

# Knowledge, Attitudes and Practice of Acute Upper Respiratory Diseases in Rural School Adolescents in Neyyattinkara Taluk, India

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**Abstract:** ***Introduction:** Public knowledge and practices regarding the common cold is crucial to prevent improper treatment and preserve resources and well-being. Despite global studies on the topic, there's a gap in research focusing on rural school-going late adolescents, like those in Neyyattinkara Taluk. This study aims to assess Knowledge, Attitude and Practices regarding acute upper respiratory illness among late adolescents in Neyyattinkara Taluk. **Methods:** An observational cross-sectional study was conducted to assess the knowledge, attitude and practices of late adolescents in rural schools of a part of India from July to September 2019. The study was done among late adolescents (aged 15 - 18) in government higher secondary schools of Neyyattinkara Taluk. A sample size of 197 was taken. Data was collected using a semi-structured questionnaire covering demographics, knowledge, attitudes, and practices regarding upper respiratory illness. Point estimate was done at 95% confidence interval. **Results:** Most of the adolescents had limited knowledge about upper respiratory illness, with 167 (85%) not considering it a disease. Self-medication 116 (59%) and reliance on home remedies 110 (56%) were common, while only 39 (20%) opted for antibiotics. **Conclusions:** There was average knowledge level in adolescents but persistent misconceptions, prevalent self-medication practices, and limited understanding of disease transmission regarding upper respiratory infections.*

**Keywords:** adolescents, upper respiratory illness, knowledge, attitudes, practices

## 1. Introduction

Acute upper respiratory tract infections (URTIs) are widespread, affecting people of all ages worldwide. (1) Misusing antibiotics contributes to antibiotic resistance, a major concern in global healthcare. (2) In places like Neyyattinkara Taluk, Trivandrum, where home remedies and self-medication are common, there's a risk of serious complications and antibiotic resistance due to misconceptions about URTIs. (3)

This highlights the urgent need to explore how late adolescents in rural schools perceive and handle URTIs. (3, 4) By understanding their beliefs and behaviors, policymakers and healthcare providers can tailor interventions to encourage proper management of URTIs, ultimately reducing the burden of preventable illnesses in the community. (3, 5)

This study was conducted to assess the knowledge, attitude, and practice about Acute Upper Respiratory Infections among late adolescents in rural schools of Neyyattinkara Taluk, Trivandrum.

## 2. Methods

This school-based cross-sectional study was conducted from July 15 to September 15, 2019, among adolescents aged 15 - 18 attending Government Higher Secondary Schools in Neyyattinkara Taluk, Thiruvananthapuram District. Approval was obtained from the Principals of the respective schools prior to data collection. The study aimed to assess the knowledge, attitudes, and practices regarding acute upper respiratory infections (URIs) among late adolescents in rural areas. Participants were selected based on inclusion criteria of being aged 15 - 18 years and providing informed assent to

participate in the study. Adolescents who were absent on the day of data collection were excluded. The sample size was determined using a formula based on an estimated prevalence of knowledge of 67%, as reported in a similar study conducted by Sairam Chella, Sukhdas Gangam, Pallavi Anirapu. (6) A sample of 197 late adolescents was selected from schools in Neyyattinkara Taluk and was calculated using the following formula:

$$\begin{aligned} \text{Sample Size} &= 4pq/dA^2 \\ &= 4 \times 67 \times 33 / (6.7)^2 \\ &= 197 \end{aligned}$$

Where,

$$\begin{aligned} p &= \text{prevalence} = 67\% \\ q &= 100 - p = 100 - 67 = 33 \\ d &= 10\% \text{ of } p = 10 \times 67 / 100 = 6.7 \end{aligned}$$

So, in the study 197 late adolescents were selected from schools of Neyyattinkara Taluk.

Data was collected using a pre-designed semi-structured questionnaire, translated into the local language. The questionnaire consisted of three parts: demographics, general knowledge about URIs, and practices for managing URIs. The first part included the respondents' demographics, such as age, gender, and educational level. The second part included the respondents' general knowledge about the common cold, such as causes of the common cold, its management and methods of transmitting the common cold. The third section addressed the respondents' practices for managing the common cold. The questions addressed the steps that patients usually take to manage the common cold, the steps patients take if symptoms of the common cold continue for more than seven days, and how respondents respond upon interacting with those suffering from the common cold. Questions were

either Yes/No or multiple - choice format to facilitate easy response and maximize the response rate. It is believed that close - ended questions are much easier for respondents to answer and lead to a higher response rate.

In this study, each correct response in the first set of 15 questions was scored as 1, with knowledge subsequently graded as poor (1 - 5 correct responses), fair (6 - 10 correct responses), or good (11 - 15 correct responses). Misconceptions were assessed by calculating the average of responses to questions 12, 13, and 14. Self - medication practices were evaluated based on responses to the 10th question, as well as options (g) and (i) of the third multiple - choice question. Additionally, the prevalence of home remedies was determined by averaging responses to options (e), (f), (g), and (l) of the third multiple - choice question. Ethical considerations were paramount, with approval obtained from the Community Medicine Department and school principals prior to data collection. Informed assent was secured from all participants, ensuring their voluntary participation and adherence to ethical standards.

Confidentiality was strictly maintained throughout the study process. Data collected were checked for completeness, and

only fully completed questionnaires were included in the final analysis. Data entry was done using Microsoft Excel, and statistical analysis was performed using appropriate software. Quantitative data were summarized using mean and standard deviation, while qualitative data were summarized using proportions. Statistical tests of significance were conducted where necessary.

### 3. Results

Majority of participants were attending Dhanuvachapuram KNM HSS 164 (82.83%). There were nearly equal proportions of males 95 (48%) and females 103 (52%). When studying the population in respect to their age - wise distribution, 3 (1.52%) were 15 years of age, 49 (24.87%) were 16 years of age, 135 (68.52%) were 17 years of age and 11 (5.58%) were 18 years of age. A total of n (42%) belonged to Dhanuvachapuram School, n (30%) to Neyyattinkara School and n (28%) to Parassala School. Regarding knowledge on common cold, analysis revealed that 168 (84.85%) did not consider it a disease, 147 (74.24%) believed it to be contagious, and 177 (89.39%) did not equate it with the flu (Table 1).

**Table 1:** Assessing Knowledge on Common Cold.

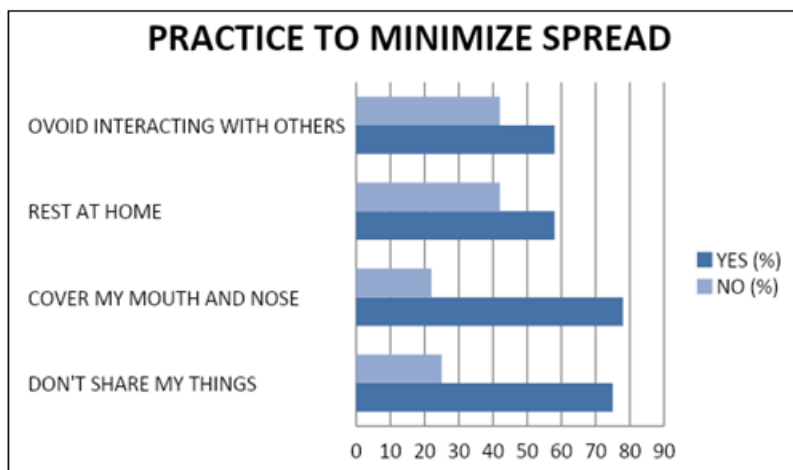
Question	Yes (%)	No (%)	Don't know (%)
Common cold is a disease	14	85.5	0.5
Common cold is a symptom	87	11.6	1.4
Does the common cold need treatment?	42	54	4
Common cold go of its own	62	31	7
Common cold is contagious	73.5	25	1.5
Do you believe that the common cold and flu are the same?	10	88.5	1.5
Can dry ginger coffee cure cold?	74.2	16.2	9.6
Can steaming cure cold?	89.4	9.1	1.5
Should people consult a doctor when they get a cold?	41.4	55.6	3
Should more people know about how to treat the common cold by themselves?	76.8	20.7	2.5
Do you think that the common cold could lead to death?	8.1	86.4	5.6
Can antibiotics cure all common colds?	25.8	55.6	18.7
Can we have milk and milk products during the common cold?	11.1	65.7	33.2
Can we exercise during the common cold?	28.7	49.5	21.8
Can we drink chilled water and eat ice cream during the common cold?	77.3	20.2	2.5

Regarding the spread of the common cold, 191 (97%) believed it could be spread through sneezing, 117 (59.1%) through coughing, 93 (47.5%) through direct contact, 43 (22%) through sharing patients belongings, 47 (24%) through low level of cleanliness, 23 (12%) through mosquitoes and flies and 124 (63%) through dust. The associated symptoms of common cold included sore throat in 105 (53.5%), vomiting in 31 (16%), headache in 71 (36%), otitis media in 25 (13%), sinusitis in 17 (9%), diarrhoea in 10 (5%) and fever in 130 (66%). When studying the practices to recover from a common cold, 137 (70%) believed in taking rest (Table 2).

**Table 2:** Practices to recover from a common cold.

	Yes (%)	No (%)
Drink plenty of water	60	40
Take rest	70	30
Take vitamin tablets	18	82
Take herbal drugs	18	82
Eat palm sugar	34	66
Eat pepper	30	70
Take antibiotics	20	80
Drink dried ginger coffee	68	32
Medication from pharmacy	26	74
Go to hospital	33	67
Decrease food intake	6	94

When asked about the necessary steps which the respondents took to minimize the spread of the disease, about three fourth of them practice cleaning hands 147 (75%) and covering mouth and nostrils 153 (78%), and 80 (41%) of them avoid interacting with others (Figure 1).



**Figure 1:** Steps followed by respondents to minimize the spread of common cold

When meeting a person with a common cold, 130 (66%) of the respondents avoid close contact, 147 (75%) avoid shaking hands, 122 (62%) keep 2 - meter distance, 100 (51%) deal with them normally and 107 (54.5%) avoid using their things. When the cold symptoms exceed 7 days, 49 (25%) continue the same treatment, 53 (27%) change to another drug, 33 (17%) use additional drugs, 31 (16%) visit a pharmacist and 171 (87%) visit a doctor. Misconceptions were present in 118 (60%). Prevalence of self - medication was seen in 116 (59%) and 86 (44%) followed home remedies. The prevalence of the knowledge level was assessed which revealed poor knowledge in 19 (10.1%), fair knowledge in 173 (88.9%) and good knowledge in 2 (1%) (Table 3).

**Table 3:** Distribution according to the grades of Knowledge levels

Domains	Poor	Fair	Good
<b>Gender</b>			
Male	10.5	87.4	2.1
Female	9.7	90.3	0
<b>Schools</b>			
Dhanuvachapuram	7.2	91.6	1.2
Newatinkara	10.2	88.1	1.7
Parashala	14.3	85.7	0
<b>Age (years)</b>			
15	0	100	0
16	12.2	85.7	2
17	10.4	88.9	0.7
18	0	100	0

#### 4. Discussion

Understanding the general public's knowledge and practices concerning the common cold is crucial. Misinformation can lead to improper treatment, impacting both the country's resources and patients' well - being. Despite availability of global studies on the topic, gap exists in research focusing on school - going late adolescents in rural areas like Neyyattinkara Taluk. Challa et al. emphasized the importance of mothers' awareness about ARIs and their danger signs in southern India. (6) Similarly, studies conducted in Maharashtra, Jordan, and Palestine have highlighted the necessity for educational programs to improve the KAP regarding ARIs and antibiotic use. (7-10) Hawking et al. discovered low awareness among adolescents in England regarding antibiotics and antimicrobial resistance. (11) Hence, context - specific research is needed to address

knowledge and practice gaps related to ARIs and antibiotic usage, especially among vulnerable populations like late adolescents in rural areas. (5)

Overall, existing literature emphasizes the need for comprehensive strategies to improve awareness, attitudes, and practices regarding ARIs and antibiotic use among different demographic groups. (12-14) By building on previous research and focusing on specific geographical areas like Neyyattinkara Taluk, this study aims to contribute valuable insights for developing effective interventions to promote rational antibiotic use and mitigate the burden of ARIs in the community.

The study shows that 177 (88.9%) of the study population had fair knowledge of Acute Upper Respiratory tract infections, but only 2 (1%) had good knowledge. In comparison, females 178 (90.3%) showed a slightly better grasp of knowledge than males 172 (87.4%). Students of Dhanuvachapuram 180 (91.6%) had better knowledge than those of Parassala 168 (85.7%). Age - wise knowledge levels showed no significance. The prevalence of misconception among the population is 118 (60%).116 (59%) of them favored self - medication, and 110 (56%) practiced home remedies. Self - administration of antibiotics among the population is only 39 (20%).

General public knowledge and practices about the common cold are an important issue. Incorrect knowledge could lead to mistreatment, which could negatively affect the country's resources and patients' quality of life. Though studies on knowledge, attitudes, and practices about Upper Respiratory Tract infections were conducted worldwide, such a study was not undertaken among school - going late adolescents in rural areas of Neyyattinkara Taluk of Trivandrum District. The study shows that 175 (88.9%) of the study population had fair knowledge of Acute Upper Respiratory tract infections, but only 2 (1%) had good knowledge. In comparison, females 183 (90.3%) showed a slightly better grasp of knowledge than males 172 (87.4%). Students of Dhanuvachapuram 180 (91.6%) had better knowledge than those of Parassala 168 (85.7%). Age - wise knowledge levels showed no significance. The prevalence of misconception among the population is 118 (60%).116 (59%) of them favored self - medication, and 110 (56%) practiced home remedies. Self -

administration of antibiotics among the population is only 39 (20%).

Other studies in Kerala have shown that 67.2% of respondents have good awareness about signs of Upper Respiratory tract infections. In Andhra Pradesh, Karnataka, and Tamil Nadu, awareness levels were found to be 55.6%, 34.7%, and 15.8%, respectively. A similar study done by Anirudha Vijay Mutalik and Vaishali V Reji among school children and their parents in rural Maharashtra found out that 51.4% have poor knowledge, 77% have a poor attitude, and 79% follow poor practices. (2)

A study on parental knowledge about medicine use in Upper Respiratory tract infection in the urban field practice area of Kempegowda, Bangalore, shows that 57% use antibiotics without doctors' consultation and 29% believe that antibiotics are required when the child falls sick with a respiratory infection every time. Home remedies were followed by 51%. (9) Another study done in Maithi Civil Hospital, Pakistan, showed that 72% of the study population had knowledge about Acute Respiratory Infection. 36% of them followed home remedies to cure common cold in their children. (11)

A similar study done in Karachi by Shireen Quasim Bham showed that cough (40%) was the most common symptom perceived in Upper Respiratory Infections. 58% followed self-medication, and Paracetamol was the most frequently used. Only 6% followed home remedies. (10) A similar study done by Taibah University, KSA, showed that 28% of the respondents took antibiotics when they caught a cold. (3)

In our study, respondents' knowledge about the cause of spreading the common cold might be influenced by their practices and education. 74% believed that the common cold is contagious, and 97% believed that sneezing can spread a cold. Though fewer indicated that direct contact with infected patients and sharing belongings with them spread cold (47.5% and 22%), and 63% believed that dust causes cold. This was reflected in their practice and attitude while interacting with others with cold — avoiding direct contact (34%), not shaking hands (25%), and keeping a distance (30%). The study in KSA shows that 76% believe that the common cold is contagious. 63% of them believe sneezing can spread the cold, though fewer indicated that coughing, direct contact with infected patients, and sharing utensils could spread cold (only 24%, 41%, and 32%, respectively). This was reflected in their practices once they had a cold. 49% avoided direct contact with others. 38% stayed at home, and 34% washed their hands. Furthermore, if they encountered others with a cold, 37% avoided direct contact with them, and 38% shared their belongings. (3)

A study in Northern Manhattan reported that 52% of their respondents believed that avoiding direct contact with infected patients reduced the spread of illness. 40% of Upper Respiratory Tract infections are viral in origin and need no treatment; This was the finding in a study done in Palestine. (5) In our study, we found out that 87% of the people visited a doctor as soon as the common cold exceeds the duration of one week. In another study at the University of Taibah, it shows that only 54% visited a doctor when their fever exceeds 7 days. (3) A study done in the United Kingdom found out

that except for some science students, adolescents in educational institutions in England have low knowledge about antibiotics. (4) Another study done in Tertiary Jordan Hospital in UAE shows that 68% visit a doctor if they have a cold, and 72% of people use antibiotics for the common cold. (7)

The knowledge of the study population in Neyyattinkara is comparatively fair (88.9%), but their knowledge about etiology is limited. The majority don't consider the common cold as a disease (85%), and many have misconceptions (60%). Though they have better knowledge about antibiotics and their restricted use, their attitude when they meet an ill person is not good. It is necessary to give awareness about preventive measures of the common cold. In the long run, it will improve the quality of life and save the country's resources.

Despite its contributions, this study has limitations. It focused solely on adolescents in rural Neyyattinkara Taluk, potentially limiting its generalizability to the broader population. The convenience sampling method further restricts representativeness, while reliance on self-reported data introduces the possibility of recall and social desirability biases. Additionally, the cross-sectional design hinders causal inference, and socioeconomic factors influencing cold-related knowledge and practices were not explored. The study also lacks assessment of long-term intervention effectiveness. Nonetheless, the insights gained offer a foundation for future research and interventions in understanding and addressing common cold perceptions and behaviors among rural adolescents.

## 5. Conclusions

The study highlights a fair average knowledge among school-going late adolescents in Neyyattinkara Taluk regarding Acute Upper Respiratory Tract infections, with a notable emphasis on cautious antibiotic use. However, misconceptions persist, alongside prevalent self-medication practices and inadequate understanding of disease transmission. To address these gaps, targeted educational campaigns are recommended, focusing on common cold etiology, symptom management, and preventive measures. Additionally, scientific evaluations of home remedies should inform public health initiatives aimed at promoting effective practices and discontinuing ineffective ones. Given the limitations of the study's scope, further research covering diverse populations across Kerala is advised to gain a comprehensive understanding of common cold perceptions and behaviors statewide.

## References

- [1] Meneghetti A, Mosenifar Z. Upper respiratory tract infection. eMedicine Web Site — Available at: <http://emedicine.medscape.com/article/302460-overview> — 2009 — Доступ: свободный. 2007;
- [2] Mutalik AV, Raje VV. Study to assess the knowledge, attitude, and practice about acute respiratory infections among school going children and their parents in rural Maharashtra. *International Journal of Medical Science and Public Health*. 2017 Sep 14; 6 (11): 1584–1584.

- [3] Al - Haddad MS, Abdallah QM, Alhamyani AH, Althomali AJ, Alshakhshir SM. General public knowledge and practices about the common cold. *Journal of Taibah University Medical Sciences*.2016 Apr 1; 11 (2): 104–9.
- [4] Hawking MK, Lecky DM, Touboul Lundgren P, Aldigs E, Abdulmajed H, Ioannidou E, et al. Attitudes and behaviours of adolescents towards antibiotics and self - care for respiratory tract infections: a qualitative study. *BMJ Open*.2017 Jun 6; 7 (5): e015308.
- [5] Zyoud SH, Abu Taha A, Araj KF, Abahri IA, Sawalha AF, Sweileh WM, et al. Parental knowledge, attitudes and practices regarding antibiotic use for acute upper respiratory tract infections in children: a cross - sectional study in Palestine. *BMC Pediatr*.2015 Nov 11; 15: 176.
- [6] Challa S, Gangam S, Amirapu P. Acute respiratory infections in the children of the Southern states of India, with a special focus on the newly carved states. *Int J Contemp Pediatr*.2015; 395–400.
- [7] Abu Hammour K, Abu Farha R, Alsous M, Rizik M, Abu Hammour W. Evaluation of risk factors affecting parental knowledge and attitude toward antibiotic use in children with upper respiratory tract infections. *Eur J Integr Med*.2018 Jan 1; 17: 107–11.
- [8] Sougaijam A, Devi H, Thangjam N, Sougaijam A. Knowledge on Acute Respiratory Tract Infection Among Mothers in An Urban Community of Imphal west District: A Community Based Cross - Sectional .... *Journal of Dental and Medical*.2017;
- [9] Ramegowda C, Prakruthi RA, Rajanna P. A Study on Parental Knowledge and Pattern of Medicine Use in Acute Respiratory Infections among Under Five Children in Urban Field Practice Area of Kempgowda Institute of Medical Sciences, Bangalore. *Natl J Community Med*.2018 Jul 31; 9 (07): 496–500.
- [10] Bham SQ, Saeed F, Shah MA. Knowledge, Attitude and Practice of mothers on acute respiratory infection in children under five years. *Pak J Med Sci Q*.2016 Nov - Dec; 32 (6): 1557–61.
- [11] Kumar R, Hashmi A, Soomro JA, Ghouri A. Knowledge Attitude and Practice about Acute Respiratory Infection among the Mothers of Under Five Children Attending Civil Hospital Mithi Tharparkar Desert. *Primary Health Care*.2: 108.
- [12] Cantarero - Arévalo L, Hallas MP, Kaae S. Parental knowledge of antibiotic use in children with respiratory infections: a systematic review. *Int J Pharm Pract*.2017 Feb; 25 (1): 31–49.
- [13] Belongia EA, Naimi TS, Gale CM, Besser RE. Antibiotic use and upper respiratory infections: a survey of knowledge, attitudes, and experience in Wisconsin and Minnesota. *Prev Med*.2002 Mar; 34 (3): 346–52.
- [14] Denno DM, Bentsi - Enchill A, Mock CN, Adelson JW. Maternal knowledge, attitude and practices regarding childhood acute respiratory infections in Kumasi, Ghana. *Ann Trop Paediatr*.1994; 14 (4): 293–301.
- [15] Veena Saroji H. Awareness and practice of Standard Precautions among Kerala state health services personnel in Neyyattinkara Taluk.2014; Available from: <https://citeseerx.ist.psu.edu/document?repid=rep1&type=pdf&doi=2d4ca8631a83c9e1518151d4ac8cc51326f273b3>