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Effectiveness of Educational Package (EP) in Terms of Parental Ability Regarding Safe Administration of Medication in Children with Respiratory Disorders

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Abstract: ***Respiratory diseases are common throughout the world, affecting a large fraction of the population every year. Diseases of respiratory system are the major cause of mortality and morbidity worldwide, with infants and young children especially susceptible. Inappropriate inhalation technique is hazardous to the safety of children with asthma and unnecessarily increases costs resulting from unnecessary re-hospitalization. The objectives of the study were to assess and compare the parental ability regarding safe administration of medication in children with respiratory disorders before and after implementation of educational package. Methods: Quantitative research approach with quasi experimental (one group pre test-post test) design used and study conducted at MMIMS&R Hospital, Mullana, Ambala, Haryana and Civil Hospital, Ambala, Haryana. Fifty parents having children admitted in Paediatric ward and PICU were selected by purposive sampling technique and the tool developed and used for data collection was Observation Checklist. Results: Significant findings of the study were that the mean 3rd post-implementation parental ability score regarding administration of medication through Nebulization (22.66±.848) was higher than the mean pre implementation parental ability score (7.44±1.580) and mean 3rd post-implementation parental ability score regarding administration of medication through Oral Route (12.32±.551) was higher than the mean pre-implementation parental ability score (6.04±1.106). The study also depicted significant association of mean post implementation parental ability score regarding safe administration of medication through Nebulization with Informant and type of hospital and through Oral Route with duration of illness. Conclusion: The finding of study revealed that the educational package was effective in terms of parental ability regarding safe administration of medication in children with respiratory disorders.***

Keywords: Effectiveness, Educational Package, Parental Ability, Safe Administration of Medication, Children with Respiratory Disorders

1.Introduction

Breathing is so vital to life that it happens automatically. Breathing couldn't happen without the respiratory system which includes the nose, throat, voice box, windpipe, and lungs.[1] Respiratory diseases are common throughout the world, affecting a large fraction of the population every year. These diseases affect all age groups, although children are more vulnerable. Out of nearly 13 million annual deaths of children below the age of five years in the developing countries, a large fraction is due to acute respiratory diseases (ARD).[2]

Inhalation therapy is currently the most important way by which treatment is delivered to children with Lung diseases. Asthma is treated with aerosols and inhalation therapy is used by millions of asthmatic children worldwide. Acute and chronic airway bronchoconstriction and inflammation in asthma are usually treated with inhaled bronchodilators and corticosteroids, which can be administered through hall types of inhalation devices.[3]

UNICEF statistics (2005) reported that an acute respiratory infection is one of the leading causes of under-five mortality in developing countries, responsible for 1.9 million deaths annually. Among 42 countries in the world, 90% of child mortality burden, 14-24% of under-five mortality burden is due to pneumonia. Nearly 70% of this pneumonia mortality occurs in Africa and south-east Asia regions. Most of the children have about 4-6 attacks of acute respiratory infection each year. In India, of the 2.5 million born, 1.5 million do not reach their 1st birthday, and 5 million their 5th birthday. It means every day nearly 2500 under-five children die of which 600 die due to acute respiratory infection.[4]

Incidence of respiratory infections cannot be reduced without an overall increase in social and economic development. But enormous evidences have shown various measures to reduce this disease mortality. Every reduction in death due to ARI would give an incremental benefit toward achieving the Millennium Development Goal (MDG 4).[5]

2.Need of the Study

In paediatric patients, parents are typically the primary agents in promoting their children's health, giving direct care, providing access to health services, modelling attitudes and behaviours that influence their children's well being and instilling a lifelong orientation in health behaviours and future morbidity.6 Parents and caregivers make frequent errors when administering medications to children. These errors which include inaccurate dosing as well as no adherence to medication regimens, place children at risk for morbidity and mortality.[7]

Mis-dosing is prevalent with 50% or more of paediatric caregivers either measuring an incorrect dose or reporting having given a dose of liquid medication outside the recommended range.[8] A correct inhalation technique is often lost over time, and therefore inhalation instructions should be given repeatedly to achieve and maintain correct inhalation technique in asthmatic children. Patients should demonstrate their inhalation technique, and relevant instructions and corrections should be provided, at every visit and/or regularly at prescription renewals.[9]

Many asthma affected children and their parents are not familiar with appropriate techniques for inhaler use. This may result in misuse, overdose or diminished response of the administered therapeutic drugs or may even result in unnecessary repeated hospitalization. In order to achieve asthma control it is essential receive appropriate education and training pertaining to the management of their disease and most importantly are prescribed the correct inhalation device to ensure that medication is deposited in their lungs.[10] Therefore, a need was felt to educate the parents about safe administration of medication in the form of demonstration.

3.Objective

To assess and compare the parental ability regarding safe administration of medication in children with respiratory disorders before and after implementation of educational package.

4.Materials and Methods

Quantitative research approach with quasi experimental (one group pre test-post test) design used. The study conducted at MMIMS&R Hospital, Mullana, Ambala, Haryana and Civil Hospital, Ambala, Haryana on 50 parents having children admitted in Paediatric ward and PICU which were selected by purposive sampling technique. Tool used for data collection was Observation Checklist. The educational package was developed to improve the parental ability.

Ethical approval to conduct study was obtained from institutional ethical committee of M. M University, Mullana. Consent was taken from the parents of the study subjects regarding their willingness to participate in the research project. The purpose for carrying out research project was explained to the subjects and assurance of confidentiality was given.

5.Results

Description of selected variables of Parents and Children:

Findings revealed that Majority of parents (70%) were mothers, (68%) were in age group of 31-35, (92%) were married, (68%) were Hindu, 50%) were having primary level education, (78%) were home maker/unemployed, Majority of parents (44%) were having <5000 monthly income, (62%) were belong to urban area, (70%) were having source of information, (90%) were not any co-morbid disease.

Data revealed that Majority of children (62%) were in age group of 6-10, (66%) were boys, (54%) were having any other diagnosis, (70%) were having <6month duration of illness, (68%) were admitted in private hospital, (66%) were taking oral and inhalation medication, (60%) were taking medication for 2 time /day.

Table 1: Frequency and Percentage distribution of parental ability regarding safe administration of medication in children through Nebulization

N=50 S. No	Level of parental ability	Range of score	Pre-implementation f (%)	Post implementation f (%)
1.	Excellent (≥75%)	21-27	00	49 (98)
2.	Good (61-75%)	17-20	00	1 (2)
3.	Average (50-60%)	14-16	00	00
4.	Below average (<50%)	0-13	50 (100)	00

Table 2: Frequency and percentage distribution of level of parental ability regarding safe administration of medication in children through Oral Route

N=50

S. No.	Level of parental ability	Range of score	Pre-implementation f (%)	Post implementation f (%)
1.	Excellent (≥75%)	11-14	00	50 (100)
2.	Good (61-75%)	9-10	00	00
3.	Average (50-60%)	7-8	13 (26)	00
4.	Below average (<50%)	0-6	37 (74)	00

Maximum score=14 Minimum score=0

6.Discussion

The present study was aimed to assess and evaluate the effectiveness of Educational Package (EP) in terms of parental ability regarding safe administration of medication in children with respiratory disorders at selected Hospital, Ambala, Haryana."

The present study findings indicated that most of the respondents are mothers for administering the medication in children. These findings were consistent with the

findings of the study conducted by **Arlene M. Butz, et al (2005)** to evaluate a home based asthma educational intervention targeting symptom identification for parents of children with asthma and study concluded that the mother was primarily the parents for administering medication in children.

The results of present study had shown that the implementation of educational package and its effectiveness in enhancing the parental ability regarding safe administration of medication. These findings were also consistent with the findings of the study conducted by **Arlene M. Butz, et al (2005)** to evaluate a home based asthma educational intervention targeting symptom identification for parents of children with asthma and study concluded that education intervention can be effective for improving appropriate use of medications in children with asthma. These findings were consistent with the findings of the study conducted by **Kaynat Saiyed, et al (2013)** to determine if asthma knowledge and self management skills could be improved by the teaching educational programme and study concluded that educational programme improved the self-management skills. These findings were also consistent with the findings of the study conducted by **Hyam Tantawi, et al (2012)** to evaluate the effect of educational guidelines program on asthmatic children and their mothers' through assessment for their knowledge and practices regarding bronchial asthma and its management and study concluded that a positive effect of the program on mothers' practices. These findings were also consistent with the findings of the study conducted by T Bertsche, et al (2010) to assess the error prevalence in drug administration by mouth or gastric tube before and after implementing a programme for quality improvement for nurses and parents and study concluded that appropriate teaching and training of both nurses and parents supported by pamphlets was a highly efficient way to reduce error prevalence.

7.Conclusion

The following conclusions were drawn from the study findings:

- The mean post-implementation parental ability score regarding safe administration of medication in children with respiratory disorders through Nebulization (22.66±.848) was significant higher than the mean pre implementation parental ability score (7.44±1.580)
- The mean post-implementation parental ability score regarding safe administration of medication in children with respiratory disorders through Oral Route (12.32±.551) was significant higher than the mean pre implementation parental ability score (6.04±1.106)

Thus the study concluded that the educational package has been found to be effective in terms of parental ability regarding safe administration of medication in children with respiratory disorders.

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