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ARTICLE

Shyness as a Moderator of the Relationship between Avoidant Personality and Social Interaction Anxiety among Students

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ABSTRACT

The traits of shyness and social interaction anxiety are common among students. The objective of the current study is to analyze relationships among multiple psychological constructs, including avoidant personality, shyness, and social interaction anxiety among college and university students, as well as to explore the moderating role of shyness between avoidant personality features and social interaction anxiety. The study also assessed gender differences in shyness and social interaction anxiety, and provided counseling to students with a higher level of social interaction anxiety. The sample of the present study comprised college and university students aged 18–30. The data were collected using a purposive sampling technique to approach the students experiencing social interaction anxiety. The systematic desensitization technique was used to counsel the participants who scored higher on the Social Interaction Anxiety Scale. The findings of the study indicated positive correlation between avoidant personality and social interaction anxiety ($r = 0.156, p < 0.05$), shyness ($r = 0.329, p < 0.001$), and social interaction anxiety and shyness ($r = 0.597, p < 0.001$). Shyness significantly moderated the relationship between avoidant personality and social interaction anxiety. The results indicated that there is no significant difference regarding gender in terms of social interaction anxiety and shyness. The findings also showed that there is a significant positive effect of systematic desensitization on social interaction anxiety in participants. The present study provides insight to colleges and universities to develop the skills necessary for students to cope with social interaction anxiety, avoidant personality, and shyness.

Keywords: Avoidant Personality; Social Interaction Anxiety; Shyness; Systematic Desensitization

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1. Introduction

Shyness can be defined as a kind of extreme self-focus, and it can range from modest social difficulty to complete social withdrawal. It is characterized by consistent obsession with one's behaviors, thoughts, and feelings^[1]. Shyness is the tendency to feel extreme nervousness or fear in unfamiliar social environments or when one perceives they are being judged^[2]. Avoidance, dread, and inhibition can be signs of shyness in situations involving perceived social assessment and in unfamiliar social settings. People who are shy exhibit behavioral, emotional, and cognitive symptoms^[3]. Most people experience shyness on occasion. However, some people's shyness can be so severe that it prevents them from interacting with others even when they want or need to, which can cause issues in their personal and professional lives^[4]. Similar to social anxiety disorder, shyness is rather common and affects a large percentage of people. Cognitive behavioral therapy and pharmacological alternatives are used to treat shyness to improve social skills and decrease avoidance behaviors^[5]. The primary cause of social anxiety, which restricts a person's capacity to engage and adjust in a social setting, may be persistent shyness^[6].

Beginning in early adulthood, avoidant personality is a widespread pattern of social restraint, excessive concern about negative judgments, and negative self-evaluation that occurs in a range of situations. Avoidant personality disorder is typically present in 3.3% of people^[7]. Extreme sensitivity to rejection, feelings of being inadequate, and a persistent pattern of social anxiety are all characteristics of avoidant personality, along with a strong inner need for friendship and connections with others^[8]. Individuals with avoidant personalities suffer considerably and have significant functional deficits, but there is still a dearth of meta-analytic data for treatment and therapy^[9]. Unmet emotional experiences, such as the loss of important persons, and poor parenting can lead to avoidant personality. These events can cause avoidance behavior, negative thoughts, and social anxiety as a coping mechanism for predicted negative assessment^[10].

Social Interaction Anxiety arises when people are facing and dealing with a social situation where they can be easily observed and scrutinized by others, whether familiar or not. Individuals with limited social coping skills may experience greater difficulties in social situations. It is one of the most prevalent problems related to mental health conditions

that arises and is exacerbated by the presence of any kind of distress, pain, infirmity, or suffering^[11]. Fear, worry, and discomfort related to one or more social contacts are examples of strong, personal emotional responses and preventive behaviors that are referred to as social interaction anxiety^[12]. An individual exhibiting social interaction anxiety experiences anxiety when they are in social circumstances, such as conversing and meeting. It is being unable to take pleasure in situations or pursuits that are typically enjoyable^[13]. The fear of being excluded from social experiences and social interaction anxiety associated with the desire for approval and connection are thought to be the root causes of extreme online practices^[14].

Shyness, avoidant personality, and social interaction anxiety are all closely related concepts that affect interpersonal adjustment and social functioning. According to earlier research, these factors coexist and could be a factor in students' social challenges. Consequently, a deeper comprehension of the social and emotional difficulties faced by young adults may be obtained by analyzing their interactions.

Existing research has consistently found links between avoidant personality, social interaction anxiety, and shyness. People with avoidant personality traits and higher levels of shyness are more likely to struggle in social situations, which emphasizes the need to investigate how these factors interact. Existing literature indicates that individuals facing social interaction anxiety are vulnerable to other major impairments in their lives^[15]. An online study was conducted by Flynn et al. on a sample of 961 undergraduates on social interaction anxiety^[16]. They associated depression with social interaction anxiety. The target population was college students. According to this study, the acceptance of the presence of social interaction anxiety acts as a variable that moderates the association between social interaction anxiety and depression. Those individuals who showed a more robust link between social interaction anxiety and depression were poor at acceptance. In a study of Chinese college students, Adare et al. explored whether attachment mediated the association between interparental conflict and social anxiety symptoms^[17]. The results showed that peer and parental attachment served as significant mediators linking interparental conflict to social anxiety symptoms in a serial manner.

Zygta et al. proposed a study to investigate how so-

cial anhedonia, peer issues, and social anxiety relate to social avoidance and shyness in early childhood^[18]. Over the course of 16 months, parents of 148 children completed tests on social anxiety, social avoidance, peer issues, social anhedonia, and shyness. The findings showed that avoidance and shyness were both strongly correlated with peer issues, social anhedonia, and social anxiety. Peer issues and lower parental education were found to be major risk factors for social avoidance in young children, highlighting the significance of addressing these factors in early age to prevent social avoidance. Sun et al. examined the link between prosocial behavior and agreeableness, and the association between social self-efficacy and agreeableness among undergraduate students (1,383), where shyness moderated the mentioned relationships^[19]. According to results, there is a strong positive relationship between agreeableness and prosocial behavior when the level of shyness is lower. Agreeableness has a positive effect on prosocial behavior, and shyness has moderated this effect.

Jung et al. tested whether, in adults with a clinical diagnosis of anxiety before receiving cognitive behavioral therapy, the construct of emotional intelligence, along with its four core components, separately enhanced approach-related behaviors, like sociability, or reduced avoidance-related behaviors^[20]. The study was sampled with 160 patients, and online questionnaires were filled out by them. Sex specific emotional intelligence (EI) was found to moderate the association between shyness and sociability. Self-emotional appraisal, a component of emotional intelligence, reduced the adverse impact of shyness on sociability among women. The EI other's emotional appraisal dimension had a similar effect on men. According to the results, emotional intelligence might be a good target for interventions aimed at improving social approach behaviors in patients with clinical anxiety. A study was conducted by Sorensen et al. to comprehend the origins and progression of the challenges that people with avoidant personality disorder currently face daily^[21]. Semi-structured qualitative interviews were conducted twice with individuals with avoidant personality disorder (N = 15). The findings make clear how people with avoidant personality disorder can generate developmental life stories in the interaction between themselves as individuals and the expanding needs of their social setting, even though they are not necessarily particular to avoidant per-

sonality disorder.

Rettew had proved the existence of a relationship among avoidant personality, social interaction anxiety, and shyness^[22]. He conducted a review study to examine the association of social interaction anxiety with avoidant personality and shyness. He reviewed different studies that were conducted to find out the relationship between avoidant personality and social interaction anxiety, and the relationship between avoidant personality and shyness. He concluded that these three variables exhibited statistically significant correlations, and shyness plays a vital role in avoidant personality and social interaction anxiety. Bruch conducted a review study on shyness and social interaction^[23]. He examined different components of interpersonal response that are experienced by a shy person in his social interactions. After analyzing the components of responses made by people in social interactions, the author described some new and appropriate directions regarding shyness and social interaction. Limited research has examined whether shyness affects the strength of the association between avoidant personality and social interaction anxiety, despite the fact that prior research has established relationships between these variables. This gap is especially noticeable in student populations, where social interaction is essential to both academic and personal growth.

Bowlby and Ainsworth explained attachment theory, where they provided an evidence-based and clinically applicable model to understand many intrapersonal and intrapsychic aspects that play a central role in personality disorders^[24]. Difficulties with attachment play a vital role in the onset of avoidant personality and many other personality disorders. The core of attachment theory is the early interactions between the caregiver and child. Bowlby in 1973 associated specific patterns and styles of insecurity with specific personality disorders^[25]. According to him, anxious attachment can be linked with a dependent personality, and avoidant attachment may result in an avoidant personality in later life. Levy et al. stated that a huge amount of literature supports the theoretical association between attachment insecurity and personality pathology^[26]. Though very little attention has been given to avoidant personality, still the attachment theory supports the connection between avoidant personality disorder and attachment.

According to the psychobiological model of personal-

ity, there are four components of temperament, i.e., harm avoidance, persistence, novelty seeking, and reward dependence. These dimensions can objectify all personality disorders because of the connection between the dimensions and personality disorders^[27]. A study conducted by Bricaud et al. based on the psychobiological model of personality found a positive relationship between harm avoidance and avoidant personality disorder^[28]. Cooperativeness and self-directedness are negatively correlated with an avoidant personality, while self-transcendence is positively correlated with an avoidant personality.

The cognitive theory of social anxiety suggests that the patterns of thoughts and our beliefs are major factors in the emergence of social anxiety. According to cognitive theory, those suffering from social anxiety tend to underestimate their capability to tackle social situations, overestimate the threatening level of social settings, expect only negative consequences while interacting in social settings, and overestimate these negative consequences. According to cognitive theory and previous research, cognitive behavioral therapy demonstrates strong effectiveness in the treatment of social anxiety^[29].

According to the theory of shyness, the onset of fearful shyness generally occurs in the first year of life, particularly in the second half. The reaction, also known as stranger anxiety, occurs primarily when the infant is confronted by unfamiliar people, usually adults. Shyness is not just caused by stranger anxiety; it can also arise due to one of two alternative conditions. The first characteristic is intrusiveness. Intrusiveness can be both spatial and psychological. The other individual may expose highly intimate information or prompt similar sharing. In any case, most adults and older children find such intense intimacy uncomfortable, if not threatening, and they typically respond with behavioral inhibition and avoidance. As children grow older, they lose their fearful shyness. Non-threatening strangers are perceived as familiar rather than unfamiliar after many repetitions and thus do not elicit fear^[30].

Therefore, the current study intends to explore the moderating role of shyness as well as the relationship between avoidant personality and social interaction anxiety among students. The results could help us better understand the social challenges experienced by students and help inform future intervention strategies.

1.1. Conceptual Model of the Study

Figure 1 shows that shyness plays a moderating role between avoidant personality and social interaction anxiety among students. The presence of shyness strengthens avoidant personality and social interaction anxiety among students.

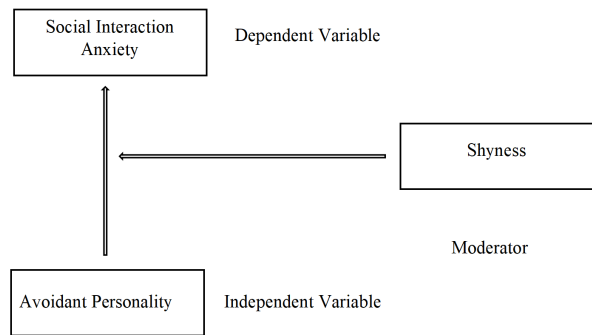


Figure 1. Moderating effect of shyness on the relationship between avoidant personality and social interaction anxiety among students.

Figure 2 shows the correlation between avoidant personality, social interaction anxiety, and shyness among students.

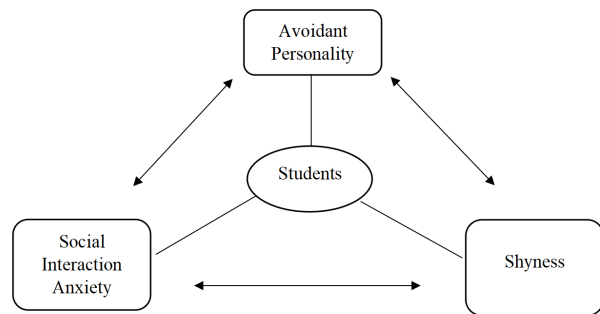


Figure 2. Correlations among avoidant personality, shyness, and social interaction anxiety in students.

1.2. Objectives of the Study

1. To measure the relationship between avoidant personality, social interaction anxiety, and shyness among students.
2. To formulate the moderating role of shyness in relation to avoidant personality and social interaction anxiety.
3. To examine gender differences in social interaction anxiety and shyness.
4. To counsel those students experiencing social interaction anxiety and shyness by using the systematic

desensitization technique, relaxation technique, and talk therapy.

1.3. Hypothesis of the Study

The study was intended to test and prove the following research hypotheses:

H1. *Avoidant personality will be correlated with social interaction anxiety and shyness among students.*

H2. *Shyness will moderate the relationship between avoidant personality and social interaction anxiety.*

H3. *Female students will be more anxious regarding social interaction as compared to male students.*

H4. *Females with avoidant personality will show more shyness as compared to males with avoidant personality.*

2. Methods

2.1. Research Design

The current research is a quantitative study in which a correlational research design is used.

2.2. Sample and Procedure

A purposive sampling approach was adopted in the present study to collect data from the desired sample of 100 male students and 100 female students from different colleges and universities in Khyber Pakhtunkhwa. The scale used to measure social interaction anxiety (SIAS) is translated by the researcher from the source language (English) into the target language (Urdu). Data are collected from adolescents and young adults with an age range of 18–30 years. Both male and female participants are characterized as avoidant, shy, and socially anxious if they score greater than the cutoff score on the rating scales. Participants were counseled by using systematic desensitization and relaxation techniques who had strong social interaction anxiety. Informed consent is obtained from the participants, and the Research Ethics Committee of the Department of Psychology of Hazara University has approved this study. This study adhered to the ethical principles set forth in the Declaration of Khyber Pakhtunkhwa.

Inclusion/Exclusion Criteria

Inclusion criteria involve only those students who have experienced social interaction anxiety ever in their academic career, aged 18 to 30 years. Students who did not experience social interaction anxiety and did not lie in the mentioned age range are not included in the study.

2.3. Instruments

2.3.1. Demographic Information Form

A demographic sheet has been prepared by the researcher to gather data regarding the gender, age, and educational institute of the subjects of the present study.

2.3.2. Five Factor Measure of Avoidant Personality (FFAvA)

The Five Factor Measure of Avoidant Personality Scale was developed by Lynam et al.^[31]. There are 40 items in this scale, and comprised of 10 subscales, each having 4 items. The subscales are: Evaluation Apprehension, Despair, Mortified, Overcome, Social Dread, Shrinking, Risk Averse, Joylessness, Rigidity, and Timorous. Items 5, 6, 7, 8, 10, 14, 15, 16, 19, 20, 25, 27, 34, and 35 are reverse-scored. Grading of items is done on a 5-point scale (A is Strongly Disagree, B is Somewhat Disagree, C is Neither Agree nor Disagree, D is Somewhat Agree, E is Strongly Agree). The total score was calculated by combining the scores of all subscales. High scores show the presence of an avoidant personality, and lower scores indicate the absence of an avoidant personality. The scale has high internal consistency, whereas the reliability of the scale computed in the current study was $\alpha = 0.87$.

2.3.3. Social Interaction Anxiety Scale (SIAS)

Mattick and Clarke developed this scale to gauge the severity of social interaction anxiety^[32]. It consists of 20 items, where items 5, 9, and 11 are reversed-scored. The responses to each question are rated on a 5-point Likert scale (0 = Not at all, 1 = Slightly, 2 = Moderately, 3 = Very, and 4 = Extremely). This scale was translated by the researcher into Urdu, and the Urdu version was used in this study. The overall score was obtained by combining the scores of all the items. The cutoff score of this scale is greater than or equal to 34, where the highest score is 4 and the lowest score is 0. The reliability of this scale is 0.96, whereas the reliability of

the scale computed by the researcher in the present research was $\alpha = 0.86$.

2.3.4. Shyness Scale (SS)

The Shyness Scale (SS), constructed by McCroskey and Richmond, was used to measure shyness^[33]. The Shyness Scale contains 14 items, all measuring the presence of shyness in individuals. A 5-point scale is used to grade items (5 is for Strongly Agree, 4 is for Agree, 3 is for Neutral, 2 is for Disagree, 1 is for Strongly Disagree). The total score was obtained by following three steps of scoring. Step 1: Add the scores for items 1, 4, 6, 7, 9, 11, and 12; Step 2: Add the scores for items 2, 3, 5, 8, 10, 13, and 14; Step 3: Shyness = 42 plus Total of Step 1 minus Total of Step 2. Concisely, Shyness score = 42 + (sum of items 1, 4, 6, 7, 9, 11, 12) – (sum of items 2, 3, 5, 8, 10, 13 and 14). The reliability measured by the authors was >0.90 , whereas the reliability computed in the current study was $\alpha = 0.86$ for 7 items and $\alpha = 0.75$ for the other 7 items.

2.4. Data Analysis and Interpretation

For the analysis of data, SPSS-24 and Process Macro are used in the current study. Some statistical tests, including correlation, *t*-test, and Hierarchical Multiple Regression, are applied to the data for the verification of hypotheses.

3. Results

The current study has examined the relationship between avoidant personality, social interaction anxiety, and shyness in college and university students of Khyber Pakhtunkhwa. The study has also looked at the moderating role of shyness in relation to avoidant personality and social interaction anxiety. The significance of demographic variable gender on social interaction anxiety and shyness is also assessed.

Table 1 demonstrates that the Five Factor Measure of the Avoidant Personality Scale (FFAvA) and Social Interaction Anxiety Scale (SIAS) have alpha reliability of 0.87 and 0.86. The Cronbach alpha value of Shyness Scale was calculated separately for 7 items each, and SS1 and SS2 have alpha reliability of 0.86 and 0.75 respectively showing internal consistency of the instruments was high.

Table 2 indicates a significant positive relationship between avoidant personality and social interaction anxiety ($r = 0.156^*$, $p < 0.05$), and a significant positive correlation with shyness ($r = 0.329^{**}$, $p < 0.001$). Similarly, social interaction anxiety is positively correlated with shyness at a significant level ($r = 0.597^{**}$, $p < 0.001$). Shyness has a significant positive relationship with both avoidant personality and social interaction anxiety ($r = 0.329^{**}$, $p < 0.001$; $r = 0.597^{**}$, $p < 0.001$), respectively.

Table 1. Psychometric properties of five-factor measure of avoidant personality scale (FFAvA), social interaction anxiety scale (SIAS), and shyness scale (SS).

Scale	<i>M</i>	<i>SD</i>	Range	Cronbach's α
FFAvA	134.4	19.3	97–177	0.87
SIAS	53.6	11.1	37–72	0.86
SS1	25.7	5.9	10–35	0.86
SS2	18.0	5.3	11–33	0.75

Note: FFAvA = Five Factor Measure of Avoidant Personality Scale; SIAS = Social Interaction Anxiety Scale; SS = Shyness Scale.

Table 2. Correlation coefficient between five-factor measure of avoidant personality scale (FFAvA), social interaction anxiety scale (SIAS), and shyness scale (SS).

Variable	<i>n</i>	<i>M</i>	<i>SD</i>	1	2	3
FFAvA	200	134.4	19.3	-	0.156*	0.329**
SIAS	200	53.6	11.1	0.156*	-	0.597**
SS	200	55.0	9.3	0.329**	0.597**	-

Note: * $p < 0.05$, ** $p < 0.01$. FFAvA = Five Factor Measure of Avoidant Personality Scale; SIAS = Social Interaction Anxiety Scale; SS = Shyness Scale.

Table 3 indicates non-significant differences between males and females in social interaction anxiety and shyness. The study findings indicate that male participants ($M = 53.1$, $SD = 11.3$) and female participants ($M = 54.1$, $SD = 11.0$)

have equal scores on social interaction anxiety. Results also indicate that female participants ($M = 54.7$, $SD = 9.6$) and male participants ($M = 55.3$, $SD = 9.1$) have equal scores on shyness.

Table 3. Mean differences of males and females regarding social interaction anxiety and shyness.

Variables	Male (n = 100)		Female (n = 100)		t (198)	p	Cohen's d
	M	SD	M	SD			
SIAS	53.1	11.3	54.1	11.0	0.643	0.632	0.08
SS	55.3	9.1	54.7	9.6	0.482	0.712	0.06

Note: SIAS = Social Interaction Anxiety Scale; SS = Shyness Scale.

Shyness Moderating the Relationship between Avoidant Personality and Social Interaction Anxiety

Hierarchical Multiple Regression was used to run the moderation analysis. The Enter method was applied to test the moderating effect of shyness on the relationship between avoidant personality and social interaction anxiety. See **Table 4** for details.

Table 4 reveals the mean comparison of participants in the pre-counseling and post-counseling phases on social interaction anxiety. Counseling was done by researcher under professional supervision at the counseling center for stu-

dents at Hazara University. It was a single session of 30 min comprising of relaxation techniques like deep breathing and progressive muscle relaxation, and basic systematic desensitization. Findings indicated a significant mean difference in social interaction anxiety with $t(59) = 2.56, p < 0.05$. Results indicate that mean scores on social interaction anxiety in the pre-counseling phase ($M = 3.30, SD = 0.33$) slightly decreased in the post-counseling phase ($M = 3.23, SD = 0.34$). Both sets of scores were significantly correlated ($r = 0.84^{***}, p < 0.001$). The value of Cohen's d was 0.31 (< 0.50), which indicated a small effect size. This shows the significant and small pre-post effect of systematic desensitization on social interaction anxiety in participants.

Table 4. Mean comparison of students in pre-counseling and post-counseling phases on social interaction anxiety.

Variables	Pre-Counseling		Post-Counseling		t (59)	p	r	Cohen's d
	M	SD	M	SD				
SIAS	3.30	0.33	3.23	0.34	2.56	0.01	0.84*	0.31

Note: * $p < 0.05$. SIAS = Social Interaction Anxiety Scale.

Table 5 shows the results of a hierarchical multiple regression analysis examining the moderating role of shyness in the relationship between avoidant personality and social interaction anxiety. Analysis was generated by using Process Macro. Two steps have been created, i.e., Step 1 and Step 2. In the first level of multiple hierarchical regression, avoidant personality, an independent variable, and shyness, a moderator, have been entered as predictors of a dependent variable, social interaction anxiety. This level is termed Step 1. In the final level, avoidant personality (independent variable), with the interaction term of average scores ($FFAvA \times SS$), was entered against the dependent variable, social interaction anxiety.

It revealed that avoidant personality positively predicted social interaction anxiety ($\beta = 0.09, p < 0.05$). Shyness negatively predicted social interaction anxiety ($\beta = -0.25, p < 0.05$). Together, these variables accounted for 5.1% of the variance in social interaction anxiety ($\Delta R^2 = 0.051$). How-

ever, the interaction of avoidant personality and shyness was significant ($\beta = 0.68, p < 0.001$), suggesting that shyness moderated the relationship between avoidant personality and social interaction anxiety. The addition of the interaction term explained an additional 8.2% of the variance in social interaction anxiety ($\Delta R^2 = 0.082$). Shyness explained a 13.3% variance in social interaction anxiety in the model ($R^2 = 0.133, F = 10.09, p < 0.001$). This shows the moderating role of shyness in exposure to avoidant personality and social interaction anxiety, thus confirming the hypothesis.

Figure 3 shows that shyness moderated the relationship between avoidant personality (independent variable) and social interaction anxiety (dependent variable) among students. It also showed a significant interaction effect of shyness on avoidant personality and social interaction anxiety. The plot indicates that participants with high level of shyness exhibited more social interaction anxiety and a high level of avoidant personality.

Table 5. Hierarchical multiple regression analysis predicting social interaction anxiety from avoidant personality, shyness, and their interaction.

Variables	Social Interaction Anxiety		
	ΔR^2	β	S.E
Step 1	0.051		
FFAvA		0.09*	0.04
SS		-0.25*	0.15
Step 2	0.082		
FFAvA \times SS		0.68***	0.15
Total R^2	0.133		
F	10.09***		

Note: * $p < 0.05$. *** $p < 0.001$. FFAvA = Five Factor Measure of Avoidant Personality Scale; SS = Shyness Scale.

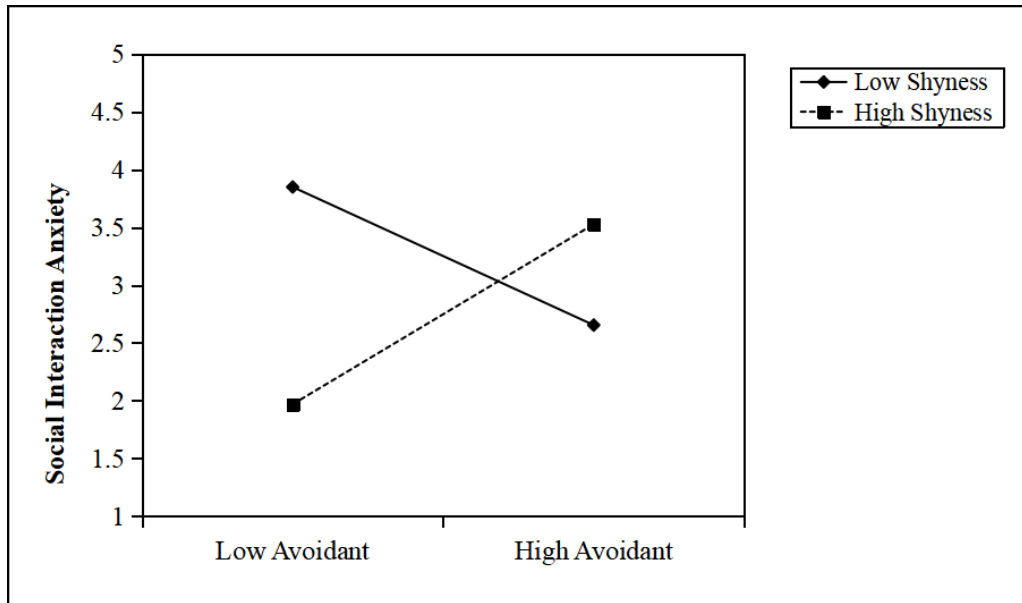


Figure 3. Moderating effect of low shyness and high shyness in the relationship between avoidant personality and social interaction anxiety.

4. Discussion

The findings of the current study revealed that there is a significant positive correlation among avoidant personality, social interaction anxiety, and shyness (see **Table 2**). These outcomes are aligned with the findings of the previous study, which indicated that there is a significant positive relationship among the three variables, i.e., avoidant personality, social interaction anxiety, and shyness^[22].

Additionally, findings also indicate a strong positive correlation between social interaction anxiety and avoidant personality (see **Table 2**). Prior research also determined the same results. Didenko et al. conducted a study on social phobia and avoidant personality^[34]. Results were analyzed, and it was concluded that both variables have positive and close clinical associations with each other. A detailed study was conducted by Eikenæs et al. to compare self-reported experi-

ences of childhood in social phobia and avoidant personality disorder^[35]. The findings showed an association between adverse childhood experiences and both social phobia and avoidant personality disorder. A study was conducted by Cox et al. to examine the relationship between social phobia and avoidant personality^[36]. They concluded that social phobia and avoidant personality showed a high degree of overlap. Results also revealed that avoidant personality and social phobia are different constructs but highly related to each other.

According to the results of current research, there is a significant correlation between shyness and social interaction anxiety (see **Table 2**). Previous studies also determined that shyness is closely related to social interaction anxiety. Colonnese et al. studied the relationship between shyness and social anxiety, deeply. The results revealed that participants who displayed shyness were more socially anxious as

compared to those who did not express shyness^[37]. Poole et al. explored the relationship between social anxiety and shyness and also investigated the role of sociability in this relationship^[38]. A positive association between shyness and social anxiety was found, as the individuals who experienced shyness also scored high on different components of social anxiety.

The findings of the current study indicate that there is no significant difference in the level of social interaction anxiety and shyness with respect to male and female participants aged 18–30 years (see **Table 3**). The findings do not support the third and fourth hypotheses of the present study, which state that female participants will have more social interaction anxiety and shyness as compared to male participants, and females with avoidant personality will exhibit more shyness as compared to males, respectively. The results of the study are aligned with past studies, which reported the same results. In view of the literature, the findings mentioned above are consistent with the prior study of Hashempour et al., who found that there are no significant differences in gender on social anxiety, especially when it comes to interaction, which means that both males and females who participated in the study did not differ in terms of social interaction anxiety^[39]. The findings of the present study are consistent with the study conducted by Seema and Kumar, who examined gender differences regarding social anxiety and self-esteem in adolescent students^[40]. Findings revealed that there is no significant gender difference in both social anxiety and self-esteem. A study conducted by Sridhar and Surya on social anxiety and gender correlates among young adult college students^[41]. The findings of the present study are consistent with the present study that there is no significant gender difference concerning social anxiety in students. The findings of the study are parallel to the previous study by Madu et al., conducted on the role of gender in shyness traits among adolescents^[42]. They have found that there are no gender differences in shyness; in other words, males and females do not differ in terms of shyness level. Another cross-cultural study based on shyness and some other variables conducted by Afshan et al. found that there is no significant difference between male and female students with respect to shyness^[43].

As per results, counseling technique, i.e., systematic desensitization, has a significant and small pre-post reduction

in social interaction anxiety in students (see **Table 4**). Prior studies also proved that systematic desensitization decreases the level and strength of social interaction anxiety. A study conducted by Chisara examined the effect of the systematic desensitization technique on generalized anxiety, including social anxiety and phobias among high school adolescents^[44]. The outcomes of the study proved the effectiveness of systematic desensitization in reducing generalized anxiety, social interaction anxiety, and phobias. The researcher recommended that systematic desensitization should be used by counselors to reduce different anxieties in students, as it is more effective than other techniques. Abood and Abu-Melhim studied the effectiveness of systematic desensitization in reducing the level of anxiety regarding interaction among Jordanian students learning English as a foreign language^[45]. Results of the study indicated that systematic desensitization proved to be more effective in reducing the level of anxiety among the learners who used it as compared to those who did not use the technique.

The results of the current study suggested that shyness plays a significantly positive moderating role in a relationship with avoidant personality and social interaction anxiety (see **Table 5**). These outcomes are paralleled with the results of the former study in which Rettew reviewed different studies related to social interaction anxiety, shyness, and avoidant personality and their relationship with each other^[22]. According to the findings of the mentioned study, shyness plays a vital role in strengthening avoidant personality and social interaction anxiety, through which it was concluded that shyness acts as a moderator in relation to avoidant personality and social interaction anxiety. A study was conducted on social anxiety, shyness, and problematic mobile phone use by Hong et al.^[46]. They did a moderate mediation analysis, which indicated that shyness moderates and worsens social anxiety and problematic mobile phone use in adolescents. Chavira et al. conducted a study on shyness, social phobia, and avoidant personality^[47]. The first aim of the study was to investigate the relationship between shyness, social phobia, and avoidant personality disorder. The second objective of the study was to determine the role of shyness in avoidant personality and social phobia. The findings showed that higher rates of social phobia and avoidant personality were found in the participants who were highly shy. The results also proved that persis-

tent childhood shyness has a moderating role in avoidant personality and anxiety disorders.

The current study contributes to the existing literature in a number of significant ways. First, rather than concentrating only on direct correlations between avoidant personality and social interaction anxiety, it expands on earlier studies by investigating shyness as a moderator in this relationship. Second, by offering empirical data from a student population in Khyber Pakhtunkhwa, Pakistan, the study adds to the literature from non-Western cultural contexts. Lastly, the results validate the usefulness of short-term counseling interventions for students experiencing social interaction anxiety. When taken as a whole, these contributions improve our knowledge of the variables linked to social interaction anxiety and could guide future initiatives for intervention and prevention in educational settings. Additionally, there is only one study aligning with my main hypotheses, conducted by Rettew in 2010^[22]. The current study is an important addition to the literature while filling the gap of investigating shyness as a moderator of relationship between the two variables.

4.1. Limitations and Suggestions

The findings of the current study are sufficient, but there are some limitations and suggestions given below:

In the current study, the researcher used a self-reported measure for the assessment of avoidant personality. So, it is suggested to use projective techniques to get better results about avoidant personality in future research. The present study assessed only gender differences in social interaction anxiety and shyness; other social factors were not considered. The researcher suggests assessing the variables in terms of age, culture, family system, socio-economic status, and more. The current study included only a few colleges and universities in KP. The researcher suggests including a greater number of colleges and universities for the confirmation of overall results.

4.2. Implications

The current study is significant for college and university students, teachers, and theorists to have a better understanding of avoidant personality, social interaction anxiety, and shyness. These variables have a deep relationship with each other and may affect students' lives too. Shyness is an

important factor for avoidant personality and social interaction anxiety. This study provided strong knowledge about social interaction anxiety, which may be helpful for college and university students in order to cope with it and perform better academically and socially. This study can provide a helping hand to professors, counselors, and psychologists by highlighting how social interaction anxiety plays a role in students' academic and social life and exhibit one to perform better. The implementation of the intervention technique used in this study could also be beneficial in assisting students to overcome anxiety. The present study is beneficial for teachers and parents, as it represents knowledge about shyness, its key causes, and its effective role in the onset of avoidant personality and social interaction anxiety. This study is also beneficial for clinicians as it provides a deep understanding of avoidant personality, its root causes and symptoms, and discusses intervention strategies used with participants with social interaction anxiety, i.e., systematic desensitization, and relaxation techniques, which can be used to reduce the tendencies of avoidant personality and to overcome the anxiety, respectively.

5. Conclusions

The results proved that there is a significant positive relationship between avoidant personality, social interaction anxiety, and shyness in college and university students of Khyber Pakhtunkhwa. It was concluded that shyness significantly and positively moderates the relationship between avoidant personality and social interaction anxiety among students. Results also indicated that there is no gender difference in social interaction anxiety among participants, which means that no differences in social interaction anxiety levels were found in males and females. It was also concluded that there is no significant gender difference with respect to shyness in college and university students of Khyber Pakhtunkhwa. It was also proved that the systematic desensitization technique is effective in reducing social interaction anxiety among students, as the level of anxiety slightly decreased in the participants who received counseling. Overall, the findings can help students, teachers, clinicians, therapists, and other psychology practitioners in properly tackling social interaction anxiety by reducing avoidant personality features and shyness traits.

Author Contributions

Conceptualization, Z.N. and S.F.K.; methodology, Z.N. and S.F.K.; formal analysis, Z.N. and S.A.S.; investigation, Z.N.; resources, Z.N.; writing—original draft preparation, Z.N.; writing—review and editing, S.F.K. and S.A.S.; supervision, S.F.K. All authors have read and agreed to the published version of the manuscript.

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Institutional Review Board Statement

The study was conducted in accordance with the Declaration of Helsinki, and approved by the Institutional Review Board (Advanced Studies and Research Board, ASRB) of Hazara University Mansehra. The study was reviewed and approved by the Board in its 43rd meeting, on 14-06-2022, with no specific protocol code assigned.

Informed Consent Statement

Informed consent was obtained from all participants.

Data Availability Statement

Data will be provided on request.

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Conflicts of Interest

The authors declare no conflict of interest.

AI Use Statement

The authors declare that no artificial intelligence (AI) tools were used in the preparation of this manuscript.

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