

# How do Mothers Recognize & Treat Pneumonia in their Children at Home? A study in Union Council Jhudo, District Mirpurkhas

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## ABSTRACT

**BACKGROUND:** A large number of children suffering from pneumonia fail to reach health facilities well in time because their mothers fail to recognize seriousness of their illness. Early recognition of symptoms of pneumonia by mothers and their participation in effective case management of pneumonia may reduce childhood mortality in our population.

### METHODOLOGY:

**OBJECTIVES:** To determine the mothers' perceptions regarding pneumonia in children & the home remedies used by them to treat pneumonia in children.

**STUDY DESIGN:** A descriptive cross sectional study conducted on four hundred & eighty eight mothers taking care of their children of age less than three years. It was conducted among houses of Union Council Jhudo.

**RESULTS:** Fast breathing & chest indrawing were most commonly reported symptoms for pneumonia (59.4%). The study revealed statistically significant association of symptoms identification by mothers with higher educational status ( $p=0.04$ ), living in joint families ( $p=0.05$ ) & higher parity ( $p=0.02$ ). Majority of the mothers (94.4%) were using two or more home remedies for their children. Honey was the most commonly utilized remedy for pneumonia (82.4%), followed by green tea (44.7%) & Vicks massage (43.2%).

**CONCLUSIONS:** The study concluded with the recommendations that IMNCI community component may be strengthened & better education to the care takers should be given, especially to mothers to enable them to recognize signs of pneumonia in order to improve the case detection of pneumonia, its early referral and in reducing mortality due to pneumonia.

**KEY WORDS:** pneumonia, maternal perceptions, home remedies.

## INTRODUCTION

Infant mortality rate in Pakistan is still at alarmingly high level ie 72/1000 live births<sup>1</sup>. This is in contrast to our neighboring countries like Bangladesh (46/1000), India (61/1000) & Sri Lanka (12/1000). In Pakistan although under five mortality rate showed a decline from 124/1000 (1990) to 87/1000 (2010); but the neonatal mortality is still posing a problem as it is still high ie 41/1000 live births (2010)<sup>2</sup>. A UNICEF's estimate for Pakistan for the period 2006-2010 revealed 69/1000 live borne children of age less than five years with suspected pneumonia being taken to an appropriate health-care provider<sup>2</sup>. According to another estimate, around half million under five children's deaths per year are occurring in developing countries. Pakistan is among the six countries in the world contributing to 50% of such deaths<sup>3</sup>. Acute respiratory infections account for nearly one third of these deaths<sup>4</sup>. In the developing world, the situation is worsened where among the estimated nine million children's deaths in 2007, around 20% deaths were due to pneumonia<sup>5</sup>. The situation is more worsened by the fact that many

sick children fail to reach health facility well in time, and children from poorer families are even less likely to obtain care. In Bangladesh, a study showed that only 8 % of sick children were first taken to appropriate health facilities for this problem<sup>6</sup>. Therefore better education of families, especially of mothers to enable them to recognize signs of pneumonia are likely to improve the case detection and to reduce mortality. The national ARI control program in Pakistan was launched in 1989. The main strategy of this program was based on World Health Organization sponsored ARI Control Program. The program objectives includes early recognition of cases of pneumonia in children by their caretakers and effective case management by the health care providers<sup>7</sup>.

### *Rational for study:*

Before such education programs about ARI are undertaken, it is very necessary to understand what is already known and what makes a mother worry about a child with respiratory infection? Moreover, policy makers should know what options are easily available to mothers as home remedies to try first before seeking treatment from health facilities? This is likely to help

us in preparing relevant education materials on ARI. The current study was, therefore, conducted to understand the signs of pneumonia recognized by the mother and the remedies they routinely try before seeking help from some health facility.

**Objectives:**

1. To assess the maternal perceptions about pneumonia in their children.
2. To determine the home remedies used by mothers to treat their children's pneumonia.
3. To seek association of maternal perceptions & maternal socio-demographic characteristics.

**MATERIAL & METHODS**

**Study setting & study design:**

It was a community based descriptive cross sectional study carried on the houses of Taluka Jhuddo, district Mirpur Khas. It has total sixty four Basic Health Units (BHUs) & ten Rural Health Centers (RHCs)<sup>8</sup>. According to the 1998 census of Pakistan, it had a population of 15, 69,030. Jhudo is one of the six talukas of district Mirpur Khas & is itself administratively divided into six union councils. We selected the Union council Jhudo for our study purpose. The total estimated population of UC Jhudo is 38,269 according to 1998 census & we selected children less than three years of age for purpose of our study.

**Sample size & sampling technique:**

Mothers of four hundred & eighty eight children of age upto three years were selected for the purpose of this study. The mothers of children of more than three years were not selected for the study. It was a convenience type of sampling. If a mother was taking care of more than one children of age less than three years, she was interviewed for her youngest child.

**Data collection tool:**

The principle researcher along with her team collected the data. Information was collected on preformed & pretested, close-ended questionnaire to determine the distressing symptoms for which the mothers sought treatment from a medical facility; and the type of remedies used at home before medical intervention. The symptoms perceived by the mothers were compared with the findings as per IMNCI/ARI guidelines.

**Inclusion criteria:**

1. Those mothers who gave permission to be interviewed.
2. Mothers of children aged less than three years.

**Exclusion criteria:**

1. Those who did not allowed to be registered in the

study.

2. Mothers who were taking care of child whose age was more than three years.
3. Children who were currently suffering from any other disease.

**Variables:**

1. Age of child.
2. Gender of child.
3. Symptoms related to pneumonia: Fast breathing (Pasli chalna), chest indrawing, noisy breathing, fever, cough, refusal to feed, combination of these symptoms.
4. Maternal literacy status: Primary/post primary.
5. Residential background: Rural/urban/ slum.
6. Type of family: Nuclear family/joint family.
7. Religion. Islam/any other religion.
8. Socio-economic status of family: Poor (income <rs: 10,000 per month)/lower middle (income rs:10,000-20,000 per month)/middle class (income rs: >20,000 per month).
9. Working status of mother: Working woman / remains at home.
10. Parity of mother (total number of children she had).
11. Home remedies given to child.
12. Reasons for giving home remedies.
13. Duration of total delay in seeking health care.

**Data Analysis:**

Data was entered in SPSS software version 16. Frequencies for all variables were calculated in percentages. Mean & standard deviation was computed for the quantitative variables. The association of socio-demographic variables to the perceptions & practices of mothers was analyzed by applying Chi-squared test. The p-value of less than 0.05 was taken as the level of significance for these associations.

**RESULTS**

1. A total of four hundred & eighty eight mothers were interviewed to find out their perceptions about pneumonia in their children.
2. Cough accompanied by fever was the most commonly reported symptom for pneumonia in children (65.2%) Fast breathing & chest indrawing were reported symptoms for pneumonia by 59.4% mothers (Table I).
3. Regarding socio-demographic characteristics of the mothers taking care of their children, majority of them (48.4%) were belonging to rural areas while 47.9% were belonging to slum areas; only 3.7% belonged to urban area. 98.7% were living in joint family; 88.9% of mothers were either illiterate or only primarily educated. Majority (81.6%) belonged to lower socio-

economic class; 93.4% were Muslims; 91.4% were housewives; among total 488 mothers, 54.9% were multiparous & 30.7% were looking after two children having age less than three years. (Table II).

4. Regarding age of children, 57.6% were between ages one month to one year; 22.3% were neonates while remaining 20% were those whose age was more than one year. Among total 488 subjects, 60.9% were males & 39.1% were females.

5. Regarding home remedies given to children for pneumonia, majority of mothers (94.4%) were using two or more home remedies. Honey came out to be the most commonly utilized remedy for pneumonia (82.4%), followed by green tea (44.7%) & Vicks masage (43.2%).

6. Regarding reasons for giving home remedies for pneumonia in children, 63.1% of the mothers were influenced by some elder family member for using home remedies; 21% narrated good experience with home remedies in the past.

7. Our study revealed 50.9% of mothers delaying up to two days for seeking health facility services. 33.9% of mothers delayed for up to three days before seeking care. Another 13.7% of mothers delayed for even five days in trying home remedies for pneumonia in their children.

8. Regarding association of symptoms recognized by mothers & maternal demographic characteristics, the study revealed that relation of identification of pneumonia symptoms was statistically significant with higher educational status ( $p=0.04$ ), living in joint families ( $p=0.05$ ), higher parity ( $p= 0.02$ ); while it revealed no significant association with residence status ( $p= 0.12$ ), socio-economic status ( $p=0.06$ ) & working status of mothers ( $p=0. 11$ ).

9. Strikingly, mothers were seen more cautious about taking their male children to health facility earlier; among 248 children taken to health facility earlier ie within two days, 227 were males ( $p=0.01$ ); among them majority were of neonatal age ( $p=0.00$ ).

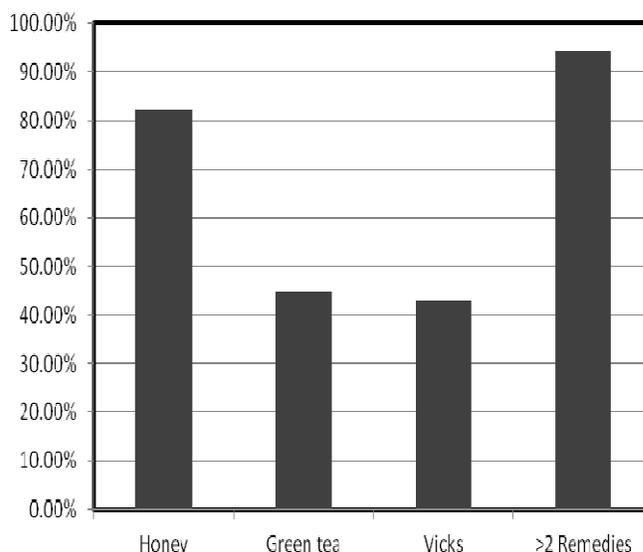
**TABLE I: SYMPTOMS IN CHILDREN AS PERCEIVED BY MOTHERS**

Symptoms	Frequency	%
Fever & cough	318	65.2%
Fast breathing & chest indrawing.	290	59.4%
Fast breathing (Pasli chalna)	211	43.2%
Noisy breathing	132	27%
Chest indrawing	79	16.2

**TABLE II: DEMOGRAPHIC CHARACTERISTICS OF THE MOTHERS IN STUDY POPULATION**

Demographic Characteristics of Mothers	Total no.	Correctly Diagnosed Pneumonia	%
<b>Maternal Educational Status</b>	327	36	11%
Illiterate	107	101	94.4%
Primary	54	53	98.1%
Post primary			
<b>Residential Status</b>			
Rural	236	108	45.8%
Urban	18	13	72.2%
Slum	234	169	72.2%
<b>Socio-economic Status</b>	398	218	54.8%
Poor	69	57	82.6%
Lower middle	21	15	71.4%
Upper middle			
<b>Working Status of Mothers</b>	42	19	45.2%
Working	446	271	60.8%
Non-working			
<b>Parity of Mothers</b>			
Para 2 or less	112	36	32.1%
Para 3-4	108	67	62.0%
Para 5 or more	268	187	69.8%
<b>Type of family</b>			
Joint Family	442	274	61.9%
Nuclear Family	46	16	34.8%

**GRAPH I: HOME REMEDIES GIVEN BY MOTHERS TO TREAT PNEUMONIA**



## DISCUSSION

Although pneumonia is a major cause of death in Pakistan, little is known about community perceptions of this disease. The sub-optimal child rearing practices, poverty & delays in care seeking are the major underlying factors for this disease<sup>9</sup>. According to Integrated Management of Neonatal & Childhood Illnesses, fast breathing & chest indrawing are the two basic parameters to identify pneumonia & its severity in children. In our study, these were the reported symptoms for pneumonia among 59.4% of the total mothers interviewed. A study conducted in Nigeria with similar objectives revealed 61% of mothers recognizing pneumonia by difficult breathing; while fast breathing was reported by 42% of the mothers and 26.5% of the mothers were of the opinion that severe cough was the symptom of pneumonia<sup>10</sup>. Several studies showed that mother's lack of education and being inexperienced as a caregiver were the two major risk factors for not recognizing childhood pneumonia<sup>11</sup>. The current study also endorses the same findings by revealing the statistically significant association between recognition of symptoms of pneumonia & maternal educational status ( $p=0.04$ ) & with parity of mothers ( $p=0.02$ ) (Table II); therefore increasing maternal educational level & her awareness regarding symptoms of pneumonia will have a positive impact. In another study, it was proved that educating the mothers was of utmost importance in good child rearing practices<sup>12</sup>. Uwaezuoke Y et al also concluded that the maternal knowledge score on pneumonia signs & symptoms increased significantly by increasing her educational level ( $p<0.05$ )<sup>10</sup>.

The mothers usually opt for home remedies from a variety of items available at their homes. In our study, most of mothers (94.4%) were using two or more home remedies. Honey was the most commonly utilized remedy for pneumonia (82.4%); green tea was used by 44.7% of the respondents, while 43.2% of the mothers were favoring child's chest massage by Vicks. A study conducted in Multan identified 53% of the mothers who had not sought any physician's help for treating their children for pneumonia; only 21% had paid visit to a qualified family physician, and 19% were giving self medication at home<sup>13</sup>. Similarly, a community based study conducted in Lahore found 71.2% of the mothers initiating the home based treatment on their own to treat pneumonia in their children<sup>14</sup>. This finding also embossed finding of our study that majority of the mothers felt no harm in initiating home remedies for pneumonia in their homes. Lahore's study although a very old study, but still it revealed that mothers were well aware about home management of pneumonia & 44.1% of them used allopathic drugs, 27.1% used Joshanda, 22% vicks rub, 22% honey,

20.3% soanf water, 15.2% tea, 11.9% kept the child warm and 8.5% gave boiled eggs to their children<sup>14</sup>. Our study findings were also comparable with another study conducted in India with the same objectives. The Indian study revealed honey and ginger in combination or separately to be the two most commonly used home remedies for cough & pneumonia<sup>15</sup>. Our study highlighted green tea being used as a home remedy by 44.7% of the mothers for their children. Green tea utilization had been associated with a lower risk of death from pneumonia in Japanese adults also but its role in children still needs research<sup>16</sup>. Honey, lemon & sesame seeds had long been labeled as the best remedies for pneumonia according to the concepts in Ayurvedic medicine<sup>17</sup>. Vicks massage was reported to be practiced by 43.2% of the mothers in our study. However Anwar KS pointed out in their study that most of the mothers (94.7%) using vicks had wrong concepts about it<sup>18</sup>. Therefore this issue also needs counseling the mothers. Residing in rural areas & belonging to poor families were the associated factors for relying on home remedies. In our study, 54.8% of the mothers belonged to poor families & were opting for home remedies for pneumonia in their children; however this association didn't prove to be significant ( $p=0.06$ ). Families in the poorest countries, where the majority of children are affected by pneumonia, may not have easy access to hospitals. In-patient treatment may not be an option for parents who cannot leave their homes to accompany the sick child. In addition, children with severe pneumonia are vulnerable to infections as a result of weak immunity and they could be at increased risk in crowded hospital wards. A community-based approach would bring treatment to people's homes, so that children with pneumonia can be identified and treatment begun before the onset of life-threatening complications<sup>19</sup>. A study in Bangladesh revealed that 45% of mothers living in rural community used home-made remedies; for example, massaging the child chest with mixture of warm oil and garlic or black cumin seed<sup>20</sup>. The relation of identification of pneumonia symptoms was statistically significant with maternal higher educational status ( $p= 0.04$ ), living in joint families ( $p=0.05$ ) & higher parity ( $p= 0.02$ ); A study conducted in Thailand on the same issue revealed that illiterate mothers were lacking knowledge about simple signs and symptoms of pneumonia<sup>21</sup>. Self administration of medications was reported by a good number of mothers (24%) in our study; but it was further seen in the study that majority of the mothers (50.9%) sought health facility's help within two days; while there was a delay of up to three days in 33.9% of the mothers. Iqbal M et al also cite that majority of the children were self treated at home & had visit to health facility after

an average of 3.0 days<sup>13</sup>. This point is very important to note that besides other factors, late care seeking was the major risk factors for fatal pneumonia<sup>22</sup>. This also highlights the need for proper training of care takers of the children. The study demonstrated that the target of ARI education in Pakistan should extend, beyond government doctors, to mothers & care seekers. A study was conducted to review the implementation of the community component of the Integrated Management of Childhood Illness (IMCI) strategy in a small village in Peru during the period 2004-2008 which revealed that the recognition of symptoms of pneumonia decreased the death rate among children by 18 per cent<sup>23</sup>.

### CONCLUSIONS & RECOMMENDATIONS

Our study concludes that although mothers & care seekers are quite aware about the symptoms of pneumonia in children; still a lot work is required to be done on providing guidance to them in order to raise their level of awareness; they might be encouraged to give home remedies to their children but at the same time should be able to identify danger our signs of pneumonia in their children & be able to consult health care providers whenever need arises. This can be achieved by incorporating the community component as well as health system component of Integrated Management of Neonatal & Childhood Illnesses (IMNCI).

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