

A Study to Assess the Effectiveness of Educational Intervention on Knowledge Regarding Prevention of Diaper Dermatitis Among Mothers of Infants in Selected Community Area, Vishakapatnam District, Andhra Pradesh

Aruna Malla¹, Dr. Neha Bhatia², Dr. Vishnu Dev Mishra³

¹Research Scholar, Rourkela Senior Nursing College, Sundargarh

²Professor, Rourkela Senior Nursing College, Sundargarh

³Principal, Rourkela Senior Nursing College, Sundargarh

*Corresponding Author: Aruna Malla

ABSTRACT

Introduction: Dermatitis is a skin inflammation occurs in early childhood. Most are easily treated and do not have long term consequences. Dermatitis is a condition in which the skin changes in response to external stimuli. The most common type of dermatitis in infants are contact diaper dermatitis. It is important to understand that these skin disorders bring emotional problems for the family and child. Diaper dermatitis, a common cause of irritant contact dermatitis, occurs in approximately one-third of young children, usually in a mild form. It is most common in infants from 4 to 12 months of age group. Diaper dermatitis is a primary reaction to urine, feces, moisture, or friction. Hence the focus of this study was to effectiveness of educational intervention for the prevention of diaper dermatitis among mothers of infants in selected community area, Visakhapatnam. **Methodology:** A Quasi experimental design - Non randomized control group design and evaluative approach was used in the study. The data was collected from 60 subjects, each 30 mothers of infants in control group and 30 mothers of infants in experimental group, selected through non probability convenient sampling technique. Data was collected using structured questionnaire. **Results:** The overall analysis of level of knowledge of mothers regarding prevention of diaper dermatitis showed that in experimental group, in the pre-test 28 (93.33%) mothers had inadequate level of knowledge, and 2 (6.66%) mothers had moderate level of knowledge and none of mothers had an adequate level of knowledge. In the post-test, none of mothers had inadequate level of knowledge, 1 (3.33%) of mother had a moderate level of knowledge and 29 (96.66%) mothers had adequate level of knowledge. Regarding control group the pre-test revealed that 29 (96.66%) mothers had an inadequate level of knowledge, while 1 (3.33%) mother had moderate level of knowledge and none of the mothers had an adequate level of knowledge. In the post-test 29 (96.66%) mothers had inadequate level of knowledge, 1 (3.33%) mothers had a moderate level of knowledge. Evaluate Pre and post test level of knowledge in experimental group was done by using paired "t" test, the obtained "t" value was 17.29 for knowledge which was greater than table value 2.05 at 29 degree of freedom at 0.05 level of significance. There was a significant difference between the pre and post test level of knowledge. Evaluated between post test level of knowledge among experimental and control group by using unpaired "t" test, the obtained "t" value was 21.05 for knowledge which was greater than table value 2.001 at 58 degree of freedom at 0.05 level of significance. There was a significant difference between the experimental and control group level of knowledge among mothers of infants, hence alternate hypothesis accepted and null hypothesis rejected. **Conclusion:** Findings of the study shows that there was a significant difference in post test level of knowledge of mothers of infants in experimental group where as little increase in the knowledge scores of mothers of infants in control group. From this it is concluded that the Educational intervention is effective in improving the level of knowledge of mothers. And there was no significant association between level of knowledge of mothers of infants in experimental group with selected demographic variables.

Key Words: Knowledge; mothers; prevention of diaper dermatitis, educational intervention; Experimental group; Control Group.

How to cite this article: Malla A, Bhatia N, Mishra VD. A Study to Assess the Effectiveness of Educational Intervention on Knowledge Regarding Prevention of Diaper Dermatitis Among Mothers of Infants in Selected Community Area, Vishakapatnam District, Andhra Pradesh. Int J Drug Deliv Technol. 2026;16(66s):133-138. DOI: 10.25258/ijddt.16.66s.18

INTRODUCTION

New born babies (0-28 days) should breast feed 8-12 times per day for about the first month. Some breast feed babies have 4-12 bowel movements per day. Baby may also pass stools after each feeding. So the mother will use the diaper for baby to prevent wetting by using diaper for long period of time,

excess moisture accumulated in the perianal area, which cause rashes and infection it leads to diaper dermatitis [1]. Dermatitis is a skin inflammation occurs in early childhood. Most are easily treated and do not have long term consequences. Dermatitis is a condition in which the skin changes in response to external stimuli. The most common type of

dermatitis in infants are contact diaper dermatitis. It is important to understand that these skin disorders bring emotional problems for the family and child [2]. Diaper dermatitis, a common cause of irritant contact dermatitis, occurs in approximately one – third of young children, usually in a mild form. It is most common in infants from 4 to 12 months of age group. Diaper dermatitis is a primary reaction to urine, feces, moisture, or friction. Natural herbs such as oils of sandal- wood, peppermint, and lavender mixed together, calendula cream, or chickweed leaves, powdered marshmallow root, powdered chickweed root, powdered comfrey root, goldenseal root powder, sweet almond oil, and beeswax to be heated in a cast-iron pan and strained through cheesecloth before applying to the diaper rash [3,4].

The most common medications used to treat diaper rash are zinc oxide and petrolatum. Zinc oxide cream, ointment is commonly applied as a water impermeable barrier [5]. The diaper can be therapeutic, in preventing diaper rash. Infants in diapers with absorbent gel lining had fewer diaper rashes of less severity than children in cloth or non-gelled diapers. The diaper may also be therapeutic for mental challenged children [6].

NEED OF THE STUDY

Diaper dermatitis is one of the most common skin disorders of infants and children. The reported incidence and age of onset vary worldwide, related to differences in diaper use, toilet training, hygiene and child-rearing practices in different countries. Diaper rash accounted for nearly 20% of pediatric clinic visits. Diaper rash may occur frequently between 9 and 12 months of age [7]. In India, World Health Organization 2020 diaper rash is the most common dermatitis found in infancy. Prevalence has been variably reported from 4-35% in the first 2 years of life. Incidence triples in babies with diarrhea. It is not unusual for every child to have at least 1 episode of diaper rash by the time he or she is toilet-trained. Because fewer than 10% of all diaper rashes are reported by the family, the actual incidence of this condition is likely underestimated [8]. In the United States, diaper dermatitis represents 10 to 20 percent of all skin disorders evaluated by the general pediatrician. According to the 2001 National Ambulatory Medical Care Survey, there were 8.2 million pediatric visits for diaper dermatitis and the calculated risk of developing diaper dermatitis throughout childhood was one in four. In infants, the estimated prevalence of diaper dermatitis ranges from 7 to 35 percent. Diaper dermatitis can develop as early as one week of age, but the peak incidence occurs between 9 and 12 months [9].

OBJECTIVES OF THE STUDY

1. To assess the level of knowledge regarding prevention of diaper dermatitis among

mothers of infants before educational intervention among experimental and control group.

2. To plan and implement educational intervention on prevention of diaper dermatitis among mothers of infants in Experimental group.
3. To evaluate the effectiveness of educational intervention on prevention of diaper dermatitis among mothers of infants in experimental group.
4. To compare the effectiveness of educational intervention on prevention of diaper dermatitis among mothers of infants between experimental and control group.
5. To find out the association between the post-test level of knowledge on prevention of diaper dermatitis among mothers of infants with their selected demographic variables in both experimental and control group

HYPOTHESES:

- H1: There will be significant difference in the level of knowledge on prevention of diaper dermatitis among mothers of infants before and after educational intervention in the experimental group.
- H2: There will be a significant difference in the level of knowledge in the prevention of diaper dermatitis among mothers of infants after educational intervention in between the experimental and control group.
- H3: There will be a significant association between the post test level of knowledge on prevention of diaper dermatitis with their selected demographic variables among the experimental and control group.

METHODOLOGY:

Research approach used in this study is evaluative approach with Quasi experimental, pre-post-test control group design. In this study knowledge of mothers regarding the prevention of diaper dermatitis was dependent variable and educational intervention regarding prevention of diaper dermatitis by using charts and pictures was independent variable. Age of mother, age of child, gender of infants, birth order, mother education, mother occupation, type of family, sources of information and monthly income of the family are the demographic variables. 60 mothers of infants in which 30 for experimental group and 30 for control group were selected from community health centre, Kranthi Nagar, Visakhapatnam. The selection of samples were done through Non-probability convenient sampling technique. Mothers of infants and who are available in the community area at the time of data collection were included in the study. A structured knowledge questionnaire is a

A Study to Assess the Effectiveness of Educational Intervention on Knowledge Regarding Prevention of Diaper Dermatitis Among Mothers of Infants in Selected Community Area, Vishakapatnam District, Andhra Pradesh

method of gathering self-reported information from respondents was used. The split half method of tool was used to test the reliability. The computed value for Karl Pearson's formula (split-half method) for tool was used to test reliability of tool 0.95. Hence the tool is found to be reliable.

RESULTS

Table No. 1: Frequency and percentage distribution of diaper dermatitis of mothers of infants with selected demographic variables

S R O	DEMOG RAPHIC N DATA	EXPERIMENTA L GROUP		CONTROL GROUP	
		FREQ UENC Y	PERCE NTAGE	FREQ UENC Y	PERCE NTAGE
1.	Age of mother				
	A. 21-25 years	21	70%	26	86.66%
	B. 26-30 years	5	16.66%	4	13.33%
	C. 31-35 years	4	13.33%	0	0%
2	Age of child				
	A. 1-6 months	20	66.66%	18	60%
	B. 6-12 months	10	33.33%	12	40%
3	Gender of infants				
	A. Male infant	21	70%	25	83.33%
	B. Female infant	9	30%	5	16.66%
4	Birth order				
	A. First child	18	60%	20	66.66%
	B. Second child	8	26.66%	8	26.66%
	C. Third child	4	13.33%	2	6.66%
	D. Fourth child and above	0	0%	0	0%
5	Mothers education				
	A. Illiterate	10	33.33%	10	33.33%
	B. Primary	11	36.66%	10	33.33%
	C. secondary	9	30%	9	30%

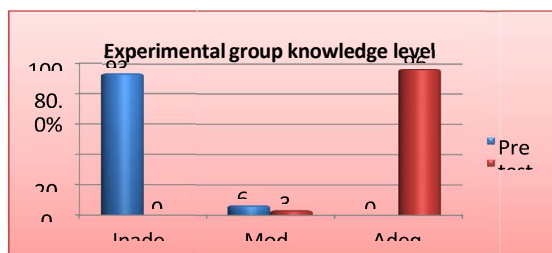
	D. Higher Qualificat ion(Inter Degree (P. G)	0	0%	1	3.33%
6	Mother occupatio n				
	A. House wife	22	73.33%	22	73.33%
	B. Private employee	8	26.66%	8	26.66%
	C. Governm ent Employee	0	0%	0	0%
	D. Business /Self employee	0	0%	0	0%
7	Type of family				
	A. Nuclear family	18	60%	18	60 %
	B. Joint family	12	40%	12	40%
	C. Extended family	0	0%	0	0%
8	Source of informati on				
	A. Mass media	4	13.33%	4	13.33%
	B. Books	0	0%	0	0%
	C. Parents /family members	25	83.33%	23	76.66%
	D. Friends/p eer	1	3.33%	3	10%
9	Monthly income of the family				
	A. Less than 5000/-per month	16	53.33%	16	53.33%
	B. 5001/- 10000/- Per month	7	23.33%	6	20%
	C. 10001/- 15000/- Per month	5	16.66%	5	16.66%
	D. 15001/-	2	6.66	3	10%

A Study to Assess the Effectiveness of Educational Intervention on Knowledge Regarding Prevention of Diaper Dermatitis Among Mothers of Infants in Selected Community Area, Vishakapatnam District, Andhra Pradesh

above				
-------	--	--	--	--

The above table no. 1 show that With regards age of mothers, in the experimental group, 21-25 years were between (70%), the majority of age of child are 0-28 days 20(66.66%), 21(70%) of the children were males, majority 18(60%) were first child, majority 10(43.33%) were illiterate, majority 22(73.33%) were house wife, majority 18(60%)were nuclear family, 4(13.33%) were mass media was used as source of information regarding prevention of diaper dermatitis and majority 2 (6.66%) earned more than Rs. 15,001/- per month. In control group, majority 21-25 years (86.66%), majority of age of child 0-28days 18(60%), 25(83.33%) of the children were females, majority 20(66.66%) were first child, majority 10 (33.33%) had primary education, majority 22(73.33%) were housewife, majority 18(60%)were nuclear family, majority 4(13.33%) were mass media was used as source of information regarding prevention of diaper dermatitis and majority 3(10%) families earned more than Rs. 15, 001/- per month.

Table No 2: Frequency And Percentage Of The Level Of Knowledge Among Mothers Of Infants In Experimental And Control Group



Groups	KNOWLEDGE	Pre test		Post test	
		Frequency	%	Frequency	%
Experimental group	Inadequate	28	93.33%	0	0%
	Moderate	2	6.66%	1	3.33%
	Adequate	0	0%	29	96.66%
Control group	Inadequate	29	96.66%	29	96.66%
	Moderate	1	3.33%	1	3.33%
	Adequate	0	0%	0	0%

Figure 1: Knowledge level of Experimental Group mothers

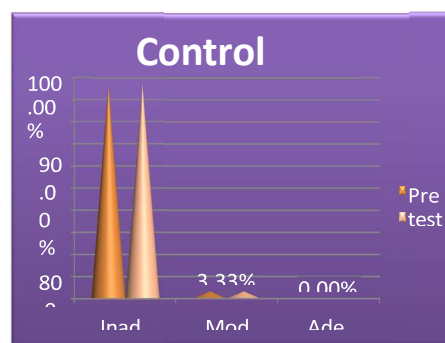


Figure 2: Knowledge level of Control Group mothers

The above table no. 2 and figure no. 1 & 2 show that that in experimental group majority 28(93.33%) of the subjects had inadequate knowledge and 2 (6.66%) had moderate knowledge in pre test, where as in post test 29 (96.66%) of subjects had adequate knowledge and 1 (3.33%) had moderate knowledge.

The above table shows that in control group majority 1 (3.33%) of the subjects had moderate knowledge and 29 (96.66%) had inadequate knowledge in pre test, where as in post test 1 (3.33%) of subjects had moderate knowledge and 0 (0%) had adequate knowledge.

Table No. 3: Evaluate The Effectiveness Of Educational Intervention On Prevention Of Diaper Dermatitis Among Mothers Of Infants In Experimental Group

Aspect	Score	Mean	Standard Deviation	Paired Value	Table Value	D.F	Pvalue
Pre-test	296	9.86	2.635	17.29	2.05	29	0.05
Post-test	665	22.1	2.354				

The above table illustrated that the mean pre-test, level of knowledge in experimental group (9.86) was lesser than the mean post-test level of knowledge (22.1) showed that there was a significant difference between the pre-test and post-test level of knowledge. The standard deviation of pre-test level of knowledge was 2.635 and the standard deviation of post-test level of knowledge was 2.354, showed that there was a significant difference between the pre-test and post-test level of knowledge. The obtained „t“ value was 17.29 greater than table value 2.05 at 29 degree of freedom in 0.05 level of significance. Therefore the obtained „t“ value was found to be significant hence the researcher has sufficient evidence to conclude that post-test had more knowledge than pre-test after the educational intervention of the prevention of diaper dermatitis

A Study to Assess the Effectiveness of Educational Intervention on Knowledge Regarding Prevention of Diaper Dermatitis Among Mothers of Infants in Selected Community Area, Vishakapatnam District, Andhra Pradesh

Table No. 4: Comparison Of The Level Of Knowledge Regarding Prevention Of Diaper Dermatitis Among Mothers Of Infants Between Experimental And Control Group

Aspects	Scores	Mean	Standard Deviation	Calculated Value	Tabulated Value	Df	Pvalue
Experimental Group Post-test	665	22.1	2.354	21.05	2.001	58	0.05
Control Group Post-test	304	10.1	2.06				

The above table showed that mean value for experimental group post-test level of knowledge was 22.1 with standard deviation of 2.354 and the mean value for control group post-test level of knowledge was 10.1 with standard deviation of 2.06. There was a significant difference of mean and standard deviation of level of knowledge among mothers of infants on prevention of diaper dermatitis between the experimental and control group.

The obtained “t” value was 21.05 greater than table value 2.001 at 58 degree of freedom in 0.05 level of significance. Therefore the obtained “t” value was found to be significant hence the researcher has sufficient evidence to conclude that experimental group had more knowledge than control group

DISCUSSION

The present study was attempted to explore the knowledge level of mothers regarding prevention of diaper dermatitis at selected Community, Visakhapatnam. The pre-test level of knowledge among mothers of infants experimental group showed that 28(93.33%) had inadequate knowledge, and none of the mothers had adequate level of knowledge. Whereas, the pretest level of knowledge among the mothers of infants in control group showed that 29 (96.66%) had inadequate knowledge, and none of them had adequate knowledge.

The findings are consistent with the study conducted by Carr. A. N, Dewitt.T, Cork. M.J; study revealed that (61%) of the samples had good knowledge (37%) had average knowledge and (2%) has poor knowledge. Mean score regarding prevention of diaper dermatitis was (20.83) among demographic variable age, religion, educational qualification, occupation, marital status, type of family and number of children, it was found that there was association between education and knowledge of mother below 3 years children.

The findings of the study shown that the standard deviation of pre test knowledge in experimental

group was 2.635 and the standard deviation of post test knowledge 2.354 showed that there was a significant difference between pre and posttest. The overall knowledge computed “t” value 17.29 greater than the table value 2.05 at Df 29 which was statistically non significant at $p < 0.05$ level.

The findings are consistent with the study conducted by Dsouza. A, Pai s. m, Maya k.s; pre-test knowledge score showed a majority of the mothers of the 23(54.8%) had average knowledge and none of them had excellent knowledge and in the post- test mean score knowledge was (22.62) compared to the pre-test score (12.67). There was significant increase in the post-test mean score (82.6) of attitude when compared to the pre-test score (61.6) and post-test mean score (18.64) of practice when compared to the pre-test score (24.64).

CONCLUSION

The percentage distribution of level of knowledge reveals that mothers of infants in experimental group had above average knowledge whereas mothers of infants in control group had no change in the level of knowledge. “t” value was 17.29 and table value 2.05 at 29 Df in 0.05 level of significance. The comparison between experimental and control group knowledge the obtained “t” value was 21.05 was greater than table value 2.001 at 58 Df in 0.05 level of significance.

Therefore the obtained “t” value was found to be significant. It can be concluded that educational intervention on prevention of diaper dermatitis has improved the level of knowledge among mothers of infants.

RECOMMENDATIONS

On the basis of the findings of the study following recommendations have been made:

- A similar study can be replicated on large sample to generalize the findings.
- A similar study can be conducted in different setting.
- A true experimental study can be conducted on prevention of diaper dermatitis.

Conflict of Interest: The authors certify that they have no involvement in any organization or entity with any financial or non-financial interest in the subject matter or materials discussed in this paper.

Funding Source: There is no funding Source for this study

BIBLIOGRAPHY:

1. Gupte P, “Textbook of Neonatal Emergencies”, 1st Edition, Delhi ,Peepee Publishers, 2006, page no. 440-453.
2. McKenzie J.F, “Textbook of Community of Health”, 1st Edition, London, Jones and Bartlett Publishers, 2005, page no. 149-152.

A Study to Assess the Effectiveness of Educational Intervention on Knowledge Regarding Prevention
of Diaper Dermatitis Among Mothers of Infants in Selected Community Area, Vishakapatnam
District, Andhra Pradesh

3. <https://www.researchgate.net/publication>.
4. Park K, "Textbook of preventive and social medicine" 23rd Edition, Jabalpur, M/s Banarsidas Bhanot Publishers, 2015, Page no. 367-314.
5. <http://www.rguhs. diaper dermatitis.in>
6. Ferrazzini G, Kaiser RR, Hirsig Cheng SK, et al. "Microbiological aspects of diaper dermatitis". *Dermatology (Basel)* 2003, 206 (2): 136-141.
7. Scheinfeld N, "Diaper dermatitis : a review and brief survey of eruptions of the diaper area". *American Journal of Clinical Dermatology*. 2005;6:273-281.
8. P N Dixon, R P Warin, M P English, "Alimentary *Candida albicans* and napkin rashes". *Dermatology*. 2003, 206 (2):136-141.
9. G Ferrazzini et al. "Microbiological aspects of diaper dermatitis". 2004, (p) 208-216.