Original Article

Perfectionism, Emotion Regulation and Their Relationship to Negative Affect in Patients with Social Phobia

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ABSTRACT

Context: Research on the perfectionism and emotion regulation strategies in anxiety disorders has gained increased attention. These have an important implication for formulation of therapies. **Aims:** We examined perfectionism, emotion regulation were examined in 30 patients with social phobia (SP) and 30 community participants. **Settings and Design:** A cross-sectional design using a clinical and a community control sample was adopted in this exploratory study. **Materials and Methods:** Participants were assessed on The Mini-International Neuropsychiatric Interview, Frost's-Multidimensional Perfectionism Scale, Ruminative Response Scale of the response style questionnaire, cognitive emotion regulation questionnaire, Social Interaction Anxiety Scale and the Beck's Depression Inventory. **Statistical Analysis:** Data was analyzed using independents samples *t*-test and Pearson's Product moment correlations and step-wise linear regression. **Results:** Individuals with SP had higher perfectionism (mean = 100.30, SD = ±17.73, $t = 7.29$, $P < 0.001$), rumination (mean = 61.47, SD = ±11.96, $t = 6.71$, $P < 0.001$) and lower levels of positive reappraisal (mean = 11.53, SD = ±3.85, $t = 4.90$, $P < 0.001$). Perfectionism was correlated with social anxiety ($r = 0.44$, $P < 0.05$) and rumination ($r = 0.43$, $P < 0.05$), but not with depression. Rumination was positively correlated with both social anxiety ($r = 0.513$, $P < 0.01$) and depression ($r = 0.485$, $P < 0.01$).Positive reappraisal was negatively correlated with depression ($r = -0.396$, $P < 0.05$) and anxiety ($r = -0.335$, $P < 0.05$). Acceptance was found to be significantly correlated only to the reflective pondering subscale of rumination. Parental criticism was a significant predictor of social anxiety ($F = 11.11$, $P < 0.01$) and brooding predicted depression ($F = 10.49$, $P < 0.01$). **Conclusions:** This study highlights the role of perfectionism as a maintaining factor in SP and the importance of adaptive forms of emotion regulation that need to be addressed in psychological interventions.

Key words: *Emotion regulation, perfectionism, rumination, social phobia*

Access this article online	
Website: www.ijpm.info	**Quick Response Code**
DOI: 10.4103/0253-7176.135370	

INTRODUCTION

Social phobia (SP) is the third most common psychiatric disorder, characterized by a marked fear of social interactions, fear of negative evaluation and scrutiny and anticipation of rejection or humiliation.[1] SP is associated with other co-morbid disorders like depression and substance dependence.[2] People with SP experience significant social and occupational dysfunction and poor quality-of-life.[3]

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Cognitive behavioral models highlight the role of anticipatory anxiety, self-focused attention and post event processing (PEP) in the origin and maintenance of SP.[4,5] Personality factors such as perfectionism and emotion dysregulation have also been implicated in the maintenance of social anxiety.[6,7]

Perfectionism is defined as the desire to achieve the highest standards of performance along with the tendency to be unduly self-critical.[8] Perfectionism has been conceived as a multi-dimensional construct[8,9] and patients with SP have elevated scores of maladaptive perfectionism, which includes concern over mistakes (CM), doubt about actions and parental criticism (PC).[6,10-12]

Perfectionism has been proposed to maintain negative affect and to lead an anticipatory anxiety.[4] Cognitive models of SP also highlight the tendency to ruminate on cognitive content related to perceived performance failure following a social event, known as PEP.[4] PEP has been associated with higher levels of social anxiety[13] and is distinguished from rumination since it dwells on performance failure than on depressive symptoms.[14]

Rumination refers to "behaviors and thoughts that focus one's attention on one's depressive symptoms and on the implications of these symptoms."[15] While rumination has received extensive research attention in the context of depression[16,17] it has been studied less extensively in the context of anxiety disorders. Some studies report that, rumination is prospectively associated with high levels of anxiety[18] and social anxiety.[19]

Rumination has also been linked to perfectionism and mediates the relation between perfectionism and negative affect.[20] Emotion dysregulation is reported to be an important mechanism in mood and anxiety disorders in general[21] and in SP in particular.[7] Patients with SP use less frequent expression of positive emotions, pay less attention to their emotions and have more difficulty describing their emotions than individuals with generalized anxiety disorder and controls.[22] Cognitive emotion regulation refers to the conscious, cognitive way of handling the intake of emotionally arousing information.[23]

Reappraisal and acceptance are adaptive forms of cognitive emotion regulation.[24,25] Reappraisal or the generation of positive interpretations about a stressful situation to reduce distress is associated with better psychological outcomes including the experience of positive emotions better interpersonal relations, self-esteem and life satisfaction.[25-27]

Acceptance, refers to thoughts of accepting one's experiences and resigning oneself to what has happened.[23] It is associated with earlier recovery from negative mood induction.[28] Acceptance is considered to be an important component of third-wave behavior therapies, such as mindfulness based cognitive therapy[29] and acceptance and commitment therapy.[30]

Research on adaptive forms of emotion regulation strategies has yielded inconclusive results and there is little research on the relationship with reference to negative affect. Therefore, we examined the relationship among perfectionism, rumination, acceptance and positive reappraisal and negative affect (anxiety and depression) in patients with SP. We also examined the relative contribution of these factors to negative affect.

MATERIALS AND METHODS

Sample

The sample consisted of two groups. The clinical sample included patients (N = 30, mean age = 28.60 years, SD = ±7.25) with a primary diagnosis of SP [31] with or without Anxious Avoidant Personality Disorder (F 60.6), aged 18-50 years. Exclusion criteria were co-morbid diagnosis of psychosis, bipolar affective disorder, severe depression with psychotic symptoms, current psychoactive substance dependence or any other anxiety disorder other than SP, organic disorders, neurological disorders and/or major physical illnesses. Individuals who had undergone psychological intervention for SP in the last 1 year were also excluded. The community sample (N = 30, mean age = 27.33 years, SD = ±6.49) was matched on age and gender with the clinical sample and served as a control sample. They were recruited from the community using the snowball technique. Exclusion criteria were a presence or history of major psychiatric disorder or physical illness.

Tools

Frost's-Multidimensional Perfectionism Scale (F-MPS)[8] is a 35-item questionnaire that assesses six dimensions of trait perfectionism, CM, doubts about actions (DA), PC and parental expectations (PE), organization (O), personal standards (PS). Internal consistencies for the subscales ranged from 0.77 to 0.93. The reliability of the total score is 0.90.[32] Test-retest reliability in the Indian sample is reported to be 0.87.[11]

Rumination was assessed using the Ruminative Response Scale of the response style questionnaire (RSQ)[33] the Ruminative Response Scale is a 21 item measure that measures Ruminative Response Style, the tendency to think about one's feelings and symptoms of dysphoria. Two components of rumination have emerged from factor analysis, namely reflective pondering and

brooding after the removal of those items, which have overlap with the symptoms of depression.[34] The scale has adequate internal consistencies of 0.77 for brooding and 0.72 for reflective pondering.[34]

Cognitive emotion regulation questionnaire (CERQ)[23] a 36 item tool measures the conscious cognitive components of emotion regulation, that a person uses after the experience of negative life events. CERQ measures nine different emotion regulation strategies, however in the present study, only acceptance and positive reappraisal were included to measure positive adaptive strategies.

Social Interaction Anxiety Scale (SIAS)[35] is a 20-item self-report measure that assesses general fears of social interaction in groups or dyads. The SIAS has adequate reliability and validity, with Cronbach's alphas of 0.99 and 0.93 reported for undergraduate students and in patients with SP respectively. The SIAS has also been shown to have good test-retest reliability, with $r = 0.92$ for 4 and 12 weeks.[35]

Beck's Depression Inventory-II (BDI-II)[36] is a 21 item measure that assesses cognitive, affective and somatic components of depression. The BDI-II has been reported to have good validity and reliability in distinguishing people with and without depression.[36]

Design

Procedure

A cross-sectional design was adopted and the study was exploratory in nature. The clinical sample was recruited from the out-patient mental health services of the National Institute of Mental Health and Neurosciences. Participants provided informed consent and the study was reviewed for ethical considerations by a board of members, including senior mental health professional. The Mini International Neuropsychiatric Interview[37] was used to confirm a diagnosis of SP in the clinical sample and to rule out co-morbid disorders. The participants were then administered the remaining measures individually.

The community control sample was matched with the clinical sample on age and gender. They were screened using an interview question for current or past psychological distress or help sought and then administered measures of perfectionism, rumination, emotion regulation, social anxiety and depression.

Statistical analysis

The two groups were compared on measures of perfectionism, rumination, emotion regulation strategies and negative affect, using independent sample *t*-tests. Relationship between variables was examined using the Pearson's product moment correlations. Multiple linear step-wise regression analysis was carried out to examine predictors of social anxiety and depression. Partial correlations were carried out to control for the effect of mood on the relationship between variables.

RESULTS

The final sample for the study included 60 participants comprising of 30 participants each in the clinical and community control groups. The two groups were matched with respect to age and gender and were comparable on years of education, occupation and marital status. The clinical sample consisted predominantly of males (93%), having finished their graduation (86.7%), employed (70%) and having never been married (66.7%). The community sample had slightly different number of participants who were employed (60%) and single (76%), however these differences were not statistically significant [Table 1].

Comparison between the two groups on negative affect, perfectionism, rumination and emotion regulation strategies [Table 2]

The clinical sample had significantly higher levels of overall perfectionism ($t = 7.29$, $P < 0.0001$), CM ($t = 9.45, P < 0.0001$), PS ($t = 2.23, P < 0.05$), parental expectations ($t = 2.12$, $P < 0.05$), PC ($t = 4.09$, $P < 0.0001$) and doubts over actions ($t = 6.64, P < 0.0001$) than the community controls.

Patients with SP reported higher use of reflective pondering ($t = 3.55$; $P < 0.001$), brooding ($t = 7.07$;

Table 1: Socio demographic characteristics of the clinical and the community control samples

Variables	Clinical sample (*N*=30)		Control community sample (*N*=30)		Significant
Age (in years)					
Mean	28.60		27.33		
Standard deviation	7.25		6.49		
	F	%	F	%	
Sex					
Male	28	93.33	28	93.33	0.640
Female	2	6.67	2	6.67	
Education (in years)					
Graduate	26	86.7	26	86.7	1.00
<12/12th	4	13.33	4	13.33	
Occupation					
Student	6	20	10	33.33	0.489
Employed	21	70	18	60	
Unemployed	3	10	2	6.67	
Marital status					
Never married	20	66.67	23	76.67	0.390
Married	10	33.33	7	23.33	
Religion					
Hindu	26	86.7	21	70	0.117
Others	4	13.33	9	30	

Table 2: Comparison of the two groups on perfectionism, rumination, emotion regulation, negative affect

Measures	Clinical (*N*=30)		Community control (*N*=30)		*t* values	Significant
	Mean	SD	Mean	SD		
SIAS	48.93	14.07	14.10	9.36	11.288***	0.0001
BDI	24.73	11.84	5.33	5.32	8.182***	0.0001
F-MPS						
CM	33.53	6.31	18.97	5.59	9.452***	0.0001
PS	24.63	5.02	21.63	5.38	2.232*	0.030
PE	16.13	5.17	13.80	3.06	2.126*	0.038
PC	11.60	3.29	8.47	2.58	4.098***	0.0001
DA	14.40	3.51	8.40	3.47	6.649***	0.0001
O	22.53	5.40	22.00	4.63	0.410	0.683
Total	100.30	17.73	71.27	12.6	7.296***	0.0001
RSQ						
Rumination-reflection subscale	12.57	3.002	9.93	2.766	3.533**	0.001
Rumination-brooding subscale	14.87	3.026	9.50	2.850	7.072***	0.0001
Rumination scale total	61.47	11.968	42.03	10.414	6.710***	0.0001
CERQ						
ACC	12.73	3.205	12.03	3.690	0.784	0.436
PR	11.53	3.857	15.80	2.797	−4.905***	0.0001

*$P<0.05$; **$P<0.001$; ***$P<0.0001$; CERQ – Cognitive emotion regulation questionnaire; RSQ – Response style questionnaire; FMPS – Frost's Multidimensional Perfectionism Scale; BDI – Beck's Depression Inventory; SIAS – Social Interaction Anxiety Scale; SD – Standard deviation; CM – Concern over mistakes; PS – Personal standards; PE – Parental expectations; PC – Parental criticism; DA – Doubts about action; O – Organization; PR – Positive reappraisal; ACC – Acceptance

$P < 0.001$), overall rumination ($t = 6.70$, $P < 0.001$) and lesser use of positive reappraisal ($t = 4.905$, $P < 0.0001$) as compared to community controls. There was no difference between the two groups on the scores of Organization subscale of F-MPS (Clinical sample mean = 22.53 SD = ±5.406; community, mean = 22 SD = ±4.63, $t = 0.410$) and acceptance (clinical sample mean = 12.73 ± 3.20; community mean = 12.03, SD = ±3.69, $t = 0.784$).

Associations among the variables

Correlations with negative affect

The analysis of relationships among variables in the clinical sample, indicated a significant positive correlation between scores on SIAS (social anxiety) and overall perfectionism ($r = 0.446$; $P < 0.05$), CM ($r = 0.361$, $P < 0.05$), PC ($r = 0.533$, $P < 0.01$), doubt over actions ($r = 0.453$, $P < 0.05$) and RSQ total ($r = 0.513$, $P < 0.01$) indicating that higher levels of maladaptive perfectionism and rumination are associated with greater social anxiety. Depression was found to be significantly correlated to the RSQ total ($r = 0.485$, $P < 0.01$), the brooding component of rumination ($r = 0.521$, $P < 0.01$) indicating that greater levels of rumination and brooding, greater the depression. There was no significant correlation found between depression and perfectionism. Positive reappraisal was found to be negatively related to depression ($r = -0.396$, $P < 0.05$) and social anxiety. However, the association between positive appraisal and social anxiety was not significant ($r = -0.335$) indicating that greater the use of positive reappraisal, lower is the depression and anxiety.

Correlations among rumination, perfectionism and cognitive emotion regulation

RSQ total was significantly correlated with overall perfectionism ($r = 0.436$, $P < 0.05$), CM ($r = 0.446$, $P < 0.05$) and PC, ($r = 0.528$, $P < 0.01$) and doubt about actions ($r = 0.41$, $P < 0.05$) indicating that higher scores on maladaptive dimensions of perfectionism is associated with greater use of rumination as a response style. Among the dimensions of perfectionism, parental expectations was significantly associated with the reflective pondering component of rumination ($r = 0.400$; $P < 0.05$) and CM ($r = 0.403$, $P < 0.05$) and PC ($r = 0.472$, $P < 0.01$) were found to be significantly associated with the brooding component of rumination. Higher PS ($r = 0.472$; $P < 0.01$) and greater report of parental expectations ($r = 0.435$, $P < 0.05$) were associated with greater use of positive re-appraisal. Acceptance was found to be positively correlated to the reflective pondering subcomponent of rumination ($r = 0.372$, $P < 0.05$) [Table 3].

Multiple linear regression analysis [Table 4] indicated that PC was a significant predictor of social anxiety in the clinical sample, accounting for 26% of the variance in scores on SIAS (adjusted $R^2 = 0.259$, $\beta = 0.533$, $P < 0.002$) and the brooding component of rumination emerged as a significant predictor of depression accounting for nearly 25% of the variance in scores on BDI-II (adjusted $R^2 = 0.246$, $\beta = 0.521$, $P = < 0.003$).

Partial correlations controlling for scores on BDI (depression) indicated that there was a significant

Table 3: Relationship among perfectionism, rumination, emotion regulation and negative affect in clinical sample (*N*=30)

Measures	SIAS	BDI	RSQ	BR	REF	PR	ACC
SIAS	1	0.422*	0.513**	0.312	0.324	−0.335	0.179
BDI	0.422*	1	0.485**	0.521**	0.206	−0.396*	0.010
F-MPS (total)	0.446*	0.191	0.436*	0.355	0.246	0.244	0.047
CM	0.361*	0.217	0.446*	0.403*	0.121	0.046	0.208
PS	0.144	−0.009	0.222	0.108	0.193	0.472**	−0.169
PE	0.301	0.020	0.120	0.105	0.400*	0.435*	−0.135
PC	0.533**	0.299	0.528**	0.472**	0.102	−0.099	0.166
DA	0.453*	0.276	0.410*	0.319	0.238	−0.075	0.147
O	0.053	0.075	0.102	−0.008	0.102	0.305	−0.053

*$P<0.05$; **$P<0.01$; F-MPS – Total score of F-MPS; CM – Concern over mistakes; PS – Personal standards; PE – Parental expectations; PC – Parental criticism; DA – Doubts about Action; O – Organization; SIAS – Social Interaction Anxiety Scale; BDI – Beck's Depression Inventory; RSQ – Response style questionnaire; BR – Brooding component of rumination; REF – Reflection component of rumination; PR – Positive reappraisal; ACC – Acceptance; F-MPS – Frost's Multidimensional Perfectionism Scale

Table 4: Predictors of social anxiety and depression

Predicted variable	Predictor variables	Adjusted R^2	*F*	β	Significant
Social anxiety	Parental criticism	0.259	11.112**	0.533**	0.002
Depression	Rumination – brooding	0.246	10.493**	0.521**	0.003

*$P<0.05$; **$P<0.01$

influence of mood on the relationships between the variables.

DISCUSSION

The present study examined the relationship among perfectionism, rumination, emotion regulation strategies and negative affect in patients with SP. The demographic characteristics of the sample in the present study are consistent with studies carried out in a similar setting.[11] Although patients had developed social anxiety during adolescence, they sought treatment only when it caused significant interference in everyday functioning. Findings indicate that more men than women seek treatment. Our findings are consistent with literature that suggests that depression is a common co-morbid psychiatric disorder in patients with SP.[2] SP and depression were found to be significantly correlated.

Patients with SP had higher maladaptive perfectionism as seen on high scores on overall perfectionism, CM, DA, parental expectations and PC. They reported higher PS than community participants. These findings are consistent with findings by other researchers in SP[6,11] and indicate that maladaptive perfectionism is an important variable that needs to be addressed in the treatment of SP. Further, maladaptive dimensions of perfectionism, namely, CM, doubt about actions and PC were positively associated with social anxiety emphasizing the clinical relevance of these variables. Self-oriented perfectionism, which is similar to PS has been defined as holding unrealistic standards and excessive striving to attain these standards and has been found to be correlated to depression.[38] The clinical group did not differ from the community sample on organization, which is often considered to be adaptive when in moderation. Organization has been found to be uncorrelated or negatively correlated to psychopathology.[39] Thus, our findings indicate that persons with SP have a tendency to be excessively vigilant regarding mistakes in social interactions leading to greater self-focus, anxiety and dissatisfaction with respect to their effort and performance in a social situation. The finding that PC is higher in patients with SP is consistent with studies that highlight the role of parenting as a contributor to development of maladaptive perfectionism.[39]

Patients with SP also reported a higher levels of rumination, brooding and reflective pondering. Rumination was associated with greater social anxiety and depression. Rumination is a method in which the individual focuses on the causes and consequences of negative affect in response to negative affect.[15] While reflective pondering refers to purposeful turning inward to engage in cognitive problem solving to alleviate one's depressive symptoms, brooding refers to passive comparison of one's current situation with some unachieved standard.[34] Rumination has been found to be a factor in the onset and exacerbation of depressive symptoms and is prospectively correlated with general anxiety.[18,19] In the form of post-event processing it is associated with higher levels of SP.[13] The present study found that rumination was associated with both social anxiety and depression. However as the present study was cross-sectional in nature, causation could not be determined. It may be hypothesized that a ruminative tendency leads to greater social anxiety due to self-focused attention on experience, causes and consequences of anxiety and depression or vice versa.

We found that the clinical sample used positive re-appraisal less frequently than community participants. Positive reappraisal is an adaptive strategy helpful in generating positive perspectives as a way of reducing distress.[25] Our finding is consistent with studies that report positive reappraisal to be negatively associated with a depression in clinical samples.[23,24] Recent studies indicate that patients with SP have greater difficulty regulating their emotions[22] and a greater tendency to suppress emotions.[7] Our findings suggest that greater use of rumination and lesser use of positive reappraisal is associated with greater social anxiety. SP is associated with a deficit in the use of positive reappraisal as an

emotion regulation strategy which could result in greater negative affect. More studies are needed to examine patterns of emotion regulation in SP.

The two groups did not differ in the use of acceptance. It is possible that the two groups use acceptance in different contexts. Research suggests that adaptive strategies are context dependent and are not associated with psychopathology over a long-term.[24] Thus, the use of acceptance may be considered appropriate when the individual cannot take any action to change circumstances and may be maladaptive when a person accepts as situation as it is without attempting to change them. However, acceptance was assessed using a single measure and may not be sufficient to detect usage in specific situations.

The finding that rumination is associated with perfectionism is consistent with other studies that report that rumination is correlated with CM and doubt about actions[20] socially prescribed and self-oriented perfectionism.[40] Brooding was significantly associated with maladaptive perfectionism and high parental expectations. Those who experience PC may develop a tendency to dwell on mistakes, compare it with an unachieved standard, thus perpetuating negative affect. Contingent reward and approval based on child's ability to perform adequately also lead to higher perfectionism[41] a tendency to self-criticality to ensure that they do not fall short of parental expectations. PC was a significant predictor of social anxiety in patients with SP. Early experiences of parental criticality have been implicated to development of self-conscious emotions like shame and guilt.[39] Patients with SP describe their parents as being overprotective, lacking warmth, rejecting, less caring and more likely to use shame tactics as compared to normal controls.[42] There is a need for further studies in this area.

Among the emotion regulation strategies, positive reappraisal has been found to be positively correlated with PS and parental expectations. The adaptive and maladaptive aspects of perfectionism have been previously found to be associated with varying emotion regulation strategies.[43] PS and parental expectations are adaptive dimensions, which have not been found to be correlated to social anxiety and depression in the present study. Therefore, it can be concluded that those with higher levels of PS or parental expectations may use positive reappraisal to regulate affect and are less likely to experience negative affect.

Brooding emerged as a significant contributor to the development of depression and is supported by findings that consider brooding as accounting for the dysfunctions associated with depression.[34]

Our study has several strengths. It included a control group that was group matched for demographic variables. The use of structured interviews to establish primary diagnosis and also to rule out other Axis I disorders as confounders is also strength of the study. However, the findings need to be interpreted in the background of some limitations such as a relatively small sample size that was predominantly male, thus limits further analysis and the generalizability of findings. A cross-sectional design and use of self-report measures may have been limitations as well.

The study has important clinical implications for therapies that focus on emotion regulation skills and use of adaptive strategies. Psychological therapy must address the role of early experiences of PC and its impact on subsequent beliefs about self and self-evaluation. The study also highlights the need to treat negative mood early in therapy.

Future research must include larger representative samples, with an attempt to understand mediating variables, as well as samples with co-morbid disorders. As emotion regulation strategies are partially automatic, assessing them through experimental paradigm would corroborate findings on self-report measures.

CONCLUSIONS

Perfectionism and rumination are significantly elevated in patients with SP. There is a significant relationship among these variables and negative affect in patients with SP. Greater use of rumination was associated with higher depression and anxiety as well as the maladaptive dimensions of perfectionism and patients with SP tends to use less positive reappraisal as an emotion regulation strategy. PC was an important predictor of social anxiety and brooding predicted depression.

ACKNOWLEDGMENT

The authors would like to thank Dr. Mariamma Phillip for her inputs on the analysis of data.

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How to cite this article: Rukmini S, Sudhir PM, Math SB. Perfectionism, emotion regulation and their relationship to negative affect in patients with social phobia. Indian J Psychol Med 2014;36:239-45.

Source of Support: Nil, **Conflict of Interest:** None declared.