



# Emotion regulation, negative self-evaluation, and social anxiety symptoms: The mediating role of depressive symptoms

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## Abstract

Due to the high rate of comorbidity of social anxiety disorder and major depressive disorder, this study aimed to examine the mediation effect of depressive symptoms on the association between emotion regulation, negative self-evaluation, and social anxiety symptoms. The population of this study consisted of all students of the Faculty of Architecture, Islamic Azad University. The sample included 284 of the students based on convenience sampling method. Depressive symptoms were measured by Beck Depression Inventory-II (Beck et al., 1996), emotion regulation was measured by Cognitive Emotion Regulation Questionnaire (Garnefski et al., *Personality and Individual Differences*, 30(8), 1311–1327, 2001), social anxiety was measured by Social Phobia Inventory (Connor et al., *Depression and Anxiety*, 14(2), 137–140, 2001) and, negative self-evaluation was measured by Consequences of Negative Social Events Questionnaire (Wilson and Rapee, *Journal of Anxiety Disorders*, 19(3), 245–274, 2005). We used Path analysis to test the significance of mediation. The result of the study indicated that the direct and indirect effects of all maladaptive emotion regulation strategies, negative self-evaluation and evaluation from the others', and depression components on social anxiety symptoms components was positive and significant. From these results, we conclude that high levels of depressive symptoms accompanied by high levels of maladaptive emotion regulation and high levels of negative self-evaluation can lead to increased social anxiety symptoms. The theoretical and practical issues have been discussed.

**Keywords** Depressive symptoms · Emotion regulation · Self-evaluation · Social anxiety

## Introduction

One of the essential factors involved in mental health is the ability to understand and feel about oneself. Low self-esteem and a negative self-image are the hallmarks of many psychological disorders (Koban et al., 2017). According to cognitive theory, negative self-perception is

one of the significant problems in social anxiety disorder (Hofman, 2007; Moscovitch et al., 2013). Social anxiety can include a range of mild to severe symptoms characterized by the intense and irrational fear of others judging one's performance (Golombek et al., 2019). Symptoms of social anxiety are associated with bias socially threatening information in young people and adults (Abend et al., 2019). According to cognitive theories, self-related negative cognitions play a significant role in development (Spence & Rapee, 2016) and maintenance (Clark & Wells, 1995; Rapee & Heimberg, 1997) of social anxiety. The ability to understand personal capacities in a field ensures that one performs well in that particular field (Leduc & Bouffard, 2017). Bias can be observed in all aspects of self-perception, including psychological characteristics and awareness of skills and abilities (Bollich et al., 2015). Individuals with social anxiety tend to have negative predictions about their social performance beforehand, and think negatively about their performance afterwards (Blöte et al., 2019). The results of other studies also confirm the relationship between social

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anxiety, and negative cognitions related to self before, after and during social situations (Alfano et al., 2006; Hodson et al., 2008). This is well explained by cognitive theories about the role of mental rumination in social anxiety (Heimberg et al., 2010). According to cognitive theories, initial thoughts about self-assessment of a social event are altered by mental rumination and may become more negative (Blöte et al., 2019). Other empirical studies also demonstrate a relationship between rumination and negative self-assessment after the event (Schmitz et al., 2010).

Despite the centrality of their role in social anxiety disorder as well as other emotional disorders such as depression, many studies have examined the role of emotion regulation in a variety of mental disorders, including eating disorders, depression, anxiety disorders, and substance abuse (Aldao et al., 2010). The results of these studies confirm a strong relationship between emotion dysregulation, especially emotional suppression and rumination (Wahl et al., 2019), and psychological disorders (McGrogan et al., 2019). Mood problems and anxiety are also associated with deficiencies in regulating intense emotions (Mazefsky et al., 2013). Emotional dysregulation as one of the main factors in maintaining anxiety has recently received much attention in the pathology models of anxiety disorders (Hofmann et al., 2012; Kivity & Huppert, 2018). One study found that people with severe social anxiety had less ability to describe their emotions than non-clinical cases (Butler et al., 2018; Turk et al., 2005). Individuals with more social anxiety symptoms also indicate greater emotion dysregulation (Hambour et al., 2018). Emotion regulation is associated with various skills, including the ability to perceive and recognize an emotional state as an issue that requires proper management, selecting appropriate strategies, and implementing strategies correctly (Gross, 2015; Palmer & Alfano, 2017). Individuals differ in experiencing the intensity and nature of emotions and how they respond to them (Hodgins & Knee, 2002). Vulnerable people may develop emotional dysfunction and be affected by their emotions (Ryan & Ryan, 2019). People who have difficulty in emotion regulation often use dysfunctional strategies such as rumination, substance abuse, and avoidance to regulate their emotions (Berking & Whitley, 2014). These strategies may reduce stress in the short term, but they produce more spontaneous arousal leading to emotional dysregulation in the long term (Gratz & Roemer, 2004; Inwood & Ferrari, 2018). Social anxiety, on the other hand, is associated with a wide range of psychological disorders, including anxiety disorders, depression, and substance abuse (Beesdo-Baum et al., 2012; Spence & Rapee, 2016).

One of the at-risk conditions for depressive disorders is the concept of subthreshold depression, which has been extensively researched recently. Subthreshold depression refers to a condition in which a person has fewer symptoms than the diagnostic criteria for major depressive disorder,

such as less severity, duration, or frequency. The prevalence of depression among adults is 2.9% to 9.9% in primary care and 1.4% to 17.2% in the context of society (Lee et al., 2019; Rodríguez et al., 2012). According to researchers, while negative life events accelerate depression, biased attention towards life events and negative evaluation of them characterize depression (Girz et al., 2017; Gotlib & Joormann, 2010). The results show that depressed individuals exhibit more distorted self-evaluation than non-depressed individuals. They use more negative traits in the description of themselves and remember less positive traits (Auerbach et al., 2015; LeMoult & Gotlib, 2019). The study results (Leduc & Bouffard, 2017) showed that students who were negatively biased in assessing their competence in school felt less accepted among their peers (Leduc & Bouffard, 2017). Experiencing more or less severe negative moods than average is one of the main symptoms of depression (Girz et al., 2017). According to the study, distorted negative self-evaluation develops after periods of negative mood experience in depressed individuals (LeMoult et al., 2017). Emotion suppression is associated with more rumination (Joormann & Stanton, 2016; Liverant et al., 2011). Rumination is a reaction to negative emotions, and repetitive thinking about the symptoms of depression includes the causes and meaning of these symptoms (Joormann & Stanton, 2016). Rumination is defined as a perseverative focus on the causes and consequences of one's current state (Nolen-Hoeksema et al., 2008). Rumination as a response to low mood is associated with psychological disorders such as anxiety disorders and depression (Dodd et al., 2019; McLaughlin & Nolen-Hoeksema, 2011; Schäfer et al., 2017).

Social anxiety disorder and major depressive disorder are among the most common psychological disorders (Langer et al., 2019). Among anxiety disorders, social anxiety disorder has the highest association with depressive symptoms (Flynn et al., 2019). The results of several studies predict depression in patients with the social anxiety disorder (Bittner et al., 2004; Kessler et al., 1999; Stein et al., 2001). Studies show that 25 to 31 percent of adolescents and adults who meet the diagnostic criteria for social anxiety disorder also show symptoms of depression (Chavira et al., 2004). Soares et al. (2019) observed a significant direct relationship between social anxiety and depression in a study of 1,296 adolescent students in the northeastern region of Brazil (Soares et al., 2019). In a study, Everaert et al. (2018) explained the relationship between depressive disorders and social anxiety through inflexible emotional interpretations (Everaert et al., 2018). According to the network approach, symptom overlap of social anxiety and depression is one of the reasons for the high rate of comorbidity of them (de la Torre-Luque & Essau, 2019). Also, according to the tripartite model of Clark and Watson (1991), a non-specific emotional factor underlies both depression and social

anxiety disorders. It causes the comorbidity of these two disorders (Haraden et al., 2019).

The university is a social environment that sometimes puts students under pressure in terms of social interactions. Some studies indicated that 37% of students experience significant anxiety about negative evaluation and 53% of students experience some depressive symptoms (Kählke et al., 2019). Sarfan et al. (2019) demonstrated in a study that avoiding experience and post-event processes could play a role in the relationship between symptoms of social anxiety and worse biases of "self-evaluation of social skills" (Sarfan et al., 2019). Due to the high rate of comorbidity of social anxiety disorder and major depressive disorder, the present study aimed to test hypotheses 1) the relationship between depressive symptoms and distorted self-assessment, emotional dysregulation and social anxiety and 2) the role of depressive symptoms in aggravating distorted self-assessment, emotional dysregulation, and social anxiety as mediator.

## Method

### Participants and Procedure

The population of this study consisted of all students of the Faculty of Architecture, Islamic Azad University. It is recommended to have at least five subjects for every path model parameter (Kline, 1991). Therefore, the sample included 284 of the students based on convenience sampling method. Due to a large number of questionnaire items (92 items), there was a possibility of incomplete filling of questionnaires by students. Therefore, we recruited more participants to prevent sample drop. Participants were included if they were over 18 years old, students at university, and willingness to participate in the research. Exclusion criteria were refusal to participate in the study, incomplete completion or non-return of the questionnaire. To collect information for the research and sampling, the Islamic Azad University was referred, and 300 students were invited through an announcement on the university website to complete the questionnaires. After providing the necessary explanations about the cooperation and ethical considerations of the research, the students completed the questionnaires with consent. After collecting the questionnaires, 16 of them were deleted due to incompleteness and, the rest were analyzed.

### Measures

**Demographic information** A questionnaire was used to analyse the relationship between some demographic variables and research variables. A demographic sheet was used to collect the information about the subjects, such as age,

gender, education, occupation, existence of a history of physical illness(yes/no), and existence of a history of mental illness(yes/no).

**Social Phobia Inventory (SPIN)** The SPIN is a 17-item questionnaire constructed by Connor et al. (2001) to assess social anxiety during the past week. The SPIN consists of three subscales: fear(1,3,5,10,14,15), avoidance(4,6,8,9,11,12,16) and somatic symptoms(2,7,13,17) that are supposed to characterize social phobia. Each of the 17 items is based on the Likert scale (0–4). Scores range from 0 to 68, and higher scores indicate more social phobia symptoms. This self-report questionnaire has acceptable convergent validity and internal consistency ( $\alpha = 0.82–0.94$ ) (Connor et al., 2001). The original questionnaire was previously translated and adapted to Iranian university students who suffered from social anxiety. The reliability of SPIN was assessed using Cronbach's alpha, split-half reliability, Spearman-Brown coefficient, and test–retest. The Cronbach's alpha, Spearman-Brown coefficient, and test–retest of SPIN was 0.97, 0.97, and 0.82, respectively ( $\alpha < 0.0001$ ) (Mahdi, 2016).

**Beck Depression Inventory-II (BDI-II)** The BDI-II (Beck et al., 1996) is a 21-item self-administered questionnaire to assess the severity of subjective depressive symptoms based on the last two-week time period. This questionnaire can be administered in non-clinical and clinical populations. The BDI-II has three factors including cognitive (3,5,6,7,8,13,14), affective (1,2,4,9,12) and somatic (10,11,15,16,17,18,19,20,21) scores. Each of the 17 items is based on the Likert scale (0–3). Scores ranges from 0 to 63 and higher scores indicate more depression symptoms. 0–10 on the BDI is considered absent or minimal depression; 10–18 mild to moderate depression; 19–29 is moderate depression; and 30–63 is severe depression. This questionnaire has acceptable convergent validity and internal consistency( $\alpha = 0.82–0.94$ ) (Beck et al., 1996). The original questionnaire was previously translated and adapted to Iranian university students. The BDI-II-Persian had high internal consistency (Cronbach's  $\alpha = 0.87$ ) and acceptable test–retest reliability ( $r = 0.74$ ) (Rajabi, 2004).

**Cognitive Emotion Regulation Questionnaire (CERQ)** The CERQ (Garnefski et al., 2001) is a 36-item scale created to assess the cognitive aspects of emotion regulation. This questionnaire evaluates individual differences in coping across seven subscales including self-blame(1,2,4), blaming others(34,35,36), acceptance(5–8), positive refocusing (13–22), rumination(3,9,10,11,12), positive reappraisal (23–27) and catastrophizing(29–32). The CERQ can be applied in non-clinical and clinical populations with different age groups. The items are rated on a 5-point Likert scale ranging from 1 (almost never)

to 5 (almost always). This questionnaire has acceptable internal consistencies (0.68–0.93) (Garnefski et al., 2001). The Persian translation of the CERQ was developed with a back-translation procedure. Two bilingual (Persian English) psychologists translated the English version of the CERQ into Persian. Another (Persian-English) bilingual psychologist then translated the translated questionnaire back into English. Discrepancies emerging from this back-translation were discussed, and adjustments to the Persian translation of the CERQ were made. In the CERQ Persian, Cronbach's alpha subscale ranges were from 0.64 to 0.82 (Samani & Sadeghi, 2010).

**Consequences of Negative Social Events Questionnaire (CNSEQ)** The CNSEQ was constructed by Wilson and Rapee (2005) to interpret the consequences of negative social events. Sixteen negative social events have been described in this questionnaire. Four subscales of this questionnaire are negative self-evaluation, negative evaluation from other's perspectives, negative short term consequences and negative long term consequences. The items are rated on a 9-point Likert scale (0 = I don't believe in it at all, 8 = I believe in it completely). The CNSEQ has good internal consistency (0.63–0.75) using Cronbach's alpha (Wilson & Rapee, 2005). In the Iranian version of CNSEQ, the reliability of alpha has been reported 0.89 for the subscale of negative self-assessment, and 0.90 for negative assessment by others (Khayyer & Ostovar, 2007).

## Statistical Analysis

In this study, descriptive statistics indicators such as Mean and Standard Deviation were used to describe the variables. Furthermore, correlation and path analysis tests were used to analyze the data. Due to the theoretical foundations and research background, to determine the role of depression symptoms between emotion regulation strategies, negative self-evaluation and social anxiety symptoms, a conceptual model and relationships between variables were evaluated in the form of a probabilistic model.

Statistical analysis was performed using the SPSS IBM version (SPSS Inc., Chicago, IL) and AMOS software. The analysis process consisted of several steps. First, descriptive statistics was used to show demographic information and psychosocial characteristics of the study population. Then used Pearson correlation analysis was used to test the correlation change between the primary outcome and the associative factors.

Finally, we used Path analysis to test the mediation model as follows.

## Results

The number of subjects was 284 who were selected by the available method. Demographic findings showed that 130 (45%) were female and 154 (55%) were male, of which 79 were married (27%) and 205 were single (73%). The age range between 18 and 49 years, and about 90% of the participants were between 18 to 30 years. Among the participants, 18 (6%) suffered from a physical illness and 25 (8%) reported a history of a psychological disorder. Since no relationship was found between any of the demographic variables and other research variables, they were excluded from the study.

Table 1 shows the mean and standard deviation of the participants' scores in this study for the research variables.

The path analysis was used to determine the mediating role of depression. The default assumptions of path analysis include the linear relationship between the predictor variables of the dependent variable, the independence of the errors, the normality of the data, the absence of multiple and one-way alignment for the model have been investigated and observed. Chi-square fit index (49.14), CFI equal to 0.97, AGFI equal to 0.91 and RMSEA equal to 0.004, which indicates the significance of the fit model; In addition, 5% of the data was discarded and deleted.

According to Table 2, the direct and indirect effects of all adaptive emotion regulation strategies (Positive reappraisal, Positive refocusing, Acceptance) on the components of social anxiety, including fear, avoidance, and somatic symptoms, were negative and significant. The direct and indirect effects of all maladaptive emotion regulation strategies (Self-blame, Rumination, Catastrophizing and Other-blame) on the components of social anxiety including fear, avoidance, and somatic symptoms were positively significant. The direct and indirect effects of negative self-evaluation and negative evaluation from the others' perspective on the components of social anxiety were positive and significant. The direct effect of depression components (cognitive, emotional and somatic) on social anxiety components were positive and significant. The Coefficient of determination for fear is 0.39, for avoidance is 0.26 and for somatic symptoms is 0.31 (Fig. 1).

## Discussion

The current study investigated the relationship between social anxiety, emotion regulation, negative self-evaluation and depression among Iranian university students.

The direct and indirect effects of all adaptive emotion regulation strategies (Positive reappraisal, Positive

**Table 1** Descriptive characteristics and correlational coefficients

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Emotion regulation- Positive refocusing	1														
2. Emotion regulation- Positive reappraisal	.216*	1													
3. Emotion regulation- Acceptance	.188**	.314**	1												
4. Emotion regulation- Self-blame	-.202**	-.224**	-.265**	1											
5. Emotion regulation- Other-blame	-.214**	-.206**	-.254**	.197**	1										
6. Emotion regulation- Rumination	-.316**	-.226**	-.301**	.206**	.312**	1									
7. Emotion regulation- Catastrophizing	-.265**	-.181*	-.201**	.236**	.345**	.288**	1								
8. Social anxiety- fear	-.361**	-.26**	-.191*	.247**	.287**	.204**	.504**	1							
9. Social anxiety- avoidance	-.401**	-.307**	-.214**	.306**	.402**	.255**	.414**	.356**	1						
10. Social anxiety- somatic symptoms	-.277**	-.191*	-.305**	.199**	.236**	.314**	.424**	.451**	.265**	1					
11. negative self-evaluation	.112	.098	.047	.046	.047*	.109	.054	.354**	.214**	.388**	1				
12. Evaluation from other's perspective	.087	.054	.089	.105	.063*	.099	.102	.347**	.465**	.241**	.450**	1			
13. Depression- cognitive	-.228**	-.188*	-.235**	.302**	.412**	.308**	.214**	.405**	.366**	.311**	.244**	.203**	1		
14. Depression- emotional	-.308**	-.354**	-.312**	.287**	.354**	.347**	.311**	.411**	.270**	.214**	.290**	.247**	.506**	1	
15. Depression- somatic	-.265**	-.234**	-.310**	.309**	.322**	.266**	.244**	.365**	.219**	.238**	.235**	.219**	.499**	.435**	1
Mean	34.41	17.54	14.51	8.21	9.19	16.14	12.26	13.81	15.19	7.19	33.84	20.94	10.29	8.98	13.74
SD	18.51	17.59	12.81	12.56	13.81	17.74	12.56	14.51	12.89	13.58	25.99	21.46	8.49	6.91	10.58

\*  $p < .05$ , \*\*  $p < .01$

**Table 2** direct and indirect effect of the variables in the path analysis model

Paths	Direct effect	Indirect effect	Total effect
On the components of fear of:			
Positive refocusing	-.29**	-.09**	-.38**
Positive reappraisal	-.21**	-.03*	-.23**
Acceptance	-.15*	-.05**	-.20**
Self-blame	.22**	.07*	.29**
Other-blame	.23**	.11**	.34**
Rumination	.14*	.04*	.18**
Catastrophizing	.39**	.12**	.51**
negative self-evaluation	.24**	.08*	.32**
Evaluation from other's perspective	.31**	.06*	.37**
cognitive	.32**		
emotional	.27**		
somatic	.29**		
On the component of avoidance of:			
Positive refocusing	-.31**	-.10**	-.41**
Positive reappraisal	-.28**	-.09**	-.37**
Acceptance	.15*	-.07*	-.22*
Self-blame	.26**	.07*	.33**
Other-blame	.34**	.14**	.48**
Rumination	.22**	.04*	.26**
Catastrophizing	.31**	.16**	.47**
negative self-evaluation	.16*	.04*	.20**
Evaluation from other's perspective	.21**	.09*	.30**
cognitive	.29**		
emotional	.19**		
somatic	.13*		
On the component of somatic symptoms of:			
Positive refocusing	-.14*	-.06**	-.20**
Positive reappraisal	-.21**	-.11**	-.32**
Acceptance	-.29**	-.03**	-.32**
Self-blame	.19**	.14**	.33**
Other-blame	.12*	.09**	.21**
Rumination	.16*	.04*	.20**
Catastrophizing	.21**	.019**	.40**
negative self-evaluation	.35**	.08**	.43**
Evaluation from other's perspective	.24**	.05*	.29**
cognitive	.26**		
emotional	.21**		
somatic	.19**		

$p < .05$ , \*\*  $p < .01$

refocusing, Acceptance) on the components of social anxiety disorder, including fear, avoidance, and somatic symptoms, were negative and significant. Our finding is in line with previous work indicating that Psychological rejection is an aggravating and maintaining factor for depression and SAD (Social Anxiety Disorder) (Aldao, 2013; Flynn et al., 2019). Additionally, individuals with less SAD use cognitive reappraisal effectively to reduced negative emotion.

The direct and indirect effects of all maladaptive emotion regulation strategies (Self-blame, Rumination, Catastrophizing and Other-blame) on the components of social anxiety, including fear, avoidance, and somatic symptoms was positively significant. In support of the previous result, some other research suggested that some factors, such as emotion regulation, play a role in creating and maintaining internalizing symptoms and disorders (Brown et al., 2013; Burghy et al., 2012; Jazaieri et al., 2015). Self-criticism has



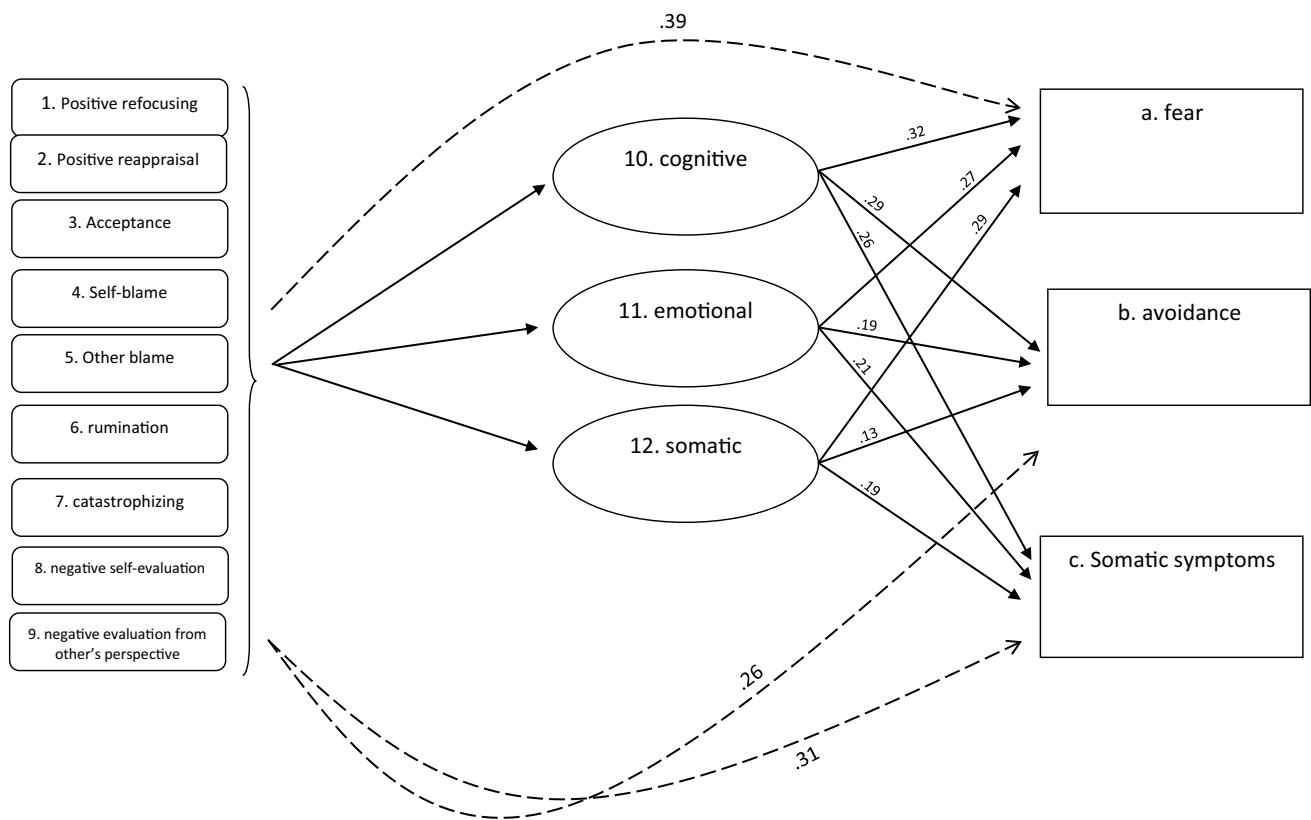


Fig. 1 Fitted model of path analysis

a significant role in SAD and individuals with social anxiety disorder have higher scores on self-criticism and dependence and lower scores on self-esteem (Iancu et al., 2015). Self-criticism has a considerable effect on the severity of SAD during treatment (Cox et al., 2002). Furthermore, individuals with SAD have more tendency to avoid social situations.

The direct and indirect effects of negative self-evaluation and negative evaluation from the other’s perspectives on the components of social anxiety were positive and significant. The present findings converge with the prior researches indicating that self-evaluation and evaluation from the other’s perspectives have a notable role in SAD (Everaert et al., 2018; Mehu & Scherer, 2015). Depression and social anxiety are associated with cognitive distortion, and interpretation inflexibility has a significant role in depression and anxiety. Individuals who suffer from SAD and MDD (Major Depressive Disorder) have difficulty using positive information to moderate initial negative perceptions, and this is one of the reasons of the coexistence of SAD and MDD (Everaert et al., 2018). In other studies, ignoring positive interpretations and focusing more on negative interpretations are considered as factors affecting the severity of depression and SAD, and even as a transdiagnostic process in SAD and depression, these factors have been mentioned (Hirsch et al., 2016; Rapee & Heimberg, 1997). Social anxiety is

associated with fear of positive and negative evaluation while interacting with others (Weeks et al., 2010). Another study has reported that worthlessness and feelings of inferiority are bridge symptoms in network analysis of social anxiety and depression symptoms (Langer et al., 2019). Increasing feelings of inferiority results in depression symptoms. On the other hand, experiencing some of the somatic symptoms like blushing or trembling in individuals with SAD can occur because of intense focus on self’s inferiority (Oren-Yagoda et al., 2021). According to the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5), feelings of worthlessness or excessive guilt are one of the symptoms of major depression episode (Kählke et al., 2019). Individuals with SAD have more tendency to view themselves negatively, and negative self-evaluation has a significant role in development and maintenance of SAD. The belief of being not good enough is a vulnerability of both depression and SAD and can results in a submissive (i.e., social anxiety) or a defeat (i.e., depression) response (Langer et al., 2019). Individuals with social anxiety have a poorer evaluation of their performance than non-anxious people. They also use more negative information when writing about themselves (Brozovich & Heimberg, 2011).

The direct effect of depression components (cognitive, emotional and somatic) on social anxiety components were

positive and significant. Our finding is compatible with some other studies suggesting the comorbidity and association between social anxiety and depression (Avenevoli et al., 2015; Beesdo et al., 2007). Feelings of worthlessness and anhedonia are maintaining factors in comorbid depression and social anxiety (de la Torre-Luque & Essau, 2019). The result of one study indicated that individual with co-occurring internalizing symptoms have more tendency to express psychological distress inwards (Carragher et al., 2016). Furthermore, Suicidal ideation is associated with depression and social anxiety (Bringmann et al., 2015). In a study, it is suggested that Suicidal ideation is one of the most influential symptoms in the network symptoms of social anxiety and depression (Heeren et al., 2018).

To explain the results of this research it can be said: among anxiety disorders, social anxiety disorder is a distinct disorder. While we often expect that rumination occurs in depression and low mood contexts, in Social anxiety, both rumination and worry occur (Blöte et al., 2019). In addition, people with social anxiety do not avoid all of the social situations. They only avoid situations that involve social pressure (Berking & Whitley, 2014). People diagnosed with social anxiety are often afraid to act in a way that is humiliating or embarrassing. One of their main fears is the fear of negative evaluation. When individuals are fearful of negative evaluation, they start to worry about evaluation. The more individuals expect of their social evaluation, the more they tend to filter out their positive achievements. This thinking pattern leads to a greater tendency to avoid social situations (Clark & Wells, 1995). Avoiding social situations is associated with negative problem orientation and rumination. Post-event rumination and brooding – comparing one's current status with some unachieved standard- increases anxiety and negative emotions over time and results in depressive symptoms (Brozovich & Heimberg, 2011). Individuals with depressive symptoms are more likely to be isolated in their social networks, increasing both depression and social anxiety symptoms. Social isolation can result in more negative self-evaluation and worrisome thoughts, which elevate social anxiety symptoms (Schmitz et al., 2010).

There were several limitations in the present study. Firstly, using a non-clinical sample of college students who hardly scored above the identified score for social anxiety and Major depression disorder, our sample might be biased. According to the result, the mean scores on BDI-II appear to be fairly high. To explain this, the average score of anxiety, stress and depression among Iranian students is slightly higher than the average score reported in studies in other countries (Mohammadzadeh et al., 2019). Notwithstanding this, because of the dimensional nature of social anxiety and depression, subthreshold samples can still give us helpful information to understand the nature of comorbidity of social anxiety and depression.

Future studies may want to extend this investigation to other samples who have experienced noticeable symptoms of Major depression and Social anxiety disorder. Secondly, our sample consisted of undergraduate university students. Future studies may test if the results of this study can be generalized to other samples. Thirdly, the use of a cross-sectional design restricted our interpretation of mediation results. However, we think that it was an essential first step to understand the structural relationship of the model. Longitudinal research is needed to understand the exact relationship of the model. Fourthly, all the data was collected through self-report, which could inflate association. Future works may want to use other methods to extend the present results. Additionally, future studies may want to investigate the possible role of self-esteem, rumination and Interpersonal relationships in influencing the interaction between social anxiety and depression symptoms.

To conclude, this study found several associations between social anxiety symptoms, emotion regulation strategies, negative self-evaluation and negative evaluation from the others' perspective, and depression symptoms. The findings of this study indicated that all the adaptive emotion regulation strategies have a negative and significant relationship with social anxiety, meaning that with the increasing scores in the adaptive emotion regulation strategies, the score of social anxiety decreases. All maladaptive emotion regulation strategies have a positive and significant relationship with social anxiety, meaning that with increasing scores in maladaptive emotion regulation strategies, the score of social anxiety increases. Also, the relationship between negative self-evaluation and negative evaluation from the others' perspective with social anxiety is positive and significant; that is, social anxiety increases with increasing negative self-evaluation and negative evaluation from the others' perspective scores. In addition, the relationship between depressive symptoms and social anxiety is positive and significant, that is, social anxiety increases with increasing depressive symptoms. Finally, from the findings of this study, it can be concluded that depressive symptoms can play a mediating role in the relationship between emotion regulation strategies and negative evaluation.

**Data Availability** The datasets generated during and/or analysed during the current study are available from the corresponding author on reasonable request.

## Declarations

**Ethical Approval** All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.



**Conflict of Interest** The authors have declared that there is no conflict of interest.

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