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# Defense Mechanisms, Impaired Emotion Regulation and Intolerance of Uncertainty in Students with and without Social Anxiety: A Comparative Study

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**Abstract**: The present study aimed to compare defense mechanisms, impaired emotion regulation and intolerance of uncertainty in students with and without social anxiety. The research method was causal-comparative and statistical population included all students of the Islamic Azad University of Bandar Abbas (Iran). Participants were 120 people (60 students with symptoms of social anxiety disorder and 60 normal students) were selected by simple random sampling. The research instruments included: Social Anxiety Disorder, Defense Styles, Scale of Difficulty in Emotion Regulation, and Intolerance of Uncertainty. Data were analyzed Multivariate Analysis of Variance (MANOVA). The results indicated that there was a significant difference between two groups in the dimensions of defense mechanisms (developed defense style, immature defense style, and neurotic defense style) ($F=6.86$, $p \leq 0.05$). Also, according to results there was a significant difference between two groups in emotion regulation disorders and their components (rejection of emotional responses, difficulty in performing purposeful behavior, difficulty in controlling impulse, lack of emotional awareness, limited access to emotional regulation strategies, and lack of emotional clarity). In contrast to the average dimension (difficulty in controlling impulse) in normal students is more than students with social anxiety ($F=15.86$, $P \leq 0.05$). According to our results students with symptoms of social anxiety have more stress of uncertainty, negativity of unexpected events, avoidance, and uncertainty about the future compare to normal students.

**Keywords:** Defense Mechanisms, Emotion Disorder, Uncertainty Intolerance, Social Anxiety

## Introduction

Anxiety disorders are among the most prevalent psychiatric disorders (Salari *et al*., 2020) associated with significant developmental, biological, and pathological problems. They damage multiple areas of functioning such as emotional, cognitive, and behavioral, and are usually chronic in nature. They also increase the risk of co-occurrence of several other psychiatric disorders (Clark *et al*., 2017). One of the prevalent and pervasive types of anxiety disorders that have been the focus of extensive research is social anxiety disorder (SAD), which is characterized by a marked and persistent phobia of social and performance situations in which a person may be evaluated. SAD is a condition characterized by a persistent phobia of social situations, specific activities, a phobia of negative evaluation, and avoidance of situations that trigger this phobia (Ahmed, 2017). Intolerance of uncertainty (IU) is a characteristic observed in other emotional dysregulations such as anxiety disorders and depression as well. Studies have shown that many people have experienced SAD in their lives. This disorder is the fourth most prevalent disorder after depression, alcohol abuse, and specific phobia (Cruz, Martins, and Diniz, 2017). It is one of the most common psychiatric disorders in the student population, reported to have many

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psychosocial problems that have negative impacts on their social, academic, occupational, and mental health (Gao, Ping, and Liu, 2020). One of the important psychological aspects of SAD is defense mechanisms (Munir, 2017). Studies have shown that people with mental disorders have an immature and non-adaptive defense style, while the non-clinical population has a far more mature defense style (Calvet, Ouro, and Hankin, 2015). The dominant defense mechanisms in depression are considered to be passive aggression and resentment. Moreover, SAD is significantly related to all types of immature defense styles except for denial (Mesgarian, Azadfalah, Farahani, Ghorbani, 2017). Another important psychological variable in SAD is emotional dysregulation. Gross defines emotion regulation (ER) as a process by which individuals influence what emotions they have, when they have them, and how they experience and express them (Gross, Thompson, 2017). ER is a process through which people regulate their emotions to respond consciously or unconsciously. It is an important part of every person's life, and emotional dysregulation can lead to sadness and even psychological damage (Aigner, Sachs, Bruckmüller, Winklbaur, Zitterl, Kryspin-Exner, Gur & Katschnig, 2017).

The evidence regarding SAD shows that it may be affected by a problem with ER (Sackl-Pammer, Jahn, Özlü-Erkilic, *et al*., 2019). These people predict their lack of internal control over their emotional responses when facing social anxiety situations. The prevalence rate of this disorder in the U.S.A. is reported to be 12.1% and it is the second most prevalent type of anxiety disorder in this country (Holaway, Heimberg & Coles, 2016). Most people with SAD do not seek treatment, and about 70-80% of people with secondary diagnoses receive co-existing disorders such as specific phobia, agoraphobia, major depression, and alcohol abuse (Clark, 2019).

Since university students are considered one of the most important social assets of society, analyzing the issues related to their behavioral characteristics can be of special importance in humanities. Therefore, the general objective of this research is to compare defense mechanisms, emotional dysregulation, and IU in students with and without SAD.

## Material and Methods

A causal-comparative research method was used in this study. Its population consisted of a total of 5000 B. A student of Islamic Azad University, Bandar Abbas branch, in the academic year of 2019-2020, out of whom 120 students (60 students with SAD symptoms and 60 normal students) were selected as the sample. In causal-comparative research, the minimum number of samples should be 15 people (Delavar, 2018). To increase the validity of the research, we selected 60 students for each group by simple random sampling. Multivariate analysis of variance (MANOVA) and SPSS-23 statistical software were used for data analysis.

### Measurement tools

**Social Anxiety Disorder (SAD) Questionnaire**: This test was designed in 1996 by Lina Jerabek to assess social anxiety for ages 10 and higher. It consists of 25 five-choice questions scored with almost always, often, sometimes, and rarely. It contains 5 subscales, namely fear of strangers, fear of evaluation by others, fear of public speaking, fear of social isolation, and fear of manifesting anxiety symptoms.

The total score of the test ranges between 25 and 125. A score below 56 indicates that the person has anxiety as a disorder, one between 56 and 75 indicates that the person has normal anxiety and one above 78 indicates that the person has no SAD. A reliability coefficient of 0.76 has been reported in the studies conducted in Iran for this questionnaire and its construct validity was also confirmed. Its reliability was calculated to be 0.85 using Cronbach's alpha coefficient, which indicates its good reliability. Its validity was measured using Cronbach's alpha method and its internal consistency was reported to be 0.76 (Hashemi, Darvizeh, and Yazdi, 2019). The reliability of the entire questionnaire was calculated as 0.71 using Cronbach's alpha in this study.

**Defense styles Questionnaire (DSQ)**: DSQ-40 was developed by Andrews, Singh, Bond, & Michael in 1993. This questionnaire is a paper-pen, self-report measure containing 40 questions rated on a 9-point Likert scale (ranging from "strongly agree" to "strongly disagree"). It assesses 20 defense mechanisms in three mature, neurotic and immature styles. It has high face validity and its inter-rater agreement (five raters) for the agreement of each defense with its item has been reported to be 0.74 (Andrews *et al*., 1993). The correlation between mature defenses is 0.97, neurotic defenses are 0.94, and immature defenses are 0.95. The internal correlation of the questions with Cronbach's alpha coefficient for a sample of 214 students of Tehran University for each of mature, immature, and neurotic styles was reported to be 0.75, 0.73, and 0.74, respectively (Heidari Nesab and Shoeiri, 2011). The reliability of this questionnaire was calculated using Cronbach's alpha, which was 0.77, 0.72, and 0.74 for mature, neurotic, and immature styles, respectively.

**Difficulty in Emotion Regulation Scale (DERS):** The DERS is a 36-item self-report scale designed by Gratz and Roemer (2004). It is scored on a 5-point Likert scale (from rarely to almost always) and has a total score. The designers of this questionnaire have reported its validity to be acceptable and calculated its reliability using Cronbach's alpha to be 0.93. In Iran, Mazaheri, Ferdowsi, and Motabi (2015) conducted a study using exploratory factor analysis, in which they showed that the 36-question form of this questionnaire in Iranian culture has a 6-factor structure and reported its Cronbach's alpha ($\alpha = 0.90$) and concurrent validity as favorable. The Cronbach's alpha coefficient of this scale was calculated as 0.95 in the current study.

**Intolerance of Uncertainty (IU) Questionnaire**: This questionnaire was designed by Freeston, Rheaume, Letarte, Dugas & Ladouceur (1994) to measure people's rate of tolerance for uncertain situations. This test has 27 five-point questions (never, rarely, sometimes, often, and always) each having 1, 2, 3, 4, and 5 points, respectively. Freeston *et al.* reported its reliability coefficient to be 0.85 through Cronbach's alpha. This scale was revalidated in 2002 by Buhr & Dugas. This tool has also been translated into Persian. Its reliability has been reported as 0.79 using the test-retest method and it has good face validity (Arfaei, Gharamaleki, Besharat and Hekmati, 2011). In the current study, its reliability was obtained as 0.89 using Cronbach's alpha coefficient.

## Results

The sample consisted of 64 men (53.1%) and 56 women (46.9%). Also, 41.6% of the participants belonged to the group of normal students with the highest frequency in the bachelor's degree and the lowest ( 5%) in the Ph.D. degree, while in the group of students with SAD symptoms, the highest frequency (35%) belonged to the associate's degree and the lowest (3.34%) belonged to the Ph.D. degree.

**Table 1**. Mean and SD of defense mechanisms, emotional dysregulation, and IU in the groups under study

| Defense mechanisms | Group | Mean | SD |
|---|---|---|---|
| Mature defense style | Normal students | 88.05 | 14.56 |
| | Students with SAD symptoms | 51.30 | 9.58 |
| Immature defense style | Normal students | 50.27 | 10.72 |
| | Students with SAD symptoms | 74.70 | 11.29 |
| Neurotic defense style | Normal students | 54.11 | 10.21 |
| | Students with SAD symptoms | 85.24 | 13.20 |
| Non-acceptance of emotional responses | Normal students | 9.72 | 2.26 |
| | Students with SAD symptoms | 15.50 | 8.54 |
| Difficulties engaging in goal-directed behavior | Normal students | 7.50 | 1.56 |
| | Students with SAD symptoms | 16.87 | 3.63 |
| Impulse control difficulties | Normal students | 16.04 | 4.48 |
| | Students with SAD symptoms | 8.00 | 2.80 |
| Lack of emotional awareness | Normal students | 10.82 | 8.03 |
| | Students with SAD symptoms | 17.00 | 9.81 |
| Limited access to ER strategies | Normal students | 10.90 | 4.87 |
| | Students with SAD symptoms | 17.80 | 5.05 |
| Lack of emotional clarity | Normal students | 9.11 | 2.87 |
| | Students with SAD symptoms | 16.36 | 9.01 |
| Inability to act | Normal students | 21.70 | 11.25 |
| | Students with SAD symptoms | 20.10 | 10.80 |
| Stressfulness of uncertainty | Normal students | 23.28 | 12.83 |
| | Students with SAD symptoms | 30.86 | 15.02 |
| The negativity of unexpected events and avoidance | Normal students | 15.63 | 8.89 |
| | Students with SAD symptoms | 27.81 | 14.10 |
| Uncertainty about the future | Normal students | 4.11 | 2.54 |
| | Students with SAD symptoms | 12.06 | 5.15 |

According to the results given in Table 1, the mean and SD of "inability to act" in normal students were (21.70 and 11.25), while they were (20.10 and 10.80) in students with SAD symptoms; the mean and SD of "stressfulness of uncertainty" in normal students were (23.28 and 12.83), while they were (30.86 and 15.02) in students with SAD symptoms; the mean and SD of "negativity of unexpected events and avoidance" in normal students were (15.63 and 8.89), while they were (27.81 and 14.10) in students with SAD symptoms; and the mean and SD of "uncertainty about the future" in normal students were (4.11 and 2.54), while they were (12.06 and 5.15) in students with SAD symptoms.

According to the results given in Table 1, the mean and SD of the mature defense style of normal students were (88.05 and 14.56), while they were (51.30 and 9.58 for students with SAD symptoms; the mean and SD of the immature defense style of normal students were (50.27 and 10.72), while they were (74.70

and 11.29 for students with SAD symptoms; and the mean and SD of the neurotic defense style of normal students were (54.11 and 10.21), while they were (85.24 and 13.20) for students with SAD symptoms. Table 2 presents the mean and SD of emotional dysregulation and its components in the groups under study.

**Table 2**. Results of MANOVA on the dimensions of defense mechanisms

| Source of change | Dependent variable | SS | DF | MS | F | p | Eta |
|---|---|---|---|---|---|---|---|
| Model | Mature defense style | 234253.012 | 1 | 234253.012 | 258.097 | 0.001 | 0.768 |
| | Immature defense style | 11882.813 | 1 | 11882.813 | 37.855 | 0.001 | 0.327 |
| | Neurotic defense style | 89891.401 | 1 | 89891.401 | 37.760 | 0.001 | 0.566 |
| Group | Mature defense style | 10374.012 | 1 | 10374.012 | 11.430 | 0.001 | 0.128 |
| | Immature defense style | 1757.813 | 1 | 1757.813 | 5.600 | 0.020 | 0.067 |
| | Neurotic defense style | 58.8.368 | 1 | 58.8.368 | 6.575 | 0.012 | 0.078 |
| Error | Mature defense style | 70793.975 | 117 | 907.615 | | | |
| | Immature defense style | 24484.375 | 117 | 313.902 | | | |
| | Neurotic defense style | 68902.708 | 117 | 883.368 | | | |

According to the results presented in Table 2, the mean and SD of "non-acceptance of emotional responses" for normal students were (15.50 and 8.54), while they were (9.72 and 2.25) for students with SAD symptoms; the mean and SD of "difficulties engaging in goal-directed behavior" for normal students and students with SAD symptoms were (16.87 and 3.63), respectively; the mean and SD of "impulse control difficulties" for normal students were (16.04 and 4.48), while they were (8.00 and 2.80) for students with SAD symptoms; the mean and SD of "lack of emotional awareness" for normal students were (10.82 and 8.30), while they were (17.00 and 9.81) for students with SAD symptoms; the mean and SD of "limited access to ER strategies" for normal students were (10.90 and 4.87), while they were (17.80 and 5.05) for students with SAD symptoms; and the mean and SD of "lack of emotional clarity" for normal students were (9.11 and 2.87), while they were (16.87 and 9.01) for students with SAD symptoms.

**Table 3**. Results of the MANOVA test on the dimensions of IU

| Source | Test | SS | DF | MS | F | p | Eta |
|---|---|---|---|---|---|---|---|
| Group | Non-acceptance of emotional responses | 256.017 | 1 | 256.017 | 4.281 | 0.001 | 0.385 |
| | Difficulties engaging in goal-directed behavior | 56.067 | 1 | 56.067 | 7.315 | 0.009 | 0.112 |
| | Impulse control difficulties | 43.350 | 1 | 43.350 | 2.515 | 0.008 | 0.242 |
| | Lack of emotional awareness | 114.750 | 1 | 114.750 | 3.746 | 0.001 | 0.224 |
| | Limited access to ER strategies | 114.817 | 1 | 114.817 | 2.878 | 0.001 | 0.247 |
| | Lack of emotional clarity | 234.233 | 1 | 234.233 | 3.102 | 0.001 | 0.233 |

**Table 4**. Results of the MANOVA test on the dimensions of IU

| Source of change | Dependent variable | SS | DF | MS | F | p | Eta |
|---|---|---|---|---|---|---|---|
| Group | Inability to act | 20002.812 | 1 | 20002.812 | 0.699 | 0.123 | 0.023 |
| | Stressfulness of uncertainty | 1824.050 | 1 | 1824.050 | 4.858 | 0.001 | 0.159 |
| | The negativity of unexpected events and avoidance | 6808.050 | 1 | 6808.050 | 5.233 | 0.001 | 0.120 |
| | Uncertainty about the future | 7425.060 | 1 | 7425.060 | 12.296 | 0.001 | 0.117 |

As Table 4 shows, there is a significant difference between normal students and those with SAD symptoms in all the dimensions of IU, except for "inability to act", that is, in the dimensions of (stressfulness of uncertainty, negativity of unexpected events, and avoidance, and uncertainty about the future) ($p<0.05$). Therefore, this hypothesis is confirmed and the dimensions of (stressfulness of uncertainty, negativity of unexpected events and avoidance, and uncertainty about the future) are different in normal students and students with SAD symptoms. The results show that the dimensions of (stressfulness of uncertainty, negativity of unexpected events and avoidance, and uncertainty about the future) are observed more often in students with SAD symptoms than in normal students. Besides, there is no significant difference between normal students and students with SAD symptoms in terms of "inability to act".

## Discussion

This study was aimed at comparing defense mechanisms, emotional dysregulation, and IU in normal students and those with SAD symptoms. The results indicated a significant difference between them in terms of the dimensions of defense mechanisms (mature defense style, immature defense style, and neurotic defense style). According to the results, immature and neurotic defense styles were more present among students with SAD symptoms than among normal students, while the mature defense style was more present among normal students than among those with SAD symptoms. The results of this hypothesis are consistent with the findings of Besharat, Hafezi, Shirazi, and Ranjbari (2018), Mesgarian *et al.*, and de Roten, Djillali, Crettaz Von Roten, Despland, & Ambresin. Besharat *et al*. (2017) concluded that immature defense mechanisms were the dominant defenses of people suffering from depression, neurotic mechanisms were the defenses of most people with anxiety disorders, and mature mechanisms were the defenses of most normal people. Mesgarian *et al*. (2016) found a weak correlation between the mature defense style and social anxiety. Rationalization and dissociation mechanisms, which belong to the immature defense style, had an inverse correlation with social anxiety. The second finding of the research showed that difficulty in ER and its components (non-acceptance of emotional responses, difficulties engaging in goal-directed behavior, lack of emotional awareness, limited access to ER strategies, and lack of emotional clarity) were more present in students with SAD symptoms than in normal students. Impulse control difficulties were also observed more among students with SAD symptoms than among normal students. The findings of this research are consistent with those of Abolghasemi and Soltani (2019); Davoodi, Neshat Doost, Abedi and Talebi (2014);

Eftekharzadeh, Hosseinian, Shams, and Yazdi (2016); Jalali Bajd and Ahi (2017); Obeid, Haddad, Fares, Malaeb, Sacre, Akel, *et al,* (2021); and Tundo, Betro & Necci (2021). Most of the studies have focused on anxiety disorders and depression and considered them to emanate from ER problems. These results show that inefficient ER is one of the main features of anxiety disorders. Accordingly, anxious people face difficulties using emotion management strategies when faced with negative emotions and show less efficiency in improving negative moods. moods anxiety and generalized anxiety have a significant correlation with ER problems in early adolescence. Therefore, it can be concluded that people with SAD face problems selecting cognitive ER strategies. People with SAD use less positive cognitive ER strategies than the normal group. People suffering from SAD use strategies of positive refocusing, refocus on planning, positive reappraisal, and putting into perspective to regulate their emotions.

To explain the result, we can say that many of the studies conducted about emotion have focused on the role of regulating the consequences of emotion on behavior and cognition. When a person faces an emotional situation, having good feelings and optimism alone will not be enough for them to control their emotions. Recent research on ER shows that this concept has roots in the study of psychological defenses, psychological stress and coping, attachment theories, and emotion theories (Sivandian and Besharat, 2019).

The research findings also indicated a significant difference between normal students and those with SAD symptoms in terms of uncertainty about the future. The results also showed a significant difference between the students with hoarding disorder (HD) and those with SAD symptoms in terms of all dimensions of IU, except for "inability to act"; that is, there was a difference between the two groups in terms of all the other dimensions of IU, including stressfulness of uncertainty, the negativity of unexpected events and avoidance, and uncertainty about the future. According to the results, the dimensions of (stressfulness of uncertainty, negativity of unexpected events and avoidance, and uncertainty about the future) were observed more in students with SAD symptoms than in students with HD symptoms, but there is no significant difference between the two groups in terms of inability to act. The results of this hypothesis are consistent with the findings of previous studies, including Tashkeh, Emami, Bakhtiari, and Jafari (2018) and Alizadeh Fard and Alipour (2020). Uncertainty, ambiguity, and unpredictable changes inherently exist in social situations. Therefore, it is possible that the intolerance of uncertainty, ambiguity, and unpredictable changes that have been effective in reaching stressful uncertainty which negatively affects the person and is associated with fear (for example, fear of being scolded), avoidance (for example, talking to strangers) and physical discomfort (for example, blushing and trembling with a shaky voice) that some people experience in such situations.

There is a significant negative relationship between clinical levels of SAD and emotional perception. However, this relationship was not found in non-clinical levels of social anxiety. Moreover, the obsessive-compulsive group had a weaker perception of emotion than the two patient groups (Generalized Anxiety and Social Anxiety groups), but the two Generalized Anxiety and Social Anxiety groups performed similarly. The results of this part of the research are consistent with the findings of

Tashkeh *et al*. (2018); Ghazanfari and Badri (2019), and Ozmete and Pak (2020). For example, Ghazanfari and Badri (2019) concluded that SAD in adolescents is related to anxiety sensitivity and negative emotional regulation and causes generalized anxiety disorder, which confirms the results of other studies in this field. Tashkeh *et al*. (2018) found a significant difference in IU between the two groups of people suffering from body dysmorphic disorder (BDD) and those suffering from SAD. IU was significantly higher in the SAD group than in the BDD group. The results also showed that people with SAD experienced negative emotions more intensely than positive emotions. To explain this result, we can say that people who have uncertainty perceive ambiguous situations as threatening, while those who have IU need more information before deciding on ambiguous situations. The result of this way of thinking is worry and anxiety, and people who have IU exhibit less confidence in their decisions in ambiguous situations. They generally show a lot of anxiety and worry about their decisions. The result of this hypothesis can be considered to be consistent with the finding of a study by Alizadeh and Alipour (2020) on the Path analysis model in the prediction of corona phobia based on intolerance of uncertainty and health anxiety, showing that health anxiety and IU have a positive direct relationship with corona phobia.

There are limitations for most studies in the field of humanities and social sciences, as this study faced the following limitations: the use of self-report questionnaires, which may trigger biased results, the impossibility of controlling the socio-economic status or measuring the mental disorders of students and the possibility of the indirect effect of these variables on the research results as interfering and mediating variables. It had other limitations as well, including the sample size and the lack of control over some variables such as the use of medication. The following suggestions can be made based on the results of this study: IU should be considered an important indicator in the diagnosis, treatment, and recovery of people with anxiety disorders. Therefore, it is suggested that these people receive training to improve and tolerate uncertainty and that future research compare the IU of people with anxiety disorders and those with other mental disorders. Since ER, moderation, and management of emotions can be improved to some extent through skill training, positive ER skills bring positive adaptation in healthy and unhealthy people. Therefore, it is suggested that the authorities pave the way for enhancing the mental well-being in people's lives through appropriate training in different ways.

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