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A Survey to Determine the Prevalence of Acute Respiratory Infections (ARI) and Their Determinants in Children in the Age Group of 0 to 5 Years in Nerul, Navi Mumbai

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ABSTRACT

Respiratory infections are a major cause of morbidity and mortality among children in the age group of 0 to 5 years. Many infants suffer from respiratory ailments in the first year of life which if left untreated can cause long term implications. Poor functioning of the lungs hampers the participation in physical activities and sports thereby affecting the normal growth and development of the child. Thus the overall quality of life of the child is impaired. Better awareness among parents, teachers and caregivers will go a long way in preventing frequent illness due to respiratory infections in the age group of 0 to 5 years.

This survey was conducted using a pre designed questionnaire in a locality consisting of a population belonging to mixed socioeconomic levels.

From the study we conclude that respiratory infections are a common occurrence in the age group of 0 to 5 years and several contributing factors if identified early can prevent respiratory illness in this age group.

Keywords: acute respiratory infections, socioeconomic status, childhood allergies

INTRODUCTION

One of the leading causes of morbidity and mortality in children in the age group of 0 to 5 years is acute respiratory infections (ARIs) [(1)]. Evidence shows that approximately 15-30% of all under five deaths in India occur due to ARI's which can be prevented [(2)]. They also have systemic effects which occur due to spread of infection or microbial toxins, inflammation, and reduced lung function [(3)]. ARI can be classified based upon the primary site of the infection as upper respiratory tract infection or lower respiratory tract infection.

Acute upper respiratory tract infection includes common cold, sinusitis, pharyngitis, tonsillitis, and otitis media. The term acute lower respiratory tract infection encompasses epiglottitis, laryngitis, bronchitis, bronchiolitis and pneumonia and are more serious as compared to acute upper respiratory tract infection [(4)]. Pneumonia accounts for most deaths in children under 5 years of age [(5)].

It can lead to multiple visits to a doctor as well as hospital admissions. This imposes a major burden on the healthcare system in developing countries like India. The families have to endure the economic burden and many of them spend a large proportion of their monthly income on hospitalisation etc. Many a times due to children suffering from ARIs the care givers are unable to devote time to their normal activities thereby creating a significant financial loss [(6)].

Several preventable socio-cultural, demographic and environmental risk factors predispose children under 5 years to ARI's. Thus if identified timely it can go a long

way not only in saving innocent lives but also improving the quality of life and reducing disability. Hence this study was undertaken with the aim of finding out the prevalence and determinants of ARI's in a middle class locality in Nerul, Navi Mumbai. The data thus obtained can help design awareness programs for parents and care givers alike and thereby help to curb the menace of ARI's.

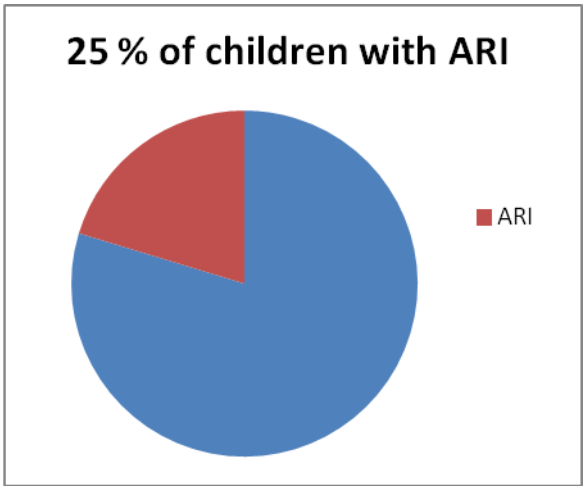
MATERIALS AND METHODS

The survey was conducted in a middle class locality in Nerul, Navi Mumbai. Children in the age group of 0 to 5 years living in that area constituted sample population. A pre designed questionnaire was used for data collection. The questionnaire consisted of questions pertaining to the demographic data, birth history, the history of respiratory illnesses, socioeconomic status and living conditions. The questionnaire was in English language. the researchers approached various housing societies in the said locality and were permitted to interact with parents during the society meeting. The parents were the informants. The nature and purpose of the study was explained to them. They were assured that confidentiality of the data will be maintained. Those willing to participate were given the questionnaire and asked to fill in the required information. Total sample size thus obtained was 110. The data thus obtained was analysed.

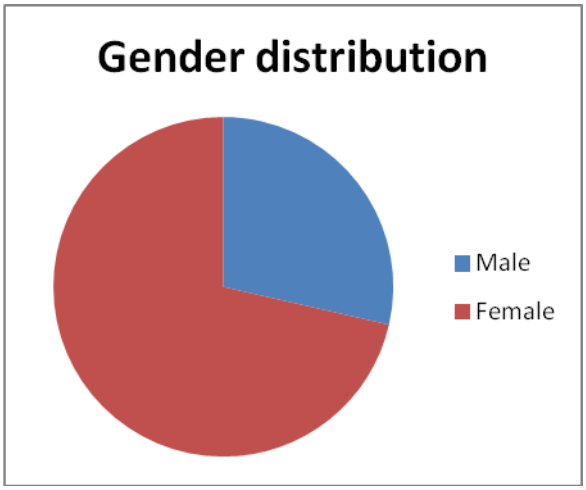
STATISTICAL METHODS

The data obtained from the questionnaire was analysed descriptively. Following factor were analysed

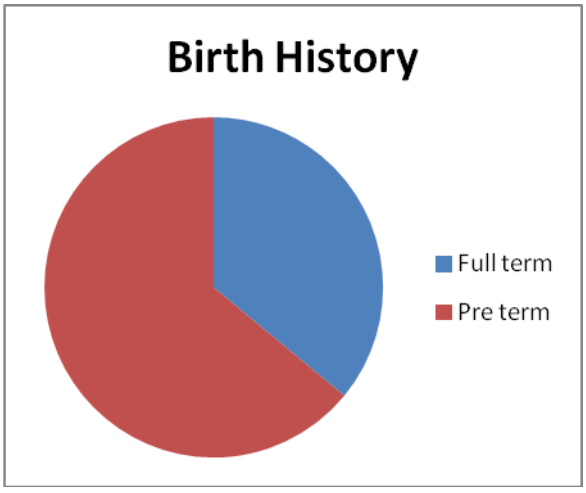
Total number of children with ARI - out of the sample studied 28 children were cases of ARI



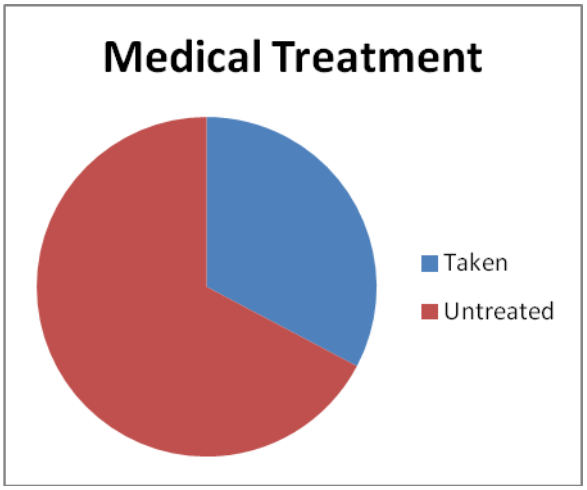
Gender distribution of the sample – 13% of males and 33.9 % females affected



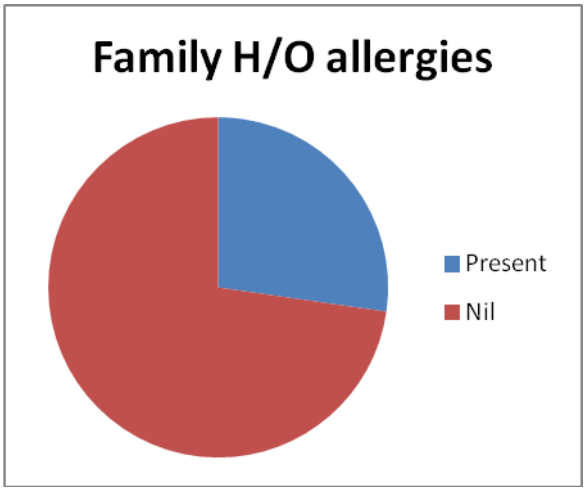
Birth history –full term 36 %, preterm 64%



Medical Treatment taken for ARI – only 36 % of the affected children took timely medical treatment.



Family history of allergies- 28 % of the affected children had family history of allergies



RESULTS

Analysis of the data shows that ARI are more common in females. Also pre term children are more prone to develop ARI. A lot of the children from the sample studied were given timely medical treatment. Few of the children from the sample had family history of allergies which predisposes them to develop ARI. Majority of the children in the locality studied lived in spacious well ventilated and clean homes with appropriate sanitation. All the children were given primary immunisation. The families were aware about the importance of good nutrition, sanitation and a healthy environment for a healthy child

DISCUSSION

Analysis of the data shows that the prevalence of ARI is 25% in the sample studied. The occurrence is more common in females. Also pre term children are more prone to develop ARI. A lot of the children from the sample studied were given timely medical treatment. Few of the children from the sample had family history of allergies which predisposes them to develop ARI. Majority of the children in the locality studied lived in spacious well ventilated and clean homes with appropriate sanitation. All the children were given primary immunisation.

As regards the gender prevalence evidence shows that females are more prone to develop upper respiratory tract infection and males lower respiratory tract infection. Several factors such as anatomic differences and the role of sex hormones in regulation of immune system may be responsible for this predisposition [(7)]. Other factors which could contribute to greater incidence of respiratory infections in this age group are the immaturity of the immune system, handling by multiple care givers, playing with different peers etc [(8)].

Several supporting studies show that pre term children are more prone to develop ARI and asthma in later life [(9)]. Incomplete alveolar development, low surfactant and poor immune systems contribute to greater incidence of ARI in pre term babies [(10)]. Family history of allergies also acts as a confounding factor to childhood respiratory illness and especially asthma even in later life [(11)].

Living conditions also influence the occurrence of respiratory infections in children. Factors such as crowded homes, poor sanitation and ventilation predispose children to respiratory illness. Presence of fumes or smoke in the vicinity affects the ciliary activity and lung parenchyma as well thereby encouraging secondary infection [(12)]. Several supporting studies show that living conditions have an impact on the occurrence of respiratory infections in children [(13,14)]. Thus greater awareness in

this regard can go a long way in improving the health status and quality of life for children.

CONCLUSION

From this study we can conclude that ARI is a common occurrence among children in the locality studied. Many of the determinants contributing to the occurrence of ARI can be rectified and thus preventive measures can be undertaken to improve the quality of life of children.

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