Moderating Role of Psychosocial Support in Post-Traumatic Stress Disorder Symptoms among Children after 2015 Earthquake

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Abstract

Objective: Importance of social assistance during and after disasters have been exponentially increased; however, it remains unclear how social support plays roles in disaster and disaster related reactions. Therefore, this study aimed to examine the moderating effect of psychosocial support on the development of PTSD symptoms after earthquake exposure among children.

Methods: A community-based cross-sectional study was carried out in Kathmandu district fifteen months after the 2015 earthquake. Multi-stage cluster sampling was used to select 800 earthquake affected children of age 7-16 years and their parent/first-degree relative. Face-to-face interview with structured During and After Earthquake Trauma Exposure Questionnaires (DAETEQ), Family Functioning Assessment Device (FAD), Children PTSD Symptoms Score (CPSS) and psychosocial support questionnaire was done. Multi-group structural equation modelling was conducted in conjunction with bootstrapping techniques used to improve sample size for effect detection.

Results: There were distinct relationships of study variables across high and low social support group. The severity of earthquake had a direct and positive relationship with family functioning ($\beta = 0.36$, $p < 0.01$) and PTSD symptoms ($\beta = 0.24$, $p < 0.01$) among the low social support group. However, there was no significant association found in the high social support group ($\beta = 0.24$, $p < 0.01$). While family functioning did not exert an indirect effect among low social support group, there was a significant effect when sample size was increased with bootstrapping methods (95% CI = -0.125, -0.112).

Conclusions: Efforts to mobilize and fortify psychosocial support can help to attenuate adverse outcomes with exposure to disasters in children.

Keywords: Psychosocial Support; Family Functioning; Severity of Earthquake; Children; PTSD Symptoms

Introduction

The 2015 earthquake was the most destructive disaster to occur in Nepal since the 1934 Earthquake. An estimated 10,000 people died with more than 22,000 people injured. Thousands of families were displaced. A majority of the displaced families were living in temporary shelters such as makeshifts, tents or collectively in a building for more than a year after the earthquake. After the earthquake, families from affected areas had limited access to basic facilities such as electricity, water and cooking materials and encountered a large economic burden [1]. All these changes in family living changed the way families operated within family or outside the family [2,3].

The 2015 earthquake led to elevated levels of psychological distress among survivors, particularly among children, as their families struggled with difficult circumstances. Exposure to severe psychological trauma such as war, disaster and sexual trauma and the resulting psychological and physical health trauma has been well documented [4,5]. Several studies have reported that greater family distress is associated with higher levels of psychological symptoms [6]. Disaster leads to increased family conflict, as families have to deal with the

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stress associated with recovery, rebuilding and resilience. Although disaster-related stress tends to decrease over time, conflict and stress due to disaster induced parental distress, altered family relationship and discipline within the family environment and functioning tend to persist [7]. The conceptual model of children's post disaster [8] and the Family Stress Model [9] has provided possible explanations of how external stressors, such as disasters, can affect children's mental health.

Several studies have explored the degree to which caregiver characteristics and the family milieu may facilitate development in children and adolescents [10] as well as the positive association of poor family functioning with increased anxiety scores of children. Collectively, these findings suggest that family environment may be an important factor in adjustment of children after traumatic situations. However, there is limited evidence on the effect of family functioning on the relationship between severity of disaster and PTSD symptoms in children. There is often a considerable role of family, and the adaptive coping mechanisms they practice may have an influence on the psychological impact of the disaster. Several other protective factors, such as mental health before disaster and social support, have been identified that may be involved in attenuation of the psychological impact of natural disaster.

The social support comprises the quantity and quality of available social roles, networks and the degrees of individuals' beliefs that his/her needs are fulfilled. Several studies have reported that higher engagement with social support following traumatic exposure reduces PTSD symptoms [11]. Higher levels of social support have been associated with better post-disaster psychological functioning as well as better coping mechanisms for families and individuals [12]. Therefore, we may reasonably expect that children and their families who receive high social support differ from those who receive low social support when developing PTSD symptoms in response to the severity of exposure to disaster.

There are several studies that discuss the protective role of social support against PTSD symptoms and other psychological problems after stressful situations and its buffering effects that can impact family well-being, quality of parenting and resilience of children after disaster [13]. Social support has larger effects in appraisal of stressors and helps to regulate the intensity of emotional reactions to the traumatic event therefore buffering the effect of exposure [14,15]. Further, higher levels of social support have also been linked to increased post-disaster functioning and resilience. Social support enhances the functioning by fostering effective coping mechanisms and promoting self-efficacy in the individual and families [16,17]. Having an array of social support for the families of children in the traumatic situation has been widely endorsed in children's mental health outcomes [18]. Availability of social assistance from relatives, communities and other sources will help in family function reconstruction and decrease distress within family and individual.

Despite the recognition of the importance of social support in disaster-affected families, there is little theoretical work to provide a conceptual idea for understanding the relationship between social support, family functioning and mental distress in children after a disaster. There is a scarcity of research assessing the role or introduced interventions with the individual and families who experience stressful situations [13].

Stress in the aftermath of a disaster can be prolonged for more severely affected families in terms of damage, loss, and low social integrity as families need to cope with demands associated with recovery, social disruption and financial issues. Thus, this study assessed how disaster exposure affects family functioning and how it is related to children meeting PTSD symptoms criteria. This study aimed to explore if psychosocial support moderates the relationship between family functioning and severity of exposure to the earthquake and PTSD symptoms in children.

Methods

Study design and setting

A community-based cross-sectional study was done in Kathmandu District, Nepal. Kathmandu was one of the districts most affected by the 2015 earthquake.

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Participants

The study population included children aged 7 - 16 years and their parents/first-degree relatives (direct care-giver), who had been living in Kathmandu before the 2015 earthquake for at least 6 months prior to the date of interview. Data collection was conducted in September and October 2016, which was 15 months after the 2015 earthquake. Multi-stage cluster sampling was carried out. In the first stage, two out of five urban and three out of 6 sub-urban municipalities of Kathmandu Valley were selected. In the second stage, 10 village wards were selected from each municipality with probability proportional to size (PPS) based on number of households in each ward. In the final stage, 800 children and their families were chosen randomly. All eligible subjects in the selected households were included and if a house did not meet the inclusion criteria, a house from the second list of houses in the wards was chosen. Three community health volunteers and a child psychologist were trained and employed to interview eligible subjects at their home.

Ethical approval was taken from Nepal Health Research Council (ref no 150) and Prince of Songkla University (ref no 59-183-18-5). Verbal and written consent was taken from family and children. Anonymity and confidentiality were maintained throughout the study.

Instruments

A face-to-face structured interview questionnaire was developed using validated instruments. The questions included socio-demographic characteristics of children and family, level of exposure to the earthquake, PTSD symptoms, psychosocial support and family function assessment. The questionnaire was reviewed by experts who were bilingual child psychologists.

Level of exposure to earthquake

Level of exposure to earthquake among the children was evaluated with the During and After Earthquake Trauma Exposure Questionnaires (DAETEQ). It was adapted from a Hurricane Exposure questionnaire and previous disaster studies [8,19]. Each item was based on 'yes/no' choice. The total number of items was 29 and the score was kept in continuous scale.

Child-PTSD symptoms scale (CPSS)

PTSD symptoms severity was assessed by the Child-PTSD symptoms scale (CPSS), a translated and validated version of a questionnaire based on the Diagnostic and Statistical Manual of Mental Disorder (DSM-IV) diagnostic criteria of childhood PTSD [20]. CPSS has 17 items for severity of PTSD symptomology, each on a 4-point Likert scale (0 = never, 1 = once in a week, 2 = 2-4 times in a week and 3 = 5 or more times in a week) therefore the range of total score is 0 to 51, with a higher score indicating more severe PTSD symptoms.

Psychosocial support questionnaire

The researcher-constructed psychosocial support questionnaire had 12 items on 5-point Likert scales to assess received psychological and material support and respondents' satisfaction with received and perceived social support [21]. The questionnaire was adapted from a social support questionnaire and modified based on country context. The range of total scores was 5 to 60. The questionnaire was checked for face validity by a group of experts in psychology. Cronbach's internal consistency index from the pilot study was 0.83.

Family functioning assessment device

The McMaster Family functioning assessment device [22] had 60 items which were further classified into 7 different subclasses on 4-point Likert scales to assess overall family process of aspects such as communication, manipulation of environment and problem solving. Scores were calculated for each subscale. Family functioning generally reflects family dysfunction but in this study score of good family functioning was used to interpret family functioning and its relation to other variables. The questionnaire was checked for face validity by a group of experts in psychology. Cronbach's internal consistency index from the pilot study was 0.86.

Statistical analysis

Epi-data 3.1 was used for data entry and Statistical Software LISERAL 8.1 version was used for data management and analysis. There was no missing data at the item level. We examined univariate and multivariate normality of the data to determine if the assumptions of structural modelling were met. We found no severe violation of the normality in terms of skewness (all < 1.5) and kurtosis (< 3) on any variables. Relative multivariate normality was 0.987 and the result of Mardia's coefficient was -0.927, which indicated significant kurtosis (i.e. < 1.96). All the analyses were conducted using covariance matrices as input and the maximum likelihood estimator.

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The study compared the fit of hypothesized model using chi-square statistics and other indices including root mean square error of approximation (RMSEA) and its 90% confidence interval, standardized root mean square residual (SRMR), comparative fit indices (CFI) and Non-Normed Fit Index (NNFI).

We set the cutoff for each fit index where for RMSEA value of 0.05 or less would indicate a "close fit". Similarly, CFI and NNFI with the value of close to 0.95, SRMR less than 0.08 reflects a "good fit" of the data [23]. Comparative fits of the models were evaluated by chi-square difference tests. Individual factor loadings for the items used to develop the measurement model ranged from 0.27 to 0.78. Items above 0.4 were considered acceptable. All factors loadings of the items were more than 0.4 except for problem solving. Standardized factor loadings of the variables of path models are shown in table 1.

To test the significance of the total and indirect effect of severity of earthquake on PTSD symptoms in a larger sample, a bootstrap resampling procedure on model 2 was conducted. Two thousand bootstrapped samples were created. Bootstrapping is recommended over the more traditional approach like Sobel test or casual steps approach to test indirect effects because it has relatively high statistical power due to the increased sample size that is created based on the parameters of the existing data [24]. If 95% CI for the estimates of indirect effect does not contain zero, then it can be concluded that the indirect effect is statistically significant at 0.05 level.

Model specification

The proposed model is depicted in figure 1. The severity of earthquake exposure may exert its impact on post-traumatic stress and family functioning independently (direct effect). Family functioning was hypothesized to mediate the impact of severity of earthquake exposure on PTSD symptoms in children after the earthquake and psychosocial support buffers the relationship of family functioning with the severity of exposure to the earthquake and PTSD symptoms in children [25].
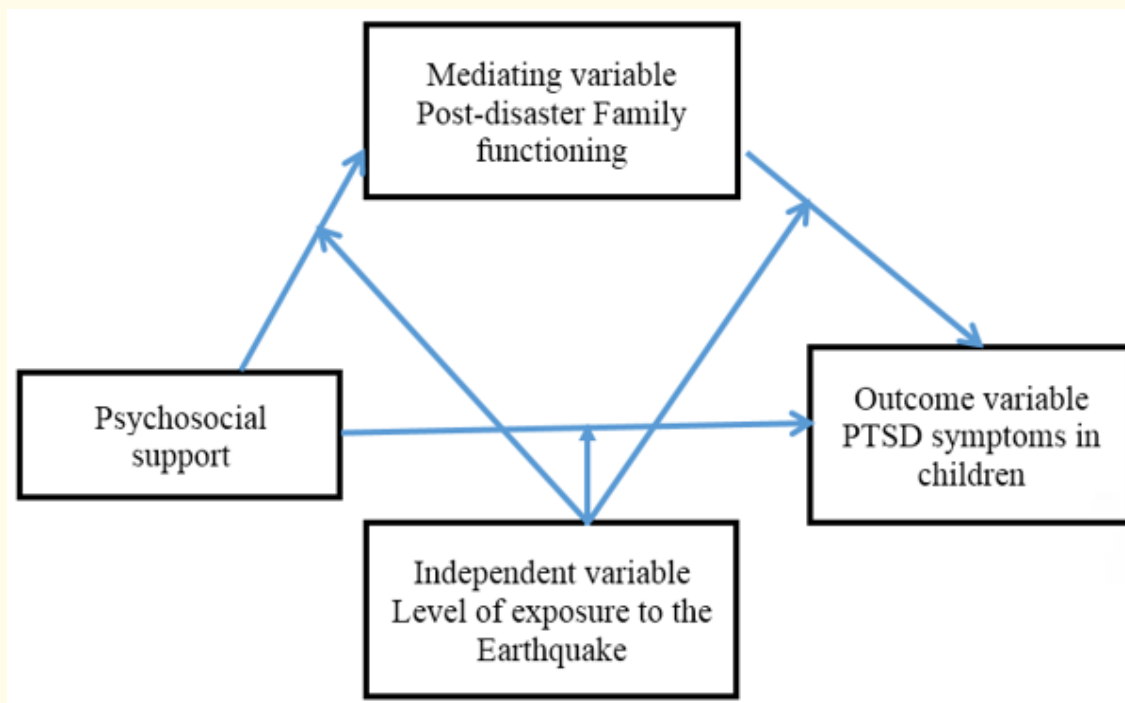

Figure 1: *Hypothesized model of the study showing the relationship of the variables.*

We specified models for the hypothesized path model and tested the fit to the data using multi-group structural equation modelling technique. We grouped data based on the levels of psychosocial support into high and low psychosocial support groups using the mean of the social support score as a cut-off. Model 1 was a model with no constraints on any parameters, indicating that models between high-

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low social support groups were allowed to be different in their measurement model and relationship among the construct. In model 2, we constrained factor loadings to be equal across the groups of social support indicating the invariance of relationship between observed variables and underlying constructs. A comparable fit between model 1 and model 2 indicated that measuring instruments operated consistently across the high and low support groups. Model 3 was model 2 with additional constraints on measurement error variance implying equal variance of observed variables across the group. Mode 4 was model 2 with equality constraints on the relationship among constructs in the model across groups.

Results
Missing Data and Normality

Characteristics of the subjects are shown in table 1. The average age of children receiving high psychosocial support was 11.54 ± 2.70 years and that of low psychosocial support was 11.69 ± 2.61 years. The majority of the respondents in both groups (high and low psychosocial support) went to primary school. Sixty-two percent of children living in urban areas received high psychosocial support whereas 63% of children living in sub-urban areas received low psychosocial support. Mean scores of PTSD symptoms among the children with high and low psychosocial support were 20.62 ± 10.64and 22.20 ± 10.38, respectively.

Variables	Range	Low Psychosocial Support		High Psychosocial Support		Loadings
		Mean	SD	Mean	SD	
Age	7 - 16	11.69	2.61	11.54	2.70	-
Severity of earthquake exposure						
During earthquake exposure severity	1 - 15	7.15	2.68	6.80	2.31	0.77
Post - earthquake exposure severity	1 - 14	7.61	2.59	7.10	2.54	0.78
Family functioning Domains						
Problem Solving	1 - 4	3.20	0.39	3.65	0.37	0.27
Communication	1 - 4	3.70	0.36	3.06	0.35	0.50
Roles	1 - 4	2.62	0.37	2.60	0.26	0.45
Affective responsive	1 - 4	2.96	0.45	3.01	0.47	0.56
Affective Involvement	1 - 4	2.60	0.53	2.68	0.54	0.46
Behavior	1 - 4	2.71	0.39	2.73	0.36	0.50
General Functioning	1 - 4	2.83	0.40	2.76	0.38	0.43
PTSD	0 - 51	22.20	10.38	20.62	10.64	1.00

Table 1: *Descriptive statistics of study variables.*

Model testing

Table 2 shows the fit indices of the 4 specified models. Model 1 (baseline model without any constraints across high and low support groups) and Model 2 with equality constraints on factor loading) showed comparable fit with no statistically significant differences ($\Delta\chi^2$ = 8.01, Δdf = 7, P = 0.33). The result implied that observed variables in the models had the same relationship with their corresponding constructs across the groups. In other words, high and low social support groups perceived the items measuring observed variables in the same way, which is a pre-requisite for a meaningful comparison of the path coefficient between groups. Further tests consider Model 2 as the baseline model. Model 3 (with the equality constraints on both loadings and measurement errors) showed a poorer fit to the data compared to Model 2 (with equal loadings) ($\Delta\chi^2$ = 26, Δdf = 9, P = 0.002), indicating differences in variance of observed variables across groups of social support. As a result, we tested equality of path coefficients in Model 4 using Model 2 as the baseline. Model 4 (Model 2 with the equality constraints on path coefficients) showed a poorer fit than model 2 ($\Delta\chi^2$ = 9, Δdf = 3, P = 0.032), implying there were differences in the relationship between latent constructs across groups of social support. Therefore, model 2 (best fitted model) was used for the interpretation of the relationship among constructs. Overall, the findings indicate that psychosocial support moderates the effects of family functioning and severity of earthquake exposure on PTSD symptoms among children.

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Model Specification	χ^2	df	RMSEA (90% CI)	NNFI	CFI	SRMR	P value $\Delta\chi^2$
Model 1 (No Constrains)	126.38	60	0.051 (0.038, 0.064)	0.93	0.95	0.044	-
Model 2 (Equality constraints on loadings)	134.39	67	0.048 (0.036, 0.061)	0.93	0.95	0.047	0.331[a]
Model 3 (Equality constraints on variance)	160.86	76	0.051 (0.042, 0.063)	0.93	0.94	0.051	0.002[b]
Model 4 (Equality constraints on path coefficient)	143.16	70	0.050 (0.038, 0.062)	0.93	0.95	0.054	0.032[c]

Table 2: Goodness of fit indices in the analysis of hypothesized model.

[a] *Model 1 as a baseline for calculating $\Delta\chi^2$.*

[b] *Model 2 as a baseline for calculating $\Delta\chi^2$.*

[c] *Model 2 as a baseline for calculating $\Delta\chi^2$.*

Relationship of the variables in hypothesized model

Total, direct and indirect effects between severity of earthquake exposure and PTSD symptoms was carried out. Table 3 shows standardized path coefficients of constructs in model 2.

Dependent Variables	Low Psychosocial Support		High Psychosocial Support	
PTSD symptoms (Y)	Severity of Earthquake Exposure(X)	Family Functioning[1] (M)	Severity of Earthquake Exposure (X)	Family Functioning (M)
Direct Effect	0.26**	-0.06	0.10	-0.17*
Indirect Effect	-0.02	-	-0.002	-
Total Effect	0.24**	0.06	0.098	0.17
Family functioning (Total = Direct effects)	0.36**	-	0.01	-

Table 3: Completely standardized maximum likelihood parameter estimates.

[1]*Family functioning reflects good family functioning*

*p < 0.05.

**p < 0.01.

Among the low psychosocial support group of children, the "direct effect" (β = 0.26, p = < 0.05) and the "total effects" (β = 0.24, p = < 0.05) of severity of earthquake exposure on PTSD symptoms were significant, whereas the direct effect of family functioning (β = 0.06, p = 0.37) had no significant effect on PTSD symptoms. Interestingly, there was a significant positive effect of the severity of earthquake on family functioning (β = 0.36,p = < 0.05).

On the contrary, "direct effects" and "total effect" of the severity of exposure to the earthquake on PTSD symptoms was not significant (β = 0.10, p = 0.25 and β = 0.098, p = 0.25) among the children receiving high psychosocial support. However, the direct effect of family functioning on PTSD symptoms was significant (β= -0.17, p = 0.02).

Family functioning did not mediate the effect of earthquake exposure on PTSD symptoms in either group of children. Indirect effects of earthquake exposure via family functioning on PTSD symptoms with high and low psychosocial acuity were non-significant with β = -0.02, p = 0.39 and β = -0.002, p = 0.94), respectively.

Testing the significance of the indirect effect by bootstrapping

The indirect effects of bootstrapped sample of the severity of earthquake exposure on PTSD symptoms through family functioning are presented in table 4. The 95% confidence interval of the indirect effect for children from both groups were close to, but did not include, zero particularly in the high support group. In the low support group, one unit change in earthquake exposure was associated with 0.11 - 0.13 decrease in PTSD symptoms via good family functioning.

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				Bias corrected 95% CI for mean Difference Indirect Effect	
Group	**Unstandardized mean indirect effect**	**SE**	**Z**	**Lower**	**Higher**
Low Psychosocial support	-0.120	0.003	-36.17**	-0.13	-0.11
High Psychosocial support	-0.010	0.000	-6.77**	-0.01	-0.001

Table 4: *Unstandardized Indirect Effect[2] of Severity of Earthquake exposure on PTSD symptoms through Family functioning on Bootstrapped samples.*

[2]*Indirect effects of good family functioning.*

*p < 0.05.

**p < 0.01.

Discussion

This study aims to test the moderating role of psychosocial support in the relationship of severity of earthquake exposure, family functioning and PTSD symptoms among children affected by 2015 earthquake in Nepal. We found that children receiving high psychosocial acuity (20.62) had lower mean score of PTSD symptoms than those receiving low psychosocial support (22.20). This finding supports a previous study where individuals with lower levels of psychosocial support had a higher level of psychological distress [26].

Over all findings indicated that psychological support has distinct role in the relationship of level of exposure to the earthquake and PTSD symptoms among children via family functioning. Among the low psychosocial support group, the severity of exposure to the earthquake had significant a positive direct effect and a total effect on PTSD symptoms, whereas no significant effect was seen among children who received high psychosocial support. This finding was consistent with prior research [27,28] which found that high support had a negative effect on PTSD. Low social support has been consistently identified as a risk factor during stressful situations [29]. Further, cognitive processing theory also provides evidence of the importance of psychosocial support in the development of PTSD symptoms or PTSD. This theory explains that adequate availability of social support facilitates the cognitive processing and utilization of coping strategies that may help an individual to regulate emotions regarding stress [30].

Moreover, adequate social supports appear to mitigate disaster victims' exposure to earthquake or earthquake related stressors and resources like social support and efficacy help enhancing active and effective dealing with post-traumatic adversities [31].

Our findings show family functioning was inversely associated with PTSD symptoms among the children receiving high psychosocial support. Children having good family functioning have less PTSD symptoms. Previous studies demonstrated that poor family functioning, lack of communication and lack of encouragement of autonomy were associated with increased anxiety and PTSD in children [32]. In an earthquake setting, dysfunctional family functioning predicted the state of anxiety in the children [33]. Availability of social support has evidence of increasing family resilience, cohesion and expressiveness, which enable the family to respond positively towards adverse situation which decreases the potential for PTSD development among children [34,35]. However, in this study, there was no significant association of family functioning with PTSD symptoms among children receiving low social support. Low level of social support may be largely ineffective for solving family dysfunction after the disaster or there may be a lack of congruency between family stressors or dysfunction and type of support being provided [36]. This finding supports the hypothesis that social support has a distinctive role in the family functioning. Further, the severity of exposure to the earthquake and family functioning were positively associated among the children receiving low psychosocial support. This shows that when the severity of exposure to earthquake is high, a family tends to function better when there is a low availability of social support. This is a unique finding in that it suggests families come together to promote resilience even more so in low social support settings. Generally, family functioning and its operating system vary with the cultural context of a country, socio-demographic profile of family or race/ethnic background [37].

Specifically, Nepalese society is very particular in functioning collectively during the time of adversity. Togetherness and bonding among the people from the diverse community with different culture and religion were noticed in post-earthquake situation [38]. When encountering problems with stressful conditions, the Nepalese culture generally believes that family needs to perform together to handle

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the problem effectively [39]. Further, in the case of inadequate social assistance, they have their own local knowledge system of survival for survival through managing locally available resources during adversity so that families tend to perform well within themselves rather seeking help from others [39].

Mediation role of family functioning between both high and low psychosocial acuity group was not encountered by Sobel test. A previous study has explained that social support has comparatively larger effects [29]. Probably, the large effect of the social support has a larger influence on the effect of severity of earthquake on PTSD than family functioning so the mediating role of family functioning was not significant. Moreover, Sobel test is explained a weak approach to detect the mediation because of power limitation to detect the effect as the normality assumption of the Sobel test is often violated reducing the ability to detect true relationship amongst variables [40]. Further, previous studies have shown that these two aspects operate as an interaction. There is a strong role of psychosocial support in post-disaster family operating systems and functioning [41,42]. Mediation analysis has highlighted the importance of considering the moderating context in mediation research [43]. For example, discrepancies in the role of mediation across groups that support a particular context have been noted, indicating that the role may change depending on context [44,45]. Furthermore, high cultural value has been assigned to the society in Nepal [46,47], which suggests that the psychosocial support received and perceived may be more important to the well-being in such settings to minimize the disaster-induced trauma or distress. Therefore, to confirm the result of indirect effect and to identify the true relationship among the variables bootstrapping was done. With the increased sample size, we found a significant negative indirect effect of severity of earthquake on PTSD among low social support group. The findings of the study imply that earthquake brings the family together in the time of crisis leading to good family functioning, which in turn decreases PTSD symptoms among children. Nepal is a poor country and after the massive destruction from the earthquake, the flow of social assistance, delivery of rescue and steps towards resilience have were delayed due to underlying economic, political and geographical problems. Delays in relief programs have united the families to rebuilding communities. These communities are formed by families living in the affected area. Families living in makeshift shelters with a lack of basic living such as water, food and security with delayed lines of recovery from the nation have started reconstruction and restoration work by themselves. Possibly this coming together in crisis has enhanced their family functioning and the environment, ultimately reducing the effect of severity of earthquake on PTSD symptoms. However, the effect size of the indirect effect was small, which is inconsistent with previous findings as the effect of family functioning was found to have a medium to large effect in the previous study [29]. Effect of family functioning was determined without adjusting other factors such as age, gender, peri-trauma factor which hold larger effects [29] and this may be one possible reason for the small effect size. Without considering the large effect variables, the study still detected significant indirect effect which clearly speaks that family function has some role in the effect of severity of earthquake on PTSD symptoms.

Interpretation of the study should be considered within the context of the study's limitation. With the respect to measurement, the analysis focused on one indicator of mental health status, PTSD symptoms. Similarly, psychosocial support is a collective form of perceived and received support and was not further distinguished (family, friends, community), limiting our ability to discern whether specific forms of the social support led to fewer earthquake related stressors. The cross-sectional nature of the data limits the ability to determine the temporal relationship of the construct. For example, it is not clear whether unit social support enhance the family functioning or if the family with good functioning are better able to attract social support unit. In addition, pre-disaster family functioning information, which can help determine if there was a change in family functioning after the disaster, was not available.

Both methodologically and statistically to test mediation, studies need three time points of data to understand the casual relationship of the construct. Our assessment of the earthquake exposure does not have enough measurement time points to assess for true mediation. Future research should be directed towards longitudinal studies that would permit the researcher to disentangle the underlying causality among the variables. In addition, future research should include a broader range of stressors that may potentially clarify the interrelationship of the factors examined in this study.

Conclusion

Despite these limitations, this investigation contributes in important ways to our understanding of the mechanism through which stressful events, social support and family functioning influence psychological distress. Study implications for interventions and policies are aimed at reducing disaster-related psychological distress. The observed difference in the pattern of association between severity of earthquake exposure and PTSD symptoms in low and high psychosocial support groups suggest that the effects of psychosocial support

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are distinct and can be mobilized and fortified to reduce the distress of individuals and minimize their adverse outcome. Enhancing the family role and their functioning in the low social support areas can be effective in redeeming the crisis effects. Studies including family intervention have improved PTSD symptoms, our study also added some evidence on role of the family in alleviating the severity from disaster and reducing PTSD symptoms. Thus, psychiatric or mental health care provider can be thoughtful about family based interventions and programs while dealing with survivors of disasters. However, limited data exist on family interventions in post-disaster settings [48] and best practices of family intervention for disaster survivors must be extrapolated further from the larger studies in future.

Over all, this study contributes to the understanding of the psychosocial aspects and its effect on family dynamic that may be important in targeting children on-going with psychological distress after disaster. Further, the togetherness among the family and society during stressful situation need further research so that it can be replicated to improve family cohesion during crisis.

Acknowledgement

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