

The mediating role of metaworry between emotion oriented coping and negative beliefs about rumination: A transversal analysis of emotional dysregulation

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Abstract

Objective: To explore the role of metaworry in mediating the relationship between emotion-oriented coping and negative beliefs about rumination.

Method: The cross-sectional transversal study was conducted at private, government and semi-government organization from February to October 2016. The sample comprised of educated adults from various professions working in the twin cities Rawalpindi and Islamabad, Pakistan. The subjects were administered self-reporting Coping Inventory for Stressful Situation, Negative Beliefs about Rumination Scale and the Anxious Thought Inventory instruments to assess metacognitive self-regulation.

Results: Of the 514 subjects, 130(26%) were males and 384(74%) were females. The overall mean age was 32.56 ± 6.69 years. The mean professional experience was approximately 9 ± 6.30 years, with a mean 8.5 ± 8.12 working hours. Academic cut-off was set at graduation, but approximately 355 (69%) subjects were postgraduates. The highest mean value for stressors was in the personal category 1.19 ± 0.8 , followed by work stressors 1.18 ± 0.95 , family stressors 1.08 ± 0.92 and environmental stressors 1.04 ± 0.81 . The mediating effects of metaworry had an effect size of 12.44% which depicted a small size.

Conclusion: Metaworry may not be specific to Generalised Anxiety Disorder, but is a susceptibility factor of psychological dysfunction in nonclinical population.

Keywords: Mediation, Negative beliefs about rumination, Emotion oriented coping, Metaworry. (JPMA 69: 794; 2019)

Introduction

Cognitive appraisals play an imperative role in our understanding of experiences by giving an accurate evaluation of the events in daily life. According to early research attempts on cognition and emotions, explanation of an emotional state due to an autonomic arousal is insufficient unless augmented by cognitive factors.¹ Lazarus's stress and coping theory signifies that cognitive appraisals mediate the association between the environment and the person.² Similarly, another study suggested that cognitions and perceptions influence our emotions and behaviour.³ Therefore, not merely our knowledge but interpretation of events determines subsequent moods and behaviours.³ The beliefs that are formed after practical implementation of cognitions are linked to the emotion-regulation process and signify the information that was previously stored as a result of an experience.⁴ An operational characteristic of belief pertains to an association with pathology specificity,⁵ for example, beliefs themed on danger are relevant to

anxiety while themes of loss and despair are prominent features of depression.⁶ These beliefs influence the way we process cognitive information by bending appraisals of events or biasing experiences in such a way during the appraising process that they become belief-congruent information.

Subsequently, negative automatic thoughts depict dysfunctional schemata. Therefore, the main focus of cognitive therapies is to identify, assess and alter negative thoughts or beliefs to modify associated dysfunction of mood and behaviour.⁷ A contemporary explanation of generic cognitive processing style proposes that dysfunctional beliefs begin with dysfunctional information processing in line with the metacognitive theoretical perspectives.⁸ Consequently, this dysfunctional processing develops into, or initially causes, perseverative thinking and emotional coping or develops clinical tendencies and cognitive irregularities, playing a major role in psychopathology.⁹ The metacognitive theory is a comprehensive explanation of metacognitions that monitor and regulate the executive self-regulatory system. According to Flavell,¹⁰ metacognitive experience can be described as conscious cognitive or affective experiences that accompany and pertain to any intellectual enterprise. Metacognition functions by

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examining and regulating executive functions towards any specific goal. Thus, the previous knowledge and beliefs will provide guidelines for the process to filter information and regulate information input i.e., congruent to the existing framework of beliefs. That also explains why beliefs are enduring in nature and difficult to change given that experiences are interpreted in the light of metacognitive biases.

The metacognitive beliefs are a component of universal cognitive practice that contributes to either positive beliefs or negative beliefs about rumination. The positive beliefs imply repetitive or perseverative thinking being a helpful strategy and giving an insight into the problem, while, on the other hand, when the stimulating factors remain and a failure is faced in solving the situation at hand, the individual further experiences negative thoughts that interfere with problem-solving, are unconstructive and uncontrollable.¹¹ These negative metacognitive beliefs are suggestive of the danger or uncontrollability of worry that it must be avoided. Metaworry or worry about worry are outcomes of negative metacognitive beliefs in the worry process and the result of worrying. Individuals with Generalised Anxiety Disorder (GAD) hold negative and positive beliefs about worrying.¹² Positive and negative beliefs correlate positively with proneness to pathological worry. Britton, Neale¹³ showed significant individual differences in metaworry and negative beliefs about worry, showing females to be on a higher note for both negative beliefs and anxious thoughts.

Emotional styles of coping are hypothesised to predict the negative beliefs about rumination. In females especially, emotional coping is found to be high, making them emotionally vulnerable.¹⁴ Metaworry mediates the relationship between emotion-oriented coping and negative beliefs about rumination, as, according to Papageorgiou and Wells¹¹ negative beliefs about rumination are associated with perseverative negative thinking.¹² Literature has scarcely addressed the mediating role of metaworry, and, there is a need to identify this gap to facilitate the existing explanation of relationships between variables of self-regulatory executive functions model.

The current study, as such, was planned to explore the role of metaworry in mediating the relationship between emotion-oriented coping and negative beliefs about rumination.

Subjects and Methods

The present cross-sectional study was conducted at local government, semi-government and private organizations

from February to October 2016. The sample comprised of educated adults from various professions working in the twin cities i.e., Rawalpindi and Islamabad, Pakistan. The participants were chosen on purposive sampling technique, having minimum academic qualification of graduation (14 years of studies) and working as full-time employees in any capacity or department within their organization. Those who did not meet the criterion or those who refused to volunteer were excluded. The study was approved by the ethics committee of the National Institute of Psychology, Quaid-e-Azam University, Islamabad. The informed consent was taken from the participants and they were assured of the confidentiality of the data collected. The procedure took approximately 10 minutes per subject.

The data collection instruments included Coping Inventory for Stressful Situation (CISS), a 48-item scale that measures coping styles by subject's responses on a variety of stressful situations.¹⁵ Using a 5-point Likert scale with choices ranging from 'not at all' to 'very much', CISS assesses individuals according to three basic coping styles: task-oriented coping (16 items), emotion-oriented coping (16 items) and avoidance-oriented coping¹⁶ items. The internal consistency of the three dimensions of the CISS ranges from 0.81 to 0.90 and test-retest correlation ranges between 0.55 and 0.73.

Also used was the Negative Beliefs about Rumination Scale (NBRS)¹⁵ that evaluates the negative metacognitive beliefs about repetitive thoughts. It is a 13-item scale consisting of two sub-categories; the first assessing metacognitive beliefs about uncontrollability and harm associated with rumination, while the second assessing interpersonal and social consequences. Respondents are required to indicate the extent to which they agree with each of the items on a 4-point rating scale ranging from 1=do not agree to 4=agree very much.

Finally, metaworry was assessed using the Anxious Thought Inventory (AnTI) Wells.¹⁶ It is a 22-item tool; the dimensions of social worry (9 items), health worry (6 items) and metaworry (7 items). Metaworry dimension of the inventory consists of both process and content of worry. Respondents rate 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 (0.75) and test-retest reliability coefficients (0.77) showed the psychometric adequacy of the scale.

Gender-wise comparison was done and t-test was performed to investigate statistically significant

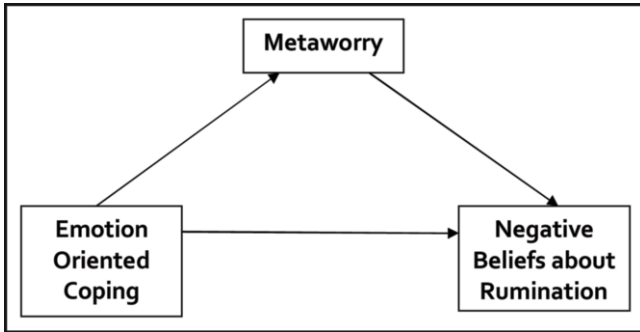


Figure: Mediation Model for Emotion Oriented Coping, Metaworry and Negative Beliefs about Rumination.

mean differences. The distribution of data was considered sufficiently normal for t-test (i.e., skewness < |2.0| and kurtosis < |9.0|).¹⁷ In addition, the homogeneity of variance was tested with Levene's F-test, and since metaworry lacked homogeneity and created a bias in the parameters, therefore, statistical corrections were applied. Metaworry for emotion-oriented coping reflected a medium effect, according to the guidelines spelled out by Cohen.¹⁸ Finally, the mediating effects of metaworry were calculated for effect size in the light of literature Preacher and Kelley.¹⁹

In line with the main purpose of the study, the indirect path between emotion-oriented coping and negative beliefs about rumination was explored (Figure). The path model was examined using process macro. Both direct and indirect effects were estimated. A two-tailed significance of indirect paths was estimated at 95% confidence interval (CI) using 500 bootstrap samples.

Results

Of the 514 subjects, 130(26%) were males and 384(74%) were females. The overall mean age was 32.56±6.96 years. The mean professional experience was approximately 9±6.30 years, with a mean 8.5±8.19 working hours. Academic cut-off was set at graduation, but

Table-1: Psychometrics and Correlation matrix for Emotion- Oriented Coping, Metaworry (AnTi) and Negative Beliefs about Rumination (N=514).

Subscales	Items	M(SD)	1	2	3
1 Negative Beliefs about Rumination	13	26.84(8.16)	-	0.41**	0.50**
2 Metaworry (AnTi)	7	16.12(4.42)		-	0.32**
3 Emotion Oriented Coping	16	47.27(9.07)			-

*p<.05, **p<.01.

approximately 355 (69%) subjects were postgraduates. The highest mean value for stressors was in the personal category 1.19±0.8, followed by work stressors 1.18±0.95, family stressors 1.08±0.92 and environmental stressors 1.04±0.81.

Negative beliefs about rumination were significantly positively correlated with metaworry (p<0.01), and emotion-oriented coping (p<0.01). The correlation directions were logically reflected between metaworry and emotion-oriented coping (p>0.01) (Table-1). The gender-wise comparison of the three scales was also done (Table-2). Homogeneity of variance was satisfactory for emotion-oriented coping (p=0.65) and negative beliefs about rumination (p=0.41) though not for metaworry. After statistical corrections were applied, significant difference in the mean values between genders (p<0.01) was found, with the males being significantly dissimilar from females in terms of metaworry and emotion-oriented coping. Cohen's d for metaworry was 0.49 and 0.33 for emotion-oriented coping, reflecting a medium effect.

In terms of path model, significant direct effects from the independent to the dependent variable was found (p<0.01). Similar significant results were observed when mediator was introduced (p<0.01) but a change in the strength of the relationship (ΔR²=0.12) was noted (Table-3).

Lastly, the mediating effects of metaworry showed significant indirect effects with an effect size of 12.44% that showed small size of effect.

Table-2: Mean Differences between Genders on Emotion Oriented Coping, Metaworry (AnTi) and Negative Beliefs about Rumination (N=514).

	Males (N=384)		Females (N=130)		t(483)	95% CI		Cohen's d
	M	SD	M	SD		LL	UL	
Negative beliefs about Rumination	26.54	8.19	27.69	8.06	1.36	-0.52	2.82	0.14
Metaworry (AnTi)	26.54	4.13	17.71	4.85	4.42(191)	1.18	3.09	0.49
Emotion Oriented Coping	46.51	8.89	49.45	9.26	3.16	1.11	4.78	0.33

*p<.05, **p<.01.

Table-3: Estimates of Model Examining the Mediating Role of Metaworry between Emotion Oriented Coping (EOC) and Negative Beliefs about Rumination (NBR).

Predictors	B	Negative Beliefs about Rumination 95% CI		
		B	LL	UL
Constant	3.08	9.10	-	-
EOC	0.28	0.15*	0.20	0.36
Metaworry	0.91	0.43*	0.69	1.12

Note: B = Unstandardized Regression Coefficients; β = Standardized Regression Coefficients; CI = Confidence Intervals; LL = Lower Limits; UL = Upper Limits; * $p < 0.05$, ** $p < 0.01$.

Discussion

In the present exploratory study, metacognitive model served as a guide for investigating the mediating relationship of metaworry between emotion-oriented coping and negative beliefs about rumination.²⁰ Previous research has indicated a vital role of metaworry in initiating negative beliefs about rumination as well as being a prerequisite for emotion-oriented coping²¹ but these findings were relevant mainly to participants from clinical population. The present study explored the role of metaworry within a mainstream sample to testify the model as universal cognitive architecture irrespective of the specificity of the sample population. Furthermore, it was hypothesised that the presence of metaworry is responsible for clinical nature of worry in GAD, indicating the existence of metaworry component to be specific to dysfunctional cognitive processing. The study set out to investigate whether metaworry arbitrated the relationship between emotion-oriented coping and negative beliefs about rumination.

In addition, literature suggested positive association between negative beliefs about rumination and metaworry. This finding was supported in the present study as revealed by the relationship between variables following similar directions. Studies have shown that emotion-oriented coping is relatively higher in the female gender due to their emotionally susceptible mechanics, while in males the same is moderated.²² Our findings supported the same signifying that females were significantly different with higher scores. The connection between metaworry and negative beliefs about rumination has been well-established with reference to GAD,²³ specifying that previously existing positive beliefs about the advantages of worry and rumination provide a breeding ground for the negative beliefs representing danger and uncontrollability of the thought processes while furthering emotional coping.²⁴ However, this was a gap in literature that remained to be testified with reference to a nonclinical sample that was addressed in the current study. Metaworry mediated the indirect path

for both males and females, depicting the universality of the model across gender. Although, the mediational relationship was observed but it implies that the mediating role of metaworry is activated within the framework of present model. This can be explained in terms of metacognitive functions that provoke thought-monitoring after the activation of self-regulatory executive functions (S-REF) subsequently promoting the notion that S-REF is comparably stimulated in both genders.

The current study had its limitations, including the research design. A longitudinal study would show more clearly how gender differences exist in this relationship over time. Secondly, comparative samples i.e., clinical versus nonclinical may be beneficial in displaying metacognitive self-regulation within broader perspectives. Despite these caveats, the current study was able to investigate a relatively unexplored association between important variables.

Conclusions

Metaworry may not be specific to GAD and may be taken as a susceptibility factor to psychological dysfunction in a nonclinical population.

Disclaimer: None.

Conflict of Interest: None.

Source of Funding: None.

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