Original Article

Maternal Education And Impact On Child Heath Care Practice In Most Common 5 Admissions In Pediatric Medicine

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Abstracts: 1) To determine the frequency of top five diseases among children presenting in pediatric medical unit. 2) To find out the association of maternal education with Feeding practices, immunization and nutritional status in children with these diseases.

Materials and Methods: It was a prospective observational study conducted in medical unit of the Children's hospital and the institute of child health Lahore from February 2009 to April 2009. Total 175 patients age between1 month to 5 years were enrolled in the study. Data was collected after an informed consent from the mother. A predesigned Performa was filled for every patient, which included history and examination.

Results: Among 175 patients, there were 64% male and 36% female. Regarding age distribution 92 patients were between 1 month-2 years and 83 were in the age group of 2 - 5 years. The most common cause for hospitalization was acute lower respiratory tract infections like bronchopneumonia/lobar pneumonia and bronchiolitis (30.8%), acute watery diarrhea (18.85%), meningoencephalitis (bacterial/viral/tuberculous) 12%, tuberculosis (pulmonary/Skeletal) (9%) and malaria (4.5%). Other less common diseases were enteric fever (4%), febrile seizures (4%), urinary tract infections (3.4%), metabolic seizures (3%) and measles (2.28%). Amongst patients, 18.3% did not receive any vaccination, 39.3% were partially immunized while 74% were fully immunized according to EPI. After inquiry it was found that only 2% of the mothers fulfill the criteria for clean feeding practices & rest of 98% were otherwise. Only 15% of patients were adequately weaned and 28.3% were exclusively breast fed.

It was found that 107 patient (61.2%) belonged to low socio-economic class while 65 (37.1%) came from low middle class income group while only 3 patients (1.7%) belonged to upper middle class family.

Conclusion: Great emphasis is needed for improvement of primary health care, immunization, and promotion of breast feeding as well as hygienic practices. In resource compromised country like Pakistan strengthening of primary health facilities and education of women appears to be the only way forward if reduction in disease burden and morbidity has to be achieved.

Keywords: Immunization, hygiene

Introduction

Conventional methods of classifying causes of death suggest that in children (aged 0-4 years) about 70% of the deaths worldwide are due to diarrhea, acute respiratory infections, malaria and preventable diseases.[1] Parents and guardians play pivotal role in keeping their children healthy but this cannot be achieved without improvement in public heath infrastructure and education of masses. The Millennium development goals (MDG) set in Sep 2010 summit is clear proof of realization. In spite of MDG goals, WHO, immunization coverage in Pakistan is for common diseases far from being satisfactory.[24] Pakistan is country at war and because of financial and geopolitical crisis the inflation rate is rising and the per capita income which was US 369$[22] is slipping down. More than 24% population is living under the poverty,[23] this combined with the low literacy rate caries risk for strategies aimed at improvement of health indices to end up in failure. As it has been documented that the risk of diseases increases due to low educational status and poor environmental sanitation. [2,3]

Materials and Methods

1. To determine the frequency of top five diseases among children admitted in paediatric medical unit.
2. To find out the association of maternal education with immunization status and nutritional status in children with these diseases.

Patients And Methods

It was a prospective observational study conducted in medical ward of the Children's hospital and the institute of child health Lahore from February 2009 to April 2009.

Total 175 patients were enrolled in this study. Data was collected after an informed consent from the mother of patients. A pre designed Performa was filled for each patient by the investigator which included a detailed history highlighting their demographic data, duration of illness, presenting complaints, maternal education, developmental, feeding, and socioeconomic history and vaccination history was recorded. Details on clinical examination were collected from emergency resident's evaluation. These included vitals like P/R, R/R, B.P, temperature, Anthropometric data sch as weight, height and head circumference, mid arm circumference and Final diagnosis recorded after investigations.

Appropriate treatment was continued in the form of antibiotics, antipyretics etc.

Results

Among 175 patients, there were 64% male and 36% female. Regarding age distribution 92 patients were between 1 month- 2years and 83 were in the age group of 2- 5 years . Most of patients (36%) belonged to semi urban area while 33% belonged to urban area and 30% to rural area.

The most frequent cause for hospitalization was acute lower respiratory tract infections (broncho-pneumonia/lobar pneumonia and bronchiolitis) and together account for 30.8%, acute watery diarrhoea (18.85%), meningoencephalitis (bacterial/ viral/tuberculous) 12%, tuberculosis (pulmonary /Skeletol) 9% and malaria (4.5%). Other less common diseases were enteric fever (4%), febrile seizures (4%), urinary tract infections (3.4%), metabolic seizures (3%) and measles (2.28%).

Amongst patients, 18.3 % did not receive any vaccination and the parents were not aware of the need, 39.3% were partially immunized while 42.4% were fully immunized according to EPI programme.

Table-1: Type off feeding in children<2 years(No= 92)

Milk Type	Frequency	Percentage
Exclusively mother feed	26	31.0%
Both mother & top feed	40	43.4%
Only top feed (Cow'smilk/formula feed)	26	28.3%
Total	92	100%

Vaccination data when analyzed only as a group in mothers with qualification intermediate and above fully vaccinated percentage of children rose to > 90% but unfortunately this only comprised of 12% of the total cohort. Table number 1 shows the pattern of feeding in children < 2 years of age. Mothers were particularly asked about their concept of bottle / nipple cleanliness & hygiene. The bottle hygiene was defined as washing the bottle / nipple, boiling it for 5 to 10 minutes than keeping the bottle covered & uncovering the nipple only when has to feed the child. . Each time it has to be fresh feed and if some milk left in the bottle unused should be kept in the refrigerator, preferably for not more then 4 hours. Mother should wash her hands thoroughly before preparing the feed and use boiled water for formulation. Analysis of data shows that that only 2% of the mother meet the laid criteria for clean feeding practices.

Weaning was defined as addition of at least 1 semisolid food by the age of six months and provision of 3 to 4 servings of different foods by the age of 1 year. According to this definition only 15% were adequately weaned.

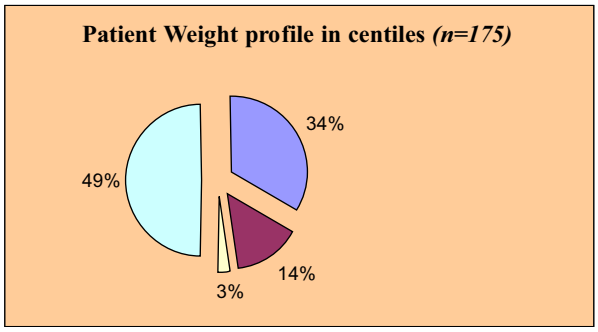
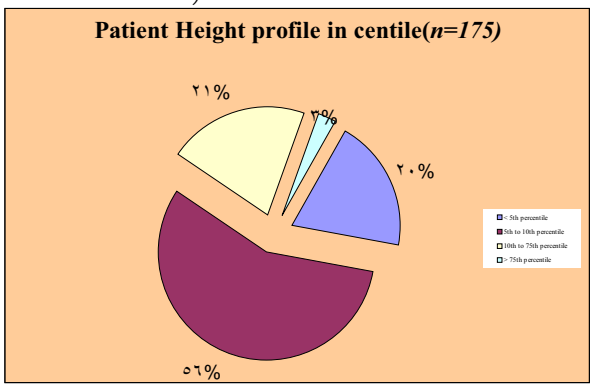


Fig-1: Weight Percentile of 175 Patients (Age range 1 month to 5 Years)



Caloric intake of the patients prior to the ailment was calculated according to the recommended caloric allowance for the particular age and expected weight. Normal caloric intake was defined as 100% for particular age group and expected weight. It was found that 68% were receiving less than 60% of the recommended calories while 20% of the patients were taking 60% to 90% and only 12% were receiving more than 90% of the recommended calories.

The patients were grouped according to the monthly income of the family. Low socio-economic class was defined as having monthly income of <8000 Rs/. Per month while low middle class as having monthly income between 8000 to 30,000 Rs Per month and upper middle class earning more than 30,000/months. It was found that 107 patient (61.2%) belong to low socio-economic class while 65 (37.1%) came from low middle class income group while only 3 patients (1.7%) belonged to upper middle class family as

shown in bar diagram. Maternal education was specifically asked for to find the relationship between maternal literacy with the nutritional status and infectious diseases of the child. Mothers were categorized illiterate as the one who never attended or completed the primary school. The categories shown in the table number [4]

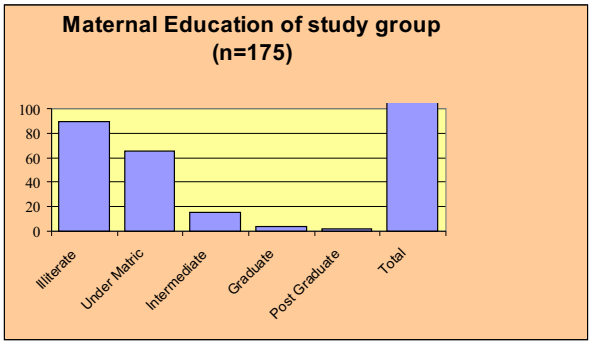


Fig-1: Mternal education

Amongst 60% children having weight of <3rd percentile 69% were from the low socioeconomic group and rest were from middle income group. Breakdown of the 26 breast fed children revealed normal nutritional status in 88% of the children

Among the 89 children of illiterate mothers only 23 (25.8%) were immunized as compared to educated mothers where immunization coverage was 74%,

Similarly 77% children of normal nutritional status belonged to educated mother while 23% of illiterate mother

Discussion

Advanced world as a result of various developments and higher socioeconomic conditions is experiencing shift from infections to malignancies and "life style "diseases, while many Asian countries are still grappling with infectious diseases, diarrhoeal and malnutrition. Among common diseases in children, acute lower respiratory tract infections (ALRIs) are a leading case of morbidity and mortality in children under 5 years of age in developing countries, contributes to approximately 2.6 million deaths annually, which is responsible for 1/3 of the child hood mortality in developing countries.[5,6] By immunization against measles and pertusis, currently only small proportion of all ALRIs can be prevented.[7,8]

Lower respiratory tract infection was the most frequent cause of admission in our study (30.8%). Reason for this high ratio can be due to poor socioeconomic status. The national immunization program does not provide vaccination against common pathogen pneumococcus, even vaccination against HIB was introduced in the recent past. Even if immunization programme is upgraded there is still a good 60% population in our small sample who are either not or partially vaccinated. The segment is always going to be at risk but looking at the data of educated mother group though the number is small but clearly provides window of opportunity where focus on education of mothers may improve the whole morbidity and mortality profile of the community.

Second most common disease in this study was diarrhea (18.8%). As indicated by various studies, inspite of all the preventive efforts and introduction of ORS therapy diarrheal diseases are still one of the leading causes of childhood mortality under five years of age especially in developing countries. It also acts as a major contributor of malnutrition in these children.[9] Amongst the major causes of diarrhoea are lack of breast feeding and unhygienic feeding practices as documented in our results where only 28.3% were exclusively breast fed and only 2% of the mothers offering bottle feeding were exercising clean feeding practices. In Pakistan there are about 24 million children under the age of five years.[10] On average each child gets 5-6 episodes of diarrhoea per year; to account for a total of approximately 120 million episodes per year.[11,12] High incidence of diarrhoea in our country is because of poor socioeconomic conditions, poor personal hygiene

Acute bacterial meningitis is one of the most severe infectious diseases causing neurologic sequelae and accounting for an estimated 171,000 deaths worldwide per year.[14,15] Although many new antibacterial agents have been introduced in context of its treatment but still its fatality rates are high ranging between 2% and 30%.[16,17] Besides that, permanent sequelae such as epilepsy, mental retardation or sensorineural deafness are observed in 10%-20% of those who survive[18]

Tuberculosis has reached epidemic proportion in many developing countries. Although progress has been made to reduce the global incidence of drug susceptible tuberculosis but the real beneficiary are developed countries with all kind of resources. Poor countries are rather facing even worst situation because of emergence of multidrug resistant and extensively drug resistant tuberculosis. According to WHO report 440, 000 cases of MDR were reported in 2008 , India, China and Pakistan carry nearly 50% of the burden[19] There were 150,000 deaths due to MDR TB in 2008.

In this study malaria was only 4.5% while in another study which was done in Nigeria it was about 69.7% revealing that area is malaria endemic.[20] In developing countries, malaria and malnutrition are major health burden with infants and children being the most vulnerable group. Malnutrition remains a widespread and largely unrecognized problem .[21]

Conclusion

Great emphasis is needed for improvement of primary health care, immunization, and promotion of breast feeding as well as hygienic practices. In a resource compromised country like Pakistan we cannot cope with the current situation in children with provision of drugs/medical care only what is actually needed is strengthening of primary health care.

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