

Analysis of a health camp at a rural set up in Nepal

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Abstract

Background: In Nepal where there is lack of health facilities in rural areas, health camps play an important role in providing health services. It is important to analyse health camps to determine the area of need and further planning. An analysis of multispecialty health camp was done in Aurahi of Mahottari district which is one of the most rural areas of Nepal.

Objectives: To quantitatively determine the population utilizing the multispecialty health along with the patients' demographic data and major health problems present in the area.

Methods: A descriptive cross sectional study was conducted among 2560 people attending a health camp organised during 19th to 25th December 2019. Information was collected using registers with consent. Ethical clearance for the study was obtained from the Institutional Review Committee (IRC). The data were entered and analysed in Microsoft Excel.

Results: Two thousand five hundred and sixty people which comprised of 8.06% of the total population of the municipality reached out for services at the health camp. The number and percentage of population attending respective speciality were Nutrition - 869 (33.93%), Dental - 429 (16.75%), Gynaecology - 398 (15.50%), Medicine - 268 (10.46%), Obstetrics - 218 (8.52%), non-specific symptoms - 152 (5.94%), Dermatology - 122 (4.77%), ENT - 82 (3.22%) and Surgery - 50 (1.97%) respectively.

Conclusion: The study shows presence of significant unmet health needs in this rural district of Nepal due to the lack of basic health services in the region.

Key words: Health camp; Rural; Nepal.

INTRODUCTION

Nepal has a population of 26 million and 86% of the total population lives in rural areas.¹ Significant

portion of the population resides in rural areas where health care facilities are inadequate and people have low accessibility for the same.² This in turn has given birth to a trend where healthcare providers, social service promoters, different organizations and individuals organize mobile health care services and outreach clinics at different communities away from their regular work place which plays a vital role.^{2,3} Health camps seem to be a cost effective way to bridge the gap to achieve health coverage in places of need.⁴

Aurahi Nainigauri, a municipality in Mahottari District of Province 2, is one of the places where Kathmandu Medical College Teaching Hospital has been regularly organizing health camps. Other places include different communities in Kathmandu, Lalitpur, Bhaktapur and remote places in Thokarpa, Barhabise, Sipaghat and Kavre.

Aurahi is about 6-7 hours' drive from Kathmandu, across difficult mountainous terrain. The municipality has few health posts with very limited facility necessitating to drive about 2 hours' to reach the district hospital with better facilities.⁵ Maternal and infant mortality rate

Access this article online

Website: www.jkmc.com.np

DOI: <https://doi.org/10.3126/jkmc.v10i4.43864>

HOW TO CITE

Karki C, Karki C, Basnet R, Dixit PB, Rajak A. Analysis of a health camp at a rural set up in Nepal. *J Kathmandu Med Coll.* 2021;10(4):233-9.

Submitted: Jul 22, 2021

Accepted: Mar 14, 2022

Published: Mar 24, 2022

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ISSN: 2019-1785 (Print), 2091-1793 (Online)



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of this district are higher than the national average.⁶ Socio-economic indicators including the human development index (HDI), female literacy rate and gender empowerment measure (GEM) of Mahottari district (0.41, 22%, and 0.30 respectively) are low in comparison to the national average (0.47, 42.8%, and 0.39 respectively).⁴

The objective of this study was to quantitatively determine the population utilizing the multispecialty health camp. The study also aimed to find the patients demographic data and major health problems present in this geographical area. The disease burden and medications issued have been further sub-categorized into medical specialities in this study which might be helpful to rationalize resources and recruitment for the future.

METHODOLOGY

A descriptive cross sectional study was conducted among 2560 people attending a health camp organised during 19th to 25th December 2019 in rural Mahottari district of Nepal.

Information about the health camp was circulated in the village and surrounding 6-7 villages using microphone systems using bullock carts. An appropriate location was identified with support from the local stakeholders and necessary arrangements including tents and rope guided tracks for queue was managed according to the service needed.

All the patients attending the health camp were included in this study ensuring every patient registered only once and informed consent was taken from them before collection of their information. Registration for the nine-hour camp started via six counters where a register was maintained to record basic demographic information of the patients like name, age, sex, religion, ethnicity, marital status, education status, type of house roof, drinking water supply, latrine facility, cooking modality and reason for attending the camp. Vitals including anthropometry of the patients were measured. Anaemia and malnutrition were diagnosed based on anthropometric and clinical features. Subsequently they were guided to see a doctor. The team consisted of twelve specialist doctors (physician, surgeon, gynaecologist, ENT, dentist, dermatologist, paediatrician, general practitioner, pathologist and community medicine expert), six medical officers, few residents, two nurses, four local organizers and few volunteers from the village.

After consultation the patients were guided to the pharmacy counter where free medicines were dispensed

after recording their diagnosis and treatment in the register there. Patients requiring referral were sent to a counselling counter for facilitating them for further process of referral.

At the end of the day all the registers were collected and later data were tabulated and analysed in Microsoft Excel software. Ethical clearance (Reference number: 181020110) for the study was obtained from the Institutional Review Committee (IRC) of Kathmandu Medical College before organising the health camp.

RESULTS

The health camp was conducted from 19th to 25th December 2019. The total number of patients attending the camp were 2723. However, 163 patients were found to have re-registered and were excluded from the study. Therefore, data of the total 2560 patients have been analysed which accounts to 0.40% of total population of the district and 8.06% of total population of the municipality.

Table 1 shows that maximum number of patients were from the 20 to 31 years age group (1591 i.e. 62.14%) and a total of 1970 (76.96%) patients who visited the health camp were females. Ninety seven percent of the patients were Hindus and more than 60% of the patients were from so called lower casts like Mushar, Chamar, Dasnami etc. Of the total, 1746 (68.2%) patients were married; almost 315 (18%) of married patients got married before the age of 19 years of age. Seventy percent of the population at Aurahi Nainigauri do not have a proper roof over their house and only 8.98% of the population has water supply from the government supply system. Only 0.5% of the population have access to cooking gas and only 23.59% had electricity facility at their house while 86% did not have latrine facility at home. Regarding literacy, 46.79% could not read or write, 27.85% could only read and 25.19% could read and write.

Table 2 shows the diagnosis of the patients made by the consulting doctors. Eight hundred and sixty-nine (33.93%) patients received service from the nutrition counter and many were clinically anaemic and malnourished. Moreover, 433 (16.91%) patients coming to other counters (Gynaecology-193, Medicine-124, Obstetrics-82, nonspecific-18, Dermatology-11 and Surgery-5) had secondary diagnosis of anaemia. Thus, anaemia and malnutrition were found to be prevalent in 1302 (50%) patients coming to this health camp.

A large number (429) of patients comprising of 16.75% attended the dentist with dental caries, mobile tooth,

dental deformities and other minor dental issues among which 28 people attending this counter also attended gynaecological and medicine counters. Subsequently, the Gynaecology counter was found to be the second most visited counter with 398 (15.50%) women consulting for genital infection, menstrual disorders, uterovaginal prolapse etc. where a significant number were found to have a secondary diagnosis of anaemia too. There were a number of cases of anaemia and other medical disorders in pregnancy who were suggested and facilitated to go to a higher center for their safe confinement.

Two hundred and sixty eight (10.46%) patients were seen to seek service from the medicine counter with various complaints including a few who came for follow up after major cardiac surgery done at Shahid Gangalal National Heart Centre, Kathmandu.

Less than 2% of the patients' sought surgical and orthopaedic consultation. They had already USG diagnosed gall stones, hernia, hydrocele, renal stones, piles, fissures, thyroid swellings and orthopaedic related issues.

Moreover, 152 (5.94%) patients with nonspecific problems like muscle pain, body ache, headache, tingling sensations, abdominal pain etc. visited the camp for which no definite cause could be found and only basic symptomatic management was done. Many patients also reached the camp to receive free medications to store them for the future.

Table 3 shows that 37 (1%) patients needed to be referred to higher center for their further management. It was mostly for surgical procedures, correction of severe anaemia, investigations not available there and safe confinement of pregnancies associated with additional risk factors.

Table 1: Demographic profile of the patients.

Demographic variables	Number of participants (n)	Male	Female
Age group (years)			
<19	451 (17.61%)	65 (14.4%)	386 (85.6%)
20-25	815 (31.83%)	201 (24.6%)	614 (75.4%)
26-31	776 (30.31%)	156 (20.1%)	620 (79.9%)
32-37	302 (11.79%)	74 (24.5%)	228 (75.5%)
>38	216 (8.43%)	94 (43.5%)	122 (56.4%)
Total	2560	590 (23.04%)	1970 (76.96%)
Religion			
Hindu	2492 (97.3%)		
Muslim	63 (2.4%)		
Others	5 (0.2%)		
Ethnicity			
Mushar	639 (24.9%)		
Dasnami	481 (18.7%)		
Dhanuk	465 (18.1%)		
Koiri	69 (2.6%)		
Yadav	402 (15.6%)		
Chhetri	21 (0.82%)		
Chamar	341 (13.3%)		
Others	142 (5.5%)		
Marital status			
Married	1746 (68.2%)		
Unmarried	814 (31.7%)		

Table 2: Socioeconomic parameters of patients.

Parameters	Number of participants (n)
Pakka roof	768 (30%)
Latrine	358 (13.98%)
Water supply	230 (8.98%)
Cooking modality	
Gas	13 (0.5%)
Electricity	604 (23.5%)
Kerosene	24 (0.9%)
Firewood	1365 (53.3%)
Cow dung	554 (21.64%)
Literacy	
Illiterate	1198 (46.7%)
Could read	713 (27.8%)
Could read and write	645 (25.1%)
Missing	4 (0.15%)

Table 2: Prevalent health problems observed.

S.No.	Specialty	Common diagnosis	n (%)	Main treatment done
1	Dental	Dental caries	215 (50.1%)	Dental extraction
		Mobile tooth	139 (32.4 %)	Dental cleaning
		Dental deformity	75 (17.4 %)	Oral health Education
		Total Dental patients	429 (16.75%)	
2	Gynaecology	Vaginal Infection	230 (8.94%)	Medications including hormones
		Prolapse	13 (0.50%)	Pessary / PF Exercise
		Menstrual problem	155 (6.05%)	Referred for surgery
		Total Gynaecology patients	398 (15.50%)	NB - 7.55% of these patients had anaemia as the secondary diagnosis.
	Obstetrics	Normal pregnancy	115 (4.50%)	Basic investigations
		Anaemia in pregnancy	82 (3.20%)	Medications
		Other medical disorders	21 (0.82%)	Counselling
		Total Obstetrics patients	218 (8.52%)	
	Nutrition	General Anaemia	718 (28.04%)	Medications
		Malnutrition	151 (5.89 %)	Health education
		Total Nutrition patients	869 (33.93%)	
3	Medicine	COPD	40 (1.58%)	Investigations
		URTI	17 (0.66%)	
		Hypertension	67 (2.61%)	
		Vague stomach ache (PUS)	82 (3.25%)	
		Helminthiasis	27 (1.05%)	Medications
		Diabetes	20 (0.78%)	Counselling
		FU Cardiac surgery	2 (0.08%)	Referral
		Anxiety / depression	13 (0.52%)	NB - 124 (4.83%) of these patients were mild to moderately anaemic.
Total Medicine patients	268 (10.46%)			

4	Dermatology	Scabies	20 (0.77%)	Medications Health education NB - 11 (0.42%) of these patients were anaemic.
		Eczema	23 (0.91%)	
		Dermatitis	28 (1.08%)	
		Vitiligo	5 (0.19%)	
		Prickly heat	12 (0.47%)	
		Unhygienic ulcers all over	34 (1.33%)	
Total Dermatology patients		122 (4.77%)		
5	ENT	Sinusitis	33 (1.27%)	Medications Cleaning Referral -5(0.13%)
		Otitis media	20 (0.80%)	
		Tonsillitis	18 (0.72%)	
		Vertigo	5 (0.16%)	
		Hearing defect	6 (0.25%)	
Total ENT patients		82 (3.22%)		
6	Surgery	Lipoma	3 (0.13%)	Investigations Medications Referral Counselling NB - 5 (0.19%) patients of this group were anaemic. 10 (0.38%) patients were facilitated to go to Kathmandu.
		Gall stones	13 (0.5%)	
		Hernia / hydrocele	6 (0.22%)	
		Urinary tract infection	6 (0.25%)	
		Renal calculus	3 (0.13%)	
		Piles/fissure/Haemorrhoids	6 (0.22%)	
		Thyroid swelling	5 (0.16%)	
		Postoperative follow up	1 (0.05%)	
Orthopaedic problems	7 (0.27%)			
Total Surgery patients		50 (1.97%)		
7	Nonspecific	Musculoskeletal pain	7 (0.27%)	Medications Investigations Counselling NB - 18 (0.69%) patients of this group were anaemic.
		Osteoarthritis	6 (0.25%)	
		Headache	16 (0.61%)	
		Tingling limbs (?Sensory neuropathy)	23 (0.88%)	
		Non-specific pain	40 (1.55%)	
		Abdominal pain	23 (0.91%)	
		For medications	37 (1.44%)	
Total patients with NS Complaints		152 (5.94%)		

Table 3: Patients needing referral to higher center.

Referring department	n = 37 (%)
Gynaecology	8 (0.22)
Obstetrics	4 (0.11)
Medicine	6 (0.16)
ENT	5 (0.13)
Surgery	14 (0.38)
Total	37 (1)

DISCUSSION

Although a significant population of Nepalese reside in rural areas, there is still one doctor for every 150,000 people in those areas, compared to one for every 850

people in Kathmandu valley. Health care services are not easily accessible in a rural set up like Aurahi which is obvious by the fact that more than 2500 people of the municipality reached out to an ordinarily organized

health camp for basic services. People queued repeatedly - twice and even thrice, to collect free medications being distributed to store them at home for the future. Most of the patients had poor socioeconomic status as very few lived under *pakka* roof, used latrine and had water supply. In addition most of the patients were illiterate and also used firewood, cow dung for cooking. Significant patients had malnutrition and anaemia which was diagnosed clinically. Being devoid of care even for common medical, surgical, gynaecological and other health issues for a long time has significantly increased their suffering. The patients were found to be tolerating multiple health problems which could have easily been relieved with basic medications, counselling, care and some minor commonly performed surgical procedures.

Females were found to utilize such health camp facilities more probably because it might be their only access to health care facility. Two hundred and eighteen (8.52%) patients coming to the health camp were pregnant women and half of them had high risk pregnancy. They were suffering from anaemia, hypertension, diabetes, urinary tract infection in pregnancy etc. In this context and also in the study done by Shah R, Maskey MK it is seen that these women do not have access to proper health care facility where they can get quality antenatal care or be admitted for pregnancy complications and safe confinement.⁵

Most of the patients coming to the camp were convincingly managed by providing basic management with medications, minor surgical procedures and counselling. It could probably have added more productivity to the service provided if facilities of at least basic investigations and minor surgical procedures could have been managed. Analysing the medications dispensed, it was very obvious that the most commonly prescribed medications were iron capsules (45%), multivitamins (33%), anti-helminthic (52%), oral analgesics (15%) (including paracetamol, diclofenac and ibuprofen), oral antibiotics (16%) (including amoxicillin, metronidazole, ciprofloxacin and doxycycline), antacids (16%), antifungal / anti-scabies ointment (5%) and other simple medications for symptoms like dry skin, itching, ulcers, bleeding etc.

Only 37 (1%) patients needed to be transferred to higher center for surgery, safe confinement, blood transfusion etc. Taking the patients to a higher center seemed very challenging. Provision of free treatment and free food to them at KMC Teaching Hospital through free beds have been made but unfortunately patients could not afford transportation cost to reach Kathmandu by road. Few

patients managed it on their own somehow but few had to be facilitated to get sponsors for the same with much difficulty. Involvement of local community with active participation played a major role in making this health camp more fruitful.

The findings relating to health care status in this rural set up and the scenario itself is very similar to the findings from the health camp organised by the Ministry of Health and Population at other rural set ups in the past and by Adhikari P et al focusing on ENT service.^{7, 8} The study showed that improvement of socioeconomic status of the population would help in reducing the disease burden although it was a specific otorhinolaryngology camp.⁹

The large participation of patients visiting the camp and the number of multispecialty health workers involved were the camps strength. There were many limitations of the camp such as lack of basic investigations, some necessary medications as well as cultural and language barriers.

CONCLUSION

This study clearly shows that there are significant unmet health needs in rural districts of Nepal. In most cases, it was observed that prolonged suffering from minor illnesses had affected their livelihood. The main complaints were weakness, tiredness, worm infestation, stomach pain, body ache, genital infections, menstrual problems, skin problems, dizziness, vertigo and vague feeling of being unwell. Such camps are being organized in the region by different organizations and individuals on a regular basis for years, but in spite of that, it is doubtful whether such health camp initiatives do help to achieve long-term health improvement. Such health camps help treating problems for a short term but undoubtedly, longer term solutions might be necessary. However, until the necessary solutions are in place, such camps should be organized in the same place every year even twice a year, if possible. If the community could take such initiatives and play an active role in organizing such camps, it would be even more productive. Identifying regional health institutions and making necessary negotiations for referral could further make things better.

ACKNOWLEDGEMENT

The authors would like to sincerely acknowledge:

1. All the patients seeking service with faith and confidence.
2. Kathmandu Medical College, Association of St. Mary's Alumnae Nepal (ASMAN), PN Pant Foundation

and Shiva Chandra Smriti Foundation for financial support to organise the camp.

3. All specialist doctors, nurses, medical officers, residents and local volunteers for their selfless and dedicated service.
4. Pharmaceutical companies – Deurali-Janta Pharmaceutical Pvt. Ltd (DJPL), Asian Pharmaceutical,

Lomus Pharmaceutical and others for providing sample medications for distribution.

Conflict of interest: None

Source(s) of support: Funding for this camp was done collectively by Kathmandu Medical College, Association of St. Mary's Alumnae Nepal (ASMAN), PN Pant Foundation and Shiva Chandra Smriti Foundation.

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