



Drug Consumption Profile in One of The Rural Area of Mahaboobnagar District, Telangana State

KEYWORDS

Drug Utilization, Rational drug use, Antibiotic, National List of Essential Medicines.

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ABSTRACT Drug utilization studies have become one of the important tools for the promotion of rational drug therapy. Therefore, this study was taken at retail outlets and public dispensaries in one of the rural areas of Telangana State, India. The data has been collected in a pretested schedule, compiled and analyzed using Microsoft Excel 2010 and SPSS 16. Analgesics (22-23%), Antibiotics (20-18%) and Nutrition supplements (12-16%) are the most preferred category of drugs at private and public settings. Use of broad spectrum antibiotics (40-50%) is very high. 40% of the patients are irrationally prescribed antibiotics at public settings. National List of Essential Medicines was followed more in government hospitals (80%). Therefore, this study suggests the interventional strategies like educating the civil society, periodic audit on use of drugs to be priority for all stakeholders for achieving rational drug therapy.

INTRODUCTION:

Drug utilization research (DUR) has become an essential part of pharmaco-epidemiology studies as it helps in understanding the nature and trends of drug use ^[1]. In most developed countries like Europe, Scotland, and Northern Ireland research on use of medicines has been taken up at institutional level and they pioneered the research at the National and International levels which demonstrated its effectiveness in those countries ^[2-4]. Most of the developing countries do not have this data at the National level. However few studies have been done at institutional level and showed many discrepancies. For instance, a survey from China by Jiang Q *et al.*, suggests that 60% of the prescriptions did not follow the WHO recommended standards ^[5]. The studies from two large hospitals of Sudan by Awad Al *et al.*, reported 96% of suboptimal prescription suggesting in an improvement of prescribing practices ^[6]. In India K. Krishnaswamy *et al.*, study in large number of population has pointed out several gaps between percepts and practices among practitioners and pharmacists ^[7]. A survey from Pune by Kshirsagar *et al.*, reported that more than 30% of prescriptions were irrational ^[8] which is relatively similar to West Bengal (36%) and less than Varanasi (63.33%) as reported by Alipta *et al.*, ^[9] and Tarun *et al.*, ^[10] respectively. Therefore, the prescription was also evaluated as per National list of Essential medicines, 2011 as those are the drugs that satisfy the priority health care needs of the population ^[11]. Most of the studies in India documented the pattern of drug utilization at health care facilities like private or government hospitals. Therefore our study was aimed to conduct at both retail outlets and also public dispensaries on prescribing habits of physicians and dispensing profile.

METHODOLOGY:

The present investigation was undertaken to evaluate

drug consumption profile in rural areas with respect to prescription, dispensing and usage profile at public and private dispensaries. The above information has been collected in a pretested schedule. The basic components of the current schedule were developed in accordance to the reference schedule developed by FDTRC (Food and Drug Toxicology Research Centre) at National Institute of Nutrition (NIN) as per WHO norms and used by Dinesh *et al.*, ^[12] in 1995. Rural area was selected based on the availability of Primary health Centre (PHC), Community health Centre (CHC), retail outlets and socio economic status. Sample size was calculated taking 50% of retail outlets in to consideration in the selected area and in them 50% of dispenses was documented by administering the schedule on every alternate consumer at retail outlets and PHC and CHC public dispensaries. The rationale for selecting the above design is based on the WHO criteria and earlier experience of NIN (National Institute of Nutrition). The data has been compiled and analyzed using Microsoft Excel 2010 and SPSS 16.

RESULTS:

Among the total dispenses (505) documented 306 were from retail outlets and 199 were from public dispensaries. However response rate was quite good at public dispensaries i.e., 98% and it was around 78% at retail outlets. Analgesics (22-23%), Antibiotics (20-19%), Nutrition supplements (16-12%) and Antacids (11-23%) are the most preferred category of drugs at private and public settings respectively (Refer Fig 1). Respiratory Tract Infections (R.T.I) (20-34%), Body pains including wounds (21-26%), Gastro Intestinal Tract (G.I.T) Disorders (10-15%), Fever (14-16%) and Skin infections (16-17%) are the major symptoms recorded at private and public settings respectively.

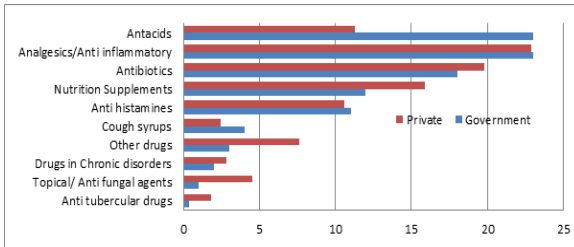


Fig 1: profile of drugs prescribed at public and private settings

Analgesics:

Analgesics are the first most preferred category of drugs constituting 23-24% in both private and public settings. Among them NSAIDS (Non steroidal Anti Inflammatory Drugs) and NSAID combinations was the most preferred category of analgesics at private settings (80%). Whereas, diclofenac (70%) paracetamol (25%) and ibuprofen (5%) are the main drugs prescribed at public settings.

Antibiotics:

Antibiotics are the second most preferred category of drugs constituting around 18-20% in public and private settings respectively. Amoxicillin is the most preferred drug in government hospitals. Whereas, amoxicillin+clavulanic acid is more preferred in private settings. Synthetic penicillins constitute the major class of antibiotic at both private (38) and public (45) settings. Although cephalosporins are the most preferred category of drugs in private settings (28%), they are preferred very less in public settings (3.7%) (Refer Fig 2). Cough and cold, Fever, Diarrhoea, Skin infections are the major symptoms recorded for antibiotic prescription at public and private settings. Supply of drugs is limited to only one to two days in 98% of prescriptions in public dispensaries although drugs were prescribed for 3-5 days by doctor. It is also important to note that even at retail outlets more than 20% of antibiotic purchase includes 1 day or less than one day supply of antibiotics and they quoted financial constraints as the main reason for partial prescription.

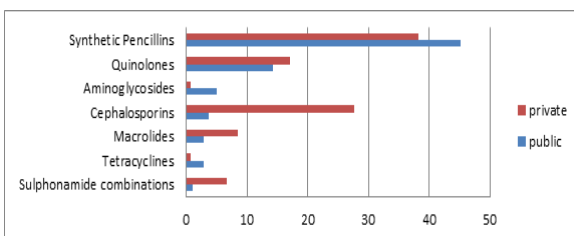


Fig 2: profile of use of various classes of antibiotics at public and private settings

Nutrition supplements:

Nutrition supplements are the third most preferred category of drug in both private and public settings. Majority of prescription for nutrition supplements include fixed dose combinations which constitutes more than 70% of total prescription.

National List of Essential Medicines:

In the study 20% of the prescriptions from public settings and 38% of prescriptions from private settings contain drugs not listed in NLEM. The most prescribed drugs not listed in NLEM 2011^[11] were given in Table 1. (Refer Table 1).

Table 1: Most prescribed drugs not listed in NLEM

S.No.	Drug name	Public	Private
1	Aceclofenac combination with NSAIDS and Serratiopeptidase	56	5
2	Norfloxacin	6	12
3	Deflazacort	2	6
4	Furazolidone	2	10
5	Mefenamic acid and its combinations	30	0
6	Theophylline compounds	4	8
7	Loperamide	6	2

DISCUSSION:

The consumption of drugs is escalating day by day coupled with the introduction of new chemical entities. Analgesics and antibiotics comprised around 50% of total drugs prescribed and emerged as the main category of drugs. Among analgesics, widespread use of NSAIDS and its combinations may increase the risk of gastrointestinal (GI) and cardiovascular complications ^[13-14]. However, this explains the high use of antacids at public sectors i.e., to decrease the G.I complications due to NSAIDS ^[15]. Therefore use of analgesics need to be rationalised based on therapeutic perspective view.

Antibiotics are the wonder drugs of 20th century and their wide spread use is similar to the previous studies ^[16-17]. The data shows that use of broad spectrum antibiotics (40-50%) is high in both private and public settings and similar to other studies conducted in south India (40%) ^[18]. In government hospitals, supply of antibiotics was limited to one to two days although they were prescribed for 3-5 days by doctor; this may result in incomplete dosage schedule by the patient. This is an alarming factor as this may result in resistance in long term. Financial constraints were quoted as the main reason for partial prescription at retail outlets. Therefore necessary measures must be taken up in this respect like encouraging use of generic drugs in low income people etc., to prevent antibiotic resistance. Therefore, these studies highlights the need for rational use of antibiotics with relevance to symptom and bring awareness among the public on the need to complete the dosage schedule thereby saving these precious drugs to serve the need of future generations.

Unlike previous studies where nutrition supplements stood first among the total prescribed drugs, they are the third or fourth most preferred category of drugs. In 2002, Iron Deficiency Anemia (IDA) was considered to be one of the most important contributing factors to the global burden of disease ^[19]. In India it is reported that prevalence of anemia is 52% among reproductive women ^[19] but the prescription for Iron+folic acid includes only 1-2% of total prescriptions. The prescription of nutrition supplements is not in accordance to the deficiency disorders. High use of multi vitamin and mineral combination questions the therapeutic requirement.

National List of Essential medicines contain all the medicines that satisfy the priority health care needs of the population. In this study it was shown that more than 20-40% of drugs are prescribed out of NLEM and the percentage is similar to the studies conducted by Dimri S *et al.*, ^[20]. It indicates that there is a need on audit on use of such drugs. Thereby, assess their therapeutic requirement for the improvement of facility indicators.

CONCLUSION:

The results suggest that analgesics and antibiotics emerged as favorite medicaments. Use of analgesics must be limited to prevent gastrointestinal and renal complications. Use of broad spectrum antibiotics need to be monitored to prevent resistance. Prescription of multi vitamin and mineral combination must be according to the therapeutic requirement. Prescription of drugs from NLEM must be preferred. Therefore, the study facilitate in developing interventional strategies like educating the public/ civil society must be done for ensuring rational use of drugs.

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