

ORIGINAL ARTICLE

ASSESSMENT OF MOST COMMON INFECTIOUS DISEASES AND PRESCRIPTION PATTERN IN THE HEALTH CARE CENTRES OF JIRABHAWANI RURAL MUNICIPALITY, PARSA, NEPAL

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ABSTRACT

Background: The term “infectious disease” refers to a group of diseases that are contagious or transmissible caused by pathogenic biological agents such as bacteria, viruses, fungi, parasites, and protozoa in a single host organism. This study was conducted to know about most common infectious diseases and prescription pattern in three health posts of Jirabhwani, Rural Municipality Parsa, Nepal.

Method: Descriptive Cross-sectional study was conducted by analyzing 331 prescriptions of patients suffering from different infectious disease using data collection form recommended by WHO that includes the patient and drug related data as well as other information.

Results: The most infectious diseases was Scabies (24.74%) followed by chronic wound (12.20%) and fungal infections (10.80%). Majority of cases were in between the age group of 11-21 years (19.64%). The average number of drugs per prescription was 2.06. Out of 683 drugs prescribed, antimicrobials (42.90%) were most commonly prescribed among which most commonly prescribed was Amoxicillin (30.59%) followed by Gamma Benzene Hexachloride (19.12%). Similarly, 24.16% antihistamines and 22.84% NSAIDs were prescribed among which Paracetamol (75.5%) was most commonly prescribed. The drugs prescribed by generic name was 73.3% according to WHO indicators.

Conclusion: The most common infections found was scabies followed by chronic wound and frequently prescribed antibiotic was amoxicillin.

Keywords: Infectious diseases; Drug prescribing pattern; WHO indicator; Antimicrobial

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INTRODUCTION

The term “infectious disease” refers to a group of diseases that are contagious or transmissible, which comprise clinically evident illness (i.e. characteristics medical signs and/symptoms of disease) resulting from the infection, presence and growth of pathogenic biological agents such as bacteria, viruses, fungi, parasites, and protozoa in an individual host organism.¹

Nepal has highly diversified ecosystem with various kinds of flora and fauna including microbiota. Similarly, it has diversification with diverse cultural, climatic and geographical variation. All of these variations along with poor hygienic practices and sanitation, open defecation, lack of awareness, lack of availability of safe drinking water, lack of implementation of government health policies, poverty, natural disaster, climate change, demographic changes facilitates the continuous emergence and re-emergence of several life-threatening human infectious diseases.² Thus variety of factors influence the spread of infectious diseases throughout the country. There is diversity of disease distribution.¹

Prior to 20 years ago, infectious diseases primarily water and airborne diseases including rabies, tetanus and others were the major contributing factor of morbidity and mortality in Nepal. These infectious diseases were the alone contributor for 70% of all health problems and cause of death. Numerous children were being prey for the easily preventable and curable communicable diseases like diarrhea, dysentery, typhoid fever, tuberculosis and other respiratory tract infections.

Health posts are government healthcare institutions that are a level above sub-health post. They assist in running immunization campaigns, reproductive healthcare programs,

and other preventative health programs in rural areas. Essential medications are provided by the government at no expense to the health post, along with five staff members.³

Access is defined as having medicines continuously available and affordable at public or private health facilities or medicines outlets that are within one hour walk from the homes of the population.⁴ Drug therapy which is mainly aimed at prevention, cure or control of various diseases plays an important role in protecting, maintaining and restoring health.⁵ The significance of quality assessment and evaluation in healthcare is becoming more widely acknowledged, and medicines are essential to the delivery of healthcare.⁶ The effectiveness of medical outcomes and the appropriateness of patient care depend greatly on the proper use of medications. Self-medication, polypharmacy, incorrect antibiotic usage, abuse of injectable drugs, and the prescribing of pharmaceuticals without following relevant clinical practice guidelines are the most prominent reasons of irrational medicine use.⁷ The first step toward limiting irrational medication usage is to assess the amount to which it occurs. It is especially important with antibiotics because resistance is increasing and the number of new antibiotics entering the market is not increasing.⁸

The World Health Organization (WHO), in collaboration with the International Network of Rational Use of Drugs (INRUD), created a set of indicators in the 1990s to assess the effectiveness of healthcare institutions in terms of medication consumption.⁶ The assessment of drug use patterns by the WHO/INRUD indicators is increasing in developing countries, which is encouraging, as the indicators have been successfully applied in more than 30 developing countries.⁸

Assessment of the existing prescribing practice in a health care facility helps to identify the specific drug use problems which help in meaningful intervention.⁹ In this study we evaluate the drug prescribing practice in three health post by using WHO prescribing core indicators.

METHODOLOGY

A descriptive cross-sectional study was conducted among 331 patients with infectious disease at sedhawa health post, Mahadewpalti health post and Jitpur health post of Jirabnawani rural municipality, parsa, Nepal after ethical clearance from IRC of MMIHS. Discriptive data with frequency and percentage were analysed using SPSS version 20.

RESULTS AND DISCUSSION

Patient Age Distribution:

In this study of age distribution of patients showed that (11-20) age group (19.6%) constituted highest number who visited the health posts of Jirabhawani RMC followed by (0-10) age group with (18.73%). According to study carried by Mishra, T .et. al showed that (10-20) age group (19.71%) 1 and Pr S .et al showed that (10-20) age group (19.1%) 13 visited the health post. Geographical and physical infrastructure and socio-economic profile might have influenced the finding.

Patient Gender Distribution:

Discussing about gender wise distribution of patients, the results showed 49.8% were male and 50.2% were female. The study conducted by Mishra T. et .al also showed similar result where 42.86% were male and 57.14% were female.¹

Frequency of Infectious Disease

The most common infectious disease was found to be scabies (24.74%) in our study followed by bacterial wound (12.20%) and fungal infections (10.80%) and dental caries (4.53%). Similar study conducted by Ansari et.al also showed similar results where fungal infections was found be (7%)and Oro-dental diseases (4%)¹¹. Similarly, the study conducted by Pr S.et.al showed similar results that wound was found to be (8.72%)⁹. This may be because there is a higher chance of infection by various pathogenic micro-organisms in the winter season which is also better environment for multiplication of pathogenic micro-organism and also in the winter season there is poor personal hygiene due to chilling cold in the terai region. Similarly, scabies quickly spread to the other family members if one is affected by it and leaving it untreated thinking that it is just normal itching which just goes away after few days (Fig 1).

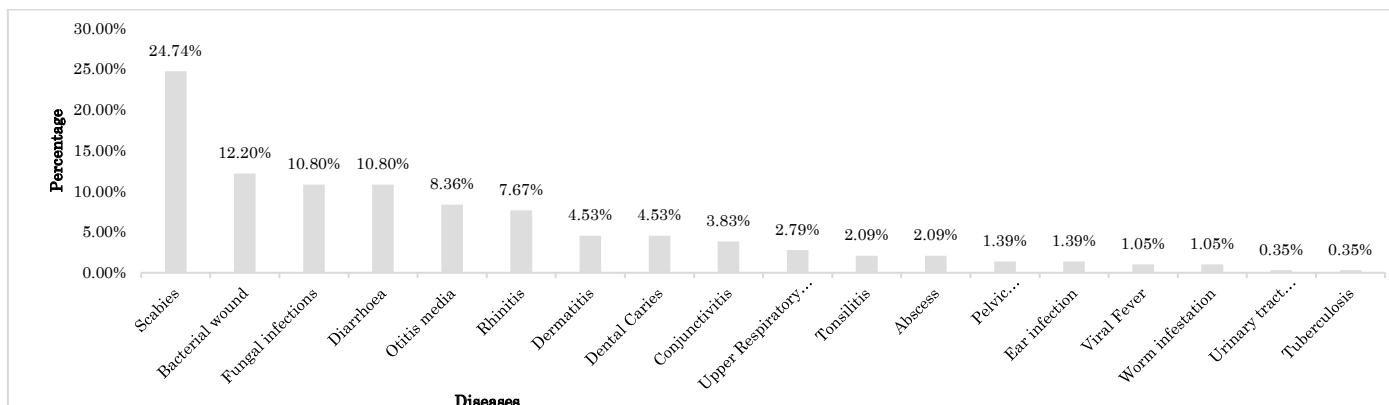


Figure 1: Frequency of Infectious Disease

Common Drugs Prescribed in the Health Posts

In this study (Figure 2) most of the drugs prescribed were antimicrobial (42.9%) antihistamines (24.16%) and NSAIDs (22.84%). In the study carried by Pr , S. et.al antibiotic was (46%) and NSAIDs were (27.8%).¹³ The change of weather and type of diseases prevalent at particular area might have affected the finding.

The results show(fig 3) that Amoxycillin was prescribed (30.59%) most followed by Gamma benzene hexachloride (19.12%), ciprofloxacin (16.76%) and metronidazole (10%) among the total 21 prescribed antimicrobials. The study conducted by Pr , S. et.al has similar results where the metronidazole was prescribed for (8.5%)⁹ whereas the study conducted by Atif, M.et.al have disimilar results where ceftriaxone (71.8%) was prescribe the most followed by cefotaxime (5.6%), metronidazole (4.7%) and ciprofloxacin (4.2%)⁸.

As described in fig(4) Paracetamol(75.15%) was the most prescribed NSAIDS followed by Ibuprofen (21.82%) in our study which is close to the results obtained by Pr, S. et.al where paracetamol was prescribed as 82.35% and ibuprofen as

15.35%⁹

Table 1: Distribution of WHO core Prescribing Indicators

Prescribing indicators	Findings	WHO stan- dard values in health faci- ties
Average number of drugs prescribed per encounter	2.06	1.6-1.8
% of drug precived by generic name	73.38	100.0
% of encounter with prescribed	49.54	20.0-26.8
% of drug prescribed form EDL	83.08	100.0

The average number (table 1) of drugs per encounter was 2.06 which was similar with the results obtained by Dahal et.al where average number of drugs per prescription was 2.29 ¹⁰ Mishra T. et.al where average number of drugs per prescription was 2.49¹ and Atif, M.et.al where average number of drugs per prescription was 2.3%.⁸ These all indicate the

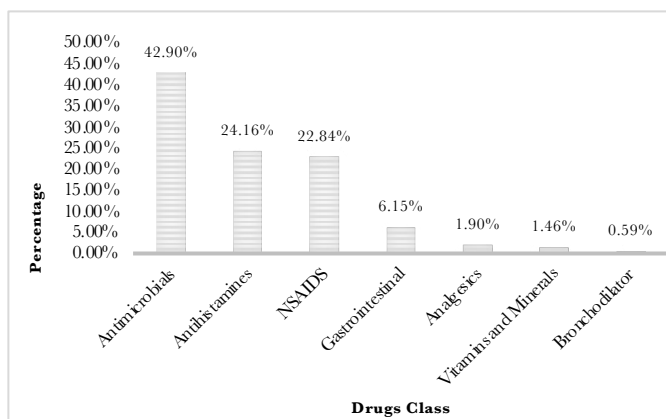


Fig2 :Distribution of Drug Class

was found to be (49.54%). In the study conducted by Atif, M. et. al were percentage of encounter with antibiotic was found to be (52.4).⁸ The results obtained were above the optimal values suggested by WHO/IUNRD (20.0-26.8) which indicate the irrational and overuse of antibiotics.

The percentage of drug prescribed from EDL was found to be (83.08%) which was similar to the study conducted by Atif, M.et.al and Dahal et.al where the results was 81.5%⁸ and 85.19%¹⁰ respectively. The results obtained were below the optimal values suggested by WHO/IUNRD (100.0%). This may be due to that our study was conducted in health posts where government provides free medicines.

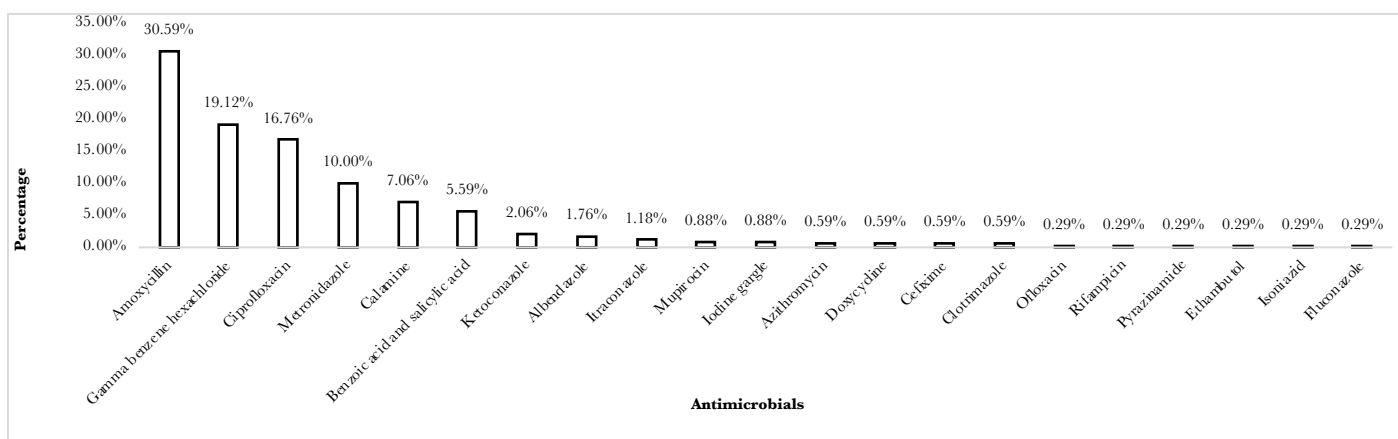


Figure 3: Various Antimicrobial Drugs Prescribed in Health Posts

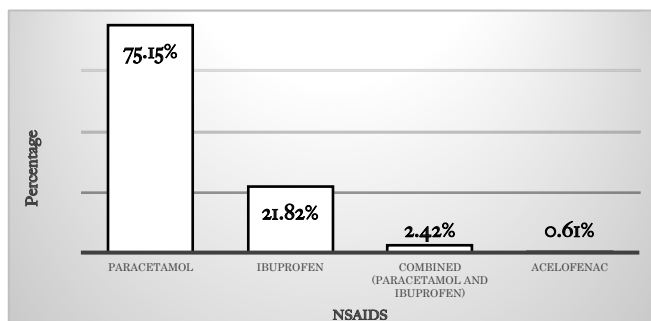


Figure 4: Distribution NSAIDs Prescribed drug in the Health Post

polypharmacy since it is above the optimal values suggested by WHO/IUNRD (1.6-1.8). This may be due to variability in health care delivery system, socio-economic profile, morbidity and mortality profile of the population.

(Table 1), Discussing about percentage of drug prescribed by generic name was found to be (73.38%). The result was close with the study done by Atif, M.et.al where the results was (83.1%)⁸ and that of Pr ,S et.al where the results was (63.5%).⁹The result was not similar with the study done by Dahal et.al and Mishra et .al where the results was (59.02%)¹⁰ and (20.62%)¹. Increasing generic prescribing may substantially reduce the cost of drugs for the patients and at the same time this study was also conducted in government health facilities where most of the drugs are prescribed in generic name.

In this study (table 1) of percentage of encounter with antibiotic

CONCLUSION

From this study, the most common infectious diseases are scabies followed by chronic wound, fungal infections where least common infectious diseases are tuberculosis. The most commonly prescribed drugs were antimicrobial (where amoxicillin was frequently prescribed followed by gamma benzene hexachloride) followed by antihistamine and NSAIDs (paracetamol, ibuprofen, aceclofenac). The average number of drugs per prescription was found to be 2.06 in the health posts of Jirabhawani RMC.

RECOMMENDATION

The present study reveals irrational prescribing. Therefore, prioritization on prescribing drugs by generic name, and antibiotic policy guidelines needs to be encouraged.

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AUTHOR CONTRIBUTIONS

DP Baniya took the overall responsibility for the study, including conceptualization, methodology development, analysis, and finalization of the manuscript. RTC and MB contributed to methodology design and tool preparation, while PA, UG and AC led the preparation of the theoretical framework, methodology, data collection and analysis, and draft preparation.

COMPETING INTERESTS

All the authors declare no competing interests