkers reached different results in their study as follow that the male faculty members had much more participation that the females in the university scientific products. Saeedzade quotes from Betz and Haket that the difference in gender sociability causes different perceptions from the sources of self- efficacy in boys and girl students, it is the reason of functional difference in boys and girls, and there fore, the more gender perceptions they have, the more probable the functional differences are between boys and girls. [14] In the present study like the research of Bohrani, it was obvious that that girls and higher academic motivation than boy (total score of internal and external motivation). [15] As Rodgers and coworkers' study results suggest, girls pay more attention to learning and try to develop their understanding in what they do, but the boys try to seem better than others. [16] The present study results were like Qanbar Roohi's study results. We concluded that the research self- efficacy and academic motivation of nursing and midwifery students are better that those of the students of heath and paramedics which is the same as the study results of Qanbar Roohi. [17]

The present study suggested that there is a significant link between research self- efficacy and academic motivation as if increase in research self- efficacy amount leads to higher academic motivation in students just like in Roohi's study results. [8]

The findings of Zeinalipoor and coworkers confirm the positive and significant relationship between self- efficacy and function. [18] The findings of the present study are equal to the findings of Mimi and Pagares. [19] There was a high correlation among self- efficacy in conceptualization, performance methods , skills and mastery with academic motivation, and also the results of regression show that %28 of changes in academic motivation is stated by the variable of research self- efficacy, and among the seven predicting variables of analytical and statistical self- efficacy, self- efficacy in conceptualization, self- efficacy in methods

and performance, self- efficacy in qualitative research, self- efficacy in report writing, self- efficacy in needed skills for research and self- efficacy in considering ethical principles, just the variable of self- efficacy in methods and performance and skills for research and self- efficacy in considering ethical principles, just the variable of self- efficacy in methods and performance and skills and mastery can be a good predictor for academic motivation which was equal to the results of Hoshang Geravand's study. [11]

## CONCLUSION

The findings of this study suggest that generally, the B.S students of Mazandaran University of medical sciences don't have good and desired self- efficacy and academic motivation and self- efficacy and academic motivation are directly correlated and interrelated. It means that the more students believe in their competence and capabilities in doing their academic affairs, the better and higher academic education they will have programmers and university professors can evaluate the student's academic motivation knowing their self- efficacy and help them by offering needed instructions and providing necessary facilities for their every day and future success.

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