

Health Scenario of Karnali Province

Paudel T¹, Amgain K², Sanjel S³

¹Professor, Department of General Practice and Emergency Medicine, Karnali Academy of Health Sciences, Jumla

²Assistant Professor, Department of Anatomy and Cell Biology, Karnali Academy of Health Sciences, Jumla

³Associate Professor, Department of Community Medicine, Karnali Academy of Health Sciences, Jumla

Corresponding author:

Prof. Dr. Tarun Paudel

Email: drtarunpaul@gmail.com

ABSTRACT

Introduction: Although Karnali is an old civilization of Nepal, this province has low human development indexes and the indicators of health are low. This study was carried out to comprehend the trend of public health indicators and disease pattern of Karnali Province.

Methods: Descriptive study using provincial three years' health data were reviewed from all the 10 districts of Karnali Province using per forma. Data entered in Microsoft Excel software were transferred into the statistical package for social sciences version 21 and descriptive analysis was carried out.

Results: Previous three years' data were analyzed. The last years' results were BCG coverage was 106.0%, DPT/Hepa B was 93.0%, 95.0%, tetanus toxoid (TT) 2 & tetanus toxoid 2+ was 82.0%, 0-11 months' growth monitoring was 126.0%, 0-23 months' underweight children was 8.0%, pneumonia among new acute respiratory infection was 24.0% prevalence of acute respiratory infection was 949/1,000, prevalence of diarrhea was 709/1,000 and severe dehydration among diarrhea was 0.9%. Four Antenatal check up was 55.0% institutional delivery was 67.0%, delivery by skill birth attendant was 56.0%, health examination within 24 hours of delivery was 65.0%, and contraceptive prevalence (CPR) rate was 35.0%. Likewise, treatment success rate of tuberculosis was 86.0%, new case detection for rate/100,000 tuberculosis was 0.5, HIV Incidence rate/10,000 was 5.3 and outpatient department attendance was 83.0%. Among top 10 diseases, respiratory infection was the first with 14.8%, followed by acute peptic disorders 10.4%, headache 7.9%, worm infestations 7.2% and fall injuries/ fractures found 5.9%.

Conclusions: The indicators of health condition of Karnali Province are markedly low in comparison to the other provinces as well as the national figure. The utilization of public health services has to be reinforced in the province and districts.

Keywords: *Karnali province, health indicators, top ten diseases*

INTRODUCTION

Karnali is an old civilization of Nepal and it is connected with Karnali river the archaeological sites found in Jumla, Surkhet and Dailekh refers that this area was part of Khasa kingdom which was established during 11th century.¹ The districts of

Karnali province are the districts having very low human development index (0.469) in comparison to National figure (0.574).^{1,2} All the indicators of health are low in this province in comparison to the other provinces.³⁻⁵ Health personnel population ratio is also noticeably low in this province.⁶

A large section of the population, predominantly those living in rural poverty, are at risk of infection and death by communicable diseases, malnutrition and other health-related events.⁵ Nevertheless, some improvements in health care can be witnessed; most notably, there has been significant improvement in the field of maternal health after the establishment of Karnali Academy of Health Sciences and its extended health services in the districts.⁷

At present, central Government and provincial Government are enthusiastic to improve the health status of the province. With the establishment of Karnali Academy of Health Sciences in Jumla, the situation will escalate within a short period of time.⁷ So, this study was carried out to comprehend the trend of public health indicators and disease pattern of Karnali Province.

METHODS

This was descriptive study conducted using provincial health data of 2072/2073, 2073/2074 and 2074/2075. Three years' health data were reviewed from all the 10 districts of Karnali Province.

The data from all 10 districts of public health offices and district hospital were collected. A per forma was developed to synchronize the data.

The data were entered into the Microsoft Excel software. After transferring into the statistical package for social sciences (SPSS) version 21, descriptive

analysis was carried out. The outputs were presented in the tables and charts.

RESULTS

Table 1: Basic health information of Karnali Province numbers

Particulars	Facts
Districts	10
Urban Municipality	25
Rural Municipality	54
Total Population	1743006
≤ 1-year children	37003
≤ 5-years of children	179486
≥ 60 years population	147025
Total health institution	433
Hospitals	15
PHC	14
Health posts	336
FCHVs	4341
Immunization clinic	1323
PHC-CRC clinics	1060

There are 10 districts, 25 Urban Municipalities and 54 Rural Municipalities in the Karnali province. In total 433 health institution including 14 PHCs, 15 hospitals and 336 health posts are existed (Table 1).

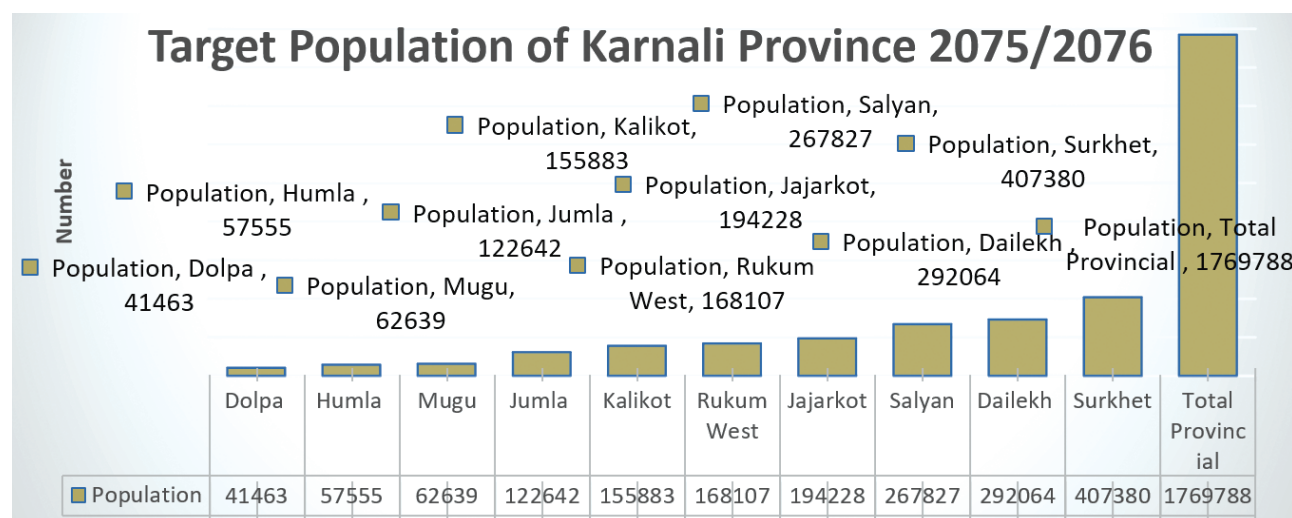


Figure 1: Target Population 2075/2076

In total of 1769788 people residing in 10 districts namely: Dolpa, Humla, Mugu, Jumla, Kalikot, Rukum West, Jajarkot, Salyan, Dailekh and Surkhet is the target population of the Province (Figure1).

Table 2: Health indicators of Karnali Province

Health Institutions	2072/ 2073	2073/ 2074	2074/ 2075
Public hospitals	89	86	97
PHC	99	99	100
Health post	98	99	98
PHC-ORC clinics	76	88	84
Immunization clinic	88	97	90
FCHVs	86	88	88
Immunization			
BCG	90.0%	100.0%	106.0%
DPT-HepB-Hib3	88.0%	97.0%	93.0%
Measles	83.0%	96.0%	95.0%
TT 2 & TT 2+	67.0%	76.0%	82.0%
Nutrition			
0-11 months' growth monitoring	93.0%	127.0%	126.0%
0-23 months' underweight children	6.0%	10.0%	8.0%
Integrated Management of Childhood Illnesses (IMCI)			
Pneumonia among new ARI	28.0%	27.0	24.0%
Prevalence of ARI/1000	939	927	949
Prevalence of diarrhea/1000	699	722	709
Severe dehydration among Diarrhea	1.8%	0.8%	0.9%

Three years data from 2072/2073, 2073/2074 and 2074/2075 were analyzed and found that BCG coverage 90.0%, 100.0% and 106.0% respectively in the consecutive years; DPT/Hepa B coverage 88.0%, 97.0% and 93.0% respectively; measles coverage 83.0%, 96.0% and 95.0% respectively; TT 2 & TT 2+ coverage 67.0%, 76.0% and 82.0% respectively; 0-11 months' growth monitoring coverage 93.0%, 127.0% and 126.0% respectively; 0-23 months' underweight

children coverage 6.0%, 10.0% and 8.0% respectively; pneumonia among new ARI coverage 28%, 27% and 24% respectively; prevalence of ARI/1000 were 939, 927 and 949 respectively; prevalence of diarrhea/1000 were 699, 722 and 709 respectively; and severe dehydration among diarrhea were 1.8%, 0.8% and 0.9% respectively in the consecutive years (Table 2).

Table 3: Health services utilization for previous three years

Health Services	2072/ 2073	2073/ 2074	2074/ 2075
4 ANC visit as per protocol	40.0%	49.0%	55.0%
Institutional delivery	56.0%	60.0%	67.0%
Delivery by SBA	50.0%	51.0%	56.0%
Health examination within 24 hours of delivery	56.0%	59.0%	65.0%
Family planning			
Contraceptive prevalence rate (CPR)	33.0%	36.0%	35.0%
Malaria			
Total malaria patients	60	74	169
Plasmodium Falciparum	3.33.0%	4.05%	0.59%
TB			
Case notification rate/100,000	81	101	95
Treatment success rate (%)	92.0%	83.0%	86.0%
Leprosy			
New case detection rate/100,000	0.53	0.57	0.5
HIV			
Incidence rate/10,0000	5.2	6.1	5.3
Number of new HIV positive	114	222	57
Curative Services			
OPD attendance	83.0%	78.0%	83.0%

Health Services for FY 2072/2073, 2073/2074 and 2074/2075 were also analyzed. The findings were four ANC visit as per protocol 40.0%, 49.0% and 55.0% respectively; institutional delivery 56.0%, 60.0% and 67.0% respectively; delivery by SBA 50.0%, 51.0% and 56.0% respectively; health examination within 24 hours of delivery 56.0%, 59.0% and 65.0% respectively; CPR 33.0%, 36.0% and 35.0% respectively; total number of malaria patients 60, 74 and 169 respectively; plasmodium Falciparum percentage 3.33%, 4.05% and 0.59% respectively; case notification rate of TB/100,000 were 81, 101 and 95 respectively; treatment success rate 92.0%, 83.0% and 86.0% respectively; new case detection rate/100,000 were 0.53, 0.57 and 0.5 respectively; HIV Incidence rate/10,000 were 5.2, 6.1 and 5.3 respectively; number of new HIV positive were 114, 222 and 57 respectively; and OPD attendance percentage 83.0%, 78.0% and 83.0% respectively in the consecutive years (Table 3).

Table 4: Top ten Morbidity of Karnali Province (% among total hospital visits) in 2074/75

Disease Pattern	Frequency	Percentage
Respiratory infections	27310	14.8
APD	19191	10.4
Headache	14577	7.9
Worm infections	13286	7.2
Fall injuries/fractures/orthopedic problems	10887	5.9
Skin diseases	9780	5.3
Abdominal pain	7935	4.3
Viral influenzas	7935	4.3
Urinary tract infection (UTI)	7012	3.8
AGE	6827	3.7
Others	50744	27.5
Total Hospital visit	184525	100.0

The presence of diseases pattern was also assessed. The respiratory infections was found 14.8%, APD was found 10.4%, headache was found 7.9%, worm infestations was found 7.2%, fall injuries/ fractures/ orthopedic problems was found 5.9%, skin diseases was found 5.3%, abdominal pain was found 4.3%, viral influenzas was found 4.3%, UTI was found 3.8 %, AGE was found 3.7% and the remaining 27.5% of the diseases were Others (Table 4).

DISCUSSION

It is believed that the pattern of medical diseases in developing countries is different than the developed countries.⁸ In the current study, three years data in 2072/2073, 2073/2074 and 2074/2075 were analyzed and found that BCG coverage were 90.0%, 100.0% and 106.0% respectively in the consecutive years; DPT-HepB-Hib3 were 88.0%, 97.0% and 93.0% respectively; measles were 83.0%, 96.0% and 95.0% respectively. The national rate for BCG were 99.0%, 94.0% and 87.0%; children under one year immunized with DPT-HepB-Hib3 92.0%, 91.0% and 82.0%; children under one year immunized with OPV3 92.0%, 90.0% and 79.0%; one-year-old children immunized against measles/rubella 88.0%, 85.0% and 77.0%; and children 12-23 months immunized against Japanese encephalitis 43.0%, 53.0% and 63.0%.³

In this study, the TT 2 & TT 2+ in 2073/2074 and 2074/2075 were found 67.0%, 76.0% and 82.0% respectively. The national rate of pregnant women who received TT 2 and TT2+ were 52.0% 66.0%.³ In the current study, FY 2072/2073, 2073/2074 and 2074/2075 findings of four ANC visit as per protocol were 40%, 49% and 55% respectively; institutional delivery were 56%, 60% and 67% respectively; delivery by SBA were 50%, 51% and 56% respectively; health examination within 24 hours of delivery were 56%, 59% and 65% respectively; and contraceptive prevalence rate (CPR) were 33%, 36% and 35% respectively. The national figures of pregnant women attending first ANC visit were 86.0% 96.0% 97.0% respectively; pregnant women attending four ANC visits were 59.0%, 52.0% and 51.0% respectively; institutional deliveries were 50.0% 52.0% and 55.0%

respectively; deliveries conducted by a skilled birth attendant were 50.0% 51.0% 54.0% respectively; postpartum women received PNC checkup within 24 hours of birth 48.0% 52.0%, and women who had three PNC check-ups as per protocol were 20.0% and 18.0%.³

There has been an overall reduction in under nutrition, disparity between socio-economic groups and between urban and rural areas is growing.⁹ This was seemed that 0-11 months' growth monitoring was 93.0%, 127.0% and 126.0% respectively; and 0-23 months' underweight children were 6.0%, 10.0% and 8.0% respectively. The national figures for the same were 97.0% and 78.0%; and 2.5% and 3.2% respectively.³ In this study, pneumonia among new ARI were 28.0%, 27.0% and 24.0% respectively; prevalence of ARI/1000 were 939, 927 and 949 respectively; prevalence of diarrhea/1000 was 699, 722 and 709 respectively; and severe dehydration among diarrhea were 1.8%, 0.8% and 0.9% respectively in the consecutive years. In the previous national study, incidence of ARI per 1,000 children under five years (new visits) 951/1000, 765/1000 and 648/1000; incidence of pneumonia among children under five years (per 1,000) were 188/100 and 147/1000 of children under five years with ARI suffering pneumonia 25.0% and 22.0%. Incidence of diarrhoea per 1,000 under five years children (new cases) 629/1000, 502/1000 and 422/1000, children under five years with diarrhoea suffering from dehydration (facility, outreach & community level) 21.0% and 20%.³

In this study, the total number of malaria patients were 60, 74 and 169 respectively; plasmodium falciparum percentage were 3.33%, 4.05% and 0.59% respectively. In the national figures, the annual blood slide examination rate (ABER) 0.94%, 0.75% and 0.84% respectively; and annual parasite incidence (API) population at risk 0.12/1,000, 0.10/1,000 and 0.07/1,000 respectively.³ In our current study, case notification rate of TB/100,000 were 81, 101 and 95 respectively; Treatment success rate were 92%, 83% and 86% respectively; new case detection rate/100,000 were 0.53, 0.57 and 0.5 respectively. National figures

for case notification rate (all forms of TB) was 136, 123, 113; treatment success rate was 90.0%, 92.0% and 90.0%; and the sputum conversion rate were 90.0%, 89.0% and 89.0% respectively.³ In our current study, HIV Incidence rate/100,000 were 5.2, 6.1 and 5.3 respectively; number of new HIV positive were 114, 222 and 57 respectively; and OPD attendance percentage were 83%, 78% and 83% respectively in the consecutive years. New case detection rate (NCDR) for leprosy per 100,000 population were 11.8, 11.0 and 10.7; and the prevalence rate per 10,000 was 0.83, 0.89 and 0.89. In this study, OPD attendance 83.0%, 78.0% and 83.0% respectively. Comparable with this study, the national figures for OPD attendance were 79.0%, 73.0% and 66.0%.³

The presence of diseases pattern was also assessed. The respiratory infections was found leading cause of the morbidity with 14.8%, APD 10.4%, headache 7.9%, worm infestations 7.2%, Fall injuries/ fractures/ orthopedic problems 5.9%, skin diseases 5.3%, abdominal pain 4.3%, viral influenzas 4.3%, UTI 3.8 %, AGE 3.7% and the remaining 27.5% of the diseases were Others. Similar to the current study other studies conducted in Nepal revealed that respiratory diseases were the leading cause of morbidity among top ten prevalent diseases.^{4, 8, 9}

The scenario of province 1 was as follow: DPT-HepB-Hib3 86.0%, measles 83.0%, children growth monitored 61.0%, severe pneumonia 0.6%, severe dehydration 0.45%, AVC checkups as per the protocol 42.0%, institutional delivery 48.0%, delivery by SBA 48.0%, CPR 35.0%, TB case notification rate 86.0%, treatment success rate of TB was 85.0%, OPD service utilization was 76.0%. For the province 4, DPT-HepB-Hib3 75.4%, measles 74.0%, 0-23 months growth monitoring 69.5%, severe pneumonia 0.3%, severe dehydration 0.11%, four ANC checkups as per protocol 59.0%, institutional delivery 49.9%, delivery attended by SBA 49.7%, CPR 26.8%, case notification rate of TB/100,000 was 81.0, treatment success rate of TB was 91.8%, population untiring OPD services was 102.5%.¹⁰ Findings revealed that health services improving and the morbidities were gradually decreasing.

We have tried our best to find out the health services utilization and the morbidity patterns of the Karnali Province.

As this is the secondary data analysis, all the necessary data could not be accessed due to inconsistency of data compilation of the different institutions.

IMPLICATIONS OF THE STUDY

Health scenarios of Karnali Province will be useful in program development and improvement, policy development, strategic planning, for decision makers and planners. It will also helpful for evaluation and monitoring as well as for research of health services in upcoming days

CONCLUSION

All the indicators of health status of Karnali Province are noticeably low in comparison to the other provinces as well as the national figure. Four ANC visits, institutional delivery, delivery by SBA, health examination within 24 hours of delivery and CPR has to be strengthened in the province as well as in the districts.

ACKNOWLEDGEMENT

Our sincere gratitude goes to the Ministry of Social Development, Karnali province, all district health offices and district hospitals situated in the Karnali Province for providing data.

REFERENCES

1. Provincial Government, Karnali Province, Chief Minister and Ministerial Office, Birendranagar-Surkhet, Nepal. Introduction of Karnali Province. Birendranagar-Surkhet: Provincial Government, Karnali Province, Chief Minister and Ministerial Office, Birendranagar-Surkhet, Nepal; 2018 [cited 2019 January]
2. UNDP. Human Development Indices and Indicators: 2018 Statistical Update. Kathmandu, Nepal: United Nations Development Programme; 2018. Available from: <http://hdr.undp.org/en/content/human-development-indices-indicators-2018-statistical-update>
3. GoN, MoHP, DoHS. Annual Report 2015/2016. Kathmandu: Government of Nepal, Ministry of Health, Department of Health Services; 2016. Available from: dohs.gov.np/wp-content/uploads/2017/06/DoHS_Annual_Report_2015_16.pdf.
4. MoHP, New Era, ICF. 2016 Nepal Demographic and Health Survey Key Findings. Kathmandu, Nepal: Ministry of Health; 2017. Available from: <https://nepal.unfpa.org/sites/default/files/pub-pdf/NDHS%202016%20key%20findings.pdf>
5. Anonymus. Health in Nepal. Wikipedia; ; 2018 [cited 2019 January 5]; Available from: [file:///F:/REF%20of%20k%20provincial%20health/Health%20in%20Nepal%20-%20Wikipedia.html](https://en.wikipedia.org/wiki/Health_in_Nepal).
6. Basnet BB. Health Fact Sheet & findings of Provincial Review FY 2073/74: Province 1. Dhankuta: Eastern Regional Health Directorate; 2017. Available from: <http://dohs.gov.np/wp-content/uploads/2017/09/Province-1.pdf>.
7. KAHS. About Institution. Jumla, Karnali: Karnali Academy of Health Sciences; 2018 [cited 2019 January 8]; Available from: <http://www.kahs.edu.np/about-institution>.
8. Rauniyar MSJ, RL Bhatta, Shrestha A, Acharya K Disease Pattern, Morbidity Indicators in a Tertiary Care Center of a Developing Country. Ann Public Health Res 2017;4(1):1055. Available from: <https://www.jsimedcentral.com/PublicHealth/publichealth-4-1055.pdf>.
9. Prakash S. Public Health Scenario in Nepal. Acta Scientific Nutritional Health. August 2017;1(4). Available from: <https://actascientific.com/ASNH/pdf/ASNH-01-0036.pdf>.
10. Paudel TN. Health Fact Sheet & findings of Provincial Review FY 2073/74: Province 4. Pokhara: Western Regional Health Directorate, Pokhara; 2017. Available from: dohs.gov.np/wp-content/uploads/2017/09/Province-4.pdf.