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ANALYZING KNOWLEDGE, ATTITUDES, AND PRACTICES OF PARENTS REGARDINGANTIBIOTIC USE FOR UPPER RESPIRATORY TRACT INFECTIONS IN THEIR CHILDREN

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ABSTRACT

Background:
Upper respiratory tract infections (URTIs) in children account for a sizeable proportion of consultations in paediatric practice. There is sufficient evidence to back the viral origin of most of the URTIs and that the use of antibiotics in the same is unnecessary. Despite a predominantly viral cause, the prescription of antibiotics for URTI has been hugely popular among parents. This practice is an important factor, among others, in contributing to the development of antimicrobial resistance.

Objectives: To explore the knowledge, attitude, and practices (KAP) of caregivers regarding antibiotic use in children with URTIs.

Methods: This observational, cross-sectional study was conducted in a paediatric OPD in a tertiary care centre in Guntur. Among the children of age one and above, attending the OPD with features of URTI, 250 patients were selected at random. Information was gathered from their caretakers (accompanying them) using a self-constructed questionnaire, after taking informed consent.

Results: Among the test subjects, the majority belonged to lower-middle and upper lower-class groups. A majority could identify URTI symptoms and sought health care when the duration was more than one day. More than half of them did not know the viral origin of the illness, nor about antibiotic indications. None of them had an idea about antibiotic resistance. 72% of them used medications before coming to this institution, of whom 62% used antibiotics, either from pharmacistprescriptions or from leftovers from a previous illness.

Conclusions: Awareness regarding antibiotics is low among the public and resistance could be avoided if they are educated on concepts of indications of drugs and resistance.

Keywords: URTI, antibiotics, viral, antimicrobial resistance.

INTRODUCTION

Upper respiratory tract infections (URTIs) in children account for a sizeable proportion of consultations in paediatric practice [1]. There is sufficient evidenceto back the viral origin of most of the URTIs and that the use of antibiotics in the same is unnecessary. Some infections, even though bacterial (like otitis media, sinusitis) are self-limited and don't require antibiotic treatment. URTI forms a continuum with lower respiratory tract infection which is more often bacterial. Despite a predominantly viral cause [2], the prescription of antibiotics for URTIhas been hugely in practice among parents. This practice is an important factor, among others, in contributing to the development of antimicrobial resistance. Reasons for such inappropriate use of antibiotics in URTIs are complex, involving the knowledge, and attitude of parents towards the illness, the beliefs of physicians, and constraints of daily practice. The availability and accessibility of the drugs have been an unfortunate aid to this practice.

AIMS AND OBJECTIVES

To explore the knowledge, attitude, and practices (KAP) of caregivers regarding antibiotic use in children with URTIs

METHODS

This observational, cross-sectional study was conducted in a paediatric OPD in a tertiary care centre in Guntur, Andhra Pradesh, India in the monsoon of 2022. The focus of this study was URTI and the use of antibiotics in URTI. Among the children of age one and above, attending the OPD with features of URTI, 250 patients were selected at random. Information was gathered from their caretakers (accompanying them) using a self-constructed questionnaire, after taking informed consent.

Inclusion criteria: Caregivers of children of age greater than one yr with URTI symptoms

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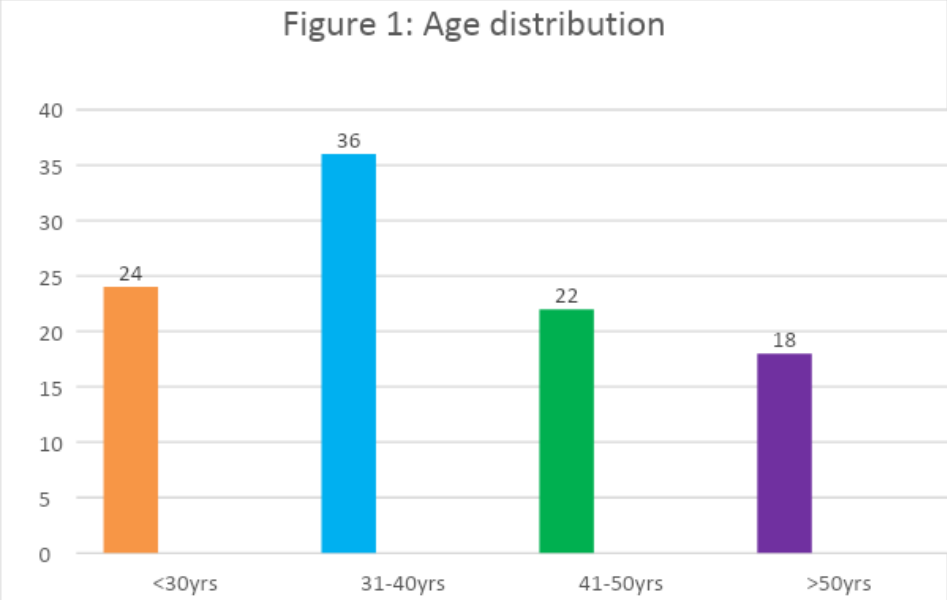
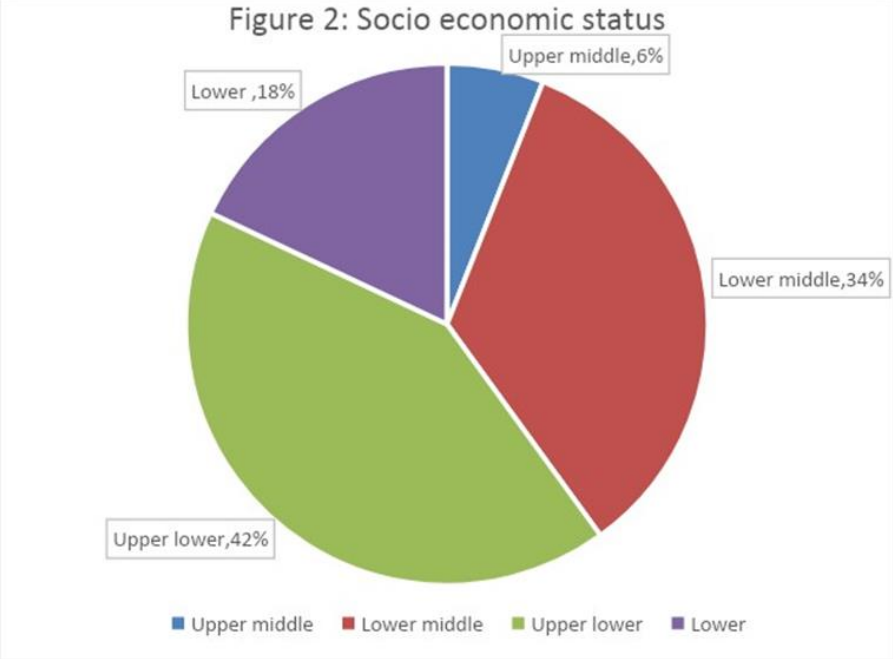
Exclusion criteria: Caregivers of children with concomitant LRTI and caregivers of children brought with respiratory illness in critical condition.

RESULTS

In this study, a total of 250 subjects (caregivers) were enrolled, out of whom 145 were mothers, 55 fathers, and 50 grandparents. The mean age of the subjects was 34.12 years with the range being 19 to 57 years. Age distribution (fig 1) showed a majority in the age group of 31- 40 years (36%). The socio-economic status (fig 2) of the subjects was classified according to the modified Kuppuswamy scale, and it was found that 6%(n=15) belonged to the upper-middle class, 34%(n=85) to the lower-middle class, 42%(n=105) to the upper-lower class, 18%(n=45) to lower class. Knowledge of the subjects regarding the use of antibiotics in URTIs was analyzed and the results showed 73%(n=183) of them were aware of the symptomsof URTI. However, 94% (n=235) of the subjects had no idea of the viral cause of most URTIs and that there is no role for antibiotics in the infection. 58% (n=145) of the caretakers knew that URTIs are self-resolving. Awareness about antibiotics was assessed and it showed that 91% (n=228) were ignorant of the indications and duration of the course of the drugs. 100% (n=250) of the subjects were unaware of the concept of antibiotic resistance (Table 1). Attitudes and practices regarding antibiotic use in URTIs were examined and the results are illustrated in figures 3-7.





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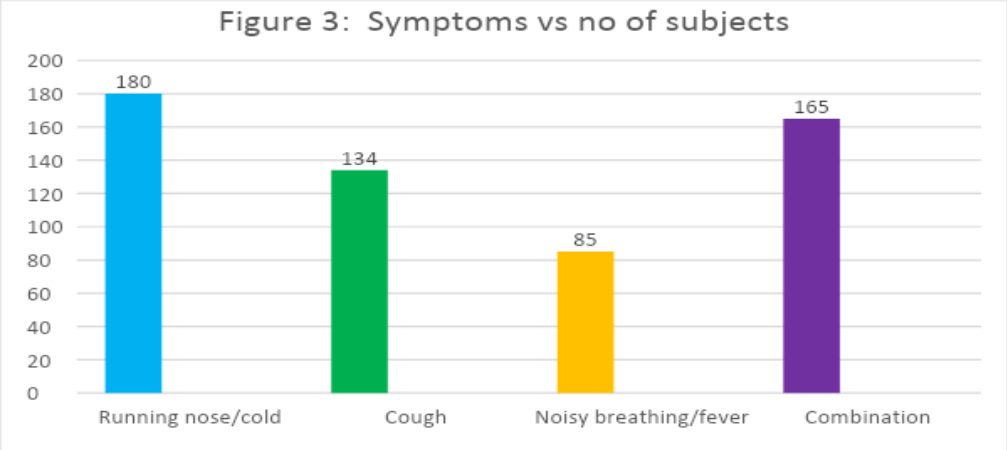
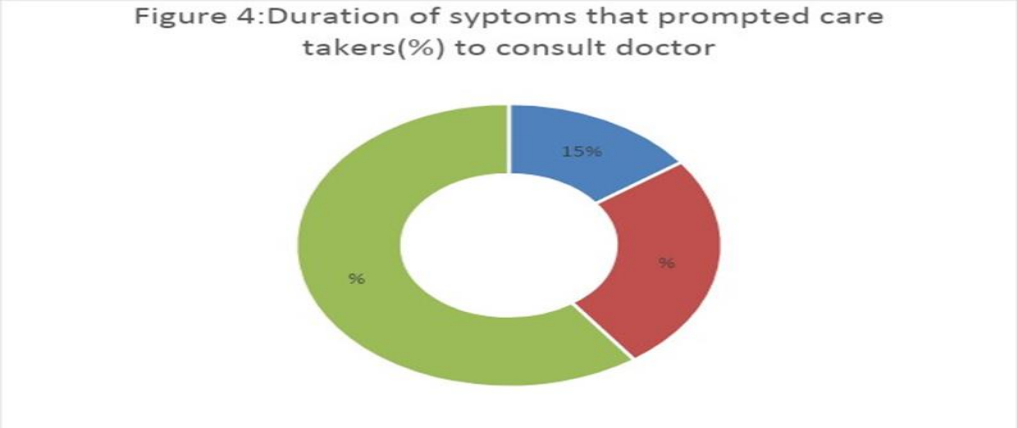


Table 1: knowledge, attitude and practices (KAP) of caregivers regarding antibiotic use in children with URTIs

	Knowledge about symptoms of URTI	Knowledge about most URTIs being viral and norole of antibiotics in Rx	Knowledge about URTIs being self resolving	Knowledge about specific indications and duration of course of antibiotics	Knowledg e about the concept of antibiotic resistance
AWAR E	73%	6%	58%	9%	0%
NOT AWAR E	27%	94%	42%	91%	100%



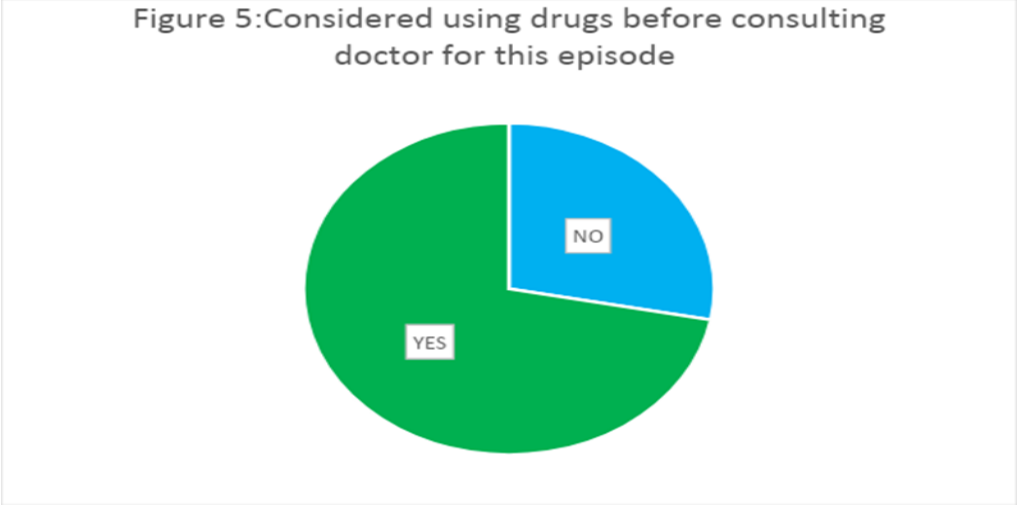


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Figure 6: Source of drugs

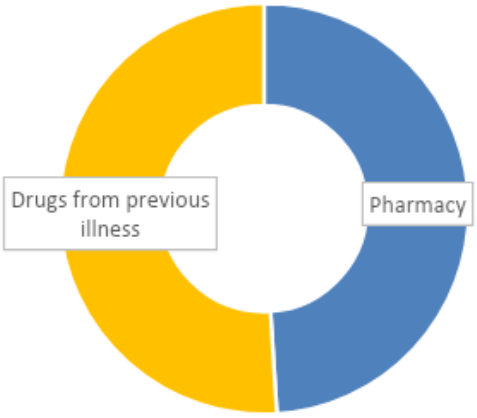
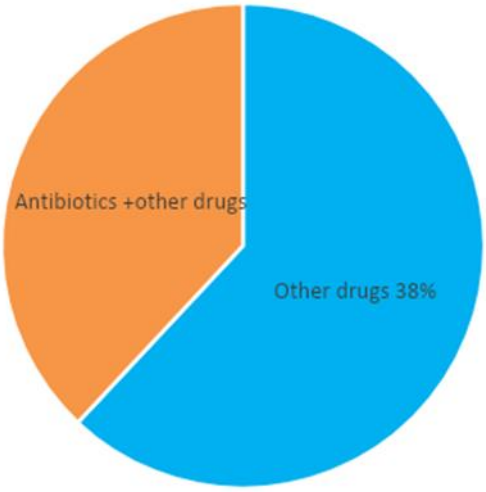


Figure 7: Drugs used



DISCUSSION

This hospital-based study interviewed caretakers of 250 children with URTI, randomly selected, among those attending OPD. The majority of them belonged to upper-lower and lower-middle class groups. In this study, 73% could recognize thesymptoms of URTI. Nearly 60% of the caregivers under study were prompted to attend healthcare facilities when the duration of symptoms was between 1-5 days. 58% understood the self-resolving nature of the disease. 94% of them did not knowthat the illness is viral in origin and that there is no role for antibiotics in the treatment of the same [3]. It is not surprising that most of them did not believe in the precise indication or duration of antibiotic use. This finding was also reported by Bosley H *et al* [4] in their study. Misuse of antibiotics was seen in those who misbelieved the effectiveness of the drugs in viral infections, as also noticed by Mallah N *et al* [5]. In a systematic analysis conducted by antimicrobial resistance collaborators [6], the burden of antimicrobial resistance attributable to mortality in 2019 in the WHO European region was 1,33,000 deaths. This development of resistance is majorly contributed to the misuse of antibiotics [7]. In the present study, none of the subjects knew the concept of antibiotic resistance. Among the test subjects, 72%(n=180) used drugs before attending this institute. The primary source of prescription in 51% of the above subjects is pharmacies and leftovers from previous similar illnesses in 49%. This observation was also mirrored in studies conducted by Machango *et al* [8] and RK Srivastava *et al* [9]. Informal HCWs who include local drug vendors accounted for half of the inappropriate prescription of antibiotics, which was less than observed in the study by Khare S *et al* (89%) [10,11]. 62% (n=112) of subjects, of those already using drugs (n=180), were found to be using antibiotics, whereas the other 38% (n=68) used other drugs.

This rampant unfitting use of antibiotics is also supported by Kotwani A *et al* in their study [12]. The reasons for such

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use as put forth by Singhal T *et al* [13] and other related studies include poor prescriber knowledge [14], pressure from caregivers, OTC availability, fear of missing diagnosis, and medico-legalrepercussions. Chatterjee S *et al* [15] supported this observation and also emphasized strengthening interventions to improve prescribing. Thakolkaran *et al* also advised establishing antimicrobial stewardship programs [16], such as India's National action plan for antimicrobial resistance [17].

CONCLUSIONS

Antimicrobial resistance has been an arms race between pharmaceutical scientists working on developing newer drugs and bacteria gaining resistance against the drugs. The misuse of antibiotics is a prime but avoidable factor in the development of drug resistance. Most families being ignorant of this development prefer using drugs without an appropriate prescription. Hence there is a need to equip the publicwith knowledge of the causes of illnesses and the role of antibiotics. This can be made possible by promoting attitudes and practices among parents by targeted education and among informal health care workers by regulation of inappropriate prescription. Furthermore, strong antimicrobial stewardship programs are necessary to combat this ongoing, invisible hazard.

LIMITATIONS:

- This study aims at understanding the KAP of parents only. It doesn'tevaluate the prescribing patterns or practices of healthcare institutions.
- This study doesn't offer a detailed experience of the programs working against antimicrobial resistance

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