

**Variation in Prices of Common Drugs: case study
from two remote districts of Nepal**

Humla and Okhaldhunga

WLB

Nepal Health Research Council

Kathmandu, Nepal

March 2007

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Forewords

It is normally perceived that cost of health services, including essential medicines, in remote districts of Nepal is higher as compared to the urban areas of the country. However, there is no data available in this regard. Thus, Nepal Health Research Council took the initiation on identifying the prices of some of the essential medicine in two remote districts and comparing them with prices in Kathmandu.

The result obtained from the study has revealed important information on the price situation of the essential medicines in private sector in two remote districts. Apparently, it indicates to the need of research in this issue at the national level in order to assess the situation in the country.

The Government of Nepal has recognized health of people as a fundamental human right. In order to realize this commitment, Ministry of Health and Population has reinforced and adopted a new strategy in delivering essential health services to the people with a special priority of the needs of poor, deprived and vulnerable sectors of population. In this context, I believe that the research results would be useful for the stakeholders including the policy and decision makers for bringing the essential drugs in affordable prices in such remote districts.

For making the study a success firstly, my thanks go to Mr. Bhupendra Bahadur Thapa, Director of the Department of the Drug administration. I would like to thank Ms Pearl Banmali, Co Principal Investigator of the study. Similarly, I express my sincere thank to the team of Nepal Health Research Council: Dr. Rajendra Kumar BC, Mr. Nirbhaya Kumar Sharma, Mr. Subodh Kumar Karna, Ms. Shailee Singh Rathout, Mr. Bijaya Kumar Jha and Mr. Gopal Prajapati.

Finally, I take this opportunity to express my sincere thanks to WHO for its financial support for the study.

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1. Introduction

Access to essential medicines is fundamental human need. It is the prime duty of any government to assure the accessibility of life saving drugs. From the patient or consumer's point of view access to essential medicines means that such medicines should be available at reasonable prices and they should be readily available in health facilities. Needless to say, essential assured quality drugs save lives of millions of people when are available at affordable prices. Although considerable progress has been made in terms of access to essential medicines in the last twenty-five years especially after introduction of the essential medicines concept, unfortunately many poor people in the world cannot have access to essential medicines. Nepal is not exception.

Health expenditure of the poor is largely devoted to buying medicines. Therefore, the price of essential medicines does matter – not only to patients, but also to the governments with the responsibility to provide better healthcare for the citizens. One of the major determinants of access to treatment is the price of medicines. Most of the health posts in the remote areas of Nepal cannot provide enough essential drugs. Therefore, poor people have to depend on local pharmacies. Shortage of essential drugs is more acute in the remote and backward areas. At the same time, even if available, they are more expensive in the remote districts.

2. Background

According to the data of 2000 the high-income countries, comprising of 14 per cent of world's population, accounted for 79 per cent of the measured value of pharmaceutical outlays. Forty per cent of the world's population living in low-income countries spent on an average US\$ 4.40 a year per capita on medicines. The total number of people without access to medicine remains between 1.3 and 2.1 billion. Majority of such people stay in the developing countries. It is believed that in many high income countries over 70 per cent of pharmaceuticals are publicly funded whereas in low and middle income countries public expenditures do not cover the basic medical needs of the majority of the population. In developing countries 50 to 90 per cent of medical expenses are borne by the patients themselves¹. In South Asia only about 80 per cent of private expenditure for health care goes on medicines². Poor health conditions are one of the major reasons for acute poverty in South Asian countries^{3,4}.

It is well known that one third of the world's population lacks access to essential medicines due to unaffordable price¹.

The price of the medicine varies between and within the countries. WHO identified following interesting factors regarding variation in the prices of essential medicines:

- The sector in which they are purchased: the price is often higher in the private for-profit sector.
- The type of procurement agent: different prices may be paid for the same product by a public sector purchaser, such as the Ministry of Health, the health facility that supplies the medicine to the patient, and the individual who purchases the medicine.
- The distribution route: a patient who purchases a medicine at a public hospital pharmacy may have to pay more if the hospital pharmacy purchased the product from a local wholesaler instead of purchasing by tender or through the public health sector distribution system.
- The patent status: the price of patented medicines is often higher than that of their generic equivalent⁵.

The cost of the medicine may be affected by the hidden factors also. A study conducted in nine developing countries identifies the following hidden costs: import tariffs, port charges, clearance fees, pre-shipment inspections, pharmacy board fee, and importer's markups, value added tax (VAT), federal and state taxes, wholesale and retail markups⁵. The hidden costs may even double the manufacturer's cost⁶. In the case of Nepal; a study has reported that in spite of minimal import tariff of 4 per cent, total hidden cost accounts for 48 per cent. It is believed that the prices of medicines are well above their actual production costs⁷.

In Nepal, which lies in South Asian region, 38 per cent of the population living below poverty line is unable to fulfill the basic needs⁸. The poverty issue is more acute in remote areas. In Nepal, about 70 percent of the health related expenditures is borne by the patient themselves compared to around only 20 percent in high-income countries⁹.

Access to essential medicines is a key priority in health care service in any setting. In Nepal limited medicines are available at government health facilities. The government has published essential drug list for various levels of health facilities. The government is supplying selected medicines at health posts and sub-health posts. Such medicines are free of costs. In the districts where community drug programs are implemented patients pay a subsidized price for such medicines. There are more than 10,000 retail pharmacies in the country selling such medicines. As the medicine provided by the government is not enough, people need to purchase from them.

In the remote areas of the Nepal, where poverty prevails, essential medicines are out of reach for about one third of the population, people who do have some access to such medicines need to pay higher prices compared to the people living in the centrally located urban or semi-urban areas of the country. Normally the price of medicine is uniform throughout country. But due to transportation costs, medicine prices tend to be higher in the remote areas.

It is believed that prices of medicines of similar nature vary between the centrally located areas and the remote areas of the country. But there is lack of information regarding the price difference to validate the issue.

3. Purpose and Objective of the Study

Purpose

Ministry of Health and Population has reinforced the existing policy and adopted new strategies of service delivery to the people with high priority of health needs of poor, deprived and vulnerable sectors of population. The strategies ensure that essential health services are within the reach of people. The purpose of the study was to provide the relevant information about the situation of essential medicines in remote districts to the Ministry of Health and Population with the belief that such information will help the Ministry to work out necessary policy to address inequality.

4. Objectives

With the overall objective to assess the variation in price of common drugs in remote districts the study had the following specific objectives:

- Identify the prices of the common drugs in two remote districts of Nepal (Okhaldhunga & Humla).
- Compare the price variation of listed essential medicines in these districts with the manufacturer's retail price.
- Assess the variation of price of same drugs within the districts.

5. Methodology

The research was designed as descriptive study. The districts, Humla and Okhaldhunga, were purposively selected as they represented western and eastern mountain and hilly regions respectively.

Humla District

Humla district, which lies in Far Western region lies in Karnali zone, is regarded as one of the remote areas of Nepal with very poor health status. The district covers an area of 5,655 sq km and has a population of 40,595. Simikot is the district's headquarter. The district health profile indicates that Humla is one of the districts with very poor health status ⁸. In a composite index of development, this district ranked fourth from the worst-off districts ¹⁰. The main health problems are: severe to chronic malnutrition; frequent diarrhea and infestations related to lack of hygiene and sanitation. Poor nutrition, gastrointestinal ailments, worms, measles, tuberculosis, vitamin deficiency, eye and respiratory diseases add up to many serious health problems ¹¹.

During winter season accessibility to other districts is hampered due to the heavy snowfall causing more difficulties in fulfilling basic needs of the population.

Okhaldunga District

Okhaldunga district is among the remote districts of Nepal. Okhaldhunga lies in the Eastern Development Region of Nepal. Okhaldhunga Bazar is the district's headquarter. It has the area of 1074 Sq. Km having the population of 156702. The life expectancy at birth of this district is 63.26 and this district has the human development index of 0.481, the human poverty index of this district is 46. The adult illiteracy rate is 58.5 ⁸. Large number of children is under five years of age and is under chronic malnourishment. In recent years the diseases such as acute respiratory infection disease, skin disease, diarrhea and gastritis, which could be easily cured, are found as the major disease of the district ¹²

Both the districts are facing the problems of inaccessibility and immobility due to lack of proper roads. In these districts most people are only taking care of the day-to-day needs for survival. A good percentage of the population migrates for short or long periods to other parts of Nepal or to India for livelihood or trade, especially during the winter months. These districts are in the most isolated regions, accessible only by foot or on small planes.

Selection of medicines to be studied

The essential medicines to be included in the study were decided together with the Department of Drug Administration. Similarly, the DDA provided the list of retail prices of the study drugs.

The identified common drugs for Humla District are:

1. Albendazole tablet 400 mg & suspension
2. Amoxicillin capsule 500 mg
3. Ciprofloxacin tablet, 500 mg/250
4. Co-trimoxazole Tab.or Cap. 800+160 mg & suspension
5. Dextromethrophan coug Syrup/ Susp. 50ml/100ml
6. Folic acid
7. Ibuprofen/paracetamol tablet 400/325 mg & suspension
8. Metronidazole and diloxanide Tab & suspension
9. Omiprazole capsule, 20 mg
10. ORS
11. Paracetamol susp/ Syp/Tab
12. Vitamin B-complex syrup, 100-200 ml

The identified common drugs for Okhaldhunga District are:

1. Albendazole tablet 400mg
2. Amoxicillin capsule 500 mg & 125mg
3. Ciprofloxacin tablet, 500 mg/250
4. Co-trimoxazole Tab.or Cap. 800+160 mg & suspension
5. Dextromethrophan coug Syrup/ Susp. 50ml
6. Folic acid
7. Ibuprofen tablet 350 mg/ 500mg
8. Metronidazole and diloxanide Tab/ Suspension and Syrup
9. omiprazole capsule, 20mg
10. ORS
11. Paracetamol syp
12. Vitamin B cmplex syrup 100 –200 ml

The duration of the study was from September – December 2006. The study included all the pharmacies existed in the headquarters of the two districts. The list of the pharmacies existed in the Humla district was obtained from Gramin Bikas Samiti of the Humla District, which is responsible for the registration of the pharmacies while the list of pharmacies of Okhaldhunga was obtained from the Chief District Officer of the district.

The list of price of the common drugs of these districts was obtained through different approaches – surrogate customer, observation of drug sell, and interview with the customer about the price of purchased drugs. The retail price of the drugs was compared in different way 1) with the price of the similar drugs having different and common brand obtained from the various pharmacies within the districts 2) with the prices of drugs in another study district, and 3) with the price in Kathmandu, based in retail price.

Validity of the Study

In small market places like Humla and Okhaldhunga, confidentiality of the surrogate costumers, who were researchers themselves, could be questionable. This may have influenced the actual selling prices in the retail shops. As the issue of price bill is not a common practice in those retail shops, information about the price of drugs obtained from the interviews with costumer may have recall errors. It is difficult to say about the consistency of price of medicine in the same drug shop for different costumers, as the charging for medicine by the pharmacists according to the capacity of the costumers cannot be ruled out. In such circumstances, one time data collection may not reflect the actual selling practices and price of medicines in the market.

6. Results

The total number of pharmacies was six and three respectively in Humla and Okhaldunga districts as of December 2007.

Efforts were made to find out the price differentials of various products through secondary data and primary data. Major findings of the study showed that there were variety of products in the market with different prices and product names. The prices of the medicines varied as per the product name. Prices of the same products were found to be varied in different places due to scarcity of the product as well as distance of the village from the main market paces. Main findings of the study indicate that prices of the same product vary from place to place depending upon the scarcity of the product and distance of the place from the mainstream market paces.

The results of the study are provided in the following sections which substantiates the findings of the Study.

6.1 Generic Medicines and No. of Brands

A total of 12 generic drugs were studied in two districts - Humla and Okhaldhunga. These drugs varied with respect to brand name, strength and place of purchase. These drugs were presented in different preparation forms. Among them 2 categories of drugs were in capsule form, 1 in powder form, 5 in suspension form, 4 in the syrup and 7 were in the tablet form. There were 84 brands of medicines in these generic drugs from 32 different manufacturers.

Table 1: Generic Medicines and No. of Brands

Medicines in generic name	Number of Brands
Albendazole 400mg tablet	10
Albendazole suspension 10ml	4
Amoxycillin capsule 500mg	9
Ciprofloxacin tablet 500mg	6
Co-trimoxazole tablet 800+160	7
Co-trimoxazole suspension 50 ml	1
Dextromethrophan suspension. 50-100ml	4
Dextromethrophan syrup.50-100ml	2
Metro +Diloxa tablet 400+350mg	2
Metro +Diloxa syrup	1
Metro +Diloxa suspension	4
Folic acid	3
Ibuprofen + paracetamol tablet 400+325mg	5
Ibuprofen + paracetamol suspension	1
Ompirazole capsule	4
ORS	2
Paracetamol tablet 500mg	3
Paracetamol syrup.60ml	4
Vitamin B complex syrup 100-200ml	11

6.2 Overall Price Variation of the Same Generic Production

Table 2 shows the variation of price within the same generic drug. The result shows that there is price variation for the same generic drug. A study on price differences of various drugs from both the districts showed that there exists variation with respect to minimum. The maximum variation is found to be 177 percent, in the drug ibuprofen 400mg where the price varied from Rs.1.08 to Rs 3. and the

minimum variation is found in the drug Ibuprofen + paracetamol 350+500 mg which varied from Rs.2.40 to Rs.2.50.

Table 2: Price Variation of the Same Generic Production in both districts together

Medicines in generic name	Minimum Price (a)	Maximum Price (b)	% in price difference with respect to minimum $(b-a)/a * 100$
Albendazole - tablet	15.00	35.00	133
Albendazole - suspension	30	50.00	67
Amoxycillin -capsul 500mg	9.00	14.00	56
Ciprofloxacin - tablet	11.00	16.00	45
Co-trimoxazole- suspension	19.65	45.00	129
Co-trimoxazole- tablet	2.16	4.70	117
Dextromethrophan - syrup (100 ml)	58.00	110.00	89
Dextromethrophan - syrup (50 ml)	28.00	68.00	143
Dextromethrophan - suspension (50 ml)	45.00	68.00	51
Folic acid - Tablet	1.75	2.00	14
Ibuprofen + paracetamol tablet-400+325 mg	2.80	4.00	43
Ibuprofen + paracetamol tablet-350+500 mg	2.40	2.50	5
Metro + Diloxa – tablet 400/350mg	3.20	3.57	12
Metro + Diloxa - suspension	35.00	49.00	40
Omeprazole -capsule	6.00	10.00	66
ORS	7.00	15.00	114
Paracetamol - syrup (60 ml)	23.00	45.00	95
Vitamin B complex - syrup 100 ml	45.00	90.00	100
Vitamin B complex – syrup 200 ml	85.00	170.00	100

6.3 Overall Price Variation of the Same Brand Production

Findings given in table 3 indicate that there is a wide variation price of medicine even among the same brand product. The highest price difference is seen in most commonly used medicine like paracetamol and oral rehydration solution.

Table 3: Overall Price variation within the same brand in Humla and Okhaldhunga Districts

Generic Name	Brand Name	Price Variation of the same Brand Product		
		Minimum Price	Maximum Price	% in price diff. with respect to minimum
Albendazole tablet 400mg	Almex	20.00	30.00	50
Albendazole suspension	ABEN	30.00	35.00	17
Albendazole tablet 400mg	Wormnil	15.00	25.00	67
Amoxicillin tablet 500mg	Welmox	9.00	12.40	38
Amoxicillin tablet 500mg	Amoxa	10.00	13.00	30
Amoxicillin tablet 500mg	Amoxydin	11.00	14.00	27
Amoxicillin tablet 500mg	Simox	9.50	10.04	6
Ciprofloxacin tablet 500mg	Cifrox	12.00	13.00	8
Ciprofloxacin tablet- 500 mg	Ciprodeep	13.00	14.40	11
Ciprofloxacin tablet- 500 mg	OMFLOX	11.00	13.00	18
Co-trimoxazole tablet-800/160	Cotrim	3.00	4.70	57
Co-trimoxazole, tablet-800+160	MONOPRIM	3.00	4.00	33
Dextromethrophan syrup 50ml	Brumol	28.00	35.00	25
Dextromethrophan syrup,100ml	KAF D	80.00	110.00	38
Folic acid tablet 20mg	Folvin	1.75	2.00	14
Ibuprofen + paracetamol tablet 350/500mg	Coflam	2.40	2.50	4
Ibuprofen + paracetamol,tablet 400+325mg	Flamet	3.00	4.00	33
Ibuprofen + paracetamol,tablet 400+325mg	IBUMAX-Plus	3.00	3.50	17
Metro + Diloxa 100+125, 60ml	Diofur-M	40.00	49.00	23
Metro + Diloxa tablet,400+350mg	Metdil	3.50	3.57	2
Omiprazole capsule 20mg	F-Omez	8.00	9.00	13
ORS	Nava jeevan	7.00	15.00	114
Paracetamol syrup-60ml	Cetophen	23.80	25.00	5
Paracetamol tablet 500mg,	Evamol	1.00	8.00	700
Vitamin B complex syrup 200ml	Bicovit	90.00	98.00	9
Vitamin B complex syrup – 100 ml	Bustup Forte	45.00	50.00	11

6.4 Comparison of price variation in Humla and Okhaldhunga Districts

Table 4 shows the price comparison of the two districts, Humla and Okhaldhunga. In these districts there is price difference within the same generic drug. In the case of Humla district the variation with respect to minimum varied from 12 percent to 150 percent. Similarly, in case of Okhaldhunga district it varied from 1 percent to 62 percent. This showed that the percentage of price difference prominent in Humla district compared to Okhaldhunga district.

Table 4: Comparison of price variation of Humla and Okhaldhunga Districts

Generic name	Humla		Diff in percent with respect to min.	Okhaldhunga		% in price difference with respect to min
	Minimum Price	Maximum Price		Minimum Price	Maximum Price	
Albendazole, tablet	20.00	30.00	50	15.00	20.00	33
Amoxicillin capsule 500mg	9.50	14.00	47	9.00	10.04	12
Ciprofloxacin tablet 500mg	11.00	16.00	45	12.00	14.40	20
Co-trimoxazole, tablet	3.00	4.70	57	2.16	3.50	62
Dextromethrophan, suspension 50ml	45.00	68.00	51	28.00	35.00	25
Ibuprofen + paracetamol tablet 400/325	2.80	4.00	43	2.40	2.50	4
Metro + Diloxa, suspension, 60ml	40.00	45.00	13	40	49.00	23
Omeprazole capsule-.20mg	8.00	10.00	25	6.00	7.20	20
ORS	6.00	15.00	150	7.00	7.20	3
Paracetamol syrup 50 ml	30.00	40.00	33	23.80	25.00	5
Vit. B complex, syrup 100ml	70.00	90.00	29	36.00	45.00	25
Vit. B complex, syrup 200ml	170.00	190.00	12	85.00	98.00	15

6.5 Comparison of price variation between Humla and Okhaldhunga District with the manufacturer's retail (MRP) price

The result of the study given in the table 5 and 6 showed that there is price variation of the similar drug and this variation existed within the similar brand of the same drug. When compared with the MRP the price difference was found from minimum 3 percent that is in Amoxicillin 500mg found in Okhaldhunga district to the maximum of 213.50 percent in the drug Albendazole suspension in Humla district. This indicates that in remote districts there is increase in the price as compared to the maximum retail price. Also when viewed the table 5, it is found that there is more percentage difference with respect to MRP for the albendazole suspension. The difference was found to be from 50 percent up to 213 percent. In case of cough syrup containing dextrophan/ 50ml the variation with respect to MRP varied from Rs. 40 percent upto Rs.125 percent. This indicates that the price for the suspension form of drug is charged more as compared to MRP.

Table 5: Comparison of price variation of Humla District with the MRP

Generic name of the drug	Brand	Manufacturing country	MRP	Unit Price in the district	% in price difference with respect to MRP
Albendazole tablet-400mg	Zentel	India	23.00	30.00	30
Albendazole suspension-10ml	ABEN	Nepal	20.00	35.00	75
Albendazole tablet- 400mg	Alleantin	Nepal	16.00	30.00	88
Albendazole suspension-10ml	Alworm	Nepal	20.00	30.00	50
Albendazole tablet- 400mg	Almex	Bangladesh	15.00	30.00	100
Albendazole tablet- 400mg	Zydus Cadilla	India	24.00	35.00	46
Albendazole tablet- 400mg	Wormnil	Nepal	16.00	25.00	56
Albendazole tablet- 400mg	Zeroworm	Nepal	14.00	35.00	150
Albendazole tablet- 400mg	Aldoze	Nepal	20.00	35.00	75
Albendazole tablet- 400mg	Ovazole	Nepal	13.00	25.00	92
Albendazole suspension10ml	Alleantin	Nepal	16.00	50.00	213
Amoxicillin capsule 500mg	Amoxydin	Nepal	10.00	14.00	40
Amoxicillin capsule 500mg	Welmox	Nepal	8.70	12.40	43
Amoxicillin capsule 500mg	Reymoxis	Nepal	8.70	12.10	39
Amoxicillin capsule 500mg	Omex	Nepal	9.00	13.00	44
Amoxicillin capsule- 500mg	Simox	Nepal	9.00	10.00	11
Amoxicillin capsule- 500mg	Amoxa	Nepal	9.00	13.00	44
Ciprofloxacin tablet- 500mg	OMFLOX	Nepal	10.00	14.00	40
Ciprofloxacin tablet- 500mg	Cifrox	Nepal	11.48	13.00	13
Ciprofloxacin tablet- 500mg	Ciprodac	India	11.00	14.00	27
Ciprofloxacin tablet- 500mg	Xebec	Nepal	10.00	11.00	10
Ciprofloxacin tablet- 500mg	Ciprobiotic Forte	India	6.58	16.00	143
Co-trimoxazole tablet-800+160	MONOPRIM	Nepal	1.32	4.00	203
Co-trimoxazole tablet-800+160	Pactrim	Nepal	2.75	3.00	9
Co-trimoxazole tablet-800+160	Synoprim	Nepal	3.50	4.00	14
Co-trimoxazole tablet-800+160	cotrim Forte	Nepal	2.70	3.50	30
Co-trimoxazole tablet-800+160	Cotrim	Nepal	2.50	4.70	88
Co-trimoxazole tablet-800+160	Cotrimax DS	Nepal	2.50	4.00	60
Dextrophan suspension100ml	Meryl Linctus	Nepal	35.00	68.00	94
Dextrophan syrprup100ml	KAF D	Nepal	56.00	110.00	96
Dextrophan suspension 50m	Cherena Paed	Nepal	35.00	50.00	43
Dextrophan suspension 50ml	Himali	Nepal	20.00	45.00	125
Dextrophan suspension-100ml	Vasodryl	Nepal	60.00	110.00	83
Ibuprof + paracet. tablet-400+325	IBUMAX-Plus	Nepal	2.00	3.00	50
Ibuprof + paracet. tablet-400+325	IBUDIN plus	Nepal	2.00	3.20	60

Ibuprof + paracet. tablet-400+325	Flamet	Nepal	2.00	3.00	50
Ibuprof + paracet. tablet-400+325	Monoprofen plus	Nepal	1.70	2.80	65
Ibuprof + paracet tablet-400+325	Flamet	Nepal	2.00	4.00	100
Omeprazole capsule 20mg	F omez	Nepal	6.50	8.00	23
Omeprazole capsule 20mg	Omedian	Bangladesh	5.50	10.00	82
Omeprazole capsule 20mg	Procid	Nepal	6.00	10.00	67
Omeprazole capsule	F-Omez	Nepal	6.50	9.00	38
ORS	Navajeevan		6.00	15.00	150
ORS	Jeevanshakti		8.50	15.00	76
Paracetamol tablet 500mg	Evamol		0.50	8.00	750
Paracetamol tablet	Rexamol	Nepal	0.50	2.00	150
Paracetamol syrup 60ml	Synomol	Nepal	20.00	40.00	100
Paracetamol syrup 60ml	Picimol	Nepal	17.00	30.00	76
Paracetamol syrup 60ml	Symol	Nepal	17.00	35.00	106
Paracetamol syrup 60ml	Polar	Nepal	17.00	45.00	165
Paracetamol tablet	Phenocet	Nepal	0.50	1.50	200
Metro + Diloxa tablet 100+125	Dazyl-D	Nepal	3.5	5.00	43
Metro + Diloxa tablet 100+125	Nidazole	Nepal	1.5	2.20	47
Metro + Diloxa suspension-50ml	Diastazal	Nepal	25	40.00	60
Metro + Diloxa tablet-100+125	Amecore	Nepal	3	4.50	50
Metro + Diloxa suspension-60ml	Protogyl	Nepal	35	45.00	29
Vitamin B complex syrup-200ml	Fortiplex	Nepal	70	140.00	100
Vitamin B complex syrup-200ml	Vita	Nepal	65	120.00	85
Vitamin B complex syrup-200 ml	Polybion	India	82.17	150.00	83
Vitamin B complex syrup-200ml	R. B. Tone	India	98	170.00	73
Vitamin B complex syrup-200ml	Vita B	Nepal	70	110.00	57
Vitamin B complex syrup-200ml	Vigoran	Nepal	74	90.00	22

Table 6: Comparison of price variation of Okhaldhunga Districts with the MRP

Generic	Brand	Manufacturing country	MRP	Unit price in the district	% in price difference with respect to MRP
Albendazole tab 400mg	Zolex	Nepal	15	20	33
Albendazole tab 400mg	Worastat	Nepal	14.5	20	38
Albendazole tab 400mg	Alleantin	Nepal	16	19.2	20
Amoxicillin cap 500mg	Nemox	Nepal	8.37	10	19
Amoxicillin cap 500mg	Welmox	Nepal	8.7	9	3
Amoxicillin cap 500mg	Himox	Nepal	8.7	9	3
Amoxicillin cap 500mg	Mymox	Nepal	7	9	29
Amoxicillin cap 500mg	Simox	Nepal	8.37	10.04	20
Ciprofloxacin tab 500mg	Cifrox	Nepal	11.48	12	5
Ciprofloxacin tab 500mg	Ciprodeep	Nepal	12	14.4	20
Co-trimoxazole susp 50ml	Aprim Susp.	Nepal	17	25	47
Co-trimoxazole tab 800+160	Cotrimax DS	Nepal	2.5	4	60
Co-trimoxazole tab 800+160	Aprim DS	Nepal	2.65	3.5	32
Co-trimoxazole tab 800+160	Bactrim DS	India	1.81	2.16	19
Dextrophan syrup. 50m	Brumol	Nepal	20	35	75
Metro + Diloxa tab	Diastazal	Nepal	1.95	3.2	64
Ibuprofen and paracetamol tablet-350/500mg	coflam	Nepal	2.00	2.40	20
Metro + Diloxa syp	Amecore	Nepal	30	35	17
Metro + Diloxa tab 400+350	Metdil	Nepal	2.98	3.57	20
Omirprazole 20 mg	Omocid	Nepal	6.00	7.20	20
ORS	Navajeevan	Nepal	6.00	7.20	20
Paracetamol syrup 60ml	cetophen	Nepal	17:00	25:00	47
Vitamin B complex syp 200ml	Becolex	Nepal	37	85	130
Vitamin B complex syp 200ml	Bicovit	Nepal	70	98	40
Vitamin B complex syp 200ml	Lomoplex	Nepal	65	85	31
Vitamin B complex syp 200ml	Bicovit	Nepal	70	90	29

7. Discussion

The results of the study showed that price of the common drugs are higher in Humla and Okhaldhunga compared to the price in Kathmandu. Due to transportation cost and other hidden costs, higher prices of drugs in these districts are expected. In addition, there was a wide variation in price between the same drugs produced by different manufacturers in both districts. It is also observed that price difference is larger in liquid form compared to tablet form of medicine. In both the districts, it was found that price varied among pharmacies for the same drug and brand. Different factors may have contributed to such variations. One of the reasons for this may be that the price regulatory mechanisms did not exist or were ineffective in the study districts. The pharmacists have liberty to charge prices according to their own convenience. The other reasons may be different local costs within and between the districts; these costs might be local taxes, different transportation cost, different wholesale rates, etc.

The findings that the price, compared to MRP, is higher in the remote districts can be explained by the extra charges to reach the districts. In case of Humla district the only access is by foot or air. The medicine needs to be brought to this district by air, and because of this the medicine has to be sent through cargo. The charges taken by the government for the cargo per kg is Rs.60. The pharmacists of this district give the responsibility to the private cargo agents for transporting the drugs to the district and the charges taken by them varied from Rs. 60 to 75 per kg depending upon the season. These cargo agents charge more during winter as compared to summer. In case of Okhaldhunga although there is access to road but one needs to cross the river by boat to reach the headquarter, due to which extra prices are charged for the medicines during transportation.

The result of the study also found the price of the syrup or the suspension to be more expensive compared to the tablet or the capsule form. The reason for this may be that the suspension or syrup is found in the form of bottle form, which is heavier and fragile and the prices charged per kg for the tablet and the suspension is equal.

The data also reveals that there is price variation between the manufacturers. This is one of the important information for the government for selection of the medicine. The government has the responsibility of providing essential medicine to all the people of the country at affordable prices. Price information helps in price negotiations, in locating new supply sources, and in assessing the efficiency of local procurement.

In the case of Humla district when a patient gets sick s/he needs to be brought to the district headquarter due to unavailability of the essential medicine in the health post. From the interview we could say that in the health post the medicine is provided only once a year and when the stock gets finished there is no alternative to bring the medicine and one needs to wait for another year. Thus the only choice is to visit the health post of the district or the pharmacies, which are only situated in the district, headquarter. According to the local villagers, due to high number of patients visiting the health post it is difficult to receive the needed medicine from the health post, so the patients are forced to visit the pharmacies to purchase essential drugs. Looking at the result of the study, the drugs in the remote districts seem to be more expensive compared to the centrally located areas. As most of the deprived and poor people live in such remote district it is really very difficult for them to buy the needed drugs

Conclusions and Recommendations

The study shows that the price of the medicine in these two remote areas seems to be higher compared to the price of the MRP rate. The findings of the study show that great variations in the prices of medicines exist in the two districts, Humla and Okhaldhunga, In these districts there is price variation within the same generic drugs. The study shows that the percentage of price variation is

more prominent in Humla district compared to Okhaldhunga district. Prices charged seemed to be very high as compared to the MRP.

Recommendations

As the results of the present study indicates to unexplained and different price variation in two districts, it is necessary to conduct such studies in other remote districts in order to get a clearer picture of drug price situation in the country. Price variation in essential drugs is unexpectedly high in the study districts. Therefore, the authority should consider the formulation of the pricing policy of drugs in remote districts, since the people in such remote districts are paying the higher price for the essential drug.

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The overall price of Okhaldhunga, Humla and MRP

Generic	District	Brand	Strength	Place	Unit_price	MRP
Albendazole tablet	HUMLA	Almex	400mg	Bangladesh	20.00	15.00
Albendazole tablet	HUMLA	Zentel	400mg	India	30.00	23.00
Albendazole tablet	HUMLA	Wormnil	400mg	Nepal	20.00	16.00
Albendazole suspension	HUMLA	ABEN	10ml	Nepal	35.00	20.00
Albendazole tablet	HUMLA	Wormnil	400mg	Nepal	21.00	16.00
Albendazole suspension	HUMLA	ABEN	10ml	Nepal	30.00	15.00
Albendazole tablet	HUMLA	Aleantin	400mg	Nepal	30.00	16.00
Albendazole suspension	HUMLA	Alworm	10ml	Nepal	30.00	20.00
Albendazole tablet	HUMLA	Almex	400mg	Bangladesh	30.00	15.00
Albendazole suspension	HUMLA	ABEN	10ml	Nepal	35.00	20.00
Albendazole tablet	HUMLA	Zydus Cadilla	400mg	India	35.00	24.00
Albendazole tablet	HUMLA	Wormnil	400mg	Nepal	25.00	16.00
Albendazole tablet	HUMLA	Zeroworm	400mg	Nepal	35.00	14.00
Albendazole suspension	HUMLA	Aldoze	10ml	Nepal	35.00	20.00
Albendazole tablet	HUMLA	Ovazole	400mg	Nepal	25.00	13.00
Albendazole suspension	HUMLA	Aleantin	10ml	Nepal	50.00	16.00
Albendazole tablet	OKHALDHUNGA	Zolex	400mg	Nepal	20.00	15.00
Albendazole tablet	OKHALDHUNGA	Worastat	400mg	Nepal	20.00	14.50
Albendazole tablet	OKHALDHUNGA	Wormnil	400mg	Nepal	15.00	16.00
Albendazole tablet	OKHALDHUNGA	Aleantin	400mg	Nepal	19.20	16.00
Albendazole tablet	OKHALDHUNGA	Wormnil	400mg	Nepal	19.20	16.00
Amoxicillin capsule	HUMLA	Amoxydin	500mg	Nepal	14.00	10.00
Amoxicillin capsule	HUMLA	Welmox	500mg	Nepal	12.40	8.70
Amoxicillin capsule	HUMLA	Amoxa	500mg	Nepal	12.60	9.00
Amoxicillin capsule	HUMLA	Reymoxis	500mg	Nepal	12.10	8.70
Amoxicillin capsule	HUMLA	Amoxa	500mg	Nepal	10.50	9.00
Amoxicillin capsule	HUMLA	Omex	500mg	Nepal	13.00	9.00
Amoxicillin capsule	HUMLA	Amoxydin	500mg	Nepal	11.00	10.00
Amoxicillin capsule	HUMLA	Simox	500mg	Nepal	9.50	9.00
Amoxicillin capsule	HUMLA	Amoxa	500mg	Nepal	10.00	9.00
Amoxicillin capsule	HUMLA	Simox	500mg	Nepal	10.00	9.00
Amoxicillin capsule	HUMLA	Amoxydin	500mg	Nepal	14.00	10.00
Amoxicillin capsule	HUMLA	Amoxa	500mg	Nepal	13.00	9.00
Amoxicillin capsule	HUMLA	Amoxydin	500mg	Nepal	13.00	10.00
Amoxicillin capsule	HUMLA	Amoxa	500mg	Nepal	13.00	9.00
Amoxicillin capsule	OKHALDHUNGA	Nemox-125DT	500mg	Nepal	10.00	8.37
Amoxicillin capsule	OKHALDHUNGA	Welmox	500mg	Nepal	9.00	8.70
Amoxicillin capsule	OKHALDHUNGA	Himox	500mg	Nepal	9.00	8.70
Amoxicillin capsule	OKHALDHUNGA	Mymox	500mg	Nepal	9.00	7.00
Amoxicillin capsule	OKHALDHUNGA	Simox	500mg	Nepal	10.04	8.37
Ciprofloxacin tablet	HUMLA	OMFLOX	500mg	Nepal	14.00	10.00
Ciprofloxacin tablet	HUMLA	Cifrox	500mg	Nepal	13.00	11.48
Ciprofloxacin tablet	HUMLA	OMFLOX	500mg	Nepal	11.00	10.00
Ciprofloxacin tablet	HUMLA	OMFLOX	500mg	Nepal	13.00	10.00
Ciprofloxacin tablet	OKHALDHUNGA	Cifrox	500mg	Nepal	12.00	11.48
Ciprofloxacin tablet	HUMLA	Ciprodac	500mg	India	14.00	11.00
Ciprofloxacin tablet	HUMLA	XEBEC	500mg	Nepal	11.00	10.00

Ciprofloxacin tablet	HUMLA	Ciprobiotic Forte	500mg	Nepal	13.00	12.00
Ciprofloxacin tablet	OKHALDHUNGA	Ciprodeep	500mg	Nepal	13.00	12.00
Ciprofloxacin tablet	OKHALDHUNGA	Ciprodeep	500mg	Nepal	14.40	12.00
Co-trimoxazole suspension	OKHALDHUNGA	Aprim	50ml	Nepal	25.00	17.00
Co-trimoxazole tablet	OKHALDHUNGA	Cotrimax DS	800+160	Nepal	4.00	2.50
Co-trimoxazole suspension	OKHALDHUNGA	Aprim DS	50ml	India	19.65	16.38
Co-trimoxazole tablet	HUMLA	MONOPRIM	800+160	Nepal	4.00	1.32
Co-trimoxazole tablet	HUMLA	Pactrim	800+160	Nepal	3.00	2.75
Co-trimoxazole tablet	HUMLA	Synoprim	800+160	Nepal	4.00	3.50
Co-trimoxazole tablet	HUMLA	cotrim Forte	800+160	Nepal	3.50	2.70
Co-trimoxazole tablet	HUMLA	Cotrim	800+160	Nepal	3.00	2.50
Co-trimoxazole tablet	HUMLA	Synoprim	800+160	Nepal	4.00	3.50
Co-trimoxazole tablet	HUMLA	MONOPRIM	800+160	Nepal	3.00	1.32
Co-trimoxazole tablet	HUMLA	Synoprim	800+160	Nepal	3.00	3.50
Co-trimoxazole tablet	HUMLA	Cotrim	800+160	Nepal	4.70	2.50
Co-trimoxazole tablet	HUMLA	Cotrimax DS	800+160	Nepal	4.00	2.50
Co-trimoxazole suspension	HUMLA	Chemtrim	60ml	Nepal	45.00	20.00
Co-trimoxazole tablet	OKHALDHUNGA	Bactrim DS	800+160	India	2.16	1.81
Dextromethrophan suspension	HUMLA	Meryl Linctus	50ml	Nepal	68.00	35.00
Dextromethrophan syrup	HUMLA	KAF D	100ml	Nepal	80.00	56.00
Dextromethrophan syrup	HUMLA	KAF D	100ml	Nepal	110.00	56.00
Dextromethrophan syrup	OKHALDHUNGA	Brumol	50ml	Nepal	35.00	20.00
Dextromethrophan syrup	OKHALDHUNGA	Brumol	50ml	Nepal	28.00	20.00
Dextromethrophan suspension	HUMLA	Cherena Paed	50ml	Nepal	50.00	35.00
Dextromethrophan suspension	HUMLA	Himali	50ml	Nepal	45.00	20.00
Dextromethrophan suspension	HUMLA	Vasodryl	100ml	Nepal	110.00	60.00
Folic acid tablet	HUMLA	F vit	10mg	Nepal	2.00	1.10
Folic acid tablet	HUMLA	Falvin	10mg	Nepal	2.00	1.50
Folic acid tablet	OKHALDHUNGA	Folvin	10mg	Nepal	1.80	1.50
Folic acid tablet	OKHALDHUNGA	Folvin	10mg	Nepal	1.75	1.50
Folic acid tablet	OKHALDHUNGA	Folvin	10mg	Nepal	1.80	1.50
Ibuprofen + paracetamol tablet	HUMLA	IBUMAX-Plus	400+325mg	Nepal	3.50	2.00
Ibuprofen + paracetamol tablet	OKHALDHUNGA	Coflam	350+500 mg	Nepal	2.40	2.00
Ibuprofen + paracetamol tablet	HUMLA	IBUDIN plus	400+325mg	Nepal	3.20	1.80
Ibuprofen + paracetamol tablet	HUMLA	IBUMAX-Plus	400+325mg	Nepal	3.00	2.00
Ibuprofen + paracetamol tablet	HUMLA	IBUDIN plus	400+325mg	Nepal	3.20	2.00
Ibuprofen + paracetamol tablet	HUMLA	Flamet	400+325mg	Nepal	3.00	2.00
Ibuprofen + paracetamol tablet	HUMLA	Monoprofen plus	400+325mg	Nepal	2.80	1.70
Ibuprofen + paracetamol suspension	HUMLA	Cymol plus	50ml	Nepal	35.00	20.00
Ibuprofen + paracetamol tablet	HUMLA	Flamet	400+325mg	Nepal	4.00	2.00
Metro + Diloxa suspension	HUMLA	Diastazal	60 ml	Nepal	40.00	25.00
Metro + Diloxa suspension	HUMLA	Amecore	60 ml	Nepal	50.00	30.00
Metro + Diloxa tablet	HUMLA	Dazyl D	100+125mg	Nepal	5.00	3.50
Metro + Diloxa tablet	HUMLA	Nidazole	100+125mg	Nepal	2.20	1.50
Metro + Diloxa suspension	HUMLA	Protogyl	60 ml	Nepal	45.00	35.00
Metro + Diloxa tablet	OKHALDHUNGA	Metdil	400+350mg	Nepal	3.50	2.98
Metro + Diloxa suspension	OKHALDHUNGA	Diofur-M	100+125(60 ml)	Nepal	40.00	35.00
Metro + Diloxa tablet	OKHALDHUNGA	Metdil	400+350mg	Nepal	3.50	2.98

Metro + Diloxa tablet	OKHALDHUNGA	Diastazol	400+350mg	Nepal	35.00	30.00
Metro + Diloxa syrup	OKHALDHUNGA	Arnecore	400+350mg	Nepal	35.00	30.00
Metro + Diloxa tablet	OKHALDHUNGA	Metdil	400+350mg	Nepal	3.57	2.98
Metro + Diloxa suspension	OKHALDHUNGA	Diofur-M	60ml	Nepal	49.00	35.00
Ompirazole capsule	HUMLA	F-Omez	20mg	Nepal	8.00	6.50
Ompirazole capsule	HUMLA	Omedian	20mg	Bangladesh	10.00	5.50
Ompirazole capsule	OKHALDHUNGA	Omocid	20mg	Nepal	6.00	6.00
Ompirazole capsule	OKHALDHUNGA	Omocid	20mg	Nepal	7.20	6.00
Ompirazole capsule	HUMLA	F-Omez	20mg	Nepal	8.00	6.50
Ompirazole capsule	HUMLA	F-Omez	20mg	Nepal	9.00	6.50
Ompirazole capsule	HUMLA	F-Omez	20mg	Nepal	8.00	6.50
Ompirazole capsule	HUMLA	Procid	20mg	Nepal	10.00	6.00
ORS powder	HUMLA	Jeevan Shakti		Nepal	15.00	8.50
ORS powder	HUMLA	Navajeevan		Nepal	15.00	6.00
ORS powder	HUMLA	Jeevan Shakti		Nepal	15.00	8.50
ORS powder	HUMLA	Jeevan Shakti		Nepal	15.00	8.50
ORS powder	HUMLA	Navajeevan		Nepal	15.00	6.00
ORS powder	OKHALDHUNGA	Navajeevan		Nepal	7.00	6.00
ORS powder	OKHALDHUNGA	Navajeevan		Nepal	7.00	6.00
ORS powder	OKHALDHUNGA	Navajeevan		Nepal	7.20	6.00
Paracetamol syrup	OKHALDHUNGA	Cetophen	60ml	Nepal	25.00	17.00
Paracetamol syrup	OKHALDHUNGA	Cetophen	60ml	Nepal	23.80	17.00
Paracetamol syrup	HUMLA	Evamol	500mg	Nepal	8.00	0.50
Paracetamol syrup	HUMLA	Synomol	60ml	Nepal	40.00	20.00
Paracetamol syrup	HUMLA	Picimol	60ml	Nepal	30.00	17.00
Paracetamol tablet	HUMLA	Evamol	500mg	Nepal	1.00	0.50
Paracetamol tablet	HUMLA	rexamol	500mg	Nepal	2.00	0.50
Paracetamol tablet	HUMLA	Phenocet	500mg	Nepal	1.50	0.50
Paracetamol tablet	HUMLA	Polar	60ml	Nepal	45.00	17.00
Vitamin B complex syrup	HUMLA	Vigoran	100ml	Nepal	90.00	39.95
Vitamin B complex syrup	HUMLA	Synoplex	100ml	Nepal	70.00	32.00
Vitamin B complex syrup	HUMLA	Lysovit	100ml	Nepal	80.00	40.00
Vitamin B complex syrup	HUMLA	Synoplex	100ml	Nepal	70.00	32.00
Vitamin B complex syrup	HUMLA	Synoplex	100ml	Nepal	70.00	32.00
Vitamin B complex syrup	HUMLA	Vita	200ml	Nepal	120.00	65.00
Vitamin B complex syrup	HUMLA	Vigoran	200ml	Nepal	90.00	74.00
Vitamin B complex syrup	HUMLA	Vita B	200ml	Nepal	100.00	70.00
Vitamin B complex syrup	HUMLA	Vita B	200ml	Nepal	110.00	70.00
Vitamin B complex syrup	HUMLA	Fortiplex	200ml	Nepal	140.00	70.00
Vitamin B complex syrup	HUMLA	R. B. Tone	200ml	India	170.00	98.00
Vitamin B complex syrup	OKHALDHUNGA	Bicovit	200ml	Nepal	90.00	70.00
Vitamin B complex syrup	OKHALDHUNGA	Bustup Forte	100ml	Nepal	45.00	36.00
Vitamin B complex syrup	OKHALDHUNGA	Lomoplex	200ml	Nepal	85.00	65.00
Vitamin B complex syrup	OKHALDHUNGA	Becolex	200ml	Nepal	85.00	37.00
Vitamin B complex syrup	OKHALDHUNGA	Lomoplex	100ml	Nepal	50.00	35.00
Vitamin B complex syrup	OKHALDHUNGA	Bicovit	200ml	Nepal	98.00	70.00
Vitamin B complex syrup	OKHALDHUNGA	Bustup Forte	100ml	Nepal	50.00	36.00