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Original Research Article

Effect of parental knowledge and attitude in the control of childhood asthma

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ABSTRACT

Background: Asthma is responsible for 250,000 deaths and 1% of all the DALY (disability-adjusted life year) worldwide. It is a leading cause of school absenteeism among children and incurs a large financial burden. Parents of children with asthma have varied beliefs and knowledge about asthma and its treatment which may affect the control of asthma.
Methods: A cross-sectional study was carried out among parents of children who attended the asthma clinic of a tertiary care centre in central Kerala, India using a questionnaire.
Results: A total of 303 parents were enrolled in the study. The mean age of the asthmatic children was 5.36±1.8 years with a male to female ratio of 1.16:1. In the study group 48.18% (146/303) of the parents correctly answered >60% (at least 7 correct answers out of 11) of the knowledge questions (mean = 6.57±2.06) while only 17.16% (52/303) of the parents correctly answered >60% (at least 4 correct answers out of 7) of the attitude questions (mean = 3.20±1.33). A statistically significant association (P = 0.0035) was found between knowledge levels (<or> 60% of the knowledge questions correctly answered) and control of asthma. And a similar association (P = 0.0135) was also seen between attitude levels (<or> 60% of the attitude questions correctly answered) and control of asthma.
Conclusions: Even though parents had better knowledge of asthma than attitude, the control of asthma was related to the level of both knowledge and attitude of parents.

Keywords: Attitude, Control of asthma**,** Knowledge, Parents

INTRODUCTION

Asthma is a chronic inflammatory condition of the lung airways resulting in episodic airflow obstruction.[1] Asthma affects boys more than girls in pre-pubertal age group; more in poor families, more in modern metropolis locales, and its prevalence strongly correlates with that of atopic eczema and allergic rhino conjunctivitis.[2]

Non-communicable disease (NCD) forms 43% of all the world's diseases and is on the rise, particularly in low economic countries.[3] Asthma is a chronic NCD affecting 300 million individuals all over the world.[4] The prevalence of asthma increases as the community adopts an urban lifestyle.[5]

Around 25,0000 asthma-related deaths are reported all over the world, and most are preventable, being due to suboptimal long term control and delay in obtaining medical care during the final attack.[3] The economic burden of asthma is measured both in terms of direct medical costs(cost of hospitalization and medication) and indirect cost (lost productive time and premature death).[6] Children with asthma tends to miss school more often than their healthy peers and the mean school absenteeism increases with the severity of asthma. Parents of children

with asthma have varied beliefs. An example for this is the 'no symptoms, no asthma' belief and the 'acute disease' belief.[7] This may lead to not using controllers (inhaled corticosteroids) on days when the asthma symptoms are absent. This stems from the belief that asthma is absent if overt symptoms are absent.[7, 8] Another example is parental concern about dependency and addiction towards anti-asthma medication and this may lead to discontinuation of medications.[9]

Knowledge about asthma is varied among the public. Inadequate literacy with poor reading levels were associated with poor asthma knowledge.[10] Socioeconomic status and ethnicity plays an important role in health related knowledge.[11] It is also found that if adequate asthma related knowledge is provided for the asthmatic, the odds of them adhering to medications are more.

METHODS

A cross-sectional study was carried out at a tertiary care centre in central Kerala, India. Approval from hospital research and ethics committee was obtained prior to the commencement of the study. Parents of children with asthma attending the asthma clinic of our hospital were interviewed using a standard pro forma after getting an informed consent. These questions were asked in the local language. There were 11 questions pertaining to asthma knowledge and 7 to attitude. All questions were in a 'Yes' or 'No' format. Each correct answer was given a point. For analysis, knowledge points and attitude points were dichotomized at 60 % levels.[12] And > 60% levels were taken as favourable and <60% levels were taken as less favourable. Control of asthma was assessed using National asthma education and prevention program: expert panel report 3 (EPR 3).[13]

Descriptive and inferential statistical analysis has been carried out in the present study. Results on continuous measurements are presented on Mean±SD (min-max) and results on categorical measurements are presented in number (%). The relative risk, its standard error and 95% confidence intervals were calculated according to Altman, 1991. The Significance is assessed at 5% level of significance. Chi-square/fisher exact test has been used to find the significance of study parameters on a categorical scale between two or more groups. Multivariate analysis was done by logistic regression. Data was entered by SPSS version 10.0 analysed using epiinfo, SPSS 15.0, MedCalc 9.0.1.

RESULTS

376 parents were interviewed out of which 303 parents gave a complete response hence the response rate was 80.58%. The mean age of the asthmatic children was 5.36±1.8 years. There were 53.80% males (n = 163) and 46.20% females (n = 140) among the asthmatic children, so the male to female ratio was 1.16:1. The majority of the subjects were in the middle socioeconomic class 47.19% (n = 143). In the study group 67% (n = 203) were urban dwelling, while 33% (n = 100) were rural dwelling population. A positive family history of asthma was present in 29.70% (n = 90) of the cases in the study group. In the study group, 41.91% (n = 127) of the children had controlled asthma while 58.09% (n = 176) of the children had uncontrolled asthma.

Table 1: Baseline characteristics of study groups.

Parameter	Group	Number	Percentage
Age	2-5 years	129	42.57
	5-8 years	145	47.85
	8-12 years	29	9.57
Control of asthma	controlled	127	41.91
	uncontrolled	176	58.09
Family history of asthma	Yes	90	29.70
	No	213	70.30

Table 2: Effect of parental knowledge and attitude in the control of childhood asthma.

Parameters		Controlled asthma	Uncontrolled asthma	Significance (p value)
Knowledge	>60% levels	74 (50.7%)	72(49.3%)	0.0035*
	<60% levels	53 (33.8%)	104(66.2%)	
Attitude	>60% levels	30 (57.7%)	22(42.3%)	0.0135*
	<60% levels	97 (38.6%)	154(61.4%)	

*2 tailed Fisher's exact test.

In the study group 48.18% (146/303) of the parents correctly answered >60% (at least 7 correct answers out of 11) of the knowledge questions (mean = 6.57±2.06). Out of the total, 80.86 %(n = 245) of parents knew that asthma is a disease affecting the lungs while 29.04% (n = 88) parents did not know that asthma can cause recurrent symptoms. The majority (62.05%) of the parents were unaware that asthma is present all the time and not only when symptomatic. In the study group 89.11% (n = 270) parents knew that asthma is not a contagious disease and 72.61% (n = 220) parents identified asthma as a heritable disease. In the present study, 37.62% (n = 114) parents knew about the need of regular medication in asthma.

In the study group 17.16% (52/303) of the parents correctly answered >60% (at least 4 correct answers out

of 7) of the attitude questions (mean = 3.20±1.33). In the study group, a high level of wrong belief about inhaled corticosteroid was noted with 39.93% (n = 121) parents thinking that their child's intelligence may be affected by inhaled corticosteroids, 62.38% (n = 189) parents thinking that their child's growth will be affected by inhaled corticosteroids and 60.07% (n = 182) parents thinking that their child may get addicted to inhaled corticosteroids. In the study group, 76.54% (n = 232) parents wrongly believed that oral medications are safer and more effective than inhaled medications.

Out of the 146 children whose parents had >60% knowledge levels, 50.7% (n = 74) had controlled asthma while 49.3% (n = 72) had uncontrolled asthma. And out of the 157 children whose parents had <60% knowledge levels, 33.8% (n = 53) had controlled asthma while 66.2% (n = 104) had uncontrolled asthma. A significant association (0.0035) was found between knowledge levels of parents and control of asthma in their children.

Out of the 52 children whose parents had >60% attitude levels, 57.7% (n = 30) had controlled asthma while 42.3 %(n=22) had uncontrolled asthma. And out of the 251 children whose parents had <60% attitude levels, 38.6% (n = 97) had controlled asthma while 61.4% (n = 154) had uncontrolled asthma. A significant association (P = 0.0135) was found between attitude levels of parents and control of asthma in their children.

DISCUSSION

The baseline characteristics of the study including mean age, sex ratio, socioeconomic status and percentage of urban dwellers were comparable with others from around the world.[12,14,15] In the study group 41.91% (n = 127) of the children had controlled asthma while 58.09% (n = 176) of the children had uncontrolled asthma which was comparable with Rabe et al study.[16] In spite of a good knowledge about asthma and its treatment among the parents, a poor attitude was noted regarding key asthma related issues.[12] This indicates the need for an asthma education program focusing mainly on changing behaviour, rather than providing information alone.

It was also found that the control of asthma was better if the parents had better knowledge and attitude towards asthma. Use of mass media (press, television, and radio) to propagate asthma related information and busting myths related to asthma may lead to a better-informed community and a better control of asthma.

The main limitation of the study was that the study group consisted of parents who had received different levels of knowledge about asthma from health care providers. Another limitation of the study was the non-inclusion of parents of inpatient asthmatics, who may have children with more severe asthma and their KAP response may be different from the present group.

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