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A Community-Based Cross-Sectional Study on Knowledge, Attitude, and Practice towards Antibiotics among Residents of a Selected Ward in Trivandrum, Kerala, India

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ABSTRACT

The present study attempts to assess the knowledge, attitude, and practice of antibiotic use among residents in a selected ward of Thiruvananthapuram, Kerala, since inappropriate use is one of the important causes leading to antimicrobial resistance. The objectives are to assess the level of community knowledge regarding proper use of antibiotics and resistance, to assess attitudes about antibiotic consumption and guidance from professionals, and to explore actual practices regarding the use, storage, and disposal of antibiotics. The study was conducted with a community-based cross-sectional design and lasted for four months. Data from 150 adult residents were collected using a validated structured KAP questionnaire, and ethical principles were followed strictly. More than half of the participants had good knowledge of antibiotics. Attitudes were variable; however, no participant had a maximum score on the attitude domain. A considerable number of participants had inappropriate antibiotic-use practices, especially regarding prescription-only use, completion of treatment courses, and consulting healthcare professionals. Significant association between knowledge with attitude and practice was identified and most of them had a positive correlation among all the domains of KAP. The study concludes that though the community's knowledge and attitudes regarding antibiotics are moderately satisfactory, unsafe practices are predominant.There is, therefore, a need for targeted community-based educational interventions and antibiotic stewardship programs to be implemented to bring about improvements in rational antibiotic use and reduce the risk of antimicrobial resistance.

KEYWORDS: attitude; community-based study; knowledge; practice; questionnaire; antibiotics

I. INTRODUCTION

Antibiotics are among the most significant discoveries in modern medicine and play a crucial role in the prevention and treatment of infectious diseases. However, their irrational and inappropriate use has led to the growing global threat of antimicrobial resistance (AMR), which poses a serious challenge to public health systems worldwide. The World Health Organization recognizes antimicrobial resistance as one of the top ten global health threats, emphasizing the urgent need to promote rational antibiotic use at the community level. Since a large proportion of antibiotic consumption occurs outside hospital settings, understanding public behavior towards antibiotics has become increasingly important.[1],[5]

In recent years, attention has shifted from focusing solely on healthcare providers to also considering the role of the general population in antibiotic misuse. Community residents often practice self-medication, discontinue antibiotics prematurely, use leftover medicines, or demand antibiotics for viral infections such as the common cold and flu. These practices contribute significantly to the development of AMR. Therefore, improving public awareness and responsible behavior toward antibiotic use is essential for safeguarding the effectiveness of existing antimicrobial agents.[1],[3],[5],[7]

Knowledge, attitude and practice (KAP) are key factors that influence how individuals use antibiotics. Knowledge refers to the understanding of antibiotics, their appropriate indications, dosing, and the consequences of misuse. Attitude reflects the beliefs, perceptions, and expectations of individuals regarding antibiotic use and resistance. Practice represents the actual behavior of individuals, including self-medication habits, adherence to prescribed regimens, and consulting

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healthcare professionals before using antibiotics.[1],[4],[7]

Assessing the level of KAP towards antibiotics among community residents is vital for identifying gaps that may contribute to inappropriate antibiotic use. The findings of such assessments can help in designing effective awareness programs, educational interventions, and public health strategies to promote rational antibiotic use.[1],[5],[7]

With this background, the present study is undertaken as a community-based cross-sectional study to assess the KAP towards antibiotics among residents of a selected ward in Trivandrum. The outcomes of this study are expected to contribute towards strengthening community awareness and supporting efforts to combat AMR, thereby improving overall public health and patient safety[1],[3],[5].

II. MATERIALS AND METHODS

Materials Required:

- Data collection form
- Informed consent form
- Validated KAP Questionnaire

Data Sources:

All the relevant and necessary data were collected through direct interviews with residents of Alathara wardThiruvanandhapuram,Kerala.

Methodology:

- Study Design: Prospective cross-sectional study
- Study site:Alathara Ward Thiruvananthapuram District, Kerala
- Duration of Study:3 months
- Subjects: Community members ofAlathara ward Thiruvananthapuram District, Kerala
- Sample size:The sample size was calculated using the formula for estimating a population proportion:

$$n = \frac{Z^2_{(1-\alpha/2)} \times P(1-P)}{d^2}$$

Where:

n=required sample size
P= anticipated population proportion
d= absolute precision
$Z_{(1-\alpha/2)}$= standard normal deviate corresponding to the desired confidence
level

Based on a previous community-based study conducted by **Simegn W and Moges G.** on awareness and knowledge of antimicrobial resistance among adults in Ethiopia, the anticipated population proportion (P) was taken as **0.58** . An absolute precision (d) of **8%** and a **95% confidence level** were considered for the calculation.

Using these parameters, the required sample size was estimated to be **146**. To ensure adequate representation and to compensate for potential non-response, the sample size was rounded up to **150 participants**.

III. RESULT AND DISCUSSION

Statistical analysis was carried out to describe the study population and to examine the relationships between knowledge, attitude, and practice (KAP) regarding antibiotic use. Socio-demographic variables and individual KAP item responses were summarized using frequency and percentage. Overall knowledge, attitude, and practice scores were further classified into good, average, and poor levels based on the scoring criteria described in the methodology, and these categories were presented as proportions. To assess whether attitude and practice levels differed across knowledge categories, Chi-square test of association was applied, and statistical significance was interpreted using a p-value < 0.05. In addition, the strength and direction of relationships between the continuous/domain scores of knowledge, attitude, and practice were evaluated using Pearson correlation coefficient (r) along with corresponding two-tailed p-values. Findings were presented in tables and figures with appropriate interpretation in line with the study objectives.

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Table 1. Socio demographic characteristics

		Frequency	Percent
Age	18-29	18	12
	30-39	38	25.3
	40-49	29	19.3
	50-59	25	16.7
	≥ 60	40	26.7
Gender	Male	60	40
	Female	90	60
Education	Primary	7	4.7
	Secondary	29	19.3
	Higher secondary	33	22
	Graduate	65	43.3
	Post Graduate and above	16	10.7
Occupation	Student	7	4.7
	Homemaker	45	30
	Unemployed	16	10.7
	Self - Employed	21	14
	Government Employee	10	6.7
	Private Employee	34	22.7
	Retired	17	11.3
	Total	150	100

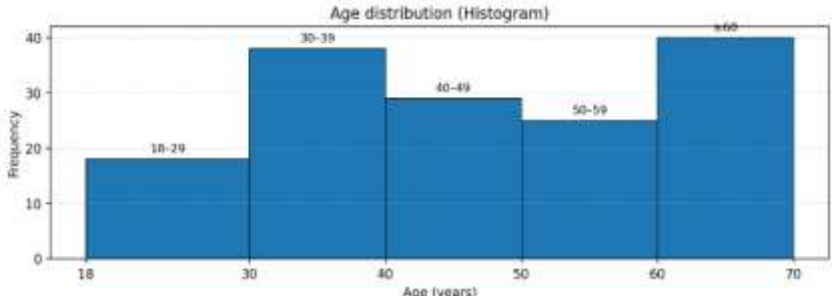

Fig no.1. Age distribution

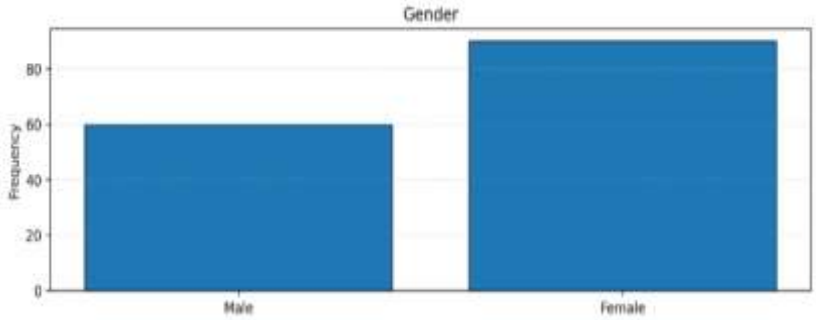

Fig no.2. Gender

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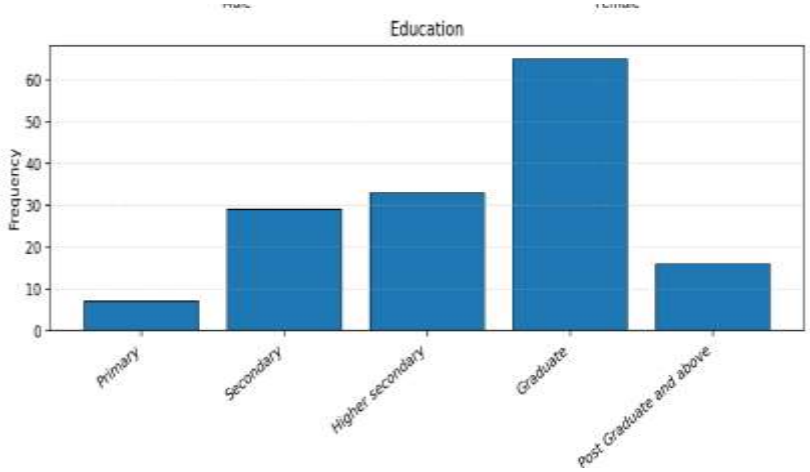

Fig no.3.Education

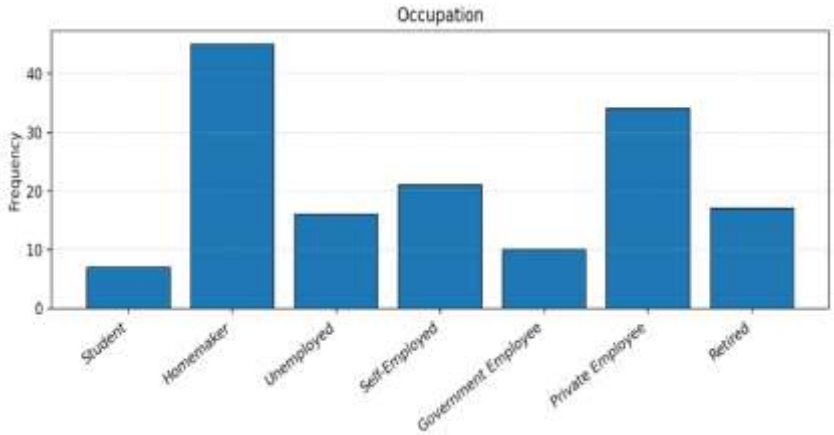

Fig no.4. Occupation

Table 1 presents the socio-demographic profile of the study participants (N = 150). The age distribution shows representation across all adult age groups, with the largest proportion belonging to the **≥60 years** category (**40; 26.7%**), followed by **30–39 years** (**38; 25.3%**) and **40–49 years** (**29; 19.3%**). Participants aged **50–59 years** constituted **25 (16.7%)**, while the youngest group (**18–29 years**) accounted for **18 (12.0%)**, indicating that the sample included both younger adults and a considerable proportion of older adults.

With respect to gender, **females formed the majority** of the sample (**90; 60%**), whereas **males constituted 60 (40%)**, reflecting a higher participation of women in the community survey.

Regarding educational status, the sample was predominantly educated up to graduation and above. **Graduates formed the largest group** (**65; 43.3%**), followed by those with **higher secondary education** (**33; 22.0%**) and **secondary education** (**29; 19.3%**). A smaller proportion reported **postgraduate education or higher** (**16; 10.7%**), and only **7 (4.7%)** participants had education up to the primary level. This distribution suggests that the study population had an overall moderate-to-high educational profile.

In terms of occupation, **homemakers comprised the largest subgroup** (**45; 30.0%**), followed by **private employees** (**34; 22.7%**) and **self-employed individuals** (**21; 14.0%**). **Retired participants** accounted for **17 (11.3%)**, while **unemployed participants** constituted **16 (10.7%)**. Smaller proportions were **government employees** (**10; 6.7%**) and **students** (**7; 4.7%**). Overall, the occupational distribution indicates a mixed participant base including homemakers, working adults, and elderly/retired individuals, providing diversity in socio-economic and life-stage representation within the community sample.

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Table 2. Knowledge on Antibiotics

		Frequency	Percent
Antibiotics treat viral infections (e.g., common cold).	True	53	35.3
	False	97	64.7
Misuse/overuse of antibiotics causes antibiotic resistance.	True	83	55.3
	False	67	44.7
Complete the full antibiotic course even if you feel better.	True	111	74.0
	False	39	26.0
Sharing antibiotics is safe if symptoms are similar	True	20	13.3
	False	130	86.7
Asking for antibiotics for minor illness is appropriate.	True	33	22.0
	False	117	78.0
Antibiotic resistance can spread person-to-person.	True	27	18.0
	False	123	82.0
	Total	150	100.0

Table 2 describes the participants' knowledge regarding antibiotic use and antibiotic resistance (N = 150). Overall, knowledge was satisfactory in certain key areas related to appropriate antibiotic use, but important gaps were also evident—particularly regarding antibiotic resistance and its spread.

Nearly two-thirds of the participants (**97; 64.7%**) correctly identified that **antibiotics do not treat viral infections** such as the common cold, while **53 (35.3%)** incorrectly believed that antibiotics are effective against viral illnesses. Awareness regarding the role of antibiotic misuse in causing resistance was comparatively moderate: **83 (55.3%)** correctly agreed that **misuse/overuse of antibiotics can lead to antibiotic resistance**, whereas a substantial proportion (**67; 44.7%**) did not recognize this link, indicating incomplete understanding of antimicrobial resistance (AMR) mechanisms.

Knowledge about **completing the full course of antibiotics** was relatively strong, with **111 (74.0%)** correctly stating that the antibiotic course should be completed even if symptoms improve; however, **39 (26.0%)** still held incorrect beliefs, which could contribute to premature discontinuation and increased risk of resistance. Encouragingly, a large majority (**130; 86.7%**) correctly rejected the misconception that **sharing antibiotics is safe** when symptoms are similar, suggesting good awareness of the risks associated with antibiotic sharing.

On the other hand, knowledge related to **antibiotic demand and appropriateness of use** was mixed. While **117 (78.0%)** correctly disagreed that **requesting antibiotics for minor illness is appropriate**, about one-fifth (**33; 22.0%**) perceived antibiotic demand as acceptable in minor conditions, which can contribute to unnecessary antibiotic consumption.

A major knowledge deficit was observed regarding **person-to-person spread of antibiotic resistance**: only **27 (18.0%)** correctly acknowledged that **antibiotic resistance can spread from one person to another**, whereas the vast majority (**123; 82.0%**) were unaware of this concept. This finding is particularly important from a public health perspective, as it reflects limited understanding of AMR as a community-level threat rather than only an individual-level issue.

In summary, Table 2 indicates that while participants demonstrated relatively good knowledge on completing antibiotic courses and avoiding antibiotic sharing, **misconceptions persist about antibiotic use in viral infections**, and **knowledge about AMR—especially its spread—is notably inadequate**, highlighting the need for focused community awareness and educational interventions.

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Table 3. Level of Knowledge

	Frequency	Percent
Good	80	53.3
Average	61	40.7
Poor	9	6.0
Total	150	100.0

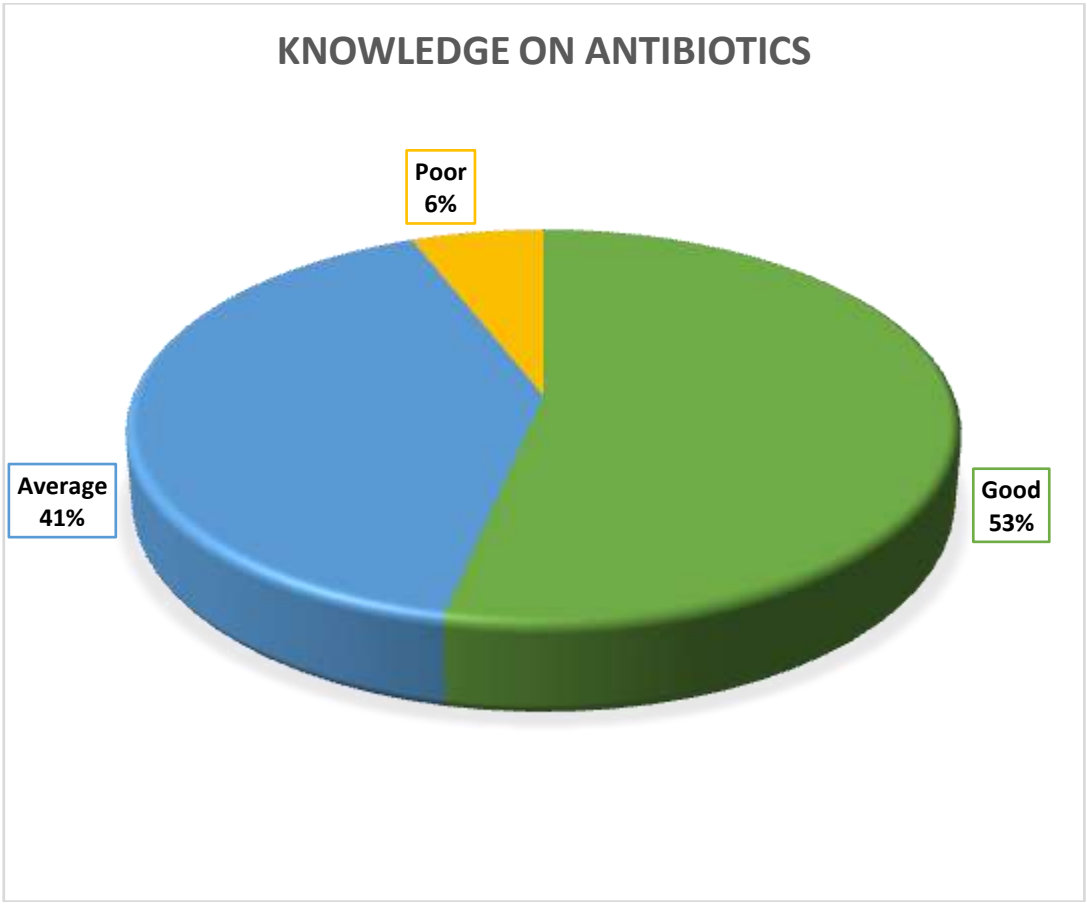

Fig no.5. Knowledge on antibiotics

Table 3 summarizes the overall level of knowledge on antibiotics among the study participants (N = 150). More than half of the respondents demonstrated a good level of knowledge (80; 53.3%), indicating that a substantial proportion had an adequate understanding of key concepts related to antibiotic use and resistance. A considerable share of participants fell into the average knowledge category (61; 40.7%), suggesting partial awareness with persisting misconceptions or incomplete understanding of certain aspects. Only a small proportion exhibited poor knowledge (9; 6.0%), representing a minority group with comparatively limited awareness.

Overall, this distribution indicates that while the community shows a generally satisfactory knowledge base regarding antibiotics, the large "average" segment highlights the need for targeted educational efforts to strengthen understanding—particularly in areas where knowledge gaps were evident in item-wise assessment.

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Table 4. Attitude

		Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
I keep antibiotics at home for emergencies.	No	70	32	14	16	18
	%	46.7	21.3	9.3	10.7	12
I take antibiotics without a prescription.	No	74	33	10	12	21
	%	49.3	22	6.7	8	14
I take antibiotics for every health problem.	No	59	38	21	17	15
	%	39.3	25.3	14	11.3	10
I trust my doctor when antibiotics aren't needed.	No	14	12	10	41	73
	%	9.3	8	6.7	27.3	48.6
Antibiotics make me recover faster from any infection.	No	18	19	31	55	27
	%	12	12.7	20.7	36.7	18
follow all instructions when taking antibiotics	No	8	11	11	33	87
	%	5.3	7.3	7.3	22	58

Table 4 presents participants' attitudes towards antibiotic use across five response options (strongly disagree to strongly agree) (N = 150). Overall, attitudes were largely favourable for key stewardship-related statements such as trusting doctors and following instructions; however, some misconceptions and potentially inappropriate expectations regarding antibiotics were also observed.

A substantial proportion of respondents expressed negative attitude towards keeping antibiotics at home for emergencies, with 70 (46.7%) strongly disagreeing and 32 (21.3%) disagreeing (total 68.0%). Nonetheless, nearly one-quarter still supported this practice, as 16 (10.7%) agreed and 18 (12.0%) strongly agreed (total 22.7%), indicating the persistence of a tendency to stock antibiotics for future self-use.

Similarly, attitudes against taking antibiotics without prescription were strong: 74 (49.3%) strongly disagreed and 33 (22.0%) disagreed (total 71.3%). However, 12 (8.0%) agreed and 21 (14.0%) strongly agreed (total 22.0%) that they would take antibiotics without a prescription, reflecting a meaningful subgroup with permissive attitudes toward self-medication.

Regarding the belief that antibiotics should be taken for every health problem, the majority again demonstrated a negative attitude, with 59 (39.3%) strongly disagreeing and 38 (25.3%) disagreeing (total 64.6%). Still, 17 (11.3%) agreed and 15 (10.0%) strongly agreed (total 21.3%), showing that approximately one-fifth retained a broadly pro-antibiotic attitude for varied illnesses.

In contrast, a very positive attitude was observed toward professional guidance: trust in the doctor when antibiotics are not required was high, with 41 (27.3%) agreeing and 73 (48.6%) strongly agreeing (total 75.9%). Only a small minority disagreed (14; 9.3% strongly disagree and 12; 8.0% disagree), indicating strong acceptance of clinical decision-making.

However, an important attitudinal concern was evident regarding perceived benefits of antibiotics: 82 (54.7%) agreed/strongly agreed that antibiotics make recovery faster from any infection (55; 36.7% agree and 27; 18.0% strongly agree). This suggests a persistent misconception that antibiotics are universally beneficial for infections, which can drive demand even in viral or self-limiting conditions.

Finally, adherence-related attitude was strongly favourable: the majority expressed willingness to follow all instructions when taking antibiotics, with 33 (22.0%) agreeing and 87 (58.0%) strongly agreeing (total 80.0%). Very few disagreed (8; 5.3% strongly disagree and 11; 7.3% disagree), indicating generally positive attitudinal readiness to comply with correct antibiotic use.

In summary, Table 4 indicates predominantly appropriate attitudes towards prescription-based use and trust in healthcare providers, along with strong intention to follow instructions. Nevertheless, the persistence of beliefs supporting self-storage/self-use and the

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misconception that antibiotics hasten recovery from any infection highlights critical areas for community-focused antibiotic awareness and behaviour change communication.

Table 5 Level of attitude

	Frequency	Percent
Good	51	34.0
Average	64	42.7
Poor	35	23.3
Total	150	100.0

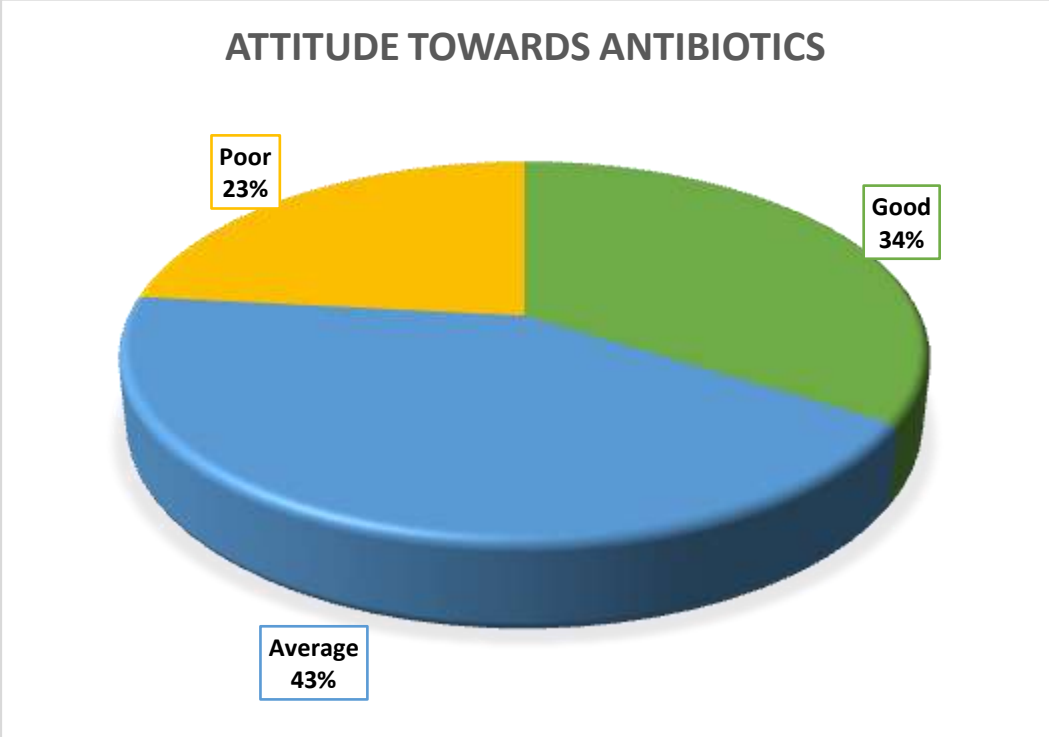

Fig no.6. Attitude towards antibiotics

Table 5 summarizes the overall attitude level towards antibiotic use among the study participants (N = 150). The largest proportion of respondents demonstrated an average level of attitude (64; 42.7%), indicating that many participants held a mix of appropriate and inappropriate beliefs—suggesting partial alignment with recommended antibiotic stewardship principles but with persisting misconceptions.

Approximately one-third of participants showed a good attitude (51; 34.0%), reflecting a stronger inclination to rely on prescriptions, trust professional advice, and support appropriate antibiotic use. However, nearly one-quarter were categorized as having a poor attitude (35; 23.3%), representing a notable subgroup with attitudes that may predispose to antibiotic misuse (such as favouring self-medication, keeping antibiotics at home, or believing antibiotics accelerate recovery for any infection).

Overall, the findings indicate that while a significant proportion exhibit positive attitudes, the predominance of the "average" category and the presence of a sizeable "poor" attitude group underscore the need for focused community education and behaviour change interventions aimed at correcting misconceptions and strengthening appropriate antibiotic-related decision-making.

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Table 6. Practice

		Always	Often	Sometimes	Rarely
Take antibiotics only with a valid prescription	No	15	8	24	103
	%	10.0	5.3	16.0	68.7
Complete the full course even if feeling better	No	17	22	24	87
	%	11.3	14.7	16.0	58.0
f a dose is missed, take it as soon as remembered (unless near next dose).	No	32	51	23	44
	%	21.3	34.0	15.3	29.4
If not working, consult a doctor/pharmacist; don't stop or change on your own.	No	11	25	27	87
	%	7.3	16.7	18.0	58.0
Store as per label instructions; keep out of children's reach.	No	12	26	22	90
	%	8.0	17.3	14.7	60.0
Dispose leftovers safely; don't keep for future use or share.	No	63	21	20	46
	%	42.0	14.0	13.3	30.6

Table 6 describes antibiotic-related practices among the study participants (N = 150) across four response categories (always, often, sometimes, rarely). Overall, the findings indicate that several recommended practices—particularly those related to prescription-only use, course completion, consulting professionals, and safe storage—were reported inconsistently, with a high proportion falling into the "rarely" category for multiple items. In contrast, safe disposal of leftover antibiotics was comparatively better, though still not optimal.

With respect to obtaining antibiotics only with a valid prescription, the majority of participants reported this practice rarely (103; 68.7%). Only 15 (10.0%) reported always doing so and 8 (5.3%) often doing so, suggesting that non-prescription access or use remains common in the community.

A similar pattern was observed for completing the full antibiotic course even when feeling better. More than half of the respondents indicated they rarely complete the full course (87; 58.0%), while only 17 (11.3%) always and 22 (14.7%) often reported completing the prescribed duration. This practice pattern raises concerns about premature discontinuation, which can contribute to treatment failure and antibiotic resistance.

In contrast, practice related to missed doses showed a relatively more favourable distribution. About one-fifth (32; 21.3%) always took a missed dose as soon as remembered, and 51 (34.0%) often followed this correct approach. However, nearly one-third (44; 29.4%) still reported doing this rarely, indicating incomplete adherence behaviour in a sizeable subgroup.

For the practice of consulting a doctor or pharmacist when the antibiotic does not seem to work, 87 (58.0%) reported this behaviour rarely, while only 11 (7.3%) always and 25 (16.7%) often sought professional consultation. This suggests that self-directed stopping or switching of antibiotics may occur, which can be unsafe and ineffective.

Similarly, proper storage of antibiotics as per label instructions and keeping them out of children's reach was also weakly practiced: 90 (60.0%) reported doing this rarely. Only 12 (8.0%) always and 26 (17.3%) often reported appropriate storage, indicating potential risks of reduced drug efficacy and accidental exposure, particularly in households with children.

Finally, practices related to safe disposal of leftover antibiotics were comparatively stronger than the other domains. A sizeable proportion reported always disposing leftovers safely (63; 42.0%), and 21 (14.0%) did so often. However, 46 (30.6%) still reported this practice rarely, indicating that keeping leftover antibiotics for future use or sharing may still occur in a considerable minority.

In summary, Table 6 highlights major practice gaps in prescription-only antibiotic use, completion of antibiotic courses, consultation with healthcare professionals, and safe storage, despite

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relatively better practice with disposal. These findings underscore the need for targeted public health interventions focusing not only on knowledge enhancement but also on practical behaviour change strategies to promote responsible antibiotic use and reduce the risk of antimicrobial resistance.

Table 7. Level of Practice

	Frequency	Percent
Good	47	31.3
Average	56	37.3
Poor	47	31.3
Total	150	100.0

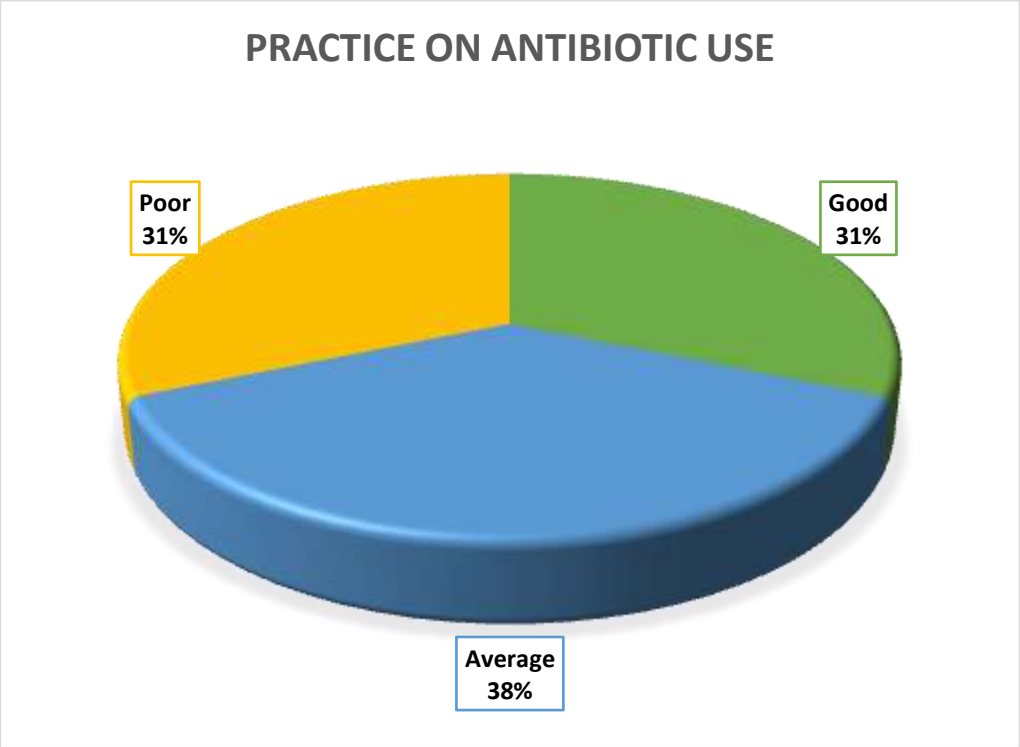

Fig no.7. Practice on antibiotic use

Table 7 summarizes the overall level of antibiotic-related practices among the study participants (N = 150). The largest proportion of respondents demonstrated an average level of practice (56; 37.3%), suggesting that many participants followed recommended behaviours inconsistently—adopting appropriate practices in some situations but not uniformly across all aspects of antibiotic use (such as prescription-only use, course completion, consultation, storage, and disposal).

Notably, the proportions classified as good practice and poor practice were equal (47; 31.3% each). This indicates a clear polarization within the community: while nearly one-third reported generally appropriate antibiotic practices, an equally large segment exhibited practices that may increase the risk of misuse, treatment failure, and antimicrobial resistance.

Overall, the distribution shows that only about one-third of participants consistently practiced responsible antibiotic-related behaviours, while a substantial proportion remained in the average or poor categories. This finding reinforces the need for community-based interventions that not only improve awareness but also strengthen day-to-day adherence to safe and appropriate antibiotic use practices.

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Table 9. Association Between Knowledge, attitude and practice

		Knowledge									
		Good		Average		Poor		Total		Chi square	Significance
		No	%	No	%	No	%	No	%		
Attitude	Good	41	51.3	9	14.8	1	11.1	51	34.0		
	Average	32	40.0	28	45.9	4	44.4	64	42.7	31	0.001
	Poor	7	8.8	24	39.3	4	44.4	35	23.3		
Practice	Good	40	50.0	7	11.5	0	0.0	47	31.3		
	Average	23	28.8	26	42.6	7	77.8	56	37.3	32.3	0.001
	Poor	17	21.3	28	45.9	2	22.2	47	31.3		
	Total	80	100.0	61	100.0	9	100.0	150	100.0		

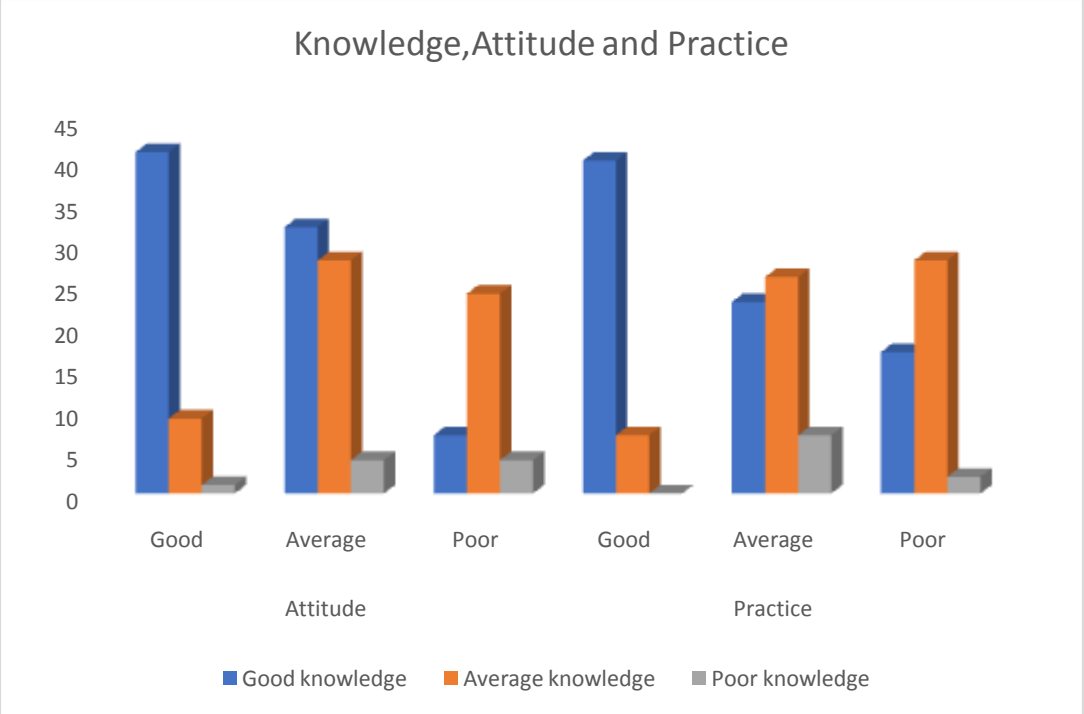

Fig no.8. Knowledge, Attitude and Practice

Among participants with good knowledge (n = 80), the dominant attitude pattern was good attitude, with 41 (51.3%) demonstrating good attitude. Another 32 (40.0%) had average attitude, and only 7 (8.8%) had poor attitude. This indicates that when knowledge is strong, unfavourable attitudes are relatively uncommon.

Among those with average knowledge (n = 61), the distribution shifts: only 9 (14.8%) had good attitude, while a much larger proportion had average attitude (28; 45.9%) and poor attitude (24; 39.3%). Thus, at the average knowledge level, favourable attitude becomes less frequent, and poor attitude rises substantially.

In the poor knowledge group (n = 9), attitude was predominantly unfavourable: 4 (44.4%) had poor attitude and another 4 (44.4%) had average attitude, while only 1 (11.1%) showed good attitude. This highlights that poor knowledge is accompanied by a marked decline in positive attitudes.

For participants with good knowledge (n = 80), half demonstrated good practice (40; 50.0%), while 23 (28.8%) had average practice and 17 (21.3%) had poor practice. This suggests that higher knowledge is accompanied by better antibiotic-use behaviours, though a notable

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minority still reported poor practice despite good knowledge.

Among those with average knowledge (n = 61), the pattern shifts towards poorer behaviour: only 7 (11.5%) had good practice, while the majority were in average practice (26; 42.6%) and poor practice (28; 45.9%) categories. Thus, as knowledge drops to average, good practice reduces considerably and poor practice becomes most common.

Within the poor knowledge group (n = 9), practice was largely average (7; 77.8%), with 2 (22.2%) showing poor practice, and none (0.0%) demonstrating good practice. This suggests that extremely low knowledge is associated with an absence of consistently good practices.

In summary, Table 9 demonstrates a clear gradient: better knowledge is associated with more favourable attitudes and more appropriate practices, while declining knowledge corresponds with worsening attitude and practice levels. The significant Chi-square values (p = 0.001) confirm that these observed shifts in attitude and practice across knowledge categories are statistically meaningful and unlikely to have occurred by chance.

Table 10. Relationship between Knowledge, attitude and practice

		Knowledge	Attitude	Practice
Knowledge	Pearson Correlation	1	.280**	.217**
	Sig. (2-tailed)		.001	.008
Attitude	Pearson Correlation	.280**	1	.450**
	Sig. (2-tailed)	.001		.000
Practice	Pearson Correlation	.217**	.450**	1
	Sig. (2-tailed)	.008	.000	

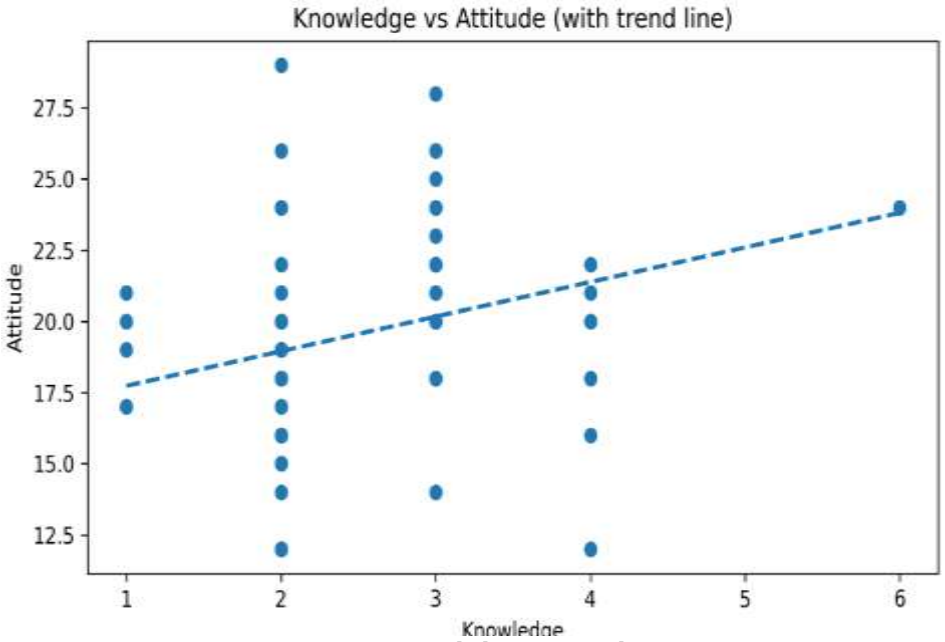

Fig no.9. Knowledge vs Attitude

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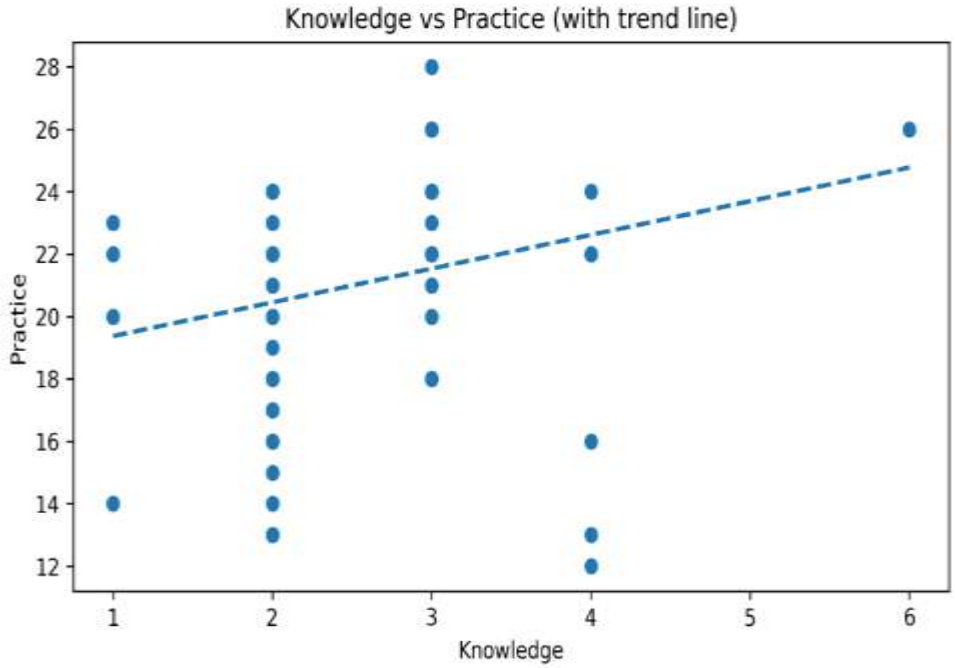

Fig no.10. Knowledge vs Practice

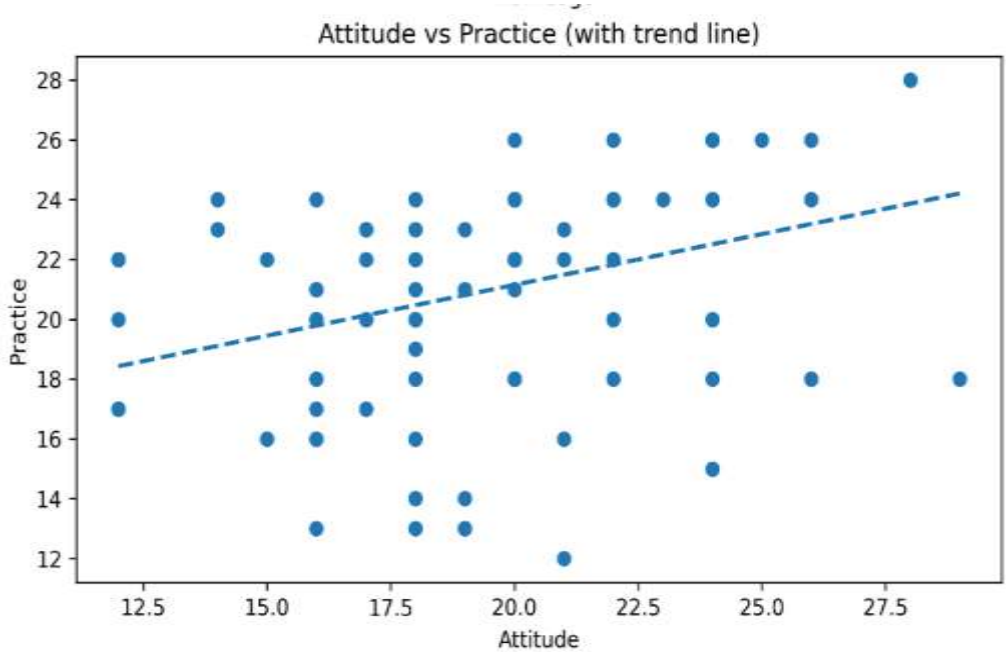

Fig no.11. Attitude vs Practice

Table 10 presents the relationship between knowledge, attitude, and practice (KAP) scores on antibiotics using Pearson correlation analysis (N = 150). The results demonstrate statistically significant positive correlations between all three domains, indicating that higher scores in one domain tend to be associated with higher scores in the others.

A positive correlation was observed between knowledge and attitude (r = 0.280, p = 0.001), suggesting that participants with better knowledge regarding antibiotics and antibiotic resistance generally expressed more appropriate

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and favourable attitudes toward antibiotic use. Similarly, knowledge also showed a significant positive correlation with practice ($r = 0.217$, $p = 0.008$), implying that increased knowledge is associated with comparatively better antibiotic-use practices, although the strength of this relationship is relatively modest.

The strongest association was observed between attitude and practice ($r = 0.450$, $p < 0.001$), indicating a moderate positive relationship where participants with more favourable attitudes were considerably more likely to report appropriate antibiotic-related behaviours. This suggests that attitude may play a key role in translating awareness into action.

Overall, the correlations indicate that the three domains are interlinked: knowledge supports more favourable attitudes, and both are associated with better practices, with attitude showing the closest relationship with practice in this study.

IV. SUMMARY

This community-based cross-sectional study assessed knowledge, attitude, and practices (KAP) related to antibiotic use among 150 adults. The sample included participants from a wide age range, with a notable proportion aged ≥60 years, and females forming the majority (60%). Educational attainment was generally moderate-to-high, with graduates forming the largest group, and homemakers and private employees constituting substantial occupational categories—suggesting a socially diverse community profile.

Knowledge findings showed that more than half of the participants (53.3%) had good knowledge, while 40.7% had average knowledge and 6% had poor knowledge. Item-wise analysis indicated that knowledge was relatively strong in some domains—particularly that antibiotics should not be shared and that the full course should be completed. However, important misconceptions persisted, including belief in antibiotics for viral infections in a sizeable minority, and a major knowledge gap regarding person-to-person spread of antibiotic resistance, which was correctly identified by only a small proportion. These gaps suggest limited understanding of antimicrobial resistance (AMR) as a public health threat.

In terms of attitude, the largest proportion of participants had an average attitude (42.7%), followed by good attitude (34%) and poor attitude (23.3%). Positive attitudes were evident in areas such as trusting doctors when antibiotics are not needed and willingness to follow instructions. However, a significant proportion still believed that antibiotics speed recovery from any infection and some supported keeping antibiotics at home or using them without prescription, indicating ongoing tendencies toward inappropriate expectations and self-medication.

The practice domain showed the greatest concern. Only 31.3% demonstrated good practice, while 37.3% had average practice and 31.3% had poor practice. Several critical safe practices were reported as rarely followed, including taking antibiotics only with a prescription, completing the full course, consulting a health professional if the antibiotic does not work, and storing antibiotics properly. Disposal of leftover antibiotics was comparatively better, but still not universally practiced.

The study also demonstrated that knowledge level significantly influenced both attitude and practice (Chi-square $p = 0.001$ for both). When knowledge was good, participants were more likely to show good attitude and good practice; as knowledge decreased, favourable attitudes declined and poor practices became more common. Pearson correlation further supported these links, showing significant positive relationships between knowledge–attitude, knowledge–practice, and especially attitude–practice, where the strongest correlation indicated that attitude may be a key pathway through which awareness translates into behaviour.

V. CONCLUSION

This study concludes that while the community demonstrates moderately satisfactory knowledge and attitude towards antibiotics, unsafe and inappropriate practices remain highly prevalent, particularly regarding prescription-only use, course completion, professional consultation, and safe storage. The findings indicate that knowledge alone is not sufficient, as a sizeable proportion of participants continued to exhibit poor practices even when knowledge was adequate. The significant association and correlation patterns suggest that improving knowledge can strengthen attitudes and indirectly improve practices, but behaviour-change strategies targeting attitudes and habitual practices are essential.

Overall, the study highlights a clear need for community-level antimicrobial stewardship interventions, focusing on correcting misconceptions (especially antibiotics for viral infections and AMR spread), discouraging self-medication and antibiotic stocking, and reinforcing

practical adherence behaviours. Strengthening awareness through sustained health education—supported by healthcare providers, pharmacists, and local public health programs—would be crucial in reducing antibiotic misuse and limiting the spread of antimicrobial resistance in the community.

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