RESEARCH PAPER

Knowledge, Attitude and Practice towards Prevention of Japanese Encephalitis among Mothers of Under-Five Children

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Abstract

The study was carried out to assess the knowledge, attitude, practice and association between knowledge and demographic variable. The main objectives of the study were 1. To assess the level of knowledge regarding Japanese encephalitis among mothers of under five children 2. To assess the attitude regarding Japanese encephalitis among mothers of under five children.3.To assess the existing practices on prevention of Japanese encephalitis infection among mothers of under five children.4.To find out the association between level of knowledge on Japanese encephalitis infection with selected demographic variable. **Methodology:** A descriptive study was conducted in selected hospitals at Varanasi. The samples of this study were 100 mothers of under five children. The samples whoever fulfilled the inclusion criteria were selected by purposive sampling technique. The structured interview questionnaire tool was used to collect data from the participants. Data analysis was done by descriptive and inferential statistics. **Result:** We selected 100 samples for our study using purposive sampling method. The result shows that 54% were having moderately adequate knowledge, 94% had a good attitude towards prevention of Japanese encephalitis, 82% of the study population had a good practice towards prevention of Japanese encephalitis, on associating the demographic variables with the knowledge of the Japanese encephalitis there was a significant association with the demographic variables like drainage system, family history of Japanese Encephalitis and source of information. **Conclusion:** The finding of this study indicates that the mothers having moderately adequate knowledge regarding Japanese encephalitis. However, their attitude towards prevention of Japanese encephalitis was generally positive and had a good practice towards prevention of Japanese encephalitis. This concludes that more training and health education is needed among the under-five mothers on the prevention of Japanese Encephalitis.

Key words: JE, Japanese Encephalitis, Knowledge, Attitude, Practice, Mothers, under five children, Varanasi Uttar Pradesh India,

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BACKGROUND OF THE STUDY

Japanese Encephalitis (JE) is a mosquito-borne viral disease that causes inflammation of the brain (encephalitis). It is spread by the bite of infected culex mosquitoes, particularly Culex tritaeniorhynchus, and is most common in rural and agricultural areas of Asia and the Western Pacific. While most infections are asymptomatic, severe cases can lead to symptoms like fever, headache, confusion, seizures, and even death, with survivors potentially experiencing permanent neurological damage. JEV is the main cause of viral encephalitis in many countries of Asia with an estimated 100 000 clinical cases every year [1]

Japanese encephalitis virus (JEV) is a flavi virus related to dengue, yellow fever and West Nile viruses, and is spread by mosquitoes (especially Culex tritaeniorhynchus). JEV is the main cause of viral encephalitis in many countries of Asia

with an estimated 100 000 clinical cases every year. Although symptomatic Japanese encephalitis (JE) is rare, the case-fatality rate among those with encephalitis can be as high as 30%. Permanent neurologic, cognitive and behavioural sequelae occur in 30–50% of those with encephalitis. The majority of cases occur in children below 15 years of age. Twenty-four countries in the WHO South-East Asia and Western Pacific Regions have endemic JEV transmission, exposing more than 3 billion people to risks of infection. There is no cure for the disease. Treatment is focused on relieving severe clinical signs and supporting the patient to overcome the infection. Safe and effective vaccines are available to prevent JE. WHO recommends that JE vaccination be integrated into national immunization schedules in all areas where JE disease is recognized as a public health issue.[2] [11]

. A literature review and modelling study estimates about 100 000 clinical cases (95% CI: 61 720–157 522) of JE globally each year, with approximately 25 000 deaths (95% CI: 14 550–46 031). Encephalitis is a medical emergency and requires urgent medical attention. There is no antiviral treatment for patients with JE. Treatment is supportive and includes stabilization and relief of symptoms. Those who have lived through encephalitis often have health-care needs requiring long-term treatment and care including rehabilitation. The on-going psychosocial impacts of disability from encephalitis can have medical, educational, social and human rights-based implications [2]

The complications of JE were recorded as neurological sequelae were defined by the presence of one or more of the following at discharge; impaired consciousness, weakness (monopoiesis, hemiparesis, and quadriparesis), focal or generalized abnormal limb tone (hypertonia and hypotonia), focal or generalized abnormal limb reflexes (hyperreflexia and hyporeflexia), diagnosis of new onset or recurrent seizures, or new or recurrent extra pyramidal movement disorders [3] the number of AES seizures and the number of affected districts have increased yet the mortality due to AES seizures has been brought down to 4.72% .[4] In India, while 24 states are endemic for JE, Uttar Pradesh contributed more than 75% of cases during the recent past. Over the years, the seasonal trend has changed and the epidemic peak of the disease has advanced by one month.[5] Uttar Pradesh is highly endemic for Japanese Encephalitis (JE), historically accounting for about 75% of cases in India, with its eastern districts, especially the Gorakhpur region, being the epicentres due to favourable breeding conditions for mosquitoes[6]. JE cases in India often follow a seasonal pattern, with increased transmission during the monsoon (July to August) and post-monsoon period (October to November) when breeding places and mosquito population are increased. Outbreaks typically occur from July to October, peaking during the rainy season. Japanese encephalitis primarily affects children and individuals living in rural areas, especially those involved in agricultural activities. Children under the age of 15 are particularly susceptible to severe forms of the disease, and the infection can lead to long-term neurological complications or death. [8]

Despite a significant historical burden, recent government and non-profit efforts in implementing a "One health approach" including vector control, immunization, and community awareness programs, have led to a substantial reduction in JE/Acute Encephalitis Syndrome (AES) cases and fatalities in recent years. [6]

MATERIALS AND METHODS

The study was carried out to assess the knowledge, attitudes and practice towards prevention of Japanese encephalitis among mothers of underfive children in selected hospitals at Varanasi district, Uttar Pradesh. The main **objectives** of the study were 1.To assess the level of knowledge regarding Japanese encephalitis among mothers of underfive children.2.To assess the attitude regarding Japanese encephalitis among mothers of underfive children.3.To assess the existing practices on prevention of Japanese encephalitis infection among mothers of under five children.4.To find out the association between level of knowledge on Japanese encephalitis infection with selected demographic variable. **Ethical clearance**: College ethical committee clearance was obtained before start the study process. **Research approach and design**: Quantitative approach and descriptive design was adopted to conduct this study. **Setting:** The study was limited to conduct in selected hospitals at Varanasi district. **Sample**: Mothers of under five children who attended selected hospitals OPD and who fulfilled the inclusion criteria were considered as study samples. **Sampling technique**: Non probability purposive sampling technique was used t select samples. **Sample size**:100 mothers of under five children. **Hypothesis:** H_1-There will be significant association between the level of knowledge on prevention of Japanese encephalitis with selected demographic variables. **Limitation:** The study was limited to conduct in selected hospitals at Varanasi district. **Projected outcome:** The study outcome is projected

to be helpful to all mothers of under five children and to government to implement various programme. **Tool:** Structured questionnaire tool was tested for its validity and reliability before implementation. The tools consist of 4 sections. **Section 1:** deals with demographic variables the demographic data consists of baseline information such as Age, Education, Occupation, Income, Areas of Living, House Environment, Pet Animals, Drainage System, House Waste Disposal, Family History of Japanese Encephalitis, Usage of replants. Source of Information. **Section 2:** Structured interview questionnaire tool was used to assess the level of knowledge. The tool consists of 20 multiple choice questions with four options. Each correct answer carries one marks and each wrong answer carries zero mark with a maximum score 20 and minimum score zero, the total score 20, depending on the level of knowledge was graded in to adequate, moderately adequate and inadequate. **Section 3** contains 5-point Likert scale to assess the attitude on prevention of Japanese encephalitis. The Likert scale consists of 10 questions, each question as its 5 dimensions like strongly agree, agree, neutral, disagree, strongly disagree. According to their level of attitude it is categorized into good, average and poor. Section 4 contains checklist with 10 questions includes 'yes or no' option. **Data collection procedure:** Prior to data collection, written permission was obtained from management of Care Children Hospital Varanasi. After received written and oral consent from study participants, data collection was done from 9 am to 3 pm from 100 mothers of under five children whoever attended OPD at mentioned hospital. One week (7 days) duration was taken to complete the entire data collection procedure. We spent approximately 45 minutes with each sample to collect the required data. The collected data was summarized organized, tabulated and analysed according to the objectives of the study by using descriptive (frequency and percentage) and an inferential statistic (chi-square).

Results and discussion

Section 1

Demographic variables

Table: 1: -Demographic variables towards mothers of under five children

N=100

S. no	Demographic variable	Option	(n) Frequency	(%) Percentage
1	Age	18-25yrs	43	43
		26-33yrs	42	42
		34-42yrs	14	14
		42 and above	1	1
2	Education	Illiterate	7	7
		Primary education	16	16
		High school	43	43
		Graduation	34	34
3	Occupation	Farmer	7	7
		House wife	55	55
		Job	29	29
		Student	9	9
4	Income	Rs 5000-10,000	68	68
		Rs 10,000-15,000	22	22
		Rs 15,000-20,000	7	7
		Rs 20,000-25,000	3	3
5	Areas of Living	Rural	56	56

		Urban	34	34
		Slum	5	5
		Hilly	5	5
6	House Environment	Near House water stagnation	20	20
		Living near Farming land	38	38
		Cattle Near house	14	14
		All the above	28	28
7	Pet Animals	Dog	26	26
		Pig	5	5
		Cow	57	57
		Goat	12	12
8	Drainage System	Open type	39	39
		Closed type	61	61
9	House Waste Disposal	In field	63	63
		Deep burial	4	4
		Municipal dustbin	33	33
10	Family History of Japanese Encephalitis	Yes	19	19
		No	81	81
11	Usage Of Mosquito Preventable Measure	Yes	85	85
		No	15	15
12	Source Of Information	ASHA	18	18
		Neighbour	23	23
		Family member	17	17
		Mass media	42	42

Table 1 describes as follows

Age distribution of the study participants, it showed that about 43% were from the age group of 18-25years, 42% were from the age group of 26-33years, 14% were from the age group of 34-42years and only 1% was from the age group 43years and above. In our research most of the research participants were from the age group of 18 to 25years.

Occupation distribution it revealed that about 7% were farmer, 55% were housewife, 29% were doing job and 34% were student. In our research most of the research participants were housewife.

Income distribution of the study participants it revealed that income of 68% of the women was 5000-10000 Rs, income of 22% of the women was 10000-150000 Rs, income of 7% of the women was 15000-20000 and income of 3% of the women was 20000-25000.In our research most of the research participant's income was around Rs.5000-Rs10000.

The area of living distribution among the study participants, it revealed that about 56% were from rural area, 34% were from urban area, 5% were from slum area and 5% were from hilly area. In our research most of the research participants were from rural areas.

The house environment distribution of the study participants it revealed that about 20% were having stagnant water near house, 38% were living near farming land, 14% were having cattle near house and 28% were having all the above. In our research most of the research participant was living near farming land.

The pet animals' distribution of the study participants it revealed that about 26% had dog, 5% had pig, 57% had cows and 12% had goat. In our

research most of the research participants had cow as their pet animal.

House waste disposal distribution of the study participants it revealed that about 63% were disposing their waste in field, 4% used to dispose by deep burial method, 33% were disposing their waste in municipal dustbin and 12% had goat in our research most of the research participants were disposing their waste in field.

The family history of Japanese encephalitis among the study participants it revealed that about 19% were having family history of Japanese encephalitis, 81% were not having family history of Japanese encephalitis. In our research most of the research participants were not having Family History of Japanese Encephalitis.

The usage of mosquito preventable measure among the study participants it revealed that about 85% were Using mosquito preventable measure, 15% were not using mosquito preventable measures. In our research most of the research participants were using mosquito preventable measures.

Figure -1: Distribution of source of information regarding prevention of prevention of Japanese encephalitis

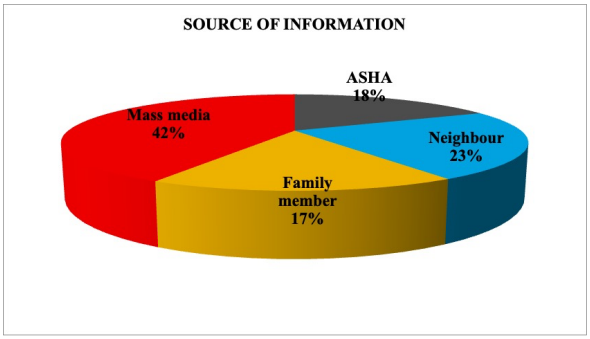

Figure 1 Describes the Source of Information among the study participants it revealed that about 18% were getting information through ASHA, 23% were getting information through neighbour, 17% were getting information through family member and 42% were getting information through mass media. In our research most of the research participant's source of information was mass media.

Figure -2 distribution of type of drainage system using by study participants

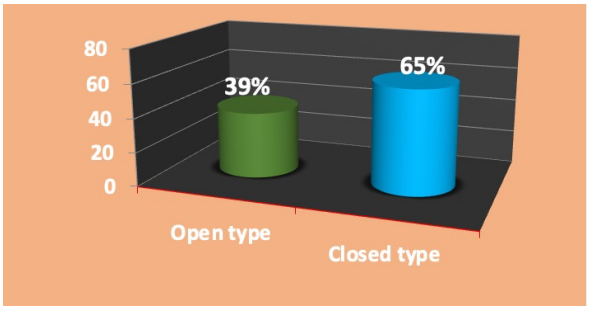

Figure -2 describes the drainage system distribution of the study participants, it revealed that about 39% were having open type drainage system, 61% were having closed type drainage system. In our research most of the research participants were having closed type of drainage system

Section -2

Table: 2 Distribution of level of knowledge regarding prevention of Japanese encephalitis among mothers of under-five children

N=100

Sl .no	Level of knowledge	Frequency (n)	Percentage (%)
1	Adequate	24	24
2	Moderately adequate	54	54
3	Inadequate	22	22

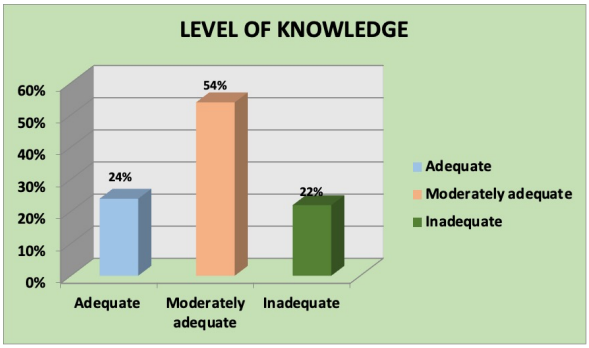

Figure 3: Level of Knowledge Distribution

Table 2 and figure 3 explained the analysed report of the Level of knowledge among the study participants it revealed that about 24% were having adequate knowledge, 54% were having moderately adequate knowledge and 22% were having inadequate knowledge. In our research most of the research participants were having moderately adequate knowledge on Japanese encephalitis.

Our study report is supported by the other study titled Evaluation of knowledge, attitude and perceptions of future health care professionals on Japanese Encephalitis conducted by sara shahid and Javeria Riaz. This study data regarding knowledge, attitude practice regarding Japanese encephalitis study result revealed that majority of the participants have adequate knowledge regarding Japanese encephalitis (62%) and positive attitude (60.2%). [7]

Section – 3

Table: 3: Likert scale regarding attitude on prevention of Japanese encephalitis

			N=100
Sl .no	**Level of attitude**	**Frequency (n)**	**Percentage (%)**
1	Good	94	94
2	Average	6	6
3	Poor	0	0

On analysing the level of attitude among the study participants it revealed that about 94% had a good attitude, 6% had an average attitude and 0% had a poor attitude towards prevention of Japanese encephalitis. The research result revealed that almost all of the study participants (94%) had a good attitude towards prevention of Japanese encephalitis

SECTION – 4

Table -4: Checklist regarding practice on prevention of Japanese encephalitis

			N=100
S l .no	**Level of practice**	**Frequency(n)**	**Percentage (%)**
1	Good	82	82
2	Average	13	13
3	Poor	5	5

On analysing the level of practice among the study participants it revealed that about 82% had a good practice, 13% had an average practice and 5% had poor practice towards prevention of Japanese encephalitis. The research result showed that most (82%) of the study participants had a good practice towards prevention of Japanese encephalitis.

The preventive aspects regarding JE are suggested by other study as vector control is important in primary prevention. To control the vector population, classical methods such as insecticide and bed nets are widely applied in endemic areas.[50] Thermal fogging with ultra-low volume insecticides such as pyrethrum or malathion has been recommended for the prevention of local transmission during epidemics, particularly in peri-urban areas with marshes. However, the vastness of breeding areas makes larvicidal measures currently impracticable. Effective measures undertaken in some countries to prevent or inhibit larval development include novel water management and irrigation practices such as periodic lowering of the water level, intermittent irrigation, and constant flow systems. Vector control alone cannot be relied upon to prevent JE since it is almost impossible to control mosquito density in the rural areas, which are the worst affected due to poor socioeconomic conditions. Thus, JE control through vector control methods is limited by the sustainability and cost effectiveness of the program.[11]

Section – 5

Table: 5: Association of knowledge on Japanese encephalitis with the demographic variables

Sl no	**Demographic variable**	**Option**	**Adequate knowledge**	**Moderate knowledge**	**Inadequate knowledge**	**χ^2 value**	**P value**	**Significance (p<0.05)**
1	Age	18-25yrs	10	23	10	4.7	0.54	Not significant
		26-33yrs	11	19	12			
		34-42yrs	1	11	2			
		42 and above	0	1	0			
2	Education	Illiterate	1	5	1	8.8	0.18	Not significant
		Primary education	3	10	3			
		High school	6	22	15			

		Graduation	12	17	5			
3	Occupation	Farmer	0	6	1	2.656	0.8	Not significant
		House wife	15	26	14			
		Job	5	17	7			
		Student	2	5	2			
4	Income	Rs 5000-10,000	13	40	15	8.8	0.12	Not significant
		Rs 10,000-15,000	3	11	8			
		Rs 15,000-20,000	3	3	1			
		Rs 20,000-25,000	3	0	0			
5	Areas of Living	Rural	11	32	13	3.97	0.67	Not significant
		Urban	10	17	7			
		Slum	0	2	3			
		Hilly	1	3	1			
6	House Environment	Near House water stagnation	5	12	3	12.3	0.054	Not significant
		Living near Farming land	7	25	6			
		Cattle Near house	6	5	3			
		All the above	4	12	12			
7	Pet Animals	Dog	6	14	6	3.41	0.75	Not significant
		Pig	0	5	0			
		Cow	13	31	13			
		Goat	3	4	5			
8	Drainage System	Open type	8	24	7	21.89	0.00018	Significant
		Closed type	14	30	17			
9	House Waste Disposal	In field	12	37	14	4.18	0.6	Not significant
		Deep burial	0	2	2			
		Municipal dustbin	10	18	5			
10	Family History of Japanese Encephalitis	Yes	0	8	11	14.20	0.0008	Significant
		No	22	46	13			
11	Usage Of Mosquito Preventable Measure	Yes	21	44	20	2.46	0.29	Not significant
		No	1	10	4			
12	Source Of Information	ASHA	3	12	3	17.55	0.00074	Significant
		Neighbour	3	11	9			
		Family member	1	8	8			
		Mass media	15	23	4			

On associating the demographic variables with the knowledge of the Japanese encephalitis there was a significant association with the demographic variables like drainage system, family history of Japanese Encephalitis and source of information.

Our finding is supported by other study titled assess the knowledge among caregivers of children under five years of age regarding Japanese encephalitis in selected rural areas of east khasi hills, Meghalaya. This study result revealed that Out of 142 participants, 33(23.24%) had poor knowledge, 56(39.43%) had

average knowledge and 53(37.33%) had good knowledge.66.91% of participants had lack of knowledge on sign and symptoms and only 38.96% had knowledge on vaccination. The study found significant association with education and type of family. [9]

The second study conducted by Daisy Konwar et all on knowledge and attitude about japanese encephalitis and community participation for its prevention in sivasagar, Assam - a cross sectional survey. The study reported that of 256 participants were interacted. 62% have lack of knowledge on vectors, 73% are unaware about proper symptoms and 69% have partial information on transmission cycle. The majority of infections occur in rural areas 77%. All ages are at risk. 64% of the respondents showed positive attitude towards community participation. The association between knowledge – Attitude is statistically significant (P-value .00001) [10]

Conclusion

The researchers have conducted a study on knowledge, attitude and practice regarding Japanese Encephalitis. The result showed that 54% were having moderately adequate knowledge, 94% had a good attitude towards prevention of Japanese encephalitis, 82 % of the study population had a good practice towards prevention of Japanese encephalitis.

This concludes that more training and health education is needed among the under-five mothers on the prevention of Japanese Encephalitis.

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