

## Assessment of knowledge, attitude and practice of parents on antibiotic use in pediatric population

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Date of Submission: 15-06-2024

Date of Acceptance: 25-06-2024

**ABSTRACT:** Antibiotic Resistance is a major global health problem driven in part by inappropriate use of antibiotic. This study assessed the knowledge, attitude and practice of parents regarding antibiotic use in the pediatric population through a cross sectional survey at tertiary care hospital in Kerala. The result showed that parents had moderate levels of knowledge and attitude, with poor practices. Only 31% of parents were aware of antibiotic resistance. The finding highlights the need for educational interventions to improve parental knowledge and promote judicious use of antibiotics in children to combat antibiotic resistance.

**KEYWORDS:** Antibiotic use, Pediatric population, Knowledge, Attitude, Practice, Antibiotic Resistance.

### I. INTRODUCTION

The discovery and use of antibiotics has revolutionized medical practice in the 20<sup>th</sup> century. Inventions of antibiotics are considered as one of the most relevant invention in the modern era.<sup>1</sup> The rational use of antibiotics is defined as “patients receive antibiotics appropriate to their clinical needs, in doses that meet their own individual requirements, for an adequate period of time, and at the lowest cost to them and their community”. Overuse, underuse and misuse of antibiotics result in wastage of resources and spread of health hazards. Irrational use of antibiotics leads to increase in the incidence of treatment failure, antimicrobial resistance and economic burden on the patient and the community as a whole.<sup>2</sup>

In a study conducted in India around 1 in every 4 parents (28%) correctly identifies that antibiotics are used against bacterial infections while only 15.5% parents knew the meaning of the term antibiotic resistance. Majority of the respondents (73.6%) appreciated that unnecessary use of antibiotics could harm the child.<sup>3</sup>

Antibiotic resistance in various bacterial pathogens has reached to a pandemic level during the last two decades. The Centre for Disease Control and prevention (CDC) estimates that in US more than 2 million people are infected every year with antibiotic resistant microbes and at least 23,000 die due to these infections. Studies from European, American and Asian countries indicate that many parents (22%, 8% and 70%) have the wrong conception about the appropriate use and efficacy of antibiotics. In global report on surveillance in Anti-Microbial Resistance, The World Health Organization (WHO) declared that anti-microbial resistance in wide range of infectious agents has become a serious public health problem and a post antibiotic era is a real possibility for the 21<sup>st</sup> century.<sup>4</sup> The objectives of this study were to assess the knowledge, attitude and practice on antibiotic use and awareness about antibiotic resistance among the parents in pediatric population.

### II. METHODOLOGY

The study was conducted in PVS SUNRISE Hospital, Calicut, a tertiary care multispeciality hospital in South India for a period of November 2022 to April 2023. The study design followed in this study was prospective cross sectional study design. Parents who accepted to give their response were included for the study.

Procedures:

- A KAP questionnaire was prepared.
- Permission of the OP paediatrician was obtained to interview the parents of the patients.
- A study criteria for the study was composed.
- All the parents who met the inclusion criteria were interviewed.
- The survey was verbally administered by the project team members.

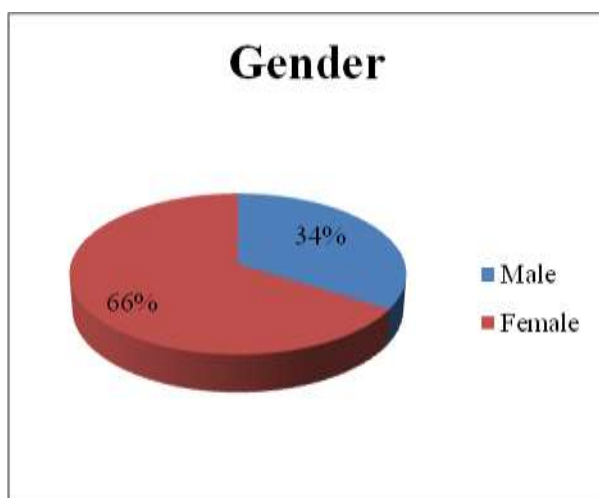
- The survey questionnaire had 47 multiple choice questions. It was divided into 4 sections:
  - a) Knowledge – 14 questions
  - b) Attitude – 12 questions
  - c) Practice – 15 questions
  - d) Socio-demographic characteristics – 6 questions
- The participant’s data were entered into a secure Excel database.
- Scoring of questions was determined.
- One point was given for every correct answers and zero point was given to every wrong or uncertain answers.
- The response in each case was divided as high, moderate and poor as: scores above or equal to 7 as high, 4-6 as moderate and 1-3 as poor.
- Awareness of antibiotic resistance among the parents was also evaluated.
- Participants who answered ‘yes’ to the question were recognised as aware and who answered ‘no’ were considered as unaware.
- The data’s collected were formulated into tables, pie charts, bar graphs and donut graph. Descriptive statistics were followed for this study.

### III. RESULTS AND DISCUSSION

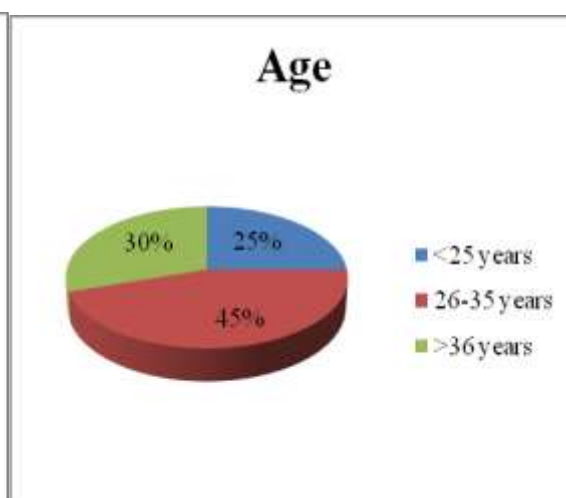
#### a. Socio-demographic characteristics:

**Table 1: Socio-demographic characteristics of the study participants (n=300)**

CHARACTERISTICS	NUMBER(n=300)	PERCENTAGE (%)
<b>Gender</b>		
Male	102	34%
Female	198	66%
<b>Age</b>		
<25	75	25%
26-35	135	45%
>36	90	30%
<b>Education</b>		
Primary	18	6%
Secondary	120	40%
UG/PG	153	51%
Illiterate	9	3%
<b>Number of children</b>		
One	126	42%
Two-three	135	45%
>three	39	13%



**Figure No. 1: Gender**



**Figure No. 2: Age**

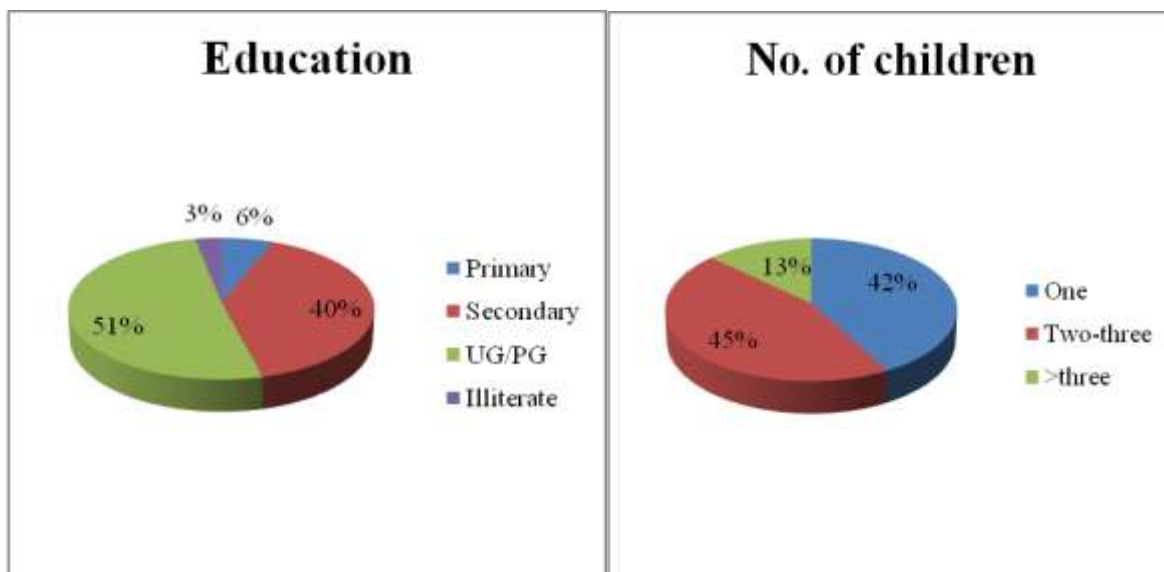


Figure No. 4: Number of children

Figure No. 3: Education

b. Assessment of knowledge

Table 2: Knowledge on antibiotic use

Scores	Number of participants (n=300)	Percentage
1-3	120	40%
4-6	153	51%
≥7	27	9%

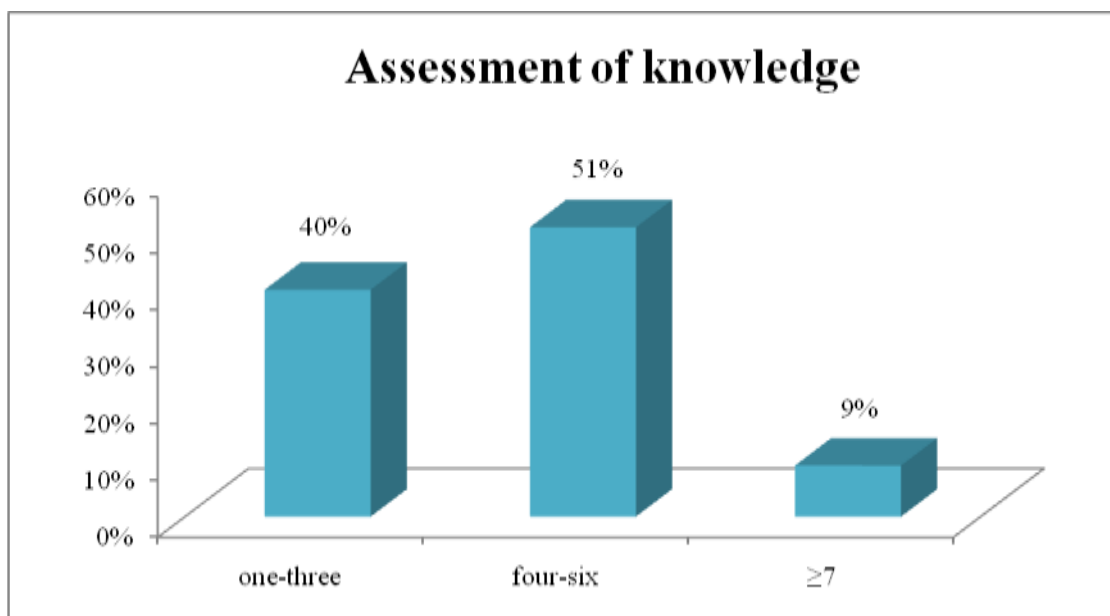
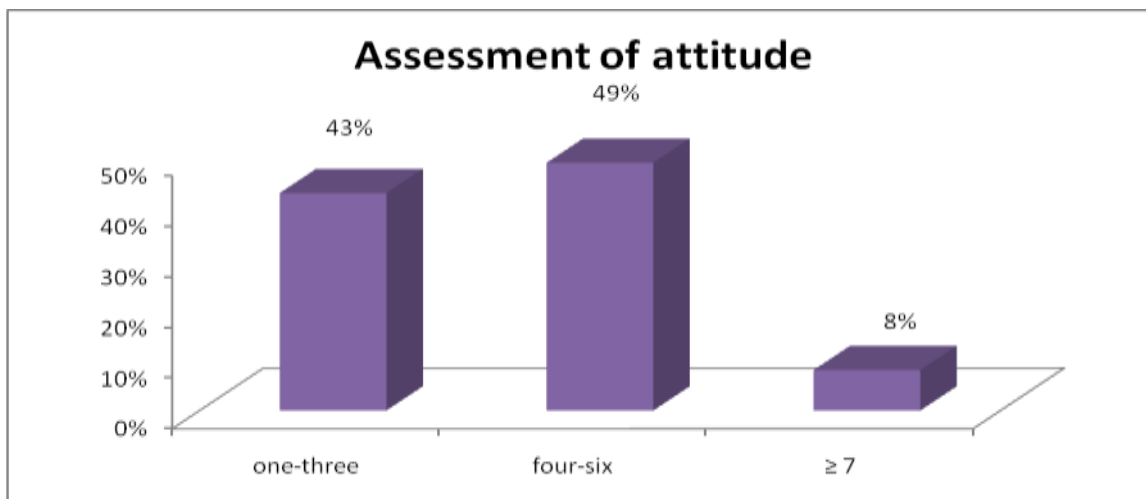


Figure No. 5: Distribution of antibiotic use according to knowledge level

**c. Assessment of attitude**

**Table 3: Attitude of antibiotic use**

Scores	No. of participants (n=300)	Percentage
1-3	129	43%
4-6	147	49%
≥7	24	8%

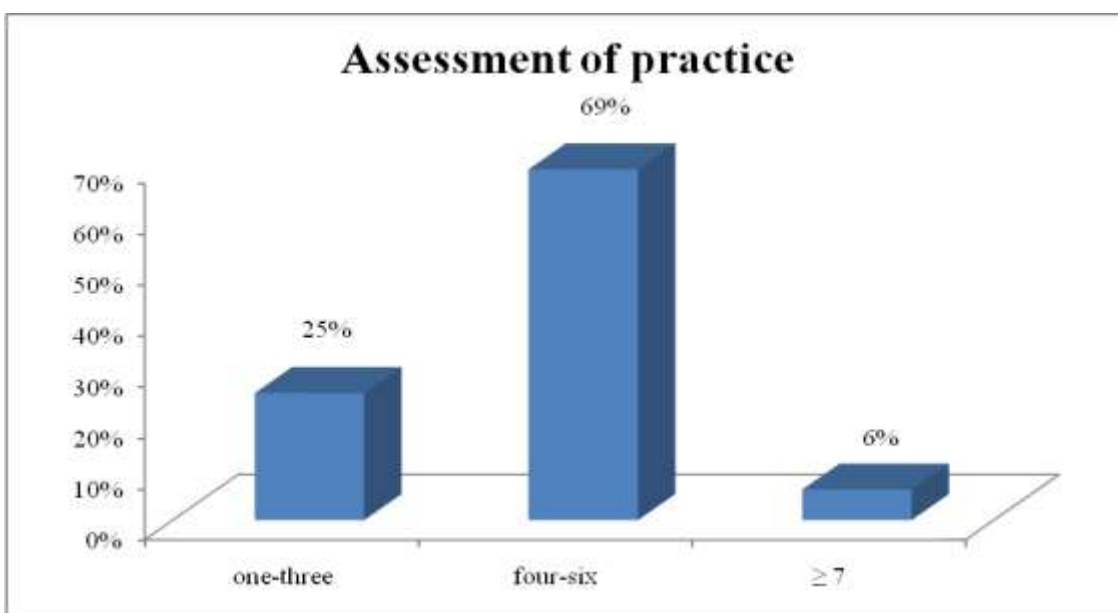


**Figure No. 6: Distribution of antibiotic use according to attitude level**

**d. Assessment of practice**

**Table 4: Practice of antibiotic use**

Scores	No. of participants (n=300)	Percentage
1-3	75	25%
4-6	207	69%
≥7	18	6%

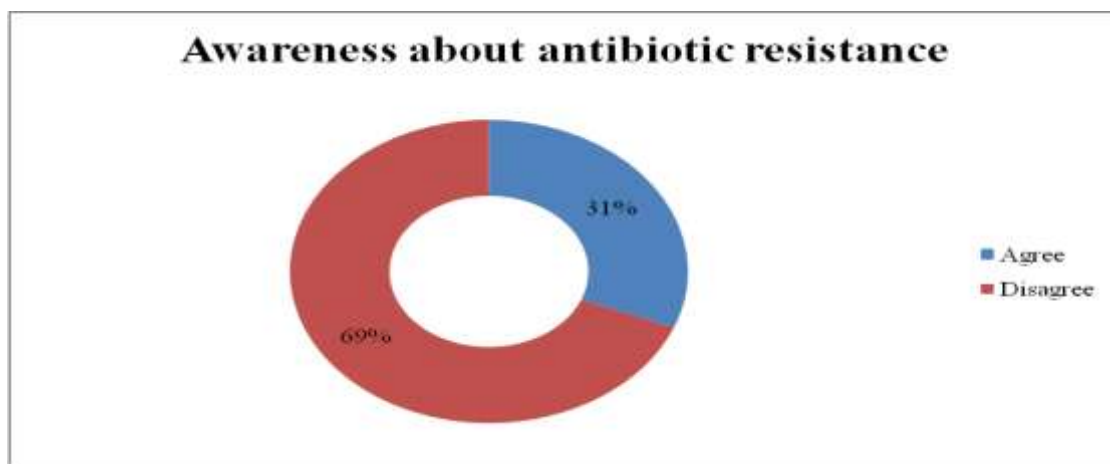


**Figure No. 7: Distribution of antibiotic use according to practice level**

**e. Assessment of awareness about antibiotic resistance**

**Table 5: Awareness about antibiotic resistance**

Query	Agree	Disagree
Have you heard about antibiotic resistance?	93 (31%)	207 (69%)



**Figure No. 8: Distribution of response on awareness about antibiotic resistance**

**IV. CONCLUSION**

The study evaluated parent’s knowledge, attitude and practices regarding antibiotic use in children. Overall, parents had moderate levels of knowledge, attitude and practices about antibiotic use. However, a significant number of parents lacked adequate knowledge about antibiotics. Many parents also had poor attitude towards appropriate antibiotic usage. In terms of practices, most parents had average practices, while some had poor antibiotic practices. Alarmingly, majority of parents were unaware about antibiotic resistance. Awareness campaigns, counselling and distribution of informative materials can help in this regard. Effective communication between parents and healthcare providers is crucial. Strict policies regulating antibiotic prescription and sale may also prevent misuse.

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