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An evaluation to assess the knowledge regarding prevention and management of chickenpox in children among mothers having children below 10 years of age residing at selected community area of Allahabad (India)

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Abstract

Chickenpox is a worldwide disease and is no respecter race or class. The incidence increases in spring & winter months in the temperate zones. In the tropics, the peak incidence is during winter and early spring. The disease in fact started spreading from February itself. Lack of knowledge among common people on preventing water contamination is helping the virus to spread rapidly. The descriptive study attempts to assess the knowledge regarding prevention and management of chickenpox among mothers of below 10 years of age children who are residing at Naini, Allahabad with a view to develop an information booklet. **Method:** The study involved single group test without a control, using non-experimental descriptive design, with non-probability convenient sampling. 60 women were involved in data collection by using structured questionnaire. The study came to an end by implementation of information booklet on chickenpox and its prevention and management, and the results were described using descriptive and inferential statistics. **Results:** The overall mean knowledge score was found to be 48.86 % and S.D 5.87. The highest mean knowledge score was found on general health (46.5%). The mean knowledge score varied from 46.5% to 55.6% on different aspects of chickenpox. Chi-square test implies that there was a statistically significant association between selected demographic variables with knowledge of prevention and home care management of chickenpox at 5 percent level. **Conclusion:** The overall findings of the study clearly showed that there is lack of knowledge of prevention and home care management of chickenpox among mothers and the results revealed that distribution of information booklet on chickenpox and its prevention and management will be helpful for the women to gain knowledge.

Keywords: *Chicken pox, Infants, Knowledge, Management, Mother and Prevention*

1 Introduction

A variety of skin infection may occur in children in the school age group. As children are inquisitive and mobile, they come into contact with a variety of people and animals. The close proximity in the school setting provides opportunity to be exposed to infectious agents (viruses, bacteria, fungus, insects and animals) in addition; children tend to share personal items. Chickenpox occurs worldwide and is endemic in large cities. Outbreaks occur sporadically, usually in areas with large groups of susceptible children. It affects all races and both sexes equally. It can occur at any age, but it is most common among children between age group 2 to 8. [1]

Chickenpox is highly infectious disease caused by one Varicella Zooster Virus belongs to the group of herpes viruses. There are many different types of herpes virus, but one feature which they all have is that they lie dormant in the body after the initial infection, and can reactivate much later. The disease caused by the reactivation of the chickenpox virus is known as shingles and it may occur when the immune system is run down. Chickenpox is highly contagious. Like most viral infections, the chickenpox virus is transmitted from person to person by droplet spread, e.g. Sneezing, and by close contact with an infected person such as touching the fluid oozing from the blisters or using the infected persons clothes or towels.[2]

Most children will contact chickenpox when they are young and it is usually a mild illness in children; though can be more serious in teenagers and adults. The incubation period is from 14 to 21 days. The child is infectious from about two days before the rash appears until all the spots have dried up which can take up to ten days. Most people get chickenpox at least once in their lifetime. If you have had chickenpox before it is very unlikely that you would get it again. The infection produces antibodies that help in fight with virus, if it attacks again. The infection is mild in children but the severity increases in adults and pregnant women. [3,4] . The best way to prevent varicella is through vaccination. Most health experts recommend that all children of 12 months age and older who have not had chicken pox get one dose at 12 to 15 months and a second, booster dose at 4 to 6 years old. Adolescents and adults who are not already immune to the chickenpox virus need two doses at least 4 weeks apart. The varicella vaccine has been shown to be 95 % effective in preventing moderate to severe infection, and 70 to 90 % against mild infection. Varicella isn't necessarily a mild illness, and it's important for parents to know that choosing not to vaccinate their children not only places their child at risk for infection requiring medical care, but also places members of the community at risk [5-10].

Materials and Methods

2 Conceptual framework

A conceptual framework is an analogous to the frame of a house, just as the foundation supports a house. A theoretical framework provides a rationale for predictions about the relationships among variables of a research study. Conceptualization refers to the process of refining general or abstract ideas, which are formulated by generalizing from particular manifestations of certain behavior or characteristics[17,18]. The conceptual framework for the present study is based on Health promotion Model. Persons have to initiate and do active roles and this behavior is goal directed for raising this health and good living. The Pender's health Promotion Model first appears in nursing literature in the early 1980s and later the revised health promotion model appears in 1996. In revised health promotion model, Pender represents that raising health status and avoiding illness are the major motivational significance in health promotional behavioral practice. This model is explained about the variables and this interrelationships that affect health promoting behavior. This model focuses on the following 3 areas: Client cognitive – perceptual factors, Modifying factors and Participating in health promoting behaviors [11-16].

2.1 Nola Pender's health promotion model

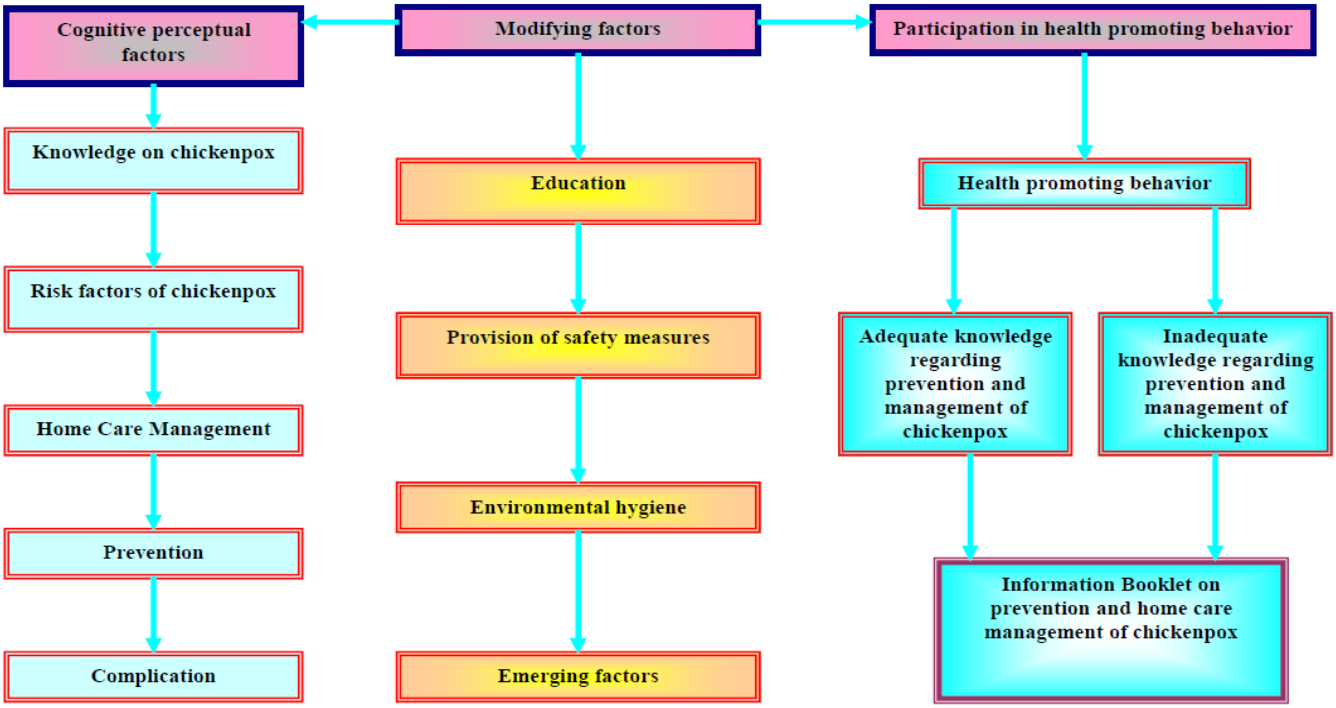

Figure 1: Schematic representation of theoretical frame work on a study to assess the Knowledge regarding Prevention and Home care management of chickenpox among mothers based on Pender's health promotion model.

2.2 Research design

The research design provides an overall or blue print to carry out the study. The research design used in this study is Descriptive design. The non probability convenience sampling was adopted to collect the data. The level of Knowledge regarding Prevention and management of chickenpox among Mothers residing at Naini, Allahabad.

2.3 Sampling

Sample : Sample refers to the sub set of population. Sampling refers to the process of selecting a portion of population to represent the entire population[17]. Mothers, who have below 10 years of age and within the age group 25-45 years of age at Naini, Allahabad. The sample consists of 60 mothers residing at Naini, Allahabad.

2.4 Sampling Technique

Sampling technique is a process of selecting representative units of population for study in a research[17-25]. In this study, subjects were selected by non probability convenience sampling technique. After selection of setting by convenient sampling method, selection was based on inclusion and exclusion criteria.

2.5 Data collection

The investigator personally visited each respondent and introduced him. The nature of the study was briefly explained to the staff nurses and it was ensured by the investigator that the routines of the hospital would not be disrupted. 60 mothers were selected by non-probability convenience sampling technique [26-31]. The questionnaire was administered to the mothers and each sample took 40 minutes for the completion of questionnaire schedule.

2.6 Plan for Data Analysis

The data were analyzed in terms of the objectives of the study using descriptive and inferential statistics.
The plan for data analysis was as follows:
1. The frequencies and percentage for analyzing demographic variables.
2. Mean, Mean percentage and Standard deviation to assess the Knowledge of Mothers regarding Prevention and home care management of chickenpox.
3. Chi-square test, to find out the relationship between Knowledge score and demographic variables.

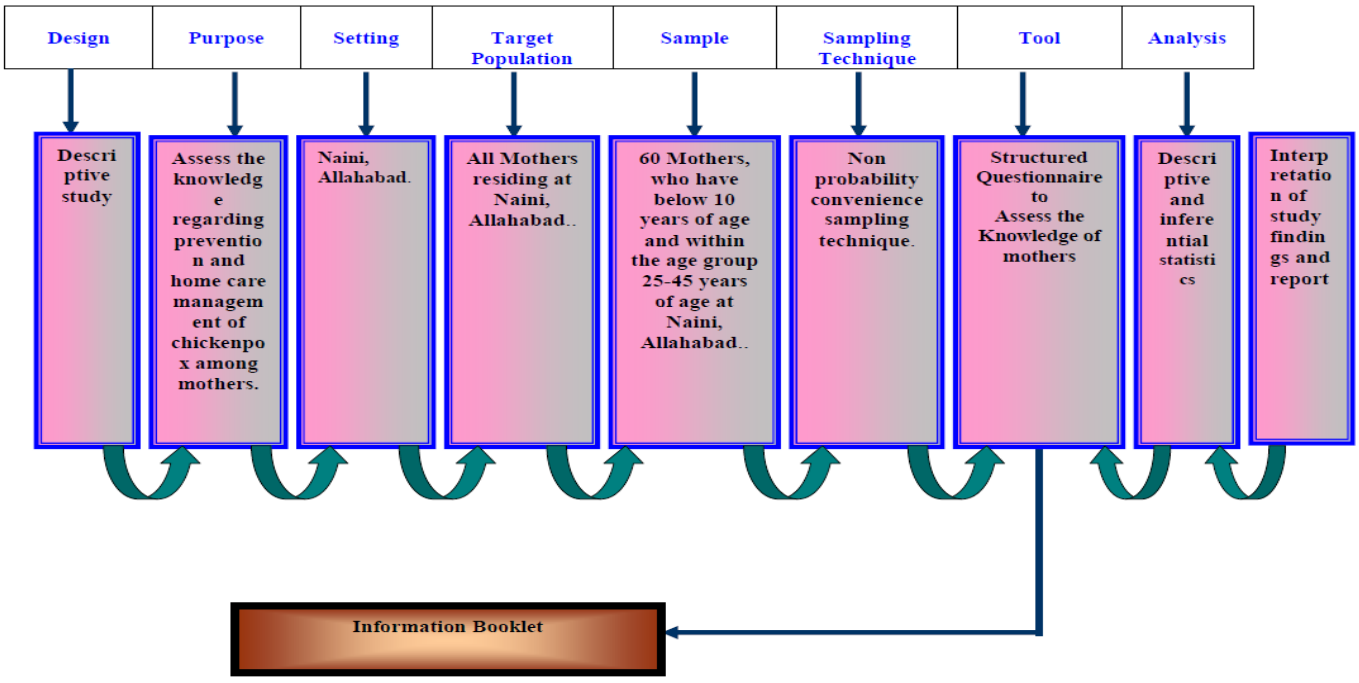

Figure 2: Schematic Representation of the Study

3 Main results

3.1 Data on demographic variables of the mothers

Table 1: The frequency and percentage distribution of the mothers according to the age group n=60

S. No.	Demographic Variable	Frequency	Percentage
1	Age in years		
	25-30 years	15	25%
	31-35years	26	43%
	36-40 years	10	17%
	41-45	9	15%
	TOTAL	60	100%

Table 2: The frequency and percentage distribution of the mothers according to the educational status n=60

S. No.	Demographic variable	Frequency	Percentage
2.	Educational Status		
	Primary	21	35%
	High school	17	28.33%
	Graduate	16	26.67%
	Others –specify	6	10%
	TOTAL	60	100%

Table 3: The frequency and percentage distribution of the mothers according to occupation n=60

S. No.	Demographic variable	Frequency	Percentage
3.	Occupation		
	House wife	31	51.67%
	Health Professional	17	28.33%
	Other Professionals	12	20%
	TOTAL	60	100%

Table 4:The frequency and percentage distribution of mothers according to family monthly income n=60

S. No.	Demographic variable	Frequency	Percentage
4.	Family monthly income (Rs.)		
	<3000	26	43.34%
	3001-6000	23	38.33%
	6001-9000	11	18.33%
	TOTAL	60	100%

Table5: The frequency and percentage distribution of the mothers according to the No of children n=60

S. No.	Demographic variables	Frequency	Percentage
5	No of children		
	One	6	10%
	Two	25	41.67%
	Three	23	38.33%
	Above three	6	10%
	Total	60	100%

Table 6: The frequency and percentage distribution of the mothers according to the type of family n=60

S. No.	Demographic variables	Frequency	Percentage
2	Type of family		
	Joint	5	8.33%
	Nuclear	55	91.67%
	TOTAL	60	100%

Table 7: The frequency and percentage distribution of the mothers according to Area of residence n=60

S. No.	Demographic variable	Frequency	Percentage
7.	Area of residence		
	Urban	10	16.67%
	Semi urban	17	28.33%
	Rural	33	55%
	TOTAL	60	100%

Table- 8: The frequency and percentage distribution of the mothers according to Source of information n=60

S. No.	Demographic variables	Frequency	Percentage
8	Source of information		
	In-service education	20	33.33%
	Journals/Books	5	8.33%
	TV/Radio	2	3.34%
	Special training	6	10%
	Others	27	45%
	TOTAL	60	100%

3.2 Area-wise distribution of knowledge scores.

Table 9: Aspect wise knowledge of respondents on impact of prevention and management of chickenpox.

S. NO.	ASPECTS	STATEMENT	SCORE RANGE	KNOWLEDGE SCORE MEAN	MEAN %	SD
1	General Awareness	6	1-5	2.9	48.3	1.2
2	Causes	4	0-4	1.98	49.5	1.04
3	Clinical manifestations	4	0-4	1.98	49.5	1.04
4	Prevention	5	1-5	2.2	45.3	7.2
5	Home care management	9	1-9	4.48	49.8	2.17
6	Complications of chickenpox	2	0-2	0.99	49.8	0.035
	Combined	30	20-43	14.53	48.43	7.97

Table 10: Overall Knowledge of mothers regarding prevention and home care management of chickenpox

S. No.	Overall knowledge	Number	Percentage
1	Inadequate (<50%)	44	73.33%
2	Moderately adequate (50-75%)	10	16.67%
3	Adequate (>75%)	6	10%
	Combined	60	100%

3.3 Findings related to association between demographic variables and knowledge levels of mothers regarding prevention and home care management of chickenpox.

Table 11: Association between age and knowledge of respondents on prevention and home care management of chickenpox

Age group	Level of knowledge score								χ^2 Value
	Inadequate		Moderately adequate		Adequate		Total		
	N	%	N	%	N	%	N	%	
26-30years	10	67	1	7	4	26	15	100	
31-35years	16	62	9	34	1	4	26	100	14.5^S
36-40 years	2	20	7	70	1	10	10	100	
41-45	4	44	4	44	1	10	9	100	
Combined	32	48	21	39	7	13	60	100	

S: Signifiant χ^2 (0.05, 6df) = 12.5

Table 12: Association between educational status and knowledge level of respondents

Educational Status	Level of knowledge score								χ^2 Value
	Inadequate		Moderately adequate		Adequate		Total		
	N	%	N	%	N	%	N	%	
Primary	21	100	0	0	0	0	21	100	
High school	15	88.24	2	11.76	0	0	17	100	
Graduate	5	31.25	6	37.5	5	31.25	16	100	49.79^S
Others	3	50	2	33.33	1	16.67	6	100	
Combined	44	73.33	10	16.67	6	10	60	100	

S: Significant at 5 % level, χ^2 (0.05, 6 df) = 12.59

The association between educational status of the respondents and knowledge level was found to be statistically significant (χ^2= 49.79^S at P<0.05 level). It is clearly indicated that there is significant association between knowledge level and educational status on prevention and management of chickenpox.

Table 13: Association between occupation and knowledge level of respondents

Occupation	Level of knowledge score								χ^2 Value
	Inadequate		Moderately adequate		Adequate		Total		
	N	%	N	%	N	%	N	%	
House wife	28	90.32	2	6.45	1	3.23	31	100	11.69^S
Health Professional	8	47.06	5	29.41	4	23.53	17	100	
Other professional	8	66.67	3	25	1	8.33	12	100	
Combined	44	73.33	10	16.67	6	10	60	100	

S: Significant at 5 % level, χ^2 (0.05, 4 DF) = 9.49

The association between occupation of the respondents and knowledge level was found to be statistically significant (χ^2= 11.69^S at P<0.05 level). It is clearly indicated that there is significant association between knowledge level and occupation of respondents on prevention and management of chickenpox.

Table 14: Association between family monthly income and knowledge level of respondents

Family monthly income	Level of knowledge score								χ^2 Value
	Inadequate		Moderately adequate		Adequate		Total		
	N	%	N	%	N	%	N	%	
Rs.<3000	24	92.31	2	7.69	0	0	26	100	9.3 ^{NS}
Rs.3001-6000	14	60.87	5	21.74	4	17.39	23	100	
Rs.6001-9000	6	54.55	3	27.27	2	18.18	11	100	
Combined	44	73.33	10	16.67	6	10	60	100	

NS: Non Significant at 5 % level, χ^2 (0.05, 4 df) = 9.49

The data subjected for statistical test indicates that there is statistically non significant association (χ^2= 9.3^{NS} at P<0.05 level). It is clearly indicated that there is no significant association between family monthly income and knowledge level on prevention and management of chickenpox.

Table 15: Association between No of children and Knowledge level of respondents

Years of experience	Level of knowledge score								X^2 Value
	Inadequate		Moderately adequate		Adequate		Total		
	N	%	N	%	N	%	N	%	
One	1	16.67	4	66.66	1	16.67	6	100	6.65^{NS}
Two	1	4.34	19	82.62	3	13.04	23	100	
Three	0	0	23	92.0	2	8.0	25	100	
Above three	0	0	5	83.33	1	16.67	6	100	
Combined	2	3.33	51	85.0	7	11.67	60	100	

NS: Non-Significant, X^2 (0.05, 6 df) = 12.592

The data shows that there is statistically no significant association (X^2 = 6.65 at P>0.05 level).

Table 16: Association between Type of family and Knowledge level of respondents

Gender	Level of knowledge score								X^2 Value
	Inadequate		Moderately adequate		Adequate		Total		
	N	%	N	%	N	%	N	%	
Nuclear	1	20.0	3	60.0	1	20.0	5	100	5.14^{NS}
Joint	1	1.81	48	87.28	6	10.91	55	100	
combined	2	3.33	51	85.0	7	11.67	60	100	

NS: Non-Significant, X^2 (0.05, 2 df) = 5.99

The data indicates that the association is statistically non significant (X^2 = 5.14 at P>0.05 level).

Table 17: Association between Area of residence and knowledge level of respondents

Type of residence	Level of knowledge score								χ^2 Value
	Inadequate		Moderately adequate		Adequate		Total		
	N	%	N	%	N	%	N	%	
Urban	4	40	3	30	3	30	10	100	
Semi urban	30	90.90	2	6.06	1	3.04	33	100	14.22^{S}
Rural	10	58.83	5	29.41	2	11.76	17	100	
Combined	44	73.33	10	16.67	6	10	60	100	

S: Significant at 5 % level, χ^2 (0.05, 4 df) = 9.49

The data subjected for statistical test indicates that there is statistically significant association (χ^2= 14.22^{NS} at P<0.05 level). It is clearly indicated that there is significant association between area of residence and knowledge level on prevention and management of chickenpox.

Table 18: Association between Source of information and Knowledge level of respondents

Source of information	Level of knowledge score								X^2 Value
	Inadequate		Moderately adequate		Adequate		Total		
	N	%	N	%	N	%	N	%	
In-service education	0	0	18	90.0	2	10.0	20	100	27.72^{S}
Journals/Books	1	20.0	2	40.0	2	40.0	5	100	
TV/Radio	1	50.0	1	50.0	0	0	2	100	
Special training	0	0	4	66.67	2	33.33	6	100	
Others	0	0	26	96.3	1	3.7	27	100	
Combined	2	3.33	51	85.0	7	11.67	60	100	

S: Significant at 5 % level, X^2 (0.05, 8 df) =15.507

The association between source of information of the respondents and knowledge level was found to be statistically significant (X^2 = 27.72 at P<0.05 level). This table indicates that there is significant association between Knowledge level and source of information of the respondents on Prevention and home care management of chickenpox.

3.4 Discussion

The non- experimental, descriptive design was adopted for the present study. Convenient sampling technique was used to select the samples. The data was collected from 60 mothers from Naini, Allahabad using a structured questionnaire and observational checklist.

3.4.1 Description of demographic characteristics

Table1 indicates that higher per cent (43%) of the respondents were belonging to the age group of 31-35 years. About 25% were belonging to 36-40 years of age group; 15% were belonging to age group of 41-45 years.
Table – 2 shows educational status – 26.67% were graduates; 28.33% had schooling till high school level. 35% and 10% had schooling till primary school and other education.
Table – 3 shows depicts that 51.67% were house wives, 28.33% were health professionals and 20% were other professionals.
Table 4 shows that 43.34% have <3000 Rs. salary. 38.33% and 18.33% had salary of Rs.3001-6000 and Rs.6001-9000 respectively.
Table-5 depicts the distribution of sample according to the No of children. The maximum of 25 (41.67%) mothers have two children, followed by 23 (38.33%) mothers have three children and the mothers have one and above three children with 6 (10%).
Table 6 depicts in relation to type of family, majority (91.67%) of respondents were found to be nuclear family as compared to joint family (8.33%) in the study group.
Table 7 depicts in relation to type of family, majority (91.67%) of respondents were found to be nuclear family as compared to joint family (8.33%) in the study group.
Table 8 shows source of information – 45% of the respondents got information from others , 33% of the respondents got information from In-service education, 10% of the respondents got information from special training, 8.33% of the respondents were belonged to Journals/Books followed by 3.34% of the respondents were belonged to TV/Radio.
Table 15 reveals that the mean knowledge score is 48.43% and SD 7.97. The highest mean knowledge score is related to general health (49.8%), whereas, the lowest mean knowledge score is related to prevention and home care management of chickenpox (45.3%). The aspect wise mean knowledge score ranged between 49.8% to 45.3%. The result shows 73.33% of the respondents possess inadequate knowledge as compared to 16.67% of respondent noticed with moderately adequate and 10% of respondents possess adequate knowledge on prevention and home care management of chickenpox. This shows that there is lack of knowledge among mothers in all aspects regarding prevention and home care management of chickenpox. Lack of knowledge among mothers regarding prevention and home care management of chickenpox was identified by researchers in the following studies which is similar to the present study.

3.4.2 The association between knowledge level and selected demographic variables of mothers

There was significant relationship found between the demographic variables such as age ($\chi 2=15.5$), education ($\chi 2=12.59$), Occupation ($\chi 2=11.69$), Area of residence ($\chi 2=9.49$), source of information ($\chi 2=15.50$) and knowledge of mothers at $p<0.05$ level. There was no significant relationship found between the demographic variable; income ($\chi 2=9.3$), No of children ($\chi 2=12.59$), Type of family ($\chi 2=5.59$) and knowledge level of mothers.

4 Conclusion

In the present study the investigator intended to assess the Knowledge of mothers regarding Prevention and home care management of chickenpox at Naini, Allahabad.

4.1 Implications of the Study

The findings of this study have implications in various areas of nursing namely: nursing practice, nursing education, nursing administration and nursing research.

1. Nursing Practice
The focus of health professionals is directed towards primary care-giving. This study helps health professionals to understand the prevention and home care management of chickenpox. The main preventive strategies can be maintained in order to avoid complications of Chickenpox etc... The nurse; during her practice in hospitals or even in the community field can play her magnificent role in eliminating the darkness of public ignorance about Chickenpox. They can also help the mothers in the effective management of Chickenpox among children [32-34]

2. Nursing education
Education is a key component in improving the knowledge of an individual. Education in nursing has a vital role to play because the students who are learners today are going to deal with tomorrow's patient. Hence, the right method of

education with an opportunity to practice and apply what has been taught is essential. Nursing teachers should emphasize on prevention and management of Chickenpox [35-37].

Nurse educators should focus caregivers as a special population at risk. Support can be planned theoretically and information materials, alternative therapies, and training sessions can be formulated to provide inpatient and community care areas. Nurse as an administrator has a crucial role in planning the policies for imparting health information to the patients and diabetic clients. Nursing administration must see that a separate budget should be allocated for in-service education in the nursing department [38-41].

4.2 Limitations

1. The study was limited to 60 mothers residing at Naini, Allahabad.
2. The study was limited for mothers who are between the age group of 25-45 years.
3. The study is limited to mother's having children between 1 to 10 years of age in a selected area.

4.3 Recommendations

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

1. A similar study can be done to assess the risk factors of chickenpox adaptability.
2. A similar study can be replicated on a large number of samples to generalize the findings.
3. A similar study can be conducted by including additional demographic variables.
4. A study can be carried out the efficiency of structured teaching programme.

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Conflict of interest

There is no conflict of interests. This is a case report, and the research has not been sponsored by any organization.

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