

# Mothers' Practices in Caring for Children with Acute Respiratory Tract Infection

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## **Abstract**

*This descriptive-correlational study was conducted to determine the mothers' practices in caring for children with acute respiratory infection in a selected village in Cangkuang, Bandung Regency, West Java, Indonesia towards development of a community health education program. The participants in this study were 83 mothers of children with acute respiratory tract infections who were currently residing in Cangkuang Village, District Dayeuhkolot - Bandung Regency. They were selected using convenient sampling technique. The instrument used to gather data was a validated survey questionnaire. The study was conducted on December 2013 to January 2014. The data collected were subjected to statistical treatments using descriptive statistics such as frequency and percentage distribution, weighted mean using a 5- point Likert scale and inferential statistics such as Pearson and Chi square for hypothesis testing. The results of Chi square and Pearson tests revealed that the participants' age, family income, educational attainment and number of family member were not significantly correlated to the mothers' practices; however, the number of family member was found out to have a significant relationship to the mothers' practices in terms of personal hygiene only. The study concluded that age, educational attainment, family income and number of family member do not determine the capabilities of mothers in their caring practices but family density does affect how the mothers enforce on their children the practice of personal hygiene. The findings of the study form the basis of developing a community health education program for the residents of selected village under study. In this regard, an intensive information dissemination campaign program through a series of seminar- workshops in collaboration with the village officials and public health nurses in order to improve the mothers' practices in the areas of personal hygiene, environmental sanitation and treatment is recommended.*

**Keywords:** Acute respiratory tract infection, Children, Mother's practice in caring

## I. INTRODUCTION

### **A. Background**

Acute respiratory tract infections in most instances initially begins from a minor symptom like colds which can progressed to serious illness. Acute respiratory tract infections are caused by virus. This type of infections is a major cause of morbidity and mortality worldwide. They are responsible for one in five deaths in children under the age of five years (Harisson, 2009).

According to WHO (2009), acute respiratory tract infections continue to be the leading cause of acute illnesses worldwide and remain the most important cause of infants and young children mortality, accounting for about two million deaths each year and the first rank among the causes of disability adjusted life years lost in developing countries 94.6 million, 6.3% of total.

The incidents of acute respiratory tract infections in children are estimated to be 25% per child per year in industrialized countries. Most cases occur in India (43 millions), China (21 millions), Pakistan (10 millions), Indonesia and Nigeria (56 millions each). Pneumonia is responsible for about 21% of all deaths in children, leading to estimate that for every 1000 children born alive, 12-20 die from pneumonia before their fifth birthday (WHO, 2012).

According to the Central Bureau of Statistics in Bandung (2012), the percentage of children suffering from acute respiratory tract infections in Bandung Regency was 80.49%; Cangkuang Village, subdistrict, has recorded 75% of children afflicted by various acute respiratory ailments.

Public health center data (2012) found out that Cangkuang Village had the highest number of cases of children with acute respiratory tract infections.

Based on the survey done (2013) in Bandung, Indonesia, the leading causes of acute respiratory infections were poor environmental sanitation and poor hygienic practices of mothers in the care of their children. The researcher, who is a community health nurse instructor, is constantly exposed to this type of health problem in the community she served. Hence, she is challenged to conduct a study to investigate the mothers' practices in caring for their children with acute respiratory tract infections in Cangkuang Village. The results of the study would be the basis in developing a community- based health program.

### **B. Statement of the Problem**

This study aimed to determine the mothers' practices in caring for children with acute respiratory tract infection in the village of Cangkuang, Bandung Regency, West Java, Indonesia. Specifically, this study sought answers to the following questions:

1. What is the demographic profile of the participants in terms of:
  - 1.1. Age,
  - 1.2. Monthly family income,
  - 1.3. Educational Attainment, and
  - 1.4. Number of family members?
2. What are the practices of the participants in caring for their children with acute respiratory tract infection with regards to:
  - 2.1. Personal Hygiene,
  - 2.2. Environmental Sanitation and
  - 2.3. Treatment at home?
3. Is there any significant relationship between each of demographic profile of the participants and their practices?
4. Based on the findings of the study, what community health education program can be proposed?

### **II. METHODS**

This research design was used in this study to determine whether the demographic profile of the participants and their caring practices they use for their children with acute respiratory tract infection is significantly correlated. The study was conducted in Cangkuang Village, one of the main part of Dayeuhkolot Subdistrict which is located in Bandung Regency, West Java, Indonesia. The target population were mothers of children with acute respiratory tract infection, residing in the working area of community health center in Cangkuang Village. A total of 83 participants were recruited through convenient sampling technique.

This study utilized survey questionnaires, which was developed by the researcher based on the related literature. Pearson test was utilized to determine the significant relationship between the demographic profile of the participants in terms of age, family income, and number of family members of the mothers and their practices in caring for their children with acute respiratory tract infections; while Chi-square test was used to determine the significant relationship between the educational attainment of the mothers to their practices.

### **III. RESULTS**

Table 1. Demographic Profile of the Participants

Variables	Frequency (f)	Percent (%)
Age (in years)		
16 – 20	6	7.00
21 – 25	20	24.00
26 – 30	24	29.00
31 – 35	16	19.00
36 – 40	13	16.00
41 – over	4	5.00
Monthly Family Income (Rp)		
500,000 – 1,000,000	20	24.00
1,000,001 – 1,500,000	35	42.00
1,501,000 – over	28	34.00
Educational Attainment		
No School	2	2.00
Elementary School	44	53.00
Junior High School	24	29.00
High School	12	14.00
College	1	1.00
Number of family member		
4 – 6	33	40.00
7 – 9	49	59.00
10 – over	1	1.00

On the area of *personal hygiene*, the data revealed that the highest-rated indicators are on item 4, "I keep the skins of the children with their bathing 2 times a day" (WM= 3.43) and item 8, "I keep cleaning my children's nails" (WM=3.32).

On the other hand, item 6, "My family members and I wear a mask to prevent contamination" got the lowest mean rate of 0.00.

The submean rating for the area on personal hygiene is 1.92 with descriptive index of “sometimes practice” which showed that the participants only practices most of the items about three times a weeks only.

With regards to *enviromental sanitation*, the data revealed that the highest-rated indicator is item 14 “*I prepare food that is safe and clean*” (WM= 3.82).

In the home environment, item 1, “*I clean the house*” got a high rating of 3.17, which implies that the mothers often clean their houses at least four times a week.

Table 2. Mothers’ Practices in Caring for Children with Acute Respiratory Tract Infection

Indicators	WM	Descriptive Index
<b>a. Personal Hygiene</b>		
1. I wash hands before handling for children	1.75	Sometimes
2. I teach children to wash their hands with soap and running water before and after eating to keep their hands	1.86	Sometimes
3. I teach my children to brush their teeth twice a day	2.71	Often
4. I keep the skins of the kids with their bathing 2 times a day.	3.43	Always
5. I teach my children to maintain oral hygiene	0.84	Rarely
6. My family members and I wear masks to prevent contamination.	0.00	Never
7. I use separate utensils with my children when setting up at the dinner table	1.47	Rarely
8. I keep my children’s nails clean	3.32	Always
Sub Mean	1.92	Sometimes
<b>b. Environmental Sanitation</b>		
1. I clean the house.	3.17	Often
2. I change my children’s bed sheets	1.24	Rarely
3. I keep the drainage clear	1.34	Rarely
4. I use electric mosquito remedies	1.17	Rarely
5. I use firewood for cooking.	0.50	Never
6. I set items in the children’s rooms so they will not look crowded.	1.42	Rarely
7. I clean the household furniture to avoid dust	2.12	Sometimes
8. I open the windows to allow air to come into the rooms.	1.48	Rarely
9. I protect my children when they go through the roads crowded with vehicles.	2.76	Often
10. I forbid people smoking inside the house to avoid air pollution.	1.61	Sometimes
11. I use water that has been sterilized	0.28	Never
12. I separate the organic and non-organic garbage and dump it into temporary shelters.	0.72	Never
13. I maintain the room temperature good enough for the children	1.95	Sometimes
14. I prepare food that is safe and clean.	3.82	Always
15. I manage liquid and solid waste for disposal that does not produce odor and contaminate water sources.	2.49	Often
Sub Mean	1.69	Sometimes
<b>c. Treatment</b>		
1. If the children temperature is over 38°C, I give febrifuge and compress with warm water.	3.52	Always
2. I give regular medication.	4.00	Always
3. I give medicine without doctor's instructions.	1.19	Rarely
4. If children cough with phlegm thick, I give water to reflec the phlegm in the lungs.	3.73	Always
5. I can recognize the signs and symptoms of a disease in children.	3.39	Always
6. I give more fluids to prevent dehydration, enough food and enough nutrition.	3.47	Always
Sub Mean	3.22	Always
<b>GRAND MEAN</b>		

Legend:

3.21 – 4.00	Always
2.41 – 3.20	Often
1.61 – 2.40	Sometimes
1.81 – 1.60	Rarely
0.01 – 0.80	Never

The study also found out that the participants never practiced using sterilized water (item 11 with WM = 0.28), never used firewood for cooking (item 5 with WM = 0.50) and never practice segregation of waste materials (item 12 with WM = 0.72). These findings suggest that mothers do not boil the water they will use for drinking since they think that the water they use is clean and can be directly drink or consume.

The area of environmental sanitation got a submean rating of 1.69 with descriptive index of “sometimes practice” which would mean that the participants only practices most of the indicators about three times a weeks only.

Finally, in the area of *treatment*, the data in Table 2 revealed that the highest-rated indicator is item 2, “*I give regular medication*” with weighted mean of 4.00. This finding showed that participants would always give medicine to their children suffering from colds and cough on a regular basis.

The other highest rating obtained was from item 4, “If my children have a fever I immediately bring them to the health center” with weighted mean of 3.73. This shows that mothers always bring their children to the health center if their children manifest any signs and symptoms of acute respiratory infection such as fever, colds, cough and body weakness. Mothers also provide home interventions to their children like giving cold compress and medicine for fever.

On the other hand, item 3, “I give medicine without doctor's instructions” got the lowest mean rating of 1.19. This suggested that participants rarely give any medicine to their children without doctor’s prescription.

It is noteworthy that the submean rating obtained in the area of treatment is 3.22 which indicated that home treatments included in this indicator were always practiced by the mothers. This would suggest that mothers provided home care interventions to their children with acute respiratory infections using traditional remedies.

Table 3. Mothers’ Practices in Caring for Children with Acute Respiratory Tract Infections

Indicators	Sub Mean I	Descriptive Index
Personal Hygiene	1.92	Sometimes
Environmental Sanitation	1.69	Sometimes
Treatment	3.22	Always
Grand Mean	2.27	Sometimes

The data revealed that the mothers’ practices on the area of *treatment* with submean of 3.22 rank the highest, which suggested that the participants always provide home care remedies to their children. The indicators in the area of personal hygiene (submean = 1.92) is ranked second and environmental sanitation (submean = 1.69) is ranked third. The findings showed that the participants’ caring practices in terms of these two areas were only performed at about three times a week only.

Table 4 illustrates the relationship analysis between age and mothers’ practices in terms of personal hygiene, environmental sanitation and treatment. The results showed that all the variables in mothers’ practices, namely: personal hygiene ( $r_{xy} = 0.174$ ), environmental sanitation ( $r_{xy} = 0.083$ ), and treatment ( $r_{xy} = -0.014$ ), exhibit no significant relationship to their age, hence, the null hypothesis is accepted

Table 4. Significant Relationship between Age and Mothers’ Practices

Variables	Computed $r_{xy}$	InterPretation	Decision
Age and Personal Hygiene	0.174	Not Significant	Accept $H_0$
Age and Environmental Sanitation	0.083	Not Significant	Accept $H_0$
Age and Treatment	-0.014	Not Significant	Accept $H_0$

Critical Value at  $df = 80; \alpha = 0.05 - \pm .217$

This result suggests that age does not affect how the mothers care for their children with acute respiratory tract infection in terms of personal hygiene, environmental sanitation and treatment.

Table 5. Significant Relationship between Family Income and Mothers’ Practices

Variables	Computed $r_{xy}$	Interpretation	Decision
Family Income and Personal Hygiene	0.162	Not Significant	Accept $H_0$
Family Income and Environmental Sanitation	0.154	Not Significant	Accept $H_0$
Family Income and Treatment	-0.009	Not Significant	Accept $H_0$

Critical Value at  $df = 80; \alpha = 0.05 - \pm .217$

The data revealed that all the variables on mothers’ practices, namely: personal hygiene ( $r_{xy} = 0.162$ ), environmental sanitation ( $r_{xy} = 0.154$ ), treatment ( $r_{xy} = -0.009$ ), exhibit no significant relationship to their family income, thus, the null hypothesis is accepted.

The results suggest that mothers do take care of the needs of their children in the areas of personal hygiene, environmental sanitation and treatment of the signs and symptoms of respiratory tract infection regardless of their family income.

Table 6. Significant Relationship between Educational Attainment and Mothers’ Practices

Variables	Df	Critical $X^2$ Value ( $\alpha = .05$ )	Computed $X^2$ Value	Interpretation	Decision
Educational Attainment and Personal Hygiene	12	21.026	11.676	Not Significant	Accept $H_0$
Educational Attainment and Environmental Sanitation	4	9.488	5.559	Not Significant	Accept $H_0$
Educational Attainment and Treatment	4	9.488	1.923	Not Significant	Accept $H_0$

As revealed in the above table, the data showed that all the variables in mothers practices, namely: personal hygiene (critical  $X^2$  value= 21.026, computed  $X^2$  value= 11.676), environmental sanitation (critical  $X^2$  value= 9.488, computed  $X^2$  value= 5.559), and treatment (critical  $X^2$  value = 9.488, computed  $X^2$  value= 1.923), have no significant relationships to educational attainment; therefore, the null hypothesis is accepted. This means that educational attainment of the participants do not affect their caring practices for their children with respiratory tract infections.

Table 7 illustrates the relationship analysis between the number of family members and mothers' practices. The data showed that among the three indicators on mothers' practices, only personal hygiene ( $r_{xy} = -0.266$ ), was significantly related to personal hygiene; hence, the null hypothesis is rejected. Meanwhile, the number of family members exhibited no significant relationship to environmental sanitation and treatment; hence, the null hypothesis is accepted.

Table 7. Relationship between Number of Family Members and Mothers' Practices

Variables	Computed $r_{xy}$	Interpretation	Decision
Number of Family Members and Personal Hygiene	-0.266	Significant	Reject $H_0$
Number of Family Members and Environmental Sanitation	-0.072	Not Significant	Accept $H_0$
Number of Family Members and Treatment	-0.010	Not Significant	Accept $H_0$

Critical Value at  $df = 80$ ;  $\alpha = 0.05$  -  $\pm .217$

On the other hand, the indicators environmental sanitation ( $r_{xy} = -0.072$ ), and treatment ( $r_{xy} = -0.010$ ) which showed no significant relationship to number of family members suggest that number of family member does not affect their practices in these areas.

The results of hypothesis tests showed that all the variables in mothers' practices, namely: personal hygiene, environmental sanitation and treatment have no significant relationship to their profile variables like age, family income and educational attainment. Results also revealed that environmental sanitation and treatment have no significant relationship to the number of family members but exhibited a significant relationship to the practice of personal hygiene.

#### IV. CONCLUSION

In the light of the findings of the study, the following conclusions were drawn: no significant relationships exist between the selected demographic profile of participants in term of age, family income, and educational attainment and each of the mothers' practices, the null hypothesis is accepted. Likewise, no significant relationship exists between number of family members and the mothers' practices in the area of environmental sanitation and treatment; therefore, the null hypothesis is also accepted. However, there is a significant relationship in area of personal hygiene; thus, the null hypothesis is rejected.

#### V. RECOMMENDATIONS

Based on the results and conclusions, the following recommendations are hereby offered :

1. An intensified information and education campaign program in collaboration with the village officials to improve the health practices of mothers in environmental sanitation and personal hygiene through health teachings, home visits and distribution of information and educational campaign materials.
2. Conduct health teachings such as mothers class utilizing the proposed community health education program to promote understanding of the importance of proper health practices in the prevention of respiratory tract infections and promotion of health.

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