



Research Article

A CROSS-SECTIONAL STUDY ON HEALTH SEEKING BEHAVIOR OF PREGNANT WOMEN, AND MOTHERS OF UNDER-FIVE CHILDREN REGARDING PREVENTION OF VECTOR BORNE DISEASES IN URBAN SLUMS OF EAST DELHI

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ABSTRACT

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Background: Vector borne disease (VBD) accounts for more than 17% of all infectious diseases, causing more than 1 million deaths annually. More than 2.5 billion people in over 100 countries are at risk of contracting dengue alone.

Objective: To assess the health seeking behavior of pregnant women, and mothers of under-five children regarding prevention of vector borne diseases in urban slums of East Delhi.

Material and Methods: The study was cross sectional in urban slums of East Delhi. 277 sample including 92 pregnant women and 185 mothers of under-five children were interviewed using pre tested semi-structured questionnaire.

Result: The Personal protective measures followed by the dwellers for control of VBDs was good and could be improved as there was direct impact of education, knowledge regarding vector borne diseases on their personal practices for control but the health seeking behavior was not influenced by their education, knowledge regarding prevention and control of vector borne diseases and their per capita income. So to improve the behavior of the residents the factors like cost of treatment, distance to health facility, health facility adequacy need to be identified.

Conclusion: It was concluded that with the intensified efforts by creating awareness about VBDs were effective and remain a valuable tool in community-based vector prevention and control interventions and treatment near to their settlement with adequate facilities around their vicinity and easy transport availability could improve their behavior towards the health.

INTRODUCTION:

Vector borne diseases (VBD) accounts for more than 17% of all infectious diseases, causing more than 1 million deaths annually. More than 2.5 billion people in over 100 countries are at risk of contracting dengue alone. Malaria causes more than 400,000 deaths every year globally, most of them children under 5 years of age.⁽¹⁾

Total number of household in slums of India are approximately 137 lakhs and nearly 1.8 million people live in slum areas in capital of India and over 60 per cent of water and vector-borne diseases in urban areas are reported from slum clusters due to lack of portable water, overcrowding, lack of drainage systems, poor toilet facilities, and thus contribute to widespread diseases, disabilities and deaths, especially amongst poor, who have limited access to timely and effective treatment.

According to many studies regarding health seeking behavior in preventing vector borne diseases socio-cultural context, community perception, distance to health institutions were the factors which contributed to delay in treatment.

As pregnant women have low immunity and more vulnerable to diseases like malaria and may experience spontaneous abortions, maternal anaemia, premature birth, stillbirths, intra-uterine growth retardation and low birth weight because of vector-borne diseases and similarly mothers of under five children are also at a risk of vector-borne diseases in urban slums because of inadequate awareness.⁽²⁾

There was a felt need to conduct study amongst pregnant women and mothers of under-five children living in urban slums which have high incidence of vector borne diseases and cases of malaria among the urban poor which is twice as high as other urbanites.⁽³⁾

So, the study was conducted to identify the factors responsible for increase in vector borne diseases in urban slums in Delhi by

evaluating the health seeking behavior of pregnant women and mothers of under-five children regarding prevention of vector borne diseases in urban slums and to come up with recommendation to improve their behavior towards health by preventing vector borne diseases.

MATERIAL AND METHODS

- **Study Area:** Urban Slum areas of East Delhi.
- **Study Design:** Cross Sectional study to assess the health seeking behavior among pregnant women, mothers of under-five children in urban slums of East Delhi.
- **Study Duration:** 3 months (February,6 to May,6 2017)
- In the first month protocol, review of literature and questionnaire was prepared.
- In the second month, face to face interview was conducted and questionnaire was filled to collect data regarding the study.
- In the third month data analysis and report was prepared.
- **Study Population:** Pregnant women, mother of under-five children of urban slums area of East Delhi.
- **Sampling Technique:** Convenient/Purposive Sampling was done to collect the data.
- **Sample Size:** Sample was collected using formula $4pq/l^2$

[Since p value from previous studies on the topic of present study is not available, so an anticipated p value is taken as 50% as per WHO practical manual on sample size determination in health studies by S. K. Lwanga and Lemenshaw (1991). So taking p 50% and allowable error (l) 6% of p in formula $4pq/l^2$, a sample size of 277 out of which 1/3rd were pregnant women and 2/3rd were mothers of under-five children i.e., 92

pregnant women and 185 mothers of under five children were interviewed.

Inclusion Criteria: Pregnant women, mother of under-five children

Exclusion Criteria: women who refused to answer the questions

• **Study tool:** A self-administered, pre-tested, semi structured questionnaire was used to evaluate the health seeking behavior of pregnant women and mothers of under-five children regarding the prevention of vector borne diseases in urban slum of East Delhi. Study tools included Pre-designed, semi structured questionnaire and had 5 parts.

Part 1: Include the Socio demographic data.

Part 2: Include knowledge on Vector borne diseases

Part 3: Include practices in their house for control/prevention of VBDs.

Part 4: Include family history of VBDs

Part 5: Include health seeking behavior for control/prevention of VBDs.

• **Analysis of Data:** Data was analyzed statistically by using MS EXCEL 2010 and SPSS statistics 20.

• **Methodology:** After determining the sample size of coverage area the sample was selected purposively from pregnant women, mother of under-five children and by using face to face interview pre-tested semi structured questionnaire which consist of both open-ended and close-ended questions on socio demographic and health seeking behavior regarding prevention of

vector borne diseases in field study area was filled in MS Excel and analyzed using SPSS Statistics 20.

RESULTS

The socio demographic profile, knowledge, practices, family history, health seeking behavior regarding prevention and control of vector borne diseases of the respondents is given in the tables below:

In Table 1: Socio-demographic profile of the study population i.e., total 277 respondent which included 185 mothers of under five children and 92 pregnant women and the common age group was 21-25 years 112 (40.43%) followed by 26-30 years consisting of 101 attendees (36.46%). About 43.32% of respondent had education up to middle level, 32.12% were illiterate 11.19% of respondent had education up to primary school and 1.81% had education up to post high school and only 1.08% were graduate. Almost all the respondent were homemaker and 164 respondent were in category 4 i.e., they were in Lower middle class and 27.79% were in lower class and were included in category 5 according B.G Prasad Socioeconomic scale 2016⁽⁴⁾. About their family type 61.37% of respondent had joint family and 38.62% had nuclear family. Around 42% were living in Pucca house and 58.48% of respondent were living in mixed type of house. About sanitary latrine around 64% of respondent lack the facility in their vicinity and 89% of respondent had intermittent supply of water in their house.

Table 1: Socio- Demographic Profile:

Socio-demographic	N(277)	%
Mother Age		
15-20yrs	27	9.74%
21-25yrs	112	40.43%
26-30yrs	101	36.46%
31-35yrs	30	10.83%
35-40yrs	7	2.52%
Month of pregnancy		
1-3mth	28	30.43%

4-6mth	37	40.21%
7-9mth	27	29.34%
Education		
Postgraduate and above	0	0.00%
B.A or B.Sc.	3	1.08%
Post high school	5	1.81%
High school	29	10.46%
Middle school	120	43.32%
Primary school	31	11.19%
Illiterate	89	32.12%
Occupation		
Professional	0	0.00%
Semi-professional	0	0.00%
Skilled worker	0	0.00%
Semi-skilled worker	0	0.00%
unskilled worker	1	0.36%
Unemployed	0	0.00%
Homemaker	276	99.60%
Per Capita Income		
Upper class	0	0.00%
Upper middle	3	1.08%
Middle class	33	11.91%
Lower middle	164	59.21%
Lower class	77	27.79%
Family type		
Nuclear	107	38.62%
Joint	170	61.37%
Type of house		
Kuchcha	0	0.00%
Pucca	115	41.52%
Mixed	162	58.48%
Availability of sanitary latrine		
Yes	99	35.74%
No	178	64.25%
Water supply		
Continuous	30	10.83%
Intermittent	247	89.16%

In Table 2 gives details of knowledge of the respondent about vector borne diseases and it was analyzed that 87% could answer that mosquitoes cause disease and 88% of the respondent knew malaria as a disease caused by mosquito around 89% and 80% were aware of dengue and chikungunya and 8% had no idea of any disease caused by mosquito. When asked about the mosquito breeding around 84% and 66% could answer

clean water and stagnant water respectively as mosquitoes breeding places and around 30% replied garbage as a breeding place. 25.63% replied night time as biting time and 10.46% said day time as biting time for mosquitoes. Knowledge of options to control/prevent VBDs was average and about personal hygiene as option was answered by around 85%.

Table2: Knowledge about vector borne diseases

Knowledge	N(277)	%
*Mosquito causes		
It bites	66	23.82%
It sucks blood	40	14.44%
It spread disease	241	87.00%

Nothing	2	72.00%
*Awareness of diseases by mosquitoes		
Malaria	244	88.08%
Dengue	247	89.16%
Chikungunya	222	80.14%
Kala Azar	1	0.36%
Filariasis	0	0%
Japanese Encephalitis	0	0.00%
No knowledge	24	8.66%
*Mosquito breeding places		
Clean Water	234	84.47%
Stagnant Water	183	66.06%
Drains	7	2.52%
Garbage	85	30.68%
Green Plants	2	0.72%
Cattle shed/cow dung	0	0.00%
*Mosquito biting time		
	N(277)	%
Night	71	25.63%
Day	29	10.46%
Anytime	179	64.62%
No idea	3	1.08%
*Knowledge of options to control/prevent VBDs		
Regular house spray with DDT (Malathion)	8	2.88%
Environment management	139	50.18%
Personal Hygiene	236	85.19%
Regular deployment of bed nets	135	48.73%

**Multiple responses were present.*

In Table 3: The Practices of the respondent is shown which include water storage and 89.50% of the respondent report the storage of water in buckets, 172 respondent stored water in underground tanks i.e., 62.10%. In Overhead tanks the percentage was 4.70% and only 6 respondents i.e., 2.20% had water storage at ground level. 31.85% of respondent had water stored in more than 2 buckets and in 5.80% cases water coverage was partial. Almost 97 % responded change of standing water around their house and

among them 40 % changes same day and 60% changes next day and 2.52% which do not change water among them 57.14 % feel changing water daily is difficult task and around 43% feel it is time consuming. When asked about their personal practices more than 80% used mosquito coils in their house for control of mosquitoes and 41.5% were using mosquito repellent ointment and few also reported the use of bed nets, protective clothing, window nets and around 4% were using nothing for mosquito's control

Table 3: Practices in their house regarding water and personal practices.

Practices	N(277)	%
*Water stored in		
Overhead tanks	172	62.10%
Underground	13	4.70%
Ground level	6	2.20%
Buckets	248	89.50%
Number of buckets stored in house		
1-2 buckets	172	69.35%
3-4 buckets	79	31.85%
5-6 buckets	7	2.82%
7-8 buckets	2	0.81%
Water Coverage		
Fully covered	242	87.40%

Partially covered	16	5.80%
Open	2	0.70%
Change Standing water		
Yes	270	97.47%
No	7	2.52%
If not ,reasons for it		
Its time consuming	3	42.85%
Its natural body and difficult to change daily	4	57.14%
It doesn't collect in my yard	0	0%
changing water doesn't reduce mosquitoes	0	0%
other reasons	0	0%
*Personal practices		
Use of mosquito repellants	115	41.51%
Use of bed nets	64	23.10%
Use of mosquito coils	232	83.75%
Use of protective clothing	5	1.80%
Use of window nets	69	24.90%
Nothing	11	3.97%

*Multiple responses were present.

In table 4: Around 90% of the respondent had no history of VBDs in their family and only 20, 12 and 1 respondents had history

of chikungunya, dengue and malaria respectively in their family.

Table 4: Family history in past 2 years.

Family history	N(277)	%
Dengue	12	4.33%
Chikungunya	20	7.22%
Malaria	1	0.36%
Kala Azar	0	0.00%
Lymphatic Filariasis	0	0.00%
Japanese Encephalitis	0	0.00%
No History	244	88.08%

In Table 5: About health seeking behavior 54.87% report next day in health facility for fever whereas 41.87% report same day and 2.8% after few days for treatment of fever which indicate the poor sensitivity of illness which arise due to ignorance and reasons for such behavior are inability to afford treatment or no adequate treatment from source.

The government hospitals are the first preferences for them as per as economic level but because of poor services, long waiting queues, long travel from their home makes it difficult for them to avail the services and for all these reasons they prefer private practitioner in emergency which is easy for them to seek.

Table 5: Health seeking behavior to control VBDs.

Health seeking behaviour	N(277)	%
Report for t/t		
Same Day	116	41.87%
Next Day	152	54.87%
After few Days	8	2.88%
*Source of information for control/prevention of VBDs		
Doctors/Health worker	57	20.57%
Family Members	32	11.55%
Radio/TV/Newspaper	269	97.11%
School/College	3	1.08%
Neighbors/Relatives	26	9.38%
Observation/Experience	9	3.24%
Others	0	0.00%
*Mode of treatment for fever		
Allopathic treatment	277	100.00%
Ayurvedic	0	0.00%
Homeopathic	13	4.69%
Faith Healing	0	0.00%
*Treatment for fever		
Government Hospital	215	77.61%
Private Hospital	6	2.16%
Private Practitioner	206	74.36%
Pharmacy Shops	0	0.00%
*Seek information on diseases & protective actions for control of VBDs		
TV	265	95.66%
Radio	0	0.00%
Newspaper	1	0.36%
Public Health Officer	90	32.49%
Flier/Posters	1	0.36%
Others	0	0.00%

** Multiple responses were present.*

DISCUSSION

In this cross sectional study, which was conducted to assess the health seeking behavior among pregnant women, mother of under-five children regarding prevention of vector borne diseases in urban slums of East Delhi the mean age of the respondent was 26.17 with standard deviation of 4.46 as compared to mean (SD) age of respondents was 34 (10.35) years in Vala Mayur et al (2013), in Rajkot district Gujarat. In the present study, 32.12% of the population was illiterate which was more than 0.64% as found in Vala Mayur et al (2013) study.

Malaria awareness was perceived by 88.08% which was more than Vala Mayur et al study (87.96%)⁽¹⁾ but regarding other mosquito borne diseases like Dengue 89.16%, chikungunya 80.14% and filaria was 0% as compared to 18.29%, 37.04%, 5.09% for dengue, Chikungunya and Filaria according to Vala et al study⁽⁵⁾ respectively. 77.61% of the respondent visits Government hospitals in Urban slums of East Delhi but according to Saswat Kumar Pradhan et al, Odisha tribal study found that around 34.20% sample households visits government hospitals/ doctors during any illness.

The area where this study was conducted was dominated by Muslim community and there was positive health seeking behavior to access the government health facility (77.6%) in major illness which was also found in study conducted by Patil SP et al (2016).⁽⁶⁾ The education of most of the respondent was till middle school and when it was analyzed that whether knowledge was influenced by education the result was it had impact on knowledge and it was found that 85.7% of 118 literate respondents had good knowledge as compared to 14.3% in 89 illiterate respondents.

After analysis it was found that personal practices regarding prevention and control of VBDs and practices followed by them for water management was influenced by their knowledge which was further dependent on their education level. So, the awareness as an tool can be used to make habitants use more of personal protective measures in these areas which will reduce the disease prevalence and will improve their health and also the use of bed nets by the respondents was 23.10% which can be improved by more provision by government so that each household meet the requirement.

As level of education of the caretakers is important on determination of the knowledge concerning cause, symptoms, treatment and prevention of disease in children. Hence automatically has an impact on the treatment seeking pattern and health outcome of the child. In India it was found that poor knowledge on disease transmission and prevention affect the treatment seeking behavior in these communities.⁽⁷⁾ Poor knowledge also sometimes causes caretakers to be even unaware of both the vulnerability of children to disease.⁽⁸⁾

So it was necessary to assess the knowledge along with factors which have influence on behavior toward health. Other than knowledge factors are socio-economic status, education, distance to health facility, cost of services, and health facility

inadequacy like stock out which influence behavior towards health.

Few factors were evaluated to see the influence and it was analyzed that education, knowledge, socio-economic status were not affecting the health seeking behavior of respondent towards prevention of VBDs which concludes that the remaining factors which were not covered in detail as these were not included in questionnaire like distance to health facility, cost of services, health facility inadequacy like stock out could have influence their health seeking behavior.

Respondents were also not found sensitive to illness/fever which was assessed through delay in seeking treatment which can be for the multiple reasons like more time consumption, harassment during travelling and standing in queues for their turn which all lead to ignorant behavior towards the health and as a result with no other option left they seek treatment from private practitioner available in their vicinity during emergency which save their travelling time, cost and harassment.

CONCLUSION:

Knowledge regarding prevention of mosquito borne diseases was average and their overall practices for control of vector borne diseases was good. However, there were many slum areas of East Delhi where there is scope of further improvement in terms of education and practices for the prevention and control of VBDs.

As it was concluded that literacy affect practices of using more personal protective measures. So, there should be encouragement by health workers and also through mass media which can provide information regarding the vector borne diseases, their causes and methods to prevent. After analyzing the effect of education on knowledge and which was found to be significant concludes that to improve knowledge of respondent, education should be imparted so as to improve their practices.

It was also found that education, knowledge and per capita income were not associated with the health seeking behavior of the respondent, so it was assumed that other factors like distance to health facility, cost of services, health facility inadequacy like stock out could have the effect. But as these were not discussed in detail, so by identifying the effect of all these factors, the behavior towards their health can be further improved.

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