



Relationship between religious coping and Post-traumatic Stress Disorder (PTSD) in flood-affected people

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ABSTRACT

This study was conducted to examine the relationship between religious coping and Posttraumatic Stress Disorder (PTSD) among flood-affected population of Srinagar city, Jammu and Kashmir, India. The study was conducted in aftermath of the September 2014 devastating flood that hit the Kashmir Valley. Purposive sampling was used; students from two hostels and adults from a locality marooned in flood-water for at least three days in Srinagar city were selected (n = 152). Participants completed two scales, 'Impact of an Event Scale' and 'Brief RCOPE'. Data was analyzed by running stepwise regression. The results showed significant positive correlations between Positive Religious Coping (PRC) and Post Traumatic Stress Disorder (PTSD); and a positive correlation also existed between Negative Religious Coping (NRC) and PTSD. Negative religious coping could fairly predict PTSD, whereas positive religious coping was not found to be a good predictor of PTSD. The findings from the present study suggest that religious coping patterns affect ways in which trauma is interpreted and reactions toward it.

Keywords: *Brief RCOPE, Impact of an event scale; Negative Religious Coping (NRC); Positive Religious Coping (PRC) and Posttraumatic Stress Disorder (PTSD).*

INTRODUCTION

1.1 Understanding Post traumatic Stress Disorder (PTSD):

There is a huge evidence that exposure to a traumatic event causes significant psychological stress. Recognizing this fact, DSM-III (1980) introduced a diagnosis, namely--- Posttraumatic Stress Disorder, PTSD—which entails an extreme response to a severe stressor, including increased anxiety, avoidance of stimuli associated with the trauma, and a numbing of emotional responses. (Alloy, Riskind & Manos, 2005) [1]

Posttraumatic Stress Disorder (PTSD) is thus, a severe psychological reaction lasting at least one month and involving intense feelings of fear, helplessness, or horror, to intensely traumatic events---events



involving actual or threatened death or serious injury to oneself or others. Such events include assault, rape, *natural disaster*, such as earthquakes and *floods*, and accidents such as airplane crashes and fires, and terrorist attacks.

It is interesting, however that all people exposed to trauma do not develop PTSD. Alloy, Riskind & Manos (2005) enumerate features that may affect the likelihood of a person developing PTSD. These features include characteristics of trauma, person and post-trauma environment. [1]

Table shows the factors that increase the likelihood of developing PTSD

<i>Features of trauma</i>	<i>Features of person</i>	<i>Features of the post-traumatic environment</i>
Intensity of exposure to trauma	Pre-trauma psychological adjustment	Availability and quality of social support
Duration of exposure to trauma	Family history of psychopathology	Additional major stressors
Extent of threat posed by trauma	<i>Cognitive and coping styles</i>	
Nature of trauma: caused by humans or natural disasters	Feelings of guilt	

1.2 Relationship between PTSD and religious coping

Out of these characteristics the present study attempts to investigate the extent to which religious coping can prevent the development of PTSD. As over past 15 years, there has been a sharp increase in the number of studies that focus on *the role of religion in coping with major life stressors*. Empirical studies have demonstrated that many people turn to religion as a resource in their efforts to understand and deal with the most difficult times of their lives (Koenig, 1998; and Anno & Vasconcelles, 2005). [2]

Pargament (2011) developed a theory of religious coping. He defined religious coping as efforts to understand and deal with life stressors in ways related to the sacred. His theory stresses several points: a) religious coping is multi-functional: it includes search for meaning, control, intimacy with others, transformation etc; b) religious coping is multi-modal: it involves behaviours, emotions, relationships, and cognitions; c) religious coping is a dynamic process that changes over time, context, and circumstances; d) religious coping is multi-valent: it is a process leading to helpful or harmful outcomes, and thus, research on religious coping acknowledges both the “bitter and the sweet” of religious life. [3]

Pargament, Smith, Koenig, Perez (1998) attempted to identify positive and negative patterns of religious coping methods, develop a brief measure of these religious coping patterns, and examine their implications for health and adjustment. Through exploratory and confirmatory factor analyses, positive and negative religious coping patterns were identified in samples of people coping with the Oklahoma



City bombing, college students coping with major life stressors, elderly hospitalised patients coping with serious medical illnesses. A 14-item measure of positive and negative patterns of religious coping methods (Brief RCOPE) was constructed. The positive pattern consisted of religious forgiveness, seeking spiritual support, collaborative religious coping, spiritual connection, religious purification, and benevolent religious reappraisal. The negative pattern was defined by spiritual discontent, punishing God reappraisals, interpersonal religious discontent, demonic reappraisal, and reappraisal of God's powers. As predicted, people made more use of positive than the negative religious coping methods. Furthermore, the two patterns had different implications for health and adjustment. [4]

In order to quantitatively examine the relationship between religious coping and psychological adjustment to stress, Ano and Vasconcelles (2005) conducted meta-analysis of 49 relevant studies with a total of 105 effect sizes. Four types of relationships were investigated: positive religious coping with positive psychological adjustment, positive religious coping with negative psychological adjustment, negative religious coping with positive psychological adjustment, and negative religious coping with negative psychological adjustment. The results of the study generally supported the hypotheses that positive and negative forms of religious coping are related to positive and negative psychological adjustment to stress, respectively. [2]

Chen and Koenig (2006) also conducted a review of empirical studies that examined the relationship between religion/spirituality and PTSD; it showed mixed findings ($n = 11$). Overall, these results appeared to be encouraging toward confirming the conceptual link between religion and trauma. [5]

Furthermore, Falloot and Heckman (2005) examined types of religious/spiritual coping used by women trauma survivors with co-occurring mental health and substance use disorders. Findings supported importance of spiritual coping for women trauma survivors with co-occurring disorders and suggested the value of increased attention to spirituality in behavioral health services, especially in assessment and therapeutic relationships. [6]

Moreover, a study conducted three years after the 2005 Pakistan earthquake, aimed to identify potentially protective psychosocial factors associated with lower PTSD and depressive symptom levels (Feder, Ahmad, Morgan, Sing & Charner, 2013). They found 65% of participants met criteria for probable PTSD. Purpose in life was associated with lower symptom levels and higher positive emotions. A form of negative religious coping (feeling punished by God for one's sins or lack of spirituality) was associated with higher symptom levels and negative emotions. [7]

In addition Koenig, McCullough & Lason (2004), quote Cardoza (2004)'s study which shows that reading Quran, praying, or engaging in traditional ceremonies was associated with significantly lower anxiety symptoms in non-disabled subjects; however no relationship could be shown in those who were disabled. Given the cross-sectional nature of this analysis, turning to religion in response to disability may have affected the results in the disabled group. [8]



1.3 Rationale of the study

In the present study, the effects of religious coping on the development of PTSD in wake of September 2014 floods that hit the Kashmir valley (Jammu and Kashmir, India) are examined. The September 2014 flood in the valley was reported to be the worst natural catastrophe witnessed in the last 60 years.

Heavy rainfall had caused 1) flash flooding with localized damage across the state, 2) landslides, which impacted on communities and road connectivity and 3) widespread flooding in the Kashmir Valley. Flood waters breached embankments in many low-lying areas in Kashmir, including the capital Srinagar, forcing people to move to safer places. The Jhelum River, Chenab and many other streams had been flowing above danger mark. The worst affected districts were Srinagar, Anantnag, Baramulla, Pulwama, Ganderbal, Kulgam, Budgam, Rajouri, Poonch and Reasi. 280 human lives were reported lost. It was reported that 450 villages, with an estimated rural population of 823,281, were flooded, with farmlands being submerged. The Jhelum river had been flowing four feet above danger mark in Srinagar. 70 percent of the Srinagar city was flooded, several areas remained submerged for about 2 weeks. The worst hit areas of the Srinagar city were Rajbagh, Bemina, Jawaharnagar, Lal Chowk, Hyderpora and the down-town areas of the city. (National Coalition of Humanitarian Agencies in India, 2014) [9]

1.3.1: Reasons for qualifying September, 2014 flood (in Kashmir) as a traumatic event

Intensity of damage caused by floods:

- Deaths -----**280**
- Persons injured/ sick----- **21,500+**
- People in relief camps -----**20,000+**
- Evacuated -----**110,000+**
- Displaced by flooding and shelter damage -----**543,379+**
- The State Government estimated the overall loss of Rs. **46,000 crores**, which includes Impact on roads, access, local economy, markets, contamination of water sources, public infrastructure, and other state assets.
- Houses completely damaged/ flooded-----**67,934+**
- Houses partially damaged -----**66,220+** (National Coalition of Humanitarian Agencies in India, 2014) [9]

1.4 Objectives of the study:

- To assess the relationship between Positive Religious Coping and Post-traumatic stress disorder (PTSD).
- To assess the relationship between Negative Religious Coping and PTSD.
- To determine the extent to which Positive Religious Coping and Negative religious Coping determine PTSD.



1.5 Research Hypothesis (H₁):

- a) There is exists a correlation between Positive Religious coping (PRC) and PTSD.
- b) There is exists a correlation between Negative Religious Coping (NRC) and PTSD.
- c) PTSD is affected by Positive Religious coping (PRC); and Negative Religious Coping (NRC).

II.METHODS AND MATERIALS

The study was conducted in three localities of Srinagar city after devastating floods of September 2014 that hit the Valley. The object of this study were the localities namely, Karan Nagar, Bemina, and Rainawari, the first two located near the river basin, Jhelum and the third one near Dal Lake; moreover all the three places lie in the Srinagar district of the state of Jammu and Kashmir, India. These localities were among the places flooded all of the sudden giving no time to the residents to escape thereby causing them to get marooned for 3-6 days in water levels going as high as ground and first floors. This study was carried 3 three months after the flood, that is, in December 2014.

Participants:

The sample comprised of the 152 adults (aged 17-62 years). There were 110 males (i.e., 72%) and 42 females (i.e., 28%), out of these 86 (i.e., 57%) were medical students residing in two hostels at different localities, one in Karan Nagar and the other in Bemina (areas in Srinagar city). Out of these students, 45 (i.e., 52%) were male medical students and 41 (i.e., 48%) were female medical students. The remaining were 66 males (i.e., 43% of the total sample) residing in Rainawari, Srinagar. 57% were the educated youth belonging to the middle socio-economic status and 43% had low education and belonged to low socio-economic status.

Criteria of inclusion:

- Ages 17-65
- People marooned for more than three days.

Criteria of exclusion:

1. Children > 16 years of age.
2. Adults < 65 years of age.

2.1 Scales used:

The subjects in the present study were assessed on two variables: PTSD and Religious Coping.

- a) For assessing PTSD, Impact of an Event Scale-R (IES-R) developed by Wiess and Marmar (1997) was used; and



b) for assessing Religious Coping, Brief RCOPE (1998) developed by Pargament was brought into the use.

The impact of an Event Scale-R (IES-R) measures the symptoms of the Posttraumatic Stress Disorder (PTSD) according to the DSM-IV, it has three sub-scales, these are: Avoidance, Intrusion and Arousal. It is a 22-item 5-point rating-scale, ranging from '0' indicating 'Not-At-All' to '4' indicating 'Extremely'.

The reliability and the validity of IES-R are found to be quite decent; the test-retest reliability of IES-R was found to be 0.57 for 'Intrusion' and 0.51 for 'Avoidance' when the time-interval between the two administrations was six months and more. But when the time-interval was six weeks or less, reliabilities were 0.94 and 0.89. [Horowitz et al 1979; and Wiess & Marmer, 1997, cited in Beck et al, 2008]. Moreover, the mean estimate of the Internal Consistency for the Intrusion is 0.86 and for Avoidance, it is 0.82. Using, the 0.80 criterion set by Carmines & Zeller (1979), both IES sub-scales are consistent, which indicates that each of them measures a homogenous construct (Beck et al, 2008). [10]

Furthermore, the Validity of IES is also decent, the estimate of the content validity of the instrument is 0.63 which is the correlation coefficient between IES Intrusion and Avoidance, which suggest that the sub scales are relatively independent of one another, each of them representing a different type of reaction in the face of stressful events. With respect to the construct validity the moderate correlation between Intrusion and Avoidance obtained in a number of studies that used IES is consistent with Horowitz's prediction that people tend to present an oscillating pattern wherein Intrusive symptoms are followed by Avoidance (Beck et al, 2008). [10]

The other scale used in this study is the Brief RCOPE (Kenneth Pargament, 1998), it is a 14-item 4-point rating scale ranging from '1' indicating 'Not-At-All' to '4' indicating 'A great deal'. The first 7 items measure Positive Religious Coping (PRC) and the remaining 7 measure Negative Religious Coping (NRC). The positive pattern consists of religious forgiveness, seeking spiritual support, collaborative religious coping, spiritual connection, religious purification, and benevolent religious reappraisal. The negative pattern is defined by spiritual discontent, punishing God reappraisals, interpersonal religious discontent, demonic reappraisal, and reappraisal of God's powers. Therefore, this scale yields two scores, one is the Positive Religious Coping Score and the other is the Negative Religious Coping Score. The scoring is quite simple again, the sum of the scores of first 7 items will yield a Positive Religious Coping Score and the sum of the scores on the last 7 items will yield a Negative Religious Coping score. The lowest score for both Positive and Negative Religious Coping categories is '7' and the highest score is '28' (Pargament, Feuille, & Burdzy, 2011). [3]

The Brief RCOPE has demonstrated good internal consistency and a decent validity. An article by Pargament et al (2010) on the psychometric status of the Brief RCOPE writes the highest alpha for PRC



as 0.94 and the alphas for NRC generally lower than the PRC scale, ranging from 0.60 among Pakistani undergraduates to 0.90 in a sample of cancer patients. With respect to the concurrent validity, the article writes, PRC is most strongly and consistently related to measures of positive psychological constructs and spiritual well-being. On the contrary, NRC is consistently tied to indicators of poor functioning, such as anxiety, depression, PTSD symptoms, negative affect and pain (Pargament, Feuille, & Burdzy, 2011). [3]

III.RESULTS

The results of the initial correlation analysis show significant positive correlation between PRC and PTSD, and also a significant positive correlation is found between NRC and PTSD. ($r = .213$, $p = .009$ & $r = .293$, $p = .000$ respectively) (see Table 1.2). Although a significant positive correlation between NRC and PTSD is expected and is consistent with the previous research, which indicates that with every unit increase in NRC there is a corresponding increase in PTSD as well, but PRC and PTSD is supposed to be negatively correlated, that is, with every unit increase in PRC, PTSD is expected to decrease. Therefore a positive correlation between PRC and PTSD is not consistent with the previous research. Furthermore, to examine the extent to which PRC and NRC can predict PTSD, Stepwise regression was run on the data (see Table 1.3). It shows NRC in step 1 ($\beta = .293$, $p = .000$) which could explain 8 % of variance in PTSD ($R^2 = .086$; $F(1, 150) = 14.062$, $p = .000$). Although PRC also contributes to the overall variance, which is 11 % ($R^2 = .112$), but it is not a significant predictor. Furthermore there was no multicollinearity in the predictor variables (as an IVF value was less than 5 in both variables), which indicates that PRC and NRC can be used to predict PTSD.

IV.DISCUSSION

The present study was conducted to examine the relationship between Religious Coping and PTSD in a sample of flood-affected people of the Srinagar city. The findings from the study reveal a statistically significant positive correlation between Positive Religious Coping (PRC) and PTSD which is consistent with the previous research, however it also reveals a positive significant correlation between PRC and PTSD which is not in tune with the previous research.

Furthermore the findings suggest that PTSD can be predicted by Positive Religious Coping (PRC) and Negative Religious Coping (NRC), albeit to a moderate degree. Nonetheless, there was a pronounced trend of Negative Religious Coping (NRC) fairly predicting PTSD. It is worth mentioning that only 11 % of variance in PTSD could be explained by PRC and NRC, indicating that there are many other factors which determine PTSD and its severity.



Amongst the four types of relationships that might exist between religious coping patterns and psychological adjustment (Ano & Vasconcelles, 2005), the present study revealed the relationship of negative religious coping with negative psychological adjustment.

Somewhat surprisingly, besides an expected significant positive correlation between Negative Religious Coping (NRC) and PTSD, there was also an unexpected significant positive correlation between Positive Religious Coping (PRC) and PTSD. It is unexpected because positive religious coping is expected to reduce the chances of developing PTSD. Therefore, instead of a positive correlation, a negative correlation between positive religious coping and PTSD makes more sense. However it might be because sometimes religious coping is a preferred method of coping but does not have the expected positive effect. One of the studies showing this unexpected pattern is that of Witvliet et al's (2004) study which found that religious coping, both positive and negative are associated with severity of PTSD symptoms. Because several previous studies had found that positive religious coping had a beneficial impact on mental health, this group's finding showed that positive religious coping was associated with the severity of PTSD symptoms, which was unexpected. [11]

In the similar vein the present study brings forth this unexpected pattern. However it might have been because of many reasons. One reason for explaining this unexpected finding might be that this study was carried just three months after the traumatic event (flood) which is less, as reactions to trauma run a somewhat normal course for a certain period of time and usually ward off with the passage of time. Research suggests that different kinds of religious coping may be related to mental health in different ways at different time points before and after the stressor. (Pargament, et al, 1994). [12] Moreover being a cross-sectional study, there are no baselines established; there are no longitudinal research data confirming the pre-trauma religious functioning of the sample. So was it that the trauma led to the religious coping or that there was already an amount of religious coping present which determined the reaction toward the trauma remains to be established.

Alternately, research also points out the cultural perspective (which includes religion and spirituality) as a determinant in the interpretation of the traumatic event. When a traumatic experience is viewed in the context of a larger religious or spiritual narrative, its meaning may vary for the patient. Since the present study was conducted on Kashmiri Muslims, why it links positive religious coping to severity of the PTSD symptoms cannot be precisely established in context of the cultural influences, because there is no relevant reference to previous research which demonstrates the general trend of religious coping among Kashmiris. However, this can still be considered in context of the history of long-standing political conflict, and a vulnerability to get affected by the natural disasters that engulfs Kashmir. Therefore, indicating that besides the traumatic event (i.e., flood) in context to which the present study has been conducted, there are other traumatic events that the Kashmiris have suffered as well. So it may be that they have adopted certain coping mechanisms, including religious coping, which



help them make sense out of the sufferings that they undergo and which might lead to their strength of being better prepared to face the future threats, a phenomenon called post-traumatic growth.

However the reason that this phenomenon is not visible in the present study might again be because of the time elapsed between the trauma and the study was too short for the people to process the trauma meaningfully. Also it might be because there was an element of unexpectedness and a lack of control associated with this trauma as the flood was unexpected and widespread giving people no control over its consequences.

Implications of the study:

There is at least one clear clinical implication of the study, which proposes that clinicians need to incorporate the use of religious coping in their clients` attempts at resolving the symptoms that were triggered by a traumatic event. For this purpose, they need to know the religious methods that are relevant to the clients. In addition the clinicians need to be aware of the maladaptive use of religion, which involves , for instance, the use of Negative Religious Coping (lack of faith, faulty cognitions about lack of forgiveness, guilt, God`s power etc) that comes in the way of clients` recovery and prevents them from using Positive Religious Coping that promotes recovery. For clients who are affected by such maladaptive cognitions, the clinicians might try to resolve them at their own by keeping in consideration the religious sensitivities of the clients and if they think that they unable to do that they might refer the client to the religious clergy for help.

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Appendices

TABLES:

Table. 1.1 showing descriptive statistics of variables in the study

VARIABLES	M	SD	RANGE	SE
PTSD	37.09	15.82	3-78	1.28
PRC	21.48	5.057	9-28	410
NRC	13.67	4.631	7-27	.375
AGE	28	10.61	15-65	.860



Table. 1.2 shows summary of Pearson correlations between different variables of the study; PTSD &PRC, NRC & PTSD AND AGE & PTSD.

	PTSD (p)	PRC(p)	NRC(p)	AGE(p)
PTSD	1	.213 ^{*,*} (.009)	.293 ^{*,*} (.000)	-.017(.833)
PRC		1	.176 [*] (.030)	-.189 [*] (.020)
NRC			1	-.142(.080)
AGE				1

^{*,*} P < .01

Table 1.3 shows stepwise multiple regression of religious coping patterns on PTSD.

PREDICTORS	M	SD	B	SE B	β	t	Sig
NRC	13.67	4.6	1.00	.267	.293	3.75	.000
PRC	21.48	5.0	.520	.245	.166	2.11	.036

Table. 1.4. shows multicollinearity results

PREDICTOR		
VARIABLES	TOLERANCE	IVF
PRC	.969	1.032
NRC	.969	1.032