ASSESSING HEALTH NEEDS IN RURAL NEPAL

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ABSTRACT: A health needs assessment was conducted by the Himalayan Family Healthcare Project on an underserved population in Manang district, Nepal. The objective of the study was to highlight the health problems of a sample never surveyed before. The assessment was to also serve as a guide in the establishment of a hospital in the area. A door to door survey was carried out in fifteen villages in late 2010. Key Informants (KIs) from 204 households (HH) were surveyed regarding their respective households. Questions included those on disease conditions, health needs, health concerns and perceptions. The results revealed that among all KIs, about three fourths (73%) reported their HH health as poor. Common health problems in HHs indicated by KIs were gastritis and other digestive problems (61%), breathing and lung problems (53%), allergies (54%), pain (45%), dental problems (44%), heart diseases (40%), hypertension (26%), and vision problems (21%). Many KIs had travelled out of the district for doctor visits (62%) and health check-ups (71%) in the past twelve months. Dental care (97%), women's health (95%), pediatric care (95%), men's health (94%), surgery (94%), vision (92%), and hearing (91%) were health services reportedly needed. Rating of overall health as poor by KIs was associated with significant health concerns and health problems in the HH. The health assessment has helped to identify the area's common health problems and concerns from residents' perspectives. Study findings provided useful information when considering the establishment of a hospital in this rural underserved area by the Himalayan Family Healthcare Project. The assessment may also find use in prioritizing health promotion interventions and programs in future.

Keywords: Health needs assessment, Health concerns, Nepal

INTRODUCTION

Nepal is a land-locked country with a population of nearly 27 million people; one third (31%) of them live below the poverty level [1]. With a Gross Domestic Product per capita of only US $440, Nepal is one of the least developed countries in the world [2, 3]. The population is growing at a rate of 2.25% per year, a rate relatively high compared to other countries in the region. Two-thirds of the population are under 15 years of age, and the number of people 60 years and above is also high [2]. Nepal faced more than a decade of political unrest until recent times which significantly hampered the country's economic development and affected progress in social and health areas. Major communicable diseases persist along with tuberculosis and HIV/AIDS and are serious public health problems. Non communicable diseases related to life style and risk factors (for example diabetes, hypertension, cardiovascular disease and cancer) are on the rise [4]. Thus, the country is going through transitions in demographic and epidemiologic characteristics.

In Nepal, rural-urban disparities continue to persist. For instance poverty is 22% in rural areas compared to 8% in urban areas. An emphasis on equity and social justice has been made in the national health policy, however gaps between the rich and the poor, and between urban and rural areas exist especially in access to healthcare [5, 6].

In addition, deeply-rooted discriminatory practices based on ethno-caste system or patriarchal structure affects the poor and the marginalized, especially in healthcare access. Without access to care, mild illnesses get treated at

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Cite this article as: Lasopa SO, States DG, Cottler LB. Assessing health needs in rural Nepal. J Health Res. 2014; 28(3): 143-50.

home and many Nepalese seek healthcare from traditional healers [7]. Complementary medicine practitioners (traditional healers known as *Dhami, Jhankri and Bijuwa*) play an important role in providing health services [8]. As in many poor countries, rural health services in Nepal are beset with numerous deficiencies that affect the quality of services offered. For instance, shortages of trained staff, equipment and drugs are common. Many health centers are poorly utilized mainly due to the lack of trained health workers or insufficient medical supplies [6, 9]. The allocation of the national budget to healthcare is inadequate (5.1%) and foreign donors contribute around 30 percent which is not enough to alleviate the problem. Therefore, households face catastrophic health expenditure of up to 70 percent [1, 10].

The Manang Valley, a trans-Himalayan district close to the Nepal-Tibet border is a hilly region accessible only by trek or air transport. The census in 2001 indicated 9,587 people living in 1,776 households. Approximately, 64% households have no toilets; drinking water quality is low and sanitation problems are widespread [11]. Health indicators such as the infant mortality rate (89 per 1000) and average life expectancy (57 years) are poor [12]. Although, a government hospital has been established along with health posts, Manang, akin to other rural regions in Nepal, suffers from an inability to retain health professionals and fails to provide health services on a regular and consistent basis. Medical doctors, although appointed, have migrated to other lucrative regions and no private healthcare facilities exist. At present four health assistants cater to the immediate health needs of nearly 10,000 residents in Manang. Otherwise, the nearest adequate medical care available is at Pokhara which requires at least a day's trek from Manang. Therefore, absence of human resources coupled with the lack of functional governmental health care facilities are major health problems. Given the present healthcare situation, the Himalayan Family Healthcare Project (HFHCP) — a non-profit organization formed with the interest of improving and providing community driven primary health care services launched a household survey in 2010 to identify community health needs. The paper aims to present for the first time, the perceived health needs and concerns as well as the self-reported health problems of this underserved population. The assessment now serves as a guide to the health partnership between the community and the HFHCF which is building a hospital in the area and nearing completion.

METHODS

Sample

All 1,776 households in the Manang district comprised the sampling frame for this door-to-door survey. Convenience sampling was used to recruit Key Informants (KIs) for each household (HH) sampled. We intended to survey females as KIs in their primary role as caretakers of the family in a male dominated society in Nepal, however, majority of them declined. Therefore, the final sample consisted of HH heads from 204 households who were predominantly male (91% male, mean age 50 years). Sample size calculations indicated that 202 HHs would be sufficient at 95% confidence interval with a margin of error at 6.5% to indicate a minimum 50% difference in health needs, concerns and conditions. The 204 households (with 1127 people) represented 11.5% of HH in the Manang district in fifteen villages. The KI reported on the health status and needs of all persons living in their HH.

Assessment

A health needs assessment questionnaire was designed for the study by the authors. The questionnaire consisted of items related to the HH as well as specific to the KI. HH composition (gender and age of HH members) was the only information specific to individual HH members. HH demographic characteristics included: income, education, religion, number of generations living in HH and whether any HH member worked or lived outside Nepal. KI characteristics included age, gender and ethnicity. Household health data elicited included health conditions, overall rating of family health and number of deaths in HHs in the last five years. KI health data included: number of meals eaten in a day, visits to a doctor in the last six months, health checkups in the last year, three top health concerns and health services they would utilize had there been a hospital in the area.

Data collection

Community health workers trained by one of the authors (DGS) collected data in the home between October and December 2010. Heads of HH were interviewed after written informed consent was taken using forms approved by the Washington University in St. Louis Institutional Review Board (IRB). Interviews were conducted in the local Nepali language. Analyses were approved by both the Washington University in St. Louis and University of Florida IRBs.

Table 1 Demographic composition in the Himalayan Family Healthcare Project Health Needs Assessment

	Number	Percentage
Household size		
1-3	35	17%
4-6	117	58%
7-9	33	16%
10 or more	17	9%
Number of generations living together		
1	10	6%
2	122	76%
3	26	16%
4	3	2%
All HH members born in Nepal	195	96%
At least one HH member living outside of Nepal	45	22%
Highest educational level		
Primary	28	16%
Secondary	125	71%
Higher Secondary	15	9%
15 Years and More	7	4%
HH income (in NRs)		
0-4999	25	14%
5000-9999	59	32%
10000-14999	30	16%
15000-19999	15	8%
20000-29999	33	18%
30000-39999	9	5%
40000and above	12	7%
Age (N=994)		
1-5 Years	70	7%
6-17 Years	208	21%
18-50 Years	553	56%
51-60 Years	78	8%
61 and Older	81	8%
Adults (18 years and above)	716	72%
Children (17 years and below)	278	28%
Male gender	375	52%
Total number of people in the HH	1127	

Statistical analysis

Analyses were performed using SAS 9.2. Proportions are reported for descriptive analysis. Households were stratified into two groups based on the rating of overall HH health status by the KI: poor (poor and fair) and good (good, very good and excellent). Comparisons between the groups were done using Fisher's exact test and two-sided chi-square test for independent variables. All hypotheses were two-tailed and *P*-values <0.05 were considered statistically significant.

RESULTS

Demographic characteristics

As shown in Table 1, 58% of HH were comprised of 4 to 6 members. Nearly all HHs (94%) had at least two generations living together and nearly all members were born in Nepal (96%). About one fourth of the HHs had at least one member living or working outside of Nepal (22%). The highest level of education achieved by 71% of HH was secondary school and 16% reported only primary school education. The average monthly income was NRs 20,100 (Nepali Rupees) or $ 261; more than half (62%) had income less than NRS 14,999. Nearly half the HH were Buddhist (48%) or Hindu (51%) (not shown). Nearly all KIs were male (91%) with a mean age of 50 years (std: 13·9; range: 22 to 80 years). While 72% of the HH members were adults (18 years and above), more than half were between 18 and 50 years (56%); only 8% were 61 years and older. As shown in Table 2, three out of four people faced at least one death in the last five years. One quarter (25%) faced two deaths. The mean age of death was 53 years. Approximately two-thirds of KI (65%) rated their HH health as fair; nearly one-fourth rated it good and 8% rated it poor. Two dichotomous groups were formed based on HH health rating: those who rated good to excellent (27%) and who rated fair to poor (73%). No differences were found between groups

Table 2 Household health in Himalayan Family Healthcare Project Health Needs Assessment

	Number	Percentage
Death in household in the last 5 years (N=196)	20	10%
One death (N=20)	16	-
Two deaths (N=20)	4	-
Rating of overall family health by KI (N=201)		
Excellent	1	1%
Very good	4	2%
Good	49	24%
Fair	130	65%
Poor	17	8%
Health conditions in households (N=201)		
Back pain	118	58%
Allergies	109	54%
Headache	102	51%
Bone pain	90	45%
Dental problems	89	44%
Chest pain	80	40%
Hearing problems	59	29%
High blood pressure	53	26%
Liver problems	35	17%
Tinnitus	32	16%
Memory problems	29	14%
Blood clots	28	14%
Anemia	27	13%
Arthritis	27	13%
Pneumonia	25	12%
Blindness	21	10%
Head injury	20	10%
Heart disease	20	10%
Kidney failure	11	5%
Cancer	1	1%
Anxiety	2	1%
Depression	2	1%
Schizophrenia	0	0%
Personality disorder	0	0%
Health concerns of KI among those with a health concern (N=170)		
Gastritis	105	61%
Breathing and lung problems	90	53%
Vision problems	35	21%
Digestive problems	28	16%
Headache	24	14%
High blood pressure	17	10%
Access to health care	13	8%
Environmental health	12	8%
Perceived need for health services by KI		
Dental care	192	97%
Women's health	191	95%
Pediatric care	191	95%
Men's health	189	94%
Surgery	181	94%
Vision	180	92%
Hearing	175	91%

on socio-demographic characteristics and were similar in the number of meals eaten, HH size and number of deaths in the last year.

Health needs and perceived need of health services

As indicated in Table 2, more than half of the HHs had a member who experienced back pain (58%), allergies (54%), or headaches (51%). Bone pain and dental problems were present in 45% and 44% of the HHs, respectively. Chest pain (40%) was also commonly reported. While mental health problems were also assessed, very few KIs reported anyone in their HHs having problems with anxiety

Table 3 Association between overall family rating and health conditions and concerns by KI in Himalayan Family Healthcare Project Health Needs Assessment

Variables	Overall family health rating by KI		
	Good (N=54)	Poor (N=147)	P Value
Health conditions in HH			
Back pain	20	100	0.062
Allergies	24	116	<.0001*
Headache	57	101	0.111
Bone pain	16	102	0.310
Dental problems	22	82	0.05*
Chest pain	19	76	0.034*
Hearing problems	16	47	0.776
High blood pressure	14	44	0.464
Liver problems	6	51	<.0001*
Tinnitus	6	44	0.001*
Memory problems	7	32	0.058
Blood clots	9	15	0.244
Anemia	9	9	0.058
Arthritis	9	12	0.253
Pneumonia	7	16	0.822
Blindness	8	3	0.01*
Head injury	7	10	0.390
Heart disease	0	11	0.04*
Kidney failure	2	16	0.033*
Health concerns of KI			
Gastritis	21	84	0.02*
Breathing and lung problems	23	68	0.706
Vision problems	6	29	0.153
Digestive problems	24	90	0.033*
Headache	2	22	0.0291*
High blood pressure	0%	12%	0.009*
Access to health care	10%	6%	0.329
Environmental health	10%	1%	0.0015*
Participation in health research studies			
Agree to take medication	72%	80%	0.16
Agree to stay overnight in a hospital	43%	39%	0.70
Agree to give blood sample	11%	7%	0.33

(1%) and depression (1%). There were no reports of major mental illness such as schizophrenia and personality disorders. Increased rates of health conditions were observed in HHs where the KI rated overall family health as poor. Significant differences were found for allergies (79%), chest pain (52%), liver problems (35%), tinnitus (30%), and kidney failure (11%). On the other hand, KIs who rated overall family health as good reported increased rates of blindness (14%). Most important to the study was the assessment of health services villagers would potentially utilize if a hospital existed in the area. As shown in Table 2, nearly all KIs indicated a high need for dental care (97%), women's health (95%), pediatric services (95%), men's health (94%), surgery (94%), vision (92%), and hearing (91%). No differences were found when comparing KIs by family health status except for perceived need for surgery services (Table 3).

Health concerns

The survey asked for the KI's top three health concerns in an open ended question without prompts. Only 33 informants did not volunteer a health concern. As shown in Table 2, the most commonly reported health concern was gastritis (61%); followed by breathing and lung problems (53%) and vision problems (21%). Health concerns differed by the KIs rating of overall family health (Table 3). Specifically, KIs who rated family health as poor reported increased digestive disorders (61%), gastritis (57%) headache (15%), heart disease (7%), and high blood pressure (12%) as compared to KIs those who reported family health as good. The only health concern KIs with self-reported good health endorsed higher than those with self-reported poor health was environmental health (10%).

Participation in health research

KIs willingness to participate in a health research study was also assessed in order to compare this population to a western population. A large proportion of the KIs reported willingness to take medication (79%) and stay overnight in a hospital (41%). Only 8% said they would give a blood sample. We found no difference in these rates when examined by family health status.

DISCUSSION

Given the inadequate healthcare conditions in Manang, Nepal, our findings shed light on the community's self-reported health problems for the first time. Based on the perspectives of the residents, the health needs assessment identified the most common problems residents' face which includes back pain, allergies, headache, bone pain, dental problems, and chest pain. However, these were not among the health concerns that emerged. Community members were most concerned about gastritis, breathing and lung problems, vision problems, headache, and high blood pressure. Despite their geographical isolation, informants were aware of health conditions and concerns. In prior studies conducted elsewhere, self- reported health has been correlated with morbidity, mortality and the use of health services. [13, 14]. It is noted that health conditions requiring laboratory or pathological investigations like tuberculosis or other infectious or non-communicable diseases were not commonly reported in this study. Comprehensive understanding of health status would require supplementation with objective health measures.

The emergence of multiple pain related conditions in our assessment is prominent; this highlights the importance of a needs assessment for risk factor investigation and healthcare planning. These findings on health conditions and concerns also reflect the current trend in developing countries where populations' managing infectious diseases have the added burden of high rates of non-communicable diseases. Based on self-reports, our findings corroborate existing national figures from hospital based records for the entire country of Nepal. As reported by the Ministry of Health and Population, the top ten causes of Out Patient Department (OPD) morbidity in 2009-2010 were gastritis, intestinal worms, acute respiratory tract infection/lower respiratory tract infection, headache, upper respiratory tract infection, pyrexia of unknown origin, imetigo/boils/furunculous, presumed non-infectious diarrhea, amoebic dysentery, and falls/injuries respectively [3]. However, in our study, cancer was not commonly reported. Such cases could have been undiagnosed or unreported due to lack of sophisticated laboratory or medical facilities. Lack of comprehensive data to assess burden and public awareness of cancer in Nepal has been noted [15, 16]. Further, marginalization of mental health and illness could have resulted in its underestimation in our study particularly because mental health screenings are not common in Nepal's heath system. Mental illness is framed as a loss of vitality due to the loss of the soul [17] and traditional healers are usually sought to treat mental health issues. Although, self-referrals for psychiatric problems are infrequent, a hospital based study in Nepal reported psychiatric morbidity as common [18] indicating an unrecognized need among the Nepalese. It is also important to assess the patient's perspectives when evaluating the burden of disease. In our study we found higher rates of allergies, dental problems, gastritis, digestive problems, headache and chronic problems of high blood pressure, chest pain, heart disease and kidney failure among household members where perception of overall family health was poor. Self-rated health has been used as a valid prospective measure of population health status [19]. Lower quality of life has been associated with individuals with chronic conditions compared to those not reporting any. Further, conditions considered more disabling and symptomatic increasingly affected the ability to work [20].

Of importance to the residents of Manang district was access to healthcare. Although, a government primary health care center has been established, Manang like entire Nepal has been facing difficulty with the retention of health workers in its rural health facilities. This could explain the high need for health services of all types. However, despite the lack of needed health services many informants had visited a doctor or had a health check up in the past 12 months. Residents preferred to travel to the nearest medical center from Manang for obtaining both basic and specialist care. The absence of a motorable road in the area implies walking to the healthcare facility or airport. Therefore, the lack of adequate health care facilities and transportation seem to be of concern, need and importance among these rural Nepalese. Poor transport services creating barriers to access to health care has been found to be a major concern for rural residents elsewhere [20]. In developed nations, although fewer providers and services exist in rural areas compared to urban areas, the rate is higher than those in developing nations. For instance, in Canada 9.4% of all physicians practice in rural areas compared to almost none in Manang; physician to population ratio of Nepal is

1:41,000 [21] as compared to 69 per 10,000 in rural Canada. Although rural Canadians report poorer self-reported health and lower physician consultations compared to their urban counterparts, a large proportion reported increased hospital care one year prior to the study [20] which is higher than rates in Nepal. Further, when compared to studies in the United States, differences were found with regard to willingness to participate in research studies. Specifically, the Nepalese would be less likely to stay overnight in a hospital (49%, US 63%), give blood samples (8%, US 78%) and likely to take medicine (79%) than those in the US (49%). Healthcare problems in developing countries are multifaceted and caused by a combination of factors including socio-cultural, economic, political factors along with poor planning and poor implementation of health policies and programs. The absence of available, accessible, affordable and sustainable services may be understood as both an outcome and cause of health related problems requiring intervention at all levels. The health needs assessment conducted in the present study has helped to identify the area's common health problems and concerns from residents' perspectives. The assessment provided useful information in guiding the decision to establish a hospital in this rural underserved area. Findings may find additional use in prioritizing health promotion interventions and programs in future.

LIMITATIONS

This was a cross sectional needs assessment that relied on self-reports to elicit health information. We were unable to verify self-reports with medical records because medical records did not exist. Further, the sample was limited in size and to a particular district in Nepal which may restrict generalizability of findings. We justify that ours was an attempt to report on a specific population with possibly unique needs and our findings may serve to guide similar research. Nevertheless, by shedding light on the health needs of this rural area, we hope this study will pave the way to adequate provision of health care and preventive services in Manang, Nepal.

ACKNOWLEDGEMENTS

Financial Support from Fogarty International Centre ICOHRTA Training Program in Behavioral Disorders (D 43-TW05811) and Indo-US Training Program in Behavioral Health Across the Lifespan (D 43-TW009120; Sonam O Lasopa, Fellow; PI: Cottler).

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