

Knowledge Regarding Oral Antibiotic Use and Resistance Among the Public

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Abstract—The increasing and often inappropriate use of oral antibiotic among the general population have become a major public health concern worldwide. Misuse, including self-medication, incomplete courses, and unnecessary prescriptions, has significantly contributed to the growing problem of antibiotic resistance. This alarming trend highlights the urgent need to assess awareness and knowledge regarding the proper use of oral antibiotics and their consequences. The main purpose of this study was to assess the knowledge regarding oral antibiotics use and resistance among adults in Nadathara gramapanchayat. The objectives of the study were to assess the level of knowledge among public regarding oral antibiotic use and resistance among the public, to find the association between knowledge regarding antibiotic use and resistance with their selected demographic variables and to prepare an information leaflet on oral antibiotic use and resistance. The study employed a quantitative research method in which purposive sampling method was used and 100 samples were selected. Data for the study were gathered using a self-structured knowledge questionnaire. The data were analyzed to obtain meaningful results. The findings revealed that approximately 81% of adults had moderate knowledge, 10% had inadequate knowledge, and 9% demonstrated adequate knowledge. The present study findings reveal an association between the level of knowledge of adults regarding oral antibiotic use and resistance with selected demographic variables such as age, educational status and type of healthcare facility available. Following the assessment, adults received an informational leaflet on the proper use of oral antibiotics and methods to overcome resistance, aiming to enhance their understanding, promote rational use of antibiotics and to prevent the rise of antibiotic resistance.

Index Terms—Oral antibiotics, Antibiotic resistance, Awareness, Knowledge, self medication, Misuse of antibiotics, public health, Adults.

I. INTRODUCTION

Antibiotics have become the cornerstone for the treatment of infectious diseases and have contributed significantly to the dramatic global health development during the last 70 years. Millions of people now survive what were previously life-threatening infections, but antibiotics are finite resources. Misuse has led to antibiotic resistance (ABR) and reduced efficacy within just a few years of the introduction of each new antibiotic.¹

India is one of those countries with a significant antimicrobial resistance problem. Even potent antibiotics are accessible in the country without appropriate prescriptions. While some studies show lack of awareness among public and this highlights an urgent need for better public awareness. Many efforts to tackle this multifaceted crisis have been emerged in the country, for instance, antimicrobial stewardship programs. However, there is often inadequate implementation of these measures. Currently, not much is known about the knowledge of antibiotic use by the common people in India and globally. Antibiotic resistance occurs worldwide and can affect anyone, of any age, in any country. Though antibiotic resistance occurs naturally, the misuse of antibiotics in humans and animals is hastening the process. Therefore, this study aims to find out the knowledge among the general public regarding antimicrobial resistance and the use of antibiotics, their attitude and practice.

1.1. Objectives

1. To assess the knowledge regarding oral antibiotic use and resistance among the public in selected community.

2. To find the association between knowledge regarding antibiotic use and resistance with their selected demographic variables among public in selected community.
3. To prepare and distribute an information leaflet on oral antibiotic use and resistance.

II. METHODOLOGY

Research approach and design: A quantitative research approach and descriptive research design were adopted. The study aimed to describe the existing knowledge of adults regarding oral antibiotic use and resistance without manipulation of variables.

Setting and population: The study was conducted in Ward 19 of Nadathara Gramapanchayat, Thrissur, Kerala. The target population consisted of adults aged 18–60 years residing in the selected community.

Sample and sampling: The sample consisted of 100 adults who fulfilled the inclusion criteria. Adults aged 18–60 years who were present during data collection were included; those unwilling to participate were excluded. Purposive sampling was used.

Tool: Section A collected demographic information including age, gender, educational status, occupation, monthly family income, area of residence, presence of a health professional in the household, antibiotic intake for health problems, family experience of antibiotic resistance, and type of healthcare facility available in the locality. Section B was a structured 30-item multiple-choice knowledge questionnaire. Each correct answer received one mark and each incorrect answer received zero. The maximum score was 30. Knowledge was categorized as inadequate (0–10), moderate (11–20), and adequate (21–30).

Validity and data collection: The tool was submitted to experts in Medical Surgical Nursing for content validity and modified according to their suggestions. Formal permission was obtained from the concerned authorities, and informed consent was obtained from participants. Data were collected on 28 February 2026 and 1 March 2026. Participants were given 30 minutes to complete the questionnaire.

Data analysis: Frequency and percentage were used for demographic characteristics and knowledge categories. Chi-square test was used to assess the association between knowledge level and selected demographic variables. Statistical significance was considered at $p < 0.05$.

III. RESULTS

The study included 100 adults. The demographic profile and knowledge distribution are summarized below.

Table I. Demographic profile of respondents (n=100)

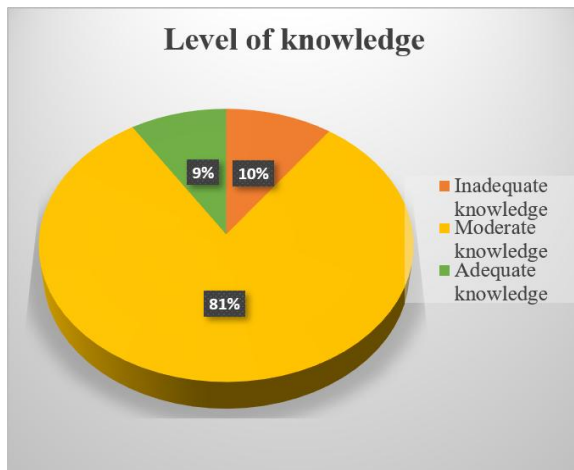
Variable	Category	n	%
Age	18–30 years	25	25
	31–40 years	17	17
	41–50 years	21	21
	51–60 years	37	37
Gender	Male	32	32
	Female	68	68
Education	No formal education	1	1
	Primary education	14	14
	Secondary education	44	44
	Graduate and above	41	41
Occupation	Government	8	8
	Non-government	39	39
	Student	12	12
	Self-employed	41	41
Monthly family income	< ₹10,000	31	31
	₹10,000–20,000	34	34
	₹20,000–30,000	22	22
	> ₹30,000	13	13
Area of residence	Urban	12	12
	Rural	88	88
Health professional at home	Yes	9	9
	No	91	91
Intake of antibiotics for health problem	Yes	47	47
	No	53	53
Family experience of antibiotic resistance	Yes	19	19
	No	81	81
Healthcare facility available	Government	33	33
	Private	22	22
	Both	45	45
	None	0	0

The largest age group was 51–60 years (37%). Females constituted 68% of the sample. Regarding education, 44% had secondary education and 41%

were graduates or above. Most respondents were self-employed (41%) or employed in non-government occupations (39%), and 88% lived in rural areas. Regarding the healthcare professional at home, 9% of adults have health professional at home and 91% of adults does not have health professional at home. 47% of adults take antibiotics for health problem and 53% of adults does not take antibiotics for any health problem. 19% of adults experience antibiotic resistance and 81% of adults does not experience antibiotic resistance. 33% of adults has Government health care facility, 22% of adults has private health care facility, 45% of adults have no health care facility in their locality.

Table II. Level of knowledge regarding oral antibiotic use and resistance (n=100)

Knowledge level	Score	n	%
Inadequate	0–10	10	10
Moderate	11–20	81	81
Adequate	21–30	9	9



Knowledge level: Of the 100 respondents, 10 (10%) had inadequate knowledge, 81 (81%) had moderate knowledge, and 9 (9%) had adequate knowledge regarding oral antibiotic use and resistance.

Table III. Association between selected variables and knowledge level (n=100)

Variable	χ^2	p value	Inference
Age	22.587	0.001	Significant
Healthcare facility	9.866	0.043	Significant
Educational status	12.617	0.050	Significant

Health professional in household	3.558	0.169	Not significant
Frequent antibiotic intake	3.406	0.182	Not significant
Area of residence	1.690	0.430	Not significant
Occupation	4.971	0.548	Not significant
Monthly family income	1.642	0.950	Not significant
Family experience of resistance	0.617	0.735	Not significant
Gender	1.039	0.595	Not significant

* $p < 0.05$ was considered statistically significant.

Association with demographic variables: Significant associations were observed for age, educational status and type of healthcare facility available in the locality. No significant association was found for the other variables tested.

IV. DISCUSSION

The value of research is only reached when the findings are well communicated and further leads to practice. Discussion refers to whether the research finding or study report differs from previous literature. The study findings were discussed according to the objective.

The first objective states that to assess the level of knowledge of oral antibiotic use and resistance among people. For the present study, it was assessed by structured knowledge questionnaire among 100 samples. Out of that 81 (81%) had moderate knowledge regarding oral antibiotic use and resistance, 10 (10%) had inadequate knowledge, and 9 (9%) had adequate knowledge regarding oral antibiotic use and resistance.

The present study findings were supported by the cross-sectional study in Ethiopia (n=385), where the study findings revealed that 72.5% have moderate knowledge and 27.5% respondents had adequate knowledge regarding antibiotic use.

The second objective of the study was to determine the association between level on knowledge on oral antibiotic use and resistance with selected demographic variables. The present study findings reveal that there is an association between the level of knowledge on oral antibiotic use and resistance with

selected demographic variables like age ($\chi^2=22.587$, $P=0.001$), educational status ($\chi^2=12.617$, $P=0.050$), healthcare facility in locality ($\chi^2=9.866$, $P=0.043$). On the other hand, the results show no association between the level of knowledge on oral antibiotic use and resistance with selected demographic variables such as gender ($\chi^2=1.039$, $P=0.595$), occupation ($\chi^2=4.971$, $P=0.548$), monthly family income ($\chi^2=1.642$, $P=0.950$), experience of antibiotic resistance ($\chi^2=6.17$, $P=0.735$), area of residence ($\chi^2=1.690$, $P=0.430$), health professionals in household ($\chi^2=3.558$, $P=0.169$), frequent antibiotic intake ($\chi^2=3.406$, $P=0.182$).

The present study findings were supported by a cross-sectional descriptive study design was conducted to assess the knowledge, attitudes, practices regarding antibiotic use and resistance among 407 adults in Dessie city. A systematic random sampling technique was used to select samples, and Google form was used to collect data online. In this study, 73.7% of study participants were aware of the existence of germs; 58.2% were aware of the existence of antibiotic resistance to bacteria; 47.7% were aware of the existence of drug resistance, 14.7% of the respondents were not aware of any risk factor for antimicrobial resistance. 15.5% of the respondents did not know the consequences of antimicrobial resistance.

V. CONCLUSION

The present study revealed varying levels of knowledge regarding the use of oral antibiotics and antibiotic resistance. Among some participants demonstrated adequate awareness about the importance of proper antibiotic use, gaps in knowledge were also identified, particularly regarding self-medication, incomplete antibiotic courses, and the consequences of antibiotic resistance. These findings highlight the need for effective health education and awareness programs to promote the rational use of antibiotics. Healthcare professionals, especially nurses, can play a crucial role in educating the community, providing accurate information, and encouraging responsible antibiotic practices. Community-based educational interventions and awareness campaigns can help improve public knowledge and ultimately contribute to the prevention of antibiotic resistance and the promotion of better health outcomes.

VI. IMPLICATIONS

Nursing practice: Nurses can contribute to antibiotic stewardship through patient and community education, counselling on prescribed antibiotic use, and reinforcement of adherence to treatment instructions.

Nursing administration: Community-based awareness programmes can focus on misconceptions about antibiotics, self-medication, inappropriate use for viral illnesses, and prevention of antibiotic resistance.

Nursing education and research: Nursing students and educators can use the findings to strengthen antimicrobial-resistance education and develop further interventional and comparative studies with larger samples.

Limitations: No broad generalisation could be made due to small sample size and long term follow up was not possible because of limited availability of time.

VII. RECOMMENDATIONS

Similar studies may be conducted on a larger sample to improve the generalizability of the findings. Comparative studies can be carried out between urban and rural populations to assess differences in knowledge and practices regarding antibiotic use and antibiotic resistance. Observational studies may be carried out in pharmacies and community health centres to assess the actual practices related to antibiotic use among the public.

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