

A Study to Assess the Effectiveness of Pamphlet On Knowledge Regarding Management and Prevention of Typhoid Fever Among Mothers of School Age Children in Selected Rural Areas at Bharatpur

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Abstract :

Introduction: Typhoid is a bacterial disease transmitted by food or water contaminated with the bacteria Salmonella Typhi. If you eat or drink something that is contaminated, then the bacteria is able to enter your body. It travels throughout your body to get to the bloodstream where it can then reach your gallbladder, liver, spleen and other parts of your body.

Material & Methods: A quantitative pre-experimental one-group pre-test post-test design was adopted among 60 mothers of school-age children in Rarah, Bharatpur, using purposive sampling. Data were collected using a validated 30-item structured knowledge questionnaire, and a pamphlet-based teaching intervention was administered. The tool had a reliability coefficient of 0.90. Ethical permission and written informed consent were obtained, and knowledge was assessed before and seven days after the intervention.

Result: While 60% had average and 40% had good knowledge in the post-test, 40% had poor, 50% average, and 10% good knowledge in the pre-test. With a mean change of 7.20 and $t = 21.40$ ($p < 0.05$), the mean knowledge score rose from 12.3 ± 6.62 to 19.5 ± 4.89 . Pre-test knowledge and a few chosen demographic factors did not significantly correlate.

Discussion: The study showed a significant improvement in mothers' knowledge regarding the management and prevention of typhoid fever following the pamphlet-based teaching intervention. The mean knowledge score increased from 12.3 in the pre-test to 19.5 in the post-test, indicating the effectiveness of the intervention.

Keywords: Assess; Effectiveness; Pamphlet; Knowledge; Typhoid Fever

INTRODUCTION

“Enteric fever” is a global major public health problem “Typhoid fever”, an acute systemic infectious disease seen only in humans. Enteric fever caused by “salmonella typhi”. Almost 80% of the cases and deaths are in Asia and the rest occur mostly in Africa and Latin America. Enteric fever is endemic in many developing Countries, including India.¹

The incidence of typhoid fever estimated 16-33 million cases of annually resulting in 5,00,000 to 6,00,000 deaths in endemic areas the world health organization identifies typhoid as a serious public health problem. Its incidence is highest in children and young adults between 5 and 19 years old. Typhoid fever is a disorder of school age children and of adults. Typhoid is a common significant cause of morbidity between 1 and 5 years of age.²

The name salmonella typhi is derived from the ancient Greek typhos. An ethereal smoke or cloud that was believed to cause disease and madness. Primary source of infection are

stool and urine. Secondary sources of infection are contaminated water, food, fingers or hands. Mode of transmission is mainly feco- oral route or urine oral route. Typhoid fever is characterized by a slowly progressive fever, (104 degree f), profuse sweating, gastroenteritis, and diarrhea, rashes, rose-colored spots may appear.³

The diagnosis of typhoid fever may be included blood culture, widal test, bone marrow culture, stool and urine culture and ELISA. Specific treatment of enteric fever used to be fluoroquinolones such as ciprofloxacin chloramphenicol, cephalosporin including ceftriaxone. Prompt treatment of the disease with antibiotics reduces the case-fatality rate to approximately 1%. Death occurs in between 10%, the case fatality rate in the united states in the pre-antibiotic era was – 9 to 13%.⁴

The complications of typhoid fever mainly, encephalopathy, intestinal hemorrhage, toxic myocarditis, bronchitis sanitation and hygiene are the critical measures that can be

taken to prevent typhoid. Careful food preparation and washing of hands are therefore crucial to preventing typhoid.⁵

Enteric fever is also known as typhoid. It is a common worldwide bacterial disease transmitted by the ingestion of food or water contaminated with the feces of an infected person, which contain the A Bacterium *Salmonella typhi*. An estimated 16–33 million cases of typhoid fever occur annually. Its incidence is highest in children and young adults between 5 and 19 years old. These cases as of 2010 caused about 190,000 deaths up from 137,000 in 1990. Enteric fever is transmitted via the fecal oral route or urine. Almost 80 per cent of cases and deaths occur in Asia. Annual incidence as high as 1,100 cases per 100,000 populations has been documented in developing countries⁷.

A third-generation cephalosporin such as ceftriaxone or cefotaxime is the first choice. At 2 years' typhoid vaccine is given (repeat after every 3 years). One single dose of 0.5 ml (subcutaneous or intramuscular administration). Oral- One capsule on day 1, 3 & 5. Sanitation and hygiene are the critical measures that can be taken to prevent typhoid. Careful food preparation and washing of hands are crucial to prevent typhoid.⁹

Morbidity and mortality due to high incidence of typhoid fever favors the introduction of typhoid vaccine in routine immunization in India. This vaccine should be given at the age of 2 years with Vi antigen vaccine and at least one more dose be given at 5 years of age¹⁰.

Today enteric fever prevention focuses on improving sanitation, ensuring the safety of food and water supplies, identification and management of chronic carriers of *S. Typhi*, and the use of typhoid vaccines to reduce the susceptibility of hosts to infection. Extending the benefits of improved sanitation and the availability of safe water and food achieved in industrialized countries a century ago to low- and middle-income countries has proved to be a challenge. United Nations Millennium Development Goal (MDG) 7 sets a target to halve by 2015 the proportion of the population without sustainable access to safe drinking water and basic sanitation.

OBJECTIVES:

1. To assess the existing knowledge of mothers of school age children regarding management and prevention of typhoid fever.
2. To determine the effectiveness of pamphlet among mothers of school age children regarding management and prevention of typhoid fever.
3. To find out the association between pre test knowledge score of mothers of school age children regarding management and prevention of typhoid fever with their selected demographic variables.

RESEARCH HYPOTHESIS

H₁: The mean post test knowledge is higher than that of their mean pre test knowledge scores regarding management and prevention of typhoid fever among mothers of school age children..

H₂: There will be significant association between pre test level of knowledge score regarding management and prevention of typhoid fever among mothers of school age children and their

selected demographic variables.

MATERIAL & METHODS:

Research Approach

This study researcher chose the Quantitative experimental research approach as appropriate to describe the knowledge regarding management and prevention of typhoid fever among mothers of school age children in selected rural areas at bharatpur"

Research Design

In study, the research design selected for the present study was pre experimental research design, one group pre-test post-test design which to describe the knowledge regarding management and prevention of typhoid fever among mothers of school age children in selected rural areas at bharatpur"

Key :-

01- Pre-test knowledge on first day.

02- Post test knowledge after seventh day.

X- Intervention, administer pamphlet on first day.

Setting of the Study

Setting refers to the area where the study is conducted. Setting is the physical location and condition in which data collection take place in a study. The selection of an appropriate setting is important because the setting can influence the way people behave or feel and how they respond.

This study will be conducted at Rarah , Bharatpur.

Population

Denise F Polit (2002) refers to population as an entire set of individuals having some common characteristics, sometimes universal. In the present study, the population was mothers of school age children residing in Bharatpur.

Sample and Sampling Technique Sample:

Sample for the present study is mothers of school age children residing in Rarah, bharatpur who fulfill the inclusion criteria.

Sample Size

Sample size for the present study is 60 mothers of school age children.

Sampling Technique

In the present study the use of purposive sampling technique is a type of non probability sampling approach adopted for present study.

Sampling Criteria

Inclusion criteria:

1. Mothers accompanying with school age children in selected rural areas, Bharatpur.
2. Mothers of school age children who are willing to participate in the study.
3. Mothers of school age children who can understand and speak Hindi or English.
4. Mothers of school age children who are present at the time of study.

Exclusion criteria:

1. Mothers of school age children who are not willing to participate in the study.
2. Mothers of school age children those who cannot understand Hindi or English.
3. Mothers of school age children Who was not present at

the time of study.

Ethical Consideration

Formal permission was obtained from the Sarpanch of Rarah, Bharatpur before conducting the study. Written consent was obtained from all samples of the study after explaining the purpose of the study. The subjects were assured that confidentiality would be maintained on information.

Tools for Data Collection

Structured knowledge questionnaire was used to assess the knowledge regarding management and prevention of typhoid fever among mothers of school age children in selected rural areas at Bharatpur.

Development of The Tool

These steps were followed for preparing the tools: -

1 Development of structured knowledge questionnaire

- (a) Planning the structured knowledge questionnaire. Prepares blue print, articles, books, journals, published and unpublished research studies and mainly website links were reviewed and used to build up a good tool for the study.
- (b) 30 objective type items prepared. The items were constructed in consultation with experts in the field of paediatric department. Each item has four alternative responses; samples are requested to answer for one best possible answer. One score given for each correct question and zero for wrong answer. The maximum score was 30 and lowest score was 0.
- (c) Planning to item analysis for item difficulty and discriminating value.

Description of The Tool

Section-A: deals with demographic data consist of 8 items used to collect the sample characteristics, which comprises of Age, Religion, Type of family, Occupation Educational Status, Family monthly income, No. of children and Source of knowledge related to management and prevention of typhoid fever.

Section-B: consists of 30 items, which has the knowledge questions about the knowledge of management and prevention of typhoid fever.

Intervention of The Study

The researcher designed, developed and administered a structured teaching programme on knowledge of management and prevention of typhoid fever.

Testing The Instrument

(A) Content Validity: The prepared tool was validated by 7 experts i.e., Paediatric nursing-5, Paediatrician-1, and Statistician-1. The experts were requested to judge items for relevance, clarity, appropriateness of the title and content area. Minor modifications were done in the tool based on expert's suggestions and in consultation with the guide. The tool was translated into Hindi without changing the meaning.

(B) Reliability of The Tool: Using test retest method, the item score was analyzed and by Carl Pearson's formula reliability coefficient was found out. The reliability coefficient was found to be 0.90. It was statistically significant and thus highly reliable.

RESULT

It is analysed and presented in term of frequency and percentage distribution.

Table-I- Frequency and Percentage distribution of subjects according to demographic variables.

S.N.	Demographic variables	Frequency(N)	Percentage (%)
1	Age in year		
	20-25 years	12	20
	26-30 years	21	35
	31-35 years	15	25
2	36-40 years	12	20
	Religion		
	Hindu	30	50
	Muslim	12	20
3	Christian	9	15
	Others	9	15
4	Type of family		
	Nuclear	15	25
	Joint	30	50
	Extended	15	25
5	Occupation		
	Housewife	12	20
	Labourer	18	30
	Employee	18	30
6	Business	12	20
	Educational status		
	Illiterate	18	30
	Primary school	18	30
7	High school	12	20
	Graduate and above	12	20

6	Family monthly income		
	<5000	12	20
	5001-10000	18	30
	10001-20000	18	30
	>20000	12	20
7	No. of children		
	One	12	20
	Two	21	35
	More than two	27	45
8	Source of knowledge		
	Newspaper/magazines	12	20
	Radio and T.V.	9	15
	Through family members	18	30
	Through health personnel	21	35

Table 2: Frequency and Percentage distribution of pre-test knowledge score of mothers of school age children regarding management and prevention of typhoid fever.

Knowledge Score	Grade	Pre test			
		Frequency	Percentage	Mean score	S.D.
0-10	Poor	24	40%	12.3	±6.62
11-20	Average	30	50%		
21-30	Good	6	10%		

Table 3: Frequency and Percentage distribution of post-test knowledge score of mothers of school age children regarding management and prevention of typhoid fever.

Knowledge Score	Grade	Post test			
		Frequency	Percentage	Mean score	S.D.

Table-I- Frequency and Percentage distribution of subjects according to demographic variables.

0-10	Poor	0	0%	19.5	±4.89
11-20	Average	36	60%		
21-30	Good	24	40%		

Table -4 Association between age and pre-test knowledge of respondent regarding management and prevention of typhoid fever.

Age group (years)	Respondent knowledge level								χ^2 value
	Poor		Average		Good		Total		
	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	
20-25 yrs.	8	66.67 %	3	25 %	1	8.33 %	12	20	7.510 NS
26-30 yrs	9	42.85 %	11	52.38 %	1	4.77 %	21	35	
31-35Yrs.	5	33.33 %	8	53.33 %	2	13.33 %	15	25	
36-40Yrs.	2	16.67 %	8	66.66 %	2	16.67 %	12	20	
Combined	24	40%	30	50%	6	10	60%	100	

NS: Non-Significant,

$\chi^2(0.05, 6df) = 12.59$

Table -5: Association between religion and pre-test knowledge of respondent regarding management and prevention of typhoid fever.

NS: Non-	Religion	Respondent knowledge level								$\chi^2_{2\text{value}}$
		Poor		Average		Good		Total		
		Numbe r	Percenta ge	Numb er	Percenta ge	Numb er	Percenta ge	Numbe r	Percenta ge	
	Hindu	10	33.33%	18	60%	2	6.67%	30	50	5.04 NS
	Muslim	4	33.33%	6	50%	2	16.67%	12	20	
	Christian	4	44.44%	4	44.44%	1	11.12%	9	15	
	Others	6	66.66%	2	22.22%	1	11.12%	9	15	
	Combined	24	40%	30	50%	6	10%	60	100	

Significant, $\chi^2(0.05, 6df) = 12.59$

Table -6: Association between type of family and pre-test knowledge of respondent regarding management and prevention of typhoid fever.

Type of family	Respondent knowledge level								$\chi^{2\text{value}}$
	Poor		Average		Good		Total		
	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	
Nuclear	9	60%	5	33.33%	1	6.67%	15	25	5.00 NS
Joint	12	40%	15	50%	3	10%	30	50	
Extended	3	20%	10	66.67%	2	13.33%	15	25	
Combined	24	40%	30	50%	6	10%	60	100	

NS: Non-Significant, $\chi^2(0.05, 4df) = 9.49$

Table -7 : Association between occupation and pre-test knowledge of respondent regarding management and prevention of typhoid fever.

Occupation	Respondent knowledge level								χ^2 value
	Poor		Average		Good		Total		
	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	
House Wife	4	33.33%	6	50%	2	16.67%	12	20	6.23 NS
Labourer	12	66.67%	5	27.77%	1	5.56%	18	30	
Employee	6	33.33%	10	55.56%	2	11.11%	18	30	
Business	4	33.33%	7	58.37%	1	8.33%	12	20	
Combined	26	43.33%	28	46.67%	6	10%	60	100	

NS: Non-Significant, $\chi^2(0.05, 6df) = 12.59$

Table -8: Association between educational status and pre-test knowledge of respondent regarding management and prevention of typhoid fever.

Educational Status	Respondent knowledge level								χ^2_{value}
	Poor		Average		Good		Total		
	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	
Illiterate	11	61.11%	7	38.89%	0	0.0%	18	30	7.77 NS
Prim. School	7	38.89%	9	50%	2	11.11%	18	30	
High School	4	33.33%	6	50%	2	16.67%	12	20	
Graduate & above	2	16.67%	8	66.66%	2	16.67%	12	20	
Combined	26	40%	30	50%	6	10%	60	100	

NS: Non-Significant, $\chi^2(0.05, 6df) = 12.59$

Table -9: Association between family monthly income and pre-test knowledge of respondent regarding management and prevention of typhoid fever.

NS:
Non-

Monthly Income	Respondent knowledge level								χ^2 value
	Poor		Average		Good		Total		
	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	
<5000	5	41.67%	6	50%	1	8.33%	12	20	4.23 NS
5001-10000	8	44.44%	9	50%	1	5.56%	18	30	
10001-20000	9	50%	7	38.89%	2	11.11%	18	30	
>20000	2	16.67%	8	66.66%	2	16.67%	12	20	
Combined	24	40%	30	50%	6	10%	60	100	

Significant,

$$\chi^2(0.05, 6df) = 12.59$$

Table -10 : Association between number of children and pre-test knowledge of respondent regarding management and prevention of typhoid fever.

No. of Children	Respondent knowledge level								χ^2 value
	Poor		Average		Good		Total		
	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	

One	7	58.33%	4	33.33%	1	8.34%	12	100	4.58 NS
Two	5	23.82%	14	66.66%	2	9.52%	21	100	
More than Two	12	44.44%	12	44.44%	3	11.12%	27	100	
Combined	24	40%	30	50%	6	10%	60	100	

NS: Non-Significant,

$$\chi^2(0.05, 4df) = 9.49$$

Table -11 : Association between source of knowledge and pre-test knowledge of respondent regarding management and prevention of typhoid fever.

Source of Knowledge	Respondent knowledge level								χ^2 value
	Poor		Average		Good		Total		
	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	
News paper/magazine	5	41.67%	6	50%	1	8.33%	12	100	0.827 NS
Radio & t.v.	4	44.44%	4	44.44%	1	11.12%	9	100	
Through Family member	8	44.44%	8	44.44%	2	11.12%	18	100	
Through Health personal	7	33.33%	12	57.14%	2	9.53%	21	100	
combined	24	40%	30	50%	6	10%	60	100	

NS: Non-Significant,

$$\chi^2(0.05, 6df) = 12.59$$

Table no.14: Mean, mean difference, 't' value of pre-test and post-test knowledge score.

N=60

Knowledge	Mean	SD	Mean difference	Df	"t" Value
Pre test	12.3	±6.62	7.20	59	21.40
Post test	19.5	±4.89			

't':- 2.00,P<0.05%

The results of the survey showed that, when it came to managing and preventing typhoid fever, 40% of mothers had low knowledge, 50% had moderate knowledge, and only 10% had strong knowledge. In the post-test, 40% of moms had good knowledge, 60% had average knowledge, and none had poor knowledge. A statistically significant gain in knowledge was indicated by the mean knowledge score rising from 12.3 ± 6.62 in the pre-test to 19.5 ± 4.89 in the post-test, with a mean difference of 7.20 and a t value of 21.40.

The results also demonstrated that several demographic factors, such as age, religion, family type, occupation, educational status, family monthly income, number of children, and source of knowledge, did not significantly correlate with pre-test knowledge.

DISCUSSION

The study found that most mothers were aged 26–30 years (35%), belonged to joint families (50%), and had average educational and income levels. Pre-test findings showed that 50% had average, 40% poor, and 10% good knowledge regarding typhoid fever. After the intervention, 60% had average and 40% had good knowledge. No significant association was found between pre-test knowledge and selected demographic variables. The mean knowledge score increased from 12.3 in the pre-test to 19.5 in the post-test. The obtained *t* value (21.40, $p < 0.05$) indicated a significant improvement, demonstrating that the pamphlet with lesson plan was effective.

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