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Role of Metaworry and Emotional Coping Across Metacognitive Beliefs and Well-Being: A Gender Perspective

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The current research aimed at exploring the moderating role of gender on the relationship between positive beliefs about rumination and negative well-being mediated serially by metaworry and emotion-oriented coping. A total of 514 employed professionals from different organizations completed Positive Beliefs about Rumination Scale, Anxious Thought Inventory, Coping Inventory for Stressful Situation, and Well-being Questionnaire-12. The findings showed positive relationships among study variables. Gender moderation was tested in both direct and indirect regression paths. The direct path between metaworry and emotion-oriented coping was moderated by gender. Positive beliefs about rumination were mediated by metaworry on emotion-oriented coping that further mediated effect of metaworry on negative well-being. The moderated mediations appeared to be significant for men only suggesting a moderating role of gender on direct and total effects. The indirect path from positive beliefs about rumination to negative well-being was serially mediated by metaworry and emotion coping for both men and women proposing absence of moderation by gender. The moderation in men within organizational settings proposed that despite holding positive metacognitive beliefs, the direct and total effects were significantly buffered in men for metaworry. However, emotion-oriented coping predicted negative well-being within organizational settings irrespective of gender category. The findings were suggestive of deleterious effects on well-being following an emotion focused approach within proactive environmental needs.

Keywords: Positive beliefs about rumination, emotion-oriented coping, metaworry, negative well-being

Stress is inevitable that prompts negative thinking, rumination, and extends distress (Nolen-Hoeksema, 1991) especially, within

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scenarios where performance is evaluated and success is linked with attaining mutual goals. The organizational settings provide a competitive environment where cognitive-emotional balance is often challenged. The unmet goals initiate negative thinking that paves the way for cognition concentrated syndrome (i.e., cognitive attentional syndrome), responsible for initiating a repetitive thinking style. This leads to a cognitive bias whereby the individual keeps focusing on certain aspects of thoughts that are dominantly negative and ignores other impartial information (Wells, 2005). This type of cognitive functioning is enduring, indefinitely self-perpetuating (Mathews, Schwean, Campbell, Saklofske, & Mohamed, 2000), and it may lead to maladaptive coping. This is explained as self-regulatory conceptualization of ruminative thinking (Mathews & Wells, 1994).

Humans have an ability to process their thinking both at cognitive level and via behavioral implementation (Nolen-Hoeksema, Wisco, & Lyubomirsky, 2008). Beliefs about repetitive thinking have been demonstrated to play a significant role in rumination, anxiety, and depression (Papageorgiou & Wells, 2001; 2003). Rumination is mistaken for, a way of coping with stress and an attempt to solve problems (Carver, Scheier, & Weintraub, 1989; Nolen-Hoeksema & Morrow, 1991) however, it is only mental processing without reaching solutions to the challenges. This is cyclic in nature and the positive beliefs about rumination play a vital role in indicating the benefits of rumination but being unable to arrive at the solution keeps the entire process lasting (Ajzen, Albarracín, & Hornik, 2007). This ruminative state furthers the conditions of maladaptive way of dealing with challenging situations leading to a variety of negative consequences including anxiety (Fritz, 1999; Schwartz & Koenig, 1996; Segerstrom, Tsao, Alden, & Craske, 2000) and anger (Rusting & Nolen-Hoeksema, 1998). In terms of chronicity of symptoms associations have been found with graver consequences, for example, suicidal ideation (Eshun, 2000).

Previous investigations have shown that a ruminative style negatively biases thinking endorsing more pessimistic evaluations of experiences (Lyubomirsky & Nolen-Hoeksema, 1995). The thinking bias leads to minimized perception of one's successes and maximizing aspects of failures (Greenberg, Pyszczynski, Burling, & Tibbs, 1992), showing anxious tendencies and lack of control over life and a failure to solve problems effectively enhancing sense of worry (Lyubomirsky et al., 1999) or be reluctant in implementing solutions (Lyubomirsky & Nolen-Hoeksema, 1995). These styles are usually responsible for swelling normal worry patterns and surfacing worry type-II known as metaworry (Wells, 1994) that is being worried about one's own

thoughts (Wells, 2008), conditions where we have a lack of control often give rise to metaworry causing dysregulation to normal cognitive processing and pose a threat to psychological well-being (Wells & Carter, 1999). An ideal well-being conveys an absence of complaints in physical, mental, and cognitive aspects of health (Karademas, 2007) but perfect well-being is rarely achieved. Positive well-being is depicted in one's achievement or growth characteristics while negative well-being is manifested in terms of dysfunctional beliefs, negative affect, or maladaptive coping patterns. A ruminative response style may manifest depressogenic risk factors (Nolen-Hoeksema, 2000) for example, elements of metaworry (Wells, 1997) and emotion focused style of coping that may lead to negative well-being, considering the theoretical underpinning.

Prior research attempts have scarcely investigated how metacognitive processing is associated with negative well-being. Literature exposes severe paucity in identifying the metacognitive leads towards well-being. Authors suggest that studies should investigate further comparisons of models to delineate the mediated relationship (Nolen-Hoeksema, Wisco, & Lyubomirsky, 2008). The present study aimed at exploring the moderating role of gender on the relationship between positive beliefs about rumination and negative well-being serially mediated by metaworry and emotion-oriented coping.

In an attempt to fill this void, this study explores the path from a ruminative thinking style to negative well-being serially mediated by metaworry and emotional coping. The direct and indirect parameters will further be tested for any differences across gender to explore moderating role of gender. Earlier researches have indicated gender differences in coping signifying that men have problem focused approach in emotionally challenging times compared to women who are more inclined to use emotion focused coping strategies (Ptacek, Smith, & Dodge, 1994). Therefore, the main objectives included verifying previously established associations between positive beliefs about rumination, metaworry, and emotion-oriented coping. Whereas, extending further investigation on relationship with serial mediation that is, metaworry and emotion-oriented coping as sequential mediators and moderated mediation effects of gender for direct and indirect paths. The present study contributes by bridging the gap between metacognitive beliefs about rumination and well-being by considering important cognitive variables depicting a dominant yet unexplored pattern of relationship.

Method

Sample

A total of 514 adults, comprising of women (26%) and men (64%) while some were found missing at random participated in the study with approximately 97% response rate. The sample was selected from various government, semi-government, and private organizations around twin cities of Pakistan that is, Rawalpindi and Islamabad. A major portion was obtained from government (41%) and private (42%) organizations and institutions. The mean age for the present sample was 32.56 years. Of the entire sample approximately 33% of the participants were unmarried, 65% were married while 6% were divorced. The data also revealed that joint or combined family system was quite high (61%) as compared to nuclear or single-family living (22%). On the professional front, the data indicated a mean experience to be approximately 9 years, employees serving approximately 10 working hours per day and drawing Rs. 48310 per month on average.

Measures

Positive Beliefs about Rumination Scale (PBRS). This is a 9-item scale that measures positive metacognitive beliefs (Papageorgiou & Wells, 2001), concentrated on the advantages of the ruminative thinking pattern as reflected in the items of scale for example, '*Ruminating about the past helps me to prevent future mistakes and failures*'. Respondents rate each statement to the extent they approve of each item using 4-point Likert type scale extending between (1) *does not agree* and (4) *agree very much*. A composite score is used by summing all items, with high scores representing the strong positive metacognitive beliefs about rumination. The original internal consistency and test-retest reliability coefficients were reported as .89 and .85, respectively. The positive correlation (r = .43) between positive beliefs about rumination and positive beliefs about worry refers to the concurrent validity of the scale. The positive correlations between PBRS, rumination, and depressive symptoms indicate medium convergent validity of the scale (Papageorgiou & Wells 2001).

Coping Inventory for Stressful Situations (CISS). The CISS scale assesses choice of coping strategies in stressful or challenging situations (Endler & Parker, 1990). The entire scale consists of 48 items with three subscales: Emotion-oriented, Avoidance-oriented, and Task-oriented coping. Each dimension consists of 16- items. The respondents used a 4-point Likert type scale ranging from (1) *Do not*

agree to (4) *Agree very much*. Intended for the present research objectives, Emotion oriented coping subscale consisting of 16-items was used. Responses are computed to get a composite score with high score representing more use of emotion-oriented coping. The original internal consistency and test-retest reliability coefficients of Emotion oriented coping subscale were reported as .89 and .85, respectively (Endler & Wells, 2001).

Anxious Thought Inventory (AnTI). The AnTI is a measure of generalized worry (Wells, 2008) consisting of 22-items on the dimensions of Social Worry (9-items), Health Worry (6-items) and Metaworry (7-items). The Metaworry dimension of the inventory holding both process and content of worry was included in the present study. Respondents rated each statement on a 6-point Likert type scale ranging from (1) *Not at all* to (6) *Very much*. A composite score is computed with high scores representing a greater strength of metaworry. The original internal consistency (.75) and test-retest reliability coefficients (.77) demonstrates the psychometric soundness of the subscale.

Well-being Questionnarie-12 (WBQ-12). An important addition to the existing list of well-being tools is WBQ-12 (Bradley, 2001). The entire scale has three dimensions including Positive Well-being, Negative Well-being, and Energy Well-being with 4-items for each subscale, including two reverse coded items for Energy Well-being subscale. The responses are rated on 4-point Likert scale ranging from (1) *Never* to (4) *Always*. WBQ-12 has been translated and validated in many languages such as Dutch (Adriaanse & Snoek, 2006), Japanese (Riazi, Bradley, Barendse, & Ishii, 2006), and Polish (Watrowski & Rohde, 2014). Originally WBQ-12 has been developed for diabetic patients, however, it is not a diabetes specific tool. The tool has been used with a variety of clinical population with adequate internal consistency (ranging from .71 to .85). With its generic nature, the author recommends its use for non-clinical samples as well. In the present study Negative Well-being dimension of the questionnaire was used.

Procedure

The heads of the organizations and institutions were approached, and formal permission was acquired to collect data. Participants were then purposively selected based on specific inclusion criteria, consisting of a minimum education of graduation, age ranging between 25-45 years and working as permanent employees in any

capacity of the organization or institution. The participants were informed about the purpose of the study and assured of the confidentiality of the information collected. None of the items were reported to be ambiguous and the participants took approximately 10-minutes to complete the entire questionnaire.

Results

The initial screening included data cleaning where missing values, outliers and homogeneity of variance were explored. The data represented a relative normal distribution with the skewness ranging from .09 to .24, suggesting the data being capable of further statistical analysis. The reliability coefficients were estimated using Cronbach's alpha to ensure psychometric appropriateness of the measures employed for the present study. The measures along with their respective alpha coefficients are given in Table 1.

Table 1

Internal Consistency Coefficients, Mean, Standard Deviation, and Correlation Coefficients of Demographics and Study Variable Measures (N = 514)

	Variables	α	1	2	3	4	5	6	7	8
1	Age	-	-	.83**	.29**	-.07	-.06	-.03	-.20**	-.23**
2	Work Experience	-		-	.30**	-.07	-.09	-.03	-.19**	-.17**
3	Salary	-			-	.07	-.02	-.05	.01	-.01
4	Working hours	-				-	.06	-.08	.06	.04
5	Negative Well-being	.68					-	.11*	.19*	-.03
6	Positive Beliefs about Rumination	.85						-	.40**	.29**
7	Emotion Oriented Coping	.77							-	.23**
8	Metaworry	.77								-
	Mean	-	32.56	9.41	48310.80	10.29	10.41	13.36	47.27	16.12
	SD	-	6.96	6.30	31237.44	8.19	3.30	3.95	9.07	4.42

*$p < .05$. **$p < .01$.

Table 1 shows that all subscales are meeting the desired acceptance level of internal consistency. The correlation matrix depicts a pattern of relationship among various demographic characteristics of the sample and the study variables. The results

reveal that work experience and monthly income are significantly positively correlated with age, suggestive of a logical elevation that is, as age increases so does the experience, however, in this research it indicates an increase in monthly earnings. The positive beliefs about rumination are positively correlated with negative well-being though not with any demographic characteristics. On the other hand, emotion-oriented coping is significantly negatively associated with age and work experience while positively associated with negative well-being and positive beliefs about rumination. The metaworry is negatively correlated with age and work experience and significantly positively correlated with positive beliefs about rumination and emotion-oriented coping.

The above associations indicate valid evidence for metacognitive processing, that increase in ruminative beliefs is associated with emotion-oriented coping, metaworry, and eventually negative well-being. However, how this existed with respect to gender was explored further. The major objective of the study was to investigate the indirect path between positive beliefs about rumination and negative well-being. The path model was designed in AMOS version 21. Both direct and indirect effects were estimated.

The two-tail significance of indirect paths were estimated at 95% confidence interval using 500 bootstrap samples the fit indices provided acceptable fit for CFI *(*1.00 > .9), RMSEA (.00 < .05), TLI (1.02 > .9) and $\chi^2(1)$ =.211 parameter estimates were significant at .01 level.

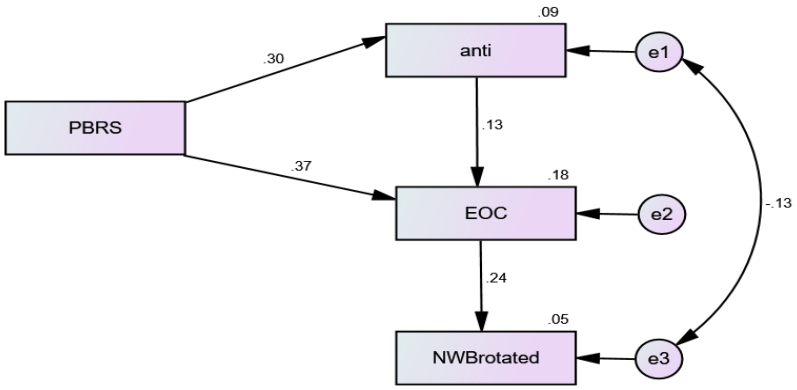

Figure 1. Effects of positive beliefs about rumination (PBRS) on metaworry (AnTI), emotional coping (EOC) and negative well-being (NWB) for men. χ(df) = .211(1); CFI = 1.000; TLI = 1.027; RMSEA = .000.

The model was further revised to estimate moderating role of gender for both direct and indirect effects. Gender was used as grouping variable and model was executed with open estimates for both male and females. The fit indices indicated a good fit of the model to the data as indicated in Table 2.

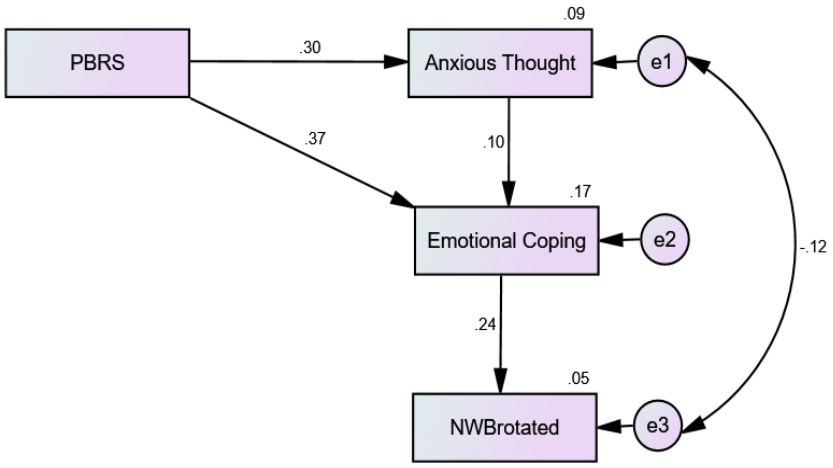

Figure 2. Effects of positive beliefs about rumination (PBRS) on metaworry (AnTI), emotional coping (EOC) and negative well-being (NWB) for women. χ(df) = 2.614(6); CFI = 1.000; TLI = 1.041, RMSEA = .000.

In the next step all parameters were constrained to be equal across male and female participants. The change in model fit indices shows a decline in the constraint model indicating that both model with open estimates and model with equality constraints are different to further explore for mediated moderation (Muller, Judd, & Yzerbyt, 2005). These results suggest potential moderation by gender for direct and indirect paths. The comparison of parameters as presented in Table 2 suggests that only one parameter in the model (i.e., the relationship between metaworry and emotion-oriented coping) is being moderated by gender. The parameter appeared to be significant for males only. Gender wise comparison of indirect effect showed that indirect path between positive beliefs about rumination and emotion-oriented coping mediated by metaworry is moderated by gender.

Table 2

Direct and Indirect Effects across Gender (N = 514)

			Dependent						
			Metaworry (AnTi)		Emotion Coping		Negative Well-being		
	Predictors	Gender	*β*	*p*	*β*	*p*	*β*	*p*	ΔR^2
	PBRS	Men	.28	.01	.36	.02			
Direct		Women	.31	.01	.41	.01			
	AnTi	Men			.13	.02			.17
		Women			.06	.51			.17
	EOC	Men					.22	.01	.05
		Women					.28	.01	.04
	PBRS	Men			.04	.02	.09	.01	
Indirect		Women			.06	.51	.12	.01	
	AnTi	Men					.03	.01	.03
		Women					.02	.02	.06
	EOC	Men							
		Women							
	PBRS	Men			.28	.01	.39	.01	
		Women			.31	.01	.43	.01	
Total	AnTi	Men					.13	.02	.05
		Women					.06	.52	.04
	EOC	Men							
		Women							

Note. PBRS = Positive beliefs about rumination; AnTI = metaworry (Anxious Thoughts Inventory); EOC = emotion oriented coping; NWB = negative well-being.

The moderating effect of gender resulted in significant indirect effect (β = .04, p < .05) for male participants and a nonsignificant indirect effect (β = .01, p >.05) for female participants. Furthermore, the gender wise comparison of parameters shows significant moderation for the relationship between positive beliefs about rumination and negative well-being serially mediated by metaworry and emotion-oriented coping. Again, the indirect path with the serial mediators appears to be significant for male participants only (β = .02, p < .01).

Discussion

Dysfunctional beliefs are majorly considered responsible for the development and maintenance of clinical problems (Wells, 2000).

Beliefs about sustained thoughts lead to a cyclic repetition (rumination) that may initiate negative thinking and metaworry (Wells & Mathews, 1994). Rumination resembles worry except that it is more liable to focus on relevance from the past and highlights emotional negativity and it is also found to be associated with anxiety (Nolen-Hoeksema et al., 2008). The self-regulatory executive function (S-REF) model proposes a universal mechanism of cognitive processing that explains rumination as a mistaken self-regulation strategy in an attempt to regain emotional balance (Wells & Mathews, 1996).

The present research investigated the relationships among positive beliefs about rumination, metaworry, emotion-oriented coping and negative well-being in an attempt to partially test S-REF model of rumination. The context of present study is suggestive of the ruminative cycle as a cognitive struggle to deal with discrepancies withholding goal progress (Matthews & Wells, 2004). In line with previous literature the results showed significantly positive relationships between positive beliefs about rumination and emotion-oriented coping suggesting that elevation of either may contribute to the other. Previous literature has shown positive beliefs about rumination and metaworry to be positively correlated and these findings were corroborated in the present study by correlations in similar directions. The significantly positive correlations amongst study variable simply (Wells, 2006) that having elevated positive beliefs about advantages of ruminative coping is associated with higher emotion-oriented coping and negative well-being. The positive relationship between positive beliefs about rumination, emotion-oriented coping, and metaworry also specifies that holding beliefs that rumination serves an advantage elevates the emotional content which is positively associated with metaworry (Wells, 1994). The S-REF model further proposes that cognitive appraisals precede emotional reactions as depicted in present findings. Thus, emotion-oriented coping often leads to self-dysregulation conditions. The current research added that worrying about worry (metaworry) may predict emotional coping that had been indicated previously (Wells, 2000) to be attributed to positive beliefs about worry. Preceding researches specified women in carrying emotionally vulnerable mechanics in choice of coping strategies (Ptacek et al., 1994) and anxiety (Donner & Lowry, 2013). Thus, we anticipated that gender will moderate the relationship between positive beliefs about rumination, metaworry, and emotion-oriented coping. This was observed in the results of direct effects between positive beliefs about rumination and metaworry, positive beliefs about rumination and emotion-oriented

coping, and emotion-oriented coping and negative well-being. Especially, the relationship between metaworry and emotion-oriented coping was expected to be significantly moderated in terms of direct and total effects. However, the constraint model's results and overall chi-square change represented a nonsignificant *p*-value, suggestive of the generalizability of the model. The indirect path from positive beliefs about rumination to negative well-being is serially mediated by metaworry and emotion coping for both genders however, an absence of moderation by gender was observed.

The past literature endorses a better probability of rumination in women (Strauss, Muday, McNall, & Wong, 1997) along with their vulnerability for emotional coping (Ptacek et al., 1994) which was also reflected in majority of the paths across direct, indirect, and total effects in terms of the standardized scores obtained for both genders. Positive belief about rumination was mediated by metaworry on emotion-oriented coping which further mediated the effect of metaworry on negative well-being. The later mediation appeared to be significant for males only suggesting a moderating role of gender on the paths between metaworry and negative well-being in the indirect effects. These findings are supplemented by prior literature indicating that females engage more in seeking emotional support in times of psychological distress (Kelly, Tyrka, Price, & Carpenter, 2008). The practice of seeking emotional support by females absorbs the negative effects on well-being. In consequence that explains the significantly higher scores of males, reflecting males to be more vulnerable to negative well-being compared to females.

Limitations and Suggestions

Several limitations must however be overcome in later research attempts for example, a repeated measure design would depict how these gender differences stand a function of time and perhaps an important factors such as personality disposition should be considered in future attempts. The present study composed of nonclinical sample, conceivably a comparison with a clinical sample would show a more concrete picture.

Implications

The present study has highlighted findings that give important implications with respect to gender differences in the relationship

between positive beliefs about rumination and negative well-being taking account of important mediators that is, metaworry and emotion-oriented coping. It must be considered that cognitive components may occupy universal entity within cognitive framework, however, the gender differences play an important part of the same mechanics. Additionally, it was observed that within the framework meta-cognitive components correspondingly play a mediating role for example, metaworry, therefore, the information processed is appraised differently. These findings may help in tailoring interventions based on the universal nature of the model for both genders and provide further elaboration to the S-REF mechanism.

Conclusions

The findings can be deduced into empirical evidence for metacognitive self-regulation suggestive of individual differences within information processing and coping. Further, the present study adds to the cognitive self-regulation model by exploring new paths within important cognitive elements. Finally, the present study provides additional indication of universal mechanisms with respect to gender. Despite these caveat, present study investigated relatively unexplored associations between important variables relevant to therapeutic interventions.

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