

# Perceived needs, self-reported health and disability among displaced persons during an armed conflict in Nepal

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## Abstract

**Background** Most internally displaced persons (IDPs) live in low-income countries and have experienced war. Few studies have assessed their psychosocial needs and disability. We carried out a comprehensive assessment of perceived needs, self-reported health, and disability among IDPs in Nepal and examined factors associated with disability.

**Method** A cross-sectional survey among 290 IDPs in Nepal was conducted between June and July 2003. We used the World Health Organization's Disability Assessment Schedule-II (WHO-DAS II) with additional local items to assess disability symptoms and a separate checklist to identify their perceived needs. Depression and anxiety symptoms were measured using the Hopkins Symptom Check List (HSCL-25), while the Posttraumatic Stress Disorder Checklist Civilian Version (PCL-C) was used to assess Posttraumatic Stress Disorder (PTSD) symptoms.

**Results** Different perceived needs such as financial help (70%), housing (40%), food and education for their children (20%) were expressed by the IDPs. Self-reported health status was strongly associated with distress and disability scores. Factors independently associated with disability were higher age, self-reported health, depression, anxiety but not PTSD. There was good correlation between WHO-DAS II and the locally identified items of disability measurement.

**Conclusions** The reporting of findings only about psychiatric symptoms is insufficient in studying the mental health of displaced and potentially traumatized populations living in low-income countries. Assessments of perceived needs and factors associated with disability give a more comprehensive understanding of the underlying needs among crisis populations, and this can inform intervention programs. Depression and anxiety should be treated effectively to avoid disability.

**Keywords** Psychological distress · Internally displaced persons · Disability · Perceived needs

## Introduction

There are currently 25 million internally displaced persons (IDP) worldwide [7], most of whom live in low-income countries. Many studies of mental health in conflict and post-conflict situations have reported high rates of psychopathology among IDP populations [1–4, 10, 16, 21–23]. A substantial proportion of the populations exposed to mass violence and conflict develop a variety of mental disorders. In particular, women, children, widows, orphans, the elderly and disabled, those exposed to severe pain and loss of body parts are vulnerable groups, and the challenge is to identify and reach those who are mentally ill [13]. The assessment of mental health problems and perceived needs in a population affected by conflict is challenging [6] and there is a lack of such studies in conflict situations. There are, however, a few relevant, studies carried out in non-conflict situations in the aftermath of the 2005 Tsunami to assess mental health needs [9, 15]. Merely reporting psychiatric symptomatology is insufficient to identify the needs relevant for possible interventions in conflict

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situations [6]. Few studies have simultaneously assessed functional disability (here onwards, disability) and mental health parameters and estimated the correlations between them [12, 19, 20]. A study among 201 help-seeking torture survivors in conflict-affected areas in Nepal found high rates of psychopathology, and posttraumatic stress disorder (PTSD) and anxiety symptoms but not depressive symptoms were found to have central roles for disability [20]. We have previously reported similar disability rates between tortured and non-tortured Bhutanese refugees [19]. However, there were differences in factors associated with disability between the two groups, and the disability rates were much lower than the rates of psychiatric disorders. There is a paucity of studies among displaced populations living in conflicts that report their perceived needs, that is, needs as experienced from the local populations' perspective.

An armed conflict between the Government of Nepal and the Communist Party of Nepal (Maoist) began in 1996 and resulted in a death toll of more than 13,000 people and forced hundreds of thousands of people to flee from their homes [5, 17]. These IDPs abandoned their homes out of fear either of the Maoist rebels or of the State forces, or of both. We reported in our previous paper that the prevalence of anxiety, depression, and PTSD symptoms were 80.7, 80.3, and 53.4%, respectively [18]. Factors independently associated with anxiety symptomatology were illiteracy and feeling miserable on arrival at a new place. Female gender, being between the ages 41 and 50 years, and feeling miserable on arrival at a new place were associated with depressive symptomatology. Also, experiencing more than three traumatic events and feeling miserable on arrival at a new place were associated with PTSD symptomatology, whereas evacuation after a week-long preparation and lower caste were found to be protective factors [18]. The high rates of symptomatology we have earlier reported raise several questions, such as whom of these large numbers of distressed IDPs need active intervention and what are their perceived needs? Given that mental illnesses are a known cause of disability, it is appropriate to correlate mental health problems with disability in an IDP population. In this paper, we aim to answer the following research questions: first, what are the perceived needs, self-reported health, and disability among IDPs in Nepal, and secondly, which factors are associated with disability?

## Methods

### Subjects

A cross-sectional household survey was carried out in seven district headquarters in Nepal between June and July

2003 when there was a temporary ceasefire. The districts were selected as a convenience sample based upon the knowledge that IDPs were coming into the Kathmandu district and the focal areas of conflict were the Baki, Bardiya, Surkhet, Dang, Kailali, and Rukum districts. A household was defined as a unit of family members who had fled their home and were living together. The final list consisted of 432 households, and we approached any person who was available and willing to participate from each household. Contact was established with 304 IDPs, of which nine refused to participate. Five of the interviews were discarded, either because the IDP was younger than 18 or he or she was not an actual IDP. Those with whom no contact could be made had either moved away or were occupied planting rice. There were no homeless IDPs. The final dataset consisted of 290 IDPs, that is, 95.4% of those who were initially contacted. More than 95% of the subjects experienced some kind of trauma, thus the sample was a highly traumatized population [18].

### Instruments

The interview questionnaire consisted of The Hopkins Symptom Checklist-25 (HSCL-25) to measure symptoms of depression and anxiety [8], and the PTSD Checklist-Civilian Version (PCL-C) to measure PTSD symptomatology [25]. We deleted an item from the HSCL-25 concerning sexual interest, because of the taboo associated with talking about sexual issues in this context. The HSCL-25 and PCL-C scores were dichotomized using the conventional cut-off scores validated against CIDI diagnoses, i.e., at the mean score of 1.75 for the HSCL-25, and at the cumulative score of 50 for the PCL-C, in order to determine increased anxiety, depression, and PTSD symptoms levels [18].

The World Health Organization's Disability Assessment Schedule II (WHO-DAS II) was selected to measure functional disability which assesses functioning for six domains: communication, mobility, self-care, interpersonal relationship, activities, and participation. Its strengths are its cross-cultural applicability and its psychometric strengths assessed through classical test construction and item response theory, and it has previously been used in Nepal among torture survivors [20]. The WHO-DAS II assesses disability in daily life through 12 items scored on a 5-point Likert Scale (1–5) in the last 30 days. The general disability score was generated by adding the scores of the 12-items that concern disability in various life domains, after recoding these scores according to the World Health Organization (WHO) instructions for the instrument.

We collected qualitative data from 24 IDPs by means of four separate focus group discussions (two with lay persons,

two with key informants such as teachers and politicians) and five semi-structured interviews to explore their concepts of health, common mental health problems, and daily activities performed by men and women. Those items which focus groups agreed upon as important missing items in the WHO DAS II were added to the questionnaire. For men, performing income-generating activities, attending meetings and rallies were the three additional items. For women, doing household work, washing clothes, taking care of children, and interacting with the neighborhood and surroundings were the four additional items. We used the same Likert scale (1–5) that was used for the WHO-DAS II to rate these additional items. Perceived needs and use of services were open-ended questions.

### Procedures

Five interviewers familiar with the local socio-cultural context, two of whom were clinical psychologists and the other three were undergraduate university students, conducted the data collection under close supervision by the investigator. They received a three-day's training on transcultural research and interviewing skills from the principal investigator. The outcome instruments were lexically translated into Nepali, tested in focus groups among lay persons, evaluated by a mental health professional, blindly back-translated, and pre-tested among 17 IDPs [24]. Subsequently, a cross-sectional survey was carried out among 290 IDPs through face-to-face interviews in a confidential environment. Because many of our respondents were illiterate, we asked for verbal informed consent after briefly explaining our research methods and aims. Ethical committees in Norway and Nepal approved the research protocol.

### Statistical analysis

Chi-square tests and Pearson correlation coefficients were computed to identify associations between dichotomous and continuous variables, respectively. We used one-way analysis of variance (ANOVA) to compare mean scores among more than two groups. Hierarchical linear regression analyses with the mean disability score as the dependent variable were run by entering first those sociodemographic variables with a *P* value less than 0.03 in bivariate analyses, and then adding trauma-related variables and finally distress variables and self-reported health as explanatory variables. Several multivariate analyses were also run to identify associations between felt needs and the different psychiatric symptomatology. We are reporting two-tailed test values, and the level of significance for all the analyses was set at 0.05. Data were analyzed using SPSS for Windows, version 16.0.

## Results

### Sociodemographic characteristics

There were 177 (61.0%) male and 113 (39.0%) female subjects in the study sample. The age of the study subjects ranged between 18 and 79 years, with a mean age of 40.9 (SD 14.2). Eighty percent of the subjects were married and mean family size was 5.3 (SD = 3.3; range = 1–17), while mean number of children in a family was 3.9 (SD = 2.1). Twenty-nine percent of the children were not living with the displaced respondents and a similar number of children over 6 did not go to school. The mean duration of displacement was 28.6 months (SD = 21.5) and almost two-thirds of the subjects belonged to a high caste (Brahmins and Chettris). Almost half of the sample (44.8%) had high school education or above, while one-fourth (26.2%) was illiterate. Almost 80% of respondents were Hindus, while the remainders were Buddhists or Christians. Fifty-eight percent of them were living in rented rooms while almost ten percent were living with their relatives. Twenty-two percent lived in their own property.

### Self-reported health

Table 1 shows the association between self-rated health in the past month and psychiatric symptoms including disability. We see a clear linear association between self-reported health status, and distress symptoms and disability. Furthermore, those subjects who reported their general health in the past month as “very well” had significantly lower disability and distress scores.

### Disability and distress symptoms

The mean of the WHO-DAS II crude scores was 4.7 (SD 2.3, range 1.0–4.7). The intraclass correlation coefficient among the 12 items in the WHO-DAS was 0.89 (95% CI 0.87–0.91). The Pearson correlation coefficient between WHO-DAS items and the local items for male and female respondents were 0.42 and 0.47, respectively. After converting the raw scores into new scores as recommended by the WHO, the mean score of the 12 items became 44.7 (SD 27.9, range 0–125). Similarly, the mean anxiety score was 2.3 (SD 0.6) and the internal consistency measured by Cronbach  $\alpha$  was 0.89 for the HSCL-25 anxiety subscale. The mean depression score was 2.5 (SD 0.7) and the internal consistency measured by Cronbach  $\alpha$  was 0.89 for the HSCL-25 depression subscale. The mean cumulative PTSD score on the PCL-C was 50.4 (SD 14.5) and the internal consistency measured by Cronbach  $\alpha$  was 0.90. The Pearson correlation coefficient between disability score and depression was 0.69, for disability and anxiety it

**Table 1** Mean-scores and association between self-rated health, and disability & distress symptomatology among IDPs ( $n = 290$ )

Self-reported health ( $n$ )	Disability mean-score (1–125)	Anxiety mean-score (1–4)	Depression mean-score (1–4)	PTSD mean-score (1–4)
Very good (10)	7.2	1.5	1.4	2.0
Good (52)	34.9	2.2	2.2	2.8
Moderate (128)	39.7	2.4	2.2	2.9
Bad (83)	55.2	2.6	2.6	3.1
Very bad (17)	82.4	3.3	2.8	3.8
	$P < 0.001$	$P < 0.001$	$P < 0.001$	$P < 0.001$
	$F = 23.2$	$F = 14.9$	$F = 14.9$	$F = 8.9$

One way analysis of variance (ANOVA) was used where degree of freedom was 4

**Table 2** Association between selected factors and disability among IDPs from linear regression analyses ( $n = 290$ )

Variables	Model 1	Model 2	Model 3		
	$\beta_1$	$\beta_2$	$\beta_3$	$t$	$P$ value
Gender (male vs. female)	0.18	0.18	0.05	1.04	0.3
Age in years	0.09	0.11	0.11	2.28	<b>0.02</b>
Marital status (married vs. others)	0.05	0.07	0.06	1.28	0.20
Education (three categories)	0.20	0.21	0.07	1.49	0.14
Number of traumatic events		0.22	0.02	0.36	0.72
Duration of displacement in months		-0.12	-0.03	-0.79	0.43
Mean anxiety score			0.17	2.45	<b>0.015</b>
Mean depression score			0.35	4.62	<b>&lt;0.001</b>
Mean PTSD score			0.10	1.43	0.153
Overall health			0.22	4.99	<b>&lt;0.001</b>

The degree of freedom for model 3 was 10 with explained variance of 74.8%

was 0.63 and for disability and PTSD it was 0.56 ( $P < 0.001$  for all values). Comorbidity rates between anxiety and PTSD, anxiety and depression, and PTSD and depression were 48.6, 74.5, and 51.0%, respectively. Also, 79% of the subjects reported that either they themselves or their families were threatened with kidnapping or killing, whereas 64% had witnessed someone being badly injured or killed. We refer to our previous publication for more details about traumatic events and instruments [18].

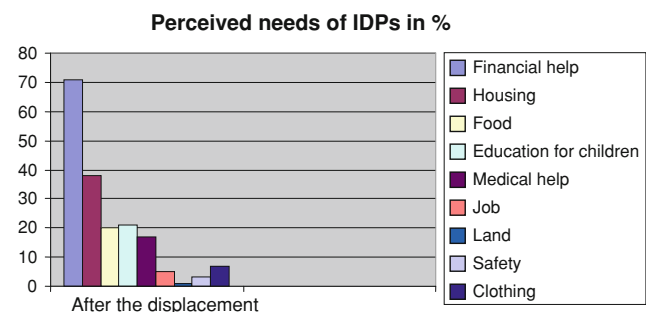
#### Factors associated with disability

Greater age, self-reported health, depression, and anxiety were independent factors associated with disability after controlling for all other variables (Table 2). The regression model explained 74.8% of the variance in which 11.4% was explained by the background variables, less than 6% by the trauma related variables (duration of displacement and number of traumatic events) and the remainder by the distress symptoms (depression, anxiety, and PTSD) and self-reported health. However, PTSD appeared as a significantly associated variable with disability after removing

depression and anxiety from this model ( $\beta = 0.5$ ,  $t = 9.8$ ,  $P < 0.001$ ). It remained significant when depression was re-entered into the model but became insignificant when anxiety was also re-entered with depression into the same model.

#### Perceived needs

As shown in Fig. 1, financial needs, housing, food, and education for their children were the most commonly

**Fig. 1** Perceived needs of IDPs ( $n = 290$ )

**Table 3** Association between perceived needs and symptom scores among IDPs from linear regression analyses ( $n = 290$ )

Perceived needs	Anxiety		Depression		PTSD		Disability	
	$\beta$	<i>P</i>	$\beta$	<i>P</i>	$\beta$	<i>P</i>	$\beta$	<i>P</i>
Financial	0.15	<b>0.01</b>	0.06	0.33	0.13	<b>0.04</b>	0.02	0.8
Food	-0.17	<b>0.02</b>	-0.14	0.05	-0.18	<b>0.01</b>	-0.16	<b>0.02</b>
Housing	0.01	0.89	0.01	0.84	0.02	0.72	0.13	<b>0.04</b>
Medical	0.12	<b>0.03</b>	0.12	<b>0.04</b>	0.12	<b>0.04</b>	0.13	<b>0.02</b>
Clothing	-0.06	0.36	-0.05	0.42	-0.07	0.25	-0.07	0.28
Safety	0.02	0.75	-0.01	0.83	-0.04	0.51	-0.6	0.32
Education for children	0.03	<b>0.01</b>	0.15	<b>0.01</b>	0.13	<b>0.02</b>	0.10	0.07
Land	0.02	0.73	0.01	0.92	0.04	0.45	-0.07	0.23
Job	-0.01	0.79	-0.04	0.52	-0.03	0.64	-0.09	0.09

reported needs right after displacement. Multivariate models were fitted by entering all perceived needs as explanatory variables and distress and disability scores as dependent variables. Financial needs, a lack of medical help and education for children were positively associated with anxiety and PTSD while a lack of food was negatively associated. Similarly, need for medical help and children's education were positively associated with depression. Lack of housing and medical help, but not a lack of food was positively associated with disability. Also, modern medical services were used by 86 (29.7%) IDPs and alternative healers were used by 44 (15.2%) IDPs during the last year. We did not find statistically significant differences between those reporting psychiatric symptoms in the form of depression, anxiety and PTSD and the use of modern or traditional health care services ( $P > 0.1$ ). However, those who visited pharmacy and modern medical services had significantly higher disability scores ( $P < 0.003$ ). Over one-fourth has been to a pharmacy to buy medicines during the last year. To an open-ended question about who they think could provide them with help, 126 (43.4%) IDPs thought the local government could provide help while 82 (28.3%) IDPs thought that NGOs could provide them the help that they needed (Table 3).

## Discussion

Different perceived needs such as financial help, housing, food, and education for their children were expressed by the IDPs. Self-reported health status was strongly associated with distress and disability scores. Factors independently associated with disability were higher age, self-reported health, depression, anxiety but not PTSD.

This study shows that making an assessment of disability with perceived needs and self-reported health status provides a more comprehensive overview of the psychosocial health problems in crisis situations like those of IDPs in Nepal. This overview will aid and inform decisions of who

may be in need of rapid interventions. Since self-rated health correlated well with distress symptoms and disability, a single question about rating one's own health status may thus be helpful as a quick assessment. Addressing the perceived needs of job opportunities and social help identified among many subjects could potentially address some of the mental health problems. This is consistent with the recent IASC Guidelines' emphasis on social interventions in the early phase of emergency-affected populations in order to protect and support mental health and psychosocial wellbeing [6]. This study also showed the internationally developed disability instrument WHO-DAS II correlated well with locally developed disability items.

Our finding that anxiety and greater age were associated with disability is similar to our previous findings among non-tortured Bhutanese refugees in Nepal [19]. Similarly, Mollica and colleagues have also reported an association between age and disability among Bosnian refugees [11, 12]. However, our finding that PTSD was not at all associated with disability is inconsistent with findings from studies among torture survivors in Nepal [19, 20] and Bosnian refugees living in Croatia [11]. This could be due to that our sample was not exclusively torture survivors as was the case in the two above-mentioned studies in Nepal. Also, there was high overlap between the different symptom measures as revealed by almost 50% co-morbidities between distress symptoms, especially between PTSD and anxiety. Nevertheless, the reporting of one or several potentially traumatic experiences was high among IDPs, where physical assaults including torture was one of the traumatic events reported. We did not find an association between number of traumatic events and disability, which is consistent with the Bosnian refugee study, even though a dose-response relationship is consistently found between the amount of trauma and the prevalence of mental disorders [13]. This finding raises the question about whether anxiety and depression measures but not PTSD measures should be included in assessing disability among moderately traumatized populations like IDPs in Nepal.

Our clinical experience also suggests most PTSD patients are able to perform their daily activities, unlike those with severe depression or anxiety disorders.

The finding that depression and disability are highly correlated is not a new finding among the general population [14, 26], but is divergent from the previous study among torture survivors where anxiety and PTSD appeared as predictors, but not depression [20]. However, a higher rate of depression was reported among the functionally disabled persons in a community survey in postwar Afghanistan [3].

Basic needs like financial help, food, housing and work, education for children and medical help were identified as the major perceived needs of IDPs. Different needs were associated with psychological symptoms and disability which may also mean that persons with poorer mental health subjectively appraise their needs as greater than the needs appraised by persons with better mental health. Medical needs of the IDPs and a need of education for their children were associated with distress symptoms and disability, which should be addressed in order to reduce psychosocial problems among displaced persons. However, a surprising finding of a negative association between lack of food and distress symptoms and disability needs further research. A positive association between use of health services and disability, but not with distress symptoms may indicate that people will not seek help while they are well-functioning despite experiencing symptoms of distress. An earlier psychosocial intervention could perhaps have avoided or mitigated disability among the IDPs.

This study has some limitations. First, this was a cross-sectional study which hinders identification of the direction of causality. Secondly, because of the lack of a proper registration system, we were not able to include all the IDPs in our sampling frame and the districts were conventionally selected, which might limit the generalizability of our findings for whole IDP populations in Nepal and possibly abroad. Thirdly, we did not assess more disabling psychiatric disorders such as psychosis in our survey. Lastly, we did not assess in detail pre-conflict factors such as poverty, lack of health care, lack of education, etc., which may have influenced disability among IDPs.

## Conclusions

Several studies have reported high rates of psychopathology in conflict or post-conflict situations. The next questions are: do they all need intervention, and what are possible effective ways to identify those IDPs who may need active treatment? This is especially important in low-income settings like Nepal where there are very limited resources that should be targeted to those most in need. Those with distress

symptoms, very high disability scores and low self-reported health status are in need of active treatment and comprise almost a third of the IDPs in our sample. The remainder would have had benefitted from ordinary psychosocial supports. Clinical applications of our findings would be to treat depression and anxiety in time to avoid disability. This study also showed that a better perspective of the situation can be attained by assessing perceived needs, self-reported health status and disability as a part of an epidemiological survey in addition to psychiatric symptomatology in conflict situations. Researchers are encouraged to incorporate disability and perceived need assessments in surveys of IDPs. Further prospective studies among displaced persons living in conflicts are required to identify the predictors of disability and distress. Studies including psychotic disorders are needed given the disability associated with these disorders, which are not uncommon among conflict affected displaced populations [16].

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