Evaluation of early maladaptive schemas and domains in social anxiety disorder specifiers and non-clinical samples

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SUMMARY

Objective: Regarding symptoms, Social Anxiety Disorder (SAD) is a heterogeneous disorder, and DSM-V defines it with a performance-only specifier. This study aimed to examine early maladaptive schema, the differences in SAD specifiers with the non-clinical samples, and the prediction of early maladaptive schema domains on SAD specifiers' symptom severity.

Method: Our sample included 59 patients with performance-only SAD (P-SAD), 61 with unspecified SAD (U-SAD), and 155 individuals in non-clinical samples. We used the Young Schema Questionnaire-Short Form 3 and the Liebowitz Social Anxiety Scale to assess the samples.

Results: Our results were remarkable differences in early maladaptive schemas between individuals of SAD's specifiers and non-clinical samples; we also found that although U-SAD's social anxiety severity related to all early maladaptive schema domains, P-SAD's social anxiety severity associated with Disconnection and Rejection and Impaired Autonomy & Performance schema domains. Our clinical findings suggest that the Disconnection and Rejection schema domain is positive, the Excessive Responsibility and Standards schema domain is negatively predicted for P-SAD's social anxiety severity, and the Impaired Autonomy & Performance schema domain is positively predicted for U-SAD's social anxiety severity.

Discussion: Early maladaptive schema domains have essential impacts on social anxiety symptoms. Understanding the various early maladaptive schema differences among SAD specifiers and a non-clinical sample and predicting these specifiers' social anxiety symptoms with early maladaptive schema domains might help explain different social anxiety disorders' clinical symptomatology.

Key Words: Early maladaptive schemas, social anxiety disorder, specifier.

INTRODUCTION

Social anxiety disorder (SAD) is characterized by overwhelming fear and anxiety in social situations and includes avoidance behaviors that interfere with occupational, social, and academic functioning (1). SAD is a psychopathology that is challenging to explain using categorical diagnosis systems since every individual with SAD is in different clinical presentations. According to research, SAD can be divided into various subtypes, and the "generalized" subtype was added and expanded in the DSM-IV (1). Several studies have shown that as social fears increase, impairment linearly increases with no identifiable threshold (2) or subthreshold (3). There is some debate about the differences between broad social fears and performance-specific fears. Some evidence suggests that there is no subtype or specifier for SAD and that the conceptualization of the disorder is based on the number of social fears (4). However, patients with broad social fears are more likely to be female, younger, have lower income, and have an earlier onset than those with performance-only fears (5). So, research

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appears contradictory regarding the contextualization of SAD as a disorder with subtypes (6) or as a dimensional rather than categorical disorder (7-9). In the DSM-V, the generalized subtype has been replaced by a performance-only specifier to provide more concrete distinctions between intense social anxiety and other types of anxiety (1).

Research on the etiology of social anxiety focuses on cognitive models, which propose that cognitive and attentional biases play a role in the onset and maintenance of SAD (10-13). Contrary to studies determining surface-level cognitions' role in SAD, some authors have examined more stable and deeper levels of cognitions known as schemas (14). Although cognitive behavioral therapy (CBT) is considered the most effective therapy for individuals with social fears or SAD, some researchers have found that some individuals do not improve or drop out, typically ranging from 10-20% of treatment (15, 16). One possible explanation for this may be that certain individuals have persistent maladaptive schemas, which may not be adequately addressed during time-limited sessions of CBT. Young et al. (2003) proposed schema theory, an extended version of Beck's cognitive schemas, which identifies early maladaptive schemas that are asserted to underlie various psychopathologies. Early maladaptive schemas are described as pervasive, broad, and dysfunctional beliefs comprising emotions, cognitions, bodily sensations, and memories about oneself and relationships with others (17). These develop in childhood and adolescence, are elaborated upon throughout one's lifetime, and centralize Beck's cognitive schemas as a cognitive processing component (18) but focus on early development and thematic contents (19, 20). Once established, early schemas are kept stable during one's lifetime to ensure cognitive consistency. However, early schemas can also become maladaptive, and early maladaptive schemas (EMSs) conduct self-destructive emotions, cognitions, and behaviors. EMSs are theoretically assumed to operate on the deepest level of cognition (21). Young et al. (2003) classified five core emotional needs unmet by family or peers that can lead to EMSs: secure attachment, autonomy, competence, sense of identity, freedom to express valid needs and emotions, spontaneity and play, realistic limits, and self-control. These five schema domains or broad categories are the Disconnection & Rejection (D&R), Impaired Autonomy & Performance (IAP), Impaired Limits (IL), Other-directedness (OD), Overvigilance and Inhibition (O&I) domains (17). A recent analysis has validated the presence of 18 schemas and provided support for a new four-domain model, the latent structure of schemas, which is considered more suitable than a model comprising five domains (22). So, these domains were organized into four groups based on empirical support and theory: the names of the three are the same: D&R, IAP, IL, and lastly, Excessive Responsibility and Standards (E&S) (23-25) (see Table 1).

Young assumed that EMSs play a significant causative role in developing psychopathologies. Several studies have investigated the role of EMSs

Table 1: Brief descriptions of schema domains.

Young and colleagues s (2003) schema domain classification	
Disconnection & Rejection (D&R) domain	Abandonment, Mistrust/abuse, Emotional deprivation, Defectiveness/shame, and Social isolation/alienation
Impaired Autonomy & Performance (IAP) domain	Dependence/incompetence, Vulnerability to harm or illness, Enmeshment/undeveloped self, and Failure to achieve
Overvigilance and Inhibition (O&I) domain	Negativity/pessimism, Emotional inhibition, Unrelenting standards/hypercriticalness, and Punitiveness
Other-directedness (OD) domain	Subjugation, Self-sacrifice, and Approval seeking/recognition seeking
Impaired Limits (IL) domain	Entitlement/grandiosity and Insufficient self-control/self-discipline.
Bach and Bernstein s (2019) schema domain classification	
Disconnection & Rejection (D&R) domain	Emotional deprivation , Social isolation/alienation, Emotional inhibition, Defectiveness/shame, Mistrust/abused, Pessimism/negativity
Impaired Autonomy & Performance (IAP) domain	Dependence/incompetence, Failure to achieve, Subjugation, Abandonment/instability, Enmeshment, Vulnerability to harm
Excessive Responsibility and Standards (E&S) domain	Self-sacrifice, Unrelenting standards, Self-punitiveness
Impaired Limits (IL) domain	Entitlement, Approval/admiration-seeking, Insufficient self-control

in various psychopathologies such as depression and anxiety (19, 26-28), eating disorders (29, 30), personality disorders (31, 32), and personality and character traits (33, 34). But, previous evidence has not demonstrated specific EMSs that lead to different emotional disorders (35, 36). Also, Calvete et al. (2005) pointed out that measurement differences could be related to these inconsistent findings (37). According to this, some authors proposed that it could be helpful to investigate via schema domains instead of EMSs (38). So, it could enable some transdiagnostic approaches like self-criticism and experiential avoidance that are part of schema therapy with great emphasis on experience and emotional responses, as trying to suppress or avoid emotions can often perpetuate or worsen, and psychotherapies which are by learning how to regulate emotions more adaptively, could be considered rather than classical cognitive psychotherapies (39, 40). Because, studies have shown that some transdiagnostic factors such as high self-criticism and dependency are strong predictors (41), and self-compassion related to fear of negative and positive evaluation (42), perfectionism and unrealistic social standards are high in socially anxious indivi-duals (43). Operating on these factors including via schema therapy before other cognitive therapies may lead to earlier results in SAD psychotherapy process.

Research has shown a significant relationship between schema domain and anxiety in the literature. It has been found that individuals exhibiting higher levels of anxiety symptoms are prone to obtaining higher scores across all schema domains in comparison to healthy control groups (44). Studies have reported stronger associations between general anxiety symptoms and schema domains related to D&R, IAP, and OD schemas in clinical samples (36, 44). Similar results have been determined in a sample of young adults who were university students, where IAP schemas were found to predict an increase in anxiety symptoms (45). Several studies have also investigated the relationship between SAD and EMSs. Pinto-Gouveia et al. (2006) found that individuals with higher EMS scores, particularly on D&R, IAP, and OD schema domains, were more likely to have social anxiety symptoms. In the same study, in a clinical sample, individuals with social phobia had higher EMS scores on the D&R schema domain than those with mixed anxiety groups (including panic disorder and obsessive-compulsive disorder) (46). Calvete and Orue (2008) found that higher scores on the D&R and IAP schemas were associated with more severe social anxiety symptoms in a non-clinical sample (47). However, these studies were limited in that they could only measure three of the five schema domains, so the predictive roles of IL and O&I on social anxiety could not be examined. Hinrichsen et al. (2004) found that abandonment and emotional inhibition schemas accounted for 25.9% of the variance in social anxiety, agoraphobia, and female gender in patients with an eating disorder (29). Some research has also examined the relationships between EMSs and SAD symptom severity via mediation analysis. For example, Carlucci et al. (2018) found that D&R and IAP schemas mediated the relationship between anxiety and co-rumination (defined as excessive rumination about personal problems between same-sex friends) (48). Difficulty in emotion regulation was also found to mediate the relationship between D&R, IAP, IL schema domains, and social phobia symptoms in university students (49). Calvete et al. (2013) found that EMSs predicted automatic thoughts of anticipatory failure and strengthened the IAP schema domains by mediating the OD schema domain in non-clinical adolescents, similar to other Calvete studies in three schema domains (27). It has been found that the D&R domain directly predicted depression symptoms, whereas schemas in the OD domain predicted social anxiety symptoms via the brooding component of rumination (50). Individuals with SAD indicate a cognitive processing bias, a social looming mediate between OD and social anxiety over time (51).

There was limited study related to differences according to different categorical classifications of SAD in literature. Studies according to some categorical classifications have revealed that there may be heterogeneous cognitive structures in SAD. Several theorists have suggested that performance anxiety (PA) and interaction anxiety (IA) are the dimensions underlying and correspondence between specific social phobia (SSP) and generalized social phobia (GSP), respectively (5, 8). It has been shown that PA/SSP is related to panic and other disorders and acute anxiety reactions (5, 8),

but IA/GSP is more closely associated with depression than PA/SSP (8, 52). According to these classifications, GSP rises before the development of metacognitive processes and before age 10 (53); however, SSP rises after the outcome of metacognitive processes and close to age 16 (54). It is also congruent with SSP, was involved in acute anxiety reactions via specific triggers that necessitate metacognition, and GSP has involved a disturbed self-image (5). Similarly, it has shown SAD's different patterns of appraisal processes; in a study, PA was conceptualized with a fear of negative evaluation of others, but IA was conceptualized with a self-image disturbance (55). Furthermore, understanding maladaptive self-deficiency issues or core fears is crucial in developing and maintaining SAD, mainly since subtypes or specifiers reflect fundamental dimensions and processes. But, in the literature, the utilization of subtypes was inconsistent and different theorists proposed multiple types of attentional biases in SAD. Some studies used the subtype concept rather than specifiers (5, 56, 57).

In summary, SAD is a psychiatric disorder with different specifiers or subtypes. Beyond emotions and beliefs, early schemas represent deeply ingrained, dysfunctional beliefs about oneself and relationships with others that are highly resistant to change. When maladaptive, they may hinder treatment progress in SAD. Not much research has been conducted lately concerning social anxiety and schemas, nor on the specifier of SAD according to DSM-V. This study aimed to examine the possible differences in EMSs between individuals with performance-only SAD (P-SAD), unspecified SAD (U-SAD), and a non-clinical sample, and the predictive power of schema domains on social anxiety symptom severity when comparing U-SAD with P-SAD.

Our hypotheses of the study are,

• There would be individuals with P-SAD with higher EMSs and schema domain scores than the non-clinical healthy group (NCG), and U-SAD has higher EMSs and schema domain scores than the P-SAD sample.

• There would be individuals with U-SAD's symptom severity scores more correlated to EMSs and, D&R and IAP schema domains' scores than P-SAD's symptom severity scores.

• All schema domains would predict individuals with U-SAD's symptom severity and only D&R and IAP schema domains would predict individuals with P-SAD's symptom severity.

METHODS

Participants and procedure

Patients aged 18-65 with the diagnosis of SAD were recruited from routine outpatient visits for three months in 2021 and were excluded if they met DSM-V criteria for mental retardation, personality disorder, autism spectrum disorder, bipolar or psychotic disorders, addiction disorders, and neurocognitive disorders. Patients who received a primary diagnosis of SAD during their routine outpatient admission were referred to one of the authors for further assessment. Patients were diagnosed using the Structured Clinical Interview for DSM-V (SCID 5-CV) and assessed for performance only specifier and others addressed as unspecified (58). The study continued until 65 people were recruited for both P-SAD and U-SAD, considering what could be excluded from the study to exceed the minimum sample size in each group. Then, six people from the P-SAD group were excluded for various reasons: three provided random responses on the measurement tools, three withdrew from the study, and four patients from the U-SAD group were excluded due to providing random responses on the questionnaire. There was 59 participant in the P-SAD group and 61 in the U-SAD group from a hospital's psychiatry outpatient clinic within one month. One hundred sixty-one individuals were recruited from hospital personnel who had no current psychiatric complaints, as determined by anamnesis and mental examination and did not meet the criteria for psychiatric disorders. Six individuals were excluded due to random responses on the measurement tools. A total of 155 participants were finally included in the non-clinical group. All participants completed a sociodemographic questionnaire and an EMSs scale, and individuals with SAD also completed a social phobia severity scale.

Detailed information about the study procedures was provided to participants, and their informed consent was obtained before their participation. The local ethical committee approved the study procedures (numbered 2021.12.09.02/04) and conducted under the ethical standards specified in the 2013 Helsinki Declaration.

Measurements

Sociodemographic data form: This form was created by the research team to determine the age, gender, and education level of the participants.

Young Schema Questionnaire - Short Form 3 (YSQSF-3): The YSQ-SF3 was developed by Young et al. (2003) to assess early maladaptive schemas. It consists of 90 items that assess 18 EMSs and five domains. The distribution of EMSs for the Disconnection & Rejection domain is Abandonment, Mistrust/abuse, Emotional deprivation, Defectiveness/shame, and Social isolation/alienation; the Impaired Autonomy & Performance domain is Dependence/incompetence, Vulnerability to harm or illness, Enmeshment/undeveloped self, and Failure to achieve; the Overvigilance and Inhibition domain is Negativity/pessimism, Emotional inhibition, Unrelenting standards/hypercriticalness, and Punitiveness; the Other-directedness domain is Subjugation, Self-sacrifice, and Approval seeking/recognition seeking; the Impaired Limits domain is Entitlement/grandiosity and Insufficient self-control/self-discipline. Higher scores on the scale indicate higher levels of maladaptive schemas. It was translated and adapted into Turkish by Soygüt and colleagues (59, 60). The reliability and validity of the Turkish version of the YSQSF-3 were assessed with university students, and the findings revealed a factorial solution comprising five schema domains and 14 early maladaptive schemas (60). The distribution of item numbers for each schema subscale in this study differed from that of the original research. The internal consistency coefficients for the EMSs ranged from 0.63 to 0.80, while those for the schema domains ranged from 0.53 to 0.81, respectively. The test-retest reliability correlations for the EMSs were between 0.66 and 0.82, and for the schema domains, they were between 0.66 and 0.83, respectively. However, Bach and Bernstein (2019) has focused on 18 EMSs and four schema domains: D&R, IAP, E&S, and IL (25) due to related studies, which is considered more suitable than a model comprising five domains (22, 61). In the present study, YSQSF-3 revealed 18 schema dimensions and four domains. This was consistent with Bach and Bernstein's (2019) research. Cronbach alpha coefficients were 0.90 for D&R, 0.89 for IAP, 0.72 for E&S, and 0.71 for IL subscales for the present study.

Liebowitz Social Anxiety Scale (LSAS): The LSAS was developed by Liebowitz (62) to assess the fear and avoidance of social situations among people with SAD. LSAS is a 24-item, 4-point Likert-type scale comprising two subscales: social interaction and performance. Each item on the LSAS is rated separately for anxiety and avoidance. The LSAS has been adapted into Turkish by Soykan et al. (2003), and the original LSAS has comparable psychometric properties in the Turkish sample, including Cronbach alpha coefficients of 0.95 for avoidance and 0.96 for anxiety subscales (63). Cronbach alpha coefficients were 0.94 for avoidance and 0.75 for anxiety subscales for the present study.

Data analysis

All statistical analyses were performed with IBM SPSS 21. Descriptive statistics and normality were assessed. Pearson correlation analysis was used to determine the correlation between specifiers of SAD severity and schema domains was determined with Pearson correlation analysis. One-way analyses of variance (ANOVA) and post-hoc Tukey were used to compare three groups: P-SAD, U-SAD, and non-clinical samples with the LSAS scores, the dependent variable. Hierarchical regression analyses were used to evaluate the predictive factors of LSAS scores, the dependent variable. The data did not show multicollinearity, which is the presence of strong correlations among variables, and the correlations among the variables were not too high (<.80). A p-value of less than .05 was considered statistically significant in all analyses.

We used an online calculation tool based on Soper's work to determine the sample size for their study. This tool requires input on anticipated effect size, desired statistical power level, number of predictors in each model, and probability level (64). We received the expected effect size as 0.3 (expert opinion was considered due to lack of similar study, and the medium effect size was expected), the desired power was 0.80, the number of predictors was each model 2 (age and gender), and 4 (YSQSF-3 schema domain scores-D&R, IAP, E&S, IL), and the alpha was 0.05. Accordingly, the required sample size for our study in each group should be at least 47. After conducting the research and performing post-hoc analyses, the power of study was calculated to be in the range of 0.90-0.91 (64).

RESULTS

The study sample included 120 adults diagnosed with SAD, 59 with the performance-only specifier, 61 with the unspecified specifier, and 155 in the non-clinical group. The SAD group was 61.7% female (N=74) with an age range of 18-64 (mean=31.54±10.12), and the control group was 63.9% female (N=99) with an age range of 18-64 (mean=30.53±2.45). The SAD group had a mean of 14.21±2.70 years of education, while the non-clinical group had a mean of 20.60±2.59 years. There were no significant differences between the SAD and control groups in terms of age (p=0.286) or gender (p=0.707), but there was a significant difference in years of education (p=0.000).

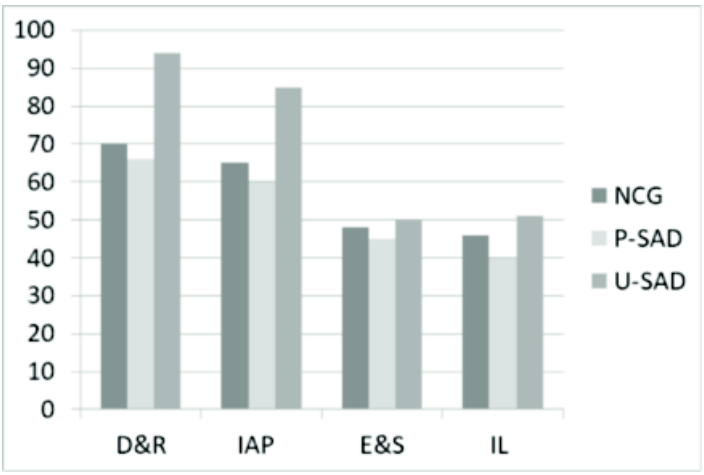
The differences in early maladaptive schemas between the groups (P-SAD, U-SAD, and NCG) were examined using ANOVAs and post-hoc Tukey corrections. (see Table 2). Our results show differences among the three groups in the IL domain scores. The U-SAD group had a higher schema domain score than the P-SAD group, and the P-SAD group had a higher schema domain score than the NCG group. Our findings determine differences between the U-SAD and P-SAD groups in the D&R and IAP schema domain scores. The U-SAD group had higher schema domain and EMS scores than P-SAD except for Unrelenting Standards, Entitlement, and Approval/Admiration-seeking schemas, which were higher in P-SAD than the U-SAD group. There were no significant differences between the U-SAD and P-SAD groups in the E&S domain, except for self-sacrifice and self-punitiveness. There were no significant differences

Table 2: EMS means and standart deviations in P-SAD, U-SAD and non-clinical samples.

	Non-clinical group (NCG) (N=155)		P-SAD (N=60)		U-SAD (N=60)		p	Post-hoc (Tukey)
Measures of EMSs and EMSs domains severity	M	SD	M	SD	M	SD		
Emotional inhibition	8.80	4.06	9.37	5.39	13.26	6.99	<0.001*	U-SAD>NCG=P-SAD
Abandonment/Instability	11.85	3.78	10.86	4.77	15.09	6.43	<0.001*	U-SAD>NCG=P-SAD
Mistrust/Abuse	12.46	4.43	12.74	6.05	16.24	6.73	<0.001*	U-SAD>NCG=P-SAD
Social isolation/Alienation	12.05	4.27	11.69	6.38	15.98	7.41	<0.001*	U-SAD>NCG=P-SAD
Defectiveness/Shame	8.84	4.07	9.66	5.65	14.52	7.61	<0.001*	U-SAD>NCG=P-SAD
Failure to achieve	9.48	4.10	8.89	5.07	14.09	7.60	<0.001*	U-SAD>NCG=P-SAD
Dependence/Incompetence	8.81	3.38	8.01	3.59	11.68	6.29	<0.001*	U-SAD>NCG=P-SAD
Vulnerability to harm	11.83	4.37	11.32	5.60	16.03	7.03	<0.001*	U-SAD>NCG=P-SAD
Enmeshment	11.35	3.96	11.37	4.40	13.26	5.45	0.013*	U-SAD>NCG=P-SAD; U-SAD=P-SAD>NCG
Subjugation	11.21	4.28	9.54	4.55	14.72	6.40	<0.001*	U-SAD>NCG=P-SAD
Self-sacrifice	16.50	5.08	15.49	6.34	17.78	6.45	0.087	-
Emotional deprivation	11.33	4.68	10.18	4.84	15.96	7.06	<0.001*	U-SAD>NCG=P-SAD
Unrelenting standards	17.62	4.36	14.88	5.93	17.50	6.31	0.002*	P-SAD>NCG=U-SAD
Entitlement	15.82	4.26	13.54	4.95	16.08	5.86	0.004*	P-SAD>NCG=U-SAD
Insufficient self-control	14.24	4.12	12.49	4.87	17.24	5.94	<0.001*	U-SAD>P-SAD>NCG
Approval/Admiration-seeking	16.13	4.78	13.61	6.33	17.85	6.79	<0.001*	P-SAD>NCG=U-SAD
Pessimisim/Negativity	13.94	4.94	13.28	5.90	18.52	6.75	<0.001*	U-SAD>NCG=P-SAD
Self-punitiveness	14.05	4.16	13.61	6.24	14.93	5.65	0.329	-
D&R	69.98	24.07	66.77	26.10	94.50	35.14	<0.001*	U-SAD>NCG=P-SAD
IAP	64.81	20.16	60.01	20.70	84.90	32.04	<0.001*	U-SAD>NCG=P-SAD
E&S	48.23	10.86	44.91	18.44	50.22	14.97	0.101	-
IL	46.45	10.34	39.64	13.48	51.18	15.74	<0.001*	U-SAD>P-SAD>NCG

D&R: Disconnection and rejection, IAP: Impaired Autonomy and Performance, E&S: Excessive Responsibility and Standards, IL: Inpaired Limits, one-way ANOVA and post-Tukey analyses. *: p<0.05

Figure 1: Mean ratings of EMS domains for the three groups (Non-clinical group, performance-only SAD, and unspecified SAD).



D&R: Disconnection and Rejection; IAP: Impaired Autonomy & Performance; E&S: Excessive Responsibility and Standards; IL: Impaired Limits; NCG: non-clinical group; P-SAD; Performance only social anxiety disorder; U-SAD: unspecified social anxiety disorder.

between the U-SAD and NCG groups in the EMS scores of Emotional Inhibition, Abandonment/Instability, Mistrust/Abuse, Social isolation/Alienation, Defectiveness/Shame, Failure to achieve, Dependence/Incompetence, Vulnerability to harm, Subjugation, Emotional Deprivation, Insufficient self-control, and Pessimism/Negativity. There were also no significant differences between the U-SAD and NCG groups in the Unrelenting Standards, Entitlement, and Approval/Admiration-seeking schema domains. (see Table 2 and Figure 1)

Table 3 shows the significant correlations between EMSs and schema domains and the symptom severity of individuals with either P-SAD or U-SAD. The relationships between each patient group and the independent variables vary, further supporting the heterogeneity of SAD. The symptom severity of patients with U-SAD was significantly correlated with all EMSs and schema domains. However, the symptom severity of patients with P-SAD was only significantly associated with Emotional Inhibition, Abandonment/Instability, Mistrust/Abuse, Social isolation/Alienation, Defectiveness/Shame, Failure to achieve, Dependence/Incompetence, Subjugation, Emotional Deprivation,

Table 3: Correlations between EMSs and schema domains scores and P-SAD s and U-SAD s LSAS scores.

Measures of EMSs and schema domains severity	P-SAD (*N*= 60)	U-SAD (*N*= 60)
Emotional inhibition	.498**	.502**
Abandonment/Instability	.354**	.634**
Mistrust/Abuse	.342**	.529**
Socialisolation/Alienation	.475**	.673**
Defectiveness/Shame	.304*	.638**
Failure to achieve	.362**	.684**
Dependence/Incompetence	.381**	.559**
Vulnerability to harm	.251	.606**
Enmeshment	.226	.594**
Subjugation	.477**	.697**
Self sacrifice	.097	.524**
Emotional deprivation	.280*	.545**
Unrelenting standards	-.010	.450**
Entitlement	.076	.423**
Insufficient self-control	.269	.662**
Approval/Admiration-seeking	.175	.557**
Pessimisim/Negativity	.348**	.622**
Self-punitiveness	.179	.393**
D&R	.489**	.710**
IAP	.458**	.773**
E&S	.068	.564**
IL	.207	.648**

D&R: disconnection and rejection, IAP: impaired autonomy and performance, IL: impaired limits, E&S: excessive responsibility and standards, LSAS: Liebowitz Social Anxiety Scale.
**: p<0.05, **: p<0.01*, Pearson correlation test

Table 4: Summary of the regression equations predicting the U-SAD s and P-SAD s LSAS scores.

Predictors	Adj. R Square	B	SE	Beta	CI (LL/UL)
U-SAD s LSAS					
	.235**				
Age		-1.322	.341	-.458**	(-2.006/-.639)
Gender		-5.171	7.316	-.084	(-19.816/9.474)
	.650**				
D&R		.177	.141	.216	(.459/.710)
IAP		.491	.139	.544**	(.769/.773)
E&S		.216	.249	.112	(.716/.564)
IL		-.144	.291	-.078	(.439/.648)
P-SAD s LSAS					
	.031				
Age		.388	.306	.168	(-.225/1.000)
Gender		.1773	6.153	.038	(-10.554/14.099)
	.475**				
D&R		.724	.180	.810**	(.363/1.806)
IAP		.215	.200	.191	(-.187/.617)
E&S		-.619	.212	-.489**	(-1.044/-.193)
IL		-.108	.267	-.062	(-.644/.427)

note: D&R: disconnection and rejection, IAP: impaired autonomy and performance, IL: impaired limits, E&S:excessive responsibility and standards, LSAS: Liebowitz Social Anxiety Scale.
SE: standard error, CI: Confidence Interval, LL: Lower Level, UL: Upper Level.
**: p<0.05, **: p<0.01*, hierarchical regression analyses

Pessimism/Negativity schemas, as well as only the D&R and the IAP schema domains. According to our results, U-SAD symptom severity was found to be more correlated to all EMS and schema domains than P-SAD symptom severity.

We conducted a hierarchical regression analysis to examine the relationship between SAD severity and EMS domains in individuals with P-SAD and U-SAD samples. In the first step, we controlled for the effects of age and gender on SAD severity, and in the second step, we evaluated the impact of schema domains on SAD severity. For the U-SAD group, the first regression model was significant [$F(2, 58) = 8.907$, $p < 0.001$, adjusted R square = 0.235]. After controlling for age and gender, the second model was also significant [$F(6,54)=6.724$, $p<0.001$, adjusted R square=0.650] and determined that only the IAP domain had a positive predictive effect on SAD severity ($\beta = 0.544$, $p<0.001$). For the P-SAD group, the first model was not significant. Still, the second model was significant [$F(6,52)=7.826$, $p<0.001$, adjusted R square= 0.475] and determined that the D&R domain had a positive predictive effect ($\beta = 0.810$, $p<0.001$), and the E&S domain had a negative predictive effect ($\beta = -0.489$, $p=0.005$) on SAD severity (see Table 4).

DISCUSSION

SAD is a heterogeneous disorder; different schemas may be relevant for other specifiers. Fundamentally, we aimed to examine the possible differences between EMSs on P-SAD, U-SAD, and NCG, and also different symptom severity predictions and correlations in P-SAD and U-SAD groups with schema domains.

Our study found partial consistency with our hypothesis that U-SAD had higher EMS questionnaires than patients with P-SAD and NCG samples. Specifically, individuals with U-SAD had higher scores on schema domains the D&R and IAP except for Unrelenting Standards, Entitlement, and Approval/Admiration-seeking. These findings provide empirical support for a cognitive model of SAD, which posits that individuals with U-SAD have negative self-perceptions of being defective, socially incompetent, and undesirable (65). Our results are consistent with previous research showing that the D&R and IAP schema domains play a central role in the onset and maintenance of SAD (27, 46, 47). Difficulty in emotion regulation was found to mediate the relationship between D&R, IAP, IL schema domains, and social phobia symptoms in university students (49). When maladaptive schemas are activated in social situations, they can have a negative impact on clinical symptomatology because they are state-dependent and are not easily accessible when not activated (38). To cope with the negative consequences of schema activation, individuals may engage in avoidance, surrender, or overcompensatory strategies that reinforce schema-related behaviors and beliefs, hindering schema healing (17).

U-SAD had higher scores on the EMSs in the IL schema domain than P-SAD and the NCG, consistent with our hypothesis. In the schemas of Unrelenting Standards, Entitlement, and Approval/Admiration-seeking, P-SAD had higher scores on the EMSs than U-SAD. These findings

are consistent with previous results, which found that patients with SAD had higher scores on all 18 schemas than the general population, except the Unrelenting Standards schema (46). Approval/Admiration-seeking and unrelenting standards schema resemble perfectionism, a transdiagnostic trait. Some studies have reported that perfectionistic strivings and concerns positively correlated to social anxiety, and perfectionistic self-promotion scores demonstrated more interpersonal rumination related to social anxiety in students (66). Social anxiety has been conceptualized as doubt about attaining others' desired impressions (67).

Our study showed no significant differences between U-SAD and P-SAD in the E&S schema domain and self-sacrifice and self-punitiveness schemas, contrary to the literature (46). Self-sacrifice schemas, which belong to the OD schema domain, have significantly played the of a mediator in non-clinical adolescents (27). Also, other research has implicated the relationship between the OD schema domain and social anxiety (27, 68, 69). In these studies, OD consisted of self-sacrifice, subjugation, and approval for seeking, so different classifications of EMSs with our study could explain this discrepancy.

In our study, it was determined that the measurement scores of Emotional Inhibition, Abandonment/Instability, Mistrust/Abuse, Social isolation/Alienation, Defectiveness/Shame, Failure to achieve, Dependence/Incompetence, Vulnerability to harm, Subjugation, Emotional Deprivation, Insufficient self-control, Pessimism/Negativity, and Enmeshment schemas for P-SAD did not significantly differ from those of the NCG. It was found that performance anxiety was involved in fear of negative evaluation by others (55). According to Young et al. (2003), the D&R was engaged in a frequent struggle to develop fulfilling and secure bonds with others, and IAP consists of the expectations regarding oneself and others that will hinder an individual's perceived ability for successful performance and independent function (17). Our study results might be explained with P-SAD being more associated with others' evaluations than self-evaluations.

Our study also had no significant differences between the U-SAD and NCG groups in the Unrelenting Standards, Entitlement, and Approval/Admiration-seeking schema domains. These results are consistent with previous studies that found that clinical samples of young adolescents with psychiatric diagnoses scored considerably higher on 14 out of 18 EMSs than non-clinical samples of high school students, except for Enmeshment, Entitlement/Grandiosity, Insufficient Self-Control, and Approval-Seeking (70). There were also some studies about no significant differences in schemas between psychopathologies and undergraduate psychology students, community controls (71-73). These EMSs were Enmeshment, Entitlement/Grandiosity, Self-Sacrifice, and Unrelenting Standards. Moreover, in a non-clinical sample, all five schema domains were significant predictors of trait anxiety (74). This raises the question of whether there are transdiagnostic schemas related to social anxiety that are present in all people. Further research is needed to investigate this possibility using a dimensional approach. However, previous findings have not indicated specific EMSs that lead to different emotional disorders (35, 36). Also, Calvete et al. (2005) represented that measurement differences could be related to these inconsistent findings (37). According to this, some authors suggested that it could be helpful to investigate via schema domains instead of EMSs (38).

It was determined that patients with U-SAD's symptom severity were significantly correlated to all EMSs and schema domains. Patients with P-SAD's symptom severity was significantly correlated to Emotional inhibition, Abandonment/Instability, Mistrust/Abuse, Social isolation/Alienation, Defectiveness/Shame, Failure to achieve, Dependence/Incompetence, Subjugation, Emotional deprivation, Pessimism/Negativity schemas, and as well as only D&R and IAP schema domains, consistent with our hypothesis. It might be related to patients with SAD primarily fear of being rejected and negatively appraised by other people (75). The D&R and IAP schema domain form fundamentally negative perceptions of self like defectiveness, shame, invalid or unwanted, and failed or inadequate/incompetent (13, 43, 76, 77). These findings might suggest that U-SAD patients may have more generalized social anxiety, while P-SAD patients may have more specific fears related to negative self-perceptions and relationship dynamics.

Our regression analysis results indicate that D&R predicted positively, E&S predicted negatively in P-SAD's symptom severity, and IAP positively predicted U-SAD's symptom severity, supporting our hypothesis. Our results are consistent with studies about the distinction of PA from IA or GSP, the conceptualization of PA as a fear of negative evaluation of others; however, IA was conceptualized with a self-image disturbance (5, 55). Prediction with D&R finding is consistent with the nature of SAD, which includes a socially defective self, perfectionist standards, low support, and emotional intimacy (27, 46, 49). The finding revealed that abandonment and emotional inhibition schemas in the D&R domain explained 25.9% of the variance in social phobia with eating disorders (29). Besides, it was found that difficulty in emotion regulation played a mediating role in the relationship between early maladaptive schema domains of D&R, IAP, IL, and social phobia symptoms in university students (49). Evidence has determined that interpersonal schemas (D&R and OD) relate to depression via negative inferences about social stressors (78). Specifically, the D&R schema domain, which includes social isolation (79), defectiveness/shame and abandonment (80), mistrust/abuse, and emotional deprivation (81), is consistent with cognitions related to social anxiety, including beliefs about being defective and/or flawless and socially isolated, which may lead to the belief that significant others will leave them. However, our results are inconsistent with previous studies in the literature that IAP has mainly predicted SAD. This inconsistency of no prediction of P-SAD symptom severity could be related to measurement differences, our sample who had not activated IAP domains schemas, or the categorization of SAD specifiers. In this case, IAP and IL schema domains could be less salient in our P-SAD sample. It might also be related to the D&R schema domain, which encompasses expectations of the individuals' requirements for safety, love, acceptance, and stability, which would not be satisfied predictably, so mainly external evaluation could be essential in P-SAD, but; the IAP domain consists of the expectation regarding oneself and the environment, which will obstruct individuals' perceived skills for successful performance and independent function, so mainly inner and outer evaluation could be essential in U-SAD. The IAP domain includes maladaptive schemas of failure to achieve, practical incompetence/dependence, and subjugation which is consistent with the beliefs that social anxiety holds about less competent and capable than others (82). A study of non-clinical adolescents demonstrated that EMSs predict automatic thoughts of anticipatory failure and worsen IAP schema domains by acting as a mediator of the OD schema domain (27). Another study in a non-clinical sample determined that emotion regulation difficulty mediates between D&R, IAP, IL schema domains, and social phobia (49). Some studies have stated that the mediation by D&R and IAP schema domains was also implied between anxiety and co-rumination (48). Contrary to the literature, we did not find that the D&R schema domain predicted the severity of social anxiety in U-SAD. This discrepancy may be due to measurement differences, our SAD sample who had not activated the D&R schema domains EMSs, or the categorization of SAD. Consequently, these differences may be beneficial for explaining different social anxiety clinical symptomatologies so that it could lead the way of schema therapy. Further research is required to understand the relationship between schemas and SAD fully.

It is important to note that the negative predictive effect of the E&S schema on social anxiety symptom severity in the P-SAD group is difficult to interpret. Individuals who act based on the E&S schema may have fewer social anxiety symptoms due to behavioral learning. It is also possible that individuals with severe P-SAD may use cognitive, behavioral, or emotional avoidance as a coping strategy with the E&S schema, which could reduce self-reported scores on the LSAS. For instance, fear of being rejected by others leads to increasing multidimensional perfectionism, which includes self-oriented perfectionism (SOP), other-oriented perfectionism (OOP), and socially prescribed perfectionism (SPP) (83). Conroy et al. (2007) examine that only SSP, not SOP, was significantly related to beliefs about failure that resulted in aversive interpersonal consequences. When it corresponds to their standards, it could result in several avoidance strategies finally abandoning tasks entirely (84, 85). Besides, experiential avoidance eliminates uncomfortable internal experiences suppressed or controlled by avoiding cases that generate them (86). Some studies related to experiential avoidance partially mediate perfectionism and worry, which involves context about doubts and failure to actions and uncertainty to achievements regarding

personal goals (87). In this case, it could be said that individuals with SAD can already be given psychotherapy with high levels of perfectionism, self-critical perfectionism, and unrealistic social standards (88) with transdiagnostic approaches via schema therapy, but further research is necessitated.

One of the strengths of our study is that it is the first study to examine the DSM-V SAD with performance-only specifier and unspecified within the concept of EMS domains. We also examined the disorders using structured clinical interviews. The study has several limitations that should be considered when interpreting the results. The SAD sample is not homogeneous in terms of treatment duration and type, and the scales used in the study were self-reported, which may have influenced the accuracy of the results. Besides, the SAD sample had comorbidities with some psychiatric disorders; this study did not control for these comorbid disorders. The generalizability of our study's findings may be limited by factors such as the sample size, single-center design, and the study's cross-sectional nature. Finally, the study only evaluated the relationships between EMSs and SAD and did not consider the potential impact of other factors, such as personality traits or environmental factors. Therefore, further longitudinal and comprehensive studies are needed.

Our study found differences in EMSs between SAD and healthy people; we also found P-SAD and U-SAD related to different EMSs and schema domains. However, some schemas did not differentiate between healthy individuals and patients with SAD. It is worth noting that previous research has shown that people with multiple social fears, as opposed to performance-only fears, tend to have greater avoidance, negative evaluation fears, higher overall anxiety, more social deficits, higher comorbidity, and differences in heritability and treatment response (5, 53, 89-91). From a clinical perspective, it may be essential to consider that potential differences in schemas prediction of P-SAD or U-SAD may explain different clinical symptomatology. Our clinical findings suggest that D&R is positively and, E&S is negatively predicted to P-SAD, and IAP positively predicted to U-SAD. Therefore, people with SAD could be carefully evaluated, focusing on different EMSs, so it could lead the way to schema therapy, which may help reduce social anxiety symptoms with no-time loss (17). Identifying schema domains according to the specifiers of SAD may enable individuals to be treated and their symptoms to regress by applying transdiagnostic treatment techniques via schema therapy (92) (i.e., self-criticism and experiential avoidance). By adjusting their emotional regulation habits, individuals can diminish the intensity of emotional challenges and restore their emotions to a functional state (93). Operating on these transdiagnostic factors, including via schema therapy before other cognitive therapies, may lead to earlier results in the SAD psychotherapy process. This study proposes the significance of researching the effects of EMSs and schema domains on social anxiety symptoms in SAD by focusing on different schemas and schema domains in different SAD specifiers in future research.

Ethical considerations: The participants were informed in detail, and informed consent was obtained. Local ethics committee approval was received for this study (December 13th, 2021, numbered 2021.12.09.02/04) which was conducted per the ethical standards set out in the 2013 Helsinki declaration.

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