

CHAPTER 4

ANALYSIS AND INTERPRETATION OF DATA

This chapter includes analysis on the basis of study's objectives.

Gathered data was first coded and incorporated in a master data sheet and then the analysis was done using SPSS 22.0 version. Data was checked for normal distribution by applying Shapiro- wilk test. Dependent variable viz knowledge and practice of mothers were normally distributed. Hence, descriptive and inferential statistics were used. Another dependent variable viz. frequency of symptoms and number of ARI episodes in under five children did not follow normal distribution. Hence, non-parametric test was used to analyse data. Maan-Whitney test was used to compare means between the experimental and control group. Furthermore, Wilcoxon test was applied to find difference within group.

Organization of findings

The analysed data were organized and presented according to the study's objectives.

Objective 1: To explore barriers related to prevention and management of acute respiratory infection in under five children

Table no 1: Socio-demographic characteristics of study participants of focus group discussion

n= 30

S.no	Variables	Frequency (n)	Percentage (%)
1	Age of Mother in years <ul style="list-style-type: none"> • Less than 20 • 21-25 • 26-30 • 31-35 • More than 35 	00 08 14 08 00	00.0 26.6 46.6 26.6 00.0
2	Mother's Education <ul style="list-style-type: none"> • Primary • Secondary • Graduation • No formal education 	02 11 16 01	06.7 36.7 53.3 03.3
3	Mother's Occupation <ul style="list-style-type: none"> • House wife • Private Job • Govt Job 	22 07 01	73.3 23.3 03.3
4	Father's Education <ul style="list-style-type: none"> • Primary • Secondary • Graduation • No formal education 	06 12 11 01	20.0 40.0 36.7 03.3
5	Father's occupation <ul style="list-style-type: none"> • Private Job • Govt Job • Daily Wages • Self-employment 	10 02 14 04	33.3 06.7 46.7 13.3
6	Family Income per month <ul style="list-style-type: none"> • Rs.4500-Rs.8000 • Rs.8000-Rs.12000 • > Rs.12000 	03 12 15	10 40 50

7	Family Type <ul style="list-style-type: none"> • Nuclear • Joint • Extended 	14 14 02	46.7 46.7 06.7
8	Family Dietary Pattern <ul style="list-style-type: none"> • Non-vegetarian • Vegetarian 	13 17	43.3 56.7
9	No of children in the Family <ul style="list-style-type: none"> • One • Two • Three 	05 14 11	16.7 46.7 36.7
10	Exposure to educational session on ARI <ul style="list-style-type: none"> • Yes • No 	09 21	30 70

The data presented in table no 1 illustrate that majority of mothers 14 (46.6%) were in the age group of 26 to 30 years. About 16 (53.3%) mothers and 12 (36.7%) fathers were graduates. Majority of mothers 22 (73.3%) were house wife and most of the fathers 14 (46.7%) were daily wages. Majority of families 17 (56.7%) were vegetarian. Most of the mothers 14 (46.7%) had two children. Majority of mothers 21 (70%) were not having any exposure to educational session on prevention and management of acute respiratory infection.

Qualitative Analysis

Focus group discussions were conducted among mothers to explore barriers related to prevention and home-based management of ARI in children. The mother's responses were audio recorded. The discussions were listened multiple times then transcription was done from audio recorded version to written verbatim in Hindi. The transcribed Hindi version was then translated in to English. Thematic analysis was done to identify various codes and common codes were grouped in to categories to generate

major themes. Complementary triangulation method was used to validate the findings of qualitative analysis.

Table no 2: Following themes were generated:

Theme	Subtheme	Narration
Lack of awareness	Unaware of facts regarding ARI among under five children	<p>“Infection in lungs occurs due to winter season only among children”</p> <p>“Throat infection does not affect lungs”</p> <p>“The biggest difficulty for me is to monitoring the sign of abnormal breathing for my child as he was constantly sick.”</p> <p>“Child has irritating behaviour and continuous crying”</p>
Follows old traditional practices for management of ARI at home	Following ritualistic family practices for recovery of child	<p>“Sometimes child gets fever due to ‘Evil Eye’ so we use oil lamp to get rid off the Evil Eye or take child to a religious healer. If there is no improvement in 4-5 days then we take the child to the doctor.”</p> <p>“I apply egg paste on chest of my child and cover it with cotton so that Child can get warmness which is told by my</p>

		<p>mother-in-law.”</p> <p>“I apply kerosene oil mixed with Vicks on the chest and do slow massage on chest. My mother-in-law says that it gives warmth to the body and gives quick relief to the child who suffers from respiratory infection”</p> <p>“Gives musk pellets (Kastoori goli) to the child.”</p>
<p>Low parental self-efficacy</p>	<p>a) Low confidence in managing child with ARI</p> <p>b) Perceived inefficient caring skill</p>	<p>"I continue to feel lack of confidence in my ability to manage my child's disease. My child easily gets sick when weather change instantly”</p> <p>“I am afraid of using any remedies and treatment at home as I anticipate harmful consequences of such remedies.”</p> <p>“I am really struggling with my confidence as a mother. I doubt myself all the time that I am not doing good job as my child getting sick constantly.”</p> <p>“I face difficulty in handling my child while he is sick as this is my first experience for providing care to my</p>

	<p>c) Feeling anxious due to illness of child</p>	<p>child.</p> <p>“The greatest difficulty is managing and controlling children to avoid exposing them to risk factors such as smoke and dust in the environment when they go out to play”</p> <p>“Feeding my child became biggest challenge for me when he was ill, anorexic, nauseatic and irritable and I feel very anxious about condition of my child.”</p> <p>“Seeing my child sick with respiratory infection is very stressful. It makes me feel very anxious and sometimes I cry thinking why my child is getting sick.”</p> <p>“It is very hard and painful to see my child struggle to breathe and make me cry and anxious. “</p>
<p>Family issues</p>	<p>a) Conflicts in Family and stressed relationship with spouse</p>	<p>“Sometimes in the house, there is little argument with mother-in-law and other family members over small things. This creates tension between me and my husband. Due to this I neglect the care</p>

	<p>b) Dependant on Family Decision for Child Health Care</p> <p>c) Lack of Co-operation from spouse /family at home in child rearing</p>	<p>of child.</p> <p>“I mostly depend on decision of parents in the family regarding treatment and care of child in sick condition for best recovery of child as they are more experienced and knowledgeable in ensuring the best recovery for the child than us.”</p> <p>“When it comes to making health care decision for my child, it is crucial for me and becomes frustrating as my family members take decision on treatment, remedies and hospitals for child.”</p> <p>“Our child becomes more irritable which make me feel incompetent in managing my child that’s why I always feel that family members and husband needed to take care of child along with me.</p> <p>“I feel very frustrating and overwhelmed because it often seems like I am the only one taking care of the</p>
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		<p>child. Parenting should be a team effort but I often find myself doing it alone. I wish they could understand how important family and spouse support is in rearing child as its very irritating to do it alone.”</p>
<p>Time constraints</p>	<p>a) Overburden due to household chores</p> <p>b) Busy with job</p>	<p>“I take care of my child alone so I cannot pay much attention to my child along with too much housework.”</p> <p>“I am failing to take care of my child due to being constantly busy in household work and responsibilities which often leaves me exhausted and distracted</p> <p>“It becomes difficult to take care of the child properly as I have to go for work outside for earning and do my own household work before going to work. My in-laws take care of the child but they are not able to look after the child a lot because they are aged.</p> <p>“I continuously struggle to find balance between my job and personal life as mother.”</p>

Theme 1: Lack of awareness

Most of mothers had lack of knowledge and most of them answered only initiative and common symptom of acute respiratory infection.

1.1: Unaware of facts regarding ARI among under five children: Most of the mothers did not clearly understand the concept of acute respiratory infection. They enlisted the symptoms only not the proper understanding of occurrence of these symptoms. They expressed that it occurs due to winter season and intake of cold water and drinks. Mothers did not explain basic phenomenon, process of disease occurring and its complete consequences on health.

Quotes related to subtheme

“Infection in lungs occurs due to winter season only among children”

“Throat infection does not affect lungs”

“Child has irritating behaviour and continuous cry”

“child has fever and fast breathing”

“Our child has trouble breathing. The child cries because he feels pain.”

“Infection in throat cause laboured breathing but don't know how this process occur and had bad affect on lungs.”

“The biggest difficulty for me is to monitoring the sign of abnormal breathing for my child as he was constantly sick.”

“The child gets nausea and sometimes the child's ribs start moving fast, the child cries again and again and also get fever and lead to affect on lungs but how it occurs that I don't know.”

Theme 2: Follows old traditional practices for management of ARI at home

Most of the mothers expressed their behaviour and belief in terms of therapeutic measures required for the treatment of child. They were more influenced by the cultural and social practices or legacy they acquire from their older ones to treat respiratory infection.

2.1: Following ritualistic family practices for recovery of child

Various rituals healing measures used and follow religious healer person instruction as therapeutic intervention while caring for the children suffering from common disease like Respiratory infection. Most of the mothers shared various old traditional practices were followed by them as they found beneficial to cure respiratory infection told by senior family members.

Quotes related to sub theme

“sometimes if child gets fever due to ‘Evil Eye’ so we use oil lamp to get rid off the Evil Eye. or take child to religious healer If there is no improvement after 4-5 days then we take the child to the doctor.”

“Sometime we go to religious healer person as child have affect of evil eye from others peoples. Religious healer person blows off ashes over the child after reading few mantras. If it does not relieve symptoms and irritability of child after 3-4 days of this along with application of home remedies then go to hospital.”

“I apply egg paste on chest of my child and cover it with cotton so that Child can get warmness which is told by my mother-in-law”

“I apply kerosene oil mixed with vicks on chest and do slow massage on chest. My mother-in-law says that it gives warmth to the body and gives quick relief to the child who suffer for respiratory infection”

“Gives musk pellets (Kastoori goli) to the child.”

Theme 3: Low parental self-efficacy

Majority of mothers expressed that feeling of doubts, stress and insecurity in their parenting abilities while providing care to child when they are sick and leads to heightened stress level as mothers were constantly worry about their skill for caring child. The three subthemes are generated under this theme: Low confidence in managing child with ARI, perceived inefficient caring skill, Feeling anxious due to illness of child.

3.1: Low confidence in managing child with ARI: Mothers expressed their feeling of insecurities, lack of confidence and experience in home care leads to unsuccessful expected outcome of maintenance of health of child.

Quotes related to subtheme

“I continue feel to have lack of confidence in my ability to manage my child's disease. My child easily gets sick when weather change instantly.”

“I felt fear of any harmful consequences of any remedies and treatment at home.”

“I am really struggling with my confidence as mother. I doubt myself all the time that I am not doing good job as my child getting sick constantly.”

“I am afraid of using any remedies and treatment at home as I anticipate harmful consequences of such remedies.”

3.2: Perceived inefficient caring skill: Mothers reported that they treat their children based on their understanding of illness and personal experience and then consult health facility when no improvement occurs and not sufficiently reassured about her information regarding disease. They perceive lack of caring skill as inefficient as they struggle in meeting the child's needs and lead to feelings of inadequacy and self-doubt.

Quotes related to subtheme

"I face difficulties to handle my child as this is my first experience for providing care to my child, so takes too much time "

"The most difficult thing is that my child coughs for a long time and makes my child doesn't want to eat and anorexic. Therefore, it is difficult to practice a reasonable diet"

"The greatest difficulty is managing and controlling children to avoid exposing them to risk factors such as smoke and dust in the environment when they go out to play"

3.3: Feeling anxious due to illness of child: Mothers expressed their experience about intense anxiety when their child falls ill. They said that well being of their little ones is primary concern and sign of their sickness trigger a wave of worry. This anxiety manifested as sleepless night, continuous monitoring of child's condition and seeking reassurance from health care professionals.

Quotes related to subtheme

"My child's feeding presents the biggest challenge when he was ill, anorexic, vomiting, fussy and irritable." I feel very anxious about disease of my child."

“Seeing my child sick with respiratory infection is incredibly stressful. It makes me feel very anxious and sometimes I cry why my child getting sick.”

“I feel very overwhelmed. I don’t know if I am doing right things to make feel my child better and relieve symptoms.”

“It is very hard and painful to see my child struggle to breathe and make me cry and anxious.”

“Feeding my child became biggest challenge for me when he was ill, anorexic, nauseatic and irritable and I feel very anxious about condition of my child.”

Theme 4: Family issues

It was admitted by most of the mothers that family characteristics widely influenced the therapeutic and preventive measures required for child care.

4.1: Conflicts in Family and stressed relationship with spouse: Mothers were aware of the fact and experienced that family issues and conflict among partners definitely affect the good level of care to be provided to child.

Quotes related to subtheme

“Sometimes in the house, there is little argument with the mother in law and other family members over such small things due to their rude behaviour which creates tension between me and my husband. Due to this little tension, stressful environment and irritable behaviour of mine thereby neglecting the care of child at good extent”

“It’s been really tough about constant conflict within our family leads to tension about for not providing proper care attention on child.”

4.2: Dependant on Family Decision for Child Health Care: Mothers expressed that sometimes they are not the common decision maker in the family which directly impacts the treatment required for the child. Due to certain boundaries in the family, mothers cannot take independent decision related to care of their sick child.

Quotes related to subtheme

“I mostly depend on decision of parents in the family in aspect of treatment and care of child in sick condition for best recovery of child as they are much experienced than us”

“When it comes to my child’s health care decision. It’s crucial for me and frustrating as my family members take decision on treatment, remedies and hospitals for child.”

4.3: Lack of Co-operation from spouse /Family at home in child rearing: As mothers shared the need of family/spouse helping hand in rearing the child which leads to Hurdles in providing care that does not meet the expected outcome for development of child.

Quotes related to subtheme

“Our child becomes more irritable which make me feel incompetent in managing my child with house work that’s why I always feel that family members and husband needed to take care of child along with me as it becomes difficult for me with household chores”

“I feel very frustrating and overwhelmed because it often seems like I am the only ne taking care of child. Parenting should be team effort but I often find myself doing it alone. I wish they could understand how important family and spouse support is in rearing child as its very irritating to do it alone.”

Theme 5: Time Constraint

Majority of mothers shared that due to lack of time, there is ignorance in activity and health of child continuously which directly affect the growth and development of child.

5.1: Overburden due to household chores

Lack of sufficient time due to pre-occupancy of household works was found to be one of the hindering factors in providing care at the good.

Quotes related to subtheme

“I take care of my child alone which is why I cannot pay much attention to my child along with too much housework for me. “

“I am failing to take care of my child the way I want due to constant busy in household chores and responsibilities often leaves me exhausted and distracted.”

5.2: Busy with jobs

Working mothers face enormous challenges and difficulties integrating their daily occupation and managing the needs of sick children.

Quotes related to subtheme

“It’s become difficult to take care of child properly as I have to go for work outside for earning and do my own household work before going for work and my in laws take care of child but they are not able to look after because are aged.”

“I continuously struggling to find balance between my job and personal life as mother.”

Objectives 2: To identify risk factors of acute respiratory infection in under five children.

Risk factors were categorized in four components. 1. Child’s characteristics 2. Environmental characteristics 3. History of illness in last six months 4. Nutritional history during infancy period.

Table no 3: Frequency and percentage distribution of children based on risk factors of ARI

S.no	Factors	Experimental group (n=209)		Control group (n=221)	
		F	%	F	%
I.	Child’s Characteristics				
1.	Low Birth weight	56	26.79	74	33.48
2.	Preterm birth of child	28	13.39	83	37.55
3	First birth order of child	43	20.57	76	34.38
II.	Nutritional history during infancy period				
1	Received Pre-lacteal feed	36	17.22	73	33.03

2	Did not receive exclusive breastfeeding	38	18.18	36	16.28
3	Bottle feeding	68	32.53	66	29.86
4	Early initiation of weaning	49	23.44	57	25.79
III	History of illness in last six months				
1	History of any other illness in child	30	14.35	27	12.21
2	Family history of respiratory infection	07	03.34	09	04.07
IV.	Environmental Characteristics	Experimental group (n=121)		Control group (n=133)	
		F	%	F	%
1.	Open drainage system	79	65.28	85	63.90
2.	Indoor smoking by family members	36	29.75	61	45.86
3.	Overcrowding in house	40	33.05	49	36.84
4.	House located near to dusty main road	47	38.84	38	28.57
5.	Pets in house	37	30.57	44	33.08
6.	Open Waste disposal	38	31.40	33	24.81
7.	Inadequate ventilation status of house	32	26.44	16	12.03
8.	Smoky Fuel used for cooking	12	09.91	08	06.01
9.	Kuccha House	08	06.61	10	07.50

Table no 3 shows that 56 (26.79%) children in experimental group and 74 (33.48%) children in control group had low birth weight, 28 (13.39%) children in experimental

group and 83 (37.55%) children in control group were born preterm, 43 (20.57%) children and 76 (34.38%) children were first born child in experimental group and control group respectively.

Regarding nutritional history during infancy period, 36 (17.22%) and 73 (33.03%) children received pre-lacteal feed in experimental and control group respectively, 38 (18.18%) in experimental group and 36 (16.28%) in control group did not receive exclusive breast feeding till 6 months, 68 (32.53%) in experimental group and 66 (29.86%) in control group were practicing bottle feeding, 49 (23.44%) in experimental group and 57 (25.79%) in control group had initiated weaning early before six months.

Regarding history of illness, 30 (14.35%) children in experimental group and 27 (12.21%) children in control group had history of illness in past six months.

Regarding environmental characteristics, majority of the houses had open drainage system in both 79 (65.28%) experimental and 85 (63.90%) control group, 36 (29.75%) in experimental group and 61 (45.86%) in control group were practicing indoor smoking by family members, 40 (33.05%) in experimental and 49 (36.84%) in control group had overcrowding in house, 47 (38.84%) houses in experimental group and 38 (28.57%) houses in control group were located to nearby road, 37 (30.57%) in experimental group and 44 (33.08%) in control group had pets in house, 38 (31.40%) in experimental and 33 (24.81%) in control group doing open waste disposal. 32 (26.44%) in experimental and 16 (12.03%) in control group had inadequate ventilation of house.

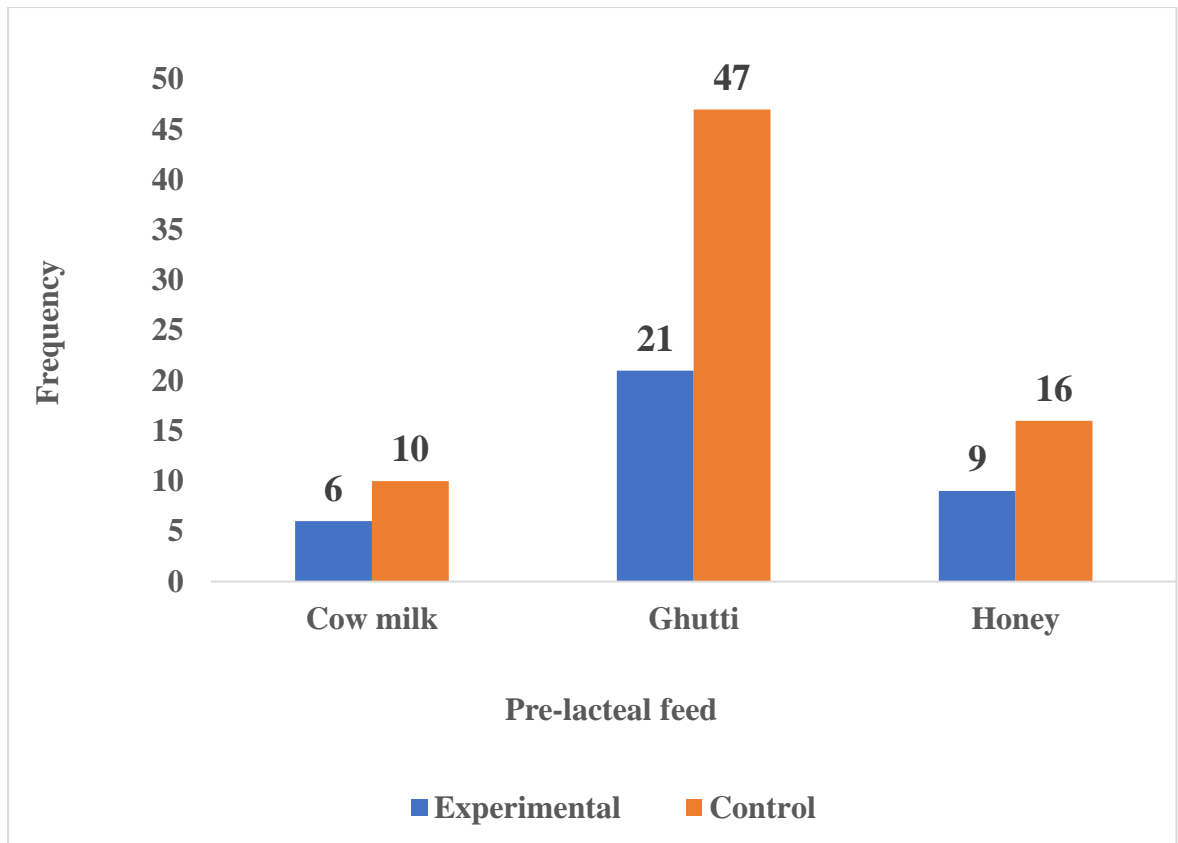


Figure no 5: Bar diagram representing frequency distribution of pre-lacteal feed

In experimental group, 36 (17.22%) children and 73 (33.03%) children in control group received pre-lacteal feeding. Among them, most of children received Ghutti as pre-lacteal feed before initiating first breastfeeding described in fig no 5.

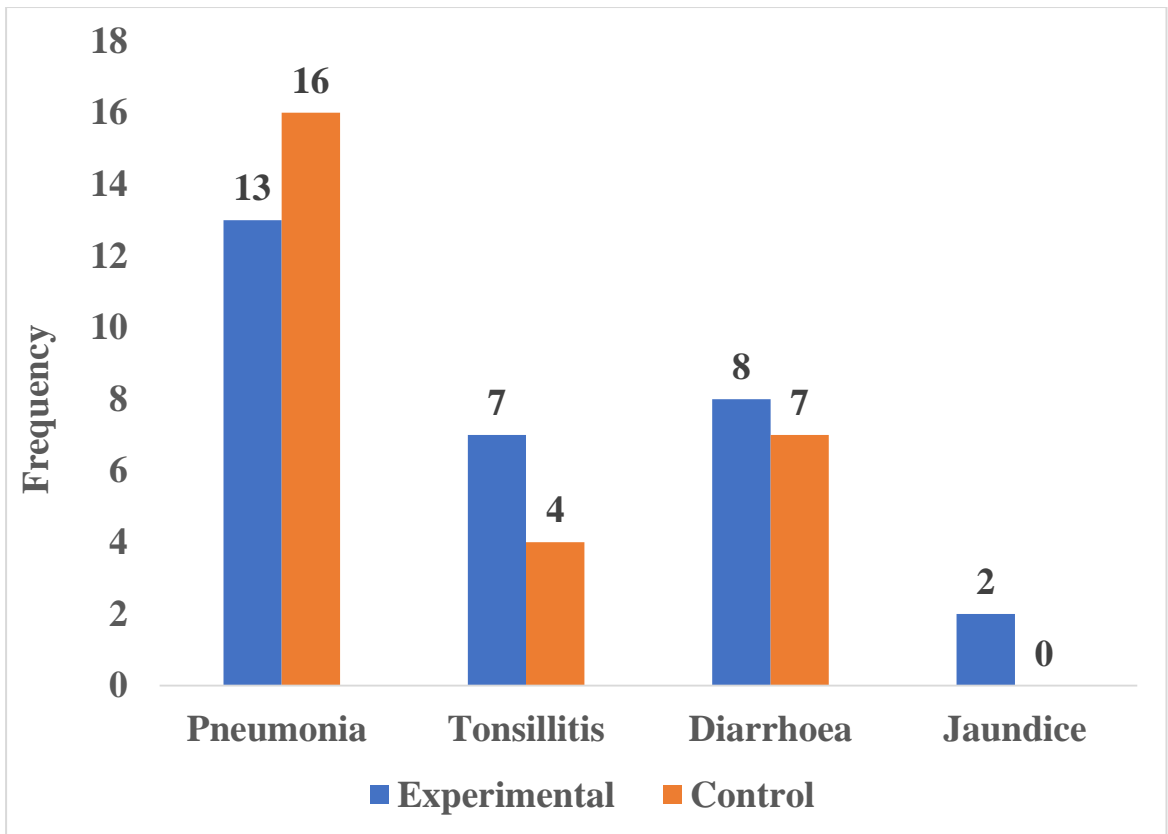


Figure no 6: Bar diagram representing frequency distribution of history of any other illness in child in past six months

In experimental group, 30 (14.35%) children and 27 (12.21%) children in control group had history of other illness in past six months. Among them, majority of children suffered with pneumonia in both experimental and control group described in fig no 6.

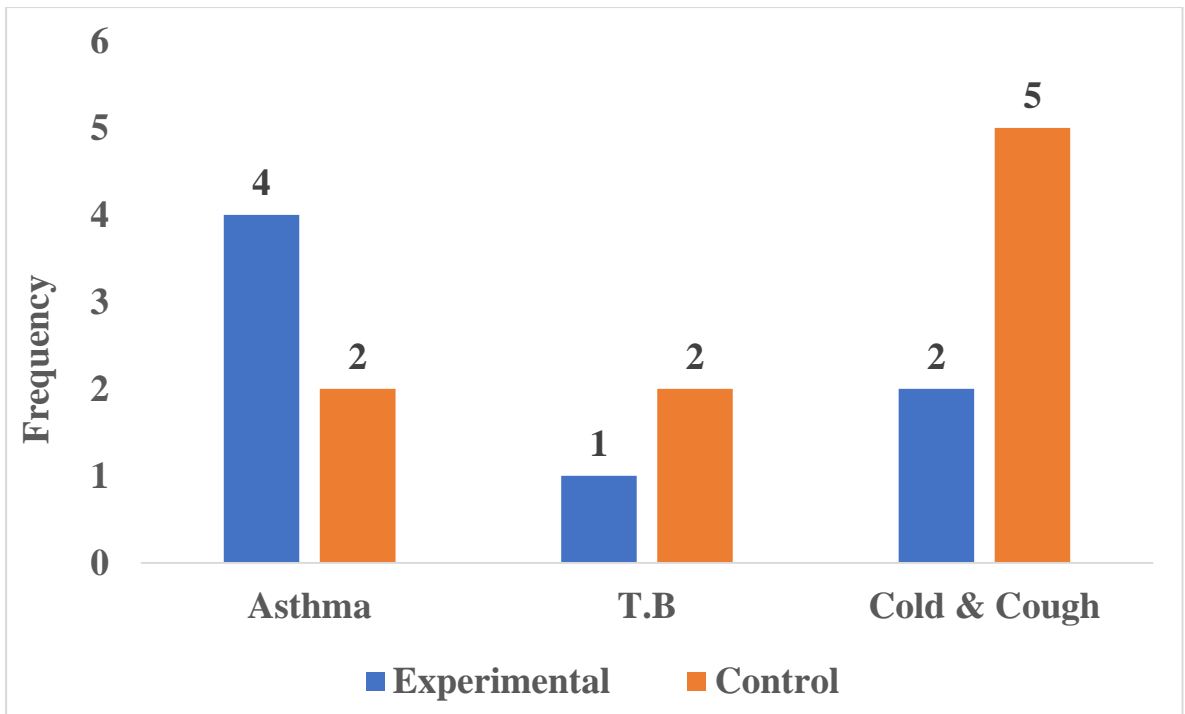


Figure no 7: Bar diagram representing frequency distribution of family history of respiratory infection in past six months

In experimental group, 07 (3.34%) family and 09 (4.7%) in control group had history of respiratory infection in past six months. Most of them had history of asthma, cold and cough in both experimental and control group described in fig no 7.

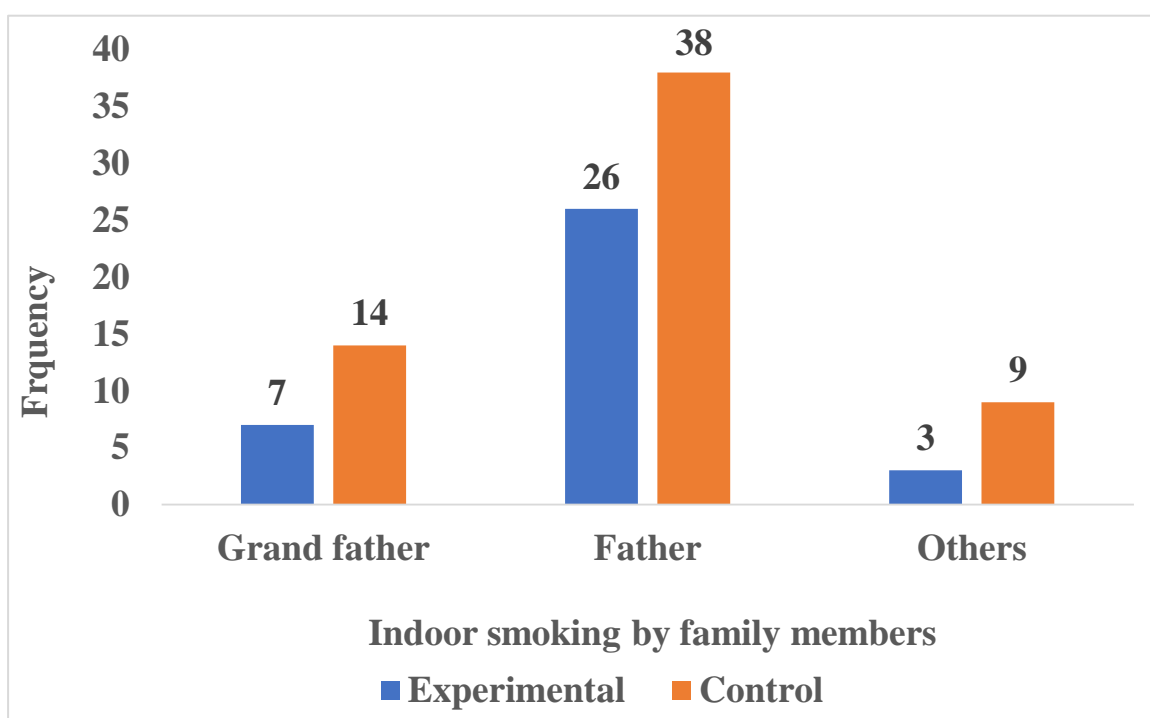


Figure no 8: Bar diagram representing frequency distribution on indoor smoking done by family members

In experimental group, 36 (29.75%) family member and 61 (45.86%) in control group used to do indoor smoking. Among them majority of father were smoking inside the house in both experimental and control group described in fig no 8.

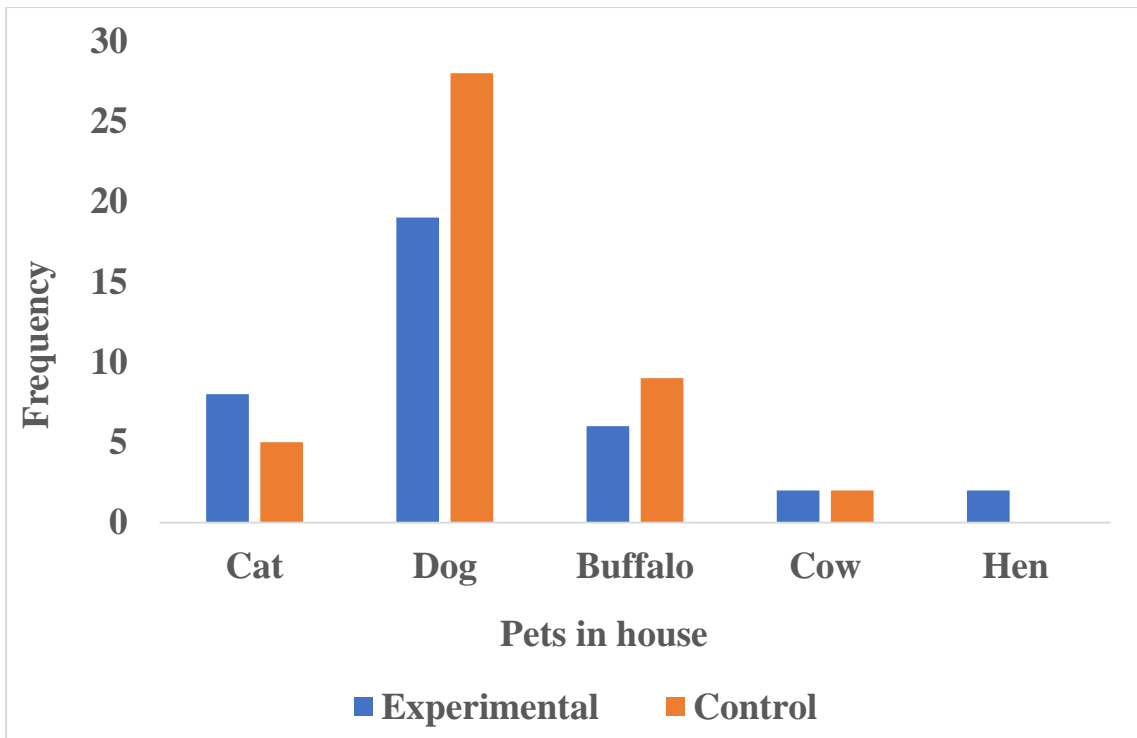


Figure no 9: Bar diagram representing frequency distribution based on pets inside house

In experimental group, 37 (30.57%) families and 44 (33.08%) families in control group were having pets inside their house. Majority of them were having dogs in their house in both experimental and control group described in fig no 9.

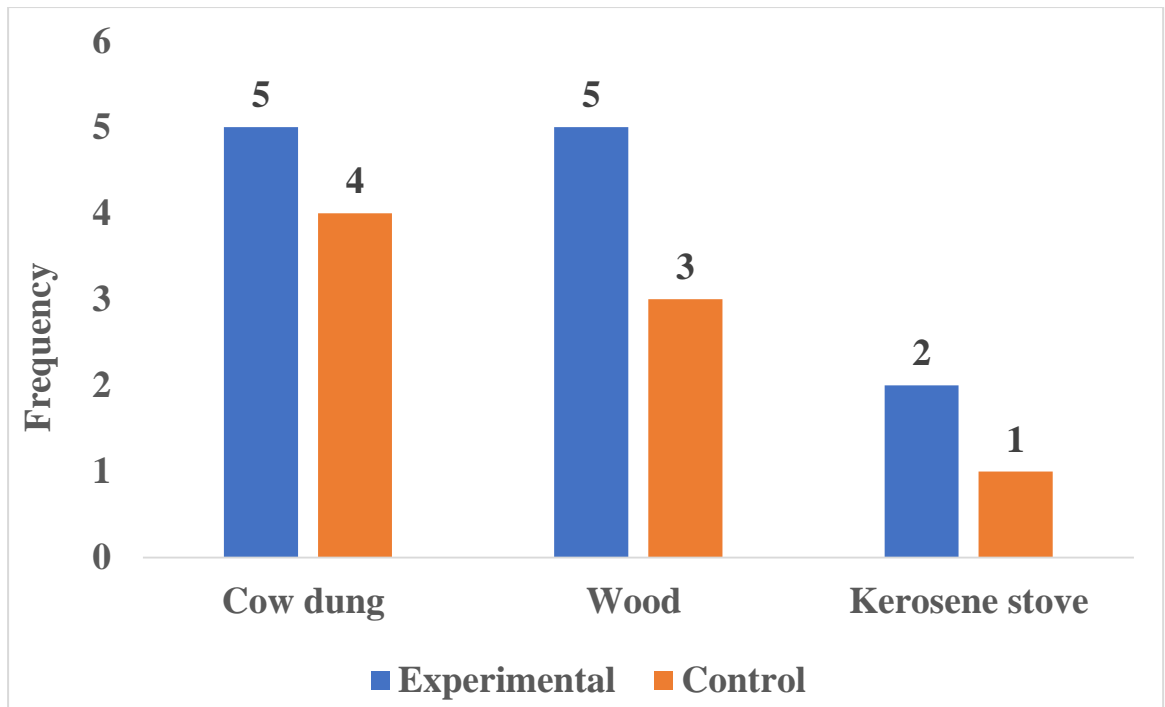


Figure no 10: Bar diagram representing frequency distribution on smoky fuel used for cooking

In experimental group only 12 (9.91%) families and 8 (6.01%) families were using smoky fuel for cooking. Among them, most of them were using cowdung and wood in both experimental and control group described in fig no 10.

Level of Environmental characteristics for Risk factors of ARI

There were 12 parameters in semi- structured interview tool for exploration of risk factors of ARI. The total score was 12. It was categorized in to (0-4) poor, (5-8) fair and (9-12) good environmental condition.

Table no 4: Frequency and percentage of level of Environmental condition of family.

S.no	Level of environmental condition	Experimental group (n=121)		Control group (n=133)	
		f	%	f	%
1	Poor	12	09.17	08	06.01
2	Fair	49	40.49	67	50.37
3	Good	60	49.58	58	43.60

Table no 4 depicts that maximum 60 (49.58%) families in experimental group were having good environmental condition and 67 (50.37%) families in control group were having fair environmental condition.

Table 5: Socio-demographic characteristics of under five children and comparison for homogeneity between experimental and control group.

S.no	Demographic variables		Experimental group (N=209)	Control group (N=221)	X ² / t test	p Value
1	Gender of Child	Male	122	128	0.01	0.924
		Female	87	93		
2	Age of child (years)	1-3	114	130	0.801	0.371
		>3-5	95	91		
3	Weight of child (kg)		Mean ± SD	Mean ± SD	0.480 ∞	0.678
			12.1 ± 4.3	11.9 ± 3.9		

∞ Independent t test

* significant at the level of p<0.05

Table no 5 illustrate that majority of children were male, most of the children were belonging between 1-3 years of age group in both experimental and control group.

Chi-square/ t test was applied to compare homogeneity of both groups in relation

to socio-demographic variables. The results identified significant difference in between experimental and control group. Hence, it could be interpreted that socio-demographic variables were similar in both groups. Therefore, both the groups were comparable.

Table 6: Socio-demographic characteristics of mothers and comparison for homogeneity between experimental and control group.

S.no	Demographic variables	Experimental group (N=121)	Control group (N=133)	X ² /Fischer exact test	P Value	
1	Age of Mother (Year)	Less than 20	4	2	2.199 ∞	0.699
		21 – 25	40	45		
		26 – 30	54	53		
		31 – 35	19	27		
		Above 35	4	6		
2	Mother Education	No formal education	1	3	0.954 ∞	0.812
		Primary education	26	27		
		Secondary education	32	33		
		Graduate	62	70		
		Post graduate	0	0		
3	Mother Occupation	House wife	88	108	2.591 ∞	0.274
		Daily wages	0	0		
		Government employee	5	4		
		Private sector employee	28	21		
4	Father Education	No formal education	2	3	0.625∞	0.891
		Primary education	11	15		
		Secondary education	46	52		
		Graduate	62	63		
		Post graduate	0	0		

5	Father Occupation	Daily wages	43	46	2.868 ∞	0.412
		Government employee	18	12		
		Private sector employee	50	59		
		Self employed	10	16		
		Unemployed	0	0		
6	Family Income Per Month	Less than 1500/-	0	0	0.883 ∞	0.643
		1501/- to 4500/-	0	0		
		45001/- to 8000/-	7	6		
		8001/- to 12000/-	49	48		
		Above 12000/-	65	79		
7	Family Dietary Pattern	Vegetarian	69	63	2.367	0.124
		Non-vegetarian	52	70		
8	Family Type	Nuclear family	65	69	0.105 ∞	0.949
		Joint family	52	59		
		Extended family	4	5		
9	No of Children in Family	One	38	29	3.474	0.324
		Two	48	56		
		Three	29	38		
		More than three	6	10		
10	Exposure to educational session on ARI	No	84	104	2.536	0.111
		Yes	37	29		

∞ Fischer Exact test

* significant at the level of $p < 0.05$

Table no 6 illustrate that majority of mothers were belonging between 26 to 30 years of age group, majority of mothers and fathers were graduates, most of the mothers were housewives, mostly fathers were employed in private jobs, majority of families had monthly income up to Rs 12000, most of the families were nuclear family and majority of mothers were having two children and had no exposure to educational session on acute respiratory infection in both experimental and control group. Chi-square/ fisher's exact test was applied to compare homogeneity of both

groups in relation to socio-demographic variables. The results identified no significant difference in between experimental and control group. Hence, it could be interpreted that socio-demographic variables were similar in both groups. Therefore, both the groups were comparable.

Objective no 3: To determine the effectiveness of need based interventional package on knowledge of mothers regarding prevention and management of acute respiratory infection in under five children

H₀₁: There would be no difference in mean knowledge score of mothers between experimental and control group after implementation of need based interventional package

H₁: There would be significant increase in mean knowledge score of mothers in experimental group as compared to control group after implementation of need based interventional package at $p < 0.05$ level of significance

Table no 7: Comparison of knowledge score of mothers between experimental and control group

Assessment	Experimental group (n=121)	Control group (n=133)	't' value	p value
	Mean ± SD	Mean ± SD		
Baseline	14.70± 1.726	14.81 ± 3.814	0.290	0.772
Post-test 1 (After 1 month)	15.02± 2.580	14.83± 4.200	0.430	0.668
Post-test 2 (After 3 months)	18.88± 2.586	15.14± 4.162	6.667	<0.001*
Post-test 3 (After 6 months)	20.94 ± 2.28	15.38± 4.148	8.076	<0.001*
ANOVA F value	215.31	0.38		
p value	<0.001*	0.89		

**Independent 't' test
ANOVA test**

***Significant at 0.05 level
Max score=26 Min. Score=0**

Table no 7 illustrate that mean knowledge score of mothers were almost similar in both (14.70± 1.726) experimental and (14.81 ± 3.814) control group at baseline assessment. In experimental group, there was consistent increase in mean post-test knowledge score at 1st month (15.02± 2.580), 3rd months (18.88 ± 2.586) and 6th month (20.94 ± 2.28) compared to baseline score (14.70± 1.726) and increase was statistically significant within the group (F = 215.31, p < 0.05). However, the control group did not show any significant change in the mean post-test knowledge score at 1st month, 3rd month and 6th month within the group (F= 0.38, p 0.89). Significant difference in mean knowledge score was observed between experimental and control group at 3rd month and 6th month (p<0.001). Hence, it could be interpreted that need based interventional package was effective in enhancing knowledge score of mothers

in experimental than control group. Thus, researcher rejected the null hypothesis and accepted research hypothesis.

Table 8: Comparison of domain wise knowledge scores of mothers within and between experimental and control group

Knowledge Domain	Assessment	Experimental group (n=121)	Control group (n=133)	Between the group	
		Mean ± SD	Mean ± SD	t value	p value
Information on ARI (Max score=07)	Pre-test	4.25±1.24	4.52±1.04	1.86	0.06
	Posttest1	4.98±1.06	4.54±0.87	3.59	<0.001*
	Posttest2	5.36±0.96	4.56±0.87	7.05	<0.001*
	Posttest3	5.87±0.88	4.52±0.83	12.52	<0.001*
Within Group		p value=<0.001 F value=141.86	p value=0.81 F value=0.10		
Prevention of ARI (Max score=12)	Pre-test	7.71±1.13	7.98±1.59	1.47	0.14
	Posttest1	8.02±1.25	8.77±1.78	3.95	<0.001*
	Posttest2	8.31±1.07	8.89±1.70	3.27	<0.001*
	Posttest3	9.61±0.82	8.70±1.64	5.51	<0.001*
Within Group		p value=<0.001 F value=222.55	p value=0.01 F value=14.43		
Home-based management of ARI (Max score=06)	Pre-test	2.83±1.00	2.62±0.79	1.83	0.68
	Posttest1	3.02±1.06	2.62±0.79	3.30	<0.001*
	Posttest2	3.34±0.96	2.62±0.80	6.45	<0.001*
	Posttest3	4.59±0.96	2.68±0.81	18.11	<0.001*
Within Group		p value=<0.001 F value=273.43	p value=0.11 F value=2.23		

Repeated measure ANOVA for within group (column wise) * p<0.05
Independent 't' test between the group (row-wise)

Table no 8 illustrate that mean knowledge score of information of ARI was almost similar at baseline in both experimental and control group. The mean knowledge score of **information of ARI** increased in post-tests after 1st month, 3rd month and 6th month after intervention as compared to pre-test in experimental group whereas no increase in post-test knowledge score occurred in control group. The difference in mean knowledge score was found to be significant between experimental and control group ($p < 0.001$) at 1st month, 3rd month and 6th month of intervention.

Mean knowledge score of prevention of ARI was almost similar in both experimental and control group at baseline. The mean knowledge score of **Prevention of ARI** increased in post-tests after 1st month, 3rd month and 6th month of intervention as compared to pre-test in experimental whereas no increase in post-test knowledge score seen in control group. The difference in mean knowledge score was found to be significant between experimental and control group ($p < 0.001$) after 1st month, 3rd month and 6th month of intervention

The mean knowledge score of home-based management of ARI was almost similar at the baseline in both experimental and control group. The mean knowledge score of **Home-based management of ARI** increased in post-tests after 1st month, 3rd month and 6th month of intervention as compared to pre-test in experimental whereas no increase in post-test knowledge score seen in control group. The difference in mean knowledge score was found to be significant between experimental and control group ($p < 0.001$) after 1st month, 3rd month and 6th month of intervention.

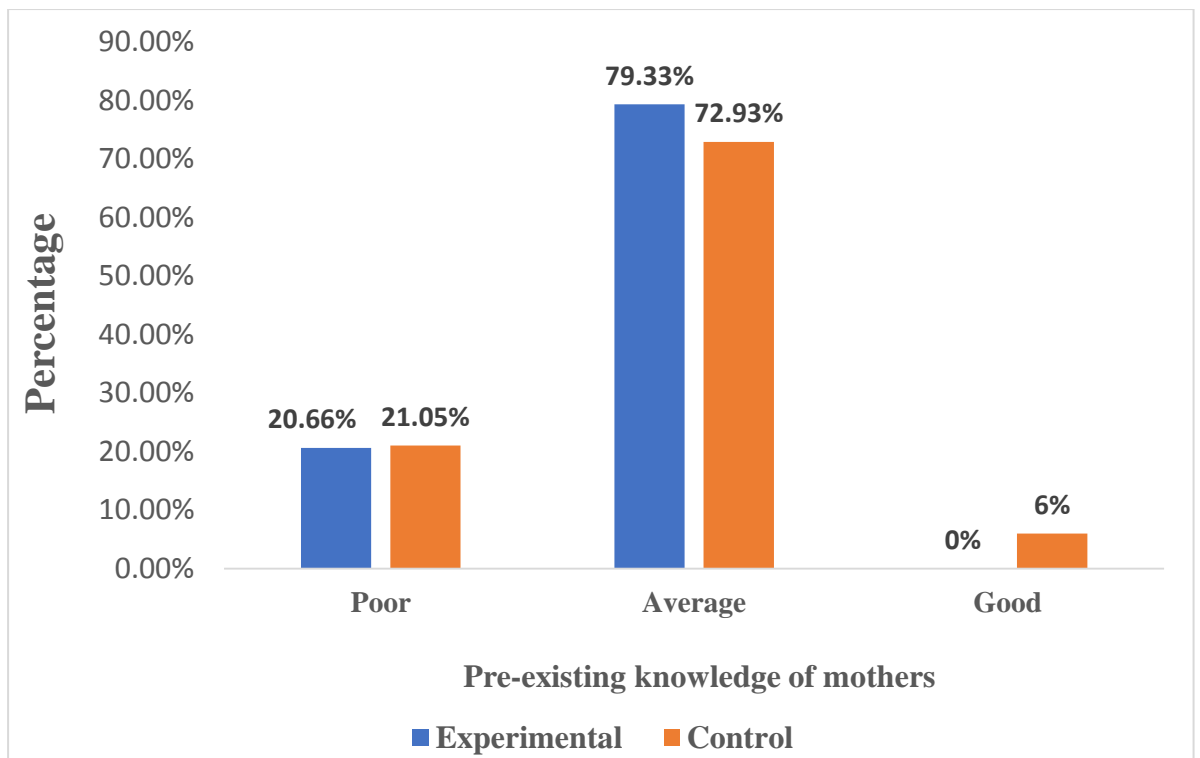


Figure no 11: Bar diagram representing pre-existing Knowledge level of mothers

Fig no 11 illustrate that most of mothers had average level of pre-existing knowledge regarding prevention and home-based management of ARI in children less than age of five years in both experimental (79.33%) and control group (73.33%).

Objective 4: To determine the effectiveness of need based interventional package on practice of mothers regarding prevention and management of acute respiratory infection in under five children

H₀₂: There would be no difference in mean practice score of mothers in experimental and control group after implementation of need based interventional package

H₂: There would be significant improvement in mean practice score of mothers in experimental group as compared to control group after implementation of need based interventional package at $p < 0.05$ level of significance.

Table no 9: Comparison of practice score of mothers between experimental and control group

Assessment	Experimental group (n=121)	Control group (n=133)	't' value	p value
	Mean ± SD	Mean ± SD		
Baseline	24.56±4.243	25.89± 4.269	0.794	0.428
Post-test 1 (After 1 month)	26.28 ± 1.885	25.73 ± 4.160	22.931	<0.001*
Post-test 2 (After 3 months)	27.01 ± 1.848	25.82 ± 4.159	21.151	<0.001*
Post-test 3 (After 6 months)	30.20 ± 1.749	25.89 ± 4.161	13.957	<0.001*
ANOVA F value	404.08	0.79		
p value	<0.001*	0.578		

**Independent 't' test
ANOVA test**

***Significant at 0.05 level
Max score=38 Min. Score=0**

Table no 9 shows that mean practice score of mothers were almost similar in both (24.56±4.243) experimental and (25.89± 4.269) control group at baseline assessment. In experimental group, there was consistent increase in mean post-test practice score of mothers at 1st month (26.28 ± 1.885), 3rd month (27.01 ± 1.848) and 6th month (30.20 ± 1.749) compared to baseline score (24.56±4.243) and increase was statistically significant within the group (F = 404.3, p < 0.001). However, the control group did not show any significant change in the mean post-test practice score at 1st month, 3rd month and 6th month within the group (F= 0.79, p 0.578). Significant difference in mean practice score was observed between experimental and control group at 1st month, 3rd month and 6th month (p<0.001). Hence, it could be interpreted that need based interventional package was effective in enhancing practice of mothers

in experimental group than control group. Thus, by rejecting the null hypothesis, researcher accepted research hypothesis.

Table 10: Comparison of domain wise practice scores of mothers within and between experimental and control group

Practice Domain	Assessment	Experimental group (n=121)	Control group (n=133)	Between the group	
		Mean \pm SD	Mean \pm SD	t value	p value
Preventive measures of ARI (Max score=22)	Pre-test	15.37 \pm 2.04	15.57 \pm 2.60	0.68	0.49
	Posttest1	16.38 \pm 1.93	15.57 \pm 2.59	2.58	0.01
	Posttest2	16.22 \pm 1.87	15.57 \pm 2.59	2.20	0.02
	Posttest3	16.36 \pm 1.90	15.58 \pm 2.50	2.69	0.008
Within Group		p value= $<$ 0.001 F value=115.56	p value=0.45 F value=0.74		
Home-based management of ARI (Max score=16)	Pre-test	11.27 \pm 2.02	10.22 \pm 2.54	1.19	0.23
	Posttest1	11.47 \pm 2.00	10.25 \pm 2.52	4.23	$<$ 0.001*
	Posttest2	11.82 \pm 1.90	10.26 \pm 2.52	5.40	$<$ 0.001*
	Posttest3	12.48 \pm 2.17	10.31 \pm 2.52	7.3	$<$ 0.001*
Within Group		p value= $<$ 0.001 F value=95.72	p value=0.09 F value=2.62		

Repeated measure ANOVA for within group (column wise),

* p $<$ 0.05

t test between the group (row-wise)

Table no 10 illustrate that mean practice score of preventive measures of ARI was almost similar at baseline in both experimental and control group. The mean practice score of **preventive measures of ARI** increased in post-tests after 1st month, 3rd month and 6th month of intervention as compared to pre-test in experimental group whereas no increase in post-test practice score occurred in control group. Difference in mean practice score was found to be significant between experimental and control group at ($p < 0.001$) after 1st month, 3rd month and 6th month of intervention.

The mean practice score of home-based management of ARI was almost similar at baseline in both experimental and control group. Mean practice score of **Home-based management of ARI** increased in post-tests after 1st month, 3rd month and 6th month of intervention as compared to pre-test in experimental group whereas no increase in post-test practice score occurred in control group. Difference in mean practice score was found to be significant between experimental and control group at ($p < 0.001$) after 1st month, 3rd month and 6th month of intervention.

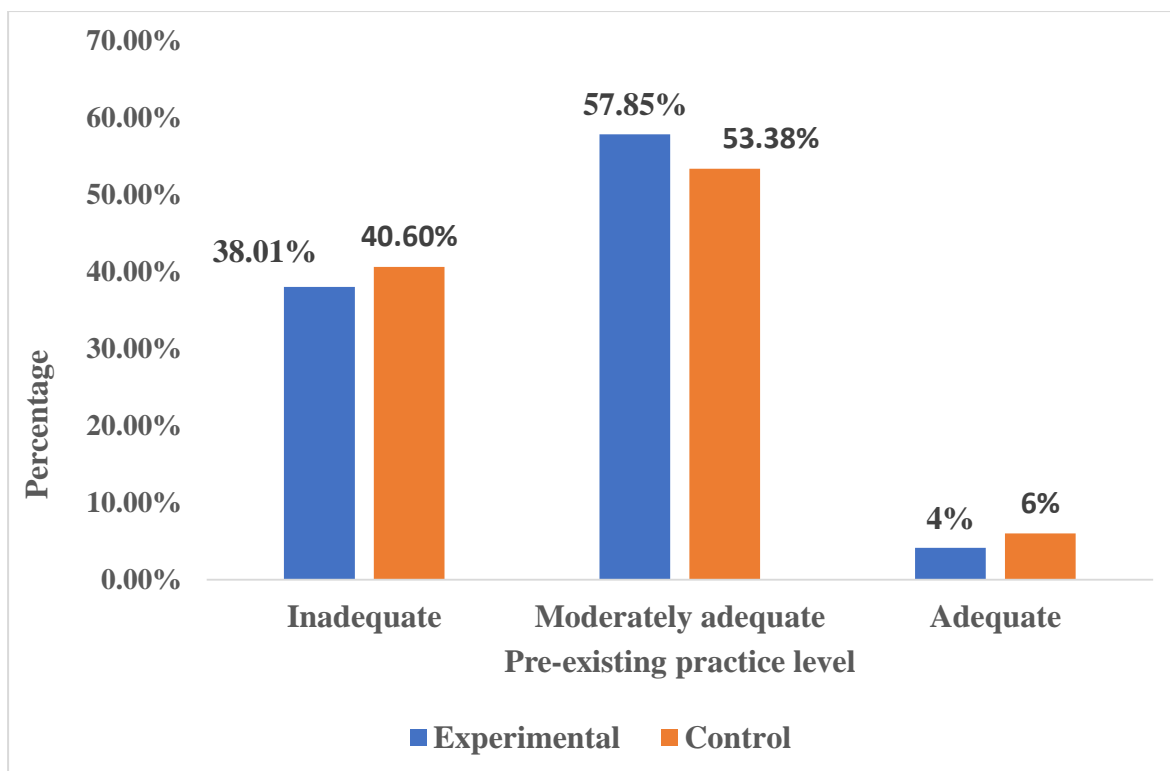


Figure no 12: Bar diagram representing pre-existing practice level of mothers

Fig no 12 depicts that most of mothers had moderate level of pre-existing practice regarding prevention and management of ARI in children under the age of five years in both experimental (57.85%) and control group (53.38%).

Objective no 5: To determine effectiveness of need based interventional package on frequency of symptoms and number of episodes of acute respiratory infection in under five children

H₀₃: There would be no difference in frequency of symptoms and number of episodes of acute respiratory infection among under five children in experimental and control group after implementation of need based interventional package

H₃: There would be significant decrease in frequency of symptoms and number of episodes of acute respiratory infection among under five children in experimental

group as compared to control group after implementation of need based interventional package at $p < 0.05$ level of significance.

Table 11: Comparison of presence of symptoms of ARI in under five children between experimental and control group at baseline

S.no	Variables	Experimental group (n=209)	Control group (n=221)	X ²	p value
1	Presence of ARI			1.06	0.30
	Yes	78	72		
	No	131	149		
2	Nasal discharge			1.04	0.30
	Yes	42	36		
	No	167	185		
3	Sore throat			0.27	0.60
	Yes	20	18		
	No	189	203		
4	Cough			0.49	0.48
	Yes	46	55		
	No	163	166		

Chi square test, $p < 0.05$

Table no 11 illustrate that at baseline, frequency of symptoms of ARI in terms of presence of ARI, nasal discharge, sore throat and cough were almost similar in experimental and control group. Hence both groups were similar.

Table no 12: Comparison of frequency and percentage of ARI symptoms in children between experimental and control group

S.no	Variables	Group	Baseline assessment	Assessment after intervention			Cochran's Q	p value
			n (%)	After 1 month n (%)	After 3 months n (%)	After 6 months n (%)		
1	Presence of ARI	Experimental (n=209)	78 (37.3)	74(35.4)	65(31.1)	51(24.4)	31.084	<0.001*
		Control (n=221)	72 (32.5)	75(33.9)	70(32.1)	64(28.9)	7.582	0.056
2	Nasal discharge	Experimental (n=209)	42(20.1)	38(18.2)	30(14.4)	19(9.1)	43.588	<0.001*
		Control (n=221)	36(16.3)	39(17.6)	37(16.7)	35(15.8)	1.522	0.677
3	Sore throat	Experimental (n=209)	20(9.6)	20(9.6)	17(8.1)	10(4.8)	24.273	<0.001*
		Control (n=221)	18(8.1)	19(8.6)	17(7.6)	16(7.2)	6.333	0.096
4	Cough	Experimental (n=209)	46(22.0)	45(21.5)	43(20.6)	31(14.8)	32.774	<0.001*
		Control (n=221)	55(24.9)	57(25.7)	54(24.4)	50 (22.62)	4.92	0.112

***Significant at 0.05 level**

Table no 12 illustrate that there was significant decrease in frequency of ARI from baseline to observation in 1st month, 3rd month and 6th month in children of experimental group compared to control group (Q =31.08, p=<0.05). Similarly, significant decrease in frequency was found in children of experimental group with regard to nasal discharge (Q =43.58, p=<0.05), sore throat, (Q =24.27, p=<0.05), cough (Q =32.77, p=<0.05). Hence, it could be interpreted that need based interventional package was effective in decreasing frequency and number of episodes of ARI in children. Thus, by rejecting the null hypothesis, researcher accepted research hypothesis.

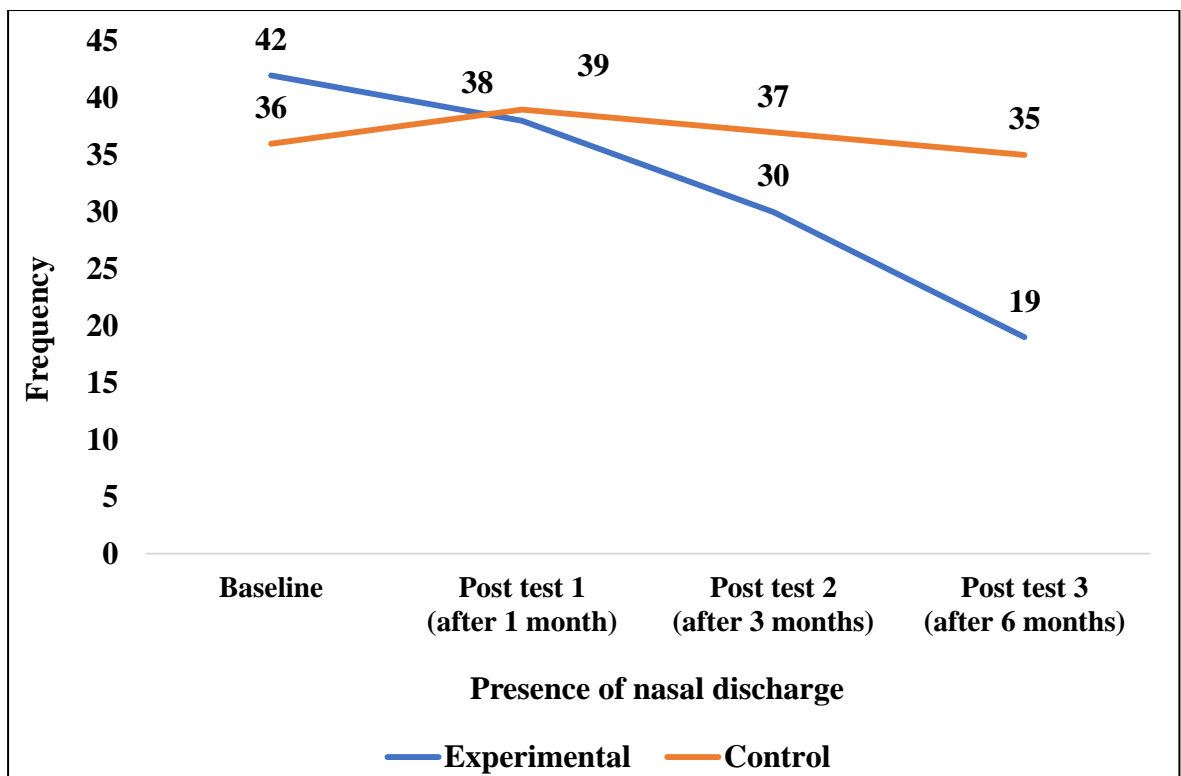


Figure no 13: Line diagram representing frequency distribution of presence of nasal discharge among children in Experimental and control group

Fig no 13 shows that there was decrease in frequency of presence of nasal discharge among under five children in experimental group compared to control group

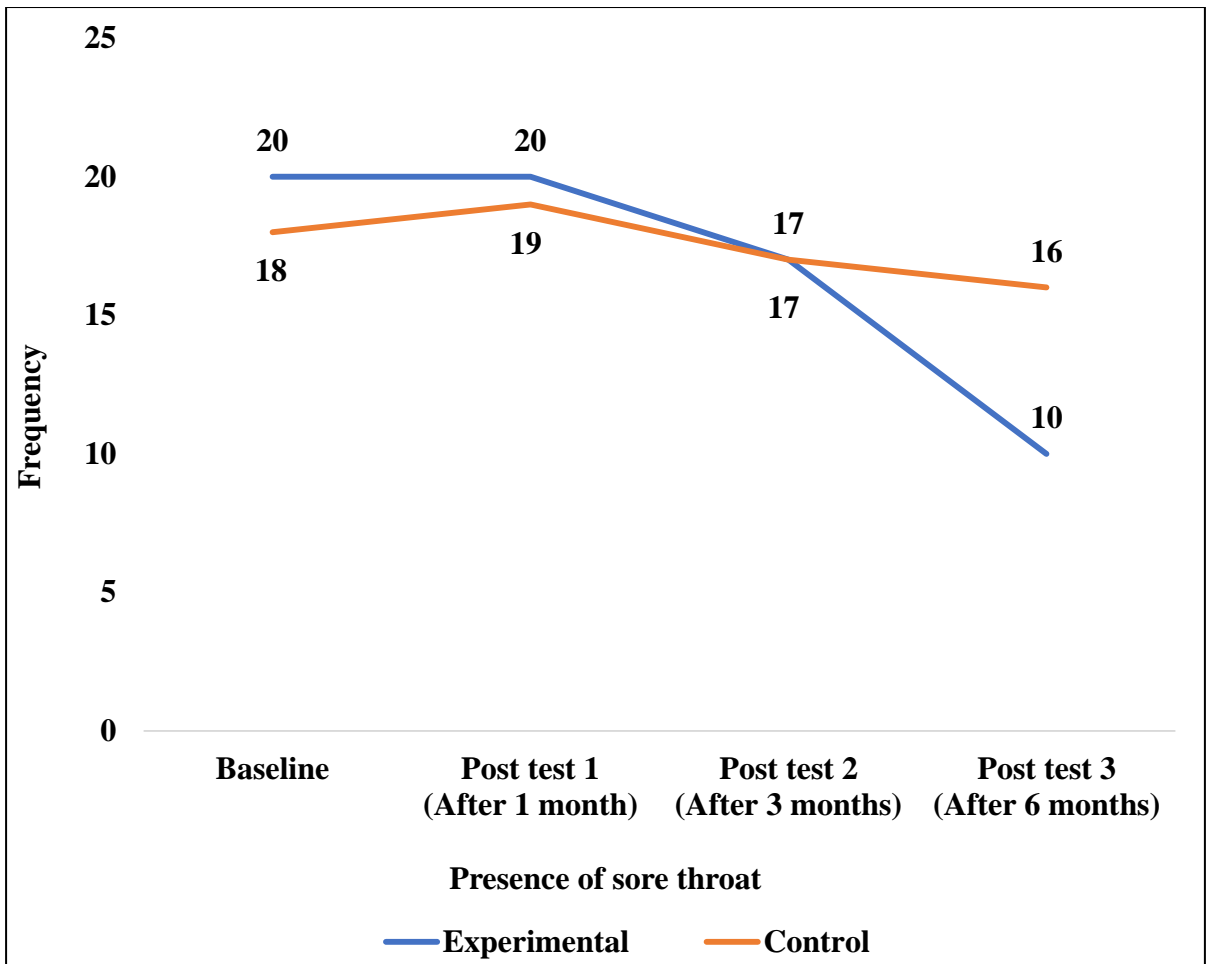


Figure no 14: Line diagram representing frequency distribution of presence of sore throat among children in experimental and control group

Fig no 14 shows that there was decrease in frequency of presence of sore throat among under five children in experimental group compared to control group

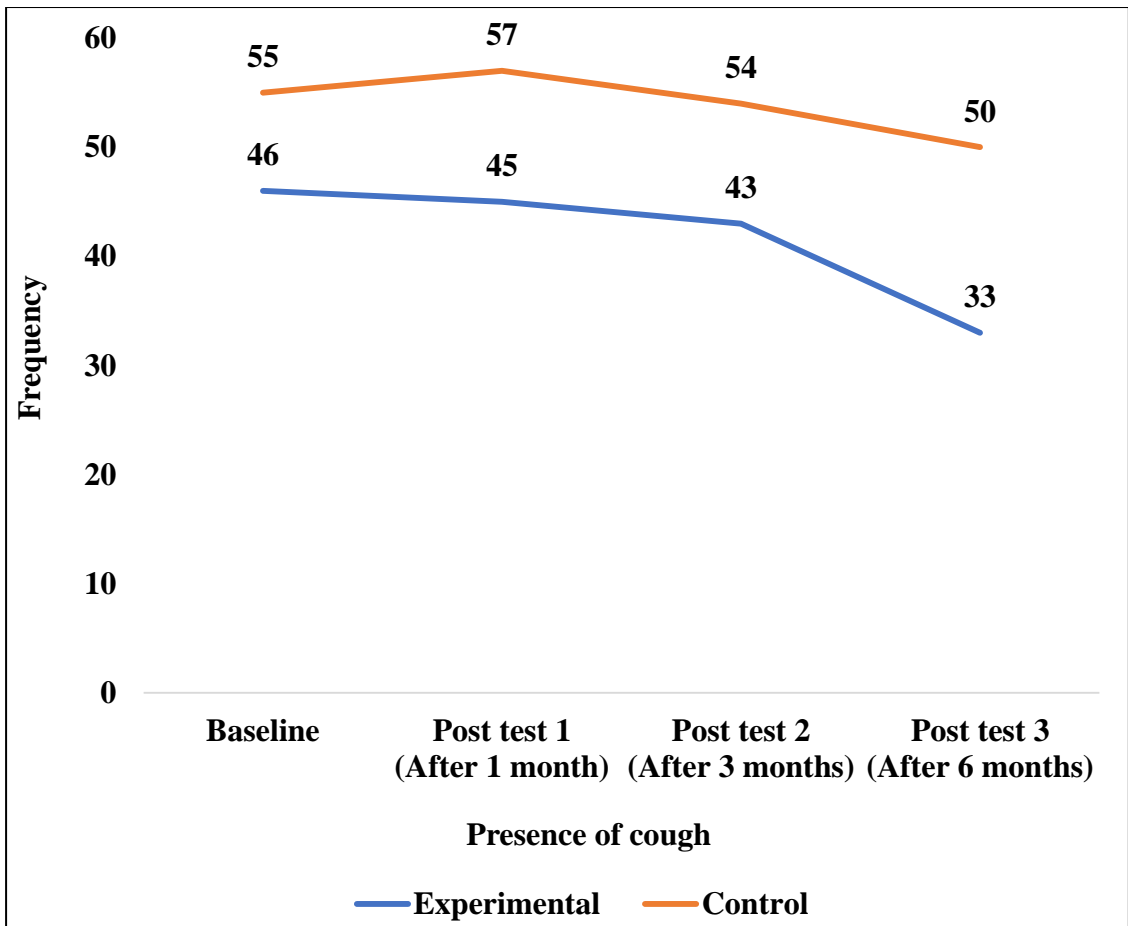


Figure no 15: Line diagram representing frequency distribution of presence of cough among children in experimental and control group

Fig no 15 shows that there was decrease in frequency of presence of cough among under five children in experimental group than control group

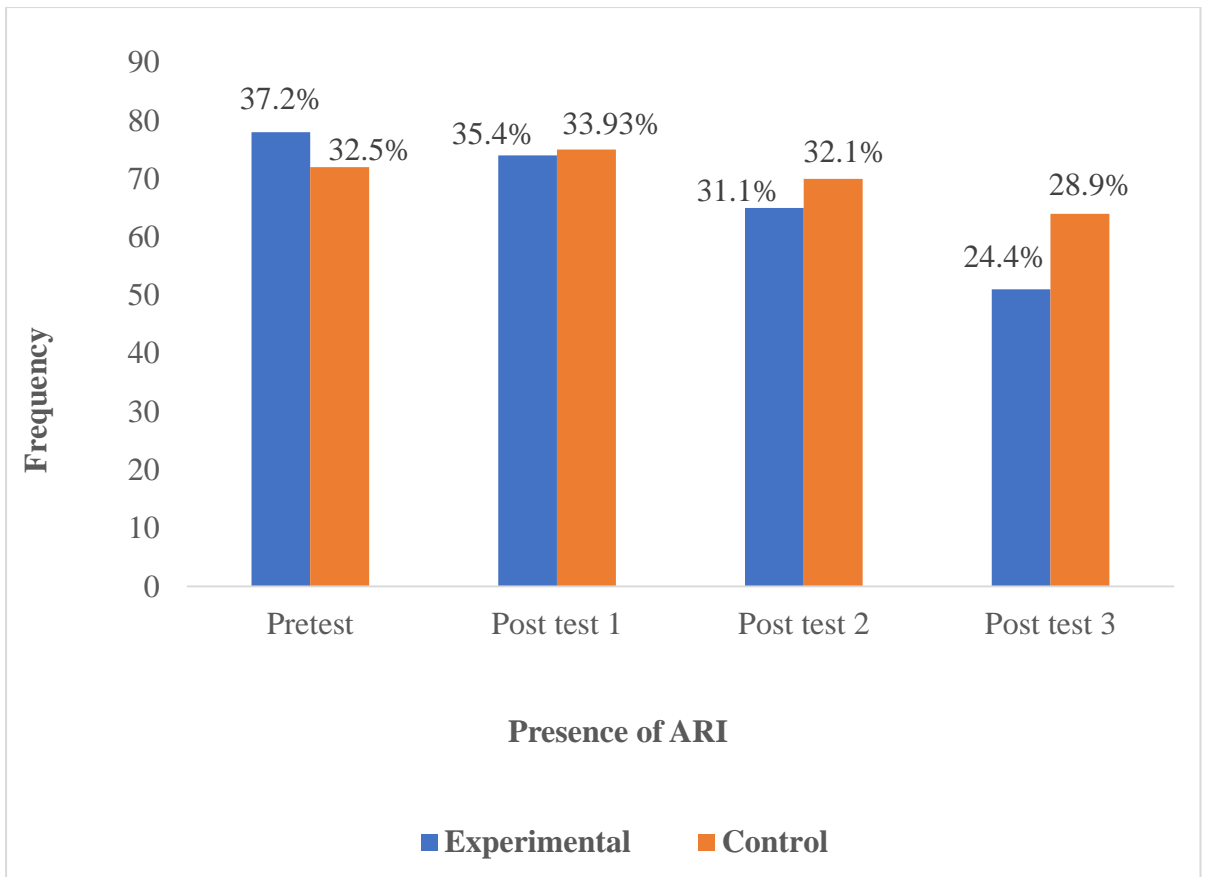


Figure no 16: Bar diagram representing percentage of presence of ARI in children in experimental and control group

Fig no 16 depicts that there was significant decrease in percentage of presence of ARI at 1st, 3rd and 6th months after intervention in experimental group compared to control group

Table 13: Comparison of number of episodes of ARI in children between experimental and control group in six months before and after intervention

Number of episodes of ARI (Six month before and after intervention)							
Assessment	Number of episodes		Control group (n=221)		Experimental group (n=209)		Mann-Whitney U test (p value)
			N	Median (IQR)	n	Median (IQR)	
6 months before intervention (baseline)	Absence of ARI episodes	0	81	1 (2)	93	1 (2)	0.09
	Presence of ARI episodes	1	71		63		
		2	47		35		
		3	17		13		
		4	05		05		
6 months after intervention	Absence of ARI episodes	0	71	1 (2)	135	0.00 (2)	<0.001*
	Presence of ARI episodes	1	92		30		
		2	42		25		
		3	12		19		
		4	04		00		
P-value (Wilcoxon test)			0.195		0.004*		

* significant at the level of p<0.05

Table no 13 illustrate that there is statistically significant reduction in number of episodes of ARI ($p=0.004$) after 6 months of intervention in experimental group compared to control group. Hence, it could be interpreted that intervention was effective in reduction of number of episodes of ARI in experimental group than control group. Thus, by rejecting the null hypothesis, researcher accepted research hypothesis.

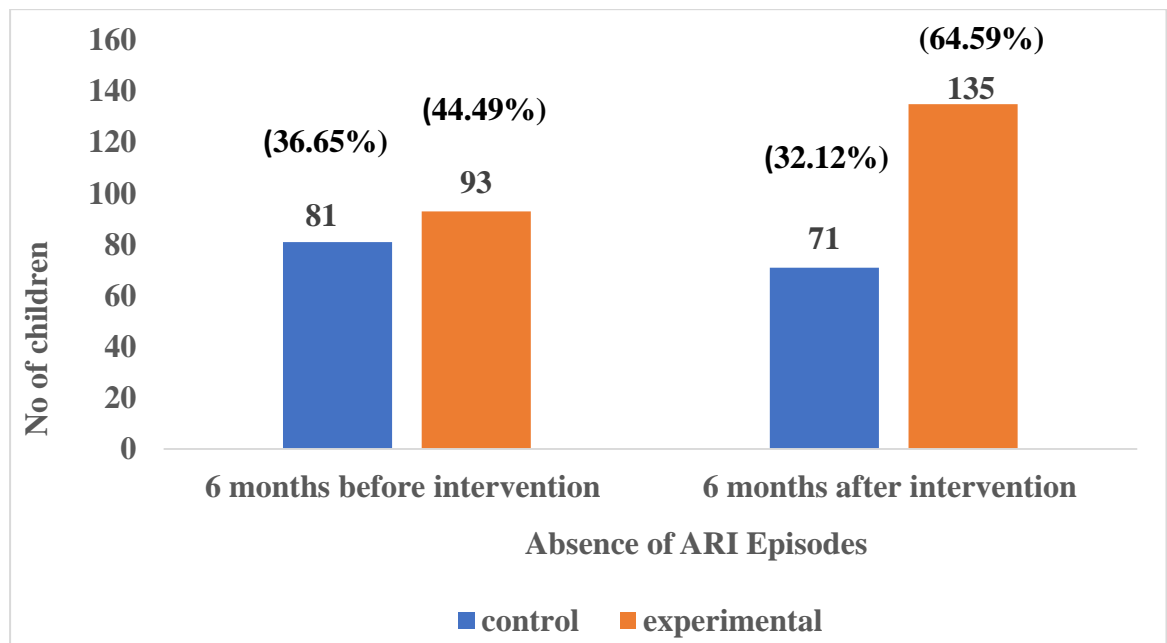


Figure no 17: Bar diagram representing the percentage distribution for absence of ARI episodes in six months before and after intervention in experimental and control group

Figure no 17 shows that in experimental group, 135 (64.59%) number of children increased who had not any symptoms of ARI after 6 months of intervention compared to 71 (32.12%) number of children in control group.

Summary

This chapter included data analysis and interpretation of findings using descriptive and inferential statistics.