

## A Study Regarding Knowledge of Anti Biotic Resistance among Engineering Students in South India

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**Abstract:** *Introduction: Antibiotic resistance is one of the biggest threats to global health today. It can affect anyone, of any age, in any country. The misuse of nonprescription drugs amongst students has become a serious problem. The youth is especially exposed to the media and the increased advertising of pharmaceuticals poses a larger threat to the young population. Methodology: V R Siddhartha Engineering College has been selected randomly among all engineering colleges located in Vijayawada, Krishna district, Andhrapradesh, India. Sample size of 150 students has been chosen randomly for this study. Results: Out of the 150 participants, 55.3% of study subjects were female, Majority of the participants (84.7%) were of urban origin, and 86% of their parents are educated. Only 10.7% of study participants have knowledge of Antibiotic Resistance and 62.67% of study participants prefer to consult qualified doctor during sickness. 23.3% study participants took medicines from pharmacy directly. Conclusions: As Engineering students play key roles in the modern technology usage there should be appropriate ways to connect them with latest health information. With the acquired health knowledge they should first change their attitude & should consult qualified doctor during sickness. They should practice taking complete course of antibiotics and share this vital information with other sections of the society.*

### I. Introduction

Antibiotic resistance is one of the biggest threats to global health today. It can affect anyone, of any age, in any country. Antimicrobial resistance threatens the effective prevention and treatment of an ever-increasing range of infections caused by bacteria, parasites, viruses and fungi<sup>(1)</sup>. Selfmedication practices are presumed to be common, practices such as the utilization of prescription and/or non-prescription medication without prior medical consultation<sup>(2)</sup> is also contributes to the problem of AMR. The consumption of drugs without prescription is a phenomenon of increasing relevance, motivated by a complex set of factors that are associated with values that Predominate in modern society<sup>(3)</sup>. The misuse of nonprescription drugs amongst students has become a serious problem. The youth is especially exposed to the media and the increased advertising of pharmaceuticals poses a larger threat to the young population<sup>(4)</sup>. A survey on widely advertised medications indicated that the majority of college students used at least one of the advertised products, without discussing this with their physicians<sup>(5)</sup>. Most medicines had been purchased directly from pharmacies while the stock of medicines at home ranked second. The latter carries the risk of exposure to expired medicine, medicine meant for someone else or drugs that may have been originally prescribed for a different problem<sup>(6)</sup>. Irrational use of medicines is a major problem worldwide. WHO estimates that more than half of all medicines are prescribed, dispensed or sold inappropriately, and that half of all patients fail to take them correctly<sup>(7)</sup>. Notwithstanding the availability of so many antimicrobial agents, infectious diseases still remain the second leading cause of death worldwide. Eventually, the widespread occurrence of antibiotic-resistant bacteria has added a new dimension to the emerging threat of bioterrorism<sup>(8)</sup>.

According to the study conducted by the author majority of non teaching staff working in a tertiary care center did not have any knowledge about Antibiotics and did not take full course of Antibiotics<sup>(9)</sup>. Even though the majority of medical students<sup>(10)</sup> and nursing students<sup>(11)</sup> studying in the same tertiary care center knew about antibiotic resistance but they lag behind in creating awareness regarding it.

Hence the study was conducted to know whether the Engineering Students familiar with Antibiotic resistance and their attitude towards taking Antibiotics as they use latest technology in their day to day life activities more than others.

### II. Objectives

1. To assess the knowledge of Engineering students regarding AMR.
2. To study the attitude and practice of Engineering students in seeking health services from qualified doctor and in taking full course of antibiotics

### III. Methodology

**Study area:** This cross-sectional study was undertaken in V R Siddhartha Engineering College, Vijayawada, Andhrapradesh, India, with approval from the Institutional Ethical Committee.

**Study design and population:** The study population consisted of engineering students from first to final year. Students were selected for the study by a simple random sampling method. The participants were briefed about the nature of the study, consent was taken and a pre-tested structured questionnaire administered to them.

**Data collection and analysis:** A structured interview questionnaire was designed as data collection instrument . Questionnaire was submitted for institutional ethical committee approval. Other necessary permission sought from the higher authorities. The objectives of the study, confidentiality of the research and other ethical considerations mentioned in the interview guidelines were explained for every interviewee. After explaining these, every respondent was asked for his or her willingness to participate in the study. This process helped in the standardization and uniformity of the data collection.

Data entered into the Statistical package for social sciences (SPSS) software and analyzed using this software. Results represented in the form of percentages.

### IV. Results

**Table 1 - Demographic profile of engineering students**

Age	Frequency	Percent
16-20	150	100
Sex	Frequency	Percent
Male	67	44.7
Female	83	55.3
Education of the parents	Frequency	Percent
Yes	129	86.0
No	18	12.0
Don't know	3	2.0
Residence	Frequency	Percent
Rural	23	15.3
Urban	127	84.7
Total	150	100.0

More than half of the participants are females (55.3%). Majority of the engineering students (84.7%) are of urban origin born to educated parents (86%).

**Table 2 : Response of Engineering students during their last episode of sickness**

During last sickness	Frequency	Percent
Visited doctor	83	55.3
Took medicine from pharmacy	35	23.3
Home medication	32	21.4
In general visits Qualified Doctor	Frequency	Percent
Yes	94	62.67
No	56	37.33
Visited when sick	Frequency	Percent
MBBS	53	35.33
BAMS	3	2.00
BHMS	12	8.00
M.S / M.D	26	17.33
RMP	43	28.67
PMP	13	8.67
First choice they preferred	Frequency	Percent
Govt. doctor	16	10.67
Pvt. Doctor	99	66.0
Medical shop	35	23.33
Total	150	100.0

Most of the participants (55.3%) visited doctor during their last episode of illness. Majority of engineering students (62.67%) prefer to visit qualified doctor in general and 66% of them visited MBBS Doctor.

**Table 3- knowledge of Antibiotic resistance**

<b>Knew about antibiotics</b>	<b>Frequency</b>	<b>Percent</b>
Yes	85	56.7
No	65	43.3
<b>Knew about Antibiotic Resistance</b>	<b>Frequency</b>	<b>Percent</b>
Yes	16	10.7
No	134	89.3
<b>Information source</b>	<b>Frequency</b>	<b>Percent</b>
Media	10	62.5
Doctor	6	37.5
Total	16	100.0

Even though 56.7% students knew about Antibiotics but majority did not know about antibiotic resistance.

## V. Discussion

More than half of the participants are females(55.3%). Majority of the engineering students (84.7%) are of urban origin born to educated parents (86%).Most of the participants (55.3%) visited doctor during their last episode of illness. Majority of engineering students (62.67%) prefer to visit qualified doctor in general and 66% of them preferred MBBS doctor.unlike the non teaching staff (45.6%) of tertiary care centre<sup>(9)</sup> only 23.3% engineering students purchased medicines directly from pharmacy.But surprisingly 37.33% engineering students approaching non qualified doctor while only 4.6% of non teaching staff and 6% of nursing students<sup>(11)</sup> approaching the above.only 10.7% of study participants familiar with antibiotic resistance and naturally majority of medical<sup>(10)</sup> and nursing students knew about it.

## VI. Conclusion

The study identified knowledge and attitude gap among the study group regarding antibiotic resistance despite their urban, educated background and professional carrier.It indicates the need of community participationand a lot of intersectoral co-ordination among the society. Government should spread the public Health knowledge both vertically and horizontally to create awareness and to change attitude by of all citizens.

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