

EFFECTIVENESS OF NURSING STRATEGIES ON KNOWLEDGE AND PRACTICE OF FEBRICIDAL MEASURES AMONG MOTHERS OF UNDER FIVE CHILDREN ADMITTED AT SELECTED HOSPITALS IN BANGALORE**Ruby Maria Tauro¹, Sheeja C. V.*², Nisha K. P.³, Maria P. Ignatius⁴ and Evangeline I.⁵**¹Nursing Officer, BMC RI, Victoria, Hospital campus, KR Market, Bangalore 560004.²Principal, Aaffinity Nursing College, No. 33 Bheemanahalli BM Main Road, Ramanagara- Bidadi-Bangalore 561209.³Asst. Professor, IKON Nursing College, No. 32 Bheemanahalli BM Main Road, Ramanagara- Bidadi-Bangalore 561209.⁴Principal, IKON Nursing College, No. 32 Bheemanahalli BM Main Road, Ramanagara- Bidadi-Bangalore 561209.⁵Associate Professor, IKON Nursing College, No. 32 Bheemanahalli BM Main Road, Ramanagara- Bidadi-Bangalore 561209.***Corresponding Author: Sheeja C. V.**

Nursing Officer, BMC RI, Victoria, Hospital campus, KR Market, Bangalore 560004.

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ABSTRACT

Background: Fever is a temporary rise in body temperature. Typical body temperature is a balance of heat production and heat loss. It's one part of an overall response from body's immune system. Fever is usually caused by an infection. For most children and adults, fever may be uncomfortable. But it usually isn't a cause for concern. Children between the ages of 6 months and 5 years are at increased risk of seizures that occur during fever. Fever is one of the most common medical signs. It is part of about 30% of healthcare visits by children. Fever is often viewed with greater concern by parents and healthcare professionals than is usually deserved, a phenomenon known as fever phobia. **The objectives** of the study were to assess the level of knowledge and practice regarding febricidal measures among mothers of under-five children and evaluate the effectiveness of nursing strategies.

Methods: A quantitative research approach with one group pre-test & post-test research design was used for evaluating the effectiveness of nursing strategies on knowledge and practice of febricidal measures among 30 mothers of under-five children. Reliability of tool was tested. Reliability coefficient 'r' value was found to be 0.86, ensured validity in consultation with nursing experts, biostatistician and pediatrician. Validity for knowledge questionnaire is 0.95 and practice checklist is 0.98. Non-probability purposive sampling technique was used to select mothers of under five children admitted to Shreya Hospital, Bangalore. Pre-test was done using demographic proforma, structured knowledge questionnaire and observational practice checklist, and nursing strategies administered on the same day. After 3 days knowledge questionnaire and observational practice checklist were again assessed. Collected data from mothers were analyzed using descriptive and inferential statistics.

Result: In the pre-test, majority of mothers had less scores in knowledge and practice of febricidal measures. In post-test knowledge and practice level of mothers significantly improved. The paired 't' value for knowledge in pre-test is 't'= 9.405 (SD ± Mean is 13.97 ± 3.828) and 't' value in post-test is 't'= 13.476 (SD ± Mean is 19.47 ± 4.981) was found to be significant at 0.001(p<0.001). The pre-test practice mean score is 6.30 ± 2.628. After administration of nursing strategies mean practice scores were 12.47 ± 2.529. The paired 't' = 13.476 at 0.001 significant level (p<0.001). Hence the null hypotheses rejected and inferred that the nursing strategies were effective in increasing the knowledge and practice scores of mothers. There was statistically significant association of practice with mother's age. **Interpretation and conclusion:** The study concludes that mothers had poor knowledge and practice regarding febricidal measures in pre-test, and after the implementation of the nursing strategies majority of subjects gained knowledge and improved their practice level. It proves that nursing strategies were effective in improvement of knowledge and practice among mothers.

KEYWORDS: Knowledge, Practice, Nursing strategies.**INTRODUCTION**

Children under five years of age are very small and all their systems are in developing stage. Because of their play activities, poor feedings and immaturity of immune system cause frequent attacks of infection like

respiratory tract infection, otitis media, diarrhea, gastroenteritis, etc. Fever is a common manifestation present in most children.^[1] Fever is a common response to a variety of conditions. Fever arises when the body

temperature is elevated as a result of body's thermostat being reset to a higher than usual temperature.^[2]

Normal body temperature is higher in preschool-aged children and highest at about 18 to 24 months of age. Infants with fever are usually irritable and may not sleep or feed well. Older children lose their interest in play. As fever gets higher children become more irritable and disinterested. Sometimes children with a high fever look surprisingly well. Children may have seizures when their temperature rises or falls rapidly. Fever gets so high that children become listless, drowsy and unresponsive.^[3]

Mother's insufficient knowledge about its evaluation and treatment frequently leads to excessive fear and anxiety. The educational interventions by healthcare professionals aiming at educating young mothers with a low educational level and those with children younger than 12 months old who seek medical attention at hospital are needed to dispel misconceptions about fever and to promote the appropriate management of febrile children.^[4]

Parents do not take accurate temperatures. They continue to base their fever management practices on the temperature reading. Fewer parents today aim to reduce temperatures to normal ranges. Some practices have been reduced over time such as the use of aspirin and cold or iced water to reduce fever. Others reflect an increased concern about harmful effects of fever and the need for control during this frightening.^[2]

Antipyretics have been and remain the preferred method for reducing fevers for many parents. Parents prefer to treat fever with antipyretics rather than reducing additional clothing or tepid sponging. Antipyretic use in fever management has increased.^[5]

Globally the incidence of fever is the major complaint for consultation. Statistics (2018) revealed that, in USA 30%, Africa 20%, Guinea 23% and Kenya 6%, 122/1000 children up to 1 year old and 415 / 1000 children from 1 to 5 years old in the Netherlands have been seen by a pediatrician in every month. In Mali, prevalence of fever for a day was 6.2% in dry season and 12.8% in rainy season.^[6]

As per the recent year's national family health survey in India prevalence of fever was 12.8% among under five children. Reported studies indicate that 50% -70% of febrile episodes were on account of acute respiratory infection. 10% -25% Gastroenteritis, 5% other infections such as meningitis, skin, or soft tissue infection, Urinary tract infection accounted for 1% - 6%.^[7]

Fever is a self-limited disease but causes discomfort among parents and the reason for distress and anxiety to them. Fever phobia has also been documented in parents causing most frequent hospital visits. The studies uncovered several aspects including inadequate

parenteral knowledge regarding fever leading to an erroneous approach to fever such as inappropriate usage of antipyretic drugs and antibiotics, improper use of physical methods of lowering and measuring fever, wrong perception of fever as a disease rather than as a symptom or sign of illness, misconception about its effects on their children's health. The variations found among these studies are possibly due to cultural, economic, geographical, demographic, and educational differences in populations among countries.^[8]

It was observed that most mothers lack knowledge and practice on febricidal measures for their children. These experiences prompted on educating of mothers of under five children with fever on febricidal measures to improve their knowledge and practice on febricidal measures. Educating and encouraging mothers, fathers, and immediate family members during their stay in hospital helps to build confidence towards febricidal measures without any fear and anxiety. It reduces hospital visit; hospital stays and facilitates early discharge and lowers the financial burden on the family. Mothers gain confidence to practice febricidal measures effectively at home and improve their existing knowledge and practice. Some research studies are needed to be carried on with effective teaching programs. This in turn helps the nursing personnel to improve their communication skills and also get updated with the recent trends in child care and provide efficient care to their patients.

The interventions aimed at reducing fever that fall within the nursing care include administration of antipyretic medication, maintenance of hydration, use of external cooling measures, and direct and environmental interventions. Hence nursing staff must provide accurate and trustworthy information about fever management to mothers to reduce their anxiety and fear.

The conceptual framework of the present study developed by the investigator is based on the General system's theory with input, process, output, and feedback.

MATERIAL AND METHODS

A quantitative research approach with non-probability purposive sampling technique of pre-experimental one-group pretest posttest design was used on 30 mothers of under five children with fever who fulfilled the inclusion criteria. Data was collected using Self-report and observation techniques. 30 items for knowledge questionnaire and 18 items for practice checklist were included. The reliability coefficient 'r' value was found to be 0.86 and developed tool was found to be reliable. The content validity of research tool for knowledge is 0.95 and for practice is 0.98.

Schematic representation of the study - O₁ - X₁ - O₂

The questionnaire consisted of two sections

Part I – Socio-Demographic data including Age, religion, educational qualification, Occupation, type of Family, sources of information, age of the child, sex, type of feeding, and present illness of the child.

Part II - Structured knowledge questionnaire and observation practice checklist regarding febricidal measures.

DATA COLLECTION PROCEDURE

Formal permission was obtained from the administrator of Shreya Hospital, the Head of the department of pediatrics and also from nursing superintendent. Data collection was carried out from 1/6/2022 to 30/6/2022. The sample was selected according to the inclusion and exclusion criteria using non-probability purposive sampling technique. Patient Information Sheet was provided to all study participants. Informed consent was obtained from all individuals. Pre-test was administered with a demographic profile, Structured knowledge questionnaire, and observation practice checklist. Nursing strategies were administered and after 3 days post-test was conducted using same structured knowledge questionnaire and observational practice checklist. The subjects were comfortable and cooperated well during the intervention.

RESULTS

The collected data were categorized and analyzed based on study objectives and hypothesis.

Section 1: Frequency percentage distribution of demographic profile of mothers and children

50% (n=15) of the mothers were in age 18-26 years and 46.7% (n=14) were of 27-35 years of age, and 3.3% (n=1) were 36-45 years. The majority of sample 73.3% (n=22) were Hindu, 16.7% (n=5) were Muslim, 6.7% (n=2) were Christian and 3.3% (n=1) were others. Majority of mothers 60% (n=18) were from joint

families and 40% (n=12) were from nuclear family. Majority of mothers 50% (n=15) had their PUC/ Diploma, 23.3% (N=7) were Graduates, 23.3% (n=7) did high school and 3.3% (n=1) had primary education. Majority of mothers 70% (n=21) are homemakers, 13.3% (n= 4) are Government employees, 13.3% (n=7) are employed in private jobs, and 3.3% are coolie workers. Majority of the mothers 50% (n=15) got information from friends, 30% (n=9) got from magazine, 16.7%(n=5) got from health professionals and 3.3% (n=1) got information from mass media. Majority of mothers 43.3% (n=13) are having one child, 40% (n=12) have two children and 16.7% (n=5) are having three children.

56.7% (n=17) of mothers have children with ages of 0-12 months, 26.7% (n=8) mothers have 13-24 months, 10% (n=3) mothers have 25-36 months, and 6.7% (n=2) are having 37-48 months old children. 60% (n=18) of mothers have male child and remaining 40% (n=12) were having female child. 50% (n=15) of mother’s children are admitted with fever, 43.3% (n=13) children are admitted for surgical procedures, remaining 6.7% (n=2) children were admitted with urinary tract infection. 63.3% (n=19) children taking breast feeding and soft diet, 20% (n=6) children taking normal diet, and remaining 16.7% (n=5) children taking only soft diet.

Section 2: Knowledge level of mothers regarding the febricidal measures and effectiveness of nursing strategies

The pre-test knowledge minimum score is 8 and post-test minimum score is 8. Pre-test Maximum knowledge score is 23 and Post-test Maximum knowledge score is 28. Mean knowledge scores of respondents were found to be 13.97 ± 3.828 in the pre-test. After administration of nursing strategies mean knowledge scores of respondents were found to be 19.47 ± 4.981 . The paired ‘ t ’ test value was 9.405 at the significant level of 0.001 ($p < 0.001$).

Table 1: Minimum, Maximum, Mean, and Standard deviation scores of knowledge regarding febricidal measures among mothers of under five children before and after nursing strategies. n=30.

Knowledge	Minimum	Maximum	Mean	SD	Paired t’test	P value
Pre-test	8	23	13.97	3.828	9.405	< 0.001
Post-test	8	28	19.47	4.981		



Fig 1: Pre-test and Post-test level of knowledge regarding febricidal measures among mothers of under five children.

H₀₁: There is no statistically significant difference between the pre-test and post-test knowledge scores of mothers on febricidal measures.

Table 1 and Fig 1 represented the mean pre-test and post-test knowledge regarding febricidal measures among mothers of under five children. The paired t-test was carried out and was found to be invariably significant at 0.001(p<0.001) level, hence null hypothesis (H₀₁) was rejected. It evidenced that the nursing strategies were significantly effective in improving the knowledge regarding febricidal measures among mothers of under five children.

Section 3: Practice level of mothers regarding the febricidal measures and effectiveness of nursing strategies

For pre-test practice minimum score is 2 and maximum score is 11. Post-test practice minimum score is 6 and maximum score is 17. The pre-test practice mean score is 6.30 ± 2.628 which shows the mother had poor practice towards febricidal measures in the pre-test. After administration of nursing strategies mean practice scores were 12.47 ± 2.529 . The paired ‘t’ test value was ‘t’ =13.476 at 0.001 level (p<0.001) which shows that mothers’ practice of febricidal measures improved.

Table 2: Minimum, Maximum, Mean, and Standard deviation scores of practice regarding febricidal measures among mothers of under-five children before and after nursing strategies n=30.

Practice	Minimum	Maximum	Mean	SD	Paired ‘t’ test	P value
Pre-test	2	11	13.97	3.828	9.405	< 0.001
Post-test	6	17	19.47	4.981		

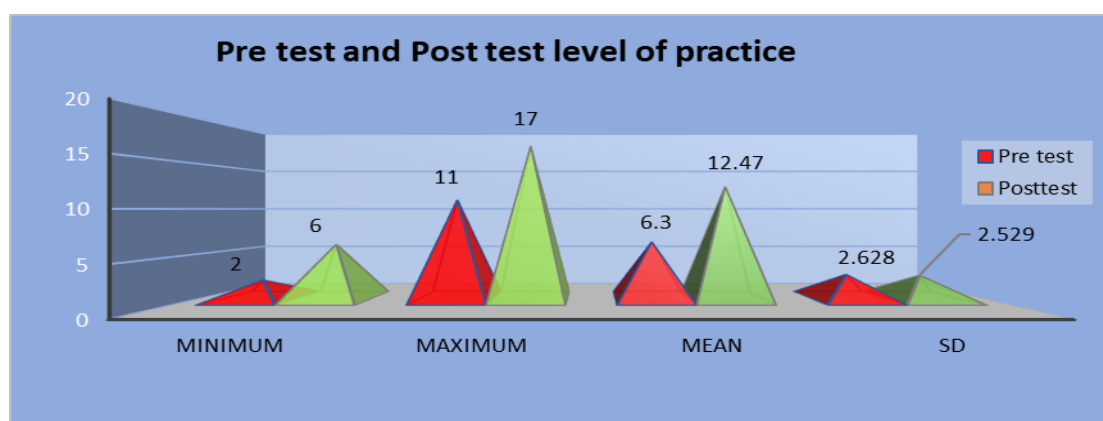


Fig 2: pre-test and post-test level of practice regarding febricidal measures among mothers of under five children.

H₀₂: There is no statistically significant difference between the pre-test and post-test practice scores of mothers on febricidal measures.

Table 2 and Fig 2 represented the mean pre-test and post-test practice regarding febricidal measures among mothers of under five children. The paired t-test was carried out and was found to be significant at 0.001 (p< 0.001) level, hence null hypothesis (H₀₂) was rejected. It evidenced that the nursing strategies were significantly effective in improving practice levels regarding febricidal measures among mothers of under five children.

Section 4: Correlation between knowledge and practice scores of mothers regarding febricidal measures.

Table 3: Correlation between knowledge and practicen=30

Variable	Correlation ‘r’	p’value
Practice	0.368	0.046
Knowledge		

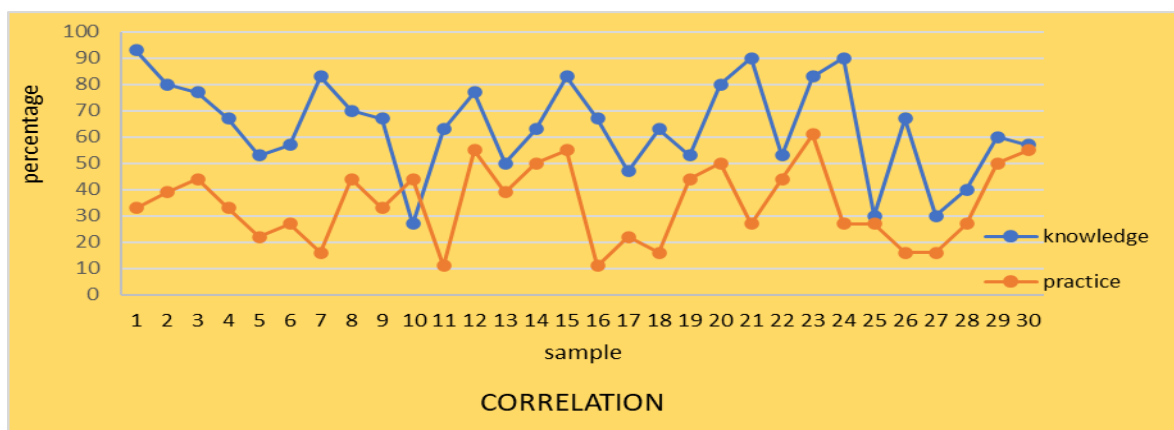


Fig 3: correlation between knowledge and practice.

H₀₃: There is no significant relationship between knowledge and practice on febricidal measures among the mothers of under five children.

From table 3 and Fig 3 evident that the obtained Pearson's "r" value of 0.368 were significant at 0.046 level of significance, which shows the knowledge and practice scores had a positive correlation. Hence it is inferred that there is significant correlation between knowledge and practice on febricidal measures among mothers of under-five children admitted at selected hospital and the null hypothesis is rejected.

Section 5: Association between pre-test level of knowledge and practice on febricidal measures with selected demographic profile of children and mothers. There was significant association between pre-test practice and with mother's age $\chi^2 = 7.533$, p value is 0.054 ($p < 0.05$) and no other demographic profile had an association with practice or knowledge.

DISCUSSION

Pre-test minimum knowledge score is 8 and maximum pre-test knowledge score is 23. The pre-test knowledge mean score is 13.97 ± 3.828 . Post-test minimum knowledge score is 8 and maximum knowledge score is 28. Post-test knowledge mean score is 19.4 ± 4.981 . In the pre-test, minimum practice score is 2, and maximum practice score is 11, mean practice score is 6.30 ± 2.628 . Post test minimum practice score is 6 and maximum score is 17. Post test mean practice score is 12.47 ± 2.529 . Nursing strategies have improved the knowledge and practice of mothers.

A similar study was conducted to assess the mother's knowledge and effectiveness of health education on mother's knowledge on the management of children suffering from pyrexia. Results show that 11.2 was the mean pre-test value and 20.8 was the mean post-test value. The paired t-test value was 11.097, ($p < 0.0001$) showing a significant gain in the mother's knowledge of management of children suffering from pyrexia. The chi-square test result shows that there was a significant association of knowledge scores of mothers with

monthly family income ($\chi^2 = 11.039$, $p < 0.05$), and source of health information ($\chi^2 = 17.861$, $p < 0.05$). The study concludes that the health education regarding management of children suffering from pyrexia was effective.^[9]

In the present study Pre-test knowledge mean score is 13.97 ± 3.828 and Post test knowledge mean score is 19.4 ± 4.981 . Paired 't' test score is 9.405 (< 0.001). Pre-test practice mean score is 6.30 ± 2.628 and post-test mean score is 12.47 ± 2.529 . The paired t-test score is 13.476 ($p < 0.001$). Overall mean percentage of knowledge score was 46.5% in the pre-test and 64.9% in the post-test. And overall mean percentage of practice score was 35% in pre-test and 69.2% in the post-test. The enhancement in the mean percentage knowledge and practice score was found to be significant.

This is supported by a study conducted to evaluate the effectiveness of educational program in improving mothers' performance toward children with typhoid fever in Zagazig City. 103 mothers participated in the study. The result shows overall pre-test knowledge score was improved from 77.7% in pre-intervention to 97.1% immediately post-intervention. The total mean scores of their practices improved from 2.84 ± 0.12 pre-intervention to 2.88 ± 0.09 immediately post-intervention. Results revealed highly statistically significant correlations between knowledge, practice, and attitudes. This study's results provided evidence that after implementation of the educational intervention mothers' knowledge, attitude, and practices regarding fever improved with highly statistically significant differences.^[10]

The obtained Pearson "r" value of 0.368 were significant at 0.046 level of significance in present study. The pre-test knowledge and practice scores had positive correlation. Hence it is inferred that there is significant relationship between knowledge and practice of mothers regarding febricidal measures.

Another cross-sectional and correlation multicenter study was conducted to describe the parental knowledge and

care of fever in children under 2 years. Results show 69.8% had a correct care/management of fever. The knowledge score is lower in people with no education ($p=0.03$), higher in Europe and South America, and lowest in Asia and Africa ($P<.001$). The correlation between the scores of knowledge and management is positive ($\rho=0.15$, $P=.008$).^[11]

Implication

Continuing educational programs can be conducted among nurses and healthcare professionals to identify the need for education in the field. Workshops, symposiums, discussion, and demonstration can be arranged in educational institution regarding the febricidal measures. The nurse should be well equipped with knowledge of febricidal measures. The nurse administrator should take an active part in developing protocols, and standing orders in providing health education to the parents. Nursing research is mainly done to improve the quality and standards of nursing. The main goal of nursing research is to improve knowledge of mothers through implementation of evidence-based practice. The educational program is effective in improving the knowledge of febricidal measures.

Conflict of interest

Authors have no conflict of interest

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