

Original Paper

The Mediating Role of Defensive Mechanisms in the Relationship Between Social Phobia and Alexithymia in University Students



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ABSTRACT

Introduction: Psychological factors play a key role in people's emotional responses to different social situations.

Objective: This study aimed to investigate the mediating role of defense mechanisms in the relationship between social phobia and alexithymia, in the students of Farhangian University, Sari City, Iran.

Materials and Methods: This was an analytical, correlational study that specifically used structural equation modeling. The statistical population included all students of the Farhangian University of Sari city, Iran, in the academic year of 2019-2020. A sample of 234 people was recruited with the available sampling method. The social phobia inventory, defense mechanism questionnaire, and Toronto alexithymia scale were used to measure the research variables. Finally, the proposed model was evaluated using structural equation modeling.

Results: The results showed that social phobia variables, undeveloped defensive mechanisms, and psychotic defensive mechanisms are positively correlated with alexithymia. Also, there is a significant negative correlation between developed defensive style and alexithymia ($P=0.001$). The results indicated significant correlations of social phobia ($r=0.28$), undeveloped defensive style ($r=0.31$), psychotic defensive style ($r=0.28$), and developed defensive style ($r=-0.30$) with alexithymia ($P=0.001$). Moreover, the research model was approved: defensive mechanisms mediate the relationship between social phobia and alexithymia in the students. The defensive mechanisms and social phobia affect 48% of the alexithymia variable.

Conclusion: The students with adaptive defensive mechanisms experience lower social phobia and alexithymia symptoms. Also, social phobia indirectly affects alexithymia through the mediating role of defense mechanisms.

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Highlights

- Emotional factors such as alexithymia play a major role in academic performance.
- Defense mechanisms affect both adaptive behavioral responses and social phobia in students.
- The defense mechanisms and social phobia are associated with alexithymia and the components of emotion expression and emotion recognition.

Plain Language Summary

Cognitive and emotional variables play an important role in people's performance. Also, the lack of coordination between cognitions, such as adaptive and maladaptive defense mechanisms can lead to social phobia disorder. Psychological dysfunction eventually leads to emotional problems, including alexithymia that involves a deficiency in identifying and describing emotions in different situations. So, the present study aimed to investigate the mediating role of defense mechanisms in the relationship between social phobia and alexithymia, in the students of Farhangian University in Sari City, Mazandaran Province, Iran. The results emphasized the role of these cognitive factors in the development of alexithymia. Thus, the study suggests the improvement of cognitive function to reduce alexithymia.

Introduction

Emotionally empowered individuals easily face life challenges and have higher mental health levels [1]. Alexithymia is a multifaceted structure characterized by an inability to recognize emotions, a lack of distinction between emotions and physical excitements associated with emotional arousal, an inability to describe one's feelings to others, a limitation in the power of imagination, and an objective thinking style [2]. This structure has been observed in patients with a wide range of psychiatric and clinical pathologies and even in the non-clinical population [3]. In such a situation, patients are at the risk of psychosomatic diseases, such as cardiovascular disorders and some psychiatric disorders, including phobia and depression [4].

People with alexithymia have problems in emotion regulation, especially in full-of-conflict psychological situations. These problems are caused by a variety of reasons, such as the personality traits that directly predispose the person to disorders related to the lack of emotion regulation ability, including phobia [5]. Therefore, the role of phobia is considered as one of the issues related to alexithymia [6]. Research shows that alexithymia is significantly associated with more severe symptoms and poorer performance in people with social phobia disorder [7].

Generally, phobia exists in everyone's life. Also, the low levels of phobia are considered as compromised responses. However, when phobia exceeds its normal

level, it damages various parts of life, such as social relationships [8]. Social phobia is the severe and constant fear of situations in which the person is faced with others or has to do something in front of them [9]. People with social phobia feel that the other people are evaluating their actions; this fact is completely in line with the outward attribute style in alexithymia and the other cognitive variables, such as defensive mechanisms [10].

Disruption in defensive mechanisms leads to deficiencies and fails in identifying and expressing the emotions [11]. Thus, defensive mechanisms as the self-regulatory processes affect the perception of threatening events to reduce the lack of cognitive coordination and minimize sudden changes in internal and external reality [12]. By distracting our attention from reality, the defensive mechanisms distort and alter the emotional perceptions [13]. Inefficient defensive mechanisms disrupt the processing of emotions, thereby, increase the likelihood of using incorrect methods, such as alexithymia [14].

Recent research shows a significant positive correlation between the severity of pain, alexithymia, and the behavioral defensive mechanism [15]. Clinical groups differ from normal individuals regarding alexithymia and defensive mechanisms, also, the developed defensive mechanisms are significantly associated with social phobia [16, 17]. Moreover, social phobia predicts alexithymia [18]. Women with alexithymia show more signs of depression and phobia, also, the signs of depression and phobia are significantly and positively correlated with undeveloped mechanisms [19].

The interpersonal relationships play a key role in well-being and mental health, and help in the self-actualization of individuals; therefore, it is important to identify the factors that disrupt these relationships [20]. Certain problems and crises can increase phobia in students. Highly anxious students experience phobia symptoms throughout their education period; these symptoms ultimately affect the academic performances of students [21]. This condition leads to problems in forming new relationships and interacting with others. This factor adversely affects both academic achievements and career decisions [22]. Students with social phobia assess social situations as vague and negative; they reduce their contact with others to avoidant behaviors [22]. Despite the importance of the issue, research has not examined the structural relationships of these variables in the form of a model. Thus, the present study mainly aimed to investigate the mediating role of defensive mechanisms in the relationship between social phobia and alexithymia in the students of Farhangian University, Sari City, Iran.

Materials and Methods

This analytical, correlational research used the structural equation modeling method. The statistical population included all 558 male undergraduate students of Farhangian University of Sari, in the academic year of 2019-2020. The study sample included 234 people that were recruited with the available sampling method. Also, the sample size was estimated using the Cochran's formula, based on the values of alexithymia's mean and standard deviation scores (61.17 ± 11.12) [16], the confidence level of 0.95, the significant level of 0.05, and the test power of 80%.

The inclusion criteria were as follows: studying the field of psychology in the Faculty of Humanities, being at least a freshman (in the second semester) and maximumly a junior (in the eighth semester), self-reporting of the lack of physical and psychological problems, declaring readiness for cooperation, residing in Sari City, and being single. Also, the exclusion criteria included the incomplete answering of the questionnaires and exiting the study at their wish.

Three questionnaires were used in the present study. The Toronto alexithymia scale (TAS) was designed by Bagby, Parker, and Taylor in 1994 [23]. TAS includes 20 items and three subscales (difficulty in identifying emotions, difficulty in describing emotions, and objective thinking); the items are scored on a 5-point Likert-type scale from 1 to 5 (completely opposite, opposite, I have

no comments, agree, and completely agree). The validity and reliability of TAS were confirmed by its developers.

Besides, the Cronbach alpha for the total scale, difficulty in detecting the feelings, difficulty in describing the feelings, and objective thinking subscales have been reported as 0.84, 0.80, 0.79, and 0.75, respectively. In Iran, the validities of the structure and content of TAS were confirmed by Hasanvand et al. [24]. In the present study, the Cronbach alpha reliabilities of 0.70, 0.76, 0.73, and 0.78 were obtained for the total scale, difficulty in detecting feelings, difficulty in describing feelings, and objective thinking, respectively.

Connor et al. developed the Social Phobia Inventory (SPIN) with 17 questions to assess social phobia [25]. The SPIN includes three subscales of fear, avoidance, and physiological discomfort. The items of this inventory are scored on a 5-point Likert-type scale (0: No way, 1: Low, 2: Somewhat, 3: High, 4: Very high). In Iran, Fathi-Ashtiani and Dastani confirmed the validity of the structure and content of the SPIN [26]. In the present study, the Cronbach alpha values of 0.80, 0.84, 0.78, and 0.85 were obtained for the fear, avoidance, physiological discomfort, and the total scores of SPIN, respectively.

The Defensive Mechanisms Questionnaire (DMQ) was designed by Andrews et al. in 1993. The DMQ includes 40 questions covering three defensive styles of developed, psychotic, and underdeveloped on a 9-point Likert-type scale (from completely agree to completely disagree) [27]. Ranjbari, Besharat, and Pourhossein confirmed the validity of the structure and content of DMQ [28]. Using the Cronbach alpha in the present research, the reliability coefficients of 0.80, 0.78, and 0.79 were obtained for the developed, psychotic, and undeveloped defensive styles of DMQ.

Sampling was performed in January 2020. Before starting the sampling, the participants received explanations about the purpose of the study and the confidentiality of the materials. Then, the informed consent letter was received from the students. A total number of 300 students were first interviewed. Next, the people, who were willing to cooperate in the study, received the questionnaires. In this study, structural regression equations modeling was used to analyze the obtained data. Finally, the statistical analyses were performed using SPSS V. 18 and 23.

Results

Out of 234 participants, 79 (33.76%), 106 (45.29%), and 49 (20.94%) had 20, 21, and 22 years of age. Also, 97 students (41.45%) were in the fourth to sixth semester and 137 students (58.54%) in the seventh to the eighth semester. Investigating the statistical assumptions, the data normality was initially confirmed with kurtosis, skewness, box, and the Kolmogorov-Smirnov test. Then, the measurement model of the three study variables was investigated.

Table 1 reports the means and standard deviations of social phobia, defensive mechanisms, and alexithymia and the correlation coefficients between these variables. According to Table 1, social phobia and defensive mechanisms are significantly correlated with alexithymia ($P=0.01$). Moreover, there are significant positive correlations between social phobia subscales and defensive mechanism styles (undeveloped defensive style and psychotic defensive style) and alexithymia. On the other hand, the developed defensive style and alexithymia (difficulty in identifying emotions, difficulty in describing emotions, and objective thinking) are negatively correlated in the study sample.

According to Table 2, the value of RMSEA (Root Mean Square of Approximation) (0.031) is less than 0.1, which indicates that the mean square of the model errors is appropriate and the model is acceptable. Besides, the value

of Chi-square to the degree of freedom ratio (2.541) is between 1 and 3, and the amount of GFI (Goodness of Fit Index), CFI (Comparative Fit Index), and NFI (Normalized Fit Index) indices are equal or greater than 0.9. These values show that the measurement model of the research variables is appropriate. According to Table 3, social phobia and defensive mechanisms directly affect alexithymia, regarding the values of common variance (R^2).

Table 4 represents the result of the mediation analysis. As can be seen, social phobia indirectly affects alexithymia; this relationship is mediated by the defensive mechanisms. Also, the standardized obtained values (β) were confirmed, according to the bootstrap estimation method. The final model showed that defensive mechanisms mediate the relationship between social phobia and alexithymia, in the students (Figure 1). Defensive mechanisms and social phobia have a total impact of 48% on the alexithymia variable.

Discussion

The present study aimed to investigate the mediating role of defensive mechanisms in the relationship between social phobia and alexithymia among the students of the Farhangian University of Sari. The results showed that defensive mechanisms mediate the relationship between social phobia and alexithymia. The direct and indirect pathways of defensive mechanisms

Table 1. Mean±SD and correlation of social anxiety and defensive mechanisms variables with alexithymia.

Variable	Mean±SD	1	2	3	4	5	6	7	8	9	10	11
Fear	8.63±3.13	1										
Avoidance	11.41±3.85	0.49*	1									
Physiological discomfort	6.30±2.45	0.67*	0.69*	1								
Social anxiety	29.74±9.53	0.81*	0.74*	0.76*	1							
Undeveloped defensive style	112.75±13.05	0.19*	0.15*	0.15*	0.16*	1						
Psychotic Defensive style	48.39±8.74	0.15*	0.16*	0.14*	0.17*	0.57*	1					
Developed defensive style	57.04±9.20	-0.20*	-0.23*	-0.22*	-0.24*	-0.39*	-0.43*	1				
Difficulty in identifying the emotions	15.95±3.65	0.15*	0.24*	0.13*	0.15*	0.24*	0.22*	0.19*	1			
Difficulty in describing emotions	13.51±3.64	0.19*	0.17*	0.18*	0.19*	0.21*	0.19*	-0.21*	0.48*	1		
Objective thinking	24.97±7.18	0.24*	0.24*	0.19*	0.18*	0.20*	0.22*	-0.25*	0.57*	0.61*	1	
Alexithymia	49.59±14.51	0.21*	0.30*	0.28*	0.28*	0.31*	0.28*	-0.30*	0.59*	0.72*	0.68*	1

* $P<0.01$

Table 2. Fit Indices resulted from model analysis

Test Name	Descriptions	Acceptable Levels	Obtained
χ^2/df	Relative Chi-square	<3	2.541
χ^2	Chi-square goodness of fit test	-	437.052
df	Degree of freedom	-	172
RMSEA	Root mean square error of approximation	0.1	0.031
GFI	Goodness of fit index	0.9	0.991
NFI	Normalized fit index	0.9	0.968
CFI	Comparative fit index	0.9	0.994

Table 3. Estimation of the direct effect of social phobia and defensive mechanisms variables on alexithymia in the study sample

Variables	B	β	R2	T	Sig.
Social phobia on alexithymia	0.384	0.290	0.111	4.994	0.001
Undeveloped defensive style on alexithymia	0.310	0.246	0.076	3.987	0.002
Psychotic defensive style on alexithymia	0.357	0.284	0.101	4.877	0.001
Developed defensive style on alexithymia	-0.334	-0.266	0.088	4.124	0.001

Table 4. Estimation of the Indirect Effect of Social Phobia on Alexithymia, Considering the Mediating Role of Defensive Mechanisms, in the Study Sample

Variables	B	CI95%		P
		Lower	Upper	
Social phobia on alexithymia with the mediating role of the developed mechanism	0.314	0.207	0.397	0.001
Social phobia on alexithymia with the mediating role of the psychotic mechanism	0.367	0.234	0.448	0.001
Social phobia on alexithymia with the mediating role of the undeveloped mechanism	0.374	0.227	0.420	0.001

and social phobia affect 48% of the alexithymia variable in the model. In this regard, Pahlavan et al. showed that the severity of the pain has a significant positive correlation with alexithymia and behavioral defensive mechanisms [15]. Also, Besharat et al. showed that defensive mechanisms significantly correlate with alexithymia.

Moreover, the scores of alexithymia and defense mechanisms increase simultaneously [16]. Mesgarian et al. reported a significant relationship between social phobia and developed a defensive mechanism [17]. Lyvers, Scott, and Thorberg showed that social phobia predicts alexithymia [18]. Furthermore, there is a significant relationship between alexithymia, defensive mechanisms, phobia, and depression [19].

Alexithymia is considered a risk factor for many diseases because the people with this serious complication can not express their emotions. This failure hinders the regu-

lation of emotions and makes it difficult to adapt successfully. The people who can promptly express their emotions get relieved of stresses [29]. Consequently, people with alexithymia are characterized by traits, such as difficulty in identifying and distinguishing between emotions, failure to regulate emotions in stressful situations, such as speaking in front of others and social interactions [30].

Thus, these individuals experience emotional distress that reduces the capacity to adapt to stressful situations [31]. When people cannot recognize their emotions, the psychological components of the excitement expression systems, including depression and phobia increases over time. Tesio et al. showed that alexithymia is associated with phobia [32].

Because these individuals cannot properly identify their negative emotions, they have difficulties in depleting and neutralizing these emotions. The lack of emotion regulation ability intensifies the negative disabling emotions

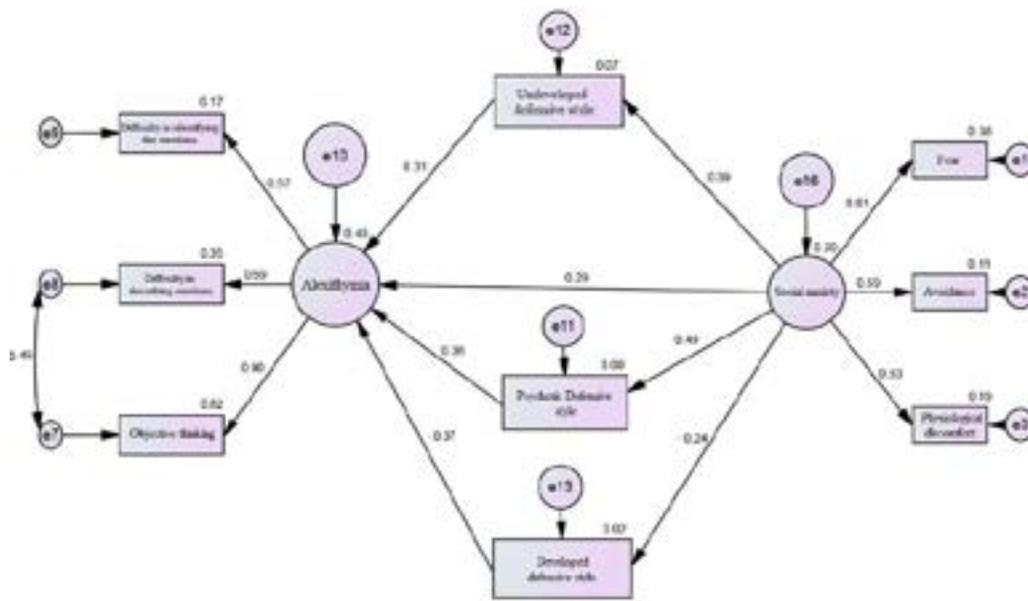


Figure 1. Final model of tested routes with standardized prediction statistics

[33]. The more deficiency in identifying and differentiating the emotions, the more severe the symptoms of phobia and depression. Such difficulty in describing the emotions represents that the person cannot express his or her intrinsic world. The lack of this skill in people with alexithymia leads to decreased social support from other people and social isolation, which cause or exacerbate the social phobia [34]. When the processing of emotional information is disrupted, the people perform poorly in interpersonal interactions, which results in social phobia.

As the people with alexithymia cannot perceive and evaluate the emotional information through the cognitive process, they become emotionally and cognitively distressed. This disability disrupts the person's emotions and cognitions and increases the likelihood of using the undeveloped mechanisms in stressful situations. Also, dominantly using an undeveloped mechanism, the person usually denies and disregards (ignores) the stress and stressful situations. Such denial or ignorance of stress is consistent with theories that believe the people with alexithymia do not experience the phobia symptoms. These theories consider alexithymia as a defense against stress. This condition justifies the positive connection between alexithymia and undeveloped defensive mechanisms.

Alexithymia prevents people from regulating and managing emotions; this failure emerges in defensive mechanisms as undeveloped mechanisms. Emotional action against emotional failure-as the essence of alexithymia-corresponds to the ability of emotional self-regulation, the cognitive process of emotional information,

and emotion regulation [2]. If emotional information is properly perceived and evaluated through cognitive processing, the organization of the emotions and cognitions will function optimally. This optimal functioning leads to the use of the developed defensive mechanisms in stressful situations [6]. The use of the developed defensive mechanisms increases the person's action and emotional management capacity.

This research showed that defensive mechanisms play a mediating role in the relationship between social phobia and alexithymia in the students of the Farhangian University of Sari. Generally, students with adaptive defensive mechanisms have lower scores in social phobia and alexithymia. However, the results are limited to male undergraduate students and the time of the study. Research with a larger sample size in different populations is suggested to make the results more generalizable. Also, psychologists and university counselors should pay attention to the role of maladaptive defensive mechanisms and social phobia to reduce alexithymia in the academic area.

Ethical Considerations

Compliance with ethical guidelines

All ethical principles were considered in this research. The participants were informed about the purpose of the research and assured about the confidentiality of their information. Also, they signed the informed consent form. Moreover, the participants were allowed to

leave the study whenever they wished, and if desired, the results of the research would be available to them. The present study has been registered at Sari Branch University (Code: IR.IAU.SARI.REC.1398.066).

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This study was extracted from the PhD. thesis by Mansour Nasiri and approved by Sari Islamic Azad University.

Authors' contributions

Conceptualization: Reza Donyavi, Yarali Dousti; Drafting and data analysis: Mansour Nasiri; Investigating and data analysis: Reza Donyavi; Editing and review: All authors.

Conflict of interest

The authors declared no conflict of interest.

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