

Academic Self-Efficacy and Psychological Well-Being in Medical Students: A cross-sectional study

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Abstract

Background: Academic self-efficacy, which refers to an individual's ability to understand their skills, is an important aspect of self-efficacy. The aim of this study was to investigate the relationship between academic self-efficacy and psychological well-being in students of Birjand University of Medical Sciences, Birjand, Iran in 2020-2021. **Patients and methods:** In this cross-sectional study, a census sampling method was used to enroll 315 students of Birjand University of Medical Sciences, Birjand, Iran. The data collection tools were standard questionnaires for psychological well-being and academic self-efficacy scale. The validity of the instruments was confirmed in previous research by Khanjani et al. and Saadat et al studies. **Results:** The findings showed a significant relationship between students' academic self-efficacy and psychological well-being and its components ($p < 0.01$). This coefficient also showed a relationship between psychological well-being and academic self-efficacy with students' average grade point ($p < 0.01$), but not with their age. The results of an independent t-test showed no significant difference in the mean of psychological well-being and academic self-efficacy between male and female students. However, the analysis of variance test showed a significant difference in the mean of these variables based on the faculty and educational level. **Conclusion:** Based on the results of this study, it can be concluded that higher psychological well-being is associated with higher academic self-efficacy in students. Therefore, it is important to regularly review students' psychological well-being to address any problems in this area.

Keywords: Academic self-efficacy, Psychological well-being, Medical education, Medical Student, Mental Health

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INTRODUCTION

Students are one of the most important groups in society, and it shows the importance of social planning for them because any disruption in their lives prevents the growth and development of this talented group. Almost a quarter of the student population is at risk of academic failure and other subsequent behavioral problems. According to surveys, about 12% of students in medical sciences universities are suspended for one semester during their studies, and academic failure causes significant damage to students, families, society, and the country. Educational planners' awareness of factors affecting academic success can guide them in implementing effective educational plans; In this regard, the concept of academic self-efficacy is taken from the social cognitive theory of

Professor Albert Bandura (1). Bandura is one of the theorists of the social-cognitive perspective that has examined many influential mechanisms, that play a fundamental role in task performance (2). Self-efficacy, an individual's belief in their ability to accomplish a specific task, has been of interest to medical researchers. In educational settings, it relates to a student's confidence in achieving goals, influencing their decision-making, mental effort, and persistence in tasks (3). Self-efficacy, as conceptualized by Bandura, encompasses an individual's sense of competence and adaptability in navigating life challenges, rooted in their firm belief in their abilities. It serves as a critical determinant of human behavior, influencing one's judgment and confidence in organizing and executing tasks to accomplish specific goals. This belief system not

only shapes an individual's decision to undertake tasks but also impacts the level of effort and perseverance they invest when confronted with obstacles. Higher levels of self-efficacy are linked to increased engagement, sustained effort, and resilience, all essential components for achieving success in various endeavors. Consequently, nurturing and enhancing an individual's self-efficacy can yield positive outcomes in their overall task performance (4, 5).

Today, researchers use multiple terms to examine the idea of happiness, including subjective well-being and life satisfaction. Subjective well-being is a combination of high positive affect, low negative affect, and high life satisfaction, while life satisfaction is a cognitive assessment of overall life quality. Some researchers use happiness interchangeably with subjective well-being, indicating the vague nature of these concepts (6-8). Well-being is a quality of life that, despite extensive efforts to explain and define it, there is still little agreement among the authors in providing a clear definition of this structure. However, the accepted definition of well-being is that of Ryan, Desi, and Riff, who define well-being as experiencing optimal performance. It means someone who lives well, has a sense of satisfaction, acts purposefully in relation to the environment, and seeks the flourishing of their capabilities (9, 10). In fact, well-being as a comprehensive word means the important role of emotions in all aspects of human behavior and development, such as mental, physical, academic health, and increasing skills, social ability, and establishing positive social relationships (11). In general, psychological well-being can be defined as cognitive and effective evaluations of life, which in addition to cognitive judgments, also include emotional reactions to events and life satisfaction (12).

In connection with this issue, the study of the situation of populations and different age and gender groups has been the focus of researchers in this field. The results of the studies have shown that psychological well-being and its components have a different status at any stage of life and in relation to demographic characteristics, and these factors are able to affect the level of psychological well-being. The studies conducted have shown that it is related to characteristics such as age, gender, faculty, and educational level (13). Finally Psychological well-being is crucial for students' overall success and satisfaction in academic settings. A positive psychological state can enhance academic self-efficacy, leading to improved decision-making, mental effort, and persistence in tasks. Therefore, understanding and promoting psychological well-being can significantly impact students' academic performance and overall well-being and so because of its importance, in this study we Measure the state of academic self-efficacy and its relationship with psychological well-being in Students of Birjand University of Medical Sciences, Birjand, Iran in 2020-2021.

PATIENTS AND METHODS

STUDY DESIGN

The present cross-sectional study was conducted on 2700 students at Birjand University of Medical Sciences, Birjand, Iran, using a census sampling method in 2020-2021 (Figure 1). All students entered the research, and every incomplete questionnaire (even one question) was excluded. The reliable sample size for the

study was calculated based on the Krejcie and Morgan table as 335 participants (14). This study was approved by the ethics committee of the university with the code number: ir.bums.REC.1400.017. At first, all of the participants were explained the steps and objectives of the study. All questionnaires were anonymous, and at the end, all the data was analyzed and reported in general. The information remained confidential.

DATA COLLECTION

Data collection tools include academic self-efficacy and psychological well-being standard questionnaires. The academic self-efficacy questionnaire was designed by On and Faraman, which consists of 32 items and is used to measure students' academic self-efficacy beliefs. The scoring of this single-component questionnaire is based on a 5-point Likert scale from very little (score 1) to very high (score 5). The minimum score in this questionnaire is 32, and the maximum score is 160, indicating a high level of academic self-efficacy in students. The validity of this questionnaire in the research of Saadat et al. was verified by the professors and experts of this domain. The reliability of this questionnaire in the mentioned study using Cronbach's alpha was 0.84 (15).

The psychological well-being questionnaire was designed by Rief, which has 18 questions and its subscales, including self-acceptance, positive relationships with others, autonomy (independence), personal control over the environment, purposeful life, and personal growth. The scoring of this questionnaire is based on a six-point Likert scale (with a score of 1 to 6). There are three questions for each subscale, and the minimum score in each subscale is 3, while the maximum is 18. In Khani et al.'s study, the validity and reliability of the questionnaire was approved. The reliability of the mentioned questionnaire is reported by using Cronbach's alpha coefficient 0.71 (16).

STATISTICAL ANALYSIS

Statistical analysis was conducted using SPSS software version 16 (SPSS Inc., Chicago, USA –version 16). Descriptive statistics for the demographic characteristics were presented by the mean and standard deviation for quantitative variables and frequency (percentage) for qualitative variables. Then, one-sample t-test, independent Pearson correlation and ANOVA tests were used to investigate to compare the variables. A P-value less than 0.05 was considered as the significance level.

RESULTS

Among 315 studied participants, 103 (32.7%) were males and the rest of them were females. The data showed that most of the participants were affiliated with the faculty of medicine (n=91, 29.8%), and the lowest frequency was related to the pharmacy faculty (n=4, 1.3%). The mean score for psychological well-being was 17.01 ± 1.19 and the mean score for academic self-efficacy was determined as 101.99 ± 19 (Table 1).

The results of the one-sample t-test indicated that the mean score of psychological well-being and its components were significantly higher than the theoretical average (3.5) ($p = 0.001$ for all variables), except two components including positive relationship with

others and purposefulness in life which were significantly less than the theoretical average (3.5) ($p=0.001$) (Table 2).

The correlation coefficient revealed a significant correlation between the psychological well-being and its components with the student's academic self-efficacy ($p=0.0001$). Additionally, there was a significant positive correlation between average grade point and both academic self-efficacy and psychological well-being ($p=0.002$ and 0.0001 , respectively) (Table 3).

As the result of the independent t-test shows, there was no significant relationship between psychological well-being and academic self-efficacy based on gender ($p<0.05$) (Table 4).

As the result of analysis of variance shows, between average psychological well-being and academic self-efficacy of students was a significant difference based on the faculty of study and Educational levels ($p<0.05$) (Table 5).

DISCUSSION

The present study aimed to measure the state of academic self-efficacy and its relationship with psychological well-being. According to the results of the present study regarding the optimal state of psychological well-being and its components (independence, personal control over the environment, personal growth, self-acceptance) among the students of Birjand University of Medical Sciences, it can be stated that university students can resist social pressures, the ability to regulate behavior from the inside and evaluating oneself by personal criteria, having a sense of dominance and superiority over the environment and controlling it, a complex presentation of external activities, effective use of opportunities, the ability to choose or create suitable contexts for personal needs and values, feeling they have their continuous growth; However, in connection with the other two components of psychological well-being (positive relationship with others and purposefulness in life), which had an unfavorable situation among university students, it can be understood that students establish a satisfying relationship with others, pay attention to health and others happiness, having a purpose and direction in life, giving meaning to life in the present and past, having an opinion and belief that gives purpose to life.

The case of the relationship between psychological well-being and academic self-efficacy was measured in a study by Asghari et al (2013), which showed that academic self-efficacy with variables of psychological well-being, family cohesion, and spiritual health is positive and significant (17). Aalipour et al (2015) concluded that all relationships between academic self-efficacy and spiritual intelligence with well-being are psychologically significant at a favorable level (18). In this regard, Khosrowshahi et al (2012) showed that the relationship between self-efficacy and the psychological well-being of students a positive and significant (19). All these results are in line with the findings of the present study. According to the results of the present study and the results of the studies conducted in this field, it can be stated that since psychological well-being has both emotional and cognitive components, people with high feelings of well-being mainly experience positive emotions and avoid bad events. They have a positive evaluation

of themselves. While people with a low sense of well-being evaluate their life situation as unfavorable and experience more negative emotions such as anxiety, depression, and anger (20). In this regard, Bandura introduces psychological health and the state of well-being as one of the important sources in creating self-efficacy and efficient beliefs that the more a person is in a state of well-being, health, and lack of boredom, considers himself more efficient in academic matters (21).

Regarding the relationship between psychological well-being and academic self-efficacy with age, academic average, and gender, Mohammadi et al (2015) in examining the correlation between academic self-efficacy and learning anxiety of the medical students of Islamic Azad University of Qom concluded that there is a positive significant correlation between academic average and academic self-efficacy. This was while the age of students had no significant correlation with academic self-efficacy (22). Asgari and Safarzadeh (2012) discussed the relationship between psychological well-being and the perceived average and age of students indicating that psychological well-being and academic performance of students have a significant relationship (23).

The availability of a study that examines the relationship between psychological well-being and the age of students is not found. According to the results of the present study and the results of the studies conducted regarding the existence of a relationship between academic self-efficacy and psychological well-being with the academic average can be said that academic self-efficacy in particular, means confidence in doing academic tasks such as reading books, answering to questions in class and preparation for the exam, and on the other hand, high levels of academic self-efficacy lead to higher grades and persistence to complete assignments; As a result, students who have academic self-efficacy, have better academic adaptation and use more useful learning strategies. In general, today researchers have found that students who have higher academic self-efficacy are more successful academically (22). However, in the explanation of the other part of the results of the present study regarding the absence of a relationship between academic self-efficacy and psychological well-being with the age of students, it can be concluded that it has been proven contrary to Bandura's theory in this regard. In his famous theory called social cognitive theory, Bandura introduces academic self-efficacy as one of the individual factors that can play a positive role in overcoming the obstacles to performing a behavior. He believes that the more successful experiences a person has, the more confident he can be in his abilities, and naturally, with increasing age, the scope of a person's experiences will increase. Therefore, we can expect that older people, who do not have special disabilities, will feel more self-efficacy (24). It is expected that since psychological well-being is based on the components of psychological capital, in addition to optimism, resilience, and hope, which also includes self-efficacy, the results of academic self-efficacy will also be true for students' psychological well-being.

According to the results of the present study and the results of studies conducted in this field, it seems that there is no significant difference between females and males in terms of academic self-efficacy; as when teenagers (female/male) receive clear information

about their abilities and progress in learning, there is no gender difference in self-efficacy; the lack of difference between female and male can be analyzed as when female receive the message that they can do homework successfully, they will have a high estimate of their ability and it can be argued that this has a role in their high perception of self-efficacy. In this regard, Bandura's self-efficacy theory is based on the assumption that people's beliefs about their abilities and talents have positive effects on their actions and are the most important factor determining behavior; by accepting this point of view, the effect of factors such as age, gender, etc. becomes less effective or even ineffective.

CONCLUSION

Based on the results of this study, it can be stated that students with a higher level of psychological well-being, have higher levels of academic self-efficacy; therefore, it requires that the psychological well-being of students be constantly reviewed and the necessary measures be taken to find any problems in this area.

CONFLICT OF INTERESTS

None.

ABBREVIATIONS

COVID-19; Coronavirus disease-2019, SARS-CoV-2; severe acute respiratory syndrome coronavirus 2, ICU; intensive care unit, PCR; Polymerase chain reaction, CT; chest computed tomography, CBC; complete blood count, ESR; Erythrocyte Sedimentation Rate, CRP; C-reactive protein, CABG; coronary artery bypass graft, MVR; mitral valve replacement, AVR; aortic valve replacement, ASD; atrial septal defect, STS; Society of Thoracic Surgeons, sAVR; surgical aortic valve replacements, TAVR; transcatheter aortic valve replacements, LAAO; left atrial appendage occlusion, TEER; transcatheter end-to-end repair, EMCO; extracorporeal membrane oxygenation.

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