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Moderating Role of Attachment Styles between Stress Appraisal and Posttraumatic Stress Symptoms

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The present study investigated the moderating role of attachment styles i.e. secure, anxious and avoidant on the relationship of perceived stress appraisal with post-traumatic stress symptoms severity (PTSS) in adolescents traumatized by flood. The sample consisted of adolescent boys (n = 278) and girls (n = 283) with an age range of 13-17 (*M* = 14.65, *SD* = 1.13) years who experienced trauma of flood in Jhang (18-Hazari) and Hafizabad (Vanike Tarrhar) in September 2014. Sample was recruited from government schools. Research instruments included Urdu versions of Attachment Style Classification Questionnaire (Finzi, Cohen, Sapire & Weizman, 2000), Perceived Stress Appraisal Measure (Peacock & Wong, 1990), Children's Revised Impact of Event Scale-13 (Horowitz, Wilner & Alvarez, 1979) and socio-demographic questionnaire. The results showed that attachment styles significantly moderated the relationship of threat and/or centrality appraisals with PTSS and suggested, when threat and centrality appraisals about a threatening condition arise, PTSS also increases if moderated by anxious and avoidant attachments but not when attachment styles are secure. Findings are implicated for psychological management of the adolescents traumatized by flood.
Keywords: secure attachment, threat appraisal, uncontrollability, post-traumatic stress symptoms

Stress Appraisal

Appraisal is a process of evaluation of stressful event in relation to one's well-being and its primary form includes perceived threat to health and perceived challenge (Lazarus & Folkman, 1984). Secondary appraisal includes assessment of personal resources to manage harm (Folkman, Lazarus, Dunkel-Schetter, DeLongis & Gruen 1986)

Appraisal of the disaster (i.e., perceived threat with regard to individual survival) affects post-trauma stress response (Aker, Erdur-Baker, Gökler-Danışman, & Yılmaz, 2012; Kausar & Anwar, 2010) drastic effects in form of severe symptoms consistently reported (La Greca et al., 1998; Weems et al., 2007), i.e. perceived threat to survival following disaster may lead towards the severe PTSS (La Greca et al., 1998).

Ehlers and Clark (2000) put forth a cognitive explanation of the PTSS and suggest appraisals of severe threat perpetuate trauma and sense of threat; it may further generate maladaptive ways to manage anxiety produced by actual or anticipated problems and its associated distress (see also Aldwin, 2007).

Perceived appraisal in form of threat, centrality and uncontrollability in various forms is significantly associated with mental health problems like depression, PTSD, low self-esteem (Britton, Lissek, Grillon, Norcross & Pine 2011; Boals et al., 2017; Levy, Nicholls & Polman, 2012).

Levy, Nicholls and Polman (2012) found that centrality is associated with uncontrollability and threat. Moss (n.d.) identified that perceived challenge is associated with the perception that the necessary resources are available; however, perceived threat is associated with the perception that cannot access the necessary resources to fulfill their demands.

According to Britton et al., (2011), threat appraisal is associated with safety/survival concerns and fear learning. Boals et al., (2017) explicated that appraisal of centrality is related with personal identity or probable devastating change in life and increased PTSS. Newby and Moulds (2011) identified that appraisals of centrality were related to increases in intrusive thoughts.

Overall, it is indicated that PTSD symptoms maintain due to perceived threat appraisals and subsequent negative cognitions, increased physiological arousal and anxiety (Ethlers & Clark, 2000; Olff, Langeland, & Gersons, 2005; Riley, 2012).

Attachment Styles

Attachment is as an emotional bond with another person and in its strongest form expresses trustworthiness and dependability in a relationship. Bowlby (1988) identified strong attachment is crucial in abating stressful response and maintaining close relationship. Literature suggests that attachment becomes active when stress and trauma occur (Arikan, 2011; Charuvastra & Cloitre, 2008). Attachment theory postulates that trauma provokes threat and attachment is activated to deal with trauma. Children have these close relationships with the parents or caregivers; in case of adult, with any other significant person (Charuvastra & Cloitre, 2008). Impaired social bonds or insecure attachment are significantly associated with PTSD. Studies on *'adult attachment style'* moderate between trauma and the development of PTSD, where avoidant attachment was found to be associated with PTSD in traumatized veterans (Declercq & Palmans, 2006; Ein-Dor, Doron, Solomon, Mikulincer & Shaver, 2010).

Insecure attachment exists primarily in form of anxiousness as well as avoidant attachments. Children, for survival instinct, depend

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on others for nurturance and care. They may develop strategies when they encounter different emotional responses and care from their parents/caregivers. These strategies are called attachment styles, and in the background attunement (aware and responsive) is working. The parent, who is aware and responsive to child's needs facilitates developing secure attachment which later on helps child to explore the world. Lack of attunement/responsiveness from caregiver, on the other side, leads towards insecure attachment (Catlett, n.d.b).

Avoidant attachment pattern develops when parents are emotionally cold, distant, and unavailable, or disregard and ignore needs of children and rejecting when they are in need (sick or hurt). Resultantly children shut down their awareness of their primary needs. Caregivers deject weeping expressions and promote independence too early for their children (Catlett, n.d.a).

Anxious attachment pattern develops when the parents are inconsistent to their children i.e. nurturing at time and intrusive or emotionally unavailable at other time. Unpredictable caregivers vacillate between these responses. Resultantly, children are unclear of the treatment of their parents and their expectations, mistrust in their caregiver, but become overly dependent. They learn strategy to cling to caregiver to satisfy his/her needs. This is called anxious or ambivalent attachment (Catlett, n.d.b).

The empirical review suggests that attachment styles determine distress while dealing with stressful event. Secure attachment is strength while insecure attachment is risk factor for distress. These attachment patterns affect coping and affective reactions in different traumas and disasters (Mikulincer & Florian, 1998), lead towards mental health problems, adjustment issues, as well as risky behaviors (Cooper, Shaver, & Collins, 1998), adolescents with anxious attachment are worst adjusted with riskier behaviors, adolescents with avoidant attachment have mental health issues and low self-esteem. There was no difference of attachment for gender and age (Cooper, et al., 1998).

The current correlational study aims at exploring the moderating role of attachment styles on stress appraisal and resulting PTSS in adolescent flood victims in areas of Punjab, Pakistan. Almost 700 villages were drowned in regions of Central Punjab including Hafizabad and Jhang in 2014 flood (WHO, 2014). Jhang is a place where repeated floods occur. Punjab Provincial Disaster Management, Authority (n.d.) has identified Hafizabad and Jhang were badly affected areas of Central Punjab, Pakistan. Rationale behind this study was to test the PTSS model (see figure below) in indigenous context. Understanding the pattern of moderation may help clinicians working simultaneously on more than one psychological dimension for effective improvement of PTSS in trauma survivors. Many studies (Arikan, 2011; Brewin, Andrews & Valentine, 2000; Declercq & Palmans, 2006; Ehlers & Clark, 2000; Kausar & Anwar, 2010; Olff, 2017) indicate that stress appraisal was significantly related with genesis of posttraumatic stress symptoms (PTSS) and could be moderated by attachment styles. To test this hypothesis in adolescent victims of floods in Jhang (18-Hazari) and Hafizabad (Vanike Tarrhar) in September 2014, study was carried out. So it was hypothesized that secure attachment style would mitigate PTSS severity, but anxious and avoidant styles would augment it (see Model below).

Model

To test attachment styles as moderators of relationship between threat or centrality appraisal and PTSS, the following model was proposed.

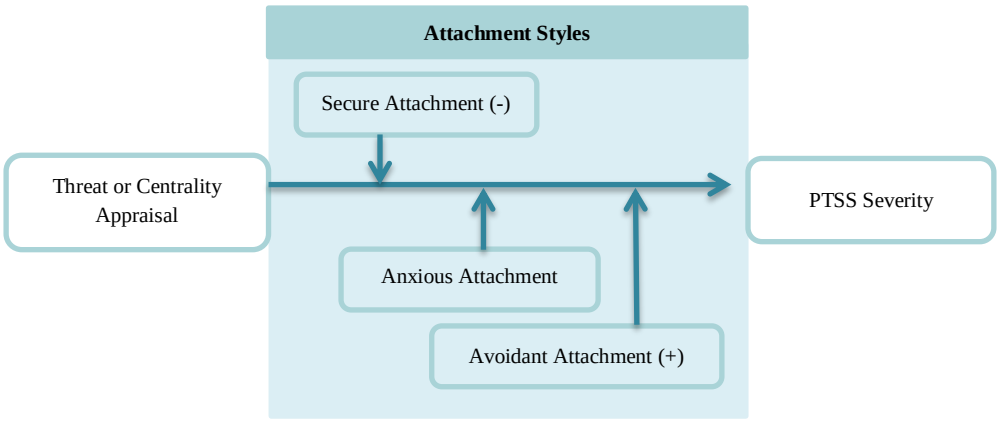

Figure 1. Shows attachment as a moderating variable that affecting threat or centrality appraisal resulting in PTSS severity, we hypothesized secure attachment style would mitigate PTSS severity, but anxious and avoidant styles would augment it.

Method

Sample

The sample (N = 561) consisted of adolescent boys (n=278) and girls (n=283) who had experienced flood of September 2014. These adolescents were taken from schools in severely flood affected districts of Jhang and Hafizabad. The age range of the adolescent boys and girls was 13 to 17 years (M age =14.65, SD =1.13). The data was collected after six months of flood.

Instruments

The Children's Revised Impact of Event Scale-13 (CRIES-13). PTSS severity was assessed by CRIES-13, developed by Horowitz, Wilner and Alvarez, (1979) which consisted of 13 items with three clusters of symptoms viz., intrusion (4 items), avoidance (4 items) and arousal (5 items); Its Urdu version (Komal & Kausar, 2015) was used in the present study. *Examples of items are as follows: Do you stay away from reminders of it (e.g. places or situations); Do you get easily irritable; Do you try to remove it from your memory.* Each item was measured on 4 point Likert-type scale with a composite score range of 0 to 63 and with a composite cluster ranges of intrusion (0 to 20), avoidance (0 to 20), and arousal (0 to 25). Higher scores mean higher PTSS on composite and cluster scores. Deeba, et al., (2014) reported Cronbach alphas range for subscales was from .68 to .75 for CRIES-13.

Attachment Style Classification Questionnaire. Finzi, Cohen, Sapire and Weizman (2000) developed this questionnaire translated in Urdu by Naz and Dawood (2010). The questionnaire has 15 items with three attachment subscales i.e. secure, anxious, and avoidant. Items are scored on a 5-point Likert scale, ranging from 1 (not at all) to 5 (very much). *Examples of items are as follows: I usually believe that others who are close to me will not leave me (secure attachment), I find it uncomfortable and get annoyed when someone tries to get too close to me (avoidant attachment); I'm sometimes afraid that no one really loves me (anxious attachment).* Finzi-Dottan, Manor and Tyano (2006) identified the Cronbach's alphas for subscales range from .70 to .80 (Finzi-Dottan, et al., 2006).

Stress Appraisal Measure (SAM). Peacock and Wong (1990) put together 28 items in SAM that assesses different aspects of primary and secondary appraisal. Primary appraisal includes three subscales, i.e. threat, challenge, and centrality and three subscales of secondary appraisal included controllable-by-self, controllable-by-others and uncontrollable (Anwar & Kausar, 2010; Peacock & Wong, 1990). Urdu translated version of this scale was used (Anwar & Kausar, 2010). SAM is a 4 point Likert scale from 0 (not at all) to 4 (extremely/ a great amount). *Examples of items are as follows: How threatening is this situation (threat)?; Does this situation make me feel anxious (challenge)?; Is it beyond anyone's power to do anything about this situation (uncontrollability)?; Does this situation have long-term consequences for me (centrality)?; Is the outcome of this situation uncontrollable by anyone (control by others)?; Do I have the ability to do well in this situation (control by self)?.* The reliability for different subscales ranges from .51 to .90 (Kausar & Anwar, 2010).

Socio-demographic Questionnaire. Demographic characteristics of the sample i.e. age, gender, class, class, age of father as well as mother, occupation of father and mother, monthly income, family system was included in the questionnaire.

Research Design

The study used a cross-sectional research design which explored the moderating role of attachment styles on relationship between stress appraisal and post-trauma symptoms largely using a correlational design.

Procedure

The sample of adolescents with (age range of 13 to 17) who were traumatized by flood was recruited from schools of flood ridden community i.e. Jhang and Hafizabad in Punjab province. The participants were accessed during regular school timings and asked to respond to the above instruments during their free time. The identified participants who were survivors of flood were called in a free classroom for filling questionnaire in a group setting. All participants were informed about the purpose of the study. They were briefed about the confidentiality of their personal information and their withdrawal rights to quit the study if they felt uneasy completing the scales and questionnaires. The adolescents' teachers, school authorities and parents were also informed of the study objectives and formal consent was sought from them. The data were collected in group settings separately for boys and girls schools.

Results

As hypothesized attachment styles (Anxious, Avoidant and Secure) moderated the relationship between Perceived Stress Appraisal and PTSS Severity, for which moderation analysis was run through add-on SPSS process (Hyes, n.d.). First, all subscales of stress appraisal and attachment styles were entered into regression model to test PTSS through stepwise model. The statistically significant variables were further tested in moderation models through SPSS and Process.

Table 1
Moderation of the Effect of Secure Attachment on PTSS Severity by Threat (*N* = 561)

Predictors	Model1 β	Model 2 β	S.E	95% *CI*
Constant	20.99***	30.66***	.41	[29.85,41.47]
Threat	.25***	.89***	.14	[.60, 1.17]
Secure attachment	-.07	-.20	.12	[-.43, .04]
Secure*Threat		-.08*	.03	[-.15, -.004]
R^2	.07	.08		
F	21.66***	15.94***		
ΔR^2		.01		
ΔF		4.26*		

Note. LL = Lower limit; UL = Upper limit; CI = Confidence interval.
***p < .001. *p < .05.

Table 1 demonstrates that secure attachment moderates the relationship between threat appraisal and PTSS. The β value for the interaction term (Secure Attachment X Threat Appraisal) is significant for Model 2. The variation of the interaction is 1%, which indicates that the moderator has a significant negative moderating influence between threat and PTSS.

Table 2
Moderation of the Effect of Anxious Attachment on PTSS Severity by Centrality Appraisal (*N* = 561)

	B			95% *CI*
Predictors	Model 1	Model 2	SE	[LL – UL]
Constant	9.4**	30.59**	.39	[29.81 - 31.38]
Centrality Appraisal	.19**	.55**	.13	[.30 - .81]
Anxious Attachment	.28 **	.84**	.12	[.59 - 1.08]

Centrality*Anxious Attachment		.10**	.03	[.04 - .17]
R^2	.12	.14		
F	50.57**	31.34**		
ΔR^2		.02**		
ΔF		11.38**		

Note. SE = Standard Error; LL = Lower limit; UL = Upper limit; CI = Confidence interval.
**$p < .001$.

Table 2 demonstrates that anxious attachment moderates the relationship between centrality appraisal and PTSS. The β value for the interaction term (Centrality Appraisal X Anxious Attachment) is significant for Model 2. The variation of the interaction term is 2% and has a significant positive influence between Anxious Attachment and Centrality Appraisal.

Table 3
Moderation of the Effect of Avoidant Attachment on PTSS Severity by Centrality Appraisal (N = 561)

Predictors	*B*		SE	95% *CI* [LL – UL]
	Model 1	Model 2		
Constant	12.05	30.47**	.41	[29.67 - 31.27]
Centrality Appraisal	.17**	.50**	.13	[.24 - .76]
Avoidant Attachment	.25**	.80**	.13	[.56 - 1.04]
Centrality*Avoidant Attachment		.12**	.04	[.05 - .19]
R^2	.11	.13		
F	34.97**	27.56**		
ΔR^2		.02		
ΔF		11.44**		

Note. SE = Standard Error; LL = Lower limit; UL = Upper limit; CI = Confidence interval.
**$p < .001$.

Table 3 demonstrates that avoidant attachment moderates the relationship between centrality appraisal and PTSS. The β value for the interaction term (Centrality Appraisal X Avoidant Attachment) is significant. The variation because of the interaction term is 2%, which indicates that the moderator has a significant influence on other variables. The relationship between centrality and PTSS remains positive, however with increased PTSS severity on high level of avoidant attachment style.

Discussion

The findings revealed significant main effects of threat, centrality appraisal and attachment styles. All hypotheses were supported. Secure attachment led to a significant negative relationship with PTSS severity, implying that when threat or centrality appraisal fuels PTSS severity, secure attachment mitigates this severity, however when attachment styles are anxious and avoidant PTSS severity is augmented.

Literature supports these findings as attachment security is important emotion regulator management of PTSD symptoms following traumatic event (Franz et al., 2014). It has been biologically verified by Arikan (2011, also see Olff, 2017) conducted an experimental study on role of oxytocin (OT) as well as secure attachment in regulating trauma associated emotion using films with traumatic content; OT played an important role in traumatic stress coping. Findings suggested that secure group with OT experienced more safety and happiness than control group who were not on OT. Arikan (2011) investigated and explained attachment as protective factor for negative changes following trauma. Findings suggested that childhood traumas, low self-esteem, attachment anxiety and dysfunctional thinking manifest severe posttraumatic symptoms. However, anxious and avoidant attachments lead towards the severe PTSS symptoms following trauma. Attachment anxiety (Besser & Neria, 2012), and avoidant attachment (Ein-Dor, Doron, Solomon, Mikulincer & Shaver, 2010) significantly correlated with PTSD symptoms. Findings reveal that attachment security significantly moderates the relationship between threat and PTSS severity in flood affected adolescents. Findings are consistent with the literature. It has been identified that children with severe exposure of trauma and threat are more vulnerable for PTSD as compared to low level of exposure and threat (Baggerly & Exum, 2008). Empirical evidence revealed that appraisal of the disaster in terms of safety and survival may impact on development of mental health issues and subsequently coping (Aker et al., 2012; Kausar & Anwar, 2010). Threat may increase during disaster and make individuals vulnerable for PTSD (Weems & Overstreet, 2009). Ehlers and Clark (2000) identified threat as maintaining factor of PTSS as it generates from trauma memory as well as maladaptive explanations of symptoms. The dysfunctional appraisals are related with genesis of PTSD symptoms and a range of negative emotions and even maintain it.

However, the role of attachment is significant as it moderates between trauma and PTSD attachment security was associated with less severe PTSD symptoms (Declercq & Palmans, 2010; Ein-Dor et al., 2010; Arikan, 2011; Benoit, Bouthillier, Moss, Rousseau & Brunet, 2010). Generally, attachment insecurity is related with the psychological distress and high risk for PTSD symptoms following trauma.

Findings suggest that attachment insecurity in form of anxious and avoidant attachment significantly moderates the relationship between centrality and PTSS in flood affected adolescents. It leads towards the increased severity of PTSS.

The appraisal of centrality has been reported an important factor of psychological health after trauma. Centrality of event or trauma is perceived relating with personal identity, change in oneself and life. The centrality of trauma has been found significant predictor of PTSS Anxious and avoidant attachment was found to be related with PTSD in traumatized population, high attachment anxiety and maladaptive posttraumatic cognitions aggravate PTSD symptoms (Declercq & Palmans, 2010; Ein-Dor et al., 2010; Arikan, 2011; Benoit et al., 2010). It has been reported that adolescents with anxious and avoidant attachment are worst adjusted regarding mental health problems as well as its severity, low self-esteem and even risky behaviors (Cooper et al., 1998).

Limitations

The current study was focused on flood affected adolescents, and needs affirmation with older participants across variety of traumatic events like terrorism, abuse and other forms of natural disasters.

Moreover, impact of attachment and appraisal on mental health of trauma survivors may be explored cross culturally.

Implications

The findings may facilitate clinical psychologists to manage PTSS in trauma-exposed population by working on attachment styles and stress appraisal factors simultaneously. The educational awareness programs and parental support with reference to trauma management may be planned. Secure basis of therapy and understanding negative appraisals in relation to PTSS severity may facilitate clinicians to manage trauma exposed population (Ethlers & Clark, 2000; Stable, 2008).

Conclusion

Attachment styles moderate the relationship between threat or centrality and PTSS severity among adolescents exposed to trauma of flood. When attachment was insecure (anxious and avoidant), centrality appraisal was augmented with it and levels of PTSS rose. Secure attachment lowered PTSS severity despite of high perceived threat. Declercq and Palmans (2006) report that attachment moderates trauma and PTSD. These findings are implicated in counseling sessions and counselors or therapists feel confident of patient's rebounding back if the attachment has been secure than insecure. This facilitates therapist in form of identifying the case formulation of clients regarding the impact of insecurity on their current level of distress for appropriate management (Stable, 2008). Additionally, Ehlers and Clark (2000) identified the understanding process of dysfunctional appraisals and PTSD symptoms severity can help clinicians in designing effective interventions for children and adolescents.

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