

Earthquake Impact, Coping Mechanism, and the Community Discourses: Experiences from the Central Hills of Nepal

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ABSTRACT

Introduction: Nepal is vulnerable to many hazards and disasters. Geographically, Nepal is situated at the Indi-an and Eurasian seismic plates and is prone to disasters like floods, landslides, fire, and earthquakes. The earthquake on April 25, 2015, with a 7.8 Richter scale and several aftershocks, have resulted in a considerable loss of human lives, physical infrastructure, and natural resources in Nepal. Many studies on the impacts of the earthquake mentioned the challenges in community recovery. This paper examines and explains the impact of earthquakes on family and community and how family and community cope during the disaster. Besides coping mechanisms, this paper explains discourses or conflicts in the family and communities. The paper is an outcome of a statistical analysis of 912 households survey conducted in Nepal's central hill, Kispang Rural municipality, a community affected by the 2015 earthquake in Nuwakot district.

Methods: This research relies on literature review, key informant interviews, Focus Group Discussions (FGD), field visits, expert interviews, etic and emic approaches to observe the field. The research questionnaires were prepared and performed a household survey of 912 households. Various questions on how the earthquake in Nepal "X" has created the "Y" impacts and discourses or conflict in the family and the community in Nepal's central hills were analyzed.

Results: The earthquake has impacted the families and communities; however, the families and communities had shown distinct coping mechanisms to stay resilient to the impact—various factors were identified where family discourses and escalated conflict influenced the community peace. It was found that family-level discourses and conflict emerged mainly in collectivist society or joint or extended families. Gender-based violence/ conflict was also measured and found augmented after the earthquake in the community.

Conclusion: The research study concluded that family discourses and conflict emerge when disaster relief and reconstruction policies do not incorporate the needs of affected communities. The multi-dimensional holistic, integrated policies that integrate all the affected communities' needs will support building community and family-level peace. Discriminative policies that divide families and communities should not be practiced.

Keywords: Conflict, Disaster, Earthquake, Nepal earthquake, Peace

Introduction

Nepal's desired condition for a peaceful conflict resolution, a constitutional assembly, and a new constitution for the country,

was prolonged because of a lack of trust and dissensus among the political leaders and parties. The armed conflict that started in 1996 killed

13,246 people, which came to a halt after the peace agreement was signed among political leaders in 2006. The post-conflict scenario and transition after the peace agreement lasted up to 2015 until the political parties' consensus was built and the new constitution for the Federal Republic of Nepal was drafted.

Building consensus among the political leaders was a considerable challenge for post-conflict peacebuilding. Thus, Nepal struggled to build the new constitution through constitutional assembly elections. In the initial five years, the first constituent assembly could not draft the constitution, and thus, the second constitution assembly was elected. However, the second constitutional assembly was struggling to finalize the constitution. Nepal had to go through several political instabilities, political crises, and leadership changes such as prime ministers. With the presence of political crises, instability, and dissensus, Nepal struggled to draft a new constitution and was struck by an earthquake on April 25, 2015. The earthquake resulted in losses of human lives, physical infrastructure, social structures, economic development, and natural resources. Nepal's post-earthquake environment has been quite different in many ways from its pre-earthquake environment. The earthquake damaged many community infrastructures and private properties. Inevitably, damaged houses and losses of lives have slipped into poverty and resulted in the loss of well-being and employment opportunities. Furthermore, it has worsened particular pre-existing vulnerabilities and created entirely new ones (1). As Pelling and Dill (2) argue, a disaster opens a "space for negotiation on society's values and structures". It creates political space for the contestation of political power. The 2015 earthquake's damages opened the space for building consensus among the political leaders and the new constitution was declared.

Impact of Nepal earthquake

The earthquake affected about one-third (8 million) of the nation's population in 31 districts out of Nepal's 75 districts. Nepal's Government identified 14 districts as the most affected districts: Gorkha, Dhading, Rasuwa, Nuwakot, Kathmandu, Lalitpur, Bhaktapur, Makwanpur, Kavre, Sindhupalchok, Dolakha, Ramechhap, Sindhuli, and Okhaldhunga. The total death toll was 8,970, while 22,302 people were injured, with about 195 accounted as still missing (Ministry of Finance, 2015). The earthquake drastically affected 5,700,000 people. The total afflicted women population were 2,710,239 (50.5%), the total Dalit population affected were 929,000 (16.3%), 39,987 women with disabilities were affected, 163,043 older women (65+ years) of the total female population were affected. Additionally, 126,000 pregnant and lactating women were influenced, and 1,399,000 children left school after the earthquake. An estimated loss due to the earthquake was Rs. 706,461 million. The highest amount being in the social sector (58%), followed by the productive sector (25%), infrastructure (9.5%), and cross-cutting sector (7.5%). At individual sectors, housing and human settlement accounted for almost half of the estimated loss due to the earthquake of 2015. While the earthquake agitated all sections of the population, it severely impacted those sections of populations who were already disadvantaged, marginalized, and disempowered, such as women, children, the elderly, disabled, Dalit, and ethnic minorities. Looking at the data of the Nepal earthquake's impact, the death toll of 8,970 was recorded and 22,302 people were injured. The earthquake completely damaged 2,687 and partially damaged 3,776 government buildings. Out of all the damage it has made to private housing, 773,095 private houses were completely damaged, and 298,998 private houses were partially damaged, which needed retrofitting. Besides, 9,353 schools were damaged (3).

Table 1. Mapping of Human and Physical Damage/loss

		Number
Human Loss	Total number of deaths	8970
	Total number of human injuries	22,302
	Total number of persons missing	195
Public Building	Number of the public building completely damaged	2687
	Number of the public building partially damaged	3776
Private Houses	Number of private houses completely damaged	773,095
	Number of private houses partially damaged	298,998
Schools	Total number of schools partially or completely damaged	9353
	Number of classrooms completely damaged	22401
	Number of classrooms damaged very much	14024
	Number of classrooms partially damaged	18942
	Number of toilets damaged	3773
	Number of Walls damaged	1518
	Number of water-supply/taps damaged	1620
Large Hydro-Power Centers	Six large hydro-power centers	Partially damaged
	12 small and medium-size hydro-power centers	Partially damaged

Source: Summarized from MoHA, 2016.

Materials and Methods

The study area is a central hill of Nepal, one of the affected districts by the earthquake of 2015. The study site is Kispang Rural Municipality in Nuwakot district. Kispang Rural Municipality is very popular for its historical, cultural, and religious aspects. This municipality is situated with Rasuwa to the east, Meghang Rural Municipality on its west, Rasuwa, and Dhading to the north, and south is the Bidur Municipality. The area of Kispang is 8,257 sq. km. Kispang Rural Municipality has five wards, from which ward 5 (Manakamana) is selected as a research site. Manakama is around 20 km away from Bidur and is the district headquarter of Nuwakot. This ward is an inhabit-ant of Gurung, Tamang, Ghale, and a considerable Dalit population.

The questionnaire survey responses of 912 households, FGDs, key informant interviews in ward 5 of the Kispang Rural Municipality in Nuwakot district were accomplished. The total population of 912 sampled households consisted of 3,706 people, of which 1,913 were males and 1,793 females. The sex ratio in the household population was found 1:0.98, which is slightly less than the national average, indicating a minor

decrease in the trend, i.e., a lower number of females. The economically active population aged 15-59 years was 66%, whereas the total dependent population aged below 15 and over 60+ years was reported at 22.50% and 11.50 %, respectively. The overall dependency ratio was estimated at around 36%. Out of 912 household surveys, 792 (87%) were male-headed households, whereas 120 (13%) were female-headed households.

Most of the family types (57.6%) were found to be nuclear, and the rest were extended family types. The highest number of households having a nuclear family type was among the Dalit community, followed by the Brahmin/Chettri and Janajati communities. The number of nuclear families was observed to increase after the earthquake due to the split in family members to obtain relief funds separately for their respective families. The average household size was found to be 6. While the maximum household size was found to be 15, the minimum was 1. According to the CBS census of 2011, the largest family size was 4; however, the study shows the most significant family size was 5 and slightly higher than the national average.

Among the 912 households surveyed, 25 people were reported to have been killed by the earthquake, 2.9% were male, and 1.7% were female. The most significant proportion of deaths (2.2%) fell in the age group 40-64, followed by ten people who fell in the age group below 40.

Both quantitative and qualitative research techniques were used for primary data collection. The quantitative methods include structured household questionnaires (Appendix 1), and the qualitative methods involved consultation meetings, key informant interviews (KII), and Focus Group Discussions (FGD). The questions prepared for the research were in the English language which later was translated into the Nepali local language, and tested in the field.

Relationship and discourse

Much research has shown that disasters can positively affect conflict prevention, resolution, peacebuilding, or related processes. Research on Tsunami responses after Tsunami has called conflicting parties to come together and respond. This has led many opposing parties to call for a ceasefire (4-7). In the same line, the earthquake's impact on the kin relationship and the emergence of the communities were studied among the 912 families in Nepal.

The Kispang Rural Municipality ward 5 is a homogeneous society, and people from different castes, ethnic creeds, and religions live together in the divided region in geography. This social structure in the community is considered the "unity and homogeneity of bounded cultural units" (8). The affinal kin among Brahmin/Chettri, Janjati (Gurung, Newar, Tamang,) and Dalit have produced a normative form of social subjectivities, and these social subjectivities have developed the dynamics of coexistence in the community. However, Janajati and Dalit communities were heavily dependent on Brahmin and Chettri communities living in the middle and the end of the hills since Janajati and Dalits' population were living in the middle and top of the hills with fewer facilities. The collective family's institutions (joint family),

marriage, traditions, kinship, and descent systems were the underlying social building blocks in Kispang ward 5 (9).

Dalit and Janajati populations were the most who left the communities and went for foreign employment. The community was much divided before the earthquake and influencing its unity. Brahmin and Chettri communities were further dividing the communities for their benefits.

"Some Tamang, age of 65, an elderly person in the community shared, "We were always deceived by the people downside (referring to people living lower land who are mainly Brahmin and Chettri). Our community is united when there are rituals or collective community cultural activities, but the community is heavily divided and politicized when it comes to development. After the earthquake, an NGO wanted to support us, but the people from downside impacted the decisions, and took the program in their localities".

Before the earthquake, most of the families were living together in joint family settings. There was more kin relationship among the family members; however, after the earthquake, the family type has changed from a joint to nuclear one among the Dalit groups. The highest number of households having a nuclear family type after the earthquake was among the Dalit community, followed by the Brahmin/Chettri and Janajati communities. The number of nuclear families was observed to increase after the earthquake due to splits in family members to obtain relief funds and housing grants separately for their respective families. The maximum household size was five, and the minimum was two. In the survey, nearly 3% of respondents stated family conflict; another 2% reported that some families started living separately. As there were splits between the families after the earthquake, the database did not show the split, and there were conflicts in receiving the relief materials 0.9% of the respondents mentioned that they had conflict over the relief support. Before the earthquake, there was no division of land and properties among the brothers and sons. However, the percentage increased after the earthquake.

Table 2. Distribution of Respondents Reporting the Conflict in the Family After the Earthquake

Categories	Yes	%	No	%
Started family conflict	26	3	886	97
Son started living separately	20	2	892	98
Conflict over land and property	14	2	898	98
Conflict over relief support	8	1	904	99
Violence against women (VAW)	137	15	775	
Child Marriage Occurred	14	2	898	98

(Source-Field 2018)

Among the total respondents, 24% experienced conflict and tension in the community after the earthquake. Almost 3% reported they experienced family conflict, 2 % of respondents experienced their son's living separately, and 2% reported they faced conflict over land and property. Around 1% of the respondents experienced conflict over relief support, 15% reported they encountered violence against women, and 2% reported they witnessed child marriage in the community. The data reveals that earthquake in the community has triggered to escalate the community conflict in the

communities.

Rana Bahadur Tamang, age 45, from the fields "shared that his son and daughter-in-law started living separately after the earthquake since their name was not on the relief list for the support for relief and recovery. Hence, we had a conflict about who would take the relief package. He further shared that there were minor household conflicts between mother-in-law and daughter-in-law, but we never decided to live separately. But the earthquake became the reason for the separation".

A pre-coded question survey on how the relief has impacted the community's social dynamics was analyzed. For the household survey, the results were summarized in Table 3. Six categories were identified, i.e., the support given on a party based, the support given to the people living on the roadside, distribution done far away from the community, women to carry relief packages and walk hours, inappropriate relief distribution, and not stated. These categories were priorities and abstracted from the FGD conducted in the communities.

Table 3. Percentage Distribution of Respondents by Complaints About the Relief Support Immediately After the Earthquake

Characteristics		Supported to party basis	Given to people near road access	Distributed far away from the community	Women had to carry relief and walk hours	Inappropriate relief distributed
Sex	Male	7.4	10.6	26.6	5.9	0.3
	Female	5.8	0.8	23.3	4.2	

(Source-Field 2018)

In many cases, relief food and non-food items were distributed far away from the communities, as stated by the research area respondents. Half of the respondents, 50%, stated that the reliefs were distributed far away from the communities, and women were to carry relief stuff and walk hours taking relief items. Around 14 % of the respondents reported that the reliefs were distributed on a biased basis, where people belonging to certain parties were given more frequently than people belonging to other parties. Compared to Brahmin/Chettri, the relief distribution places were far from the Janajati and Dalit communities.

Dhanu Maya Tamang (age 50) shared that, "most of the time, emergency relief packages, i.e., both food and non-food items were distributed in Nayapool or Shanti Bazar, which is quite far from the community. Women and elderly were finding it difficult to carry relief packages to their homes."

Man Bahadur Tamang (age 35) shared that "It is visible that people linked with a particular political party were provided with the relief packages and were informed to collect the relief packages in Shantibazar and the rest were not informed. This showed some relief packages were biased."

Discussions

Experiences from the Nepal earthquake 2015, Kispang Rural Municipality, highlights the complexity of the Nepal government's recovery strategies through NRA and the community. However, the field study respondents shared two different sets of coping methodologies implemented by the communities. Most adults shared that their resilience was through two strategies, individual coping and community coping. Knowing how to react to the earthquake impacts has been a unique coping mechanism; this has been very important to community leaders, family heads and teachers, or other religious leaders. It seemed it was challenging at the beginning how-ever, as time passes, people were coping the impacts through various strategies. Focusing, consoling oneself to help others, and taking care of people in need were factors that the respondent shares that helped cope at the individual level.

Among the overall coping strategies in health and psychological problems used by the adult population affected by the earthquake, the highest used coping strategies were active coping, where most males followed the adaptive strategy and coped with the earthquake's impact on any psychological health problems.(10-13) Most of the adult respondents reported that they directly confront a stressor and cope with the impacts. Females are more vulnerable towards managing the impacts as they shared that their focuses were more on children, family, social structures, and communities.

Followed by an active coping strategy, most respondents reported they used a substance abuse coping strategy, where almost 43% of the respondent reported they used local homemade alcohol to cope with the impacts of the earthquake. Surprisingly, women reported that they used a substance abuse strategy as well. A possible interpretation of the finding could be that adults though primarily affected by the earthquake, adopted positive coping strategies by actively changing their circumstances, supporting others in search and rescue, preparing temporary places for stay, problem-solving activities, and socializing more before.

Furthermore, in the research area, almost 90% of

the respondents reported that they had utilized religious coping practices like praying and worshipping, believing in God's help, doing charity in God's name as their strategy to overcome the stress fear. This may be because Nepalese are religious, and they strongly believe in God's aid. Many respondents shared that they also practice religious rituals. This corresponds to the findings from many other studies revealing religious coping for their positive adjustment after the earthquake.

Right after the earthquake, 24.5% used active coping strategies in purchasing food for them through the local market and shops. 16% used an active coping strategy to borrow foods from other neighbors, and 7.2% of the respondents performed the active coping strategy through eating less and limiting the portion of the food. Children had to go through direct counseling and medication to recover out from the impact of the earthquake.

Plenty of research in disaster reported that there has long been understood that child marriage increases due to emergencies. However, in the research area, the impact of a Gorkha earthquake on child marriage is, in fact, much more complex and is based on numerous factors, including both underlying cultural norms. The research area highlighted as an area with poverty and vulnerability, some of the families who have lost houses and other assets in the earthquake had to take some of the tough household decisions, such as marrying a young adolescent girl. However, when asked, 99.2% of respondents stated that there was no child marriage recorded. However, 0.8% reported that child marriage cases occurred after the earthquake, even though that may not have been planned before.

"I lost everything, my house, my documents, my food, and I was very much scared that I will die without seeing my daughter married so I decided to get her married to a man near our house. That is the reason I got my 16-year-old daughter married to a 30-year-old man", said Mr. Ramu Tamang.

2.9% of the respondent stated that there were various types of family conflicts after the earthquake. 2.2% of the respondent stated that the son who was living in the collective family as an extended family started living in a nuclear family.

The kitchen, which used to be shared, becomes separated after the conflict. 1.5% of respondents stated that there were conflicts over the land and property. 26% of the respondent stated that they had the division of land among brothers and sons. Sons, who started living separately, demanded relief as the community had to verify they lived separately before the earthquake. They have to struggle and conflict with their parents on emergency relief materials. There were some cases of divorce and family separation in the community. A total number of 12 divorces and separation after family conflict cases were recorded.

"The physical disruption of the Gorkha earthquake was overwhelming. I was newly married, the earthquake damaged my houses, and I lost income as the earthquake had interrupted business. This had impacted my wife and me ensuing stress, which took a toll on our marriage and relationships and interrupted our marriage plans. My wife left me, and we are divorced," said Mr. Som Bahadur Tamang.

Inequality and discrimination between men and women were created in society causing various communities to experience discrimination in different degrees (14). The perceptions of both men and women respondents were analyzed to determine how they see women's social status changes after the earthquake. The perceptions were analyzed through participation in a social focus group discussion with 166 (88 men and 78 women): Over 50% % of men and 60% of men and women think that women's participation in social groups after the earthquake has increased. 60% of women shared that both were

heavily involved in clearing debris, site preparation, unskilled and skilled labor for the shelter construction. Substantial participants of the focus group, almost half of them, stated that women's participation in social programs and meetings increased after the earthquake. Understanding the women's job situation, 60% of women respondents think that women's job situation after the earthquake has increased compared to before.

Concerning access to services for women, over 50% think that women's access to services is the same before and after the earthquake. Around 15% reported issues with unmarried girls sleeping and food arrangement after the earthquake, as most of the respondents, around 76%, reported they were living on the field in Tripal (Plastic tent). Around 1% of women reported problems during the menstrual period before the earthquake; however, it increased to 22% after the earthquake. 45% of women reported that there was a problem with their privacy after the earthquake. The impact of the earthquake on women was discernible and reported substantially.

Looking at the data, we can state a slight increase in the violence against women after the earthquake in the research area. Around 1% stated that there was an increase in domestic violence against women. Similarly, 1% of women respondents stated an increase in the trafficking of women and girls. These cases were based on the cases they saw and heard about in the community. Less than 1% of women respondents stated that there was an increase in women's sexual violence.

Table 4. Respondents Reporting Whether Violence Against Women Increased or Decreased After the Earthquake

Perception of whether the VAW increased or decreased?	N	%
Increased	137	15
Decreased	7	1
Don't know	768	84
Total	912	100.0

Table 5. Percentage Distribution of Respondents on Feeling how far the Female was Secured after the earthquake

Characteristics	Very secure	Somewhat	Not very secure	Very insecure
Sex				
Male	14.5%	64.5%	19.9%	1.0%
Female	12.5%	70.0%	17.5%	

Data reveals that violence against women (VAW) increased after the earthquake disaster. The research data reveals that 15% of the respondents stated an increase in gender-based violence against women, and 1% of the respondents stated a decrease in violence against women. (Table 5)

Security-wise, a question is on how to secure women after the earthquake. 14.5% of males stated that they were very secured, whereas 12.5% of female respondents stated that they felt very secure. However, 64.5% of male and 70% of women respondents felt somewhat secured, and 19.9% male and 17.5% women stated that women were not very secure. 1% of male respondents stated that they were very insecure after the earthquake.

Conclusion

The earthquake has impacted the families and communities in the affected areas, but the most significant impact over the national discourses on building consensus for approving the constitution was possible and materialized after the earthquake in Nepal. All the political parties came together, and over 85% of the constituent assembly members approve the new constitution of Nepal's federal republic.

Moreover, the Government of Nepal established Nepal Reconstruction Authority and developed many disasters related frameworks for earthquake recovery. However, the framework being a one-in-all policy was not effective in addressing the affected communities' needs. The one-policy-for-all-approach has been highly criticized by the community in the rural research area. It was felt that the policy related to procurement, community-driven recovery, limited installments with the costly design of the houses, bank account opening when there are no remote banking facilities all were recommended to have had developed separately. Because of this one-policy-for-all-approach, many families and communities mentioned many implementation challenges. It was further felt and realized that any adopted policy needed to be contextualized according to the country's geographical needs to give substantial

support to the affected communities' recovery work living in different geographical settings.

The impact of the Nepal earthquakes has shown an increased risk of family and social conflict and discourses. The earthquake shattered the lives of individuals, which has affected the families and communities. The family members and communities were putting pressure on the already-strained resources and support, and it was observed that families had conflicts and discourses over limited resources being distributed. For a few days, family and community shared the resources, saved lives, supported one another, came together, and inspired humanity. However, after 3-4 days, these same affected communities competed over the limited resources and developed conflict/discourses.

The land distribution issues emerged within the family context, which raised family tension and raised conflict—many joint families living in a collectivist society have been divided after the earthquake. A joint sharing kitchen practice for years has collapsed after sons and brothers in many families were separated. There has been an increase in violence against women.

Relief distribution frequently favored those who were living near the roads. However, rural communities without access to roads received fewer relief packages. Gender-based violence increased in the communities as people were involved in alcohol for coping with the impacts. Around 20% of women reported they are not secure in the temporary housing setting after the earthquake.

The earthquake in the research area has seemingly shown incompatible outcomes, significantly increased cooperation and peace at the beginning, and an increased risk of family and social conflict later in the relief and recovery phase.

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Conflict of Interest

None declared

Authors Contributions

N/A

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