



AN AMBISPECTIVE QUESTIONNAIRE-BASED SURVEY ON KNOWLEDGE, PERCEPTION & AWARENESS OF ANTIBIOTIC RESISTANCE AMONG PATIENTS IN A TERTIARY CARE HOSPITAL

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ABSTRACT

Antibiotic resistance is occurring everywhere in the world, compromising the treatment of infectious diseases and undermining many other advances in health and medicine. It represents one of the biggest threats to global health today, and can affect anyone, of any age, in any country. We aimed to conduct a KAP (Knowledge, Attitude & Practice) survey to evaluate the existing Knowledge & beliefs regarding antibiotics among patients in a tertiary hospital at A.P. India, as a first step to promote awareness of ABR. The study was conducted in the in-patient department of general medicine department at a tertiary hospital, Vijayawada. Out of 300 patients, 45 have been excluded from the study because of no prior antibiotic use. The rest of patients i.e., 255 have participated in the survey. Over 65.1% of the subjects were male & 34.9% were female. About 62% of the subjects haven't heard about ABR & 67% doesn't know the reasons for ABR. This study found that patients understanding of many aspects of antibiotic resistance was poor including what it is, causes & individual implications. Based on each patient's perception counselling has been done on ABR. This study provides a snapshot of where the patients stand in terms of knowledge about ABR.

Key Words:- Antibiotic resistance, medication adherence, judicious, awareness, attitude.

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discovery was a turning point in human history. Regrettably, the use of these wonder drugs has been accompanied by the rapid appearance of resistant strains. A widespread misuse and/or abuse of antibiotics and genetic plasticity of bacteria resulted in the development of resistance against these miracle drugs. The resistant bacteria survive, exchange their resistant traits and continue to multiply to cause more harm to the host. (WHO,2013). Antibiotic resistances cause longer hospital stays, increased mortality and substantial economical and intangible costs (Ott et al., 2010). A newest report by WHO about antimicrobial resistance, including antibiotic resistance, reveals that this serious threat is no longer a prediction for the future, it is happening right now in every region of the world and has the potential to affect anyone, of any age, in any country.

The possible causes for the overuse of antibiotics include the following: a) Lack of microbiology facilities or unwillingness of patients to undergo tests. b) Repetitive prescriptions of antibiotics by doctors to any patient with a fever (taking it as a sign of bacterial infection). c) Usage of antibiotics as

INTRODUCTION

The development of antibiotics, which have been called "miracle" drugs, represented a huge step forward in human medicine since the 1940s and became pillars of public health in the 21st century as most important tools in modern medicine. (WHO, 2015). Antibiotics have revolutionized medicine in many respects, and countless lives have been saved; their

postsurgical prophylactic regimen especially when doctors are concerned that, the patient will not return for follow up. (Kotwani et.al., 2010). d) the patient's expectation of being given an antibiotic over the counter or a prescription for one at the doctor's office. e) public's lack of knowledge about the appropriate use of antibiotics; and f) poverty driven misuse and /or abuse of antibiotics. (WHO/SEARO 2009)

Self-medication, noncompliance by the patients were found to augment the antibiotic resistance threat. (Kardas et.al.,2005). Evidence suggests that patient beliefs as well as their expectations and demands play a key role in inappropriate antibiotic prescribing by healthcare providers in outpatient settings. Patients who expect to receive antibiotics at an outpatient visit were prescribed antibiotics more frequently than those who were not expecting them. Likewise, providers report feeling pressured to prescribe antibiotics even when they believe that antibiotics are not clinically indicated. (Fadare JO et al., 2011).

In Europe & the United States, public education campaigns to promote awareness of AMR have been carried out & the effects of these campaigns are evaluated through surveys using questionnaires. Accordingly, these countries are able to assess the educational contents of their campaigns to develop strategies to improve them. In India, on the other hand, only few efforts have been made to evaluate the public awareness & perception of ABR, few studies have shown that there are some people who doesn't have adequate knowledge & perception about effects & use of antibiotics. (Wun et.al.,2013). Thus, the present study was aimed to assess the awareness, behavioral attitude and practice towards antibiotic usage among in patients of Vijayawada, Andhra Pradesh, India by using close ended questionnaire. The main aim of the study is to observe the knowledge, attitude, practice of antibiotics & perception of ABR among patients.

MATERIALS AND METHODS

An ambispective study was conducted among in-patients in general medicine department over a period of 6 months at Help hospitals, Vijayawada, Andhra Pradesh. In-patients aged between 20-80 & who are willing to participate in the study are included in the study. A structured questionnaire study consisting of three sections was used to assess the knowledge of patients about antibiotic resistance in India. Individual consent from

patients to participate in the survey is collected prior the start of the study. Among the 300 participants who gave the consent, 255 reported prior use of antibiotics whereas the rest of the participants didn't use antibiotics i.e., 45 of them have been excluded from the study.

A structured questionnaire was designed based on the WHO version "Antibiotic Resistance: Multi-country Public Awareness Survey" & Eubarometer- The questionnaire form consists of III sections with a total of 20 questions (WHO-2015, Eubarometer-445).

RESULTS:

DEMOGRAPHICS:

This section briefly describes the characteristics of the patients participated in this survey (Table.1). It is to be noted that some percentages in the figures may not add up to the total or 100% because of rounding.

1. **Gender:** Over 65.1% of the subjects were male & 34.9% were female.
2. **Age:** Among the sub-division of six age groups, 51-60 age group were dominant at 25.9% followed by 41-50 age group at 18.4% , 61-70 age group at 18.4% , 31-40 age group at 12.9%, 20-30 age group at 12.2 & 71-80 age group at 12.2% respectively.
3. **Educational attainment:** More than half of the patients (61.6%) were educated among which 22.7% had tertiary education followed by lower secondary education (16.1%), Upper secondary education (11.4%) & Primary education at (11.4%). About 38.4% of the patients were uneducated.
4. **Occupation:** Categorization of patient's occupation has been made into seven different sub-categories. Among those, includes Employees (20.4%), Farmers (18.8%), Housemakers (26.7%), Others (Business-18%), Students (7.1%), Retired (7.8%) & Unemployed (1.2%).
5. **Locality:** Patient's place of residence was also taken into consideration in the study. About 51% of the respondents were from rural locality & 49% from Urban locality.

Figure-1: Gender wise distribution of study population

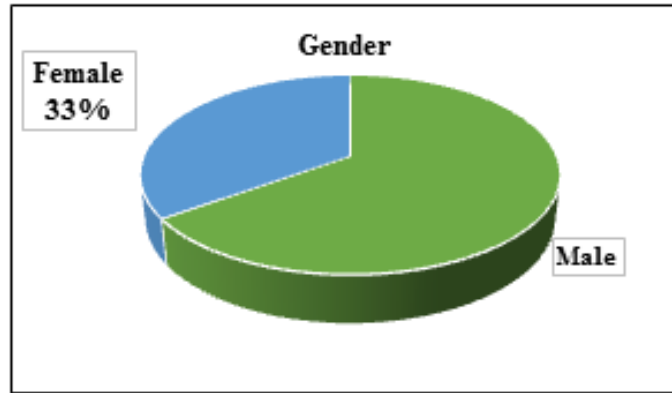


Figure-2: Age wise distribution of study population

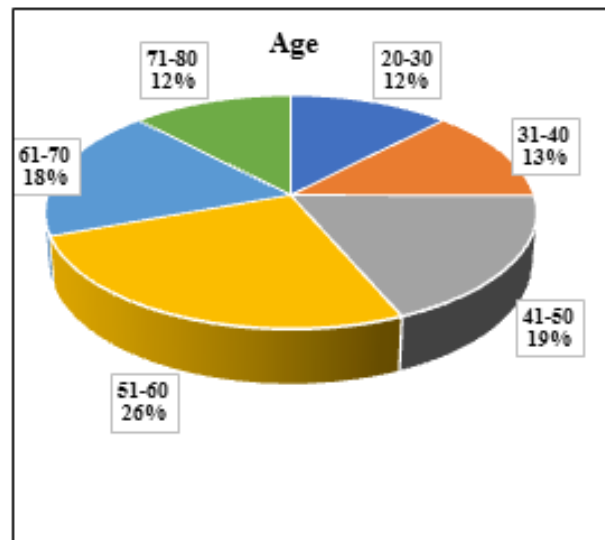


Figure-3: Education wise distribution of study population

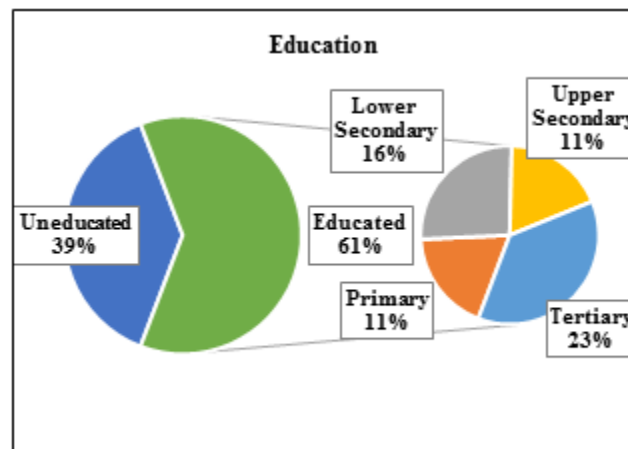


Figure-4: Occupation wise distribution of study population

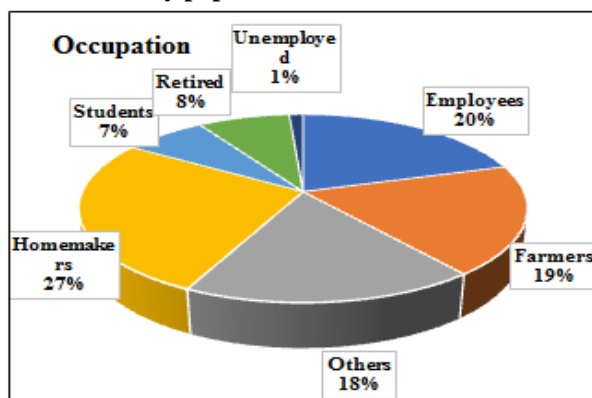


Figure-5: Locality wise distribution of study population

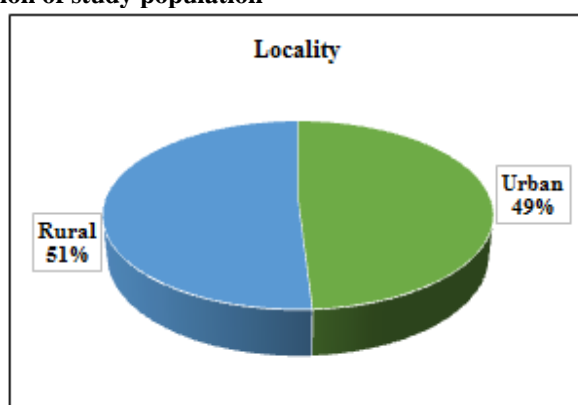


Table-1: Questions to assess patient’s knowledge, attitude & use of antibiotics

S. No	Section-I Questions	Yes (%)	No (%)
1	Do you complete the full course of antibiotic prescribed by the physician?	79.2	20.8
2	Do you take antibiotics prophylactically?	46.3	53.7
3	Do you think that antibiotics should be taken for viral illnesses like common cold, flu, sore throat, cough etc.	86.7	13.3
4	Do you save the remaining leftover antibiotics for future?	74.1	25.9
5	Do you normally stop taking prescribed antibiotics when you start feeling better?	67.8	32.2
6	Do you think that it is good to be able to acquire antibiotics from relatives or acquaintances, without having to be examined by a doctor?	36.1	63.9
7	If you get an infection, do you often wait and see, i.e., rest and take it easy, and see if the infection goes away on its own?	31.4	68.6
8	Do you think that hand hygiene (hand washing or alcohol hand rub) reduces the risk of spreading common infections, such as influenza?	38.4	61.6

Table-2: Patient’s Experience at the time of medical visit

S. No	Section-II Questions	Totally agree	Don’t agree

		(%)	at all (%)
1	Does your doctor always conduct a thorough examination regarding whether you need antibiotics or not?	98.8	1.2
2	When antibiotics are prescribed, does the doctor take time to provide information on how they should be used, in an understandable manner?	50.6	49.4
3	Does the Pharmacy staff take their time to inform you on how antibiotics should be used besides dispensing them?	74.1	25.9
4	Do you think that a doctor who does not prescribe antibiotics when you need them the most, is not as good as a doctor?	2	98

Table-3: Patient's Knowledge on Antibiotic Resistance

S. No	Section-III Questions	Yes	No	Don't know
1	Have you heard about antibiotic resistance?	38.4	61.6	0
2	Do you know the reasons for antibiotic resistance?	32.9	67.1	0
3	Do you think that taking antibiotics for inadequate duration of time leads to antibiotic resistance?	4.7	30.6	64.7
4	Do you think that Bacteria can become resistant to antibiotics?	3.9	29	67.1
5	Do you think that antibiotics used in animals can lead to antibiotic resistance?	11	22.7	66.3
6	Do you think that high population density contributes to antibiotic resistance?	24.3	11.8	63.9
7	Do you think that People can become resistant to antibiotics?	38.4	2.4	59.2
8	Does indiscriminate use of antimicrobials can cause more harm than good.	57.3	35.7	7.1

DISCUSSION:

Patient's knowledge on use of antibiotics: Most of the participants knowledge on antibiotics was good but when asked about whether antibiotics can be used for viral illness, 87% responded positively & about 13% negatively. 74% of respondents reported use of left- over antibiotics. Only 62% thinks that hand hygiene can reduce the risk of acquiring infections. Only 79.2 % complete the entire course of antibiotics as prescribed by the physician.

Patient experience at medical visit: About 49% patients responded negatively when asked whether the physician provides information on antibiotic usage when prescribed

& 74.1 % responded that the pharmacists provide the information about use of antibiotics at the time of dispensing.

Patient knowledge on ABR: Majority of the patient's knowledge on ABR & its causes is poor. About 62% of the subjects haven't heard about ABR & 67% doesn't know the reasons for ABR. When asked whether using antibiotics for inadequate duration can lead to ABR, only 5% responded positively & the rest 30 % negatively & 65% responded that they doesn't know. 66% of the respondents doesn't know that using Antibiotics in animals can be one of the cause to ABR. About 39% responded positively when asked whether they think that

people can become resistant to antibiotics. The rest 59% responded that they doesn't know & only 2% responded correctly by answering negatively. About 57% of patients thinks that indiscriminate use of antibiotics can cause more harm than good. Patients response to questions on ABR was similar to the 2016 Public KAP survey on antimicrobial resistance among the residents of Hong-kong (2013, KAP survey).

The comparison of patient variables of ABR survey has been done by chi-square using excel and found the p-value is 0.0230, which is significant at $p < 0.05$. The patients were counselling about antibiotic resistance & about rational use of antibiotics after the survey. Counselling aids like pamphlets in both English & Telugu were used to enhance the patient's perception towards antibiotics.

Study Limitations: Some of the patients might have under-reported their non-adherence to antibiotics

(section-1) in order to avoid the disapproval from us, given that the survey is done in a hospital setting. The questionnaire is lengthy & the survey is time-consuming.

CONCLUSION:

This study found that patients understanding of many aspects of antibiotic resistance was poor including what it is, causes & individual implications. Based on each patient's perception counselling has been done on ABR. Therefore, by making the patients aware of the threat that ABR poses right now, we can minimize the abuse/misuse of antibiotics by patients & also can improve the adherence to antibiotics. This study provides a snapshot of where the patients stand in terms of knowledge about ABR. Provided the given situation with ABR being a global threat, surveys as such must be conducted so as to increase rational use of antibiotics among patients. So, this data could serve as a basis for development of interventional programs in the future..

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