

Original Research Article

Self Medication with Antibiotics among Different Categories of Population Residing In Bangalore: A Cross Sectional Study

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ABSTRACT

Objective- The study was conducted to assess the knowledge, attitude and practice of self medication with antibiotics among different categories of population residing in Bangalore.

Study Design- Cross sectional study.

Method- An online survey was conducted among different categories of population residing in Bangalore in Aug 2019 using a validated questionnaire.

Results- Out of 900 individuals 780 people participated in the survey, among them 404(51.79%) were females and 376 were males(48.20%).47.17% of them self treated with antibiotics. 70.8% of the participants had basic knowledge about antibiotics .Experience of similar illness and convenience were the most common reasons for self medication. Majority of the participants obtained medications from local pharmacies. Majority of the participants believed that self medication with antibiotics is not an acceptable practice. Oral Penicillin (Amoxicillin), Macrolides, Fluoroquinolones, Tetracyclines, Cephalosporins were the most commonly used antibiotics.

Conclusion- Despite of good knowledge on the use of antibiotics among the study participants, self medication with antibiotics was highly prevalent. Creating awareness on misuse and underuse of antibiotics will help in rational use of antibiotics.

Keywords- Self medication with antibiotics, rational use.

INTRODUCTION

Self medication has become a most common practice in India and other developing countries which results in great harm. As defined by World Health Organization (WHO) self-medication is “the use of drugs to treat self-diagnosed disorders or symptoms, or the intermittent or continued use of a prescribed drug for chronic or recurrent disease or symptoms”.^[1] Due to the easy availability of antibiotics in several countries without prescription this practice has become more prevalent, thereby allowing people to ignore physician advice and use their own opinion or the advice of other non-healthcare professionals to self-medicate.

India, almost every pharmacy sells drugs without a prescription, a phenomenon seen in many developing countries. In general, lack of primary health care system with cost issues causes the irrational use of antibiotics, leading to antimicrobial resistance.^[2] It has become an emergence to take call on this global concern which is resulting in anti-microbial resistance (AMR) leading to failure of antibiotic therapy.

Public education, imposing and implementing laws regarding prescribed medications will help decrease the practice of self-medication as shown by previous research within developed world. Ideally, antibiotics need to be regulated via prescription-only. Legally, the sale of

antibiotics is regulated on a ‘sold on prescription only’ basis and this needs to be put into effect in reality as well, by incorporating strong legal actions for not doing so. For implementation of such policies and carrying out general awareness programs, information should be available to prove that self medication can be beneficial but on the other hand that it is the most harmful practice. [3] Hence this study was conducted to assess the knowledge and practice of self medication with antibiotics among different categories of population residing in Bangalore.

MATERIALS AND METHOD

This was a cross sectional study which was conducted to analyze the patient’s knowledge, attitude and practice of self medication with antibiotics. A structured and validated questionnaire containing 24 questions was sent through online to people residing in Bangalore and data were collected for a period of 2 months from August 2019 to October 2019. Previous studies showed the prevalence of self-medication to be 65% - 70% . [2] Hence using 70% as a reference in Indian population, the sample size was calculated to be 332, at a confidence level of 95%. Systematic random sampling method was used for the survey. This study was conducted in accordance with the 2004 amendment of the Declaration of Helsinki, the guidelines for Good Epidemiological

Practice [4] and local regulatory requirements.

Inclusion criteria: All healthy individuals aged between 18 and 65 years, who were able to understand the survey and questions and who were able to give an objective assessment and replies were included.

Exclusion criteria: Children and old age (>65 years) individuals and those who were physically and mentally unable to participate and give objective replies were excluded.

The questionnaire included questions that were used to assess the knowledge about antibiotics, their indications, side effects, the behaviour and attitude about the risk of self medication with antibiotics, the prevalence and reasons for self medication.

The data obtained were entered into excel sheet. Percentage was calculated and charts like pictographic representation of our results were generated.

STATISTICAL ANALYSIS-

Statistical analysis was performed using programs available in the Microsoft Excel version 2013. All variables were tested for normal distribution of the data. Data are shown as a percentage. A chi-square test was used for assessing the relationship between age group and self medication practice also that of educational status and self medication practice. Odds ratio was calculated to find out statistical significance between gender and SMA at CI of 95%. P < 0.05 was considered statistically significant.

RESULTS

Table 1: Sociodemographic characteristics of respondents with self medication practices.

Variable	Participants using self medication (n=368)	Participants not using self medication(n=412)	P-value
Age			
18-25	105 (28.5%)	113 (27.4%)	0.91
26-35	97 (26.3%)	93 (22.5%)	
36-45	85 (23.0%)	99 (24.0%)	
46-55	43 (11.6%)	58 (14.0%)	
56-65	38 (10.3%)	49 (11.8%)	
Gender			0.90
Male	176 (47.8%)	200 (48.5%)	
Female	192 (52.1%)	212 (51.9%)	
Education			0.99
Engineering	85 (23.0%)	92 (22.3%)	
Commerce	73 (19.8%)	84 (20.3%)	
Medicine	97 (26.3%)	104 (25.2%)	
Arts	64 (17.3%)	76 (18.4%)	
< or equal to 12th	49 (13.3%)	56 (13.5%)	

A total of 780 participants answered the survey among them 404(51.69%) were females and 376(48.20%) were males. 218 participants belonged to the age group of 18-25years,190 belonged to 26-25years, 184 belonged to 36-45years, 101 to 46-55 years and 87 belonged to 55-66years. 177 participants were from the engineering background, 157 from commerce stream, 201 from medicine background,140 from arts and 105 we're educated up to or less than 12th standard. 70.8% of the participants had basic knowledge about antibiotics.

It was found that females were more prone to self medication with antibiotics-

52.1% than that of males- 46.8%. People belonging to the age group of 18-25years had self medicated with antibiotics more than that of the others age groups. (28.5%). People with engineering educational status were more into self medication with antibiotics (23.0%) than other educational statuses as shown in Table 1.

According to statistical analysis, there was no significant association between Age, gender and educational status with self medication with antibiotics with a p value of 0.91,0.90,0.99 respectively as shown in Table 1.

Table 2: Reasons, diseases, basis and when to stop antibiotics during self-medication of antibiotics among the positive respondents (n=368)

Variables	Total no.	Percentage
(a)Reasons for Self medication with antibiotics		
Cost saving	98	26.6
Convenience	109	29.6
Lack of trust in prescribing doctors	23	6.25
Previous experience of current illness	138	37.5
(b)Disease for self medication with antibiotics.		
Runny nose	32	8.69
Nasal congestion	43	11.6
Cough	52	14.1
Sore throat	64	17.3
Fever	79	21.4
Ache and pain	43	11.6
Vomiting	12	3.26
Diarrhoea	24	6.52
Skin wounds	19	5.16
(c)Basis for self medication with antibiotics		
Recommendation by pharmacist	85	23.0
Opinion by family members	52	14.1
Opinion by friends	33	8.96
Own experience	74	20.1
Previous doctor's prescription	98	26.6
Advertisement	26	7.06
(d)When to stop antibiotics:		
After a few days, regardless of the outcome	49	13.3
After symptoms disappeared	85	23.0
Few days after recovery	54	14.6
After antibiotics ran out	18	4.89
At the completion of antibiotic course	97	26.3
After consulting doctor/pharmacist	65	17.6

Table 3: Practices regarding self-medication of antibiotics among the positive respondents

Variables	Total no.	Percentage
Place to get AB:		
Community pharmacies	350	95.1
Leftovers from previous prescription	4	1.08
Online shopping/E-Pharmacies	5	1.35
How to know the dosage:		
Checking inside package	49	13.3
Consulting a doctor	76	20.6
Consulting a pharmacist	64	17.3
Consulting family member/friend	58	15.7
From newspapers/magazines/books/TV programs	32	8.69
From internet	20	5.43
Previous experience	69	25.7
Max. No. of Antibiotics taken during an illness:		
1	268	72.8
2-3	88	23.9
>3	12	3.26

37.5% of study population selected antibiotics from previous experience of current illness while the remaining opted antibiotics for other fewer common reasons like convenience and cost saving as shown in Table 2(a). 21.4% of the study population self medicated with antibiotics for fever, 17.3% for sore throat and cough, nasal congestion etc was among others as shown in Table 2(b).26.6% selected antibiotics based on previous prescription by the physician, 23% based on recommendation by local pharmacists among other reasons as shown in Table 2(c). 26.3% completed the course of antibiotics, 23% stopped taking antibiotics after symptoms disappeared and there were other common reasons as shown in Table 2(d).

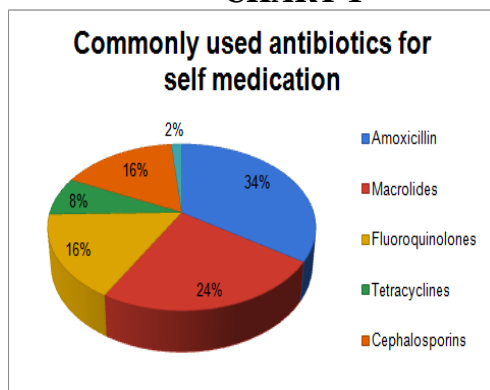
49.3% agreed that common infectious diseases couldn't be self treated.15.1% believed they could treat

common infectious diseases by themselves and others gave maybe as answer. 95% of the study population obtained antibiotics from community pharmacies. 20.6% determined the dose of antibiotics by consulting a doctor, 17.3% considered dose by consulting a pharmacist and a fewer number of people looked into the package insert as shown in Table 3. Majority of them didn't switch antibiotics and also didn't consume more than one antibiotic during the single course as shown in Table 3.88% of the study population didn't experience any adverse reactions during self medication with antibiotics. Among the fewer ones who experienced adverse reactions 49.7% consulted a doctor or pharmacist regarding the same and others stopped taking antibiotics as shown in Table 4.60% believed that it is not an acceptable practice to self medicate with antibiotics.

Table 4: Practices regarding the use of antibiotics during self-medication of antibiotics among the positive respondents (n=368)

VARIABLES	TOTAL NO.	PERCENTAGE
Switch antibiotics :		
Yes, always	12	3.26
Yes, sometimes	36	9.78
Never	320	86.9
Reason For Switching Antibiotics:		
Previous antibiotic did not work	269	73.0
Previous antibiotics ran out	2	0.54
To reduce side effects	97	26.3
Adverse reactions during Self Medication with Antibiotics:		
Yes	44	11.9
No	324	88.0
Step taken after an experience of Adverse reaction during Self Medication with Antibiotics:		
Stopped taking antibiotics	92	25.0
Switched/changed to other antibiotic	57	15.4
Consulted a doctor/pharmacist	183	49.7
Consulted friends/family members	36	9.78
SMA for self-health care:		
Good practice	24	6.52
Acceptable practice	123	33.4
Not acceptable practice	221	60.0

CHART 1



Amoxicillin (15.97%), Macrolides (11.11%), Fluoroquinolones (7.63%), Tetracyclines (3.47%), Cephalosporins (7.63%), Sulfamethoxazole +Trimethoprim (0.69%) were the most common antibiotics used for self medication as shown in Chart 1.

DISCUSSION

In this study, the prevalence of self medication remains higher by persons even with basic knowledge about antibiotics. In

developing countries like India, most episodes are treated by self-medication due to the easy availability of non-prescription drugs. It is a prominent constraint in ensuring the safe and effective use of medicines.

A study conducted by WHO reported that 364 (79.8%) of the study population used self-prescribed antibiotics. Partly, our study revealed that 48.1% of the respondents declared they self-medicated due to various justifications. It is due to lack of knowledge about the potential side effects of antibiotics and easy availability through previous prescriptions; people are more inclined to the practice of self-medication. [5]

In a study conducted by Shaik Mohammed Shamsudeen et al., the prevalence of self medication was most common among the youngsters. [2] Similar result was drawn from our study where most of the youngsters were involved in self medication practice. Hence there is a need to take a call on this global concern of misuse of antibiotics leading to antimicrobial resistance (AMR).

CONCLUSION

Despite of better availability of primary care services, it appears that a high proportion of the population prefers to use antibiotics without medical prescription. This can be brought to control, when primary care physician advises the patient about the correct use of the prescribed antibiotics. Another important intervention to reduce the major problem of self-medication with antibiotics in India should be legislative changes banning unregulated sale of antibiotics without a medical prescription. Creating awareness programs

like “ANTIBIOTIC AWARENESS WEEK” conducted in the US ,which emphasizes the importance of using antibiotics responsibly by reducing their unnecessary use and encourage people to follow their doctor’s instructions on how to take antibiotics in the appropriate way can improve the present scenario on antibiotic usage. [6] A longitudinal study with follow up’s and counselling could have helped in finding the impact towards the attitude and practice of SMA.

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