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Investigate the Aspects of Personality Type D and its Relationship to the State Trait Anxiety in Med Students of Basic Science

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KEYWORDS

Personality type D,
State trait anxiety,
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A B S T R A C T

According to their social and educational situation, med students are exposed to different kinds of anxiety and personality disorders. This study aimed to investigate the aspects of personality type D and its relationship to the state trait anxiety in med students of basic science. A cross-sectional descriptive design was selected for this study. 193 med student who were admitted to Ahvaz Jundishapur University in 1393, participated in this study. (Ds14) questionnaires of personality type D criteria and Spilberger state trait anxiety (STAI) questionnaire had been used as information gathering instrumentation. Student's demographic information had also been derived using a separate questionnaire and was compared to the other results. SPSS and V22 softwares, Chisquare test and Spearman Correlation were used to analyze information statistically. The mean core of personality type D in students was 16.8 ± 4.69 , the mean core of trait anxiety was 39.5 ± 7.9 and the mean core of state anxiety was 39.4 ± 7.8 . There was a meaningful correlation between personality type D and the state trait anxiety. Med students with personality type D, experience higher level of anxiety. Both negative feeling and social filters, accompany a higher level of anxiety.

Introduction

Over the past decade a theory is presented about the introduction of the Type D personality as a type of personality pattern that makes the individual more susceptible to anxiety and negative emotions such that people with this personality type have a has a negative attitude towards the surrounding

events and present a tense and stressful confrontation with the issues that show up. Although these people have negative feelings easily, they attempt to hide them due to the fear of rejection by society which leads to more anger and depression in these people (Dadsetan, 1996).

According to various studies Type D personality is considered as a risk factor for cardiovascular disease (Enright *et al.*, 1999), metabolic syndrome, musculoskeletal pains, psychosomatic disorders (Ma'ani, 1991) and social and psychological problems such as anxiety and depression (Rahmani *et al.*, 2014).

The prevalence of this type of personality is reported within the range of 13 to 32.5% in the normal population (Rutherford *et al.*, 2004). On the other hand the entrance to the university is a major change in peoples' lives that is considered as the cause of stress due to the adoption of new roles and major changes in life (Puliafico *et al.*, 2006) which affects academic performance and even the person's physical and mental health (Mathews *et al.*, 1998).

According to a study anxiety about the tests, heavy and high volume courses, problems related to the accommodation and concerns about job prospects are the most stress experienced by medical students that all of them make the individuals susceptible to the development of anxiety and depression disorders (Quigley *et al.*, 2012). The depression and psychological problems are reported 49.9 and 36.6% in medical students of Ahvaz studies have shown that students who have poor problem-solving when faced with stressful life events have presented dramatically higher suicidal thoughts and distress compared to the control group. Since the economy system has to pay significant costs to train these graduates, it is necessary for the graduates to have the ability to manage certain situations physically and mentally and respond to the expectations of society and the health system which requires the psychological and physical health of these people. Given the significant impact of these stressors on mental health on the one hand that is almost

unalterable in the majority of cases and improper management of people with type D personality in the stressful conditions on the other hand, it seems that awareness about the prevalence of this personality pattern in this population could provide grounds for planning strategies to change this personality pattern and train these people to deal with stressful conditions and provide help to establish a systematic and integrated program to prevent this type of personality to remove this risk factor that plays an important role in the development of diseases and disorders mentioned above. So the aim of this paper is to measure the prevalence of this personality type in this important and vulnerable group.

Materials and Methods

The present research is a cross-sectional, descriptive and epidemiological study that its population includes the medical students in basic sciences who entered the university in 2014. 193 medical students of basic sciences course in Ahvaz Jundishapur University of Medical Sciences who entered the university in 2014 are selected. A demographic questionnaire (including gender, location, academic performance and academic motivation) and Type D personality scale are presented to the students to measure personality type and State – Trait Anxiety Inventory (STAI) is presented to measure students' anxiety. Type D personality scale has 14 items and it is developed in 2005 by Denollet. The scale is based on five-point Likert scale as false, partly false, neutral, partly true and true that each option has 0, 1, 2, 3 and 4 scores respectively. The score is within the range of 14-56. Cronbach's alpha coefficients of negative emotion and social inhibition are 88 and 86% respectively and the concurrent validity coefficient of this scale and type A personality type is reported as 63 (Jonge *et*

al., 2007). According to the observers the correlation coefficient of this scale is significant ($r=69\%$). Its reliability is obtained as 88% in Iranian studies (Behdani *et al.*, 2000).

Speilberger State – Trait Anxiety Inventory (STAI) is developed by Speilberger in 1970. The questionnaire includes 40 questions that the items 1-20 are associated with state anxiety and the items 21-40 are related to trait anxiety. Questions related to state anxiety are scored based on 4-point Likert scale: never, sometimes, often, and very often and the questions related to the trait anxiety are also based on 4-point Likert scale: almost never, sometimes, often or almost always. Finally, two score are obtained that the first score indicates the state anxiety and the second one indicates the trait anxiety. Each person can earn scores between 20 and 80 in these two types of anxiety (Spielberger *et al.*, 2006). To score Speilberger State – Trait Anxiety Inventory (STAI) first the scores 1-4 are associated to each term. Some questions present the lack of anxiety that is scored reversely. After obtaining the anxiety score of each of the two subscales i.e. trait and state anxiety, they are interpreted as follows:

- Mild anxiety: the score of 20 - 29
- Relatively mild anxiety: the score of 30-49
- Relatively severe anxiety: the score of 50 -69
- Severe anxiety: the score of 70-80

In this study the statistical software SPSS V22 is applied. The applied statistic tests include:

1. Chi-Square test to test the statistic difference between the qualitative variables

2. Independent sample T-test to test differences between quantitative variables
3. The mean and standard deviation are calculated based on the following equation:

$$\sigma = \sqrt{\frac{1}{N-1} \sum_{i=1}^N (x_i - \bar{x})^2}$$

$$\bar{X} = \frac{\sum_{i=1}^n x_i}{n}$$

Results and Discussion

In this study the based on the total determined sample size, 193 medical students in the basic sciences are randomly selected and using the type D personality scale (DS14) and State – Trait Anxiety Inventory (STAI) their personality types and anxiety is studied. The type D personality mean score of the population under study was 16.8 ± 4.69 . Also the mean score of negative emotions subscale is 13.4 ± 3.61 and the mean score of social inhibition subscale is 11.08 ± 2.88 . The mean score of trait anxiety is 39.5 ± 7.9 and that of state anxiety is 39.4 ± 7.8 .

Also, as mentioned in Table 1 the results of the STAI indicates that in trait anxiety 21 (10.9%) subjects have mild anxiety, 149 (77.2%) subjects have relatively mild anxiety and 23 (11.9%) subjects have relatively severe anxiety. In state anxiety 22 (11.4%) subjects have mild anxiety, 152 (78.8%) subjects have relatively mild anxiety and 19 (9.8%) subjects have relatively severe anxiety. The relationship between type D personality and trait and state anxiety is significant ($P < 0.0001$), however, the correlation coefficient of both

relationships is higher than 0.7 and close to 1 which indicates the desirable relationship.

Results of type D personality scale and STAI based on variables also show that:

There is a significant difference in terms of type D personality in men and women ($P=0.04$) but there is no significant difference in terms of trait ($P=0.1$) and state anxiety ($P = 0.7$) in men and women (Table 2). Also in terms of location the results have shown that there is a significant difference between type D personality and location ($P = 0.002$) but there is no significant difference in trait ($P=0.08$) and state anxiety ($P = 0.07$) in terms of location (Table 2).

The results of the study show that there is no significant difference between type D personality and educational status ($P = 0.2$) and this result also holds for trait ($P=0.5$) and state anxiety ($P = 0.5$) in terms of educational status (Table 2). Also after analyzing the academic motivation it is observed that there is no significant difference between type D personality and academic motivation ($P = 0.1$). Similarly there is no significant difference between trait anxiety ($P=0.09$), state anxiety ($P = 0.1$) and academic motivation (Table 2).

Discussion and Conclusion

Based on the results and findings of the present study on medical students in basic science it is shown that there is a significant and positive correlation between type D personality and trait and state anxiety and this correlation is desirable. This is consistent with similar studies on the relationship between type D personality and anxiety. In Oginska the strong relationship between type D personality and high levels of stress among healthcare workers is presented. Williams and Habra studied indicated the relationship between type D

personality and perceived anxiety among students and the increase in cardiovascular outcomes in response to stressors. Denollet (2005) indicate the association between negative emotions and social inhibition with the same pattern of anxiety.

One of the factors playing a moderating role in the relationship between health and stress is type D personality. The relationship between type D personality and high stress has presented more evidence on the relationship between type D and psychological distress. Confirming the relationship between type D and high feelings of stress emphasizes the role of stress in the etiology of mental and physical diseases. Stress occurs when a person considers his demands beyond his coping resources. As the person has higher control in personal events he will feel less stress. People who have type D personality tend to experience negative emotions such as depression, anxiety, anger and hostile feelings along with inhibition of such excitements when combined with avoiding social contacts (Sher, 2004).

Another case in this study is high social inhibition in people with type D personality. People with type D personality have a sense of feel sadness, anxiety and negative perceptions against themselves and imagine the world full of impending troubles. These people have a sense of insecurity and tension and thus they might interpret others' behaviors more negative; they also tend to react more negatively against others. Therefore people with type D personality especially those with high social inhibition do not confide on other people easily and will never receive the sufficient social support to achieve confidence and peace (Denollet, 2005). Thus people with type D personality receive less social support because of high social inhibition and isolation (Pell *et al.*, 2012).

Table.1

Table 1. results of the STAI		
Score	trait anxiety	state anxiety
Mild anxiety (20-29)	21	22
	10.9%	11.4%
Relatively mild anxiety (20-29)	149	152
	77.2%	78.8%
Relatively Severe anxiety (50-69)	23	19
	11.9%	9.8%
Severe anxiety (70-80)	0	0
	0.0%	0.0%
Total	193	193
	100.0%	100.0%

Table.2

Table.2 Score based on variables							
Variable	Sub-variable	SCORE					
		type D personality		trait anxiety		state anxiety	
		Mean	SD	Mean	SD	Mean	SD
Gender	Male	17.59	5.53	38.59	6.58	39.23	7.24
	Female	16.29	4.01	40.14	8.73	39.65	8.31
	P-Value	0.04		0.1		0.7	
Location	Town Center	15.07	4.48	37.24	7.57	37.24	7.22
	Other cities	17.48	4.61	40.46	7.99	40.38	8.01
	P-Value	0.002		0.08		0.07	
educational status	Good	15.46	3.49	38.76	8.49	38.59	8.21
	Middle	17.92	5.36	40.45	8.10	40.47	8.12
	Weak	15.29	1.99	37.06	3.07	37.06	3.07
	P-Value	0.2		0.5		0.5	
academic motivation	Much	15.79	3.89	38.50	8.22	38.51	8.09
	Middle	17.26	5.20	39.65	7.23	39.85	7.70
	Low	17.94	4.78	41.60	8.87	40.83	7.87
	P-Value	0.1		0.09		0.1	

Social support is considered as an important factor in overcoming the stressor factors and

situations that can modulate the relationship between stress and disease and significantly

reduce the negative effects of stress. Also, when people deal with more stressor factors the reaction to stresses is reduced. In this respect, although the stressor factors are random and inevitable, they increase overcoming the stress. Close communications and social support provided by the family, friends, colleagues and the community have positive correlation with improved performance in the workplace, better coping with life's problems, general adaptation, reduced distress and physical and psychological well-being.

Based on the results of this study, the majority of students are classified in relatively mild anxiety level. The frequency of relatively severe anxiety is about 10% in both state and trait anxieties and there is no severe anxiety. The results despite the low level of state and trait anxiety, indicate cases of high risk for developing anxiety level and it is better be considered it as high and dealt with.

When a person with high trait anxiety is faced with threatening conditions, the state anxiety is increased as well. Basically anxiety happens in threatening situations and it is determined by trait and state anxiety interactively. In this case, the person is unable to consider a specific pattern of behavior to solve threatening issue or change his interpretation of it (Humara, 1999). Also anxiety causes inefficiency and anxious people use the remedial strategies.

The results of this study indicated that type D personality (negative emotions and social inhibition) is associated with state and trait anxiety levels in students and this structure is a risk factor for mental health. People with type D personality are exposed to greater stress and this can affect their health and quality of life. Thus the practical applications of the results of this study are

very important clinical, health and medicine fields. Based on the relationship between type D personality and trait and state anxiety, finding the medical solutions to help these people to reduce stress experience is necessary.

A variety of cognitive behavioral therapies, social skills training, emotional support, interpersonal psychotherapy, progressive muscle relaxation, spontaneous learning, guided imagery, meditation and various forms of meditations, hypnosis, exercise or other treatments which may reduce stress in the individual and improve his socialization are proposed to people with type D personality and high anxiety.

Although this study has a proper estimation of the type D personality and trait and state anxiety, it suffers from limitations. First it is the level of realistic responses of the participants because the applied questionnaire was in the form of self-report and there has been the possibility of bias in answering. Another point the lack of filtering based on students' physical and mental problems that the presence of physical and psychological problems at the time of completing the questionnaire could affect their responses. It is recommended to use objective tools such as interviews in more specific studies.

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