

The Relationship between Differentiation of Self and Social Anxiety with the Mediating Role of Mindfulness in Obese Women

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Abstract

Objective: Social anxiety disorder is commonly reported among obese individuals. Research has shown that people with high differentiation of self-experience less social anxiety. Mindfulness as a key mediating variable can have a significant effect on reducing social anxiety. Therefore, the aim of this study was to investigate the relationships between differentiation of self and social anxiety with the mediating role of mindfulness in obese women.

Methods: It is a non-experimental and correlation research based on path analysis. The study population consisted of all people referred to the Ayat Health Center of Tehran located in the district 19 with a BMI ≥ 30 and under the supervision of the specialist of the center during the first 6 months of 2018. The final sample consisted of 103 participants, selected by simple random sampling. In this study, the data were collected by means of social phobia, differentiation of self, and mindfulness questionnaires. Fitness of the proposed model was examined by the structural equation modeling (SEM) using LISREL and SPSS software version 18.

Results: Mindfulness plays a mediating role in the relation between differentiations of self and social anxiety. The proposed model also fitted well with the data.

Conclusion: Considering the important role of mindfulness in reducing social anxiety, mindfulness seems to be essential to teach in Health Center Education Programs.

Keywords: Mindfulness; Differentiation of Self; Social Anxiety.

Introduction

Obesity as a chronic disease is a predisposing factor for certain diseases, such as cardiovascular disease, type 2 diabetes and some types of cancer. Along with increasing prevalence of overweight, it is estimated that by 2030, 50% of the world's population will be obese (Sobol-Goldberg & Robinowitz, 2016). Besides the physical problems, the results from other studies have demonstrated that obesity is associated with an increased risk of adverse psychological consequences (Williams, Wake, Hesketh, mabers & Waters, 2005, cited by Aliakbari Dehkordi, Yaminishad, Pourhosein,

Mohtashami, Dortaj, 2019). Psychological and social problems are as follows: negative self-image, lower educational level, limited friends, looking older, decreased self-confidence, social isolation, and depression (Anderson, Cohen, Naumova & Must, 2007, cited by Aliakbari Dehkordi, Yaminishad, Pourhosein, Mohtashami, Dortaj, 2019).

Social anxiety disorder (SAD), formerly called social phobia, is a chronic anxiety disorder characterized by severe fear and the avoidance of functional and social situations (Shannon, 2012). It is also an emotional state characterized by a clear and constant anxiety and fear of being negatively judged in social situations (Kingsbury & Coplan, 2016).

Research shows that social anxiety is associated with concern about body, obesity and eating

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disorders (Yousefi, Tadiibi & Hassani, 2010).

Social physical anxiety is considered as a subset of social anxiety and an individual feels slighted by mockery of his/her physical appearance (Hart, Leary, Rejeski, 1989, Motle & Conroy, 2000, cited by Poursharifi, Hashemi Nosrat abadi, & Ahmadi, 2014).

Moss (2005) postulates that if one perceives himself differently from the others, in other words, he negatively assesses his physical qualities; he may experience more social problems, less responsive reactions than others and thus expresses a weaker overall consistency. Given that obese people have distorted the estimations of their physical characteristics, and are negatively assessing their visual qualities, they are at risk of social anxiety. Blank, Berg, and Mellaville (2006) have shown that obese children are concerned about their presence and their body images, with overweight girls more likely to experience problems such as low social interaction and poor presence in the community.

Some studies show that there is a significant relationship between poor performance of the family and physical symptoms, anxiety, sleep disorder, depression and social anxiety disorder (Zargar, Ashoori, Asghari Pour & Aghebati, 2007). In fact, since family environment is considered as the most influential factor in shaping the personality and identity of individuals, they learn how to deal with others in anxiety or daring towards others first in the family. One of the main family patterns transmitted to children is the degree of "differentiation of self" (Maser, 2011).

Differentiation of self refers to how an individual maintains state of his "I-Position" when confronting different situations. Individuals who differentiate themselves and their beliefs have a clear definition and are able to choose their own way of life. They can make the wise and logical decisions in cases that some people engage in involuntary behaviors and inaccurate decisions (Pirsaghi, 2012). According to Bowen theory, a person who

has reached a balanced differentiation of self in the family experiences the lowest level of anxiety and psychological symptoms. People who are not self-differentiated are emotionally withdrawn and unable to communicate with others in stressful times (Guvén, 2010) and also more easily excited. Their lives are influenced by the reaction of their surrounding people. A differentiated person on the flip side is able to balance between his thoughts and feeling, prone to excitement and strong self-esteem, but still has self-control, which results from the ability to withstand the tension of emotional excitement. In contrast, the undifferentiated person usually reacts hastily to obedience or disobedience to other people. They have difficulty maintaining their autonomy, especially around anxiety issues (Williams, 2012).

According to Miller (2004), the main consequence of the low level of differentiation is the experience of chronic anxiety by family members. Miller (2004) argues that as chronic anxiety increases, the degree of differentiation decreases. According to Pelge and Yitzhak (2010), the severity of the reaction of individuals to this anxiety is based on how the parent transmits anxiety. Anxiety may differ in accordance with the structure of the family or the cultural systems of the individual; however, it is a similar phenomenon for all.

Regarding the underlying mechanisms of differentiation of self with social anxiety, one must pay attention to the role of individuals' cognition. One of the possible mechanisms in the negative relationship between differentiation of self and anxiety is that people with a low level of differentiation have less adaptability to stress, and in stressful situations, negative automatic thoughts are processed faster, which creates lasting anxiety about future stressful events (Maser, 2011).

There is a relationship between cognition and excitement as the linear relationship is found between feelings and thoughts in the Aaron Beck

model. However, the process of change involves the processing of emotions at the implicit level of cognition. The concept of “mindfulness” or consciousness is attention to the presence of mind when processing emotions are the keys to the relationship between differentiation of self and anxiety.

The presence of the mind is usually defined as awareness and attention to what is happening in the present (Brawn & Ryan, 2003). Researchers have shown that increased mind attendance is associated with a variety of health outcomes such as the relief of pain, anxiety, depression, eating disorders, and stress and other diseases. Hence, the mind helps people get rid of automatic thoughts, habits and unhealthy behavior patterns and thus can play an important role in behavioral regulation (Ryan & Deci, 2000).

Mindfulness means paying attention to a specific, purposeful way of being present and without judgment. (Kabat Zinn, 2003). Mindfulness means being in the moment with everything that is present without judgment and without commenting on what is happening, i.e. experiencing pure reality without explanation (Segal, Williams & Teasdale, 2002). The basic concept of mindfulness is taken from Buddhist meditation exercises, which increases the capacity for continuous and intelligent attention that goes beyond thought. Meditation and mindfulness exercises in patients can build their self-awareness and acceptance considerably. Although various methods and techniques have been used to create mindfulness, it is not a technique. Mindfulness can be described as a method of «being» or «understanding», which requires understanding personal feelings (Baer, 2003).

Mindfulness has also been linked to the symptoms of social anxiety both theoretically and empirically, individuals suffering from SAD will experience negative thoughts about social evaluation (Herbert & Cardaciotto, 2005, Cited by

Clerkin, Sarfan, Parsons, Magee, 2017).

The prevalence of overweight and obesity in the Eastern Mediterranean Region is higher in women with higher socioeconomic status as compared to Europe and North America. For example, In Jordan, the prevalence of overweight and obesity was 56% in urban population versus 44% in rural population. There are similar trends in the Islamic Republic of Iran, Egypt Morocco, Oman, Tunisia and Turkey (Musaiger, 2004, cited by Rabie, 2010).

One of the necessities of the present study, according to Khabazkhab, Fotohi, Hashemi, Mohammad (2008), given that obesity is more common in women and an obesity epidemic is predicted in Tehran population.

In addition, women’s mental health is not only beneficial for themselves, but also it is vital for the society. It is unclear how applicable these findings on mindfulness are to non-western cultures, like Iran, which are more collectivist in nature. We, therefore, conducted this study to investigate the mediator role of mindfulness in the relationship between social anxiety and self-differentiation in Iranian obese adults. Therefore, the research question is:

Does mindfulness mediate the relationship between differentiation of self and social anxiety in obese women?

Materials and Methods

This is a non-experimental research and the correlation one based on path analysis. The study population consisted of all clients referred to the Ayat Health Center of Tehran located in the district 19 with a BMI ≥ 30 and under the supervision of the specialist of the center during the first 6 months of 2018. According to information obtained from the Health Center system, the total number of people was 140. To obtain sample size, Morgan formula was used at the 95% confidence interval. According to this formula, 103 people were selected through simple random sampling and questionnaires were

provided to them. Questionnaires were distributed and collected in collaboration with physician secretary in charge of health center and nutritionist. All participants received the informed consent forms and all necessary information such as the research objectives, confidentiality assurance, and non-disclosure of the subjects' information were provided to them. We gained their trust and satisfaction. There was no need to write their name on the questionnaire. Also, we explained that if participants were reluctant to continue, they can stop participating at any time.

Differentiation of Self Inventory (DSI)

In order to investigate differentiation of self in this study, Scowron and Friedlander's (1998) Differentiation of Self Inventory (DSI) was used. This questionnaire consists of 43 items including 4 subscales of 1- Emotional reactivity, 2- I position, 3- Emotional getaway and 4- Intermingling with others. To rate each item, respondents used a 6-point Likert-type scale, ranging from not at all true of me (1) to very true of me (6). Scowron and Friedlander (1998) reported an acceptable internal consistency of 0.88 for this tool. Also, the researchers measured the reliability of the subscales of this questionnaire for emotional reactivity subscales (0.84), I position (0.83), emotional getaway (0.82) and intermingling with others (0.74), respectively. The scoring of the questionnaire is based on a 6-point Likert scale of 1 (not at all true to me) to 6 (very true to me). To calculate the score for each subscale, the items of each subscale is summed up. To calculate the overall score, all the items of the scale are accumulated. In Iran, the content validity of this questionnaire was confirmed by a group of experts (10 people) (Latifian & Fakhari, 2014). Askian (2005) reported the Cronbach's alpha for the overall scale of differentiation as 0.81 and for the subscales as 0.80, 0.80, 0.80, and 0.74, respectively. Cronbach's alpha in this research for the overall scale of differentiation is reported as

0.78 and for the subscales as 0.80, 0.79, 0.79, and 0.71, respectively.

Social Anxiety Inventory (SAI)

In this research, the dimensions of social anxiety of subjects were assessed using Connor, Davidson, Churchill (2000), Social Anxiety Inventory. The questionnaire assesses three clinical areas of social phobia, namely fear, avoidance, and physiological symptoms of the disorder. The inventory consists of 17 items with three subscales of fear (6 items), avoidance (7 items) and physiological symptoms (4 items). Each item is scored on a five-point Likert scale (0 = not at all, 1 = a little bit, 2 = somewhat, 3 = very much, 4 = extremely). Based on the results obtained for the interpretation of the scores, the cut-off point of 40 with 80% accuracy and the cut-off point of 50% with the 89% accuracy distinguish people with social phobia from other individuals (Connor et al., 2000, cited by Fathi Ashtiani et al., 2009).

This questionnaire has a high validity and reliability. Its validity was confirmed using test-retest in groups with the diagnosis of social phobia as 0.78 to 0.89, and its internal consistency coefficient (Cronbach's alpha) was reported in a normal group as 0.94. Furthermore, the coefficients were reported for the subscales of fear as 0.89, avoidance as 0.91 and, physiological symptoms as 0.80. The construct validity was compared to the results of this test in two groups of subjects with social phobia disorder and subjects in the normal group without psychiatric diagnosis, which showed a significant difference, indicating its high validity (Salajegheh & Bonyani, 2014). In this study, Cronbach's alpha was 0.79 for the overall scale of social anxiety and 0.78 for the subscales of fear, 0.75 for avoidance, and 0.75 for physiological symptoms.

Five Facet Mindfulness Questionnaires (FFMQ)

To reveal the possible aspects of mindfulness

structure Baer et al (2006) developed this tool with integrating the available tools of Mindful Attention Awareness Scale (MAAS), Freiburg's Mindfulness Inventory (FMI), Cognitive and Affection Mindfulness Scale (CAMS), and Mindfulness Questionnaire (MQ). The final structure consisted of 39 items. Baer et al (2006) reported that the factor structure and its psychometric properties were appropriate for an American sample (0.86). The results of factor analysis have identified five factors that evaluate the various aspects of mindfulness. These factors include observing, describing, acting with awareness, non-judging, and non-reactivity. All items are scored on a five-point Likert scale, ranging from 1 (*never or very rarely true*) to 5 (*very often or always true*). The range of scores for this scale is 39-195. From the scores of each sub-scale, there is a general score showing that the higher the score, the more the mindfulness will be. In a study conducted on validation and reliability of this questionnaire in Iran, the correlation coefficients of test-retest of FFMQ questionnaire in the Iranian sample ranged from 0.57 (non-judgmental factor) and 0.84 (observation factor). Also, Cronbach's alpha was obtained at acceptable

levels 0.55 for non-reactivity factor and 0.83 for the description factor (Ahmadvand, 2011). In this study, Cronbach's alpha was 0.68 for non-reactivity factor and 0.71 for the description factor.

Findings

The data from 103 participants (with an average age of 34.44) were analyzed. Of the 103 participants, 4 had elementary education, 18 had a high school education, 40 had high school diploma and associate degree, and 38 had a bachelor's degree and 3 the master's degree. Also, 21 subjects were single and 82 were married. The descriptive indexes of the study variables are presented in Table (1).

As shown in Table 1, all study variables had an absolute value of the skewness smaller than 3 and the Kurtosis less than 10, so the violation of the normality of the data was not visible. In addition, the evaluation of multivariate and pertinent data showed that there were no overlapping data in any of the measured variables.

Our results also indicated that the tolerance values for variables were higher than 0.1, indicating a lack of multiple synergies between variables. Also, the variance inflation factor obtained for the

Table 1: The descriptive indexes of the variables under study

Descriptive indices	Variables	Mean	SD	Skewness	Kurtosis
Mindfulness		83.116	36.17	233.0-	281.0-
Observing		14.26	50.4	657.0-	368.0
Describing		26.21	68.3	035.0	148.0-
Acting with awareness		52.23	53.4	038.0-	286.0-
Non-judging		63/23	18.4	060.0-	634/0-
Non-reactivity		28.22	22.4	214.0-	348.0-
Social anxiety		88.24	23.9	050.0	715.0
Fear		82.8	56.3	197.0	508.0-
Avoidance		24.10	43.4	335.0	404.0-
Physiologic discomfort		83.5	47.2	068.0-	810.0-
Differentiation of self		87.147	49.29	016.0-	048.0
Emotional reactivity		17.38	06.8	121.0-	016.0-
I position		59.37	83.7	190.0	007.0
Emotional cutoff		59.41	32.8	036.0	087.0-
Fusion with others		51.30	45.6	084.0-	249.0

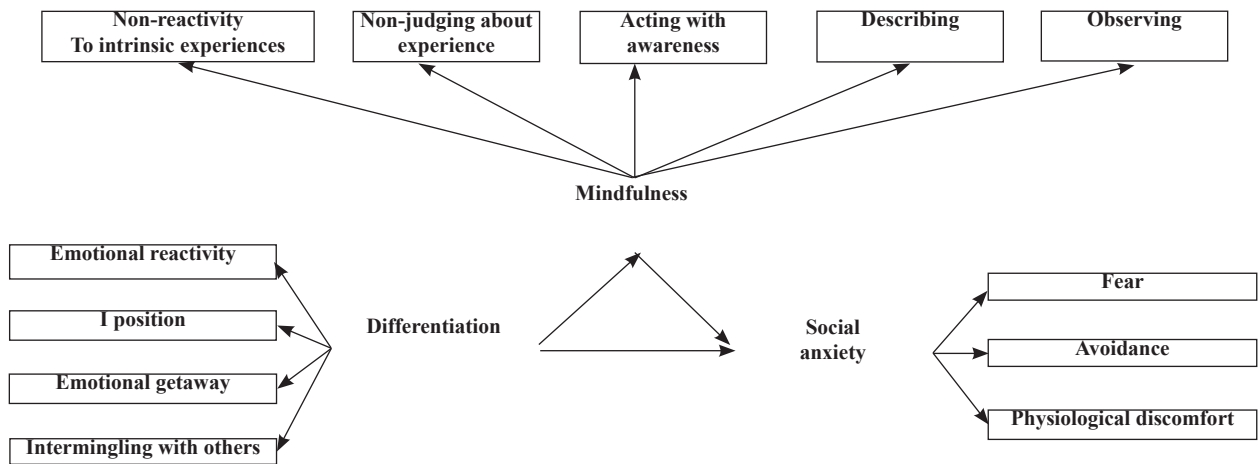


Figure 1: Proposed model of the research

variables was less than 10, indicating that there were no multiple linear relationships between the variables. Therefore, the structural assumptions for structural equation modeling were satisfied. Figure (2) shows the fittest pattern of the predictive variable of social anxiety in women.

According to the results, all paths were significant. Among the variables in the model, mindfulness had the most direct effect (-0.47) on social anxiety. Fit features of the path analysis are presented in Table (2).

The RMSEA is the most commonly used index for model fitness. If the index is lower than 0.1 and the p-value obtained at the level of 0.05 is significant, the fit of the model is confirmed. Also, if the result of dividing the chi-square by df is less

than 3, then the fitting of the model is confirmed (Hooman, 2008). In this model, the result is equal to 2.96. According to table (2), since the RMSEA for this model was 0.05, it can be claimed that the model was well fitted to the data. Also, given that the values of other fitness indicators are in the desired range (higher than 0.9) (Hooman, 2008), we can say that the results of the indicators are based on the fitting of the approved model. Table (3) presents the direct, indirect and total coefficients and significance level among the study variables.

As can be seen in Table (3), there was an indirect relationship ($\beta = 0.31, t = 16.32$) as well as a total relationship ($\beta = 0.31, t = 16.32$) between differentiation of self, mindfulness and social anxiety. Also, there was a direct relationship ($\beta =$

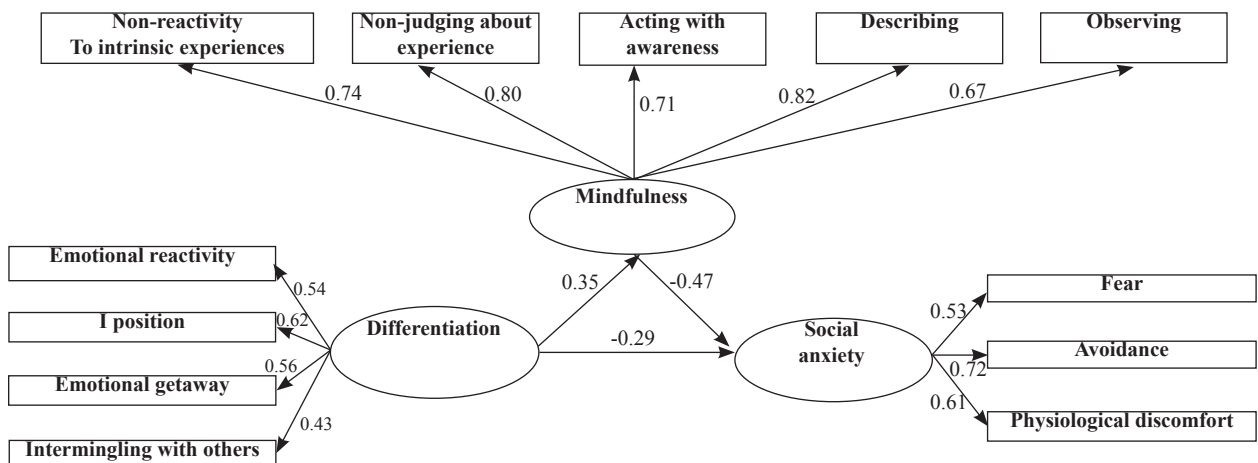


Figure 2: Direct effects and path coefficients in the proposed model

Table 2. Fitness Model Indicators

Indicators	c ²	df	c ² / df	GFI	AGFI	IFI	TLI	CFI	NFI	RMSEA
Proposed model	313.33	70	4.47	0.91	0.90	0.91	0.90	0.90	0.91	0.05

-0.35; t=8.42) and a total relation ($\beta = -0.35$; $t = 8.42$) between the differentiation of self and mindfulness. Furthermore, there was a direct relationship ($\beta = -0.47$, $t = -9.31$) and a total relationship ($\beta = -0.47$, $t = -9.31$) between mindfulness and social anxiety. Moreover, there was a direct relationship ($\beta = -0.29$, $t = -10.5$) and a total relationship ($\beta = -0.29$, $t = -10.5$) between differentiation of self and social anxiety.

Discussion and conclusion

The findings of this study supported the mediating role of mindfulness in the relationship between differentiation of self and social anxiety. These results are consistent with those of previous studies (Schmertz et al., 2012). The result of the study performed on 98 subjects diagnosed with social anxiety, showed that mindfulness has a negative correlation with the symptoms of social anxiety and this relationship is largely mediated by cognitive assessments about the probability of occurrence and cost of negative social consequences. Individuals with social anxiety have lower levels of acceptance experiences and thoughts without judgment, so they experience more maladaptive coping strategies because they suffer from internal anxious and social dysfunction (Herbert & Cardaciotto, 2005 Cited by Clerkin, Sarfan, Parsons, Magee, 2017). Indeed, people with difficulty in acting with awareness in the present moment may be distracted by self-focused attention and negative affect, resulting in higher social anxiety (Clerkin, Sarfan, Parsons &

Magee, 2017). As Schmerts et al. (2012) pointed out; social anxiety is a serious problem affecting relationships and performance of individuals. Some studies have focused on identifying its antecedents (such as environmental and familial factors), but only a limited number of studies have investigated why these antecedents are associated with social anxiety. In this study, mindfulness has been shown to act as a psychological mechanism through which self-differentiation affects social anxiety.

Also, the results of Pearson correlation indicated that simple relationships between differentiation of self and mindfulness, mindfulness and social anxiety, and differentiation of self and social anxiety were significant. In line with the result of the negative relationship between mindfulness and social anxiety, it can be pointed out that this relationship is largely based on the documented role of incompatible attention processes in maintaining social anxiety (e.g. attention to internal symptoms from negative thinking and self-image). Although the definition of mindfulness is different among scholars and researchers, the notion that mindfulness involves increasing the attention and awareness of the moment is common in different definitions (Schmertz et al., 2012). It may be possible to increase the awareness of the person to focus on social work (Schmertz et al., 2012). The effect of mindfulness may be due to improvement in the ability to regulate the emotions and reduce the mental rumination (Schmertz, 2008). Mindfulness can reduce post-event processing by reducing the

Table 3. Estimates of the cumulative coefficients of direct, indirect and total effect

Path	Direct effect	Indirect effect	t-statistic	Total effect
Differentiation of self to mindfulness to social anxiety	-	0.31*	16.32	0.31**
Differentiation of self to mindfulness	0.35*	-	8.42	0.35**
Differentiation of self to social anxiety	-0.47**	-	-9.31	-0.47**
Mindfulness to social anxiety	-0.29**	-	-10.05	-0.29**

distress of a person during a social or functional situation. (Schmertz et al., 2012), and recent research suggests that postural rumination plays an important role in maintaining social anxiety (Schmertz, 2008). Therefore, mindfulness may be effective due to the decrease in mental rumination (Schmertz et al., 2012).

Cassin and Rector (2011) compared the effect of mindfulness on post-event processing in people with generalized social anxiety and control group. The results of this study showed that mindfulness reduces distress in post-event processes.

The results of the research showed that there is a significant negative relationship between differentiations of self and mindfulness. In the interpretation of this finding, it can be said that, according to Linnaean (1993), the presence of mind plays a special role in reducing impulsivity and maladaptive behaviors. This skill generates attention control and is a good skill for people who are having difficulty in completing important assignments due to distractions caused by worries, negative memories or moods. On the flip side, differentiation is the process of individual relative liberation from family emotional anarchy. Liberation requires analyzing its role as an active participant in the systems of relationships, and the presence of the mind is in the sense of staying and rationally behaving in the face of irritable pressures and plays an important role in creating this skill and the mindfulness increases this skill. Some cross-sectional studies showed that mindfulness is negatively associated with symptoms of SAD among undergraduate students (Rasmussen & Pidgeon, 2011, Cited by Clerkin, Sarfan, Parsons, Magee, 2017) and people with clinical levels of SAD (Schmertz, Masuda, & Anderson, 2012 Cited by Clerkin, Sarfan, Parsons, Magee, 2017).

Also, our results showed that there is a negative relationship between differentiation of self and social anxiety. One of the possible reasons for the relationship between chronic anxiety

and differentiation is that poorly differentiated individuals are more anxious about leaving their nuclear families and accepting their own responsibilities. They lack the ability to manage their own lives and take care of themselves. Also, people with low level of differentiation have less adaptive power to stress, which creates lasting anxiety about future stressful events.

This study included several limitations. Firstly, the sample was restricted to only one Iranian health centre in Tehran; the results may not be generalizable to other settings or age groups. Furthermore, all participants were female. We only considered mindfulness as a mediating variable while other factors may be important. In addition, our assessment of mindfulness was based on self-reported data and future research should use other assessment methods such as peer-reports and interviews. As this was a cross-sectional study, experimental and longitudinal studies are required to establish causality.

In terms of clinical implications, more research is needed to examine the role of mindfulness in people diagnosed with psychiatric disorders. Mindfulness Based Stress Reduction, focusing on training the mindfulness or elevating flexible and nonjudgmental attention, has been demonstrated to successfully decrease symptoms of social anxiety (e.g., Goldin, Ramel, & Gross, 2009; Jazaieri, Goldin, Werner, Ziv, & Gross, 2012; Kabat-Zinn, 1990; Kocovski, Fleming, & Rector, 2009, Cited by Clerkin, Sarfan, Parsons & Magee, 2017).

The results obtained from this study showed that mindfulness skills can be beneficial for people with generalized social anxiety. Mindfulness education program needs to be included in the training courses for health centers, and the development of general knowledge about the role of effective variables in social anxiety and how to repair and control them should be taken into account in order to reduce psychological damages.

The authors declare no conflict of interest.

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