Original Article

Relationship between social support, dysfunctional attitude, and perceived academic stress in students of Ferdows school of medical sciences

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Abstract

Background & Objective: Students constantly go through experiences that can be a source of physical, emotional, or psychological stress. Dysfunctional attitudes are the root of numerous mental health problems. On the other hand, perceived social support is recognized as one of the most effective solutions in the treatment of stress and its related disorders. The present study aimed to assess the relationship of social support and dysfunctional attitude with perceived academic stress in the students of Ferdows School of Medical Sciences.

Materials & Methods: This descriptive-correlational study was conducted on 121 students of Ferdows School of Allied Medicine and Public Health who were selected via stratified sampling method in the academic year 2019-2020. The data collection tools were demographic characteristics form and three standard questionnaires of social support appraisals (SS-A) scale, vaux a, student life stress inventory (SLSI), and dysfunctional attitude scale 26 (DAS-26). Data were analyzed in SPSS software (version 22) using descriptive (mean and standard deviation) and inferential statistics (Kolmogorov-Smirnov test to determine whether sample data is normally distributed, Pearson and Spearman correlation test to check the relationship between variables, and independent t-test and analysis of variance to compare means between two groups. A p-value of 0.05 was considered statistically significant.

Results: The mean scores of academic stress and perceived social support of students were reported as 2.61 ± 0.49 and 2.42 ± 0.47, respectively, which were lower than the average. Moreover, the mean score of dysfunctional attitude (110.24 ± 78.5) was higher than the standard. Pearson's correlation test pointed to a significant relationship between social support and academic stress ($r=0.36$; $P< 0.001$), dysfunctional attitude and academic stress ($P=0.006$; $r = -0.24$) and dysfunctional attitude and social support ($P=0.005$; $R=-0.25$).

Conclusion: The results of the present study pointed out that the variables were closely related to each other, highlighting the importance of these issues in student life. In other words, in order to adjust to academic stress, which is the cause of failure and disruption in academic performance, attention should be paid to various factors at the level of the university, society, and most importantly, family where a person is raised. In this regard, culture building is necessary at the university, society, and family level to shape people's attitudes positively and develop creative thinking based on hope and a burning desire for construction.

Keywords: Academic Stress, Dysfunctional Attitude, Social Support, Students

Introduction

Since students, as the fundamental pillar of the educational system, play a special role in the achievement of educational goals, paying attention to this segment of society in terms of education and training brings prosperity to the educational system (1). Entering the university brings about a dramatic transformation in one's life, often accompanied by stress. Upon entering the university, teenagers who can not properly manage their life affairs face a daunting challenge since they are exposed to new responsibilities and relationships (2).
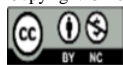
Stress or tension refers to a person's physical or mental reaction to internal and external stimuli that disrupts one's physiological stability (3). Education is a stressful experience, especially in the fields of medical sciences that deal with human life. Meanwhile, academic stress refers to the feeling of an increased need for knowledge and, at the same time, one's perception of having insufficient time to acquire that knowledge (4).

In educational environments, educational stressors exert various effects on learners. Students attend class and carry out a set of assignments to succeed in exams and get a passing grade. They constantly go through experiences that can be a source of physical, emotional, or psychological stress (5). The study and learning skills of learners who experience excessive anxiety will be lower than their actual ability and knowledge during learning and exams (6). Severe stress can lead to many physical and psychological symptoms. Its psychological consequences include unwillingness to socialize, anorexia nervosa, as well as a reluctance to live and communicate.

It has been emphasized that the student's stress level is alarming. Some suggestions have been proposed for the reduction of academic stress in students (7). In the treatment of stress and its related disorders, and in general, when a person is faced with tension and a stressful atmosphere, which is referred to as mental disorders, perceived social support is one of the most important solutions (7-9). Social support acts as a buffer against stress and is considered a protective resource that prepares people to deal with stress, anxiety, and depression (1).

In the studies conducted in this field, social support has been studied in two forms: received support and perceived support. In received social support, an emphasis is placed on the support obtained by the individual. On the other hand, perceived social support refers to the extent to which people believe that they can receive support during times of need (9, 10). Perceived social support is defined as the help and care received from other people, including emotional concern, reassurance, direction, instrumental support, evaluation, as well as the provision of information and motivation (11).

Emotional support emphasizes empathic relationships with members of the social network. Instrumental support facilitates carrying out activities of daily living. Informational support includes information that a person can use in dealing with problems and evaluation support entails feedback or information that allows a person to

compare him/herself with others (12). Beck, one of the main founders of the cognitive approach, believes that the foundation of mental health problems is dysfunctional attitudes (2).

Moreover, some studies consider dysfunctional attitudes a mediating factor in depression and anxiety disorders (13, 14). Dysfunctional attitudes, which are inflexible, extreme, and resistant to change, make a person prone to psychological disturbance. Dysfunctional attitudes are formed as a result of people's experience of themselves and the world, preparing them to interpret certain situations too negatively. These attitudes are biased assumptions and beliefs that people have about themselves, the world, their surroundings, and the future. As a result, their perception of events will be biased, and their health will be affected (15).

The results of the study by Rezaei et al. demonstrated that dysfunctional attitudes are correlated with anxiety, depression, and stress (16). Poor Seyyedi et al. (2019) conducted a study to determine the relationship of personality traits and perceived social support with gratitude with the mediating role of academic stress and academic self-efficacy of secondary school students. They revealed that personality traits and perceived social support reduced people's academic stress, and people with lower levels of stress are more self-efficacious in dealing with academic problems (17).

Dortaj et al. (2020) also conducted a quasi-experimental study to investigate the effectiveness of mindfulness-based stress reduction training in academic hope, academic tenacity, academic adaptation, and mindfulness of first-grade female students. They found that mindfulness-based stress reduction training has a significant effect on academic hope, academic tenacity, academic adaptation, and academic mindfulness of female high school students. The results pinpointed that having mindfulness in educational situations causes positive changes in education and educational environments at an optimal level (18).

Although the mentioned studies have pointed to the effect of social support and personality traits on academic stress, these studies are often conducted on school students, which is very different from university students. As mentioned, student life is a dramatic change in one's life since separation from parents, being in a new environment, interacting with new people, and facing different academic subjects can bring about severe stress. Considering the importance of the topic and the absence of a specific study on students, the present study aimed to determine the relationship between social support,

dysfunctional attitude, and perceived academic stress in students in an attempt to gain a thorough knowledge of the factors affecting academic stress and take effective measures in this regard.

Materials & Methods

Design and setting(s)

The present study was conducted based on an analytical-correlational design.

Participants and sampling

The study population was the students of Ferdows School of Allied Medicine and Public Health who were included in the study by stratified sampling method in the academic year 2019-2019. The following formula was used to calculate the sample size:

$$n = \left(\frac{z_\alpha + z_\beta}{c}\right)^2 + 3 \qquad c = 0.5 * \ln\left[\frac{1+r}{1-r}\right]$$

Considering the significance level of 5%, the test power of 95%, and the correlation of -0.34, the sample size of this study was estimated at 106 cases using previous similar studies (19). The inclusion criteria entailed willingness to participate in the study and the absence of any confirmed mental diseases. In the current study, 10 subjects were excluded from the study due to the use of antidepressants (n=2), incomplete questionnaires (n=5), and not returning the questionnaires(n=3). The response rate was about 93%. The self-administered questionnaires were completed by the participants and physically handed back to the researcher.

Tools/Instruments

To collect data, the following four questionnaires were used: demographic characteristic form, Vaux's Social Support Behaviors Scale (SS-B), Student-life Stress Inventory (SLSI), and Dysfunctional Attitude Scale(DAS-26). The first part of the questionnaire included demographic questions to check educational information (semester, field of study), type of school, interest in the field, and non-educational information (age, gender, social status, residential status, family income, and individual's own income).

The second part included Vaux's Social Support Behaviors Scale (SS-B). This 23-item scale covers the three domains of family, friends, and others. The subscale of family and friends consists of eight questions each, and the subscale of others contains seven questions. Items 3, 10, 13, 21, and 22 are reversely scored. Questions 1, 6, 10, 12, 15, 16, 19, and 23 are related to

friends' support, questions 2, 4, 7, 9, 11, 13, 18, and 22 pertain to family support, and questions 3, 5, 8, 14, 17, 20, and 21 are related to the support received from others. This test is based on a five-point Likert scale, ranging from 1 (lowest score) to 5 (highest score).

The minimum and maximum scores are 23 and 115, respectively. Ebrahimi Ghavam (2010) changed the scoring system of this questionnaire to zero and one due to the use of Cronbach's alpha. He used this test for a group consisting of 100 university students and 200 school students and reported the reliability of the test to be 0.90 in the student sample (23). In the research by Khabaz et al. (2010), the alpha coefficient calculated for this questionnaire was 0.74(24). In the current study, the validity of this questionnaire was confirmed by several experts, and the reliability of this questionnaire was obtained, rendering a Cronbach's alpha of 0.87.

The third section included the Student Life Stress Inventory: SLSI. It is a 51-item questionnaire consisting of nine categories (five stressors and four reactions to stressors). The five stressors are frustrations (1-7), conflicts (8-10), pressures (11-14), changes (15-17), and self-imposed stress (18-23). The four reactions to stressors are physiological, emotional, behavioral, and cognitive appraisal(50-51) were measured based on a 5-point Likert scale ranging from ranging from 1 = never to 5 = most of the time. The total value for the SSI is the summation of the nine category value ratings. Higher scores indicate more academic stress and stronger reactions to stress, respectively. The validity and reliability of this questionnaire in Iran have been investigated by Shokri et al., and factorial validity has been confirmed by factor analysis and internal consistency by Cronbach's alpha coefficient of 0.80 (25). In the present study, the validity of this questionnaire was confirmed by several experts, and its total reliability was obtained, rendering a Cronbach's alpha of 0.87.

In the fourth part, Dysfunctional Attitude Scale (DAS-26) was used to evaluate dysfunctional attitudes. The dysfunctional attitudes scale has 26 statements that the individual/learner responds to based on a 7-point Likert scale from strongly disagree to strongly agree, and four questions are reversely scored. The participant gets a score between 26 and 182, and those who score above 82 on this scale are considered high-risk in terms of cognitive vulnerability. This scale has four underlying factors, including success-perfectionism, need for approval, need for satisfying others, and vulnerability-performance evaluation. Based on Beck and Weisman's

perspective, it evaluates individual/general attitudes towards self, the future, and others.

Cronbach's alpha of this tool was equal to 0.92; correlation with the original form was 0.97; and its validity was obtained by predicting health with General Health Questionnaire- 28 (GHQ-28) scores by Ebrahimi et al. (22). In the present study, the validity of this questionnaire was confirmed by several experts and its total reliability was obtained based on Cronbach's alpha of 0.91.

Data collection methods

After selecting the sample and preparing the questionnaires, the location and time of data collection was determined with the coordination of the head of different departments. The students gathered in their own classrooms at their convenient time. Thereafter, explanations were provided by the researcher regarding the general purpose of the study, how to complete the questionnaires, and the assurance of confidentiality of the participants' information. Questionnaires were distributed and collected after completion. A number of 10 questionnaires were excluded. Finally, 121 questionnaires were analyzed.

Data analysis

In this study, the data were analyzed in SPSS software (version 22) using descriptive and inferential statistics. Due to the fact that in this study, the data were normally distributed (Kolmogrov-Smirnov test), descriptive statistics, such as mean and standard deviation, were used. On the other hand, Pearson and Spearman correlation tests were used at the inferential level to check the relationship between the variables. An independent t-test and analysis of variance were also used to compare the differences. A p-value of 0.05 was considered statistically significant. Pearson's correlation test was used to examine the relationship between academic stress and social support, dysfunctional attitude and social support, as well as dysfunctional attitude and academic stress.

An Independent t-test was used to compare the means of social support, dysfunctional attitude, and academic stress according to gender, marital status, place of residence, and interest. Spearman's correlation test was used to compare the means of social support, dysfunctional attitude, and academic stress according to age. Moreover, analysis of variance was used to compare the means of social support, dysfunctional attitude, and academic stress according to the field of study. Tukey's test was used to find the two-way differences between

students' stress in different academic fields and the dysfunctional attitude of students in different fields of study.

Results

The results of the study revealed that out of 121 participants in this study, 67 (55.4%) cases were male, and 54 (44.6%) subjects were female. The mean age of the participants was 20.72±2.14 years. The majority of them (86%) were single and resided in dormitories (75.2%). Moreover, 86.8% of participants were interested in their field of study. Regarding the field of study, 37.2%, 30.6%, 16.5%, and 15.7% of the participants studied nursing, operating room technology, emergency care, and health information technology (Table 1).

Based on the results of the study, the mean score of overall social support was 2.42±0.47. Among the dimensions of social support, friend and family support obtained the highest (2.55±0.58) and lowest (2.21±0.64) scores. The findings of this study demonstrated that the mean social support and its dimensions among the participants were lower than average. Moreover, the mean students' academic stress was lower than the average (2.61±0.49). The mean score of stressors was 2.078±0.53, which is higher than the mean reaction to stress (2.45±0.63).

In this study, stressors displayed a higher mean compared to the mean of reaction to stressors. Based on the results of this study, the dysfunctional attitude score was less than 82 in 16 (13.22%) participants and more than 82 in 105 (86.77%) cases. Moreover, the overall mean of dysfunctional attitude was 110.78±24.5, which is higher than the permissible value of 82 (Table 2). Pearson's correlation test showed that there was a significant relationship between social support and academic stress (r = 0.36, P < 0.001), dysfunctional attitude and academic stress (-0.24, r = 0.006, P = 0.006), and dysfunctional attitude and social support (-0.25, r=0.005, P=0.005) of participants (Table 3).

Tukey's test was used to find the two-way differences in students' stress between different fields of study (Table 4), and according to the significance level, a significant difference was only observed between operating room students and health information technology students in terms of stress. Moreover, the dysfunctional attitude was higher among nursing students than other students. These differences were statistically significant (p<0.05). The results of examining the relationship between the three variables of social support, dysfunctional attitude, and

academic stress illustrated an inverse and significant correlation between family support and dysfunctional attitude (p=-0.00; r=-0.44).

This means that from students' point of view, the higher levels of family support result in lower levels of dysfunctional attitude. On the other hand, there was a positive and significant relationship between students' academic stress and family support (p=0.001; r=0.29), signifying that students with increased academic stress receive more support from their families. There was a positive and significant relationship between academic stress and friends' support (P=0.23; r=0.01), illustrating that receiving support from friends increased significantly with a rise in academic stress.

There was an inverse correlation between the level of support from other people (except family and friends) and dysfunctional attitude; that is to say, students' dysfunctional attitude decreases significantly with an increase in the support received from other people (P=-0.2; r=-0.02). There was also a positive and significant relationship between academic stress and the support received from other people (p=0.24; r=0.006), signifying that receiving support from other people increased significantly with a rise in academic stress (Table 5).

Table 1. Distribution of the studied sample according to discrete variables

Variable		Frequency	Percentage
Gender	Male	67	55.4
	Female	54	44.6
Marital status	Single	104	86
	Married	17	14
Place of residence	Dormitory	91	75.2
	Home	30	28.4
Interest	Yes	105	86.8
	No	16	13.2
Filed of study	Nursing	45	37.2
	Operating room	37	30.6
	Emergency care	20	16.5
		19	15.7

Table 2. Central indicators and dispersion of social support, academic stress, and dysfunctional attitude of students

Social support	SD ±M	Academic stress	SD ±M	Dysfunctional Attitude	SD ±M
Family	2.21±0.64	Stressors	2.78±0.53	Dysfunctional attitude score	110.78±24.5
Friends	2.55±0.58	Reaction to stress	2.45±0.63		
Others	2.51±0.56				
Total social support score	2.42±0.4	Total academic stress score	2.61±0.49	Dysfunctional attitude total score	110.78±24.5

Table 3. Relationship between social support, dysfunctional attitude, and academic stress

Variable	Variable	R	P-value
Social support	Academic stress	0.36	<0.001
Dysfunctional attitude	Academic stress	-0.24	0.006
Dysfunctional attitude	Social support	-0.25	0.005

Notes: Based on Pearson's correlation analysis test

Table 4. Investigating the two-way difference between academic stress and dysfunctional attitude in academic fields

Variable	Discipline	Operating room	Emergency care	Health information technology
Academic stress	Nursing	0.26	0.97	0.44
	Operating room		0.72	0.02*
	Emergency care			0.35
Dysfunctional Attitude	Nursing	0.021*	0.00*	0.031*
	Operating room		0.08	0.97
	Emergency care			0.32

*Notes: Significance level: 0.05

Table 5. Pearson correlation test of social support, dysfunctional attitude, and academic stress

social support		Dysfunctional Attitude	Academic stress
Family	R	-0.44	0.29
	P-value	<0.001*	0.001*
Friends	R	-0.023	0.23
	P-value	0.79	0.01*
Others	R	-0.2	0.24
	P-value	0.02*	0.006*

*Notes: Significance level: 0.05

Discussion

The results of the present study pointed out that the level of social support of students and its dimensions were lower than average, and among the dimensions of social support, the highest and lowest scores were related to the dimensions of friends' support and family support, respectively. In agreement with the results of the present study, the research by Alvarani and Alradaydeh (2017) also suggested that students' perceived social support was at an average level (11). Based on research, receiving informal social support (family, friends, or other people) has a beneficial role in maintaining psychological health and academic success (26, 27).

The students who receive more social support will have a more remarkable ability to adapt to the university environment. Moreover, consistent with the study by Homayde et al. (2011) (28), the findings of this study revealed that the mean total score of students' stress was lower than the average, and the mean score of stressors was higher than the mean reaction to stress. In the study by Nik Anjam et al. (2016), the mean stress score was reported as average. The most important stressor experienced were related to changes and self-imposed stress; moreover, the strongest reaction to stress pertained to emotional reaction and then behavioral reaction(29).

The stressors reported in various studies are different, and all the stressors are present in student life. These discrepancies can be attributed to different data collection instruments, students' fields of study, and the university where they studied. The results of this study demonstrated that the level of dysfunctional attitude was higher than standard, and subjects were considered high-risk in terms of cognitive vulnerability. It can be stated that dysfunctional attitudes first create high and unrealistic expectations, which are usually expressed in such words as must, need to, and necessarily, resulting in disastrous generalization (15).

Moreover, the results pointed to a significant linear relationship between academic stress and social support, so that experiencing more stress in students leads to receiving more social support. Gökçearslan et al. (2018) indicated that social support is necessary at the right time, reducing stress levels (7). The results of another study denoted a significant and inverse relationship between social support and stress. The stated study also pinpointed that social support is used to eliminate the stressful situation (30).

A person who experiences various stressful events in the presence of sufficient social support from family or friends is less affected by the tensions caused by those situations than people who are not provided with social support (31). Since those who enjoy adequate social support experience less stress (32). Students face daunting challenges during their student life; as a result, they may show a negative response to these challenges in the form of experiencing high stress and low life satisfaction.

Therefore, social support provided by families, friends, or important people who play an essential role in a person's life has a marked effect on the regulation of students' lives, reduction of stress, and elevation of life satisfaction. Social support, especially from friends, family, and influential people in one's life, is believed to protect individuals from stress and developing mental disorders. The results of studies illustrated that students who enjoyed more informal social support (family, friends, and others) obtained lower anxiety and depression scores (26, 33).

It is obvious that informal social support plays an important role in the prevention of depression and anxiety. In other words, if a person is sure that he/she will be supported by someone in times of need and difficulty, he/she will be less likely to suffer from mental illnesses, such as anxiety and depression. Pearson's correlation coefficient results pointed to an inverse correlation between social support and dysfunctional attitude. That is to say, students' dysfunctional attitude is expected to decrease with an increase in social support and vice-versa. In accordance with the results of the present research, the study by Herro et al. (2019) also reported that students who receive little social support from family or friends experience higher levels of dysfunctional attitude (34).

It seems that people who have complete support resources to deal with problems and do not hesitate to ask for help from others when needed have positive and hopeful attitudes and look at problems creatively and flexibly and plan to resolve them. These factors bring a person more mental health and psychological well-being, as well as less dysfunctional attitudes. Moreover, the results of Pearson's correlation coefficient showed an inverse correlation between dysfunctional attitude and academic stress in such a way that a higher dysfunctional attitude was associated with less academic stress.

When a person has high dysfunctional attitude, he/ she may consciously prefer to take his/her attention away from issues related to education, which are less important than other subjects, thus experiencing less stress. Dysfunctional attitudes that people show in such areas as

stress prediction, stress emergence, stress development, and stress maintenance may make them prone to increased psychological damage and can lead to catastrophizing (35). When a person expects everything to be as intended, encountering the smallest obstacle causes a person stress since the existence of several negative attitudes and beliefs leads to one's low tolerance in the face of stress. As a result, having dysfunctional attitudes reduces stress (6).

Comparing the mean academic stress with students' fields of study revealed that academic stress among operating room students was higher than other students, followed by emergency care, nursing, and health information technology, and these differences were statistically significant (p<0.05). This difference could be ascribed to the fact that operating room nurses experience higher job stress due to their high workload. Lesky et al. (2012) reported moderate and severe job stress in more than half of nurses (36). Nonetheless, the study by Bakhtiari et al. (2013) displayed that operating room nurses often experience low occupational stress (37). On the other hand, in the study by Amiri (2018), almost half of the students had moderate to severe stress (3) Since most patients prefer to undergo surgery in teaching hospitals.

Teaching hospitals are becoming more popular among middle- to lower-class patients since they often cover a variety of insurances and reduce inpatient and surgical costs, especially after the implementation of the Health Transformation Plan. The presence of specialists and subspecialists in teaching hospitals can be another reason for this popularity. Consequently, the workload of operating room nurses will increase, and they will experience more stress. In cases where they experience mild stress, it may be related to private hospitals, which have fewer referrals due to the high cost of treatment and the workload of their employees is less.

Comparing the mean score of students' dysfunctional attitude with their field of study illustrated that dysfunctional attitude was more pronounced among nursing students than other students, followed by operating room, health information technology, and emergency care, and these differences were statistically significant (p<0.05). Based on Pearson's correlation coefficient test, the level of dysfunctional attitude showed an inverse and significant correlation with all dimensions of social support, including family support, friends' support, and other people's support.

In line with this finding, in the study by Serin (2019), it was also found that students' relationships with their friends have an effect on their dysfunctional attitudes. This relationship will improve with an increase in the time they spend together, and after receiving more support from friends, they will display less dysfunctional attitudes (35). In addition, students who receive full support from their families are not worried about the issues and problems of student life and resolve them with the help of their families as soon as the dysfunctional attitude appears.

On the other hand, the study of the relationship between academic stress and social support dimensions showed a positive and significant relationship between academic stress and all aspects of social support of students, including family support, friends' support, and other people's support. It means that students seek more support from family, friends, and other people with increased perceived academic stress. In their study, Abarghoyi Azizi et al. (2017) stated that people who receive social support from their families are able to better control negative situations and manage their stress. In addition, friends' support makes a person accept mental pressure and control stress more effectively (38). People who receive social support from a wide network of people can better control their stress.

Conclusion

The results of this study pointed out that the variables were closely related to each other, highlighting the importance of paying attention to these issues in student life. In other words, in order to adjust to academic stress, which is the cause of failure and disruption in academic performance, attention should be paid to various factors at the level of the university, society, and most importantly, in the family where a person is raised. In this regard, culture building is necessary at the level of the university, society, and family in order to shape people's attitudes in a positive way and develop creative thinking based on hope and a burning desire for construction and continue to support the individual by family and society. The findings of this research suggest developing educational programs for students to strengthen stress control mechanisms in cognitive, behavioral, emotional, and physiological dimensions, and some selected theoretical courses on the use of emotions and emotional control skills can be included in students' curricula. It is also possible to strengthen the dimensions of social support in students' lives to increase the level of happiness and satisfaction with life by creating a sense of peace, hope, faith, and comfort, strengthening positive

attitudes in students, and reducing dysfunctional attitudes.

Conflict of interest

The authors declare that they have no conflict of interest in this study.

Author contributions

Rahela Rajabi: generating ideas, drafting proposals, collecting data, analyzing and analyzing data, writing the article.

Hassan Eslami Aliabadi: Drafting the proposal, collecting data, writing the article.

Sayeda Sara Afrazande: Drafting of the proposal, data collection, data analysis, writing the article.

Data availability statement

All data used and analyzed in this study are available by request from the corresponding author.

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