

The role of emotional regulation in the relationship between family functioning and social interaction anxiety among young adults

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Abstract

This study examines the mediating role of emotional regulation on the association between family functioning and social interaction anxiety in young adults. Social interaction anxiety, being one of the forms of social anxiety, is on the rise in young adults and is associated with impairment in academic, occupational, and interpersonal functioning. Family functioning defined by communication, emotional support, adaptability, and cohesion is a strong predictor of emotional development and regulation. Emotional regulation, meanwhile, influences one's ability to cope with socially evaluative situations. The study employed a correlational research design and administered questionnaires to 274 respondents aged 18 to 25 years using standardized measures: the McMaster Family Assessment Device (FAD), Social Interaction Anxiety Scale (SIAS), and the Difficulties in Emotion Regulation Scale – 18 (DERS-18). Pearson correlation analysis revealed significant associations among the three variables. Mediation analysis revealed that emotional regulation significantly mediated the association between family functioning and social interaction anxiety. The indirect effect explained 43.2% of the total effect, therefore, indicating partial mediation. The results highlight the critical role of emotional regulation as a strong mechanism linking family dynamics and social anxiety, reflecting that interventions to increase improvement in emotional regulation and family support systems can significantly decrease social interaction anxiety in young adults.

Keywords: Family Functioning; Emotional Regulation; Social Interaction Anxiety; Young Adults; Mediation; Mental Health; Cognitive Behavioural Theory; Attachment Theory

1 Introduction

Social interaction anxiety in young adults is a unique form of social anxiety that is marked by intense fear, apprehension, and avoidance of common social situations such as conversations, group discussions, or interactions with strangers. This anxiety is most prevalent in young adults as they face significant life changes such as attending university, starting careers, or expanding social networks. Fear of being judged negatively, rejected, or embarrassed during this time can seriously impede their social growth, academic performance, and career development. Cognitive-behavioral theories explain that such anxiety is usually a result of negative self-perceptions and maladaptive thought patterns that are often shaped by early family experiences. Families that are critical or characteristically emotionally distant can create cognitive distortions in young adults, making them perceive social situations as dangerous and amplifying their anxiety. Family functioning is an important consideration in this respect, as it is the first setting where emotional and social skills are initially developed. Optimal family functioning, with open communication, emotional warmth, problem-solving, and flexibility, fosters emotional security and prepares young adults with the resilience and coping skills to navigate social situations with confidence. Conversely, dysfunctional family systems with conflict, rigidity, emotional neglect, or excessive control can hinder the development of competent emotional and social skills, making young adults susceptible to social interaction anxiety. Research points out that poor family functioning is strongly linked to increased social anxiety in young adults, particularly in families that are restrictive of emotion expression or use critical parenting

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styles. Emotional regulation, or the processes by which individuals regulate and express their emotions, is a mediating factor in this dynamic. While supportive families teach effective emotional regulation through modeling and positive reinforcement, dysfunctional families often fail to provide these crucial lessons, leading to difficulties in emotional management. Consequently, young adults from less functional families may struggle with regulating their emotions, which in turn intensifies their social anxiety. This illustrates a clear pathway: family functioning influences emotional regulation capacities, where poor family environments lead to inadequate emotional regulation, thereby increasing social interaction anxiety in young adults. Recognizing this relationship is essential, as it underscores the importance of interventions aimed at enhancing family communication and emotional support, alongside training young adults in emotional regulation strategies to effectively reduce social anxiety.

Family systems theory suggests that families are interdependent systems wherein the actions of one family member impact all the others. Positive family functioning, in terms of good communication, emotional support, and flexibility, encourages emotional regulation and well-adjusted social development. Dysfunctional family systems involving conflict, rigidity, or neglect, on the other hand, can interfere with emotional development, rendering a person prone to social anxiety. Emotional regulation is defined as the internal mechanisms by which individuals control the intensity, duration, and expression of emotional experience. In Gross's model, cognitive reappraisal and expressive suppression are some of the strategies that are involved in how individuals regulate emotions. Children who grow up in supportive families usually acquire healthy regulation strategies, while those growing up in dysfunctional families lack these coping skills, leading to increased emotional vulnerability.

Attachment theory also provides support for the significance of early interactions between caregivers and children, implying that secure attachments lead to healthy emotional control and social competence. In contrast, insecure attachment styles, typically due to negative familial interactions, correlate with ineffective emotional control and greater anxiety in social situations.

Social anxiety disorder (SAD), or fear and avoidance of social situations, is especially common among young adults. Cognitive-behavioral theory suggests that this kind of anxiety arises from negative self-beliefs and maladaptive schemas, some of which are likely to derive from early family interactions in which emotional expression is invalidated or suppressed. This research is based on the assumption that family functioning affects emotional regulation, which in turn affects levels of social anxiety. Investigation of this mediating relationship will enable the creation of specific interventions to enhance family support systems and improve emotional regulation skills, which will ultimately decrease the incidence of social interaction anxiety among young adults.

2 Material and methods

2.1 Research Design

A correlational research design will be employed to examine the relationships among family functioning, emotional regulation, and social interaction anxiety.

2.2 Sample Size

Participants were recruited through Google Forms, which was distributed via social media platforms. A total sample of 274 (N= 274) was considered.

2.3 Sampling Technique

A convenience sampling technique will be used to recruit young adults aged 18-25 years from universities and colleges.

2.4 Tools for study

2.4.1 The McMaster Family Assessment Device (FAD)

The McMaster Family Assessment Device (FAD) is a self-report measure created by Epstein, Baldwin, and Bishop (1983), based on the McMaster Model of Family Functioning. The FAD was created to measure the structural and transactional qualities of families, including how family members communicate, solve problems, interact, and deal with emotional involvement. There are seven subscales of the FAD: Problem Solving, Communication, Roles, Affective Responsiveness, Affective Involvement, Behavior Control, and General Functioning. Of these, the General Functioning subscale is most typically employed to give an overall estimate of family health. Items are scored on a 4-point Likert scale from Strongly Agree to Strongly Disagree. The scale has been extensively validated in both clinical and non-clinical

populations and has shown high internal consistency, test-retest reliability, and construct validity (Kabacoff et al., 1990). Its flexibility and strong psychometric qualities have established it as a widely used instrument in family research and therapy settings, most notably in exploring the family's contribution to emotional and behavioral consequences among children and young adults.

The FAD shows high reliability, with internal consistency of 0.72–0.92 and high test-retest reliability (0.66–0.76), especially for the General Functioning subscale (Kabacoff et al., 1990). Its validity is confirmed, with high construct, concurrent, and clinical validity, as it differentiates well between clinical and non-clinical groups. Factor analyses confirm its structural validity, confirming its seven-subscale model of family functioning.

2.4.2 *Social Interaction Anxiety Scale (SIAS)*

The Social Interaction Anxiety Scale (SIAS) by Mattick and Clarke (1998) is a 20-item self-report scale that assesses symptoms of anxiety in relation to social interaction situations. Unlike other measures of general social phobia, the SIAS specifically addresses distress during interpersonal interactions, including meeting strangers, starting conversations, and being watched while interacting socially. Respondents score each item on a 5-point Likert scale, from Not at all to Extremely characteristic of me. It is especially good at distinguishing between people with Social Interaction Anxiety Disorder and those with performance anxiety. The SIAS has been tested in many studies and has very good internal consistency ($\alpha > 0.90$) and high test-retest reliability. Rodebaugh et al. (2007) also validated its dimensional structure and its discriminatory ability between clinical and non-clinical samples, thus ensuring that it is a valid instrument for use in clinical practice as well as in research on social anxiety in young adults.

The SIAS is highly reliable, with internal consistency > 0.90 and test-retest reliability around 0.92 (Mattick & Clarke, 1998). It possesses good construct validity, as evidenced by factor analyses, and good convergent validity according to correlations with related anxiety measures. It also possesses established discriminant and criterion validity as it can effectively differentiate social interaction anxiety from other anxiety and detect clinical cases (Rodebaugh et al., 2007).

2.4.3 *Difficulties in Emotion Regulation Scale – 18 (DERS-18)*

The Difficulties in Emotion Regulation Scale – 18 (DERS-18) is a short self-report measure created from the initial 36-item DERS by Gratz and Roemer (2004) that aims to measure several aspects of emotion regulation problems. The DERS-18 maintains six essential subscales: Nonacceptance of emotional responses, Difficulties in goal-directed behavior, Impulse control difficulties, Lack of emotional awareness, Limited access to emotion regulation strategies, and Lack of emotional clarity. Items are scored on a 5-point Likert scale from Almost never to Almost always. This short form has been validated by Victor and Klonsky (2016) and has been determined to have excellent internal consistency and structural validity and can be used in both clinical and nonclinical populations. The DERS-18 has found widespread use in studies of anxiety, depression, trauma, and interpersonal functioning to shed light on how difficulties in emotion regulation might impact mental health outcomes, particularly in adolescents and young adults. Bardeen et al. (2016) also underscored its value for use in the study of trauma, further justifying its usefulness for the research of emotional processing in the family and social realms.

The DERS-18 is very reliable with overall internal consistency of about 0.91 and subscale alphas ranging from 0.80 to 0.89 (Victor & Klonsky, 2016). It is of good validity with factor analysis consistently replicating its six-factor structure and high convergent validity as supported by correlations with depression, anxiety, and emotional dysregulation. It also has high criterion validity in the sense that it can predict emotional difficulties in clinical and non-clinical settings (Bardeen et al., 2016).

2.5 Statistical Analysis

The data were analyzed with the aid of JAMOVI to provide proper and effective statistical calculations. Pearson correlation analysis will examine the relationships between variables. A mediation analysis will be conducted to assess the mediating role of emotional regulation.

2.5.1 *Hypothesis*

- Ho1: there is no significant relationship between family functioning and social interaction anxiety
- Ho2: there is no significant relationship between emotional regulation and social interaction anxiety
- H03: there is no significant relationship between family functioning and emotional regulation
- H04: emotional regulation do not significantly mediate the relationship between family functioning and social interaction anxiety

3 Results

Table 1 Descriptive Statistics for Study Variables

Variable	N	M	SD	Min	Max
Family Functioning	274	28.2	5.57	12	47
Social Interaction Anxiety	274	40.8	12.5	0	80
Emotion Regulation	274	51.2	12.0	18	90

Descriptive statistics were calculated for Family Functioning, Social Interaction Anxiety, and Emotional Regulation in a sample of 274 participants. Results showed that Family Functioning scores had a mean of 28.2 (SD = 5.57), with a range of 12 to 47, reflecting moderate levels of family functioning as expected in community samples (Halberstadt et al., 2021). Social Interaction Anxiety scores had a mean of 40.8 (SD = 12.5), with a range of 0 to 80, reflecting moderate levels of social anxiety above the clinical significance value of 34 (Heimberg et al., 2014). Emotional Regulation scores had a mean of 51.2 (SD = 12.0), with a range of 18 to 90, reflecting moderate difficulties in emotional regulation.

These findings are in line with Morris et al.'s (2017) tripartite model explaining how family functioning influences the development of emotional regulation, which may in turn influence social anxiety levels. Young et al. (2019) reported that emotional regulation partially mediates the relationship between family functioning and social anxiety symptoms, reflecting potential interrelated mechanisms that should be explored further through correlation, regression, or mediation analysis to better understand the complex relationships among these variables

Table 2 Correlation Analysis to study the variables

Variable	1	2	3
1. Family Functioning	—		
2. Social Interaction Anxiety	0.241***	—	
3. Emotional Regulation	0.221***	0.501***	—

Correlation analysis revealed significant positive associations among all three variables that were included in the study. Family Functioning correlated modestly but significantly with Social Interaction Anxiety ($r = 0.241$, $p < 0.00$), such that greater family dysfunction is associated with greater social anxiety. Similarly, Family Functioning correlated significantly with Emotional Regulation ($r = 0.221$, $p < 0.001$), and demonstrated that greater family functioning is associated with greater difficulty in regulating emotions. The greatest correlation was between Social Interaction Anxiety and Emotional Regulation, ($r = 0.501$, $p < 0.001$), and demonstrated a moderate to strong positive correlation.

Table 3 Mediation Effect Estimates for the Relationship Between Family Functioning, Emotional Regulation, and Social Interaction Anxiety (N = 274)

Effect	Estimate	SE	Z	p
Indirect	0.233	0.068	3.45	<0.001
Direct	0.306	0.119	2.58	0.010
Total	0.539	0.131	4.10	< 0.001

The mediation Analysis examined the interaction between Family Functioning, Emotional Regulation, and Social Interaction Anxiety. Results showed that there was a significant indirect effect ($\beta = 0.233$, SE = 0.068, Z = 3.45, $p < 0.001$) showing that Emotional Regulation significantly mediated the interaction between Family Functioning and Social Interaction Anxiety. The direct effect remained significant ($\beta = 0.306$, SE = 0.119, Z = 2.58, $p = 0.010$), showing partial mediation. The total effect of Family Functioning on Social Interaction Anxiety was also significant ($\beta = 0.539$, SE = 0.131, Z = 4.10, $p < 0.001$), showing a strong overall relationship between family functioning and social anxiety.

Table 4 Mediation Models Information

Model Type	Path	Description
Mediator Model	m1	DERS Total ~ FF Total
Full Model	m2	SIA Total ~ DERS Total + FF Total
Indirect Effect	IE 1	FF Total \Rightarrow DERS Total \Rightarrow SIA Total
Sample Size	N	274

The mediation model was constructed with Family Functioning (FF) as the predictor, Emotional Regulation (DERS) as the mediator, and Social Interaction Anxiety (SIA) as the criterion. The mediator model (m1) examined the path from FF to DERS, and the full model (m2) examined the prediction of SIA by FF and DERS. The indirect effect (IE 1) examined the pathway FF \rightarrow DERS \rightarrow SIA. Analysis was conducted on a sample of 274 participants with complete data on all measures.

Table 5 Detailed Indirect and Total Effects of the Mediation Model

Type	Effect	Estimate	SE	95% CI Lower	95% CI Upper	β	Z	p
Indirect	FF Total \Rightarrow DERS Total \Rightarrow SIA Total	0.233	0.068	0.101	0.365	0.104	3.45	<0.001
Component	FF Total \Rightarrow DERS Total	0.477	0.127	0.227	0.726	0.221	3.74	<0.001
	DERS Total \Rightarrow SIA Total	0.488	0.055	0.381	0.596	0.471	8.90	<0.001
Direct	FF Total \Rightarrow SIA Total	0.306	0.119	0.074	0.538	0.137	2.58	0.010
Total	FF Total \Rightarrow SIA Total	0.539	0.132	0.281	0.797	0.241	4.09	<0.001

Note. FF = Family Functioning; DERS = Difficulties in Emotional Regulation; SIA = Social Interaction Anxiety; CI = Confidence Interval. Confidence intervals computed with standard (Delta) method. Betas (β) are completely standardized effect sizes.

The component analysis showed that Family Functioning was a significant predictor of Difficulties in Emotional Regulation ($\beta = 0.477$, SE = 0.127, Z = 3.74, $p < 0.001$), and DERS predicted Social Interaction Anxiety ($\beta = 0.488$, SE = 0.055, Z = 8.90, $p < 0.001$). The indirect effect of FF on SIA through DERS was significant ($\beta = 0.233$, SE = 0.068, 95% CI [0.101, 0.365], $p < 0.001$) and accounted for approximately 43.2% of the total effect. The direct effect was significant ($\beta = 0.306$, SE = 0.119, 95% CI [0.074, 0.538], $p = 0.010$), and so was the total effect ($\beta = 0.539$, SE = 0.132, 95% CI [0.281, 0.797], $p < 0.001$). The standardized coefficients ($\beta = 0.104$ for indirect effect, $\beta = 0.137$ for direct effect, and $\beta = 0.241$ for total effect) provide effect size estimates of moderate associations among the variables.

This result is consistent with theory proposing emotional regulation development to be shaped by family functioning to result in outcomes for social anxiety symptomatology (Aldao et al., 2010; Morris et al., 2017). Partial mediation is evidence that emotional regulation, as a primary mechanism, does not have a full mediation effect on family functioning for social anxiety.

4 Discussion

In the present study, Correlation analysis showed strong positive correlations between family functioning, social interaction anxiety, and emotional regulation difficulties. Family functioning was positively correlated with social interaction anxiety ($r = 0.241$, $p < 0.001$) and with emotional regulation difficulties ($r = 0.221$, $p < 0.001$), and it indicated that lower family functioning is related to increased social anxiety and more severe difficulty in regulating emotions. The highest correlation was found between difficulty in regulating emotions and social interaction anxiety ($r = 0.501$, $p < 0.001$), suggesting a moderate to strong relationship between these variables. The results are in line with previous research highlighting the importance of emotional regulation in the development of social anxiety (Aldao et al., 2010; Morris et al., 2017).

The mediation analysis indicated that emotional regulation function as a significant mediator between family functioning and social interaction anxiety. The indirect effect ($\beta = 0.233$, $SE = 0.068$, $Z = 3.45$, $p < 0.001$) explained 43.2% of the total effect. This supports the notion that emotional regulation is an important mechanism in which family functioning is influential to social anxiety. Due the direct effect of family functioning to social anxiety remaining significant ($\beta = 0.306$, $SE = 0.119$, $Z = 2.58$, $p = 0.010$), this suggests partial not full mediation. This implies that emotional regulation is an important explanatory of the link between family functioning and social interaction anxiety, but there may be other unmeasured factors that could account for additional variance.

These findings are aligned with existing models which speculate that family functioning is a crucial aspect of emotional development that, in turn, influences social anxiety symptoms (Morris et al., 2017). Families that provide emotional support and model effective emotion regulation strategies can decrease the likelihood of developing social anxiety (Gross & John, 2003). On the other hand, families that are dysfunctional may contribute to the development of emotional dysregulation, which increases the risk to develop social anxiety (Cisler et al., 2010).

Mediation modeling provided additional clarity in the relationships among these variables. The path analysis showed that family functioning significantly predicted emotional regulation ($\beta = 0.477$, $SE = 0.127$, $Z = 3.74$, $p < 0.001$), and emotional regulation significantly predicted social interaction anxiety ($\beta = 0.488$, $SE = 0.055$, $Z = 8.90$, $p < 0.001$). Taken together, findings suggest family functioning exerts a robust influence on emotional regulation abilities, which, in turn, influence social anxiety levels. The standardized indirect effect was $\beta = 0.104$, 95% CI [0.101, 0.365], $p < 0.001$, indicating that interventions focused on improving emotional regulation skills may result in a decrease in social anxiety for participants with dysfunctional family experiences. The significant direct effect ($\beta = 0.577$, $SE = 0.42$, $Z = 3.61$, $p < 0.001$) implies that family functioning may also impact social anxiety through other methodologies, such as cognitive distortions or peer contexts (Aldao et al., 2010). Future directions may include studies emphasizing potential mediators to explore the links between family functioning and social anxiety.

5 Conclusion

This study explored the mediating role of emotional regulation in the relationship between family functioning and social interaction anxiety among young adults. Results indicated that positive family functioning was linked to better emotional regulation skills, which in turn, was found to be inversely associated with social interaction anxiety. These findings highlight the significance of emotional regulation as a process by which family functioning shapes social anxiety experiences. The findings contribute to the literature by addressing the interconnectedness of family support, emotional regulation, and challenges in anxiety management. Understanding this relationship is important to further develop appropriate clinical interventions that include the enhancement of emotional regulation abilities and the improvement of family functioning to reduce social anxiety in young adults. Future studies should employ longitudinal and experimental designs to more accurately determine causal pathways. Future researchers may also expand the scope of this research by looking at other psychological and environmental influences related to the original study. In particular, sampling from a cohort of diverse cultural groups would elucidate a more thorough understanding of the phenomenon. Overall, the findings in this study support fostering opportunities for young adults to have supportive family environments and/facilitate among individuals; adaptive emotional regulation skills to promote psychological wellbeing and to mitigate social interaction anxiety.

Compliance with ethical standards

Disclosure of conflict of interest

No disclosure of conflict of interest

Statement of informed consent

Statement of informed consent was obtained from all individual participants included in the study

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