Research Article

A Comparative Study to Assess the Knowledge Regarding Dengue Fever among Mother of Under-Five Children of Selected Rural and Urban Area

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Abstract

Aim: The aim of the present study was to carry out a comparative study to assess the knowledge regarding dengue fever (DF) among mother of under-five children of selected rural and urban area.

Materials and Methods: Sixty samples from rural area and 60 samples from urban area were selected by simple random sampling technique according to inclusion criteria. Non-experimental descriptive research design was used. Data collected with the help of questionnaire on DF. After data collection, health education was given to improve knowledge of mothers.

Results: The mean values for knowledge of mother of under-five children from urban and rural were calculated. The mean value for urban area was found to be 18.13 which is more than the mean of rural area (15.16). In this study, Z-test was used, |Z| value is 7.81. Calculated Z value is greater than tabulated value (1.895). Hence, it can be concluded that knowledge of mothers of under-five children from urban area regarding DF is greater than knowledge of mothers from rural area. In the study, research hypothesis (H_1, i.e., there will be significant difference in the knowledge of mother of under-five children from rural area than urban area regarding DF) is accepted.

Conclusion: Conclusion of the study was that there is a significant difference in the knowledge of mother of under-five children from rural area than urban area regarding DF.

Keywords: Assessment, dengue fever, knowledge, mother of under-five children.

Introduction

Young children are precious in their own right and they are the future of the nation. A wealth of research in recent years has revealed that children's experiences from birth to age 5 have a powerful effect on the rest of their lives. From the beginning, the brain starts "wiring for learning" and early experiences set the brain's patterns for thinking and feeling. How children are treated and how the adults around them behave strongly influence both children's ability to learn and the attitudes they develop about their own worth and the worth of others. Child health care is the most crucial factor to determine growth of the child, especially in the first 5 years of life. Certain specific biological and psychological needs must be met to ensure the survival and healthy development of the child to a healthy future adult.[1]

Dengue fever (DF) (pronounced "DhenGey") is a viral infection common throughout the tropical regions of the world. The terms "dengue" is a Spanish attempt at the Swahili phrase "Ki dengapepo" meaning "cramp-like seizure caused by an evil spirit." This disease used to be called "break-bone fevers" because it sometimes causes severe joint and muscle pain that feels like bones are breaking, hence the name.[2]

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DF is an old disease, the first record of a clinically compatible disease being recorded in a Chinese Medical Encyclopedia in 1992. As the global shipping industry expanded in the 18th and 19th centuries, it created ideal conditions for the mosquito vector, *Aedes aegypti*. Both the mosquitoes and the viruses were thus spread to new geographic areas causing major epidemics. It is spread by the day-biting *A. aegypti* mosquitoes.[3]

According to Times of India (2017), dengue swept across the Mumbai city in September 2017 has claimed 12 lives of in which six were pediatric patients aged between 2 and 16 years with this, the city's dengue death toll for the year has touched 14, making it the highest in the past 5 years. In 2017, deaths have nearly tripled when compared with 2016 when the casualty count was five. A civic official told that a majority of the deaths and admissions were reported in the beginning of the past 2 weeks of September 2017. Nine out of the 12 deaths happened between September 15, 2017, and September 30, 2017. However, the deaths of many pediatric patients have been intriguing. It was discussed with several experts though there does not seem to be a single cause responsible, said the official, adding the dengue cases have started declining. Youngest child among the deceased was a 2-year-old boy from Andheri who had fever for 4 days along with convulsions at his home. He died in one of the public hospitals.[4]

Objectives

The objectives of the study were as follows:

1. To assess knowledge regarding DF among mothers of under-five children in selected rural area
2. To assess knowledge regarding DF among mothers of under-five children in selected urban area
3. To compare knowledge of mother of under-five children regarding DF in selected rural and urban area
4. To educate mother of under-five children about DF.

Hypothesis

- H_0: There will not be significant difference in knowledge regarding DF between mothers of under-five children from rural and urban area
- H_1: There will be a significant difference in the knowledge of mother of under-five children from rural area than urban area regarding DF.

Materials and Methods

Research design and approach

In this study, quantitative approach and non-experimental descriptive comparative research design were used.

Setting of the study

The study was being conducted at selected rural and urban area.

Description of tools

The tool contains questionnaire, sections are as follows:

Section I

Demographic data: Age, education, residence, occupation, no. of children, age of children in year, monthly income, previous knowledge regarding DF, if yes then source of knowledge.

Section-II

Structured knowledge questionnaire to assess the knowledge of mothers of under-five children from rural and urban area regarding DF.

Section III

Survey format for find out of mothers of under-five children regarding DF from rural and urban area.

Population of the study

In this study, population is mother of under-five children from selected rural and urban area.

Sampling size

In this study, mothers of under-five children, 60 mothers from rural area and 60 from urban area.

Sampling technique

Rural area

After taking permission from sarpanch, ASHA worker help has been taken to find out area and then researcher conducted survey to find out mother of under-five children, a total of 135 families survey done and then out of 60 mothers of under-five mothers selected by simple random sampling technique.

Urban area

After taking permission from Nagarsevak, researcher conducted survey in selected urban area to find out mother of under-five children, a total of 135 families survey done and then out of 60 mothers of under-five children selected by simple random sampling technique.

Data collection procedure

Urban area

- Researcher conducted survey for 3 days. A total of 135 families' survey were done. Among them, 60 mothers selected by simple random sampling
- On the 1st day, data collected from 40 samples, four groups established, in each group, 10 mothers are included according to inclusion and exclusion criteria. After data collected from mothers of under-five children regarding DF from urban area, health education given to mothers of each group
- On the 2nd day, data collected from 20 samples, two groups established, in each group, 10 mothers are included according to inclusion and exclusion criteria. After data collected from mothers of under-five children regarding DF from urban area, health education given to mothers of each group.

Rural area

- ASHA workers help was taken to find out area and then researcher conducted survey to find out mother of under-

five children. Researcher conducted survey for 3 days to find out mother of under-five children. A total of 135 families covered. Among them, 60 mothers of under-five children selected

- After that, researcher taken permission and consent from mothers of under-five children about participation for research study. On the 1st day, data collected from 30 mothers, three groups established, in each group, 10 mothers are included according to inclusion and exclusion criteria
- After data collected from mothers of under-five children regarding DF from rural area, health education given to mothers of each group
- On the 2nd day, data collected from 30 mothers, three groups established, in each group, 10 mothers are included according to inclusion and exclusion criteria. After data collected from mothers of under-five children regarding DF from rural area, health education given to mothers of each group.

Reliability to tool

In this study, test-retest method uses to check consistency of tool. Test and re-test perform and value is calculated according to Kuder-Richardson formula. "r" value was 0.75, calculated value indicates that tool is reliable to conduct study.

Statistical analysis

Demographic variables were analyzed in terms of frequency and percentage. Comparison of knowledge of mother of under-five children from rural and urban area regarding DF was done. In this study, Z-test was used.

Results

Section I

- It deals with demographic data of mothers of under-five children from rural area
- It deals with demographic data of mothers of under-five children from urban area.

Table 1 reveals that most of samples from in rural area age of 46.66% of mothers were 18 years-–21 years 5 months In urban area 38.33% of mothers of under-five children were 18 years–21 years 5 months. From rural area, mothers belong to primary education, that is, 41.67%. In urban area, majority 45% of mothers education was higher secondary. 55% of mothers of under-five children in rural area was housewife. In urban area, 66.66% of mothers were housewife and 15% of mother's occupation was farming. In rural area, 50% of mothers having 1 children. In urban area, 66.66% of mothers having 1 child, 28.33% of mothers having 2 children. In rural area, majority of 68.33% of mothers having up to 1 year age of children. In urban area, 41.66% of mothers having up to 1 year children. In rural area, 60% of mothers having Rs. 3000–5000 monthly income. In urban area, 56.66% of mothers monthly income was Rs. 3000–5000. 71.60% of mothers have knowledge regarding DF in rural area, and 48.33% of mothers got knowledge from the television. in urban area, 73% of mother's answers was yes for the question of "do you have knowledge regarding DF?" And in that 30% of mothers use television as source of knowledge.

Section II

It deals with the assessment of knowledge level regarding DF among mothers of under-five children from rural area.

Table 2 predicts that in rural area, 43.33% of mothers had good knowledge, 35% of mothers had average knowledge, 13.33% have very good knowledge, and 8.33% have excellent knowledge.

Section III

It deals with the assessment of knowledge level regarding DF among mothers of under-five children from urban area.

In urban area, 50% of mothers has very good knowledge, 35% of mothers has good knowledge 8.33% average knowledge, 5% of mothers had excellent knowledge, and 1.67% of mothers had poor knowledge, as indicated in Table 3.

Section IV

It deals with comparison of knowledge of mother of under-five children from rural and urban area regarding DF.

In this study, Z-test was used, | Z | value is 7.81.

As per Table 4, according to calculated mean difference between knowledge of mother of under-five children from urban and rural area, mean score of urban area (18.13) is more than the mean of rural area (15.16). |Z| value is 7.81. Calculated Z value is greater than tabulated value (1.895). Knowledge of mothers of under-five children from urban area regarding DF is greater than knowledge of mothers from rural area. In the study, research hypothesis (H_1) accepted.

Discussion

Kogila *et al.* (2016) DF is an infectious, killer disease and many people confuse it with malaria. Symptoms of dengue include severe headache, pain in the muscles and joints, and rash that can be described as small red spots. Title of the study is a descriptive study to assess the level of knowledge on prevention of DF among the mothers of under-five children in selected hospital, Kanchipuram district, Tamil Nadu, India. Objective of the study was assess the level of knowledge on prevention of DF among the mothers of under-five children and to find out the association between the level of knowledge on prevention of DF among the mothers of under-five children with the selected demographic variables. This study had used non-experimental descriptive design with quantitative approach and was conducted among the mothers of under-five children who are attending outpatient pediatric department of in selected hospital, Kanchipuram district, Tamil Nadu, India, who fulfills the given criteria. Sample size was 30 and the sampling technique used was non-probability, convenient sampling. The study results reveal that 50% of the mothers

Table 1: Demographic data of mothers of under-five children from rural and urban area

Demographic variables	Rural *n*=60		Urban *n*=60	
	Frequency	Percentage	Frequency	Percentage
Age of mothers (in year)				
18 years–21 years 5 months	28	46.67	23	38.33
21 years 6 months–25 years 5 months	10	16.67	22	36.66
25 years 6 months–4 years	28.33	28.33	15	25
40 years and above	05	8.33	0	0
Education				
Primary	25	41.67	15	25
Secondary	17	28.33	15	25
Higher secondary	15	25	27	45
Graduation and above	03	5	3	5
Occupation				
Government service	0	0	1	1.66
Private service	1	1.67	4	6.66
Business	6	10	6	10.16
Farming	20	33.33	9	15
Housewife	33	55	40	66.66
Number of children				
1	30	50	40	66.67
2	11	18.33	17	28.33
3	12	20	02	3.33
4	17	11.67	01	1.67
Age of children of children				
Up to 1 year	25	41.66	41	68.33
1–2 years	13	21.66	12	20
2–4 years	15	25	15	25
4–5 years	18	30	12	20
Monthly income				
Rs. 3000–5000	36	60	34	56.66
Rs. 5001–7000	10	16.67	10	16.66
Rs. 7001–9000	05	8.33	06	10
Rs. 9001 and above	9	15	10	16.66
Do you have knowledge regarding dengue fever?				
Yes	43	71.60	44	73
No	17	28.33	16	26.66
If yes than source of knowledge				
Radio	2	4.65	1	1.66
News paper	4	9.30	10	16.66
Television	29	48.33	18	30
Health-care professionals	8	18.60	15	25

Table 2: Level of knowledge of mother of under-five children from rural area

Level of knowledge	Rural *n*=60	
	Frequency	Percentage
Poor	0	0
Average	21	35
Good	26	43.33
Very good	8	13.33
Excellent	5	8.33

are having inadequate knowledge and 43.3% of the mothers are having moderate adequate knowledge and only 6.7% are adequate knowledge. Mean score is 18.1, standard deviation's 3.49. Hence, this study shows that the mothers of under-five children are having a poor knowledge regarding prevention of DF. Conclusion of the study was the mothers must be aware of this infectious disease, just because this disease causes silent morbidity and mortality among the under-five children.[5]

Hermaline (2016) DF is a febrile viral disease characterized by sudden onset, and fever on 3–5 days. Dengue viruses (DENVs) are flavivirus and include four serotypes one, two, three, and four. These viruses also responsible for dengue hemorrhagic fever (DHF). The viruses are transmitted to man by bite of infective mosquitoes, mainly *Aedes aegypti*. DF viruses are considered the most important arboviruses in terms of morbidity, mortality, and economic cost within estimated 100 million cases of DF occurring throughout the world annually. Signs and symptoms of DF include fever, maculopapular rashes, and headache, primary infection with dengue usually results in febrile, self-imitating diseases, however, secondary infection may result in severe complication such as dengue shock syndrome or DHF. The title of study is a study to assess the knowledge on prevention and control of DF among the mothers of under-five children at Karaikalmedu village, Karaikal. The objective of the study is to assess the knowledge on control

Table 3: Knowledge level regarding dengue fever among mothers of under-five children from urban area

Level of knowledge	Urban $n=60$	
	Frequency	Percentage
Poor	1	1.67
Average	5	8.33
Good	21	35
Very good	30	50
Excellent	3	05

Table 4: Comparison of mean, standard deviation, and standard error

Area	Total	Mean	Standard deviation	Standard error
Urban (*n*-60)	1088	18.13	4.86	0.38
Rural (*n*-60)	910	15.16	4.66	0.38

and prevention of DF among the mothers of under-five children and to find the association between knowledge on DF among the mothers of under-five children with selected demographic variables. The design used for this study was descriptive design. The study was conducted for mothers of under-five children who are residing at Karaikalmedu, Karaikal, aged between 20 and 40 years. Sample size was 30 and the samples were selected using purposive sampling technique and with predetermined inclusion criteria. Tool consists of two sections: Section-I – It has items related to demographic variables such as age, religion, parents' occupation, and family income, type of family, and sources of information. Section-II – It consists of knowledge questionnaire regarding prevention and control of DF among mothers of under-five children. After getting written permission from panchayat president in Karaikalmedu village and informed oral consent was obtained from the study participants. Data were collected from mothers of under-five children. Self-structured questionnaire was administered to each mother separately and data were collected on the same day from all the participants. Results of the study revealed that 26% of the sample were in the age group of 25–30 years. About 46% were got secondary education, 43% belongs to self-employee, 70% of mothers were belong to Muslim, 90% belongs to both vegetarian and non-vegetarian, and 40% were got information from mass media. Conclusion was a significant association between knowledge regarding prevention and control of DF with selected demographic variables such as age, education, occupation, religion, place of living, and sources of information.[6]

Vong *et al.* dengue vaccines are now in late-stage development. Evaluation and robust estimates of dengue disease burden are needed to facilitate further development and introduction. In Cambodia, the national dengue case definition only allows reporting of children <16 years of age, and little is known about dengue burden in rural areas and among older persons. To estimate the true burden of dengue in the largest province of Cambodia, Kampong Cham, we conducted community-based active DF surveillance among the 0–19 years age group in rural villages and urban areas during 2006–2008. Active surveillance for febrile illness was conducted in 32 villages and 10 urban areas by mothers trained to use digital thermometers combined with weekly home visits to identify persons with fever. An investigation team visited families with febrile persons to obtain informed consent for participation in the follow-up study, which included collection of personal data and blood specimens. Dengue-related febrile illness was defined using molecular and serological testing of paired acute and convalescent blood samples. Over the 3 years of surveillance, 6121 fever episodes were identified with 736 laboratory-confirmed DENV infections for incidences of 13.4–57.8/1000 person-seasons. Average incidence was highest among children <7 years of age (41.1/1000 person-seasons) and lowest among the 16–19 years age group (11.3/1000 person-seasons). The distribution of dengue was highly focal, with incidence rates in villages and urban areas ranging from 1.5 to 211.5/1000 person-seasons (median 36.5). During a DENV-3 outbreak in 2007, rural areas were affected more than urban areas (incidence 71 vs. 17/1000 person-seasons, $P < 0.001$). The large-scale active surveillance study for DF in Cambodia found a higher disease incidence than reported to the national surveillance system, particularly in preschool children and that disease incidence was high in both rural and urban areas. It also confirmed the previously observed focal nature of DENV transmission.[7]

Conclusion

Non-experimental descriptive study was effective to assess knowledge of mothers of under-five children from urban area and rural area. Health education given to the mothers of both urban and rural areas regarding DF to improve the knowledge regarding DF to protect their children from DF and care during DF.

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