Original Research Article

Parental knowledge, attitude and practice regarding antibiotic use in children at a municipal corporation in Northeast India

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ABSTRACT

Background: Parental beliefs and expectations often lead to abuse and irrational prescriptions of antibiotics in pediatric population. The goal of this study was to examine parental knowledge, attitudes, and practices (KAP) about antibiotic use in children at the Agartala Municipal Corporation (AMC) area in northeast India.

Methods: This cross-sectional study was undertaken after ethics committee approval. A questionnaire was given to parents participating in the study. The questionnaire had questions on socio-demographic profile and questions from knowledge, attitude and practice domains regarding use of antibiotics. Data was collected by house to house visit. Descriptive statistics was used to assess the knowledge and practice level and to explore the attitude about antibiotics use. Chi-square test was used to find out the determinants associated with knowledge level.

Results: A total of 254 participants responded to the study. Their mean age was 31.3 (S.D; 7.8) years. Adequate knowledge about antibiotic use was found in 59.1% (150) participants. Parental age, sex, educational level, and number of children was found to be associated with the knowledge and practice of antibiotics use. 33.5% (85) respondents felt that antibiotics should be prescribed for their child whenever they suffer from cold, ear ache, throat pain. 70.9% (180) of the respondents do not give antibiotics without consulting a doctor.

Conclusions: There is a trusted relationship between parents and their child's doctors. But many parents have insufficient knowledge related to antibiotic use in children. This results in inappropriate attitudes and practices. Educational interventions will reduce inappropriate use of antibiotics.

Keywords: Antibiotics, Antibiotic in children, KAP, Parental KAP

INTRODUCTION

Antibiotic prescribing has become a common practice in pediatrics. They are considered to provide fast relief by many parents.¹,² Inappropriate use of antibiotics is the key factor to the development of resistance. Antibiotic resistance endangers their therapeutic effectiveness, increases treatment failures and leads to longer and more severe illness episodes with higher costs and mortality rates.³,⁵

The control of antibiotic utilization needs multifaceted interventions involving healthcare practitioners and the parents.⁶,⁷ Previous researches have shown patterns of inappropriate use of antibiotics in India and worldwide.⁸-¹². Our literature search did not reveal any population studies from the northeastern state of Tripura, India. Hence this study was undertaken to determine the parental knowledge, attitude and practice regarding antibiotic use.
METHODS

This cross-sectional study was carried out at the Agartala Municipal Corporation (AMC) area. AMC is the municipal body which governs and maintains the city of Agartala. A 30 days long study was conducted in the month of April, 2018. Ethical approval was taken from the Institutional Ethics Committee, Agartala Government Medical College, Tripura.

Informed consent was taken from each participant and confidentiality maintained. The parents of children below the age of eighteen years who were residing in that area for a minimum of one year were included in this study. Those who refused to participate in the study and those who were not available for correspondence or contact even after two successive visits were excluded from the study. Sampling was done by stratified random sampling method. Sampling frame was prepared. Parents who were residing in each zone of AMC formed one stratum. From each stratum, required number of samples were taken.

A questionnaire was given to parents participating in the study. It had questions on socio-demographic profile and questions from knowledge, attitude and practice domains regarding use of antibiotics. A maximum score of 8 was given to questions from knowledge and practice domains each. The scoring range of the questionnaire was 8 (maximum) to 0 (minimum). Participants who obtained scores equal or more than the media (maximum) to 0 (minimum). Participants who obtained scores equal or more than the media (maximum) to 0 (minimum). Participants who obtained scores equal or more than the media (maximum) to 0 (minimum). Participants who obtained scores equal or more than the media (maximum) to 0 (minimum). Participants who obtained scores equal or more than the media (maximum) to 0 (minimum). Participants who obtained scores equal or more than the media (maximum) to 0 (minimum). Participants who obtained scores equal or more than the media (maximum) to 0 (minimum). Participants who obtained scores equal or more than the media (maximum) to 0 (minimum). Participants who obtained scores equal or more than the media (maximum) to 0 (minimum). Participants who obtained scores equal or more than the media (maximum) to 0 (minimum). Participants who obtained scores equal or more than the media (maximum) to 0 (minimum). Participants who obtained scores equal or more than the media (maximum) to 0 (minimum). Participants who obtained scores equal or more than the media (maximum) to 0 (minimum). Participants who obtained scores equal or more than the media (maximum) to 0 (minimum). Participants who obtained scores equal or more than the media (maximum) to 0 (minimum). Participants who obtained scores equal or more than the media (maximum) to 0 (minimum). Participants who obtained scores equal or more than the med

Knowledge regarding antibiotics

It was observed 59.1% participants had adequate knowledge, whereas 40.9% had inadequate knowledge regarding antibiotics.

Table 1: Demographic details and information about antibiotic use

| Variable                        | N (%) | P value |
|---------------------------------|-------|---------|
| **Age in years**                |       |         |
| <30                             | 58 (22.8) |        |
| 30-39                           | 155 (61.1) |       |
| >40                             | 41 (16.1)  |        |
| **Sex**                         |       |         |
| Male                            | 112 (44.1) |       |
| Female                          | 142 (55.9) |       |
| **Educational status**          |       |         |
| Illiterate                      | 12 (4.7)   |        |
| Primary school                  | 30 (11.8)   |        |
| Secondary school                | 111 (43.8)  |        |
| Higher secondary school         | 58 (22.8)   |        |
| Graduate                        | 32 (12.6)   |        |
| Post graduate and above         | 11 (4.3)    |        |
| **Occupation**                  |       |         |
| Housewives                      | 126 (49.6)  |        |
| Service                         | 28 (11.1)   |        |
| Business                        | 42 (16.5)   |        |
| Others                          | 58 (22.8)   |        |
| **Number of children**          |       |         |
| 1                               | 130 (51.2)  | X²=87.422 p<0.05 |
| 2                               | 124 (48.8)  |         |
| **Number of times child required antibiotic** | |         |
| 0                               | 11 (4.3)    |         |
| 1-3                             | 170 (66.9)  |         |
| >3                              | 28.8% (73)  |         |
| **Child suffered from ADR to antibiotics** | |         |
| Yes                             | 5 (2.4)     |         |
| No                              | 249 (97.6)  |         |
| **Source of information about antibiotics** | |         |
| Doctor                          | 238 (93.8)  |         |
| Friends                         | 8 (3.1)     |         |
| Pharmacist                      | 8 (3.1)     |         |

Association of knowledge with age and sex

When compared knowledge with age, it was observed that knowledge was adequate in 24.1%, 68.4%, and 73.2% participants of ages less than 30 years, 30-39 years, and 40 years and above respectively (Chi square value: 38.212; p<0.05). When compared with sex, it was observed that 71.4% males had adequate knowledge and 28.6% (32) had inadequate knowledge. And, 49.3%
females had adequate knowledge and 50.7% had inadequate knowledge. Overall males had overall more knowledge than females regarding antibiotics (Chi square value: 13.442, p<0.05).

**Association of knowledge with educational status**

When compared knowledge with educational status it was found out that 41.2% participants who studied up to secondary had adequate knowledge and 58.8% had inadequate knowledge. And, 86.1% who studied more than secondary had adequate knowledge and 13.9% had inadequate knowledge. The difference was found to be statistically significant (Chi square value: 69.483; p value<0.05).

**Association of knowledge with number of children**

It was observed that 30.8% participants with one child and 88.7% with more than one child were found to have adequate knowledge. The difference was found to be statistically significant (Chi square value: 87.422; p value<0.05).

**Knowledge based on the 8-point questionnaire**

62.6% participants believed that administration of antibiotics during viral fever leads to quicker recovery. They also mentioned that antibiotics cause prevent serious illness, spread of infection, and recurrence of infections in case of viral fever. The results are shown in Figure 1.
The attitude of participants regarding antibiotic use

Attitude was evaluated based on 8-item knowledge questionnaire. The responses were measured using the 5-point Likert scale. 33.5% participants felt that antibiotics should be always given when child suffers from cold, ear pain, sore throat, cough or runny nose. 30.3% felt that antibiotics should be always given when child suffers from vomiting, fever, loose motion. Only 3.1% believe that antibiotics can be reused without consultation. 55.8% felt that doctor should never be changed if he prescribes antibiotic very often; and 59.5% participants felt that doctor should never be changed in case a doctor does not prescribe antibiotics. The results are shown in Figure 2.

Practice of participants regarding antibiotic use: It was evaluated that 56.9% participants had adequate practice, whereas 43.1% had inadequate practice regarding antibiotic use in children. It was also found out that 53.4% of the participants try to seek antibiotic prescription from doctor over phone whenever their child is sick, 35.8% directly buys antibiotics from local pharmacy explaining symptoms, 42.5% reads instructions mentioned on the package insert, and 74.4% keeps sick child out of school in case of sickness. The results are shown in Figure 3.

Correlation between knowledge score and practice score of the respondents: When knowledge scores were associated with the practice scores of the participants, it was found out that there was 86% correlation between the scores. The results are shown in Table 2.

DISCUSSION

The present study was conducted in AMC area to assess parental knowledge, attitude and practice level about antibiotic use. In the study, 55.9% respondents were mothers. It can be due to the fact that our data collection time coincided with the working hours of the fathers. 49.6% participants were housewives, 11.1% were employed in government service. 43.8% of participants studied up to secondary level. 51.2% had one child. This may be due to the acceptance of family planning methods in a municipality area. It was also found out that 66.9% of the respondent’s child suffered from infection one to three times during last year and for majority of the participants, 93.8%, the source of information regarding antibiotics is their doctor followed by pharmacists and friends (3.1%). The results coincide with previous studies. Adequate knowledge level about antibiotic use was found to be in 59.1% participants. This is high compared to other studies. This may due to the higher education level and taking more interest about health related issues of their children. Also, this study revealed that parental demographics such as age, sex, educational level, number of children etc. is associated with the knowledge and practice of antibiotics use. It was found
out that older participants knew more about antibiotics use than the younger one. This may be due to the fact that human beings gain experience from different events of life. Sex was also found to be significantly associated with knowledge level. It was found that males had better knowledge than females. It may be due to the fact that literacy rate of males is more than females in Tripura. As educational status increases, people are expected to become more knowledgeable. Hence, it was seen that participants with higher educational status had higher knowledge about antibiotics use. Parents having more than one child were also found to be significantly associated with more knowledge level than who had only one child. This may be due to the fact that people with more number of children make more visits to doctors, and gain more knowledge about antibiotics use. The results are similar to previous studies.2,4,15

From attitude questions, we can infer that the participants prefer to go to the doctors whenever their child needs treatment. They do not perceive that their doctors prescribe too much or too less antibiotics for their child. They do not prefer to change their doctor or self-medicate. The results coincide with previous studies.3,16,17

Regarding practice, self-medication and reuse of left over drugs was found to be lower compared to previous studies.2 This may be because of the educational status of the participants, availability of doctors over phone and access to consultation. As the study was conducted in an urban municipality area, the improved knowledge of participants about antibiotic use translated into practice about their use.

CONCLUSION

The study showed a strong association between knowledge and practice of parents about antibiotic use in children. The study was conducted over a short duration, and depended on active recall of information. Yet, it showed that education is the key towards proper use of antibiotics and thus prevention of resistance.

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