

Assessment of Mental Health and Psychosocial Support Needs and Resources among Earthquake-Affected Communities in Nepal



Conducted by



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Acronyms

AHW	Auxiliary Health Worker
ANM	Auxiliary Nurse Midwife
AUDIT-C	Alcohol Use Disorders Identification Test-Consumption
FCHV	Female Community Health Volunteers
HA	Health Assistant
HESPER	Humanitarian Emergency Settings Perceived Needs Scale
HSCL-25	Hopkins Symptom Checklist-25
IASC	Inter-Agency Standing Committee
MHPSS	Mental Health and Psychosocial Support
NGO	Non-Governmental Organization
PCL-C	Post-traumatic Stress Disorder Checklist-Civilian Version
PPS	Population Proportionate to Size
PTSD	Post-traumatic Stress Disorder
TPO Nepal	Transcultural Psychosocial Organization Nepal
UNHCR	United Nations High Commissioner for Refugees
VDC	Village Development Committee
WASSS	Assessment Schedule of Serious Symptoms in Humanitarian Settings
WHO	World Health Organization

Executive Summary

This report details the results of a mental health and psychosocial support resource and needs assessment in Kathmandu, Gorkha, and Sindhupalchowk districts, three of the most affected areas in Nepal following the earthquakes of April 25 and May 12, 2015. The assessment was conducted in August-September 2015 by the Transcultural Psychosocial Organization Nepal (TPO Nepal) and supported by International Medical Corps (IMC) whose emergency response operations started directly after the earthquakes.

The needs and resource assessment was based on Inter-Agency Standing Committee (IASC Nepal version) Guidelines and good practice principles for assessments outlined by the World Health Organization (WHO) and United Nations High Commissioner for Refugees (UNHCR) (2012)¹. The assessment used a mixed methods design with both qualitative (free-listing activity, in-depth interviews, focus groups) and quantitative (survey) approaches.

Key findings from qualitative assessment results:

- Community members were deeply impacted in many ways by the earthquakes: participants most frequently reported experiencing their own homes collapsing; the deaths of family and loved ones; witnessing destruction of neighbors' homes, schools, and hospitals; and seeing dead bodies.
- Participants expressed that mental health and psychosocial problems were common in their communities following the earthquakes, particularly fears, such as feeling frightened that an earthquake would occur again. Behavioral (e.g., increased anger/aggression), cognitive (e.g., forgetfulness), sleep (e.g., lack of sleep as well as too much sleep), somatic (e.g., numbness/tingling in limbs), emotional (e.g. sadness, hopelessness), and alcohol use problems were mentioned as significant problems.

Key quantitative assessment results:

- High overall reporting of depression (34.2%), anxiety (33.8%), and alcohol use problems (20.4%)
- Lower reporting of post-traumatic stress symptoms (5.2%)
- Suicidal ideation in the overall sample was 10.9% in the four months following the earthquake
- Average functional impairment scores were overall very low (2.83, possible range 0-27) suggesting low levels of dysfunction. Scores were slightly higher in Sindhupalchowk (5.12) compared to Gorkha (2.14) and Kathmandu (2.31). Although functional impairment scores were low, there were strong associations between impaired functioning (high scores) and risk for reporting symptoms of mental health problems (depression, anxiety, PTSD, and alcohol use).
- Populations at particularly increased risk for mental health and psychosocial problems were females, older people, Dalit and Janjati caste, and communities in Sindhupalchowk district.

¹ <https://data.unhcr.org/syrianrefugees/download.php?id=4739>

Key sources of support and mental health services

- Family, neighbors and community members, and religious leaders were the most commonly used sources for managing mental health and psychosocial problems.
- Negative coping strategies were considered highly prevalent by our participants, including excessive alcohol use, smoking, and gambling.
- Support for mental health problems were provided through two mechanisms: by traditional healers and by doctors, counselors, psychiatrist, or other mental health professional in a hospital or health post setting. Most often, community members sought care from a traditional healer and proceed to a hospital or health post only if the traditional methods were considered unsuccessful. Participants believed that both methods could be helpful in managing mental health and psychosocial problems but that the services provided in health posts or hospitals were insufficient for the demand by community members and that services were in some cases inaccessible due to shortage of trained professionals, destruction of clinics by the earthquakes, or large distance to the clinics.

Types of services requested by participants

- The most commonly recommended service by participants was improved access to basic needs: shelter, food, clean water, toilets, and improved sanitation.
- They also recommended increased training for current psychosocial workers and non-specialist primary care providers, the establishment of permanent mental health centers within hospitals and health posts, and trained and qualified mental health professionals to staff those centers.
- Psycho-education and earthquake awareness education were also recommended.

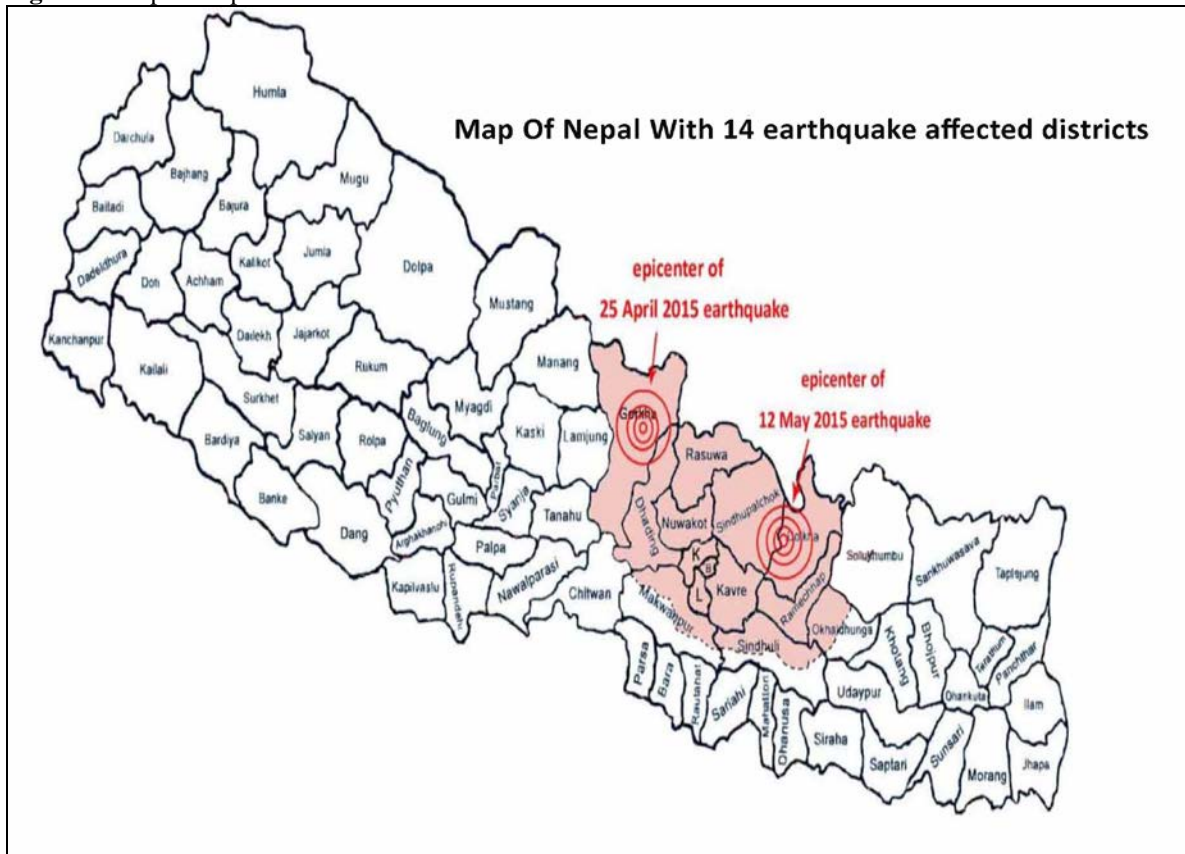
Overall, the needs assessment has identified that a wide range of mental health and psychosocial problems is having a significant impact on a substantial proportion of the populations affected by the earthquakes. The report recommends a multifaceted approach to addressing the needs of the affected populations following the IASC MHPSS Guidelines pyramid structure.:

- Basic services and security (e.g., advocating to local leaders for increased and dignified access to basic needs)
- Community and family supports (e.g., promotion of communal healing through utilization of existing social supports; suicide prevention programs, mental health awareness and stigma reduction)
- Focused, non-specialized supports (e.g., promoting coordination of care between traditional healers and hospital/health post/mobile mental health clinic staff and increased engagement with traditional healers, provision of psycho-education;)
- Specialized services for those with both mental health problems and functional impairment and focus on populations at high risk (e.g., targeting those with suicidal ideation and those with both mental health problems and impaired functioning, which may indicate greater severity of disorder); integration of mental health services with alcohol abuse services).

Introduction

A massive earthquake measuring 7.8 in magnitude on the Richter scale struck Nepal on April 25th, 2015. The epicenter of the earthquake was 77 kilometers northwest of the capital city, Kathmandu. A second large earthquake measuring 7.3 on the Richter scale occurred just 17 days later on May 12th, this time with an epicenter 76 kilometers northeast of Kathmandu. The combined impact of the earthquakes was devastating in terms of both physical destruction and loss of human life. In total, over 8,600 were estimated to have been killed, the largest in Nepal's recorded history, with over 450,000 displaced and approximately 8.5 million affected.

Figure 1. Map of Nepal



Risk for mental health problems increases substantially in populations affected by humanitarian emergencies, such as the recent earthquakes in Nepal. A wide range of mental health and psychosocial problems has been observed in populations affected by humanitarian crises, including transient psychological distress in a large proportion of the population, which is considered a normal response to an abnormal situation. A minority of people may develop mental disorders which may be specifically related to stress (e.g. prolonged grief, posttraumatic stress disorder), as well as disorders that may also occur in the absence of exposure to major stressors but may have stress as a contributing factor (e.g. mood disorders such as depression, substance use disorders, suicidal behaviors) (Inter-Agency Standing Committee, 2007). Based on review of studies conducted in Nepal and elsewhere following humanitarian crises, a substantial proportion of the population affected by the earthquakes is expected to experience psychological

distress; while the expected prevalence of common mental disorders may rise from a baseline of 10% to between 15% and 20% (e.g., depression, anxiety, and PTSD), and between 3% and 4% may experience severe mental disorder (e.g. psychotic disorders). It is important to note that the range of mental health problems includes pre-existing as well as crisis related problems.

Goals of the Needs Assessment

A specific and focused needs and resource assessment for mental health is therefore crucial to conduct in Nepal following the destruction of the recent earthquakes. According to the IASC Guidelines on Mental Health and Psychosocial Support in Emergencies, assessments of needs and resources are essential following humanitarian emergencies and can help identify the “threats to and capacities for mental health and psychosocial well-being.”(Inter-Agency Standing Committee, 2007)². They are an integral part of the ‘minimum response’ to any emergency. Information should be obtained for the following areas:

- 1) Understanding the chief MHPSS related problems confronted by disaster-affected communities including pre-existing problems and vulnerabilities;
- 2) Evaluating the availability and accessibility of formal and informal resources to address these problems;
- 3) Investigating which additional responses and resources are required to address identified needs.

The assessment allows for an informed and targeted mental health response that addresses the specific needs of populations and communities affected by the earthquakes.

The current assessment is building on previous assessments and reviews following the Nepal earthquakes. A desk review of existing information on mental health and psychosocial support in Nepal was conducted in June 2015³ (Inter-Agency Standing Committee (IASC) Reference Group for Mental Health and Psychosocial Support in Emergency Settings, 2015). Most of the research identified in the review was focused on the impact of previously experienced political violence on mental health. Major predictors of mental health problems in Nepal have previously been identified as female gender, Dalit caste (related to discriminatory practices), poverty, older age, and exposure to traumatic events (Luitel et al 2013, Kohrt et al 2012). As elsewhere, mental health and psychosocial well-being are multi-faceted constructs in Nepal, and there is great cultural diversity in Nepal. Cultural concepts of distress are rooted in concepts of the self used by cultural groups in Nepal, such as the brain-mind (e.g., *dimaag*), heart-mind (e.g., *maan*), physical body, soul, spirit, and social status (see IASC Desk Review for details). According to the desk review, the priority for mental health in health policy and funding is low in Nepal; there is no mental health act and a fledgling National Mental Health Policy has not been fully implemented as of this writing. Only 1% of the Ministry of Health budget is devoted to mental health (IRIN,

² Inter-Agency Standing Committee. (2007). *Guidelines for Mental Health and Psychosocial Support in Emergency Settings*. Geneva

³

<https://drive.google.com/folderview?id=0B9mNOc0iT4UvfnQ3aFh1LWk2dGlncnBFMVN3RVk5ZjVpNTVjVjI4WXNoRwotUllfaGdOSkk&usp=sharing>

2013). The ratio of mental health provider to client is relatedly quite low with, for example, 0.18 psychiatrists, 0.25 nurses, and 0.04 psychologists per 100,000 people (World Health Organization, 2011).

In addition to the information summarized through the desk review, a limited rapid assessment was conducted by the International Medical Corps in the first two weeks following the April 25 and May 12 earthquakes. The desk review and rapid assessment indicated that a focused in-depth assessment of mental health and psychosocial needs was warranted.

The assessment had the following specific objectives:

1. *Understand the experience of the emergency*

- a. What do the affected populations perceive as causal mechanisms for the earthquakes?
- b. How was the emergency experienced by affected populations?
- c. What information on earthquake risk is available to affected populations?

2. *Assess mental health and psychosocial problems:*

- a. What are the current prioritized mental health and psychosocial concerns for affected populations?
- b. What are the most pressing mental health concerns as expressed by members of the communities affected by the earthquakes?
- c. What percentage of the population is experiencing common and serious symptoms of distress?

3. *Sources of mental health services and psychosocial wellbeing:*

- a. What types of informal social support systems (religious, traditional) are currently available to affected populations?
- b. Which positive coping strategies are used by affected populations to address prioritized mental health and psychosocial concerns?
- c. Where do affected populations seek help for prioritized mental health and psychosocial concerns?

4. *Stakeholder recommendations:*

- a. What do different groups of stakeholders recommend in terms of mental health and psychosocial support interventions by agencies?
- b. How are these efforts best integrated and coordinated?

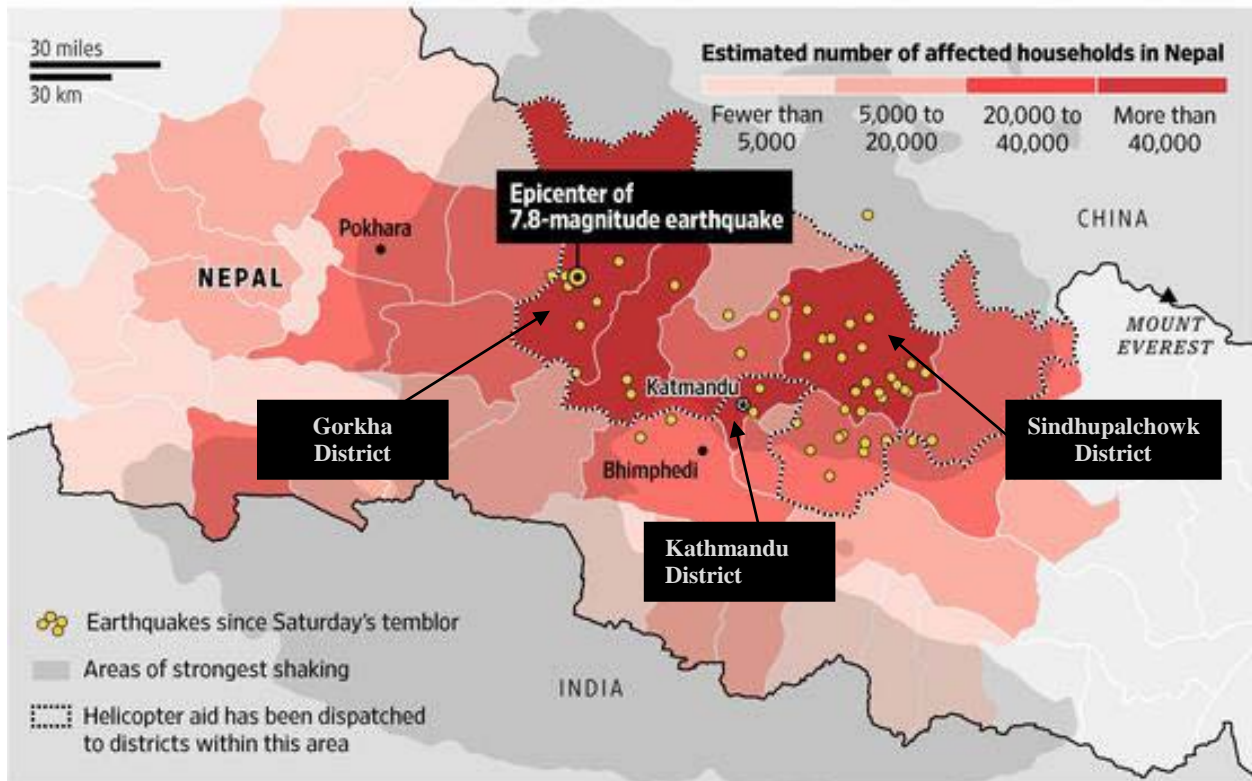
Assessment Methodology

The needs assessment was led and carried out by Transcultural Psychosocial Organization Nepal (TPO Nepal) with support from International Medical Corps (IMC). TPO Nepal aims to promote psychosocial well-being and mental health through the development of sustainable, culturally appropriate and community based support systems. TPO works with some of Nepal's most vulnerable groups, including children affected by conflict, child soldiers; refugees, victims of emergencies and disasters; children and families affected by HIV/AIDS, sex workers, trafficking survivors, survivors of sexual violence, and survivors of other human rights violations. TPO Nepal has been providing mental health and psychosocial support to people experiencing the earthquakes in all 14 highly affected districts and has worked in Nepal since 2005.

Setting

The needs assessment was conducted in Gorkha, Sindhupalchowk, and Kathmandu districts, three of the most earthquake-affected regions in Nepal (see map in Figure 2). Each district also represented one of the primary geographical regions affected by the earthquake, mountains (Sindhupalchowk), hills (Gorkha) and valleys (Kathmandu) in the Central region.

Figure 2. Map of earthquake-affected areas in Nepal



Source: The Wall Street Journal, 2015. <http://blogs.wsj.com/briefly/2015/04/28/5-maps-of-nepals-earthquake-zone/>

Gorkha district, an area of 3,610 square kilometers, has a population of approximately 271,000 people and is located along the east border of Nepal's western region (Central Bureau of Statistics, Government of Nepal, 2012). Different caste/ethnic groups live in Gorkha. Gurung make up highest (19.7 %) of the population in the district and other major castes/ethnic groups are Brahmin hill (15.2 %), Chhetri (11.6 %) and Magar (11.6 %) (CBS, 2104). Hindu (75.1%) and Buddhist (19.1%) are two major religions in the district. The literacy rate of the district is 66.8% ranking in 37th position within the country (CBS, 2104). The epicenter of the earthquake occurred 15 kilometers from Gorkha town and there was widespread destruction following the earthquake (United Nations Office for the Coordination of Humanitarian Affairs, 2015a). Over 400 people in Gorkha district were killed, over 1,000 injured in the earthquakes, and over 50% of households were damaged or destroyed. The population in Gorkha is highly dispersed and consists primarily of small villages spread throughout the mountainous region. Many of the most rural areas within the district are accessible only by footpaths, which complicated and slowed relief efforts following the earthquakes (United Nations Office for the Coordination of Humanitarian Affairs, 2015a).

Sindhupalchowk district, an area of 2,542 square kilometers has a population of approximately 288,000 (Central Bureau of Statistics, Government of Nepal, 2012). The district is close in proximity to Kathmandu city and shares its southern border with Kathmandu district. Its northern border is shared with China. It is comprised of both mountainous and hilly regions with the majority of the population living in the hill areas. The major caste/ethnic groups of Sindhupalchok district are Tamang (34.2 %), Chhetri (18.2 %), Newar (11.1 %) and Brahmin Hill (10.3 %) (CBS, 2104) and the majority are Hindus (58.9%) or Buddhist (38.0 %) (CBS, 2012). The literacy rate of the district is 59.9% ranking in 55th position within the country (CBS, 2104).

Sindhupalchowk experienced the largest aftershock in the country, a magnitude of 7.3 and was the most affected of all districts in Nepal. According to the United Nations, over 3,000 people in the district died in the earthquake, 800 injured, 64,000 houses severely damaged or destroyed, and over 100,000 people (comprising 40% of the district's population) directly affected (United Nations Office for the Coordination of Humanitarian Affairs, 2015b). Similar to Gorkha, remote areas within the district were slow to receive aid following the earthquakes.

Kathmandu district, is 395 square kilometers in size and has the highest population density in Nepal with a population of over 1.7 million people. The district includes the capital city of Kathmandu (Central Bureau of Statistics, Government of Nepal, 2012). The district is located within the greater Kathmandu valley within the Central region of Nepal. Kathmandu district have several castes/ethnic, and religions groups. Due to migration from all other districts of Nepal, there is a diverse mix of castes and ethnicities in the district. The major caste/ethnic groups of the district are Brahmin hill (23.5%), Newar (22.0 %), Chhetri (19.9%) and Tamang (11.0%) (CBS, 2104). Most of the people of the district are Hindus (80.0%) or Buddhists (15.4 %) (CBS, 2012). The literacy rate of the district is 86.3 percent ranking in first position (CBS, 2104). Although many buildings in the city remained intact following the earthquakes, the majority of households in rural areas outside of Kathmandu city were severely damaged or destroyed. Over 1,000 people in Kathmandu district were estimated to have died as a result of the earthquakes (Karuna-Shechen, 2015).

Assessment design

The assessment included qualitative methods, in the form of free-listing activities, in-depth interviews and focus groups with general community members and stakeholders, as well as quantitative methods in the form of a stratified multi-stage cluster sample of community members. These methods are outlined in detail below. Table 1 summarizes the methods and tools used to achieve each of the assessment objectives.

Table 1. Needs assessment objectives, methods, and WHO/UNHCR tool kit number

Objective	Method	Population	Tools
Understanding the experience of the earthquake	Qualitative	<ul style="list-style-type: none"> • Key informants • Stakeholders • Adults and youth 	<ul style="list-style-type: none"> • In-depth interviews (tool 11) • Focus groups (tool 11)
Assessing mental health and psychosocial problems	Qualitative	<ul style="list-style-type: none"> • Key informants • Stakeholders • Adults and youth 	<ul style="list-style-type: none"> • In-depth interviews (tool 7) • Focus groups (tool 11) • Free-listing activity (tool 10)
	Quantitative	<ul style="list-style-type: none"> • General community (ages 16 and above) 	<ul style="list-style-type: none"> • Survey including measures of: <ul style="list-style-type: none"> ○ Depression (HSCL-25) ○ Anxiety (HSCL-25) ○ PTSD (PCL-C) ○ Alcohol use (AUDIT-C) ○ Functioning ○ Suicide ○ Perceived needs (HESPER) (tool 3) ○ Serious symptoms (WASSS) (tool 2)
Examining current sources of mental health services and psychosocial support	Qualitative	<ul style="list-style-type: none"> • Key informants • Stakeholders • 	<ul style="list-style-type: none"> • In-depth interviews (tool 11) • Focus groups (tool 11)
Collecting recommendations from key stakeholders	Qualitative	<ul style="list-style-type: none"> • Key informants • Stakeholders • 	<ul style="list-style-type: none"> • In-depth interviews (tool 11) • Focus groups (tool 11)

Qualitative assessments

Free listing activity

We recruited 240 participants purposively selected with pre-defined criteria (e.g. adults, voluntarily agreeing to participate, living in the assessment areas for the last six months), 80 in each assessment district, to participate in free listing interviews. The interviews included both “grand tour” questions (i.e., asking about the current mental health problems faced by members of the community) and follow-up questions for each problem mentioned (i.e., probing for more detailed descriptions of what a specific problem looks like). Since mental health is highly stigmatized in the community; participants were asked about their current “*heart-mind*” problems due to the earthquakes. The purpose of the activity was to generate lists of mental health and psychosocial problems that community members believed were common in their communities. These lists were then used to inform and adapt existing mental health measures that we included in the quantitative survey.

In-depth interviews and focus groups

We conducted 45 in-depth interviews (15 in each district) and 15 focus group discussions (5 in each district). Interview and discussion participants included both key informants (religious and community leaders, health workers, female community health volunteers, traditional healers, and youth group leaders, as well as members of the general community (including adults, and elderly participants). Interviews were conducted one-on-one; focus groups had one facilitator and one note taker and approximately 8-12 participants.

Interviews were conducted in Nepali and later transcribed into English. Three coders independently coded the same 15% of interviews and focus group transcripts. The coders then met to develop an aggregated coding structure that was used to code the remaining interviews. The coding structure included *a priori* themes based on the assessment objectives and we also used grounded theory to code emergent themes. Analysis was conducted using NVivo, version 10 (QSR International Pty Ltd., 2012).

Quantitative assessments

Participants and procedure

Quantitative interviews were conducted to address assessment objective two by measuring and estimating the extent of mental health and psychosocial problems in our assessment districts. We interviewed community members in the three assessment districts (different assessment participants from the qualitative assessment) who were 16 years of age and older, and who had been impacted directly (or indirectly via friends and family members) by the earthquakes.

Participants were randomly selected to participate using a stratified multi-stage cluster sampling method. Interviews with participants were facilitated in-person by a assessment assessor and were conducted within the participant's home or in another private location if the participant chose to conduct the interview elsewhere.

Overview of the qualitative assessment

Table 2. In-depth interview and focus group discussion respondent types

Method	Group/Respondent type	Kathmandu	Gorkha	Sindhupalchowk
		Number		
Focus groups	General community- adults	1	2	1
	General community-elderly	1	1	1
	General community-youth and adolescents	1	1	1
	Community leaders (NGO worker, VDC/Ward secretary, Youth/Women group leader)	1	1	1
	Community health workers (HA, AHWs, ANM, FCHV)	1	0	1
	In-depth interviews	Teacher	1	2
Community health worker (HA, AHW, ANM, FCHV, Pharmacist)		5	5	4

General community- adults	1	1	1
Traditional healer	1	2	1
Community leader (NGO worker, Social worker, VDC/Ward secretary, Youth/Women group leader)	6	5	7
Psychosocial worker (Psychosocial counselor, CPSW)	1	0	1

Assessment instrument

The quantitative survey included eight sections. The survey was translated from English to Nepali and was facilitated in-person by a assessment assessor. The eight measures included in the instrument are summarized in Table 3.

Table 3. Measures included in quantitative survey

Domain	Measure name	Measure description
Demographics	-	Demographics included: sex, age, caste, education, occupation, religion, and number of family members
Depression and anxiety	Hopkins Symptom Checklist-25 (HSCL-25) (Derogatis, Lipman, Rickels, Uhlenhuth, & Covi, 1974)	HSCL-25 includes 15 depression and 10 anxiety items. It was previously validated in Nepal (Thapa & Hauff, 2005). Participants are asked how often in the past two weeks they have had symptoms using a Likert scale ranging from 1 (not at all) to 4 (extremely). A mean score is calculated for the depression and anxiety sub-scales. A cut-off of 1.75 or above is indicative of probably depression or anxiety (Thapa & Hauff, 2005). Additionally, three items (two for depression and one for anxiety) were identified in our free listing exercise and were added to the scales. Cronbach's alpha for the depression scale was 0.92 and 0.87 for anxiety.
Post-traumatic stress disorder (PTSD)	PTSD Checklist-Civilian (PCL-C) (Ruggiero, Ben, Scotti, & Rabalais, 2003)	The PCL-C is a 17-item measure of PTSD that asks respondents how often they have experienced a symptom in the past week. Responses are on a Likert scale ranging from 1 (not at all) to 5 (extremely). The PCL-C has previously been validated in Nepal (Thapa & Hauff, 2005). A total score is calculated and scores of 50 or above are indicative of PTSD. Cronbach alpha for PCL-C was 0.91.
Alcohol use	Alcohol Use Disorders Identification Test-Consumption (AUDIT-C) (Bradley et al., 2003)	The AUDIT-C is a measure of hazardous alcohol use and includes three items that ask about quantity of use, frequency of use, and binge drinking. Each of the three items has response options ranging from 0-4. A total score is calculated by summing responses to the three items. A score of 4 or above for men and 3 or above for women is considered indicative of hazardous alcohol use (Bradley et al., 2003).
Suicide	-	We included six items in the measure that asked about: suicidal ideation (past 12 months

Serious symptoms in humanitarian emergencies	WHO-UNHCR Assessment Schedule of Serious Symptoms in Humanitarian Settings (WASSS) (World Health Organization and United Nations High Commissioner for Refugees, 2012)	and past 4 months); making a plan for suicide in past 4 months; suicide attempt in past 4 months; treatment for suicide attempt in past 4 months; and location of treatment.
Functioning	-	The WASSS includes six symptoms common in populations following emergencies (i.e., fear, anger, anhedonia, hopelessness, avoidance, functional impairment). Response options are on a Likert scale ranging from 0 (none of the time) to -4 (all of the time). Scores of 2 or above on an item are considered 'positive.' The items are analyzed separately (not as a scale). A local functioning scale was previously developed for use in Nepal (Luitel et al 2013). Ten items ask participants how much difficulty they had doing daily tasks in the past two weeks (e.g., household work, taking care of family/children). Response options were on a Likert scale from 0 (not at all) to 3 (always). A mean total functioning score was calculated. Alpha for the functioning scale was 0.80.
Perceived needs	Humanitarian Emergency Settings Perceived Needs Scale (HESPER) (World Health Organization and United Nations High Commissioner for Refugees, 2012)	The HESPER includes 26 potential problems the participant may currently be experiencing. Each item is responded to by "yes" or "no" that the item is a "serious problem." The 26 items are analyzed separately. A mean number of problems is also calculated with possible range of 0-26. The measure was previously adapted for use with emergency-affected populations in Nepal.

Data analysis

To account for the complex assessment design, data were analyzed in Stata, version 13, using the `svy: command` (StataCorp, 2013) and by assigning appropriate weights. We calculated mean average and total scores for the continuous scales (HSCL-25, PCL-C, Functioning). We also calculated the proportion of the sample with scores above the cut-off values for probable depression, anxiety, PTSD, and hazardous alcohol use. We conducted post-estimation tests to assess whether there were differences in depression, anxiety, PTSD, or alcohol use based on the following demographic characteristics: sex, age, and caste. We calculated proportions for the suicide, HESPER, and WASSS items.

For all of the descriptive statistics, we present associated 95% confidence intervals.

Ethical approval

The assessment was given ethical approval by the Nepal Health Research Council. People with suicidal ideation were further assessed by using a tool developed by TPO Nepal, and referred to psychosocial counselors immediately for urgent support.

Assessment Results

Qualitative results

The qualitative results section is structured by needs assessment objective. The focus group discussions and in-depth interviews used a similar question guide and therefore we present the results of both together. Table 3 summarizes the respondent type for the interview and focus group discussions.

Assessment objective 1: Understanding the experience of the earthquake

Our first objective of the needs assessment was to gain a better, more in-depth understanding of how the earthquake was actually experienced by members of the most affected communities. A summary of the themes from this objective, descriptions of the themes, and example quotes are presented in Table 4. Explanations for the earthquakes ranged from human to natural to religious/traditional belief causes.

It will be important to take these beliefs into consideration when planning for mental health, psychosocial, and earthquake awareness programming. Perceptions of what caused the earthquake may influence the ways in which community members respond to or accept various types of services. We will discuss this point in the Recommendations section of the report.

The second theme we explored within this assessment objective was how community members experienced the earthquake itself. Many participants reported their own homes collapsing, being physically injured, and witnessing or experiencing the death of family, friends, and loved ones.

Finally, as part of this first theme we wanted to investigate the amount and type of information available to the communities on earthquake preparedness and awareness. Many participants reported that the majority of community members had little information about what to do to prepare for an earthquake or what actions to take during an earthquake.

Table 4. Themes related to assessment objective 1: Understanding the experience of the emergency

Theme	Description	Examples
Causal mechanisms of the earthquakes	Participants described a variety of beliefs in their community on what caused the earthquakes including: religious beliefs, traditional beliefs (including human causes) and natural causes. Some commented that those who believed in religious or traditional causes were 'uneducated.' Many also stated that they simply did not know what caused it.	"Most people say it's because of sin. This community is very sinful. They don't conduct religious activities anymore, people have started to eat meat, and they don't care about caste so it has happened like this. The population is growing and people are being very sinful." – <i>Female community health volunteer</i>
		"We have talked and understood that a big fish holds the earth and when the fish moves and splashes, earthquake occurs. In that place Katleri, 4 to 5 people were sitting talking. I reached there, one said when the ears of the fish moves and the other said earthquake occurred since the fish was scared." – <i>General community member</i>
		"I believe that the main cause for the earthquake, is that there are too many houses and buildings being built everywhere in land. It has become very crowded. Under the land is the sea, and when

	<p>there are too many buildings and houses on the land, earthquakes occur.”- Health worker</p> <p>“We educated ones have studied about it so to explain it in short: the northern and southern plates are colliding with each other. The southern plate is the Indian plate which collides with the northern plate which is the Chinese plate and because of this earthquake is caused. So the fault-line has ranged from east to west; like from <i>Gorkha</i> to <i>Sindhupalchowk</i> to <i>Dolakha</i>. Thus it has affected all the places that lie in its fault-line.” - Community leader</p> <p>“Educated and uneducated people may have different views regarding it. Educated persons understand the situation and knows about it while the other gives different reasons like it had occurred due to increase in sins, murder, misacts, injustice etc.”Youth group participant</p>
<p>Acute earthquake experience</p> <p>Most commonly, participants reported witnessing their homes or neighbors’ homes collapse, witnessing dead bodies, the death of family, friends and loved ones, and physical injury.</p>	<p>“I was here. I was in my own house. I was staying in the bed. When I was sitting then suddenly there was an earthquake. And after knowing that earthquake was there I tried to run downstairs and went to the staircase then suddenly I fell down and came down and then I hurriedly tried to go out of the house and at that time suddenly my house collapsed. And if I was stuck there for two seconds I think I would not be alive...and after the earthquake was calm then I went out to see the condition was the same in all the houses of the community. When I looked around there was dust and dirt everywhere and as most of the houses were destroyed so the neighbor and the people of the community went around the community to observe the status. And at last everything was destroyed.”- Youth group participant</p> <p>“By the time I reached Gairigaun I came to know about 17-18 human losses. We didn’t know where some people were and could not get the corpses out.”- Social worker</p> <p>“Father got buried. There was haze of dust everywhere and everything was invisible. We heard that hills fell down at the other side. There were smokes of dust and everything was invisible. We heard that father was buried so we ran towards that place, it was really difficult to rescue him and we cried for help. Finally, with difficulty we rescued him alive and he was able to speak. He died on the next day at around quarter past one after we rescued him.”- Community leader</p>
<p>Information availability on earthquake risk</p> <p>Many participants reported that although they now know to stay in ‘open spaces’ during earthquakes, they expressed that members of their community were either uninformed or misinformed (staying under beds or tables) about the risk of earthquakes and earthquake preparedness. A smaller number of participants reported that there were efforts ongoing</p>	<p>“There isn’t any such information provided by any organizations or institutions. But we can’t say that there isn’t any information available as the sources of media like radio, television have been informing about where should we stay, how should we stay after earthquake.”- Teacher</p> <p>“We sometimes get to watch TV or listen to the radio and get information from there. Otherwise, there isn’t much. Those who can afford TV or radio have it. We don’t have facility of newspapers here so those who have TV or radio have access to information, others don’t. – Female community member</p> <p>“There is information like we have to stay at open places, we</p>

from the government and organizations to increase knowledge in the community, although many participants did not know about these efforts or deemed them insufficient.

shouldn't go near houses that has cracks. That information is given in FM/radio. But that is not sufficient because everyone doesn't have a radio in their home. There is an electricity problem as every house isn't accessible to electric lines and this information has not been relayed in every house."- *Psychosocial counselor*

Assessment Objective 2: Assessing mental health and psychosocial problems

Commonly reported mental health and psychosocial problems

Our first step in assessing mental health and psychosocial problems was a free-list activity with 240 community members (80 from each assessment district). The most commonly reported symptoms are summarized in Table 5. There was significant overlap between the commonly reported symptoms and standardized mental health measures previously used in Nepal, HSCL-25, PCL-C, and the WASSS and we therefore included those measures in the quantitative assessment. There were three additional items mentioned by 10% or more of the free-list sample not included in those measures: 1) staring blankly/being single minded (*tolaune wa yekohoro hune*); 2) playing/warring words in heart-mind/rumination (*man ma dherai kurakhelne*); and 3) scared that the earthquake might occur again (*feri arko bhukampa aauchha bhanne dar*). We included items 1 and 2 in the depression scale and item 3 in the anxiety scale of the HSCL-25.

In addition to mental health and psychosocial problems, there were also a number of activities related to difficulty with daily functioning mentioned by our assessment participants. Based on these results we also included in our quantitative measure a functioning assessment questionnaire that was previously developed and used in Nepal (see quantitative results section).

Table 5. Most commonly reported mental health and psychosocial problems from free-list activity (n=240)

MHPSS problem	Nepali term	Kathmandu (n=80)	Gorkha (n=80)	Sindhupalchowk (n=80)	Total (n=240)
		n (district %)			n (total %)
Feeling frightened	<i>Bina karan daraune, tarshine</i>	64 (80.0)	77 (96.3)	58 (72.5)	199 (82.9)
Sleep disturbances	<i>Sutna/nidauna garo hune</i>	40 (50.0)	54 (67.5)	40 (50.0)	134 (55.8)
Worried (without reason)	<i>Bina karan pir/chinta line</i>	33 (41.3)	0 (0.0)	45 (56.3)	78 (32.5)
Loss of appetite	<i>Khana man nalagne</i>	21 (26.3)	30 (37.5)	24 (30.0)	75 (31.3)
Loss of interest in work/lack of enthusiasm	<i>Kehi garna man nalagne</i>	13 (16.3)	40 (50.0)	21 (26.3)	74 (30.9)
Staring at blank space/single minded	<i>Tolaune wa yekohoro hune</i>	21 (26.3)	23 (28.8)	25 (31.3)	69 (28.8)
Scared that earthquake might occur again	<i>Feri arko bhukampa aauchha bhanne dar</i>	37 (46.3)	0 (0.)	14 (17.5)	51 (21.3)
Anxious without any apparent reason	<i>Bina karan aatine/aatinu</i>	16 (20.0)	7 (8.8)	17 (21.3)	40 (16.7)

Dizzy	<i>Rigata lagne wa chakkar lagne</i>	4 (5.0)	7 (8.8)	12 (15.0)	23 (9.6)
Easily angered	<i>Bina karan rishaune wa Jharkane</i>	12 (15.0)	10 (12.5)	0 (0.0)	22 (9.2)
Easily startled	<i>Jhasanga hune</i>	7 (8.8)	0	13 (16.3)	20 (8.3)

Most common perceived mental health and psychosocial problems in communities

We also asked in-depth interview and focus group participants specifically about what they believed were the most common mental health and psychosocial problems in their communities (see Table 6). Participants often expressed that they believed MHPSS problems were common and significant problems in their communities, although a smaller number reported that those types of problems “we do not have here.” Women, children, and older persons were described as the most vulnerable to mental health and psychosocial problems.

Table 6. Themes related to assessment objective 2: Assessing mental health and psychosocial problems

Theme	Description	Examples
Occurrence of MHPSS problems in the community following the earthquakes	Participants reported that mental health and psychosocial problems were commonly occurring in their communities	“There are many psychosocial problems in the community. Actually, these are not only due to this earthquake. But after the earthquake psychosocial problems have increased. People have so many worries. Some of them had hardly built a house by saving all the earnings of their son. Such people are so much worried as they had to lose their houses. They think a lot about their problem. They can’t express their worries to strangers. They are worried about the problems that the earthquake has created. If they worry much then they can have the problem of psychosis later.”- <i>Pharmacist</i>
Fear	Fear, and particularly fear of another earthquake occurring (‘aayo, aayo’) was the most consistently cited MHPSS problem by our participants	“Still now if there is any thunder or sound, it feels like oh god it came again. Following that incident of earthquake we still have not been in our full consciousness what used to be before earthquake. Even I am not what I used to be, we fear as if it will happen again. I still have the fear in me. Will it come today? I have been living in this small cottage. What if even this cottage will be broken down, my family will be in miserable condition, and we will be in deep trouble after that, I feel so every now and then. If it rains heavily at night, if the earthquake comes, then will it take all of us? After that I wake up from my bed, sit on bed, then I feel as if the bed is shaking, I feel again the earthquake has come. It happens to me every now and then. This is still present in me.” – <i>Elderly male</i>
Behavioral problems	Participants commonly cited behavioral problems as occurring frequently following the earthquakes, displays of anger and aggression, walking aimlessly, sitting idle, and working less often or with less effort do to feelings of hopelessness.	“People having daily business activities hesitate to do their work. This Ashar (farming season) there was not as much farming and cultivation as it used to be before. This is because of the mental state of the people due to earthquake. They have mentality like it’s meaningless to work as it is sure that we are going to die.”- <i>Teacher</i>
Alcohol	Although some participants reported that alcohol use was not a problem in their	“As the days went by, people were worried about how to build the houses like before and are still in stress about it. If they used to drink 1 liter of alcohol before, 5 to 6 liters of alcohol (<i>Local</i>

	communities, many believed that problems associated with drinking increased following the earthquakes.	<i>Raksi, Jaad etc</i>) is consumed now after the earthquake. To reduce the mental stress, people have been drinking.”- General community focus group participant
Cognitive	Cognitive symptoms following the earthquakes according to our participants included people being distracted easily, lack of concentration, forgetfulness, confusion	“And they do have some problems like getting lost in thought, pre-occupied mind. - Women’s group leader
Sleep	After the earthquakes, participants reported that sleep problems were highly prevalent, including insomnia and nightmares.	“About mental state, I also see earthquake and houses collapsing in my dreams. I may have seen such dreams because I feel about it in my heart-mind before I sleep. But before the earthquake I had never had such dreams. Before I never used to see such dreams but now, I only have such dreams. Because of such dreams everyone has fear in their heart-mind.”- Female community member
Suicide	Responses on the incidence of suicide were highly varied. Some participants expressed that members of their own communities had attempted suicide and that it was a significant problem while other participants believed that it was not at all a problem in their communities or that it was a problem only in other communities.	“Beside these the cases of suicides are going to rise up now. Houses collapsed in earthquake and due to this, a woman who lived near health post in this Sirubari VDC has already committed a suicide. There isn’t such case in our community. We haven’t found any such cases of suicidal attempts due to depression caused by earthquake.”- Health worker “Some say they want to die because they think that it’s not worth to live after all this has happened and they keep staring blankly so we have to take them together with us to stay.”- Female community health volunteer “No. No. [Suicide is] nowhere here but it is heard such mental problems are seen mostly in Dhading area. It is heard that people losing families, vegetation, or survival of only two people in families are there in Dhading but not in this area.”- Female community health volunteer
Somatic symptoms	Somatically expressed psychological symptoms were also expressed by some participants, including numbness, loss of control of limbs, headaches, weakness, and loss of appetite.	“Some say that they don’t feel energetic and their body trembles continuously.”- Female community health volunteer
Other commonly reported MHPSS	Other commonly reported problems were feelings of sadness, isolation, and anxiety.	“They cry alone because they have a feeling that what would they do if something happened to them. There aren’t any counselors in our health posts. Many people visit here and when they can’t express their feelings, their feelings/thoughts get stuck on their heart-mind. As they can’t express their feeling, they feel sad/isolated “ <i>bairagiipan</i> ”- Health worker
Most affected populations	Women, children, and older persons were often perceived as being particularly affected by MHPSS problems	“Mainly the old people and children are affected. In their age to study, the children are mentally stressed and their school also collapsed. The children at the age to study are suffering a lot.”- Female community member “The women who have delivered a baby has worries on where to

live and what to do. The women who have delivered have fear of children getting pneumonia, cold etc.”- *Adolescent girl*

“Their problems are quite obviously related with the old age. Not being able to walk to and fro properly. They keep wishing for death. Before they would sit and enjoy watching the beautiful scenery of our place, but now, everything is ruined by the earthquake. They pray and question the god, why they had to witness such things.”- *Community leader*

Assessment Objective 3: Exploring use of formal and informal mental health services and sources of coping and psychosocial well-being

We asked participants to describe both informal and formal sources for mental health services and psychosocial well-being in their communities (summarized in Table 7). These included social supports, coping strategies, and services through traditional healers, and formal services through hospitals, and health posts. Participants often described a hierarchy of help seeking for MHPSS problems in which personal coping strategies and social support were typically the first line of care, followed by traditional healers, and only if those options were unsuccessful would a person seek treatment at a hospital or health post.

Formal services for MHPSS problems were described as existing in two forms: *traditional healers* and *counseling at hospitals or health post (in Kathmandu) or through mobile health camps (in Gorkha and Sindhupalchowk)*. Although there was disagreement among our assessment participants about which type of service they would personally use for a mental health or psychosocial problem, there was general consensus that within their communities, the typical pattern was for management to first be sought by a traditional healer and then in a hospital or health post if the traditional treatment was unsuccessful. Participants believed that both options could potentially be helpful depending on the type of problem that required treatment. Services at hospitals and health posts or through mobile camps were believed to be effective in managing mental health and psychosocial problems but participants frequently mentioned that the services were not readily accessible to them (e.g., far distance to a health post, hospital damaged in the earthquake) or that the supply of services was not sufficient for the demand.

Table 7. Themes related to assessment objective 3: Sources of mental health services and psychological well-being

Theme	Description	Examples
Social support systems	Participants expressed that social support systems in their communities were strong and that these informal supports were often the first source of treatment for MHPSS problems.	<p>“We live in a village and we are staying in a community. Beside visiting hospitals personally, one neighbor helps the other when they have such problems.”-<i>Traditional healer</i></p> <p>“We are staying together in a group. We are cooking food together. We have consoled ourselves as everyone has lost their houses.”- <i>Traditional healer</i></p> <p>“To reduce such problems people stay together in a group with their neighbors. People console each other. More frightened people are cared and consoled by everyone not to listen to any rumors. They discuss about restarting their daily works. We have</p>

	<p>to make shelter and manage anyway. People suggest each other not to fear anymore. They make others laugh, play and enjoy in a group.”-<i>Youth club leader</i></p>
<p>Other coping strategies</p> <p>There were varied types of positive coping strategies mentioned by participants including social (talking and socializing with neighbors and community members), staying active, and participating in religious events. Negative coping strategies were also frequently mentioned, including excessive alcohol use, smoking, and gambling. Some reported that there were differences by caste in the type of coping strategy employed.</p>	<p>“People stayed in groups and chatted with each other because staying alone brought such thoughts. They did these things to reduce their problem.”- <i>Community leader</i></p> <p>“I am bound by my occupation and have to struggle to earn a living so with time the problems were forgotten. To get back to normal life, a person needs to be busy with something or the other so that the problems can be forgotten. I left my problems behind and am busy with my work.”- <i>Teacher</i></p> <p>“Here we have a religious organization which organizes to sing religious songs. People say that it is better to go there and refresh our mind instead of sitting alone at home... People prefer to go to religious places instead of staying at home stressed.”- <i>Female community health volunteer</i></p> <p>“Though playing cards and in-taking of alcohol don’t make us forget our pain people are still engaged it. People brew alcohol in their own home and also even brought from Gorkha. Drunkards and the people who have urge to drink, have started drinking more after earthquake. After having 2 pegs they get relief and fall asleep.”- <i>Female community member</i></p> <p>“Well, it depends on the caste and culture. In Tamang community, they use alcohol and they even play cards. But Chetris and Brahmin, they don’t accept alcohol; instead they get involved in the religious activities. They worship here in Bajrayogini and Salinadi (religious places in Kathmandu district) so that it (earthquake) won’t occur again.”- <i>Elderly focus group participant</i></p>
<p>Help seeking, availability and acceptability of traditional healers and formal mental health services</p> <p>If coping strategies were not deemed effective, community members often seek more formal services. Many participants mentioned that this was often first with a traditional healer, although others said that only those who were ‘uneducated’ would go to a traditional healer. If services from the traditional healer were not effective, then community members may seek services in health posts or hospitals. They also expressed that MHPSS services in health posts and hospitals were likely to be helpful but that they were not widely available, accessible, or sufficient for the number of people in need.</p>	<p>“We go to the hospital and we do [treatment] in both of them [hospital and traditional healer]. It is said that they go as per their belief...that also happens. If sometime they have the headache then if it is difficult to go to hospital then also in that condition they go to the traditional healers. And as it gets treated so also people go to traditional healers and if it decrease a bit then also they think that it is treated and if it not treated then only they go to hospital.”- <i>Elderly focus group participant</i></p> <p>“They have the practice of visiting traditional healers when they are ill. Now they have trend of taking both medical treatment and traditional healing treatment together. Those who have lost their mental balance due to earthquake specially go to the traditional healers. There is no chance of missing traditional healing.”- <i>Teacher</i></p> <p>“Yes they are helpful... we have to say that the facilities available here are helpful...after the earthquake, the hospital here like life care hospital, Sushma Koirala hospital, Sankharapur poly clinic they also run the facilities for free. They have given the good care; they have done good in health care.”- <i>Youth group leader</i></p> <p>“When people had health problems people used to go to hospital but now it’s not as organized as before. They go to health posts.</p>

It's not possible to get good treatment like before. We have seen the medicines that are expired.”- *Female community health volunteer*

Assessment Objective 4: Collecting recommendations from key stakeholders and community members on prioritizing services

The purpose of the fourth assessment objective was to elicit recommendations from assessment participants on priority services and programs that were needed in their communities. The responses are summarized in Table 8.

Despite the fact that we asked specifically about services or programs for mental health and psychosocial support, participants frequently cited increased access to *services for basic needs*—food, shelter, and clean water—as the most pressing concern. Many expressed that better services for these fundamental needs and for physical health problems would in turn improve mental health in the community.

Participants also expressed that increased amounts of and access to services for mental health and psychosocial problems was critical.

Table 8. Themes related to assessment objective 4: Recommendations for mental health and psychosocial support services

Theme	Description	Examples
Increased availability of and access to mental health and psychosocial support services	Participants asked for increased availability of and access to mental health and psychosocial services, access would be improved if counselors or other professionals were based in health posts. Health professional participants also recommended ‘mental health camps.	<p>“The main thing is, rather than prescribing medicine to the patients there should be service for counseling and it can be treated by providing counseling. If the case is not treated then only prescribe medicine for them. If we prescribe medicine for every case then there might be some side-effects. So we should opt for counseling first.”- <i>Community leader</i></p> <p>“There could have been a mental recovery center here and in hospital and in health post. The environment should be good and the doctor should be of related field.”- <i>General community member</i></p> <p>“There are very few people who don’t have any psychosocial problems and as such if we want to treat these psychosocial problems and solve them actually, Nepal Government should recruit a counselor in every health posts. And I have seen it essential.”- <i>Health worker</i></p>
Psychoeducation and earthquake education	Many also expressed that basic psychoeducation in the communities would be beneficial. Participants also requested more education on earthquakes and earthquake preparedness, such as ‘awareness camps.’	<p>“We have gone into communities and talked to people and have talked to them. If we go into communities and talk about these issues of mental health then they would understand what it is all about.”- <i>Female community health volunteer</i></p> <p>“If we get information on psychological procedure. ‘What is fear, what to do to reduce it,’ this might help reduce it as well.”- <i>Member of women’s group</i></p> <p>“Speaking precisely, in this area there are facilities of health camps but the main thing we need is an awareness program.”- <i>Youth group participant</i></p>

Increased services to address basic needs	Participants also believed there was an urgent need for services that addressed basic needs such as shelter, clean water, and food. Providing such services may also help to improve psychological problems, according to some participants.	“In the community the utmost need is food, shelter and clothing. If these three things could be available as they were before: shelter to keep away cold, enough food to eat, proper clothing is what people want.” <i>Teacher</i>
Additional service ideas	Participants also recommended services that were integrated within schools, religious institutions, and those that provided trainings for community members and psychosocial workers.	<p>Engaging students in schools by providing necessary materials and incorporating child friendly teaching methods. Nowadays using multimedia in teaching is very effective. I feel that the problems could be solved if students are engaged.”-<i>Teacher</i></p> <p>“The religious program could be saptaha (a kind of prayer or religious activities), pooja (worship), like fasting and such related activities, going to temple. such work to be done in group--like prayer in group. If such activities were done then their fear and terror will be minimize or erased.”-<i>Teacher</i></p> <p>“Mainly the people are unemployed here. This is the major [problem]. If there would be skill training, as also from the agriculture it is only sufficient to live.”-<i>Youth group participant</i></p> <p>“It can be like mental health camp of 7 days or of 10 days. But I don’t think only mental health camp can solve the problem. Health staffs like us should be trained regarding mental health, and then they should be able to define the problem and after defining problem they should be able to level the problem. When they are able to level the problem then only they should be authorized to give medicines.”- <i>Pharmacist</i></p>

Quantitative Results

Participant characteristics

The sample size for the quantitative assessment was 513 participants with 171 each from Kathmandu, Gorkha, and Sindhupalchowk districts. A breakdown of participants by sex, age group, and caste is presented in Table 9.

Table 9. Needs assessment participant characteristics stratified by district

	Overall (n=513)	Kathmandu (n=171)	Gorkha (n=171)	Sindhupalchowk (n=171)
	N (Column %)			
Sex				
Male	213 (41.5)	82 (48.0)	45 (26.3)	86 (50.3)
Female	300 (58.5)	89 (52.0)	126 (73.7)	85 (49.7)
Age				
16-24	76 (14.8)	31 (18.1)	25 (14.6)	20 (11.7)
25-34	112 (21.8)	39 (22.8)	39 (22.8)	34 (19.9)
35-44	104 (20.3)	39 (22.8)	35 (20.5)	30 (17.5)
45-54	98 (19.1)	23 (13.5)	34 (19.9)	41 (24.0)

55-64	68 (13.3)	25 (14.6)	19 (11.1)	24 (14.0)
65 and above	55 (10.7)	14 (8.2)	19 (11.1)	22 (12.9)
Caste				
Brahmin	105 (20.5)	50 (29.2)	27 (15.8)	28 (16.4)
Chhetri	105 (20.5)	47 (27.5)	30 (17.5)	28 (16.4)
Janjati	258 (50.3)	65 (38.0)	90 (52.6)	103 (60.2)
Dalit	45 (8.8)	9 (5.3)	24 (14.0)	12 (7.0)

Depression

In the overall assessment sample inclusive of all three assessment districts (and weighted for actual population size) the reporting of high depression symptoms as measured by HSCL-25 plus the two additional local items was 34.2% (95% CI: 28.4%, 40.4%). There were differences in reporting across districts with the highest estimate in Sindhupalchowk, 62.8% (95% CI: 55.6%, 68.0%), followed by Gorkha, 46.6% (42.1%, 51.1%), and Kathmandu, 24.9% (95% CI: 16.7%, 35.6%). These data are summarized in Table 10.

We also analyzed whether depression symptoms differed by several key participant characteristics. In all three districts, symptoms of depression were statistically significantly greater among females as compared to males. In all three districts, depression symptoms were highest among those 65 and older, although this was only statistically significant in Sindhupalchowk. In Kathmandu (40.2%) and Sindhupalchowk (75.6%), Dalit caste had the highest depression symptoms while Chhetri had the highest in Gorkha district (50.7%). The breakdown by sex, age, and caste is summarized in Table 11.

Table 10. Mental health symptoms and functioning score stratified by district

	Overall (n=513)		Kathmandu (n=171)		Gorkha (n=171)		Sindhupalchowk (n=171)	
	Mean	Probable case %	Mean	Probable case %	Mean	Probable case %	Mean	Probable case %
	(95% CI)	(95% CI)	(95% CI)	(95% CI)	(95% CI)	(95% CI)	(95% CI)	(95% CI)
Depression (HSCL-25)	1.57 (1.51, 1.63)	32.4 (26.7, 38.7)	1.47 (1.38, 1.56)	23.7 (15.4, 34.7)	1.71 (1.64, 1.77)	43.0 (38.1, 48.1)	1.87 (1.78, 1.97)	59.1 (51.6, 66.2)
Depression (HSCL-25 + two local items)	1.58 (1.52, 1.63)	34.2 (28.4, 40.4)	1.47 (1.39, 1.56)	24.9 (16.7, 35.6)	1.72 (1.66, 1.79)	46.6 (42.1, 51.1)	1.89 (1.80, 1.98)	62.0 (55.6, 68.0)
Anxiety (HSCL-25)	1.58 (1.52, 1.64)	30.8 (24.5, 37.9)	1.46 (1.37, 1.56)	22.1 (13.3, 34.4)	1.75 (1.69, 1.81)	44.7 (40.0, 49.5)	1.93 (1.83, 2.02)	56.0 (47.4, 64.3)
Anxiety (HSCL-25 + one local item)	1.63 (1.57, 1.69)	33.8 (27.6, 40.6)	1.50 (1.41, 1.59)	22.9 (14.3, 34.7)	1.82 (1.75, 1.89)	49.7 (45.6, 53.9)	2.02 (1.92, 2.12)	65.9 (58.5, 72.7)
PTSD (PCL-C)	29.9 (28.9, 30.9)	5.2 (3.9, 6.8)	27.61 (26.39, 28.83)	2.5 (1.2, 5.3)	32.51 (31.13, 33.89)	12.2 (9.5, 15.6)	36.94 (35.42, 38.46)	11.3 (7.4, 16.9)
Alcohol (AUDIT-C)	1.46 (1.23, 1.70)	20.4 (17.1, 24.3)	1.27 (0.99, 1.56)	17.8 (13.9, 22.6)	1.40 (0.84, 1.96)	20.6 (13.8, 29.6)	2.20 (1.38, 3.01)	30.1 (19.0, 44.2)
Functioning	2.83 (2.62, 3.04)	-	2.31 (2.08, 2.54)	-	2.14 (1.70, 2.57)	-	5.12 (4.32, 5.91)	-

*Possible scale ranges: Depression (1-4), Anxiety (1-4), PTSD 17-85), Functioning (0-3), Alcohol (0-12)

Table 11. Estimates of depression stratified by district and key characteristics

	Kathmandu (n=171)	Gorkha (n=171)	Sindhupalchowk (n=171)
	% (95% CI)		
Sex			
Male	18.0 (8.7, 33.7) ^a	35.9 (28.5, 44.1) ^a	47.1 (38.1, 56.3) ^a
Female	30.7 (23.6, 33.8) ^a	50.8 (44.7, 56.9) ^a	76.2 (70.3, 81.3) ^a
Age			
16-24	29.4 (17.1, 45.8)	38.4 (24.0, 55.2)	53.0 (39.8, 65.7) ^{b,c}
25-34	20.9 (12.7, 32.4)	42.6 (34.1, 51.5)	65.5 (43.2, 82.6)
35-44	25.9 (15.1, 40.6)	51.4 (36.6, 66.0)	43.3 (27.6, 60.5) ^{d,e}
45-54	27.1 (11.1, 52.5)	47.2 (34.8, 60.0)	56.7 (50.3, 62.8) ^{f,g}
55-64	16.4 (8.0, 30.6)	49.2 (37.6, 60.8)	78.8 (70.8, 85.0) ^{b,d,f}
65 and above	37.2 (21.2, 56.5)	52.7 (40.3, 64.8)	84.9 (71.8, 92.6) ^{c,e,g}
Caste			
Brahmin	25.1 (13.3, 42.3)	30.8 (17.8, 47.8)	60.2 (48.6, 70.8)
Chhetri	18.3 (11.4, 28.1)	50.7 (39.1, 62.2)	50.3 (41.0, 59.6)
Janjati	30.5 (19.6, 44.1)	49.8 (41.3, 58.2)	70.1 (57.1, 80.5)
Dalit	40.2 (14.7, 72.4)	46.3 (34.4, 58.6)	75.6 (52.0, 89.9)

^aDifference in prevalence between males and females significant at $p < .05$
^bDifference in prevalence between 16-24 year olds and 55-64 year olds significant at $p < .003$
^cDifference in prevalence between 16-24 year olds and 65 and above significant at $p < .003$
^dDifference in prevalence between 35-44 year olds and 55-64 year olds significant at $p < .003$
^eDifference in prevalence between 35-44 year olds and 65 and above significant at $p < .003$
^fDifference in prevalence between 45-54 year olds and 55-64 year olds significant at $p < .003$
^gDifference in prevalence between 45-54 year olds and 65 and above significant at $p < .003$

Anxiety

Among the overall assessment sample, the occurrence of anxiety symptoms as measured by HSCL-25 plus the additional local item was 33.8% (95% CI: 27.6%, 40.6%). The occurrence was very similar to that of depression and followed a similar pattern by district as well: the highest estimate was in Sindhupalchowk, 65.9% (95% CI: 58.5%, 72.7%), followed by Gorkha, 49.7% (45.6%, 53.9%), and Kathmandu, 22.9% (95% CI: 14.3%, 34.7%). These data are summarized in Table 10.

We again analyzed whether anxiety symptoms differed by participant characteristics. In all three districts, occurrence of probable anxiety symptoms was statistically significantly greater among females as compared to males (as with depression). Unlike depression, the breakdown by age group for anxiety differed across the three districts. In Kathmandu, 45-54 year olds had the highest occurrence (42.3%), in Gorkha, those 65 and above had the highest occurrence (68.9%), and in Sindhupalchowk, those 55-64 had the highest occurrence (87.5%). Dalit caste had the highest anxiety prevalence in all three districts. The breakdown by sex, age, and caste is summarized in Table 12.

Table 12. Estimates of anxiety stratified by district and key characteristics

	Kathmandu (n=171)	Gorkha (n=171)	Sinhupalchok (n=171)
	% (95% CI)		
Sex			
Male	11.0 (4.8, 23.3) ^a	32.4 (24.9, 41.0) ^a	50.0 (38.9, 61.1) ^a
Female	33.0 (22.9, 44.9) ^a	56.6 (50.5, 62.4) ^a	81.0 (72.9, 87.1) ^a
Age			

16-24	11.0 (4.9, 22.9)	34.4 (18.4, 55.0) ^c	65.7 (48.4, 79.6)
25-34	26.6 (18.7, 36.4)	48.2 (36.6, 60.0)	76.2 (52.6, 90.2)
35-44	21.1 (10.5, 37.8)	58.6 (45.8, 70.3)	51.3 (36.6, 65.7)
45-54	42.3 (17.2, 72.0)	51.1 (38.2, 63.9)	61.7 (47.2, 74.4)
55-64	10.9 (4.1, 26.3)	35.4 (23.8, 43.9)	87.5 (70.5, 95.3)
65 and above	26.8 (10.3, 54.1)	68.9 (50.1, 83.0) ^c	57.1 (28.9, 81.3)
Caste			
Brahmin	13.8 (6.9, 25.5)	57.0 (40.6, 71.9)	66.3 (46.4, 81.7)
Chhetri	16.7 (9.9, 26.8)	50.6 (37.1, 64.0)	60.2 (53.4, 66.6)
Janjati	34.7 (20.0, 53.0)	44.0 (38.2, 50.0) ^d	67.7 (59.7, 74.8)
Dalit	40.3 (14.8, 72.5)	62.3 (54.5, 69.5) ^d	81.8 (61.0, 92.8)

^aDifference between males and females significant at $p < .05$

^bDifference between 25-34 year olds and 35-44 year olds significant at $p < .003$

^cDifference between 16-24 year olds and 65 and above significant at $p < .003$

^dDifference between Dalit and Janjati significant at $p < .008$

Post Traumatic Stress Disorder (PTSD)

The occurrence of PTSD symptoms was much lower than either depression or anxiety at 5.2% in the overall sample. The pattern by district also differed. Although the lowest remained in Kathmandu district, 2.5% (95% CI: 1.2%, 5.3%), the largest was in Gorkha, 12.2% (95% CI: 9.5%, 15.6%) followed by Sindhupalchowk, 11.3% (95% CI: 7.4%, 16.9%). These data are summarized in Table 10.

Similar to both the depression and anxiety symptom estimates, PTSD symptoms were more highly occurring in females than males, although (likely due to the overall low prevalence) this was only statistically significant in Sindhupalchowk. Among age groups, in Sindhupalchowk and Gorkha, the highest PTSD symptom reporting was among those 45-54; in Kathmandu those 25-34 had the highest reporting. None of those comparisons were statistically significant. There were no significant differences by caste. The breakdown by sex, age, and caste is summarized in Table 13.

Table 13. Estimates of PTSD stratified by district and key characteristics

	Kathmandu (n=171)	Gorkha (n=171)	Sindhupalchowk (n=171)
	% (95% CI)		
Sex			
Male	1.0 (0.2, 4.7)	7.1 (2.5, 18.7)	6.4 (2.2, 17.5) ^a
Female	3.8 (1.6, 8.9)	14.3 (10.6, 18.9)	15.9 (11.9, 20.9) ^a
Age			
16-24	2.2 (0.4, 10.2)	7.3 (2.1, 22.4)	12.2 (3.7, 33.8)
25-34	6.9 (2.5, 17.4)	6.4 (2.6, 14.7)	11.8 (4.5, 27.5)
35-44	0.0	12.5 (5.8, 24.8)	4.4 (1.1, 15.3)
45-54	0.0	22.7 (13.3, 36.0)	16.1 (8.6, 27.9)
55-64	3.3 (0.7, 14.3)	10.6 (5.3, 20.0)	9.1 (3.9, 19.7)
65 and above	0.0	11.1 (4.7, 24.3)	14.5 (4.9, 35.8)
Caste			
Brahmin	0.0	12.9 (5.3, 28.0)	12.8 (3.6, 36.2)
Chhetri	1.1 (0.2, 5.4)	10.0 (5.1, 18.7)	10.3 (5.6, 18.1)
Janjati	6.6 (2.9, 14.4)	13.0 (8.9, 18.5)	10.8 (6.7, 17.0)
Dalit	0.0	11.1 (5.8, 20.0)	15.4 (6.8, 31.2)

^aDifference between males and females significant at $p < .05$

Alcohol use

In the overall sample, 36% (95% CI: 31.5%, 40.9%) reported ever drinking alcohol. The occurrence of hazardous alcohol use as measured by the AUDIT-C was 20.4% (95% CI: 17.1, 24.3) in the overall sample. There were differences by district: hazardous alcohol use was highest in Sindhupalchowk at 30.1% (95% CI: 19.0, 44.2), followed by Gorkha at 20.6% (95% CI: 13.8, 29.6), and Kathmandu 17.8% (95% CI: 13.9, 22.6). These data are summarized in Table 10.

Among those who ever used alcohol in the overall sample, 56.6% (95% CI: 50.6%, 62.5%) met criteria for hazardous alcohol use. Stratified by district among those who ever reported drinking: 53.1% (95% CI: 45.2%, 60.8%) drank at hazardous levels in Kathmandu; 57.5% (95% CI: 46.7%, 67.5%) met hazardous drinking criteria in Gorkha; and 65.9% (95% CI: 51.8%, 77.7%) met criteria in Sindhupalchowk.

There were significant differences in hazardous alcohol use by sex: in all three districts, males were statistically significantly more likely to meet symptom criteria than females. In Gorkha, older participants (those 65 and older) were much more likely to drink than younger participants. There were no significant differences by age group in the other two districts. In all three districts those identifying as Brahmin had much lower levels hazardous drinking than other groups. Those identifying as Dalit had the greatest number of participants reporting hazardous use in Kathmandu and Gorkha District; in Sindhupalchowk, Janjati caste had the highest number of participants reporting hazardous alcohol use. The breakdown of alcohol use by sex, age group, and caste is presented in Table 14.

Table 14. Estimates of hazardous alcohol use stratified by district and key characteristics

	Kathmandu (n=171)	Gorkha (n=171)	Sindhupalchowk (n=171)
	% (95% CI)		
Sex			
Male	35.3 (26.7, 45.0) ^a	44.8 (28.7, 62.2) ^a	39.8 (24.9, 56.7) ^a
Female	3.1 (1.0, 9.1) ^a	11.1 (8.0, 15.1) ^a	20.9 (12.4, 33.0) ^a
Age			
16-24	9.9 (2.2, 34.9)	1.9 (0.3, 10.6) ^b	20.0 (10.4, 34.9)
25-34	7.3 (3.0, 16.9)	5.1 (2.2, 11.2) ^c	30.9 (18.3, 47.2)
35-44	27.2 (16.4, 41.6)	11.7 (5.4, 23.4) ^d	32.4 (14.9, 56.8)
45-54	21.1 (13.5, 31.3)	37.4 (20.6, 57.9)	38.9 (24.8, 55.3)
55-64	30.0 (19.1, 43.6)	27.6 (15.8, 43.6)	26.8 (15.9, 41.5)
65 and above	11.8 (2.2, 44.6)	47.1 (32.9, 61.8) ^{b,c,d}	24.1 (12.6, 41.0)
Caste			
Brahmin	13.1 (5.2, 29.6) ^e	0.0 ^{e,f}	2.5 (0.6, 9.8) ^{e,f,g}
Chhetri	9.7 (4.6, 19.4)	18.2 (6.5, 41.4)	10.0 (7.5, 13.4) ^{g,h}
Janjati	29.3 (19.8, 41.0) ^e	25.3 (19.6, 31.9) ^e	58.8 (49.2, 67.8) ^{e,h,i}
Dalit	31.3 (9.7, 66.0)	26.1 (17.3, 37.5) ^f	24.9 (13.6, 41.2) ^{f,i}

^aDifference between males and females significant at $p < .05$

^bDifference between 16-24 year olds and 65 and above significant at $p < .003$

^cDifference between 25-34 year olds and 65 and above significant at $p < .003$

^dDifference between 35-44 year olds and 65 and above significant at $p < .003$

^eDifference between Brahmin and Janjati significant at $p < .008$

^fDifference between Brahmin and Dalit significant at $p < .008$

^gDifference between Brahmin and Chhetri significant at $p < .008$

^hDifference between Chhetri and Janjati significant at $p < .008$

ⁱDifference between Dalit and Janjati significant at $p < .008$

Suicide

We included six items in our quantitative survey on suicidal ideation, plans for suicide, suicide attempts, and treatment. Overall, 15.6% of the sample (95% CI: 10.9%, 15.6%) reported having suicidal thoughts in the past year and 13.5% (95% CI: 8.8%, 13.5%) in the past four months (i.e., post-earthquake; 82.7% of those who had past year ideation had ideation in past four months). For both time references, Sindhupalchowk had the highest reporting of suicidal ideation, followed by Gorkha, and then Kathmandu.

The number of participants who reported making a plan and suicide attempts were both very small at less than 1%. Among those with ideation in the past four months, 8.7% made a plan. Among those who made a plan, 36.2% made an attempt.

The percentage of those making a plan was 4.7% (95% CI: 2.1, 10.1) in Gorkha, notably higher than the other two districts (both <1%). The data from the suicide items are summarized in Table 15.

Table 15. Suicidal ideation, plan, and attempts stratified by district

	Overall (n=513)	Kathmandu (n=171)	Gorkha (n=171)	Sindhupalchowk (n=171)
	% (95% CI)			
Suicidal thoughts (past 12 months)	13.1 (10.9, 15.6)	8.3 (5.8, 11.7)	24.5 (18.4, 31.7)	25.1 (21.5, 29.1)
Suicidal thoughts (past 4 months)	10.9 (8.8, 13.5)	6.5 (4.7, 9.0)	16.4 (12.2, 21.7)	24.2 (20.3, 28.6)
Made a plan (past 4 months)	0.9 (0.4, 2.0)	0.4 (0.1, 2.2)	4.7 (2.1, 10.1)	0.9 (0.2, 3.2)
Suicide attempt (past 4 months)	0.2 (0.1, 0.7)	0.0	0.9 (0.3, 2.6)	0.9 (0.2, 3.2)

Serious symptoms in humanitarian settings

We used the WHO-UNHCR WASSS measure to assess the number of serious mental health and psychosocial symptoms often experienced in populations following emergencies. Each of the six items is summarized in Table 16. We considered the symptom to be “positive” if a person reported experiencing it “some of the time” or more, as recommended by WHO-UNHCR (World Health Organization and United Nations High Commissioner for Refugees, 2012). In the overall sample, the most prevalent symptom was feeling uninterested to the point of not wanting to do anything, reported by 40.1% (95% CI: 36.2%, 44.0%). This was also the most highly prevalent symptom in Kathmandu at 35.3% (95% CI: 30.0%, 41.1%) and Sindhupalchowk, 57.0% (95% CI: 52.1%, 61.7%). In Gorkha, the inability to carry out essential daily activities was most prevalent at 48.8% (95% CI: 42.7%, 55.0%).

Table 16. Serious symptoms in humanitarian settings (UNHCR/WHO WASSS measure) stratified by district

	Overall (n=513)	Kathmandu (n=171)	Gorkha (n=171)	Sindhupalchowk (n=171)
% (95% CI)				
So afraid that nothing could calm	19.9 (16.3, 24.2)	14.9 (9.8, 22.1)	46.9 (40.8, 53.1)	24.7 (17.9, 33.1)
Anger that was out of control	33.7 (29.5, 38.2)	27.1 (21.2, 34.0)	45.9 (41.1, 50.8)	51.7 (42.6, 60.7)
Uninterested/ not wanting to do anything	40.1 (36.2, 44.0)	35.3 (30.0, 41.1)	41.1 (36.0, 46.5)	57.0 (52.1, 61.7)
So hopeless that did not want to carry on living	7.9 (6.2, 9.9)	5.8 (3.7, 8.9)	7.1 (4.1, 11.9)	16.1 (12.8, 20.0)
Avoided activities that reminded of earthquake	22.9 (18.0, 28.6)	17.3 (12.2, 23.9)	40.5 (37.1, 44.1)	34.6 (28.9, 40.9)
Unable to carry out essential daily activities	24.7 (21.3, 28.3)	18.3 (14.0, 23.7)	48.8 (42.7, 55.0)	35.7 (29.1, 42.8)

Functioning and perceived needs

We used a locally developed scale of functional impairment to assess how much difficulty participants reported with daily activities. These data are summarized in Table 10. Generally, functional impairment scores were very low, with an overall mean score of 2.83 (95% CI: 2.63, 3.04), from a possible range of 0-27 (0 indicating no difficulty and 27 indicating extreme difficulty). The means were similar in Kathmandu (2.31; 95% CI: 2.08, 2.54) and Gorkha (2.14; 95% CI: 1.70, 2.57) and higher in Sindhupalchowk (5.12; 95%: 4.32, 5.91). The estimates for each of the nine functioning items are summarized in Table 17.

Table 17. Functioning in the overall sample (n=513)

Item	No at all	Sometimes	Most of the time	Always
In the past two weeks, how difficult was it...				
Row % (95% CI)				
Grooming/ cleaning	69.3 (64.8, 73.6)	19.0 (15.6, 22.8)	10.6 (9.0, 12.5)	1.1 (0.5, 2.2)
Taking meal/tea	84.4 (80.8, 87.5)	0.0 (0.0, 0.1)	9.8 (7.7, 12.4)	5.4 (3.9, 7.5)
Income generating activities	70.1 (64.9, 74.9)	15.7 (11.4, 21.2)	11.3 (9.0, 14.1)	2.8 (1.7, 4.6)
Look after livestock/work in fields	64.1 (56.2, 71.3)	22.7 (18.6, 27.4)	11.9 (8.5, 16.4)	1.3 (0.6, 2.7)
Household/ domestic work	61.4 (56.6, 66.1)	26.7 (22.6, 31.2)	9.9 (7.9, 12.2)	2.0 (1.0, 4.1)
Taking care of family	80.6 (76.9, 83.8)	11.9 (8.8, 16.0)	6.8 (4.2, 11.0)	1.0 (0.0, 1.5)

members/ children				
Helping neighbour or community members	89.9 (86.5, 92.5)	7.0 (5.3, 9.4)	2.7 (1.8, 4.1)	0.0 (0.0, 0.1)
Attending community meetings	89.1 (86.5, 91.2)	6.1 (4.7, 7.8)	3.8 (2.5, 5.8)	1.0 (4.9, 2.1)
Attend cultural/ religious programs	91.5 (89.0, 93.5)	6.8 (4.9, 9.3)	1.1 (5.4, 2.1)	1.0 (0.0, 1.8)

Higher levels of impaired functioning were associated with increased odds of depression symptoms (OR=20.15; 95% CI:10.56, 38.44; $p<.0001$), anxiety (OR: 17.77; 95% CI: 9.56, 33.01; $p<.0001$), PTSD (OR=3.36; 95% CI: 1.84, 6.16, $p<.0001$), hazardous alcohol use (OR: 1.69; 95% CI: 1.17, 2.44; $p=.01$), and suicidal ideation (OR=4.69, 95% CI: 2.71, 8.13, $p<.0001$).

Perceived Needs

We also assessed assessment participants' most pressing needs according to the HESPER scale (summarized in Table 18). In the overall sample, shelter was listed as the most pressing need, reported by 60.4% (95% CI: 50.3%, 70.0%). Shelter was followed by distress (41.9%; 95% CI: 35.6%, 48.5%) and income/livelihood (41.1%); 95% CI: 36.5%, 45.9%). In all three districts these were the three most cited needs. The highest mean number of serious perceived needs was in Sindhupalchowk (9.73; 95% CI: 8.76, 10.71), followed by Gorkha (7.25; 95% CI: 6.32, 8.18), and Kathmandu (3.27; 95% CI: 2.79, 3.76).

Table 18. Humanitarian emergency setting perceived needs (HESPER)

	Overall (n=513)	Kathmandu (n=171)	Gorkha (n=171)	Sindhupalchowk (n=171)
	% (95% CI)			
Water	33.6 (26.4, 41.6)	25.1 (14.6, 39.6)	28.3 (19.6, 39.0)	67.7 (63.8, 71.4)
Food	23.2 (19.4, 27.5)	16.9 (13.3, 21.2)	40.1 (35.0, 45.4)	37.9 (30.6, 45.7)
Shelter	60.4 (50.3, 70.0)	48.4 (38.0, 59.0)	86.3 (82.4, 89.4)	91.5 (83.4, 95.9)
Toilets	31.6 (26.1, 37.5)	22.4 (17.3, 28.6)	49.2 (43.1, 55.4)	56.3 (50.4, 62.0)
Keeping clean	23.9 (20.0, 29.0)	12.8 (9.6, 16.7)	32.2 (24.2, 41.4)	61.3 (53.9, 68.2)
Clothes, bedding	14.7 (12.5, 17.2)	8.3 (5.7, 11.9)	22.8 (14.1, 34.7)	34.3 (30.0, 38.8)
Income/ livelihood	41.1 (36.5, 45.9)	28.1 (24.7, 31.8)	64.1 (60.0, 68.1)	77.3 (72.9, 81.2)
Physical health	10.8 (8.8, 13.2)	7.6 (5.0, 11.3)	27.0 (24.1, 30.1)	14.2 (9.1, 21.6)
Healthcare	6.1 (4.8, 7.8)	4.1 (2.5, 6.6)	13.5 (9.3, 19.0)	9.9 (6.0, 15.9)
Distress	41.9 (35.6, 48.5)	26.8 (21.5, 32.9)	52.9 (47.2, 58.6)	92.2 (87.6, 95.6)
Safety	11.4 (8.1, 15.8)	8.9 (4.7, 16.0)	27.6 (20.0, 36.7)	12.3 (6.7, 21.5)
Education for children	7.5 (5.2, 10.8)	5.6 (3.1, 10.0)	20.1 (14.7, 26.8)	8.2 (5.3, 12.5)
Care for family	12.0 (10.3, 14.1)	5.8 (4.6, 7.2)	17.3 (12.6, 23.2)	33.1 (27.9, 38.8)
Support from others	10.5 (7.8, 13.9)	9.9 (6.8, 14.0)	12.2 (7.1, 20.0)	11.9 (6.1, 22.0)
Separation from family ^a	10.9	7.8	10.4	50.0

Displacement ^a	2.8	2.6	0.1	13.7
Information	15.3 (12.1, 19.2)	13.2 (9.3, 18.5)	14.6 (8.4, 24.4)	23.0 (16.2, 31.6)
Way aid is provided	15.4 (11.6, 20.2)	14.4 (9.3, 21.4)	13.1 (8.1, 20.6)	20.5 (15.4, 26.8)
Respect	12.2 (9.0, 16.6)	7.9 (4.2, 14.7)	18.6 (11.4, 28.7)	25.2 (15.4, 38.4)
Moving between places	22.2 (16.5, 29.1)	12.7 (7.5, 20.7)	39.4 (34.5, 44.4)	48.5 (33.7, 63.5)
Too much free time	22.3 (18.9, 26.1)	17.3 (12.9, 22.9)	10.5 (8.0, 13.7)	59.8 (54.9, 64.6)
Law and justice	15.9 (12.3, 20.3)	9.9 (5.6, 17.0)	30.7 (23.0, 39.7)	33.5 (24.1, 44.3)
Safety for women	9.6 (7.4, 12.4)	3.5 (1.8, 6.7)	21.1 (14.4, 30.0)	26.7 (20.4, 34.0)
Alcohol/drug use in community	21.3 (18.6, 24.2)	11.3 (7.9, 15.7)	30.6 (25.8, 35.8)	54.2 (42.5, 65.4)
Mental illness in community	19.2 (15.8, 23.3)	2.5 (1.2, 5.3)	39.1 (34.3, 44.2)	74.0 (60.0, 84.7)
Care for people who are on their own	8.2 (5.7, 11.6)	2.1 (0.1, 5.2)	14.3 (10.1, 19.8)	28.6 (16.8, 44.2)
Mean number of needs (95% CI)	4.90 (4.46, 5.35)	3.27 (2.79, 3.76)	7.25 (6.32, 8.18)	9.73 (8.76, 10.71)

^aStandard errors not calculated because of stratum with single sampling unit

Conclusions

This report details results from a mental health and psychosocial needs assessment conducted in three of the most affected districts by the April and May 2015 earthquakes: Kathmandu, Gorkha, and Sindhupalchowk. The assessment followed recommendations by the WHO and UNHCR for needs and resource assessments for mental health and psychosocial support in humanitarian settings (World Health Organization and United Nations High Commissioner for Refugees, 2012). We used a mixed methods assessment design and a variety of data collection methods including: 1) free-lists; 2) in-depth interviews and 3) focus group discussions with community leaders, other district level stakeholders and general community members; and 4) a quantitative survey assessing MPSSS problems among community members in our three assessment districts. There were four goals of the needs assessment: 1) gain a better understanding of the earthquake experience among affected populations; 2) measure the number and type of MHPSS problems that are prevalent in the affected communities; 3) assess the availability of MPHSS support services and coping mechanisms commonly used by affected persons; and 4) gain insight from community members on what they perceive as the most pressing services that are needed in their districts. Below, we summarize the findings briefly.

Summary of results

Assessment Objective 1: Understanding the experience of the earthquake

The earthquakes had immediate and profound impact on the affected communities. Participants in our assessment described feelings of confusion, panic, and ultimately devastation following the earthquakes. Many had their own homes severely damaged or destroyed and all spoke of general devastation throughout their communities, including the collapsing of neighbors' homes, schools, and hospital buildings. Many lost family, friends, and loved ones due to the earthquakes. Dead bodies were commonly seen by community members and was mentioned frequently as a traumatic event by our assessment participants.

There were myriad explanations for the cause of the earthquake amongst community members. These explanations included religious causes (e.g., too much sinning in the community), traditional causes (e.g., a fish who holds the world shifting its shoulder), human causes (too many houses being built), and natural causes (e.g., shifting plates). Some of our assessment participants believed that only those who were “uneducated” would believe the religious or traditional explanations. There was consensus from our participants that information and education about the cause of the earthquake was lacking in the community. They said previously they had been told to stay inside during earthquakes and hide under furniture but they now have learned from experience that they should stay outside and in open spaces. Information provided by the government and NGOs may be helpful but it is not reaching people in remote areas who do not have access to televisions or radios.

Assessment Objective 2: Estimating MHPSS problems in the affected communities

The participants in the qualitative assessment expressed that MHPSS problems were commonly occurring in their communities following the earthquakes. Our quantitative survey also suggested high estimates of several mental health problems. The proportion of the sample expressing depression and anxiety symptoms exceeded 30% larger than previous epidemiological surveys in Nepal (28% for depression and 23% for anxiety) (Luitel et al., 2013). It is important to note that the cut-points used for estimates indicate people with elevated levels of distress but may not necessarily meet diagnostic criteria for disorder. The frequent occurrence of symptoms are in line, however, with the in-depth interview, focus group, and free-listing results from the qualitative assessment that indicated feelings of fear (especially that the earthquake would occur again), sadness, and hopelessness were common. Post-traumatic stress disorder symptoms were significantly less in the overall sample at 5%, indicating that symptoms of depression and anxiety are more pressing problems in these communities. Alcohol use was considered a big concern among community members as well and they believed that consumption had increased significantly in people already drinking following the earthquakes as a mechanism for handling stress. Twenty percent of the overall sample met AUDIT-C criteria for hazardous drinking but among those who reported ever using alcohol, this increased to 57%.

Other types of MHPSSS problems were also commonly reported in the qualitative assessment. These included behavioral problems (e.g., increased anger and aggression); cognitive symptoms (e.g., lack of concentration); sleep problems (e.g., sleeping difficulties); somatically expressed

psychological problems (e.g., lack of sensation in limbs). Suicidal ideation was very high at 11% overall. Among those with suicidal ideation, 8.7% had made a plan, and among those who made a plan, 36.3% had attempted suicide. Despite the generally high rates of mental health symptoms, the average mean scores for functional impairment were low, indicating that the ability to conduct daily activities was not significantly impacted.

Our qualitative assessment participants indicated that women, children, and elderly would be most affected by MHPSS problems consistent with previous findings in Nepal, similar to previous studies (e.g., Luitel et al., 2013). Our quantitative data supports this as well: women were much more likely to report anxiety and depression than men and depression symptoms among elderly was the highest among all age groups in each of the three districts. Although there were not substantial differences by caste for depression or PTSD, Dalit and Janjati castes had higher reported symptoms of anxiety and alcohol use compared to other groups.

For many of the mental health problems measured, Sindhupalchowk appeared to have the greatest proportion of participants reporting symptoms, followed by Gorkha, and Kathmandu. This pattern held for depression, anxiety, alcohol use, and suicide. Furthermore, 74% of participants in Sindhupalchowk believed that mental health problems were a significant concern in their community, far greater than 39% in Gorkha and 3% in Kathmandu that believed the same. This suggests that Sindhupalchowk may have the greatest need for MHPSS services.

Assessment Objective 3: Availability of mental health services and sources of support

Informal services were most commonly used to manage MHPSS problems. Sources of social support included the family, neighbors and other community members, and religious organizations and events. Social events with these sources of support were viewed as a key coping mechanism for stress or other MHPSS problems. Other coping strategies included religious practice and keeping busy, for example through work or repairing houses. Negative coping strategies were also prevalent in the community and these were most often reported as alcohol, smoking, and gambling.

Traditional healers were often sought for advice and management of MHPSS problems that could not be resolved by social support or coping strategies. Although some participants believed that only “uneducated” people would go to a traditional healer for services, nearly all participants expressed that traditional methods were frequently used as a first-line management for MHPSS problems (both pre- and post-earthquake). Services at hospitals, health posts, and mobile health camps were utilized in most cases only if traditional methods were found to be ineffective. Generally, participants believed that both types of services were effective and could even be used in tandem. They noted, however, that due to lack of trained personnel and destruction from the earthquakes that hospital and health post MHPSS services were inadequate for the demand and, for those who lived far away, inaccessible.

Assessment Objective 4: Recommendations for prioritizing services

Given that most of our participants believed that MHPSS services at hospitals and health posts had the potential to be effective, their primary recommendation for additional MPHSS services

was to increase the number of counselors who were full time staff at these clinics and to establish permanent mental health centers. They believed that additional training of current psychosocial workers in the communities could be helpful in this regard. They also believed that additional education in the community—both general MHPSS education and specific education on earthquake awareness and preparedness—would reduce the impact of mental health problems and increase the visibility and use of services.

Not surprisingly, the biggest recommendation from assessment participants was for increased access to basic needs. This included shelter, food, and clean water and toilets. These needs were expressed both in the qualitative data as well as in the quantitative HESPER. Not only were services for these needs believed to be important in their own right, but participants also thought that by addressing these immediate and basic concerns, levels of MHPSS problems would naturally reduce.

Limitations

The mixed methods design for this assessment, which included in-depth interviews, focus group discussions, and a multi-stage cluster quantitative survey, was a strength. There were, however, several limitations of the needs assessment that should be noted. First, our sample size to conduct stratified analyses by participant characteristics, such as sex, age group, and caste was limited. Our power calculations were for the full sample size. Therefore, statistical tests and associated p values for the stratified samples should be considered exploratory. Second, although almost all measures in the quantitative survey had previously been used and validated in Nepal, the WASSS measure from the WHO-UNHCR toolkit had not been used previously in Nepal. Third, we had to exclude some wards from our sampling frame because they were inaccessible due to earthquake damage, thus potentially biasing our findings towards a more positive picture. Fourth, the functioning outcome resulted in very low scores with little variability, making it difficult to conduct analyses exploring associations with other variables. Therefore, the associations between functioning and mental health outcomes should be considered exploratory. Fifth, we did not have measures of other types of mental and neurological problems, such as psychotic disorders, epilepsy, and developmental disorders, which are important to measure in humanitarian settings. Finally, we did not have a quantitative measure to assess service recommendations from assessment participants. The qualitative results from our assessment could be used to prepare one for use in future assessments and studies.

Program Recommendations

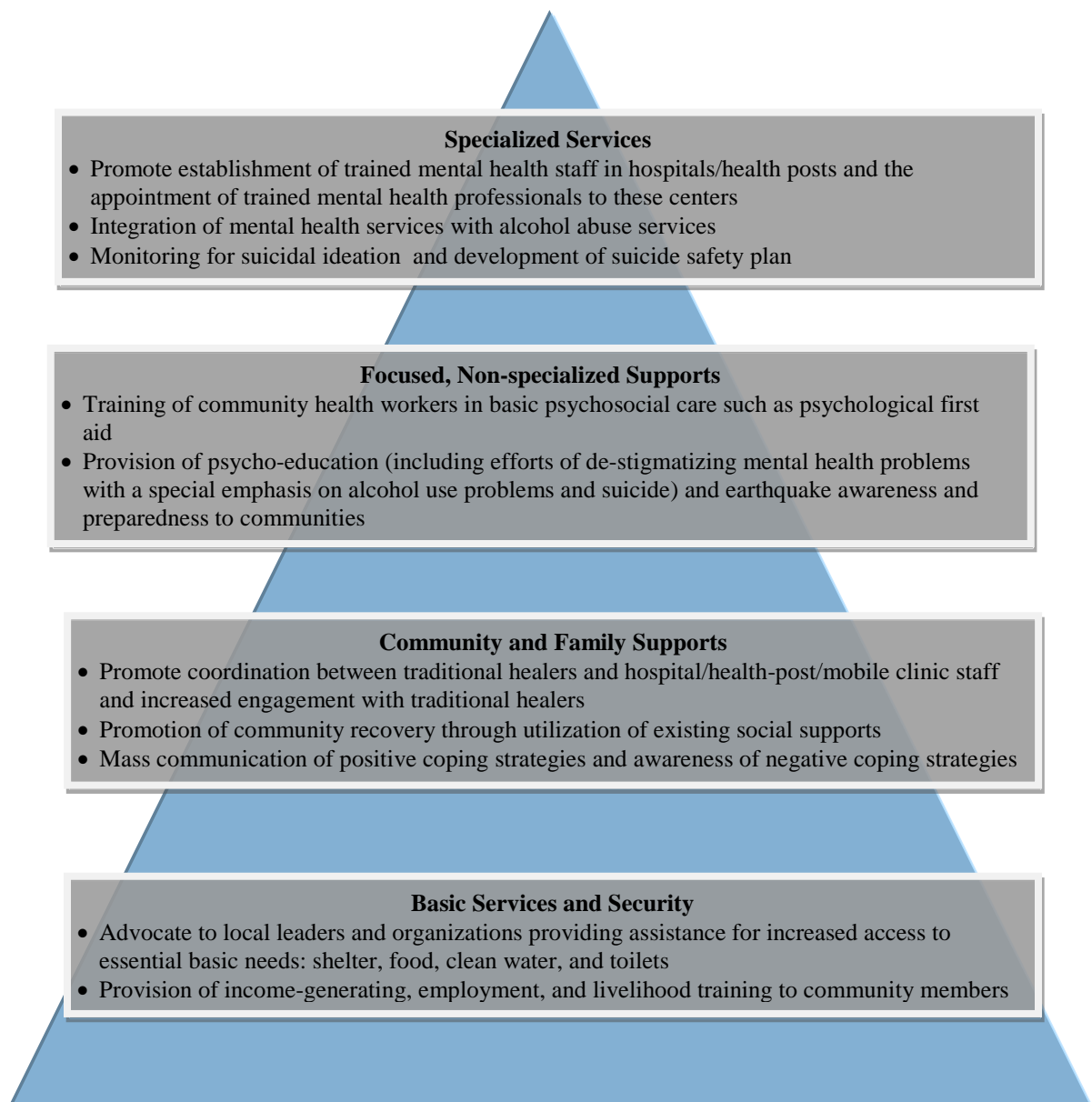
Similar to other humanitarian emergency settings, the populations in Nepal affected by the earthquake have a large number and diverse set of needs that indicates the need for a layered, multisector approach to mental health and psychosocial support services as recommended by international consensus. We therefore present our recommendations based on the findings of this needs assessment using the pyramid intervention structure developed by the Inter-agency Standing Committee (IASCNepalversion) as displayed in Figure 2 (Inter-Agency Standing Committee, 2007). Given the numerous challenges facing the earthquake affected populations and the needs and resources identified in this assessment, the recommendations that follow

should be implemented simultaneously in order to address the many cross-cutting issues in these communities.

In general, we found elevated symptoms of mental health problems but low levels of functional impairment.

Our primary recommendations displayed in the bottom two levels of the pyramid are targeted towards a greater proportion of the population who may be experiencing psychological distress, but not necessarily associated functional impairment (i.e., not mental “disorder”). The goal for these individuals is to promote resilience in order to recover and help prevent the onset of more severe psychological problems. For the smaller number of individuals with both mental health and functioning problems or those at heightened risk for these problems (based on age, gender, caste), we make recommendations displayed in the upper two levels of the pyramid. For these populations, such as those with severe PTSD, alcohol use problems, suicidal ideation, and co-occurring functional impairment, we make suggestions for more targeted MHPSS services.

Figure 2. IASC intervention pyramid structure for program recommendations



Basic Services and Security

Increased access to basic needs

The most commonly cited need among assessment participants in the quantitative assessment was shelter. Similarly, the most frequent recommendation from key informant interviews for service provision was improved access to basic needs including not only shelter, but food, clean water, toilets, and overall improved sanitation. There are on-going efforts to provide access to these basic needs by both governmental and non-governmental organizations. Unfortunately, much of this effort has not reached remote communities that may have been most affected by the earthquakes.

Overall, the report indicates that a large percentage of the population experiences psychological distress, in the form of anxiety and depressive symptoms. Given the many structural challenges that communities in the earthquake affected areas face, providing strong and equitable access to basic needs would be a key way to prevent psychological distress worsening into mental disorders with associated function impairment in the future.

Mental health problems are highly stigmatized in Nepal, which in turn decrease the likelihood that persons with such problems will seek or receive appropriate treatment (Kohrt & Harper, 2008; Kohrt & Hruschka, 2010). Community-based psycho-education of mental health and psychosocial problems would help to reduce such stigma. It would also provide information regarding the causes, symptoms, and treatment options for common mental health problems in the community. Of the problems examined in the assessment, depression, anxiety, and alcohol use problems are prevalent mental health problems. In contrast, the PTSD prevalence was comparatively low. There may be other MHPS problems which were not examined in the assessment but are common among in Nepal among adults and children affected by emergencies, such as anxiety, psychosomatic complaints, and childhood behavioral problems (Kohrt, 2009; Kohrt et al., 2012; Kohrt et al., 2008; Luitel et al., 2013).

Participants in our assessment also believed that psychoeducation alone would be useful in managing less severe symptoms of mental health problems. It is also critical that increased amounts of information and education be provided to communities on earthquake preparedness. Although efforts have been made by both government and non-governmental organizations to increase knowledge, many community members felt that they were severely uninformed about what causes earthquakes, and plans for what to do in the event of future earthquakes.

The provision of increased access to basic services would serve dual roles: 1) improving the physical health and well-being of community members and in turn 2) reducing mental health problems and functional impairment that have been caused or exacerbated by a lack of access to such services. Provision of basic needs could go a long way in helping to prevent ongoing distress which can contribute to higher risk of mental health and psychosocial problems.

Community and Family Supports

Utilization of existing social supports

Our qualitative assessment participants believed that effective management of MHPSS problems for most people was the engagement of their existing social support networks. Previous studies from Nepal (Chase et al., 2013; Kohrt BA et al., 2015; Luitel et al., 2013; Tol et al., 2005) and outside Nepal have also suggested that social support can serve as an important protective factor for people with mental health problems such as depression (Kendler, 2005) and alcohol use (Kane et al., 2014). Common existing social support networks in Nepali communities include women's and youth groups (See Nepal Earthquakes MHPSS Desk Review sections 3.1.6—3.1.9 for a comprehensive list of these existing support programs and prior research on their use). Intervention activity should therefore be focused on promoting the use of these social support sources in the community as a means of coping with common stress reactions and less severe MHPSS problems.

The participants in our assessment discussed a number of positive coping mechanisms that would help with managing stress reactions and MHPSS problems. These positive coping mechanisms included accessing social support networks, community gatherings, cooking and talking with friends, religious services and activities, and keeping busy through work. It is equally important, however, to disseminate the deleterious consequences of negative coping strategies. Alcohol use was cited as a significant problem in our assessment and hazardous drinking was very common among those who use alcohol. Our assessment participants suggested that the excessive drinking was a consequence of coping with mental health problems following the earthquakes. Gambling and smoking were also cited as negative coping strategies. Discussions of more health, positive coping strategies should therefore take place at the community level ((Chase et al., 2013).

The community can also be used to facilitate referral through use of the community informant detection tool (CIDT). The CIDT is an evidence-based approach to help female community health volunteers, teachers, and other stakeholders to refer persons with mental health problems, and it has also been adapted for referring persons with PTSD-related symptoms and suicidality (Jordans et al., 2015a) .

Focused, Non-specialized Supports

Coordination of care and engaging with traditional healers

Our assessment participants indicated that both traditional healers as well as medical/psychological methods were acceptable forms of treatment for MHPSS problems in their communities that could not be addressed by family and community level supports. Often, those with MHPSS problems seek treatment from traditional healers before hospitals or health posts, but sometimes this is done in tandem as well. Given that many Nepali consider both forms of treatment to be acceptable care options, better integration of these two methods is critical and also suggested by global guidelines (IASC, 2007). This may include discussion sessions and

consultation with counselors, psychologists, and psychiatrists who in some cases may be likely to dismiss or reject completely traditional healing methods. As a corollary to this, future studies should formally test the effectiveness of traditional methods in impacting MHPSS problems. In Nepal, prior research has shown rejection of most formal traditional healing ceremonies but strong support for community-based activities through schools, women's groups, and other civic organizations (Kohrt, 2015; Kohrt BA et al., 2015). The use of *bhoomi puja* after the earthquake, however, is an example of traditional ceremony that was supported after the earthquake based on our findings. Understanding the effectiveness of both modalities of care will provide more information on how they might work in tandem to effectively manage common mental health and psychosocial problems.

Engaging directly with traditional healers may have additional benefits, even if the approaches they are using are not considered clinically effective. Direct engagement can lead to improved referrals, greater acceptance of (other) services by clients, and better adaption clinical services to be more culturally appropriate (IASC, 2007). That said, efforts should be made to assure that traditional healing does contribute to potential harmful effects and propagation of harmful beliefs that may be especially damaging to women's MHPS wellbeing (Kohrt, 2015; Kohrt BA et al., 2015).

Training of community mental health workers and non-mental health specialists

Qualitative assessment participants were insistent that additional training of non-mental health specialists and community health workers alike was critical for addressing the many mental health problems in the community. This would involve building upon existing capabilities in the community by improving the capacity of current health workers or psychosocial support providers to manage more severe or a wider variety of mental health problems. These trainings may initially start with emphasis on the most likely problems the providers are likely to encounter. Based on our assessment, this is likely to include depression, anxiety, and alcohol use problems. All training should be evaluated to assure acquisition of clinical competence and appropriate skills (rather than only testing knowledge and attitudes). The Enhancing Assessment of Common Therapeutic Factors (ENACT) scale has been developed for Nepal to achieve this goal and could be used with non-specialists ranging from primary care workers to teachers to traditional healers (Kohrt et al., 2015a; Kohrt et al., 2015b).

Specialized Services

Focus on high-risk populations

Our assessment indicated that several groups display symptoms of mental health problem and may need additional support. These at-risk groups include women (for depression and anxiety), men (for alcohol use problems), older persons (for depression and anxiety), and Dalit and Janjati caste members (for depression, anxiety, and alcohol use problems). This also includes those with both mental health and functional impairment. Treatment programs should therefore be sure to address caste/ethnic barriers to health care and engage with policy makers and community leaders to assure access for these populations; this has previously been done by aligning with local Dalit and Janajati advocacy groups (Kohrt, 2009; Kohrt BA et al., 2015).

Outreach efforts should be cognizant of the increased risk for MHPSS problems amongst these groups but also careful not to increase stigma attached to having an elevated risk for these problems. Clinically, consideration should be made for potentially co-occurring physical health problems especially among older community members and pregnant women. Given the high rates of suicidal ideation that were considerably higher than previous reports in Nepal, careful monitoring of suicidal ideation and the development of safety plans are recommended. Finally, we found much higher rates of mental health problems in Gorkha and Sindhupalcho (Kohrt, 2009) districts compared to Kathmandu, with particularly high estimates in Sindhupalchowk, a district that experienced the greatest impact of the earthquake in terms of physical destruction, injury, and death. These districts are also less likely to have adequate services available than the more heavily populated and more easily accessible Kathmandu district. Therefore, priority should be given on developing and scaling up services in these areas.

Establishment of mental health centers

Assessment participants believed that services offered at hospitals and health posts or mobile clinics were effective in managing MHPSS problems. However, they did not think that enough services were available or accessible to the majority of community members. In other words, the demand of services far outweighed the supply. On a local level, promoting the establishment of permanent mental health services within clinics, hospitals, and health posts would provide a regular source of care for people with MHPSS problems. These centers should be staffed with providers who are trained to manage more complicated MHPSS problems than non-specialist mental health providers or community mental health workers.

Integration of mental health services and alcohol use services

This needs assessment indicates that alcohol use problems are a frequently used negative coping strategy and that levels of hazardous drinking are very high. Furthermore, alcohol use problems commonly co-occur with other mental health problems in humanitarian settings, such as depression and anxiety. Stigma remains a substantial problem with alcohol use as it does for other MHPSS problems in Nepal. Services should be integrated for both mental health and alcohol use problems when possible. Integration of care would provide more streamlined and potentially cost-effective services. In Nepal, the Counseling for Alcohol Problems would be an ideal approach as this has been adapted for Nepal context, it has been piloted in Chitwan, Nepal, and it has an evidence base supported by other studies in South Asia (Jordans et al., 2015b; Patel et al., 2014). Training modules have been developed by TPO Nepal and integrated into government MHPS planning therefore it would be consistent with general government approaches.

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Appendix 1: Tools used in the needs assessment

1. Free listing

Name: _____ Address: _____
Age: _____ Sex: _____
Education: _____ Occupation: _____
Caste: _____ Religion: _____

Question 1: What are the general problems that people from your community/village are facing because of the earthquake that occurred few months before? Please list down all sorts of problems.

Please repeat the questions time and again. Also, probe health problems in the community.

Problems	
1	12
2	13
3	14
4	15
5	16
6	17
7	18
8	19
9	20
10	21
11	22

Question 2: What are the mental health and psychosocial problems (*problems related to hear-mind*) (for e.g. fear, worry, sleeping disturbance, etc) that people from your community/village are having because of the earthquake that occurred few months before? Please list down all sorts of problems.

Problem	
1	11
2	12
3	13
4	14
5	15
6	16
7	17
8	18
9	19
10	20

Question 2a: Among these problem (mentioned above) which is the most important problem and why?

	Problem	Short description (reason)
1 st		
2 nd		
3 rd		

Question 3: What are the general activities you do on a normal day (from morning to evening)?

Activities	
Individual	
Family	
Community	

2. Checklist for Key Informant Interview

Theme	Questions	Probe
Ice-breaking	Could you please tell me something about yourself?	
Experience of Earthquake	<p>Could you please share me about your experience of the recent earthquake? <i>(Before asking this question, please make sure with participant whether they are ready to share about their experiences on earthquake or not)</i></p>	<ul style="list-style-type: none"> • Community experiences • Response to earthquake • Is the situation still the same? If not, what are the changes? • General understanding/belief of the community about the causes of earthquake (natural cause, spiritual forces, human loss) • What is your personal understanding about the causes?
	In your opinion, what are current earthquake risks to the community?	<ul style="list-style-type: none"> • Risks to landslide • Fear of another earthquake • Fear of communicable disease
	Could you please tell me what information are available to minimize the risks of earthquake in your community?	<ul style="list-style-type: none"> • Run to an open space • Staying away from cracked buildings
MHPS Problems	What are the general problems seen in your community after the earthquake?	•
	What are the major health problems in your community that appeared after the earthquake?	<ul style="list-style-type: none"> • Communicable disease • Non-communicable disease
	<p>What are the emerging psychosocial or mental health problems in your community after the earthquake? <i>Please give a hint with some example: heart-mind problems like fear, little interest or</i></p>	<ul style="list-style-type: none"> • Heart-mind problem • Brain-mind problem (in which group: women, children, elderly) • What about suicide?

	pleasure in doing things, sleeping disturbance, not interested to take food etc.	(suicidal thoughts, attempts, incidents)
Available Resources and Coping Strategies	In normal circumstances (before the earthquake), what did community people usually do to reduce the problems such as..... <i>(Read out the MHPS problems mentioned above OR major problems listed from the free list)?</i>	<ul style="list-style-type: none"> • Is it the same these days? • If different, how so? • Have these been affected after the earthquake?
	What are the common coping strategies used by the community to deal with the problems such as..... <i>(Read out the MHPS problems mentioned above OR major problems listed from free list)?</i>	<ul style="list-style-type: none"> • Personal level: Visit religious places, emotional support, drink alcohol, gambling, gathering, dancing etc.
	In your community, what others services/support systems are available that can help the people who have such problems?	<ul style="list-style-type: none"> • Traditional healers, religious leader, herbal treatment system
	Do you think the services that are available are helpful? Why or why not?	<ul style="list-style-type: none"> • What is the common practice of help seeking for such problems at the structural level?
Suggestions and Recommendations	Would you tell me about activities, or things, which are not there in your community but if they were exist they would help people in their <i>(Read out the MHPS problems mentioned above OR major problems listed from free list)</i> problems?	<ul style="list-style-type: none"> • How would these things or activities be helpful?
Wrap up	Is there anything else we didn't talk about yet today but you think would be helpful in helping people who are having problems like <i>(Read out the MHPS problems mentioned above OR major problems listed from free list)?</i>	

3. Checklist for Focus Group Discussion (FGD)

Theme	Questions	Probe
Ice-breaking	Could you please tell us something about your community?	<ul style="list-style-type: none"> • Socio-demographic/economic status, health services, cultural practices, norms and value
Experience of Earthquake	Can you please tell about the community's experience about the recent earthquake? <i>(Before asking this question, please make sure with participant whether they are ready to share about their experiences on earthquake or not)</i>	<ul style="list-style-type: none"> • Situation in the neighborhood and community • Generally, what was the community's reaction to the earthquake? • Is the condition still the same? • If not, how has it changed?
	What is the community's understanding/belief about the cause of the earthquake? How made them think it.....as the cause?	<ul style="list-style-type: none"> • Natural Process • Caused by spiritual force/supernatural power • Human activities <p>What is your personal opinion about the cause of the earthquake?</p>
	In your opinion, what are current earthquake risks to the community?	<ul style="list-style-type: none"> • Risks to landslide • Fear of another earthquake • Fear of communicable disease
	Could you please tell me what information are available to minimize the risks of earthquake in your community?	<ul style="list-style-type: none"> • Run to an open space • Staying away from cracked buildings
MHPS Problems	In general, what are the major problems in your community that appeared after the earthquake?	<ul style="list-style-type: none"> • In your family
	What are the major health problems in your community that appeared after the earthquake?	<ul style="list-style-type: none"> • Communicable disease • Non-communicable disease

	<p>What are the major problems appeared in your community that are related to psychosocial and mental health? <i>Please give a hint with some example: heart-mind problems like fear, little interest or pleasure in doing things, sleeping disturbance, etc.</i></p>	<ul style="list-style-type: none"> • Heart-mind problem • Brain-mind problem (in which group: women, children, elderly) • What about suicide (suicidal thoughts, attempts, incidents)
	<p>How have these problems..... affected the community people in their daily functioning/activities?</p>	
<p>Available Resources and Coping Strategies</p>	<p>In normal circumstances (before the earthquake), what did community people usually do to reduce the problems such as.....(<i>Read out the MHPS problems mentioned above OR major problems listed from the free list</i>)?</p> <p>What are the common coping strategies used by the community to deal with the problems such as.....(<i>Read out the MHPS problems mentioned above OR major problems listed from the free list</i>)?</p> <p>In your community, what others services/support system are available that can help to people who have such problems?</p> <p>Do you think the services that are available are helpful? Why or why not?</p>	<ul style="list-style-type: none"> • Is it the same? • If different, how so? • Have these been affected after the earthquake? • Personal level: Visit religious places, emotional support, gambling, alcohol, gathering, dancing etc. • Traditional healers, religious leader, herbal treatment system • What is the common practice of help seeking for such problems at the structural level?
<p>Suggestions and Recommendations</p>	<p>Would you tell me about activities, or things, which are not there in your community but if they had existed they would help people in their problems <i>such as... ..(Read out the MHPS problems mentioned above OR major problems listed from free list)</i>?</p>	<ul style="list-style-type: none"> • How would these things or activities be helpful?
<p>Wrap up</p>	<p>Is there anything else we didn't talk about yet today but you think would be helpful in helping people who are having problems like</p>	

	<i>.....(Read out the MHPS problems mentioned above OR major problems listed from free list)?</i>	
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4. Survey Questionnaire

Section A: Socio-demographic Information

In this section, we will discuss about your Socio-demographic Information such as educational status, occupation, marital status, caste, religion etc.

1	How old are you? Years	
2	[Interviewee sex]	Male	0
		Female	1
3	What is the highest level of education you have completed?	Illiterate	0
		Literate of Formal Education	1
		Primary level	2
		Secondary level	3
		Higher secondary level	4
		University Level	5
4	What is your occupation?	Agriculture	1
		Job/services	2
		Business	3
		Wage/labor	4
		Unemployment	5
		Student	6
		House-wife	7
		other (<i>please specify</i>)	
5	Which caste you belongs to?	Brahmin	1
		Kshetri	2
		Dalit	3
		Janjati	4
		Other (<i>please specify</i>)	
6	What is your religion?	Hindu	1
		Buddhist	2
		Muslim	3
		Christian	4
		Other (<i>please specify</i>)	
7	What is your marital status?	Unmarried	1
		Married	2
		Widow/widower	3
		Divorced	4
		Separated	5
8	How many members do you have in your family?	

Section B: Humanitarian Emergency Setting Perceived Needs Scale (HESPER)

You must have been aware that many people have been displaced due to the recent earthquake. Many people are having hard time settling down even in their own homes. You must have been having hard time settling down as well. Let’s talk about some of the problems you are facing currently. We have listed out some problems. Please let us know which problems here below are bothering you or those that you consider serious. There is no right or wrong answer to any of these questions.

Rating: 0 = no serious problem 1 = serious problem 7= Does not know 8=not applicable, 9= declines to answer	Ratings
1. Drinking water Do you have a serious problem because you do not have enough water that is safe for drinking or cooking?	
2. Food Do you have a serious problem with food? For example, because you do not have enough food, or good enough food, or because you are not able to cook food.	
3. Place to live in Do you have a serious problem because you do not have a suitable place to live in?	
4. Toilets Do you have a serious problem because you do not have easy and safe access to a clean toilet?	
5. Keeping clean <i>For men:</i> Do you have a serious problem because in your situation it is difficult to keep clean? For example, because you do not have enough soap, water or a suitable place to wash. <i>For women:</i> Do you have a serious problem because in your situation it is difficult to keep clean? For example, because you do not have enough soap, sanitary materials, water or a suitable place to wash.	
6. Clothes, shoes, bedding or blankets Do you have a serious problem because you do not have enough, or good enough, clothes, shoes, bedding or blankets?	
7. Income or livelihood Do you have a serious problem because you do not have enough income, money or resources to live?	
8. Physical health Do you have a serious problem with your physical health? For example, because you have a physical illness, injury or disability.	
9. Health care <i>For men:</i> Do you have a serious problem because you are not able to get adequate health care for yourself? For example, treatment or medicines. <i>For women:</i> Do you have a serious problem because you are not able to get adequate health care for yourself? For example, treatment or medicines, or health	

care during pregnancy or childbirth.	
10. Distress Do you have a serious problem because you feel very distressed? For example, very upset, sad, worried, scared, or angry.	
11. Safety Do you have a serious problem because you or your family are not safe or protected where you live now? For example, because of conflict, violence or crime in your community, city or village.	
12. Education for your children Do you have a serious problem because your children are not in school, or are not getting a good enough education?	
13. Care for family members Do you have a serious problem because in your situation it is difficult to care for family members who live with you? For example, young children in your family, or family members who are elderly, physically or mentally ill, or disabled.	
14. Support from others Do you have a serious problem because you are not getting enough support from people in your community? For example, emotional support or practical help.	
15. Separation from family members Do you have a serious problem because you are separated from family members?	
16. Being displaced from home Do you have a serious problem because you have been displaced from your home country, city or village?	
17. Information <i>For displaced people:</i> Do you have a serious problem because you do not have enough information? For example, because you do not have enough information about the aid that is available; or because you do not have enough information about what is happening in your home country or home town. <i>For non-displaced people:</i> Do you have a serious problem because you do not have enough information? For example, because you do not have enough information about the aid that is available.	
18. The way aid is provided Do you have a serious problem because of inadequate aid? For example, because you do not have fair access to the aid that is available, or because aid agencies are working on their own without involvement from people in your community.	
19. Respect Do you have a serious problem because you do not feel respected or you feel humiliated? For example, because of the situation you are living in, or because of the way people treat you.	
20. Moving between places Do you have a serious problem because you are not able to move between places? For example, going to another village or town.	
21. Too much free time Do you have a serious problem because you have too much free time in the day?	

The last few questions refer to people in your community ⁴ , so please think about members of your community when answering these questions.	
22. Law and justice in your community Is there a serious problem in your community because of an inadequate system for law and justice, or because people do not know enough about their legal rights?	
23. Safety or protection from violence for women in your community Is there a serious problem for women in your community because of physical or sexual violence towards them, either in the community or in their homes?	
24. Alcohol or drug use in your community Is there a serious problem in your community because people drink a lot of alcohol, or use harmful drugs?	
25. Mental illness in your community Is there a serious problem in your community because people have a mental illness?	
26. Care for people in your community who are on their own Is there a serious problem in your community because there is not enough care for people who are on their own? For example, care for unaccompanied children, widows or elderly people, or unaccompanied people who have a physical or mental illness, or disability.	
Other serious problems:	
Do you have any other serious problems that I have not yet asked you about? Write down the person's answers.	
27.	
28.	
29.	
Priority ratings for serious problems:	
Read out the titles of all questions you have rated as '1', as well as any other serious problems listed above. Write down the person's answers (write down the number and title of the questions)	
Out of these problems, which one is the most serious problem?	
Which one is the second most serious problem?	
Which one is the third most serious problem?	

Section C: Functioning Impairment

Now I would like to ask you about activities that men do in their daily life. If you have had any difficulties with an activity in the last two weeks, please tell me *how much* difficulty you had with that activity

		Not at all	Sometimes	Most of the times	Always
1	In the past two weeks, how difficult was it for you for maintaining personal hygiene? (e.g. going to toilet/ taking bath / washing hands and mouth/brushing the teeth/ combing hair/dressing up)?	0	1	2	3
2	In the past two weeks, how difficult was it for you for taking meal/tea/breakfast?	0	1	2	3
3	In the past two weeks, how difficult was it for you to work/or to be involved in income generating activity? (For example: doing business, attending work, daily labor activities)	0	1	2	3
4	In the past two weeks, how difficult was it for you doing farm-related work and looking after cattle? (For example: feeding the cattle, grazing the cattle, collecting fodder, plowing the field, etc)	0	1	2	3
5	<u>For men:</u> In the past two weeks, how difficult was it for you to help in the household/domestic chores? (For example: collecting woods, filling up the water, milking the cow, shopping groceries, help to prepare food, etc) <u>For women:</u> In the past two weeks, how difficult was it for you to help in household/domestic work? (e.g. cooking food, sweeping the house, doing dishes, cleaning the house, to help preparation of food, etc)	0	1	2	3
6	In the past two weeks, how difficult was it for you for you to take care of your children and other family members? (For example: babysitting, looking after the elderly member, taking them to the hospital, sending children to school, etc)	0	1	2	3
7	In the past two weeks, how difficult was it for you to help your neighbors (community)? (For example: setting up a temporary shelter or tarp, clearing off the rubbles, distributing the relief aid, etc)	0	1	2	3
8	In the past two weeks, how difficult was it for you to attend community meetings/gatherings? (For example: discussion, planning, participating in community activities)	0	1	2	3
9	In the past two weeks, how difficult was it for you for attending or assisting in religious activities and festivities? (e.g. doing and attending marriage, <i>Bartabanda</i> (Sacred	0	1	2	3

	Thread ceremony), <i>Nwaran</i> (baptize), doing <i>Puja</i> (Prayer or worship) etc)				
1 0	What are the other activities that you found difficult to do in the past two weeks? (Note: Please write one most important activity and ask them how difficult it was for them in the past two weeks) 	0	1	2	3

Section D: Hopkins Symptoms Checklist (HSCL-25)

Listed below are symptoms or problems that people sometimes have. Please read each one carefully and describe how much the symptoms bothered you or distressed you in the last two week, including today. Place a check in the appropriate column.

PART I: ANXIETY SYMPTOMS		Not at all	A little	Quite a bit	Extremely
		1	2	3	4
1	In the past two weeks, how often did you get startled for no reason?				
2	In the past two weeks, how often were you fearful for no reason?				
3	In the past two weeks, how often did you faint or had a feeling of dizziness or weakness?				
4	In the past two weeks, how often did you feel nervousness or shaky inside?				
5	In the past two weeks, how often did you had a feeling of heart pounding or racing?				
6	In the past two weeks, how often did you feel your limbs or the whole body trembling?				
7	In the past two weeks, how often did you feel tensed or keyed up?				
8	In the past two weeks, how often did you had headache?				
9	In the past two weeks, how often did you feel terried or panic (e.g. being under the spell)?				
10	In the past two weeks, how often did you feel restless that you couldn't sit still?				
PART II: DEPRESSION SYMPTOMS					
11	In the past two weeks, how often did you feel low in energy or weak?				

12	In the past two weeks, how often did you blame for everything that went wrong?				
13	In the past two weeks, how often did you cry even in trivial matters?				
14	In the past two weeks, how often did you lose interest or pleasure in sexual contact?				
15	In the past two weeks, how often did you have a poor appetite?				
16	In the past two weeks, how often did you have difficulty falling asleep, or staying asleep?				
17	In the past two weeks, how often did you have thoughts of hopelessness (or incapable of doing anything)?				
18	In the past two weeks, how often did you feel sad or blue?				
19	In the past two weeks, how often did you feel lonely (e.g. there's nobody for me or on my side)?				
20	In the past two weeks, how often did you have suicidal thoughts or thoughts of self-harm?				
21	In the past two weeks, how often did you feel trapped that you couldn't get out of it?				
22	In the past two weeks, how often were you worried about little things?				
23	In the past two weeks, how often did you lose interest that you didn't like to work at all?				
24	In the past two weeks, how often did you feel that you had to put greater effort in getting every little things done?				
25	In the past two weeks, how often had you had thoughts of worthlessness?				
Questions from freelisting					
26	In the past two weeks, how often did you feel being single-minded?				
27	In the past two weeks, how often were you scared that the earthquake might occur again?				
28	In the past two weeks, how often did you ruminate?				

Section E: WASSS (WHO-UNHCR Assessment Schedule of Serious Symptoms in Humanitarian Settings)

The next questions are about how you have been feeling during the last two weeks.

1	About how often during the last two weeks did you feel so afraid that nothing could calm you down?	None of the time	0
		A little of the time	1
		Some of the time	2
		Most of the time	3
		All of the time	4
		Refused	5
		Don't know	6
2	About how often during the last two weeks did you feel so angry that you felt out of control?	None of the time	0
		A little of the time	1
		Some of the time	2
		Most of the time	3
		All of the time	4
		Refused	5
		Don't know	6
3	During the last two weeks, about how often did you feel so uninterested in things (works/or going out) that you used to like, that you did not want to do anything at all?	None of the time	0
		A little of the time	1
		Some of the time	2
		Most of the time	3
		All of the time	4
		Refused	5
		Don't know	6
4	During the last two weeks, about how often did you feel so hopeless that you did not want to carry on living?	None of the time	0
		A little of the time	1
		Some of the time	2
		Most of the time	3
		All of the time	4
		Refused	5
		Don't know	6
5	During the last two weeks, about how often did you feel so severely upset or down about the earthquake event in your life that you tried to avoid places, people, conversations or activities that reminded you of such event?	None of the time	0
		A little of the time	1
		Some of the time	2
		Most of the time	3
		All of the time	4
		Refused	5
		Don't know	6
6	During the last two weeks, about how often were you unable to carry out essential activities for daily living because of..... these feelings?	None of the time	0
		A little of the time	1
		Some of the time	2
		Most of the time	3
		All of the time	4
		Refused	5

		Don't know	6
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Section F: Post Traumatic Stress Disorder (PTSD)

Please read to the respondent: Below is a list of problems and complaints that people sometimes have in response to stressful life experiences. Can you tell what was the worst or the most upsetting events that you experienced and you never forget it? Take your time to think about it, if that is necessary. Please listen the following problems carefully and indicate how much you have been bothered you in the past week.

What was the most unforgettable incident in your life?

.....

When did it happen?

.....

Now, I am going to ask you how much you have been bothered by the problem you have just explained in past two weeks. I am going to read the questions and the probable answers, please select the suitable answer.

1	In the last one week how much difficulty/discomfort have you been facing because of reoccurring memories, nightmares of a stressful experience from the past?	Not at all	1
		A little	2
		Moderately	3
		Quite a little	4
		Extremely	5
2	In the last one week how much difficulty/discomfort did you have in having repeated, disturbing dreams of a stressful experience from the past?	Not at all	1
		A little	2
		Moderately	3
		Quite a little	4
		Extremely	5
3	In the last one week how worried were you, regarding the repetition of a stressful incident?	Not at all	1
		A little	2
		Moderately	3
		Quite a little	4
		Extremely	5
4	In the last one week how much worried were you, due to the memories of the stressful past incident?	Not at all	1
		A little	2
		Moderately	3
		Quite a little	4
		Extremely	5
5	In the last one week how much difficulty/discomfort did you have in having <i>physical reactions</i> (e.g. heart pounding, trouble breathing, sweating) when <i>something reminded you</i> of a stressful experience from the past?	Not at all	1
		A little	2
		Moderately	3
		Quite a little	4
		Extremely	5
6	In the last one week how much difficulty/discomfort did	Not at all	1

	you have in avoiding <i>thinking about or talking</i> about a stressful experience from the past or avoiding <i>having feelings</i> related to it?	A little	2
		Moderately	3
		Quite a little	4
		Extremely	5
7	In the last one week how much difficulty/discomfort did you have in avoiding <i>activities or situations</i> because <i>they reminded</i> you of a stressful experience from the past?	Not at all	1
		A little	2
		Moderately	3
		Quite a little	4
		Extremely	5
8	In the last one week how much difficulty/discomfort did you have in remembering <i>important</i> parts of a stressful experience from the past? (For e.g.: noise when bomb blasted, if you have seen anyone died, now so many died, handicapped, some had some type of injuries, how much trouble does it give when you remember now?)	Not at all	1
		A little	2
		Moderately	3
		Quite a little	4
		Extremely	5
9	In the last one week how much difficulty/discomfort did you have in activities which you used to like/enjoy? (Like: roaming around, singing, dancing, looking after cattle, washing clothes)	Not at all	1
		A little	2
		Moderately	3
		Quite a little	4
		Extremely	5
10	In the last one week how much difficulty/discomfort did you have in feeling lonely, <i>distant</i> or <i>cut off</i> from other people?	Not at all	1
		A little	2
		Moderately	3
		Quite a little	4
		Extremely	5
11	In the last one week how much have you distanced from those who used to be close?	Not at all	1
		A little	2
		Moderately	3
		Quite a little	4
		Extremely	5
12	In the last one week how much difficulty/discomfort did you have in feeling as if your <i>future</i> somehow will be dark?	Not at all	1
		A little	2
		Moderately	3
		Quite a little	4
		Extremely	5
13	In the last one week how much difficulty/discomfort did you have while sleeping?	Not at all	1
		A little	2
		Moderately	3
		Quite a little	4
		Extremely	5
14	In the last one week how much difficulty/discomfort did you have in feeling irritated or sudden anger?	Not at all	1
		A little	2
		Moderately	3
		Quite a little	4

3	How often do you have 2.5 or more maana local alcohol (jaad), 3 or more glasses alcohol and 2 or more bottles of beer and one quarter or more vodka rum?	Never	0
		Less than monthly	1
		Monthly	2
		Weekly	3
		Daily or almost daily	4

Section H: Suicidal ideation and action

We can see many people in our community at different times because of different reasons try to hurt themselves, attempt suicide while some succeed by committing suicide. In this section, we are going to discuss about the same issue. If you ever had such thoughts, please share with us.

1	Have you thought of taking your life in the past 12 months?	No	0	
		Yes	1	
2	Have you ever had a thought of taking your life in the past 4 months (after earthquake)?	No	0	
		Yes	1	
3	Have you made any plans to take your own life after the earthquake?	No	0	
		Yes	1	
4	Have you attempted to take your own life (suicide) after the earthquake?	No	0	
		Yes	1	
5	Did you receive any treatment or external help for thinking about or attempting to take your own life?	No	0	
		Yes	1	
		Don't know	888	
6	What treatment did you receive?			