SELF MEDICATION PRACTICES WITH ANTIBIOTICS AMONG HEALTH CARE PROFESSIONAL IN UTTAR PRADESH, INDIA: A QUESTIONNAIRE BASED STUDY

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ABSTRACT
The purpose of this study was to evaluate the prevalence of self-medication practice and to create awareness for misuse of antibiotics among health care professional in Uttar Pradesh, India. It’s a cross-sectional study design which attempts to measure the self-medication practices among the health care professional through questionnaire based study. Among 300 participant’s, 266 (88.6%) were practicing self medication. The reason among those who did not practice self-medication was awareness for adverse reactions and misuse of antibiotics. Self-medication practice was more among physician (86%) followed by pharmacist and nursing staff (70%), dentistry (49%) and physiotherapist (38%). A majority, 97 (36.47 %), of the health care professionals used antibiotics for fever followed by Diarrhea (13.16%), Sore throat (7.14%), Common cold (7.14%), Pyorrhea (3.38%), UTI (9.02%), Peptic ulcer (5.63%), Wounds (10.90%), Conjunctivitis (3%), Skin infection (4.13%). Sources of drugs for self medication were medicines store (71%), community pharmacies (29 %). The prevalence of the practice of self-medication was highest among the age group of 31 – 40 years but lower in the 51 - 60 and > 61 years of age groups, respectively. Males exhibited higher prevalence of self-medication than females. In our study self-medication was more among graduates followed by diploma and postgraduates. This study shows the need to aware health care professional about the use of antibiotics. Hence it is needed for health care professionals, specially physicians, dentistry, physiotherapist, nursing staff and pharmacist to participate for creating awareness for the use of antibiotics, besides help from the pharmaceutical industry, government regulatory bodies and continuous inspection by the relevant authorities. The study revealed that the prevalence of self-medication with antibiotics by health care Professionals in Uttar Pradesh is very high. It is although difficult to eliminate, effort can be made to discourage this practice and ensure safer usage of antibiotics which will require better education of health care professionals to avoid the irrational use of antibiotics.

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INTRODUCTION

Self-medication is the use of drugs with therapeutic intent but without professional advice or prescription. It has also been defined as the use of nonprescription medicines by people on their own initiative[1]. According to WHO’s definition, self-medication is “the selection and use of medicines by individuals to treat self- recognized illnesses or symptoms”[2]. The World Health Organization reports that rational use of medicines occurs when patients receive adequate medication for their clinical needs, at doses varying from individual to individual and in cost effective way for the patient and the community[3].

Mis-use and self-medication with antibiotics is common throughout the world[3]. Self-medication could lead to development of antimicrobial resistance to antibiotics because of their frequent uses and it may precipitate the emergence of multiple resistant organisms that would be difficult to treat and which will indirectly increase morbidity[4-7]. There is no sector in the healthcare community which is immune to drug abuse/misuse of which the worst offenders include physicians and pharmacists[8]. Most often, physicians find it difficult to enter the patient role due to various reasons such as restricted time, nature of illness, concerns about confidentiality, high ego, etc. Both, ease of access to medications and high drug knowledge, potentially contribute to self-medication among pharmacists[9].

In practice self-care means the steps taken by the people to stay fit and healthy; meet social needs; prevent diseases; avoid unnecessary risks after an acute illness or discharge from hospital[10]. Several studies indicated substantial levels of illegal drug use among practicing pharmacists[11]. The prevalence of self-medication practices is alarmingly high in health-care professionals (HCP), despite knowing the consequences and potential risks[12].

The increased self-medication trend is not only observed in countries with advanced economies but also in developing countries[13]. In U.S., the prevalence of self-medication is 39% to 99% among doctors, in UK 90%, whereas in Australia 90%, though believed that it is acceptable to self-medicate for acute illness. Some examples of conditions where self-medication is appropriate are colds, flu, sore throat, sunburn etc. On the other hand, circumstances that favor physicians’ consultations are symptoms that persist for more than seven days; pregnant, breast-feeding, geriatric or pediatric; the condition has become worse; patient who experience unwanted side effects; possible abuse of medicine; patient have concurrent health issues.

Some of the problems associated with self-medication such as masked diagnosis, use of excessive drug dosage, prolonged duration of use, drug interactions, polypharmacy and super infection can occur in self-medicating individuals. However, there is substantial variation in the prevalence rates of self medication among developing and developed nations due to inherent differences in cultural and socioeconomic factors, disparities in health care systems such as reimbursement policies, access to health care, and drug dispensing policies[14]. The impact of the problem of self-medication practices among health care professionals varies from mild to severe.

The consequences of inappropriate self-medication among health care professionals have been found to have severe implications including legal, ethical, health defects, negative impacts on patient and quality of health care delivery.

Like any other person, health care professionals should also be encouraged through appropriate provision to enter the patient role. This is the only potential solution to decrease the high prevalence of self-medication among health care professionals. Antimicrobial resistance is a serious problem worldwide particularly in developing countries where antibiotics are often misused[15].

The objective of this study was to assess the prevalence of self-medication with antibiotics and to create awareness among health care professionals for the proper use of antibiotics and delay the development of resistance in Uttar Pradesh, as well as the factors associated with self-medication.

Hence, through this study effort has been made to make aware to health care professional regarding the proper use of antibiotics.

MATERIAL AND METHODS

The study area was Uttar Pradesh state of India which included both rural and urban areas of Uttar Pradesh. The study center was medical college, private and government hospitals, private clinics, medicine stores and by directly approaching to health care professionals. The data was collected from various district of Uttar Pradesh which covered both (i.e. urban and rural areas) of western Uttar Pradesh health care professionals. This ensured the homogeneity in our study. The sample population consists of different socioeconomic status.

A questionnaire with multiple choices and yes/no option was designed to obtain our data with 20 questions about self medication, which was answered by the health care professionals during his/ her visit. Data were collected via face to face of respondents using the questionnaire from July 2014 to December 2014. Samples of 300 health care professionals were selected from the health care set up out of which 266 were responders.

The inclusion and exclusion criteria for selection of health care professionals consuming any category of antibiotics are -

Inclusion criteria:
1. People within study area i.e. U.P, India
2. Mentally fit
3. Can communicate easily viz. speaking or writing
4. Consuming any category of antibiotics without consulting physician at time of study
Exclusion Criteria:
1. People outside the study area.
2. Mentally unfit
3. Unable to communicate through any means viz. speaking or writing
4. Health care professionals taking medicines with valid prescription.

The questionnaire used for data collection consisted of two sections with a total 20 questions. The first section included questions on the person’s descriptive characteristics (age, sex, marital status, education level & professions). The second section included questions on intention to self medication with antibiotics.

The intension to self medication with antibiotics was determined with multiple choices and yes/no questions. The interviews conducted by one person lasted approximately 10 - 20 minutes. Antibiotics were classified according to standard classification. The most common variables associated with use of antibiotics were identified through a literature review of relevant studies. The data generated was analyzed using Statistical Package for Social Sciences (SPSS®) version.

RESULTS

The results were based upon the data captured from 266 participants out of 300 participants. The prevalence of self Medication was reported as percentages. Of the 300 questionnaires distributed, 266 (88.6 %) were answered and rest ignored because they probably thought that they consume antibiotic after consulting the physician.

Despite all the explanations provided 171 (64.28 %) were male and rest were females 95 (35.71%). The gender distribution is shown in fig 1.

![Gender Distribution](image1)

**Fig no: 1 GENDER DISTRIBUTION**

The age distribution of respondents is shown in table of 266 patients. Approximately 48 (18.04%) belong to the age group of 21-30, 73(27.44%) were in 31–40 years, 67 (25.18 %) were in 41-50 years, 45 (16.91 %) were in 51-60 and only 33(12.40%) were 60 & above years of age. The age distribution is shown in fig 2.

![Age Distribution](image2)

**Fig no: 2 AGE DISTRIBUTION.**
The level of education in our study were in the following orders 166(62.40%) were graduates, 59(22.18%) were post-graduates, and 41(15.41%) were diploma. The level of education is shown in fig 3.

![Fig 3 EDUCATION LEVEL.](image)

Most used medication were antibiotics was penicillin 75 (28.19 %) followed by Cephalosporin 57 (21.42 %), Fluoroquinolones 54 (20.30 %), Anti-amoebic 44 (16.54%). The other commonly used antibiotics were Macrolides 34 (12.78%) and Amminoglycosides 2 (0.75%) which is represented in fig 4.

![Fig 4 ANTIBIOTICS GROUPS.](image)

Our study shown that the use of antibiotics for fever 97 (36.47 %) followed by Diarrhea (13.16%), Sore throat (7.14%), Common cold (7.14%), Pyorrhea (3.38%), UTI (9.02%), Peptic ulcer (5.63%), Wounds (10.90%), Conjunctivitis (3%), Skin infection (4.13%) respectively. The data is shown in fig 5.
The common reasons for self medications were lack of time 48 (18.04 %), confidence in self medication 94 (35.33 %), financial problem 14 (5.26 %), Mild illness 58 (21.80%), Quick relief 31 (11.65%), No primary physician nearby 7 (2.63%), and others 14 (5.26 %). The reason for practicing self medications is shown in fig 6.

34 responders were not practicing self medication. The Reasons for not practicing self medication were Risk of adverse drug reactions 14 (41.17%), Risk of wrong diagnosis 9 (26.47%), Risk of wrong use of antibiotics 7 (20.58%) and Others 4(11.76%). The reason for not practicing self medication is shown in fig 7.
DISCUSSION

In this study, the prevalence of self-medication among 266 health care professional (Physician, dentistry, nursing staff, pharmacy, physiotherapist) in Uttar Pradesh was investigated.

Self-medication with antibiotics by health care professionals in Uttar Pradesh was high. This finding is in agreement with a similar study which posited that the commonest groups of medication prone to self-medication include antibiotics. These groups of drugs are prone to misuse because they are readily available and microbial infections are common.

Among the respondents who practiced self-medication, the highest 73(27.44%) were aged between 31–40 years and the least 33(12.40%) were 60 & above years of age. From the data of the age distribution of respondents and the prevalence rate of self-medication, it clearly shows that there is no significant association between the age of respondents and prevalence of self-medication.

Gender distribution of respondents showed that 64.28% were males while the rest, 35.71% were females which also supported the findings of Shankar et al. (2002) and Parimi et al. (2002). However, the results contradict with findings observed by Rosen et al. (2000) and Sexton, (2003) in which they found that female HCP were more susceptible to self-medication due to strenuous job requirement.

In our study, it was observed that there is very high rate of self-medication practices among HCP which accounted to physician (86%) followed by 70.0% from pharmacist. The studies of (Dabney and Hollinger, 1999) and (Kriegler et al., 1994) provide empirical evidence in support of this claim. Based on (Davidson et al., 2003) high numbers of physicians think that it was acceptable to self-medicate for acute or chronic illnesses. Furthermore, (Chamber, 1993) also noted that physicians are more likely to treat themselves. Higher prevalence rate of self-medication among physicians is commonly due to their personal perception and mindset. However there are study outcomes reports which favor pharmacists as the prime runners for self medication practices.

In this study, among level of qualification, the highest prevalence of self-medication was recorded among respondents with graduate qualification (62.40%) while postgraduate qualification (22.44%) recorded a significantly lower self-medication practice. From this, it is obvious that the level of qualification does not play a significant role in the prevalence rate of self-medication. However, the results contradict with findings observed by (Balbisi et al., 2002) and (Parimi et al., 2002) in which they found that female HCP were more susceptible to self-medication due to strenuous job requirement.

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(Sallam et al., 2009) confirmed this by reporting that the self medicating drugs were among significant drug used for respiratory system problem. Association of the European Self-Medication Industry has listed common diseases in self medication as pain, allergy, colds, sore throats, coughs and diarrhea (Guiding Principles in Self-Medication, 1999).

This study also observed the involvement of prescription drugs in self-medication practices among HCP although the rate is slightly lower compared to non-prescription drugs.

Antibiotics are susceptible to the risks of misuse and yet they are often exposed to the high rate of self-medication practices. The involvements of antibiotics in self-medication practices among HCP, other than physicians are due to the

![Fig no: 7 AWARENESS FOR SELF MEDICATION.](image)
fact they are the commonly sold medications (Gore et al., 1994).

Though self medication is promoted by WHO, because of affordability and inaccessibility of health services in developing countries, benefit must be weighed against adverse effects.

CONCLUSION
The study revealed that the prevalence of self-medication with antibiotics by health care Professionals in Uttar Pradesh is very high.

The health care Professionals like physicians and pharmacists are no exception. The professional exposure to drugs, knowledge of their illness and treatment choice remains as the fundamental contributor to self-medication practice among health care Professionals. The Six main categories of antibiotics used in self-medication practices include Penicillin, Cephalosporin, Fluoroquinolones, Anti-amoebic, Macrolides and Amminoglycosides, which are indicated in fever, common cold, wounds, sore throat, diarrhea, pyorrhea and chills.

The consequences of self medication with antibiotics will lead to adverse drug reaction, development of resistance, irrational medication and may have health defects, negative impacts on patient and deteriorate the quality of health care delivery.

In order to curb the spate of self-medication practices among HCP, fundamental policy initiatives are required. Although self medication is difficult to eliminate, effort can be made to discourage this practice and ensure safer usage of antibiotics. This intervention will require better education of health care professionals to avoid the irrational use of antibiotics. However further research are required to substantiate these findings among health care professional.

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AUTHORS STATEMENT
The authors declare no conflict of interest.

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