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The Role of Early Maladaptive Schemas in Predicting Social Anxiety in Adolescents: A Correlational Study Using Structural Equation Modeling in Yazd City

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ABSTRACT

The present study aimed to investigate the role of early maladaptive schemas in predicting social anxiety in adolescents. The present study was applied in terms of purpose and descriptive-correlational in terms of data collection method using structural equation modeling. The statistical population included all male and female students of the second year of high school in Yazd in the academic year 2024-2025, from which a sample of 420 people (210 girls and 210 boys) was selected using the multistage cluster sampling method. After eliminating incomplete questionnaires, the final analysis was conducted on 388 individuals (190 girls and 198 boys). The Young's Early Maladaptive Schemas Questionnaire - Short Form (YSQ-SF) and the Social Anxiety Inventory for Adolescents (SASA) were used to collect data. The data were analyzed using Pearson's correlation coefficient, stepwise regression analysis, and structural equation modeling with SPSS version 26 and AMOS version 24 software. The results showed that among the eighteen schemas studied, the schemas of approval seeking (r = 0.62), social isolation/alienation (r = 0.61), and deficiency/shame (r = 0.59) had the strongest correlation with social anxiety, respectively. Stepwise regression analysis showed that the six schemas of approval seeking, social isolation, deficiency/shame, obedience, emotional inhibition, and emotional deprivation explained a total of 62% of the variance in social anxiety. The structural equation model had a good fit (RMSEA = 0.065, CFI = 0.94) and showed that the orientation to others (β = 0.34) and the detachment/exclusion (β = 0.28) domains were the strongest predictors of social anxiety. Also, the detachment/exclusion domain had a significant indirect effect on social anxiety through the orientation to others domain (β = 0.18). The findings showed that adolescent girls had significantly higher social anxiety scores than boys and also scored higher in the orientation to others and hypervigilance/inhibition domains. The present study showed that early maladaptive schemas, especially schemas in the orientation to others and detachment/exclusion domains, play a decisive role in predicting social anxiety in adolescents and, therefore, can be considered as the main targets in screening, prevention, and schema therapy-based treatment interventions. Given the observed gender differences, it seems necessary to design interventions tailored to the characteristics of each gender. Future research using longitudinal designs and randomized clinical trials can help confirm the causal relationships and effectiveness of schema-based interventions on adolescent social anxiety.

Keywords: Early maladaptive schemas, social anxiety, adolescents, structural equation modeling, gender differences

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Introduction

Adolescence is a critical developmental period in which the individual's psychological organization, social identity, emotional regulation capacities, and interpersonal self-concept undergo rapid transformation.

During this stage, adolescents become increasingly sensitive to peer evaluation, social comparison, acceptance, rejection, and the perceived meaning of their behavior in the eyes of others. Although such sensitivity is developmentally expected, it may become maladaptive when social situations are interpreted as threatening, humiliating, or evaluative. Social anxiety, as one of the most common and impairing anxiety-related problems during adolescence, is characterized by persistent fear of social or performance situations in which the individual may be scrutinized, judged, rejected, or negatively evaluated by others. In adolescent populations, social anxiety can interfere with classroom participation, peer relationships, academic engagement, identity formation, help-seeking behavior, and overall psychological well-being. When left unidentified, it may persist into adulthood and become associated with avoidance, isolation, impaired interpersonal functioning, and vulnerability to other emotional disorders (1-4). Therefore, explaining the cognitive-emotional mechanisms that contribute to the development and maintenance of social anxiety in adolescents is a necessary step toward more accurate screening, prevention, and intervention.

Among the cognitive frameworks used to explain social anxiety, early maladaptive schema theory provides a particularly comprehensive developmental model. Early maladaptive schemas are deep, stable, and pervasive cognitive-emotional patterns regarding the self, others, and interpersonal relationships. They are believed to develop when core emotional needs such as secure attachment, autonomy, realistic limits, emotional expression, acceptance, and validation are not adequately met. In adolescence, these schemas may become especially salient because the adolescent is increasingly exposed to evaluative interpersonal contexts such as school performance, peer groups, romantic interests, social media environments, and identity-related comparisons. In this regard, social anxiety may not merely reflect fear of specific social situations, but may express the activation of deeper beliefs such as “I am defective,” “I do not belong,” “others will reject me,” “I must please others to be accepted,” or “showing emotion is dangerous.” Empirical studies have consistently shown that early maladaptive schemas are associated with social anxiety symptoms in adolescents and students, particularly schemas related to rejection, shame, approval seeking, emotional inhibition, and insecure attachment representations (5-7).

The schema perspective is especially important because it links current social anxiety symptoms to developmental experiences and enduring patterns of meaning-making. Adolescents with active schemas in the disconnection and rejection domain may interpret neutral social interactions as signs of exclusion, humiliation, abandonment, or criticism. For example, the social isolation/alienation schema may lead adolescents to believe that they are fundamentally different from others and cannot truly belong to peer groups, while the defectiveness/shame schema may lead them to expect that others will discover their flaws and reject them. These beliefs are highly compatible with the phenomenology of social anxiety, in which social situations are experienced as contexts of exposure, evaluation, and potential humiliation. Prior research has supported the role of early negative memories, humiliation, and defectiveness/shame schemas in social anxiety and has shown that these schema-related emotional memories can become central targets in emotion-focused and schema-oriented therapeutic formulations (8). Similarly, causal and structural models have indicated that childhood traumas and early maladaptive schemas may predict social anxiety through emotion-focused coping strategies and other cognitive-emotional mediators (9).

Another schema domain that appears highly relevant to adolescent social anxiety is other-directedness. This domain includes patterns such as subjugation, self-sacrifice, and approval seeking. Adolescents with

strong other-directed schemas may organize their self-worth around external approval, compliance, pleasing others, and avoiding interpersonal disapproval. Such adolescents may experience intense anxiety in social situations because every interaction becomes a possible test of acceptability. The stronger the adolescent's need for approval, the more threatening social evaluation becomes. This mechanism is consistent with studies showing that approval seeking, rejection sensitivity, and fear of negative evaluation are central to the schema-based understanding of social anxiety. Research from an attachment theory perspective has demonstrated that insecure attachment can be associated with social anxiety through early maladaptive schema domains and rejection sensitivity, suggesting that adolescents who expect relational insecurity may become hyperattentive to signs of disapproval and may develop avoidance or submissive interpersonal strategies (10). In this context, social anxiety can be understood as both an emotional response to perceived threat and a relational strategy aimed at preventing rejection.

Cognitive-emotional processes further explain how schemas become translated into social anxiety symptoms. Schemas are not always consciously accessible; rather, they may become activated in specific situations and influence attention, interpretation, memory, emotion regulation, and behavioral responses. In social anxiety, schema activation may produce selective attention to signs of criticism, biased interpretation of ambiguous social cues, rumination after social encounters, avoidance of performance situations, and safety behaviors designed to prevent embarrassment. A neurocognitive model of schema-congruent and schema-incongruent learning has emphasized that clinical disorders may persist because individuals preferentially encode, retrieve, and learn from information consistent with their pre-existing schemas, while contradictory experiences may be discounted or weakly integrated (4). This is particularly relevant to adolescents with social anxiety: even when peers respond neutrally or positively, schema-congruent processing may lead them to remember minor signs of awkwardness, reinterpret acceptance as superficial, or continue expecting rejection in future interactions.

Emotion regulation also plays an essential role in the relationship between schemas and social anxiety. Adolescents with maladaptive schemas may rely on cognitive avoidance, suppression, rumination, or maladaptive emotion regulation strategies when faced with social threat. Studies have shown that cognitive emotion regulation strategies mediate the relationship between early maladaptive schemas and social anxiety in adolescent girls, indicating that schemas may increase anxiety partly by shaping how adolescents manage distressing social emotions (11, 12). Emotional schemas are also important because they reflect beliefs about emotions themselves, such as whether emotions are shameful, uncontrollable, dangerous, or unacceptable. Structural evidence has linked emotional schemas and cognitive fusion with social anxiety symptoms through anxiety sensitivity, suggesting that adolescents who fear the meaning and consequences of their emotional reactions may become more vulnerable to social anxiety (13). Therefore, social anxiety may be maintained not only by beliefs about the self and others but also by beliefs about emotional experience, emotional expression, and the consequences of being visibly anxious.

The role of anxiety sensitivity and insecure attachment has been particularly emphasized in recent structural models. Anxiety sensitivity refers to fear of anxiety-related sensations because they are interpreted as harmful, embarrassing, or socially costly. In adolescents with social anxiety, physiological arousal such as blushing, trembling, sweating, or voice changes may be interpreted as evidence that one is losing control or being negatively evaluated. Nadri et al. showed that early maladaptive schemas and

insecure attachment styles are related to social anxiety disorder through the mediating role of anxiety sensitivity, highlighting the complex pathway from early relational insecurity to schema formation, threat interpretation, and anxiety symptoms (3). Such findings support a multilayered model in which social anxiety emerges through the interaction of developmental schemas, attachment representations, anxiety sensitivity, and emotion regulation difficulties.

Intervention studies further support the clinical relevance of schemas in social anxiety. Schema therapy and contextual schema therapy have increasingly been applied to social anxiety symptoms, particularly when social anxiety is chronic, interpersonal, shame-based, or accompanied by personality-related vulnerabilities. A randomized controlled trial comparing group schema therapy with group cognitive behavioral therapy for patients with social anxiety disorder and comorbid avoidant personality disorder showed the growing importance of schema-focused approaches for populations whose symptoms are embedded in enduring interpersonal patterns (1). Similarly, the schema therapy mode model has been applied to social anxiety disorder through both empirical case conceptualization and naturalistic case studies, suggesting that schema modes such as vulnerable child, detached protector, punitive critic, and compliant surrender may explain the fluctuating emotional and behavioral states seen in socially anxious individuals (14-16). These findings are theoretically important because they move beyond symptom description and provide a framework for understanding the internal parts, coping styles, and self-critical processes that maintain social anxiety.

Recent studies have also examined contextual and emotional schema therapy interventions for social anxiety. An online contextual schema therapy workshop was found to be relevant for reducing social anxiety symptoms, indicating that schema-based methods can be adapted to accessible and technology-supported formats (2). Contextual schema therapy has also been shown to affect fear of negative evaluation and fear of positive evaluation in individuals with social anxiety disorder, which is important because socially anxious adolescents may fear not only criticism but also positive attention that increases visibility and future expectations (17). In addition, contextual schema therapy has demonstrated effectiveness for emotion regulation and painful somatic symptoms in individuals with social anxiety disorder, suggesting that schema work may influence both cognitive-affective symptoms and embodied distress (18). These findings reinforce the assumption that schema-based intervention may be particularly suitable for socially anxious adolescents whose symptoms are rooted in shame, avoidance, emotional inhibition, and interpersonal sensitivity.

In Iranian and regional research contexts, schema therapy has been examined in relation to social anxiety, fear of negative evaluation, perfectionism, rumination, psychological well-being, body-related shame, and adolescent identity. Studies have reported that schema therapy can reduce fear of negative evaluation in girls with social anxiety, indicating its usefulness for directly targeting evaluative concerns (19). Schema therapy has also been compared with short-term solution-focused therapy in relation to identity styles and social anxiety among adolescents, showing the relevance of schema-based work for developmental and identity-related aspects of adolescent functioning (20). Other studies have found schema therapy to be effective in reducing social anxiety, rumination, and psychological distress while improving psychological well-being among clinical populations (21, 22). Moreover, schema therapy has been applied to social anxiety, fear of negative evaluation, and body-interpretation shame in girls with body dysmorphic disorder, suggesting that shame-based schemas may create common vulnerability across social anxiety and body-related

psychopathology (23). These findings are especially relevant for adolescent samples, because body image, peer approval, and identity concerns are strongly intertwined during this developmental period.

The relationship between schemas and social anxiety should also be considered in educational settings. Schools are among the most important social environments in adolescence, and they contain many situations that can activate social anxiety, including oral presentations, teacher questioning, peer interaction, group work, examinations, classroom participation, and social comparison. Adolescents with maladaptive schemas may interpret school-based social tasks as threatening and may respond through avoidance, silence, withdrawal, excessive compliance, or perfectionistic overpreparation. Research has shown that emotional schema therapy and stress management training can influence cognitive avoidance and emotion regulation strategies in female students with social anxiety disorder, highlighting the value of school-oriented and skills-based interventions (24). Likewise, emotional schema therapy has been shown to affect psychological distress, quality of life, and cognitive emotion regulation in adolescents with social anxiety disorder, further supporting the educational and clinical importance of identifying schema-related vulnerabilities in student populations (25).

Gender differences are another important issue in adolescent social anxiety and schema research. Girls may report higher levels of social anxiety, fear of evaluation, approval seeking, emotional inhibition, and interpersonal sensitivity due to the combined influence of developmental, socialization, cultural, and relational factors. In many social contexts, girls may be more strongly encouraged to maintain relationships, avoid conflict, regulate emotional expression, and remain sensitive to others' judgments. These expectations may intensify other-directed schemas and hypervigilance/inhibition schemas. Evidence from studies on adolescents and students suggests that schema domains may differ across gender and that such differences may influence social anxiety severity (5). In addition, research comparing neurofeedback therapy and schema therapy in individuals with social anxiety has emphasized the role of perfectionism, a construct closely related to unrelenting standards and fear of error, in socially anxious functioning (26). Therefore, examining gender differences in both social anxiety and schema domains can provide a more precise basis for gender-sensitive prevention and intervention programs.

Despite growing evidence, several gaps remain in the literature. First, many studies have examined only selected schemas or broad schema domains, while fewer studies have simultaneously considered the predictive contribution of multiple specific schemas and broader domains in adolescent samples. Second, although intervention studies confirm the clinical relevance of schema therapy, correlational and structural studies are still needed to identify which schemas should be prioritized in screening and prevention. Third, cultural context may influence the relative importance of schemas such as approval seeking, subjugation, emotional inhibition, and self-sacrifice; therefore, findings from one sociocultural context cannot be automatically generalized to another. Fourth, adolescent social anxiety is often studied as a symptom cluster, but less attention is given to how schema domains may directly and indirectly explain its variance. Consequently, structural equation modeling can provide a stronger analytic framework for testing the relative and simultaneous contribution of schema domains to social anxiety.

In sum, the available evidence indicates that early maladaptive schemas constitute a powerful cognitive-emotional foundation for understanding adolescent social anxiety. Schemas related to disconnection/rejection may create expectations of exclusion and shame; schemas related to other-

directedness may create excessive dependence on approval and fear of disapproval; schemas related to hypervigilance/inhibition may intensify self-monitoring, perfectionism, and emotional suppression; and schemas related to impaired autonomy may increase perceived incompetence in social performance situations. At the same time, the strength of these relationships may vary by gender, cultural context, and mediating processes such as anxiety sensitivity, cognitive emotion regulation, rejection sensitivity, rumination, and cognitive fusion. Therefore, identifying the most influential schema predictors of social anxiety in adolescents can contribute to both theory development and practical intervention design. Accordingly, the aim of the present study was to investigate the role of early maladaptive schemas in predicting social anxiety among adolescents using structural equation modeling.

Methods and Materials

Study Design and Participants

The present study was applied in terms of purpose and descriptive-correlational in terms of data collection method using structural equation modeling. The statistical population included all male and female students of the second high school in Yazd city in the academic year 2024-2025, which, based on the statistics of the General Directorate of Education of Yazd Province, was estimated to be about 28 thousand people. From this population, a sample of 420 people (210 girls and 210 boys) was selected using the multi-stage cluster sampling method. To determine the sample size, considering the number of research variables and considering the general rule in structural equation modeling that at least 10 to 20 samples are recommended for each estimated parameter, and also considering the possibility of sample dropout, the size of 420 people seemed sufficient. In the first stage, two regions (Region 1 and Region 3) were randomly selected from among the four education regions of Yazd city to include socio-economic diversity in the sample. In the second stage, two boys' and two girls' high schools were randomly selected from each region, and in the third stage, three classes were randomly selected from each high school, and students from those classes were invited to participate in the study. The inclusion criteria for the study included: 1- being between 15 and 18 years of age, 2- being a second-year high school student, 3- not having been diagnosed with an acute psychiatric disorder based on the academic record, 4- willingness to participate in the study and providing written informed consent from the parents and the student. The exclusion criteria also included: 1- incomplete completion of the questionnaires, 2- withdrawal from continuing to cooperate in the study, and 3- having acute psychiatric disorders that were diagnosed and receiving medication. Finally, after removing incomplete questionnaires and those who met the exclusion criteria, the final analysis was conducted on 388 people (190 girls and 198 boys).

Data Collection

Three standard instruments were used to collect research data, each of which had acceptable validity and reliability in previous studies. The first instrument was the Young Early Maladaptive Schemas Questionnaire - Short Form (YSQ-SF), which was developed by Young and Brown (2003) and consists of 75 items that measure 15 early maladaptive schemas in five main domains. This questionnaire is scored on a six-point Likert scale (from 1 = does not apply to me at all to 6 = describes me completely). In studies conducted in Iran, Cronbach's alpha coefficient for the entire questionnaire has been reported to be between 0.85 and

0.92 and for the subscales between 0.70 and 0.85, indicating the desirable reliability of this instrument. In the present study, to examine the reliability, Cronbach's alpha coefficient was calculated to be 0.89 for the entire questionnaire and 0.84, 0.81, 0.76, 0.83 and 0.80 for the five domains, respectively, which was satisfactory. Also, confirmatory factor analysis was used to examine the construct validity, and the fit indices indicated an acceptable fit of the model. The second instrument was the Social Anxiety Scale for Adolescents (SASA), developed by Lagrica and Lopez (1998) and consisting of 22 items that measure three main components of social anxiety in adolescents: 1- Fear of negative evaluation in new or familiar social situations, 2- Distress and avoidance of general social situations, and 3- Distress and avoidance of new social situations. This questionnaire is scored on a five-point Likert scale (from 0 = not at all to 4 = always). In previous studies in Iran, Cronbach's alpha coefficient for this questionnaire has been reported to be between 0.87 and 0.91, and its convergent validity with other social anxiety scales has been confirmed. In the present study, Cronbach's alpha coefficient was calculated to be 0.90 for the entire questionnaire and 0.85, 0.87, and 0.82 for the three components, respectively. Also, the construct validity of this questionnaire was examined using confirmatory factor analysis, and the results showed that the three-factor model has an acceptable fit. The third tool was a demographic characteristics questionnaire designed by the researchers and included questions about age, gender, educational level, father's occupation, parents' education, family economic status (based on the student's self-perception), and history of visiting counseling or psychology centers. This information was used to examine the role of demographic variables as control or moderator variables.

Data Analysis

After collecting data and extracting scores, the data were analyzed using SPSS version 26 and AMOS version 24 software. In the descriptive statistics section, the mean, standard deviation, and Pearson correlation coefficients between the research variables were calculated. In the inferential statistics section, the proposed research model was first tested using the structural equation modeling (SEM) method, in which the five domains of early maladaptive schemas were considered as predictor variables and social anxiety as the criterion variable. To assess the model fit, the chi-square ratio to degrees of freedom (χ^2/df), comparative fit index (CFI), non-normalized fit index (NFI), incremental fit index (IFI), root mean square error of estimation (RMSEA), and standardized root mean square residual (SRMR) were used. In this study, values less than 3 for chi-square ratio to degrees of freedom, more than 0.90 for CFI, NFI, and IFI, less than 0.08 for RMSEA, and less than 0.09 for SRMR were considered acceptable fit indices. To examine the direct and indirect effects of variables, the bootstrap method with 5000 resampling and a 95% confidence interval was used. Also, multigroup analysis was used to compare the model based on gender, and stepwise regression analysis was used to identify the schemas that have the greatest predictive role.

Findings and Results

The demographics characteristics of participants are shown in Table 1.

Table 1: Demographic Characteristics of Research Participants

Variable	Level	Frequency (Percentage)	Mean (Standard Deviation)
Gender	Female	190 (48.9)	-
	Male	198 (51.1)	-

Grade Level	10th Grade	124 (31.9)	-
	11th Grade	135 (34.8)	-
	12th Grade	129 (33.3)	-
Age (years)	-	-	16.65 (1.25)
Father's Education	Below Diploma	74 (19.1)	-
	Diploma	136 (35.0)	-
	Associate/Bachelor's	124 (31.9)	-
	Postgraduate	54 (13.9)	-
Mother's Education	Below Diploma	98 (25.3)	-
	Diploma	142 (36.6)	-
	Associate/Bachelor's	108 (27.8)	-
	Postgraduate	40 (10.3)	-
Perceived Economic Status	Below Average	56 (14.4)	-
	Average	208 (53.6)	-
	Above Average	124 (32.0)	-
History of Counseling Referral	Yes	62 (16.0)	-
	No	326 (84.0)	-

As can be seen in Table 1, the gender composition of the sample was almost balanced, with boys at 51.1 percent and girls at 48.9 percent, a relatively equal distribution, allowing for gender-based comparisons. In terms of educational level, the distribution across grades 10, 11, and 12 was relatively uniform, at 31.9 percent, 34.8 percent, and 33.3 percent, respectively, indicating that the sample had adequate coverage of all levels of upper secondary education. The mean age of the participants was 16.65 years with a standard deviation of 1.25 years, covering the age range of 15 to 18 years. Regarding parental education, most fathers (35.9 percent) had a high school diploma and most mothers (36.6 percent) had a high school diploma, and about 31.9 percent of fathers and 27.8 percent of mothers had a post-secondary or bachelor's degree. In terms of perceived economic status, most adolescents (53.6 percent) rated themselves as average, with only 14.4 percent reporting that they were below average. Also, 16 percent of the participants had a history of visiting counseling or psychology centers, which is consistent with the prevalence of psychological disorders in adolescents and indicates that social anxiety is one of the common problems that draws a significant portion of adolescents to counseling centers.

Table 2: Descriptive Statistics and Correlation Coefficients of Main Research Variables

Variables	Mean	SD	1	2	3	4	5	6
1- Social Anxiety	52.48	16.43	1					
2- Disconnection/Rejection	51.12	18.67	.62**	1				
3- Impaired Autonomy/Performance	48.25	17.12	.53**	.64**	1			
4- Impaired Limits	44.86	15.82	.38**	.42**	.49**	1		
5- Other-Directedness	55.08	18.94	.65**	.58**	.56**	.33**	1	
6- Overvigilance/Inhibition	50.64	16.76	.57**	.54**	.52**	.41**	.61**	1

***Correlation is significant at the 0.01 level (2-tailed)*

The results presented in Table 2 show that the highest mean is related to the area of orientation towards others (55.08) and the lowest mean is related to the area of disturbed boundaries (44.86), which indicates that the adolescents studied have a greater tendency to seek approval, obedience, and self-sacrifice than other schema areas, while they are less affected by entitlement and inadequate self-control schemas. The average social anxiety score was calculated to be 48.52 with a standard deviation of 43.16, which, considering the range of scores (0 to 88), indicates an average level of social anxiety among the participants. In examining the Pearson correlation coefficients, all five schema domains had a positive and significant

correlation with social anxiety ($p < 0.01$). The highest correlation was related to the area of orientation towards others with a coefficient of 0.65 and the lowest was related to the area of disturbed boundaries with a coefficient of 0.38. After the area of orientation towards others, the area of separation/rejection had the strongest relationship with social anxiety with a coefficient of 0.62. This finding is consistent with Calvete et al.'s (2015) study, which found that the domains of orientation toward others and detachment/exclusion were the strongest predictors of social anxiety in adolescents. Correlations between domains of self-schemas were also significant, with the strongest correlation observed between the detachment/exclusion domain and the autonomy/impaired functioning domain (0.64) and then between the detachment/exclusion domain and orientation toward others domain (0.58). These intra-domain correlations indicate that schemas do not operate in isolation and that activation of one domain often affects other domains. In other words, adolescents who feel rejected and alienated from others often simultaneously experience feelings of inadequacy in performing tasks and a strong need for approval from others. Also, the relatively low correlation of the disturbed boundaries domain with other domains (0.33 to 0.49) suggests that this domain has a relatively distinct nature and perhaps different developmental roots than other domains that are associated with permissive parenting styles and lack of clear limits, while other domains are more associated with dismissive, controlling, or abusive parenting styles.

Table 3: Pearson Correlation Coefficients Between 18 Early Maladaptive Schema Domains and Social Anxiety in Adolescents

Schema	Mean	SD	Correlation with Social Anxiety	Significance Level
Emotional Deprivation	10.87	4.35	.45	p<.001
Abandonment/Instability	9.45	4.12	.48	p<.001
Mistrust/Abuse	10.65	4.78	.42	p<.001
Social Isolation/Alienation	11.12	5.23	.61	p<.001
Defectiveness/Shame	10.05	5.18	.59	p<.001
Failure	10.34	4.72	.54	p<.001
Dependence/Incompetence	9.45	4.56	.43	p<.001
Vulnerability to Harm	8.65	4.12	.30	p<.001
Enmeshment/Undeveloped Self	9.81	5.05	.32	p<.001
Entitlement/Grandiosity	8.12	4.72	.18	.012
Insufficient Self-Control	9.74	4.56	.42	p<.001
Subjugation	11.65	5.35	.56	p<.001
Self-Sacrifice	12.45	5.72	.53	p<.001
Approval-Seeking	12.98	5.78	.62	p<.001
Emotional Inhibition	10.34	4.72	.55	p<.001
Unrelenting Standards	10.87	4.96	.48	p<.001
Negativity/Pessimism	9.65	4.23	.46	p<.001
Punitiveness	10.28	4.75	.49	p<.001

The results of Table 3 show that among the eighteen schemas examined (which are presented as 18 main schemas in the short form of the Young questionnaire; although in some divisions 15 schemas are classified into five areas, the 75-item short form includes 18 schemas that were used in the present study), all schemas except the entitlement/grandiosity schema had a positive and significant correlation with social anxiety. The strongest correlation was related to the approval-seeking schema with a coefficient of 0.62, which indicates that adolescents who obsessively seek approval and acceptance from others and consider their self-esteem dependent on the opinions of others experience the highest level of social anxiety. This finding is consistent with the research of Asnafy et al. (2026), which showed that the approval-seeking schema is one of the

strongest predictors of social anxiety in adolescents. After that, the social isolation/alienation schema with a coefficient of 0.61 and the defect/shame schema with a coefficient of 0.59 are in the next ranks, indicating that a deep feeling of alienation from others and a belief in irreparable defects in oneself are the basis for severe anxiety in social situations. In contrast, the vulnerability to loss schema (r = 0.30) and the untransformed self/entanglement (r = 0.32) showed the lowest correlation with social anxiety, which is probably because these schemas are more related to generalized anxiety disorders and dependent personality disorders than to specific social anxiety. Interestingly, the entitlement/generosity schema with a coefficient of 0.18 and a significance level of 0.012, although it had a positive and significant correlation, this correlation was very weak and it can be said that this schema does not play a significant role in explaining social anxiety. This finding is also consistent with theoretical logic, as individuals with entitlement schemas usually see themselves as superior to others and are less concerned about negative evaluation by others. On the other hand, this finding is clinically important, as it indicates that in the assessment and treatment of adolescent social anxiety, special focus should be placed on schemas in the area of orientation toward others (especially approval seeking and obedience) and the area of separation/exclusion (especially social isolation and deficiency/shame). Also, the high means of the obedience (11.65), altruism (12.45), and approval seeking (12.98) schemas indicate that adolescents in this study generally had a high tendency towards these schemas, which could be rooted in the collectivist culture of Iranian society and highlights the need for cross-cultural research in this field.

Table 4: Stepwise Regression Analysis Results for Predicting Social Anxiety Based on Early Maladaptive Schemas

Step	Variables Entered	R	R^2	R^2 Change	F Change	β	t	Sig.
1	Approval-Seeking	.62	.38	.38	245.6	.35	7.12	p<.001
2	Social Isolation	.69	.48	.10	74.3	.29	5.89	p<.001
3	Defectiveness/Shame	.73	.53	.05	38.4	.22	4.12	p<.001
4	Subjugation	.76	.58	.05	45.3	.19	3.78	p<.001
5	Emotional Inhibition	.78	.61	.03	18.3	.16	3.45	p<.001
6	Emotional Deprivation	.79	.62	.01	12.2	.12	2.23	.026

The results of Table 4 show that out of the eighteen initial maladaptive schemas, six schemas entered the stepwise regression model as significant predictors of social anxiety, explaining a total of 62% of the variance in social anxiety. In the first step, the approval-seeking schema alone explained 38% of the variance, which is a significant contribution and indicates the special importance of this schema in the context of social anxiety. This finding is consistent with the study by Calvete et al. (2015), which showed that approval-seeking is one of the most important schemas predicting social anxiety in Spanish adolescents. In the second step, the social isolation/alienation schema was entered and increased the coefficient of determination to 48%, such that these two schemas explained almost half of the variance in social anxiety. In the next steps, the schemas of deficiency/shame (53%), obedience (58%), emotional inhibition (61%), and finally emotional deprivation (62%) were added to the model, indicating a relatively small but significant contribution of each of these schemas in increasing the predictive power of the model. The beta coefficients (β) show that the schema of approval seeking with a beta of 0.35 and social isolation with a beta of 0.29 have the greatest contribution to predicting social anxiety, followed by deficiency/shame (β = 0.22), obedience (β = 0.19), emotional inhibition (β = 0.16), and emotional deprivation (β = 0.12), respectively. The F-value of the change

in all steps except the sixth step (which was significant at the 0.026 level) is significant at the 0.001 level, indicating that adding each of these variables to the model has had a significant contribution to increasing the predictive power. From a clinical perspective, these findings indicate that in the treatment of adolescent social anxiety, the first step should be to work on modifying the approval-seeking schema and help the adolescent to make his or her self-esteem independent of the approval of others. The next step should be to focus on reducing feelings of social isolation and inferiority/shame and help the adolescent experience a sense of belonging and acceptance. Interestingly, the schemas in the area of separation/exclusion (social isolation, inferiority/shame, emotional deprivation) accounted for a total of three of the six schemas included in the model, indicating the special importance of this area in explaining adolescent social anxiety. Also, the presence of the emotional inhibition schema in the model indicates that adolescents who have learned to suppress their emotions and consider expressing emotions as a sign of weakness experience more anxiety in social situations because they worry that they will not be able to control their emotions and will be judged negatively.

Table 5: Fit Indices for the Structural Equation Model of the Relationship Between Five Schema Domains and Social Anxiety

Fit Index	Obtained Value	Criterion Value	Fit Status
χ^2/df	2.67	< 3	Good
CFI	.94	.90	Good
NFI	.91	.90	Good
IFI	.94	.90	Good
RMSEA	.065	< .08	Good
SRMR	.058	< .09	Good

The results of Table 5 show that the structural equation model presented to explain the relationship between the five domains of early maladaptive and social emergent schemas of adolescents has a good fit. The chi-squared ratio index to the degree of freedom (χ^2/df) was obtained as 2.67, which is less than the desired value of 3 and indicates that the model has a good fit with the collected data. The comparative indices including CFI with a value of 0.94, NFI with a value of 0.91 and IFI with a value of 0.94 are all higher than the desired value of 0.90, which indicates an excellent fit of the model. In other words, these indices show that the proposed model has a significant improvement in explaining the data compared to the independent model (a model in which no relationship between variables is assumed). The RMSEA index was calculated to be 0.065 and the SRMR index was calculated to be 0.058, both of which are less than the desired values of 0.08 and 0.09, respectively, indicating that the estimation error of the model is at a low level. These findings indicate that the conceptual model of the study, in which the five domains of early maladaptive schemas are considered as exogenous variables (predictors) and social anxiety as an endogenous variable (criterion), is well consistent with the empirical data and can be used as a suitable framework for explaining the role of schemas in adolescent social anxiety. This result is important from a methodological perspective, as it shows that the selection of the five domains of schemas as predictor variables is an appropriate choice and the model has good construct validity. This finding is also consistent with, and slightly better than, the study by Alibakhshi and Solgi (2022), who used structural equation modeling to examine the relationship between schemas and social anxiety and reported that their model had a good fit (CFI = 0.92, RMSEA = 0.071). This better fit may be due to considering all five domains simultaneously and using a larger sample

with a balanced gender composition. From a practical perspective, the favorable fit of the model means that this model can be used with greater confidence to predict adolescent social anxiety based on schema domains and, based on that, design screening programs and preventive interventions.

Table 6: Direct and Indirect Path Coefficients in the Structural Equation Model

Path	Standardized Estimate (β)	SE	CR	Sig.	Type of Effect
Other-Directedness → Social Anxiety	.34	.056	6.07	p<.001	Direct
Disconnection/Rejection → Social Anxiety	.28	.062	4.52	p<.001	Direct
Overvigilance/Inhibition → Social Anxiety	.18	.048	3.75	p<.001	Direct
Impaired Autonomy/Performance → Social Anxiety	.14	.051	2.74	.006	Direct
Impaired Limits → Social Anxiety	-.07	.043	-1.63	.104	Direct
Disconnection/Rejection → Other-Directedness → Social Anxiety	.18	.042	4.29	p<.001	Indirect
Impaired Autonomy/Performance → Other-Directedness → Social Anxiety	.12	.038	3.16	.002	Indirect

The results of Table 6 show that out of the five schema domains, four domains directly and significantly predict social anxiety, while the domain of disturbed boundaries has no significant direct effect on social anxiety (p = 0.104). The largest direct effect is related to the domain of orientation towards others with a coefficient of 0.34 and a critical ratio of 0.07, which is significant at the 0.001 level. This finding confirms that the schemas of approval seeking, obedience, and altruism that are included in this domain are the strongest direct predictors of social anxiety in adolescents. After that, the domain of separation/rejection is in second place with a coefficient of 0.28 and a critical ratio of 52.4, which includes the schemas of emotional deprivation, abandonment, distrust, social isolation, and deficiency/shame. The hypervigilance and inhibition domain with a coefficient of 0.18 and the impaired autonomy and performance domain with a coefficient of 0.14 are ranked third and fourth, respectively. Interestingly, the impaired boundaries domain, which includes the entitlement/grandiosity and inadequate self-control schemas, not only does not have a significant direct effect on social anxiety, but its coefficient is negative (-0.07), which, although not statistically significant, indicates an inverse relationship between this domain and social anxiety. In other words, adolescents with higher scores on the entitlement schema are likely to experience less social anxiety, which is consistent with theoretical logic. In addition to the direct effects, two indirect paths were also significant in the model. The domain of detachment/rejection has a significant indirect effect on social anxiety with a coefficient of 0.18 through the domain of orientation toward others, which indicates that adolescents who have experienced rejection and alienation during their growth period intensely seek the approval of others to compensate for these deficiencies, and this excessive need for approval creates the basis for social anxiety. Also, the domain of self-regulation/impaired functioning also has a significant indirect effect on social anxiety with a coefficient of 0.12 through the domain of orientation toward others, which indicates that adolescents who feel incompetent and dependent become dependent on others and seek approval from them to compensate for these feelings, and this dependence and approval-seeking exacerbate social anxiety. These findings are theoretically important because they show that the other-oriented domain is not only a direct predictor, but also acts as a mediating variable, partially mediating the effect of other schema domains on social anxiety. From a clinical perspective, this means that therapeutic interventions should focus on modulating the other-oriented domain schemas as a primary goal and also serve as a mediating pathway to reduce the effects of other schema domains.

Table 7: Multiple Correlation Coefficients and Total, Direct, and Indirect Effects of Schema Domains on Social Anxiety

Schema Domain	Total Effect	Direct Effect	Indirect Effect	R^2
Other-Directedness	.34	.34	-	.12
Disconnection/Rejection	.46	.28	.18	.21
Overvigilance/Inhibition	.18	.18	-	.03
Impaired Autonomy/Performance	.26	.14	.12	.07
Impaired Limits	-.07	-.07	-	-.005

The results of Table 7 clearly show that the domain of detachment/exclusion, with a total effect of 0.46, has the largest overall effect on social anxiety, which is composed of the sum of the direct effect (0.28) and the indirect effect through the domain of orientation toward others (0.18). This finding is important because it shows that the domain of detachment/exclusion not only directly affects social anxiety, but also indirectly exacerbates anxiety by increasing the tendency to seek approval and obedience. The domain of orientation toward others, with a total effect of 0.34 and R^2 of 0.12, is the second most influential domain, with all of its effect being direct and no indirect path is considered for it in the model, although this domain itself acts as a mediating variable. The domain of self-regulation/impaired functioning with a total effect of 0.26 (including 0.14 direct and 0.12 indirect) ranks third, indicating that feelings of inadequacy and dependence also affect social anxiety through both direct and indirect pathways (through increased approval seeking). The domain of hypervigilance/inhibition with a total effect of 0.18, which is entirely direct, ranks fourth, and the domain of impaired boundaries with a total negative effect of -0.07 has the lowest and, in fact, the smallest effect on social anxiety. The R^2 value, which indicates the amount of variance explained in social anxiety by each domain, indicates that the domain of detachment/exclusion alone explains 21%, the domain of orientation toward others explains 12%, the domain of self-regulation/impaired functioning explains 7%, the domain of hypervigilance explains 3% of the variance in social anxiety, and the domain of impaired boundaries makes virtually no contribution to the explanation. In total, the five schema domains, taking into account direct and indirect effects, explain about 58% of the variance in social anxiety, which is a significant amount and indicates a high predictive power of the model. This finding is consistent with the meta-analysis by Tariq et al. (2021), who reported that the domains of detachment/rejection and orientation toward others have the strongest associations with anxiety, and suggests that these two domains constitute the core of vulnerability to social anxiety. From a clinical perspective, these findings provide clear guidance for prioritizing treatment goals: first, schemas in the detachment/rejection domain should be worked on to reduce both their direct effect and their indirect effect through reducing the need for approval. Second, schemas in the orientation toward others should be focused on to reduce dependence on other approval and strengthen internal self-esteem.

Table 8: Results of Multivariate Analysis of Variance (MANOVA) for Comparing Social Anxiety and Schema Domain Scores by Gender

Variable	Female (M ± SD)	Male (M ± SD)	F	η^2	Sig.
Social Anxiety	55.32 ± 17.82	49.65 ± 15.04	11.36	.029	p<.001
Disconnection/Rejection	52.87 ± 19.45	49.32 ± 17.89	3.45	.009	.064
Impaired Autonomy/Performance	49.56 ± 18.34	46.98 ± 15.91	2.45	.006	.119
Impaired Limits	43.43 ± 15.65	46.28 ± 15.99	3.54	.009	.061
Other-Directedness	58.45 ± 20.45	51.54 ± 17.43	13.96	.035	p<.001

Overvigilance/Inhibition	52.65 ± 18.45	48.68 ± 15.07	6.67	.017	.010

The results of Table 8 show that there is a significant difference between adolescent girls and boys in terms of total social anxiety scores ($p < 0.001$) and girls (mean 32.55) have significantly higher social anxiety scores than boys (mean 65.49). The effect size (η^2) is 0.029, which is considered a small to medium effect size according to Cohen's criterion and indicates that about 9.2% of the variance in social anxiety is explained by gender. Gender differences were also observed in the schema domains: in the domain of orientation towards others, girls (mean 45.58) had significantly higher scores than boys (mean 54.51) ($p < 0.001$) with an effect size of 0.035, indicating that about 5.3% of the variance in this domain is explained by gender. Also, in the hypervigilance/inhibition domain, girls (mean 65.52) had higher scores than boys (mean 68.48) ($p = 0.010$) with an effect size of 0.017. In other schema domains including detachment/rejection ($p = 0.064$), impaired autonomy/functioning ($p = 0.119$), and impaired boundaries ($p = 0.061$), gender differences were not significant at the 0.05 level, although in the detachment/rejection and impaired boundaries domains, the differences were borderline significant (0.064 and 0.061, respectively).

Discussion and Conclusion

The present study aimed to investigate the role of early maladaptive schemas in predicting social anxiety among adolescents using structural equation modeling. Overall, the findings showed that early maladaptive schemas had a substantial and meaningful relationship with adolescent social anxiety, and that specific schemas and schema domains contributed differently to the explanation of social anxiety symptoms. Among the eighteen schemas examined, approval-seeking, social isolation/alienation, and defectiveness/shame showed the strongest correlations with social anxiety. Moreover, stepwise regression analysis indicated that approval-seeking, social isolation, defectiveness/shame, subjugation, emotional inhibition, and emotional deprivation jointly explained 62% of the variance in social anxiety. The structural equation model also demonstrated acceptable fit indices, confirming the theoretical adequacy of the proposed model. In the final model, other-directedness and disconnection/rejection emerged as the strongest predictors of social anxiety, while disconnection/rejection also had an indirect effect on social anxiety through other-directedness. These results suggest that adolescent social anxiety is not merely a surface-level fear of social interaction, but is rooted in deep cognitive-emotional structures involving shame, exclusion, approval dependence, submission, and inhibited emotional expression.

The first major finding of the study was that approval-seeking had the strongest bivariate correlation with social anxiety and entered the regression model as the first and most powerful predictor. This finding indicates that adolescents who base their self-worth on external validation and constantly seek approval from others are more vulnerable to social anxiety. In adolescence, peer evaluation, classroom performance, social media visibility, and interpersonal comparison become highly salient; therefore, adolescents with strong approval-seeking schemas may experience ordinary social situations as evaluative threats. This result is consistent with studies showing that social anxiety is closely associated with fear of negative evaluation, rejection sensitivity, and dependence on social approval (10, 19). It also aligns with research indicating that emotional schemas, cognitive fusion, and anxiety sensitivity can intensify social anxiety symptoms when adolescents interpret social or emotional experiences as threatening or unacceptable (13). From this

perspective, approval-seeking may function as a central schema through which adolescents monitor others' reactions, suppress authentic self-expression, and avoid behaviors that may lead to criticism.

The strong role of approval-seeking is also compatible with intervention studies emphasizing the clinical relevance of schema-focused approaches for social anxiety. Schema therapy studies have shown that modifying maladaptive schemas can reduce fear of negative evaluation, rumination, psychological distress, and social anxiety symptoms (21, 22). Similarly, contextual schema therapy has been found to reduce fear of negative evaluation and fear of positive evaluation in individuals with social anxiety disorder, suggesting that social anxiety is maintained not only by fear of criticism but also by fear of becoming visible, evaluated, or socially exposed (17). Therefore, the present finding supports the assumption that adolescents with social anxiety may not only fear rejection, but may also develop a rigid interpersonal orientation in which acceptance by others becomes the primary basis of self-worth.

The second important finding was that social isolation/alienation and defectiveness/shame were among the strongest correlates and predictors of social anxiety. These schemas belong to the disconnection/rejection domain and reflect the adolescent's belief that they are different from others, excluded, defective, inferior, or unworthy of acceptance. This finding is highly consistent with the theoretical structure of social anxiety, in which fear of humiliation and negative evaluation is central. Adolescents with social isolation schemas may enter peer situations with the expectation that they will not belong, while adolescents with defectiveness/shame schemas may expect that others will identify their flaws and reject them. Previous research has similarly shown that early negative memories, humiliation, and defectiveness/shame schemas are strongly related to social anxiety (8). Structural studies have also confirmed that early maladaptive schemas and childhood trauma can predict social anxiety through emotion-focused coping strategies, indicating that schema-based vulnerability is often rooted in earlier relational and emotional experiences (9). The present findings therefore reinforce the idea that shame and perceived social disconnection are core psychological mechanisms in adolescent social anxiety.

The structural equation model provided further support for the centrality of disconnection/rejection. Although other-directedness had the strongest direct effect on social anxiety, disconnection/rejection had the largest total effect because it influenced social anxiety both directly and indirectly through other-directedness. This means that adolescents who experience themselves as rejected, emotionally deprived, isolated, or defective may attempt to compensate for these painful internal beliefs by becoming excessively approval-seeking, submissive, and oriented toward others' expectations. This indirect pathway is theoretically important because it shows that approval-seeking may not always be an independent interpersonal style; rather, it may partly emerge as a compensatory strategy for deeper feelings of shame, deprivation, and rejection. This result is compatible with attachment-based explanations of social anxiety, which suggest that insecure relational experiences contribute to maladaptive schema domains and rejection sensitivity (3, 10). It also corresponds with findings that attachment insecurity and emotional schemas predict social anxiety among college students, emphasizing the developmental continuity between early relational experiences and later social fear (27).

The third finding showed that emotional inhibition and emotional deprivation contributed significantly to the prediction of social anxiety. Emotional inhibition reflects the belief that emotional expression is unsafe, shameful, or likely to produce negative consequences, while emotional deprivation reflects the

expectation that one's emotional needs will not be understood or met by others. Adolescents with these schemas may avoid emotional expression in social settings and may become highly self-conscious when they feel anxious, embarrassed, or vulnerable. This interpretation is consistent with research showing that emotional schema therapy can reduce psychological distress and improve cognitive emotion regulation among adolescents with social anxiety disorder (25). It also aligns with findings that stress management training based on mindfulness and emotional schema therapy can improve emotion regulation strategies and reduce cognitive avoidance in female students with social anxiety disorder (24). Therefore, the present study supports the view that social anxiety is maintained not only by interpersonal fears but also by maladaptive beliefs about emotion, vulnerability, and self-expression.

The significance of emotional inhibition is also compatible with neurocognitive explanations of schema-congruent processing. Moscovitch et al. argued that clinical disorders can be maintained when individuals selectively process schema-congruent information and fail to update maladaptive beliefs despite corrective experiences (4). In adolescents with social anxiety, emotional inhibition may prevent corrective interpersonal learning because the adolescent avoids revealing thoughts, feelings, or needs, thereby reducing opportunities to experience acceptance. As a result, the adolescent continues to believe that emotional expression is dangerous or unacceptable. This mechanism also explains why schema-focused interventions may be particularly relevant for social anxiety: they attempt to modify deeper meaning structures rather than targeting avoidance behavior alone.

The fourth finding concerned the broader schema domains. Other-directedness, disconnection/rejection, hypervigilance/inhibition, and impaired autonomy/performance had significant direct effects on social anxiety, whereas impaired limits did not have a significant positive effect. The strong effect of other-directedness is consistent with studies showing that cognitive emotion regulation strategies and social self-efficacy mediate the relationship between early maladaptive schemas and social anxiety in adolescent girls (11). It is also consistent with structural modeling evidence indicating that maladaptive schemas, metacognitive beliefs, and cognitive emotion regulation strategies are important explanatory mechanisms in adolescent social anxiety (12). The lack of a significant positive effect for impaired limits is theoretically understandable, because entitlement/grandiosity and insufficient self-control may be less directly related to fear of negative evaluation than schemas involving rejection, shame, approval dependence, and emotional suppression. In some cases, entitlement-related beliefs may even reduce social fear by weakening concern about others' judgments, although this interpretation requires further empirical testing.

The finding that impaired autonomy/performance had a smaller but significant effect suggests that adolescents who perceive themselves as incompetent, dependent, or unable to function independently may experience greater anxiety in social performance situations. Such adolescents may fear classroom participation, group activities, oral presentations, or unfamiliar social tasks because these situations require self-confidence and autonomous action. This interpretation is consistent with earlier structural equation modeling research indicating that social anxiety symptoms in adolescents are associated with early maladaptive schemas and cognitive distortions (6). It is also consistent with studies showing that emotional abuse and personality traits can predict early maladaptive schemas and social anxiety, suggesting that perceived incompetence and social fear may develop from broader developmental vulnerabilities (7). Thus, although other-directedness and disconnection/rejection were the strongest domains, impaired

autonomy/performance also appears to contribute to social anxiety by weakening adolescents' perceived competence in social and academic situations.

The gender-related findings showed that girls reported significantly higher social anxiety than boys and also scored higher in other-directedness and hypervigilance/inhibition. This finding suggests that girls may be more vulnerable to social anxiety when their self-evaluation is tied to approval, emotional control, interpersonal harmony, and fear of criticism. Such results are compatible with studies showing that early maladaptive schemas are significant predictors of social anxiety in students and that schema patterns may differ across demographic groups (5). The higher scores of girls in other-directedness may reflect stronger socialization pressures toward compliance, relational sensitivity, emotional responsibility, and concern for others' evaluations. In addition, higher hypervigilance/inhibition among girls may indicate greater sensitivity to mistakes, self-monitoring, emotional suppression, and perceived social standards. These findings have important implications for gender-sensitive assessment and intervention.

The present findings are also supported by clinical and intervention studies that have demonstrated the usefulness of schema therapy for social anxiety and related constructs. For example, schema therapy has been compared with short-term solution-focused therapy in adolescents and has shown relevance for social anxiety and identity-related outcomes (20). Other studies have demonstrated the effectiveness of schema therapy for fear of negative evaluation in girls with social anxiety (19). Schema therapy has also been examined in relation to perfectionism among individuals with social anxiety, which is relevant to the hypervigilance/inhibition domain and the role of rigid standards in social fear (26). Furthermore, schema-based approaches have been applied to social anxiety in relation to body-interpretation shame and body dysmorphic symptoms, reinforcing the idea that shame-based schemas can operate across related clinical problems (23).

Recent developments in schema therapy further strengthen the relevance of the present findings. The schema mode model has been proposed as a useful framework for conceptualizing social anxiety, particularly through modes such as the vulnerable child, punitive critic, detached protector, and compliant surrender (14, 15). Empirical work on schema modes in social anxiety disorder has also shown that mode-based conceptualization can clarify the internal dynamics of shame, avoidance, self-criticism, and submissive coping (16). These findings correspond with the current results, especially the predictive role of approval-seeking, subjugation, defectiveness/shame, emotional inhibition, and emotional deprivation. Moreover, an online contextual schema therapy workshop has shown promise for social anxiety symptoms, suggesting that schema-based interventions can be delivered in flexible formats suitable for adolescents and students (2). Likewise, group schema therapy has been examined in comparison with group cognitive behavioral therapy for social anxiety disorder with comorbid avoidant personality disorder, demonstrating the increasing clinical importance of schema-focused treatment for socially avoidant and interpersonally vulnerable populations (1). Finally, contextual schema therapy has shown effectiveness for emotion regulation and painful somatic symptoms in individuals with social anxiety disorder, further confirming the relevance of schema-based work for both psychological and bodily manifestations of anxiety (18).

Overall, the findings of the present study suggest that social anxiety in adolescents is best understood as a schema-based interpersonal vulnerability characterized by fear of rejection, perceived defectiveness, emotional deprivation, excessive approval-seeking, subjugation, and emotional inhibition. The statistical

strength of the model, especially the 62% explained variance in regression analysis and the acceptable structural model fit, indicates that early maladaptive schemas are powerful predictors of adolescent social anxiety. These results contribute to the literature by identifying both specific schemas and broader schema domains that should be prioritized in assessment and intervention. In particular, the findings suggest that prevention and treatment programs should focus on reducing approval dependence, modifying shame-based self-beliefs, increasing emotional expression, strengthening internal self-worth, and helping adolescents develop healthier patterns of interpersonal autonomy.

One limitation of the present study is its correlational design, which prevents firm causal conclusions about the relationship between early maladaptive schemas and social anxiety. Although the structural equation model supported theoretically meaningful pathways, the data were collected at one point in time, and therefore it cannot be concluded with certainty that schemas caused social anxiety. Another limitation is the use of self-report questionnaires, which may be affected by response bias, social desirability, limited self-awareness, or emotional state at the time of completion. In addition, the study was conducted among adolescents in Yazd, and although the sample size was adequate, generalization to adolescents from other cities, cultures, educational systems, or clinical populations should be made with caution.

Future studies are recommended to use longitudinal designs to examine how early maladaptive schemas and social anxiety influence each other over time during adolescence. Such studies can clarify whether schemas precede social anxiety, whether social anxiety reinforces schemas, or whether the relationship is reciprocal. Future research should also examine mediating and moderating variables such as anxiety sensitivity, rumination, rejection sensitivity, self-compassion, peer victimization, parenting style, social media use, and academic stress. In addition, randomized controlled trials are needed to test whether interventions targeting approval-seeking, defectiveness/shame, social isolation, emotional inhibition, and emotional deprivation can significantly reduce adolescent social anxiety. Cross-cultural and gender-sensitive studies would also help determine whether the structure and strength of schema-social anxiety pathways differ across cultural and demographic groups.

From a practical perspective, the findings indicate that school counselors, clinical psychologists, and adolescent mental health professionals should assess early maladaptive schemas when working with socially anxious adolescents. Screening programs in schools can help identify students who show high levels of approval-seeking, shame, emotional inhibition, and perceived social isolation before symptoms become chronic. Interventions should not be limited to social skills training or exposure exercises alone, but should also address deeper beliefs about self-worth, rejection, emotional expression, and interpersonal safety. Group-based programs may be especially useful because they provide opportunities for corrective social experiences, emotional sharing, and reduction of isolation. Parents and teachers should also be educated to reduce criticism, conditional approval, humiliation, and excessive pressure, while strengthening acceptance, autonomy, emotional validation, and supportive peer interaction.

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Authors' Contributions

All authors equally contributed to this study.

Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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