

## Pattern of illnesses among the tribal communities of Jumla, Nepal: Hospital based Study

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### Abstract

The communicable diseases still hold a greater position, while non-communicable diseases are main reasons for admission to the medical wards in developed countries. The morbidity pattern shows mostly the communicable and respiratory diseases especially Chronic Obstructive Pulmonary Disease being the main cause for the hospital admission. This retrospective study was done in Karnali Academy of Health Sciences over the period of 3 years. The record of 877 hospitalized patients in medical ward was analyzed from April 2014 till March 2017. Patient's medical records were retrieved and data analysis was done to obtain age, sex, common diagnosis, the affected system and the duration of the hospital stay. The data was analyzed by using Microsoft excel. After reviewing the data the most common age of patients being admitted was between 51-70 years followed by more than 75 years (<1%). Among the admitted patients females were more than the males. The most affected system was infectious system then respiratory system, and the most common diagnosis was chronic obstructive pulmonary disease in all years (30.8% in year 2072).

### Introduction

Jumla is a mountainous District situated in Karnali Zone of Mid-Western Development Region. Karnali Zone is the biggest zone with remote and poor regions of Nepal and is not yet well accessible by roads. There are airfields with connections to all four districts (Jumla, Kalikot, Dolpa and Mugu) except Kalikot, which is now connected by roadways up to Jumla. The topography of the district is almost same as other hilly districts and lies on the lap of Mahabharata Hill. The elevation begins from Nagma village 7000 feet to highest point of Patarasi Himal (21077 ft.). The area of the district is 2,531 kilometers (2, 53,100 ha) and there are 30 Village Development Committees (VDC). The Jumla district headquarters is located in Chandannath VDC. It is located at 2514 meters (8251 feet) elevation.<sup>(1)</sup>

Karnali Academy of Health Sciences was enacted by the Constituent Assembly in 2063 (2007), in Chandannath

VDC of Jumla to provide the health services in the backward areas (all districts of Karnali Zone, Jajarkot district of Bheri Zone and Bajura/Bajhang/Accham districts of Seti Zone). Jumla district is supposed to be one of the more accessible and developed district among all these nine districts. Various reasons physical (and geographical) and social factors have been identified for the total lack of development in Karnali region. Karnali occupies about 15% area of the country but accommodates 2% of the population. Because of sparse population density and extremely scattered settlement patterns, it is costly and difficult to provide electricity, water, and transportation facilities to all inhabitants.<sup>(2)</sup> Till now KAHS has been providing health services to the general public in 8 specialized Department (Medicine, Paediatrics, Obstetrics and Gynaecology, Surgery, Orthopaedics, Anaesthesia and General Practice Clinic) by specialist doctors since 2072 (2015). Since then the health

status, patient flow has been increasing and KAHS has become the referral center for the Karnali Zone. It has 100 beds with 20 beds allocated to medicine department. There has been no study conducted on the actual burden and patterns of the illnesses that afflict them, due to inaccessibility of health services. This is a hospital based study conducted over the 3years period showing the burden of illnesses faced requiring hospital admission.

## Methods

It is a retrospective cross sectional, observational study conducted from Baisakh 2071 to Chaitra 31<sup>st</sup> 2073 on patients who were admitted to the medical ward of Karnali Academy of Health Sciences (KAHS) age 15 years and above.

**Table 1:** Sex Distribution of patients in three year period.

| Sex / Year   | 2071        | 2072        | 2073        | Total      |
|--------------|-------------|-------------|-------------|------------|
| Male         | 100 (47.6%) | 116 (46.4%) | 196 (47.1%) | 412        |
| Female       | 110 (52.4%) | 134 (53.6%) | 221 (52.9%) | 465        |
| <b>Total</b> | <b>210</b>  | <b>250</b>  | <b>417</b>  | <b>877</b> |

In year 2072 (2015), male population was more than the female, the share of which constituted 52.10% and 47.90% respectively; thereby giving sex ratio of 100%<sup>(1)</sup>. This includes the total population present at the time in Jumla.

**Table 2:** Distribution of Jumla population by sex (%) in year 2072 (2015).<sup>(1)</sup>

| Sex          | Percentage (%) |
|--------------|----------------|
| Male         | 52.10          |
| Female       | 47.90          |
| <b>Total</b> | <b>100%</b>    |

Distribution of population by broader age group admitted in the hospital over the three years period is shown in the table 3. This shows that most of the population that visits hospital and gets admitted belongs to the age group 51-70 years with percentage being 42%, 38% and 43.2% for the year 2071, 2072 and 2073 respectively. Whereas above 70 years is nearly 10% (2073).

Data of three years period were analyzed in Microsoft excel.

## Results

The study was conducted in the KAHS over three years from 2071 Baisakh till 2073 Chaitra and the data was analyzed. A total of 877 patients were admitted to the medical ward during these three years period. Among them 412 (46.9%) were male and 465(53.1%) were female with female to male ratio of 1.1:1. The age of patients ranged from 15 to 90 years.

Table 1 shows the population of sex admitted in the hospital over the three year period which shows high percentage of female being admitted throughout.

**Table 3:** Distribution of patients by broader age group.

| Age/ Year    | 2071          | 2072          | 2073           |
|--------------|---------------|---------------|----------------|
| 15-30        | 52<br>(24.7%) | 56<br>(22.4%) | 105<br>(25.2%) |
| 31-50        | 52<br>(24.7%) | 68<br>(27.2%) | 90<br>(21.6%)  |
| 51-70        | 88<br>(42.0%) | 95<br>(38%)   | 180<br>(43.2%) |
| >70          | 18<br>(8.6%)  | 31<br>(12.4%) | 42<br>(10%)    |
| <b>Total</b> | <b>210</b>    | <b>250</b>    | <b>417</b>     |

Distribution of overall population of Jumla in 2015 shows that 59.7% of the population belongs to age 15-59 years, whereas as low as only 5.3 % of the population belongs to elderly people over 60 years of age. This shows that why people of age group 51-70 years were admitted more in the hospital, as the population of Jumla had more of this age group. The distribution of population by broader age group of year 2015 as presented in the table 4.

**Table 4:** Distribution of total population of Jumla by broader age group in year 2015.<sup>(1)</sup>

| Age Group      | Number | Percentage % |
|----------------|--------|--------------|
| Below 15 years | 857    | 35           |
| 15-59 years    | 1464   | 59.7         |
| Above 60 years | 130    | 5.3          |

The most commonly affected system is respiratory nearly 33.3% and cardiovascular being the second. Table 5 shows the pattern of illnesses present during hospital stay over three years.

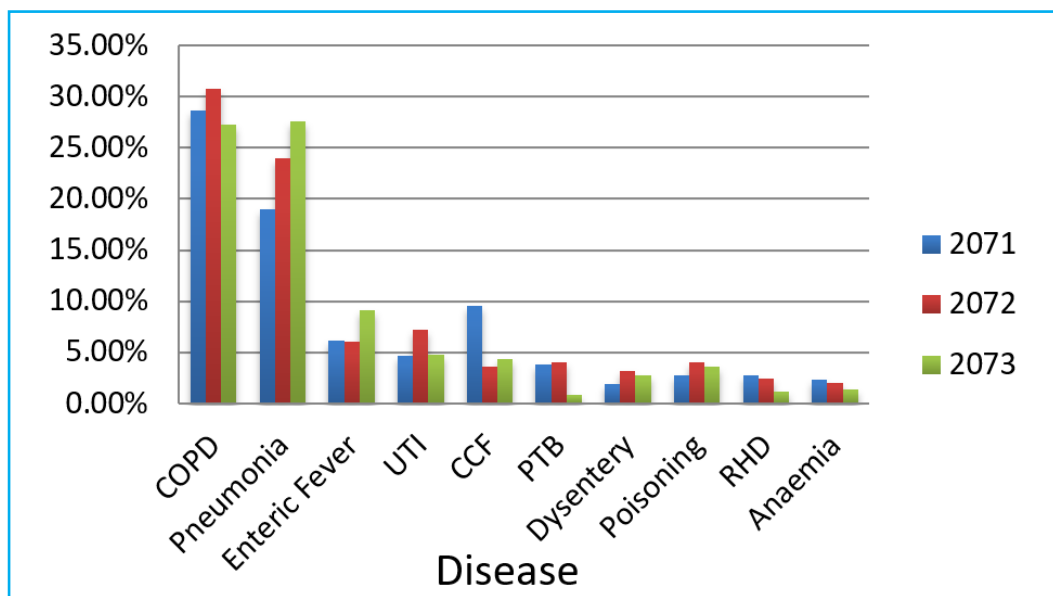
**Table 5:** Common system involved.

| Disease          | 2071       | 2072        | 2073        |
|------------------|------------|-------------|-------------|
| Infectious       | 74 (35.2%) | 103 (41.2%) | 169 (40.5%) |
| Respiratory      | 70 (33.3%) | 87 (34.8%)  | 131 (31.4%) |
| Cardiovascular   | 30 (14.3%) | 17 (6.8%)   | 35 (8.4%)   |
| Hepatobiliary    | 11 (5.2%)  | 8 (3.2%)    | 17 (4.2%)   |
| Gastrointestinal | 5 (2.4%)   | 5 (2%)      | 18 (4.3%)   |
| Poisoning        | 6 (2.8%)   | 10 (4%)     | 15 (3.6%)   |
| Renal            |            | 10 (4%)     | 14 (3.4%)   |
| Hematology       | 5 (2.4%)   | 5 (2%)      | 6 (1.4%)    |
| Neurology        | 3 (1.4%)   | 3 (1.2%)    | 6 (1.4%)    |
| Psychiatry       | 4 (2%)     | 2 (0.8%)    | 1 (0.2%)    |
| Miscellaneous    | 2 (1%)     |             | 5 (1.2%)    |
| <b>Total</b>     | <b>210</b> | <b>250</b>  | <b>417</b>  |

Infection accounted for the most admission 35%, 41.2%, and 40.5% in 2071, 2072 and 2073 years respectively. Infection includes enteric fever, pneumonia, urinary infection, pulmonary tuberculosis and dysentery.

Chronic Obstructive Pulmonary Disease (COPD) is the commonest disease requiring admission (28.6%, 30.8% and 27.3% in respective years 2071, 2072 and 2073) followed by Pneumonia, enteric fever, Urinary tract infection(UTI) pulmonary tuberculosis (PTB), Congestive Cardiac Failure (CCF), Rheumatic Heart disease (RHD) as shown in figure 1.

**Figure 1:** Common Diseases according to Percentage.



## Discussion

This study was conducted in the patients admitted to medical ward of KAHS since Baisakh 2071 to Chaitra 2073. Our study observes that female to male percentage is more in all years and the maximum patient got admitted belongs to the age group of 51-70

years (41.9%, 38% and 43% in respective years 2071, 2072 and 2073) with above 70 years nearly 10% .

Similarly to ours Shrestha et al study reported maximum cases from the age group 40-59 years.<sup>(3)</sup> Also B.P.Pokherel et al and Ashraf Muhammad et al

both study reveals the most common age of patients being admitted were between 46-65 years (37.6%) and greater than 85 years were nearly 1%.<sup>(4,5)</sup> Whereas in contrast Elias et al study showed the mean age for admission between 21-30 years.<sup>(6)</sup>

Garko S. B. et al. study shows persons aged 70 years and above constituted 26.3% of all admissions in contrast with studies in Enugu with 7.2%, and Canada with 15% whereas our study revealed above 70 years being 1%.<sup>(7)</sup>

In our study Infections accounted for 35%, 41.2%, and 40.5% of all admissions in 2071, 2072 and 2073 years respectively followed by respiratory system (33.3%, 34.8% and 31.4%). Whereas Elias Ali et al study reveals that the commonest reason for admission to the medical wards were diseases of the respiratory system, (26.9%) followed by infectious and parasitic diseases (16.4%).<sup>(6)</sup> Similarly Ogunmola OJ et al study reveals, most common cause of medical admission being cardiovascular disease 32.1% followed by infectious disease 18.8% and respiratory 9.5%.<sup>(8)</sup> Also Pokharel et al study shows most commonly affected system being respiratory 31.73% followed by infectious disease 30.08% and Shrestha et al study the main system involved was respiratory (in 2008-21.6%, in 2009-21.4%, in 2010-19.3%, in 2011 -18.2%).<sup>(3,4)</sup> In contrast Muhammad et al study reveals gastrointestinal (22.63%) being the commonest system involved followed by cardiovascular (15.29%), respiratory (14.37%) etc.<sup>(6)</sup>

In our study COPD and Pneumonia were among the top 10 diseases admitted in the medicine ward (COPD in 2071-28.6%; in 2072-30.8%; in 2073-27.3%) (Pneumonia in 2071-19%; 2072-24%, 2073-27.6%). Similarly B.P.Pokherel et al study also reveals COPD (23.17%) accounting for the highest admission followed by UTI, Pneumonia, Poisoning etc.<sup>(3)</sup> Whereas Elias Ali et al study shows Pneumonia (84.8%) being the commonest cause for the admission to the hospital followed by malaria (53%) and tuberculosis (33%).<sup>(6)</sup> Study done by Shrestha et al shows COPD (2008-7.3%, in 2009-6%, in 2010-6%, in 2011-5.8%, in 2012-4.6%) being the most common disease admitted in the hospital followed by Diabetes.<sup>(3)</sup>

## Conclusion

After the establishment of KAHS the health care facilities in Jumla has improved and so by of the nearest Karnali districts, as KAHS being the referral center. COPD was the commonest cause for the admission in the hospital followed by infectious disease as Pneumonia, UTI and Enteric Fever etc. These diseases can be prevented by educating people, antismoking campaign and other smoke prevention measures, hygienic drinking and eating habit, and health awareness.

## References

1. District Profile Jumla. Ministry of Agricultural Development PPCR/BRCH/AMIS Project Management Unit (PMU). [www.namis.gov.np](http://www.namis.gov.np).
2. [www.kahs.edu.np](http://www.kahs.edu.np). Introduction and Backward Region: A Glance.
3. Rauniyar M, Shrestha J, Bhatta RL, Shrestha A, Acharya K. Disease Pattern, Morbidity Indicators in a Tertiary Care Center of a Developing Country. *Ann Public Health Res* 4(1): 1055.
4. B.R. Pokharel, S. Humagain, P. Pant. Spectrum of diseases in a medical ward of a teaching hospital in a developing country. *Journal of College of Medical Sciences-Nepal*. 2012; Vol-8, No-2, 7-11.
5. Ashraf Muhammad; Zakria Muhammad. Disease Patterns; Admitted Patients in Medical Ward of Independent University Hospital, Marzipura, Faisalabad. *Professional Medical Journal*. 2014, Vol. 21 Issue 3, p570-574. 5p.
6. A. Elias. Reasons and outcome of admissions, *Ethiop J Health Sci*. 2010; 21(2):113-20.
7. S. B. Garko, C. N. Ekweani and C. A. Anyiam. duration of hospital stay and mortality in the medical wards of ahmadu bello university teaching hospital, kaduna. *annals of african medicine* vol. 2, no. 2; 2003: 68 – 71.
8. Olarinde J Ogunmola; Olatunji Y Oladosu. Pattern and outcome of admissions in the medical wards of a tertiary health center in a rural community of Ekiti state, Nigeria. *Ann Afr Med*. 2014; 13: 195-203.