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COMMUNITY AWARENESS OF MOSQUITOES BORNE DISEASES IN ONE URBAN AND ONE RURAL AREA IN ODISHA, INDIA

Public Health

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ABSTRACT

Prevention and control strategies for mosquitoes borne diseases require community involvement to successes. Knowledge, Attitude and Practice (KAP) study was conducted in an urban and rural area in Odisha state of India to determine the perceived risk by the community of mosquito borne infectious diseases and the level of knowledge regarding mosquitoes. Drawing on data collected in Dec-2021 to June-2022, we explore the role of community participation and the factors that influenced its failure in the prevention and control of mosquitoes-borne disease in Odisha. Approaches based on social and mobilization and communication aimed at bringing behavior change in the communities are in stressed. Community should be encouraged to take appropriate actions at household level to prevent mosquito borne diseases and the doctors and physicians should be encouraged to provide health education to the patients about the appropriate and affordable preventive measures.

KEYWORDS

Mosquitoes, Community perception, Mosquitoes borne diseases, KAP

INTRODUCTION:

Mosquitoes are one of the deadliest insects in the world. Nearly 700 million people get a mosquito-borne illness each year resulting in more than one million deaths.[1] In recent years, mosquito-borne diseases have emerged as serious public health problem in countries of South East Asia region.[2] Earlier the mosquito borne diseases were mainly restricted to urban and sub-urban areas of the country but now it spread to rural areas too, because of the availability of favorable breeding sites of disease vectors. The incidence of disease depends on the interaction of several ecological and social aspects of the community. So, it is important to provide awareness of knowledge of mosquito vectors in the community. To make community-based programs successful, it is important to know the community's perceptions about mosquitoes and mosquito borne disease transmission, mosquitoes breeding habits and their practices for mosquito vector control.[3] The ignorance of people contributes to the establishment of simple breeding habitats, which eventually responsible for the intensification of mosquito population. The outcome is responsible for the steady increase in the cases of vector borne diseases which hinders the disease control strategies. General public is ignorant of mosquito borne diseases and symptoms and so promptness in treatment is not realized. People are still confused over the symptoms of various mosquito borne fevers and its control measures. Major part of the population is poor in disease evaluation, ignorance towards health and control of mosquito population. Community therefore must understand the importance of environmental cleanliness and use water bodies effectively. Community participation in turn depends upon People knowledge, awareness and attitude toward the disease.[4] Several socioeconomic studies in various countries indicate variation in knowledge and practice related to mosquito-borne diseases.[5,6,7] Most organized vector control strategies require public support of one kind or another and the extent of people's cooperation can determine the success or failure of the entire campaign.[8] Program implementers need to understand the disease-related knowledge, attitude, and practices of the community because all of these are the important determinants of community participation.[9]

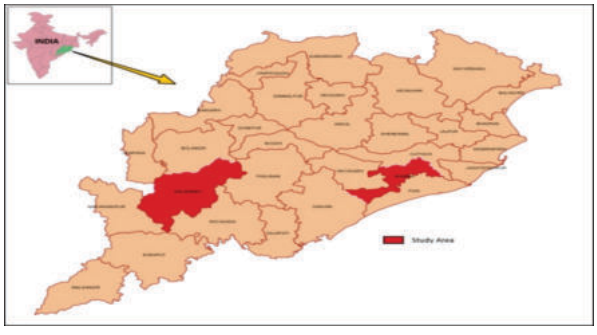
In India, although there are many mass communication and educational tactics, but community participation is not up to the mark.[10] The successive outcome will be possible on the development of understanding the way of local populations thought about vector-borne diseases and continuous participation.[11, 12, 13] Further, it is necessary to know the community perceptions about mosquitoes, and disease transmission, the breeding habits of mosquitoes and community participation for control efforts.[14,15]

According to the National Family Health Survey (NFHS)-2 1998-99 report in Odisha, 7,414 persons per 100,000 populations were reported to have suffered from malaria during the three months before the survey. Since the prevalence of malaria is known to vary considerably by season, 128 rural residents are 70 percent more likely to suffer from malaria (7,770 per 100,000) than urban residents (4,571 per 100,000). The reported prevalence of malaria is higher for males than for females in rural areas, but higher for females than for males in urban areas.

Keeping on the above issues, a cross-sectional study was conducted in one urban and one rural area in Odisha, India, from December 2021 to June 2022, focusing on knowledge regarding mosquito borne diseases and their causative agent.

Study Area

We have taken two districts, one urban and one rural district of Odisha, namely Khirda and Kalahandi, respectively. The Census of India 2011 data show the total population of Khurda district was 2,251,673, 48.16% people's resided in the urban area and the literacy rate of the district was 86.88%. Similarly, the Kalahandi district with 1,576,869 populations has 7.74% urban population and the literacy rate of 59.22%.



Map 1: Map showing the study area

MATERIAL AND METHODS

In this study, we adapted materials and methods of K. Ravi Kumar *et al* [16] applied in Karnataka state, India. All interviewers visited with a notebook where all questions had been written, they selected houses randomly in different parts of their respective districts and information's are collected. During analysis; the answers of those who had no knowledge of any question regarding mosquitoes/diseases were excluded.

Random sample was taken from both the district. The total numbers of households was kept as 1000. The study was conducted between December 2021 to June 2022.

RESULT

In the study area there were 49.1% male and 50.9%female respondents in the rural sample, where as 51.2% were males and 48.8% female in the urban sample. All the respondents' both males and females were adults.

1. Source of communication media in house

The study was began with the ascertained of the communication media available in house, the results are shown in figure-1&2. It can be noted that more than 90% of houses have TV in urban area where as 36.2% of houses have TV in rural area. About 52.8% of the rural respondents did not have any other media aids at home, where as these figures, was 0.4% in urban areas.

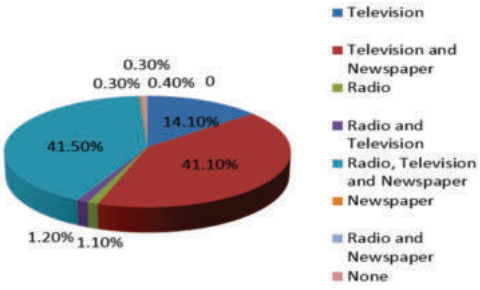


Figure 1 Showing % of availability of source of information in urban area

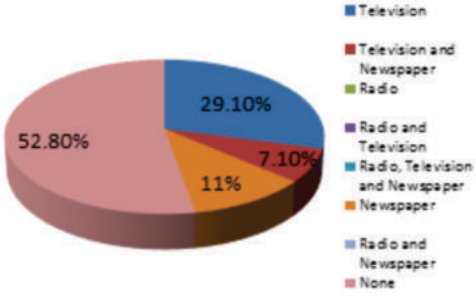


Figure 2 Showing % of availability of source of information in rural area

2. Mosquito as problem

A question was asked about whether the respondents perceived mosquitoes as a problem. In urban area 81.7% of respondents were in favor of mosquitos' bite, so they cause problem. But it is perceived that 70% of respondents in rural area mentioned that was because they bite. Only a small number of respondent (18.3% in urban and 29.0% in rural areas) said that mosquitoes caused disease. (figure-3 and 4).

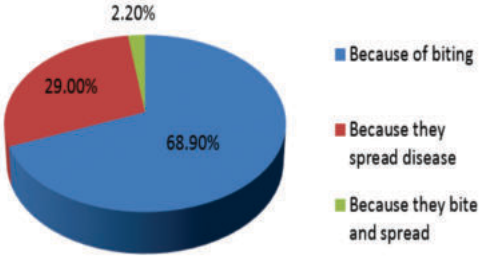


Figure 3 Showing % of respondents to why they perceived mosquitoes as a problem in urban areas

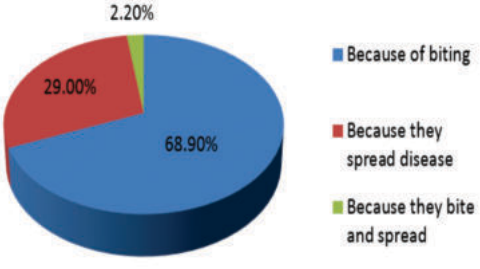


Figure 4 Showing % of respondents to why they perceived mosquitoes as a problem in rural area

3. Awareness about time of mosquito bites

A question was asked as to when the mosquitoes bite them most. Most of respondents (76.6%) mentioned night time in urban area but 56.4% in rural mentioned night time. Only 10.0% of urban and 38.6% of rural area respondents mentioned day time but dengue vector bite during daytime and this infection, in general, is prevalent in urban areas. (Figure 5&6)

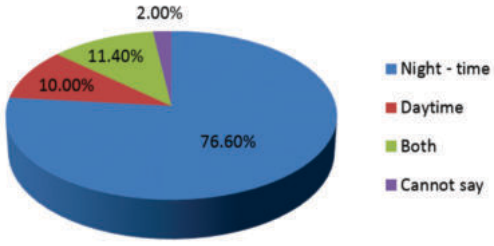


Figure 5 showing answers provided by respondents as to when do the mosquitoes bite in % in urban area

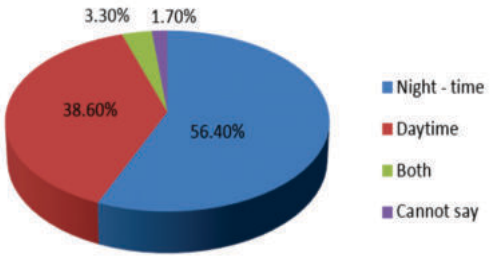


Figure 6 showing answers provided by respondents as to when do the mosquitoes bite in % in rural area

4. Awareness about breeding site of mosquito

The question was asked regarding the breeding places of mosquitoes. Regarding the breeding places of mosquitoes, the answer green plants, garbage, cowshed, cow dung were clubbed as incorrect answers. The others, namely, drains and stagnant water, were clubbed as correct answers. The correct answer was compared between the urban and rural sample of proportion, showed a clear difference. (Figure 7&8)

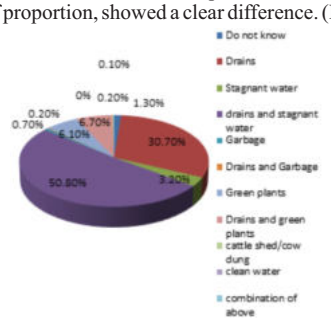


Figure 7 showing Answers provided by respondents in urban area as to where do the mosquitoes breed in %

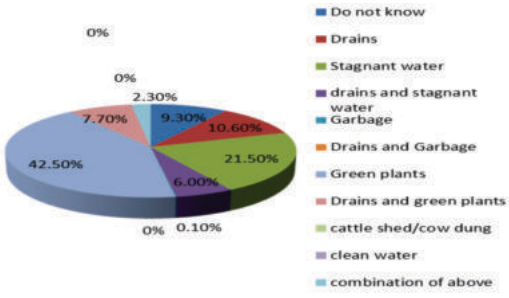


Figure 8 showing Answers provided by respondents in rural area as to where do the mosquitoes breed in %

5.Awareness about preventive measures against mosquitoes

When asked what preventive measures they could take against mosquitoes at the community level, only 0.6% in urban areas, were not aware of any measures. But it is good in rural area all are aware to prevent measures against mosquitoes.(Figure 9&10)).

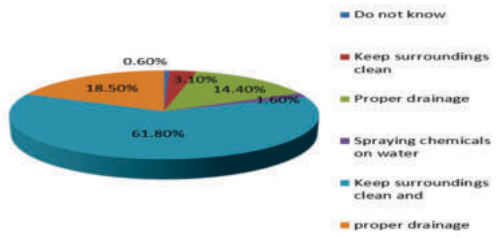


Figure 9 showing % of Answers provided by respondents in urban area as to preventive measures against mosquitoes

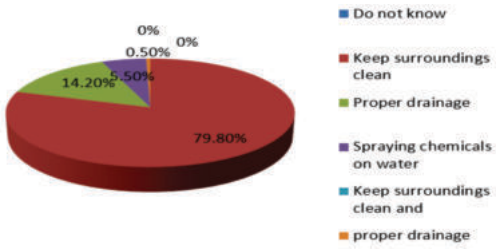


Figure 10 showing % of Answers provided by respondents in rural area as to preventive measures against mosquitoes

6.Awareness about personal protective measures against mosquitoes

The people were queried about personal protective measures being taken by them. The proportions of rural and urban sample that used some method of personal protection were compared and. it showed a clear difference (Figure 11&12)

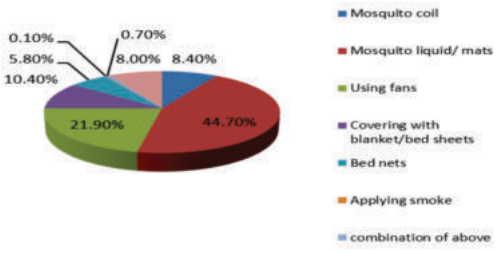


Figure 11 showing Personal protective measures being taken by the respondents of urban area in %

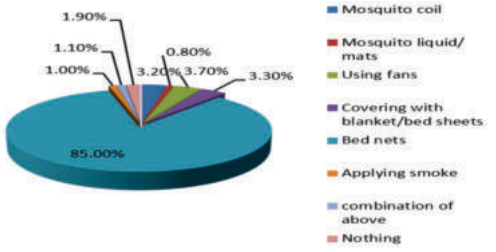


Figure 12 showing Personal measures being taken by the respondents of rural area in %

7.Awareness about diseases transmitted by mosquitoes

The people were quizzed about diseases which could be transmitted by mosquitoes. About 76.9% in urban and 93.2% in rural area mentioned malaria. Regarding other mosquitoes borne diseases, viz, dengue, Japanese encephalitis and lymphatic filariasis, the majority of people had no idea of transmission of this disease. (Figure 13 &14)

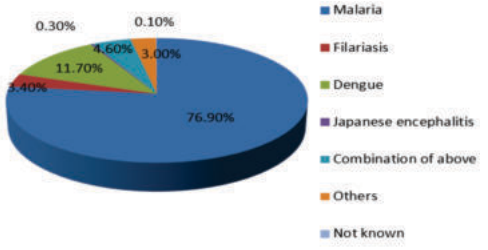


Figure 13 showing % of Knowledge of diseases transmitted by mosquitoes in urban area

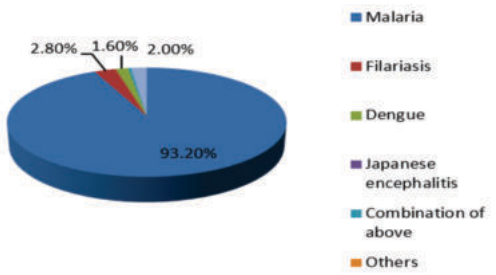


Figure 14 showing % of Knowledge of diseases transmitted by mosquitoes in rural area

8. Awareness about symptoms of malaria

Those who mentioned malaria were further asked whether they were aware of its symptoms. About half of the respondents in both regions urban and rural mentioned fever and shivering were the symptoms of malaria. (Figure 15 &16).

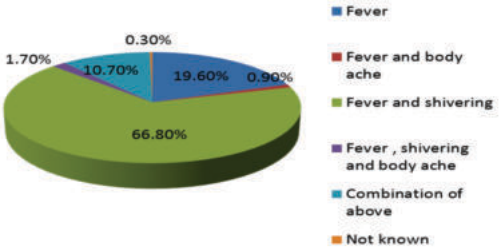


Figure 15 showing % of Knowledge of symptoms of malaria in urban area

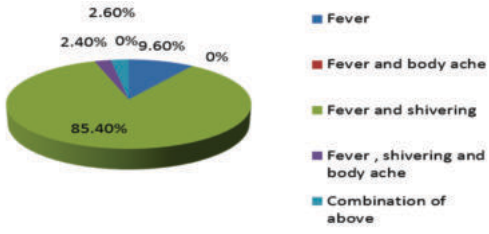


Figure 16 showing % of Knowledge of symptoms of malaria in rural area

9. Source of knowledge about Mosquito

The people were asked as to the source of their information regarding mosquito born diseases like malaria and dengue. The Important sources of information were from personal experiences and observation was highest (88.0%) in rural areas but in urban areas which was low (14.5%) as compare to rural areas. The source of information i.e. TV/Cinema in urban areas was highest (31.2%) was followed by school and colleges (30.2%).(Figure 17 &18)

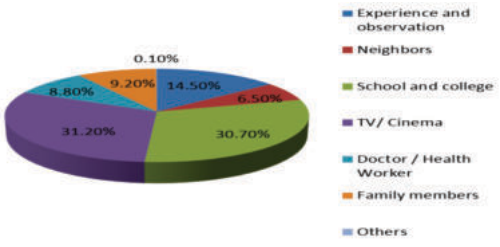


Figure 17 showing % of Source of knowledge in urban area

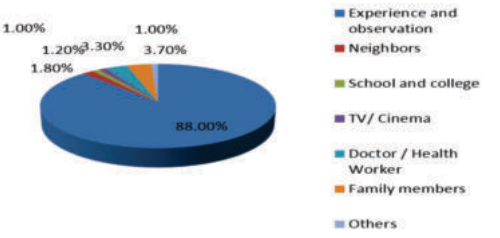


Figure 18 showing % of Source of knowledge in rural area

10. Source of treatment

A question was asked whether the respondents or any of his/her family members has suffered from fever during the previous one month. In the urban sample, there were fewer cases, they were further asked about the action taken for treatment. In the urban sample, a majority (71.3%) consulted the private practitioner.(Figure 19 & 20). In the rural sample the action taken indicated that 52% went to the private practitioner.

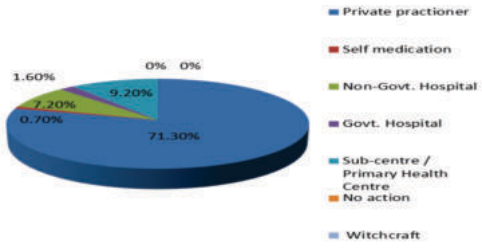


Figure 19 Showing % of Source of treatment in urban area

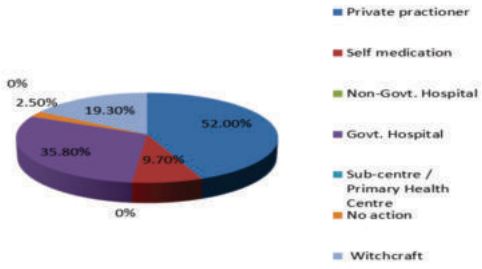


Figure 20 Showing % of Source of treatment in rural area

DISCUSSION

The study brought out certain important perceptions of the sampled community, the understanding of which is deemed vital for planning a health education programme. The important sources of information about mosquito were from radio, television and newspaper in urban areas but in rural areas television was main information media in Odisha.

The study showed that more than 80% of the people interviewed perceived mosquitoes as a problem in rural areas only rather than their disease-causing potential but in rural areas the result shows more than 70%, it was mainly malaria that was mentioned. These results were better than other study by Vala [17]

Regarding knowledge about time of mosquito's bites was surprising that more than 40% respondents in rural areas agreed that mosquitoes bite in day time but which was 21.4% in urban areas. Aedes mosquitoes usually bite during the day. [18]

There was good knowledge about correct mosquito breeding places among 84.7% respondents in urban areas but which was almost half i.e 38.1% in rural areas which shows the impact of effective Information Education Communication (IEC) by government in urban areas more than rural areas [19]. In a study by Sharma SK *et al* in Madhya Pradesh found that majority of their study subjects did not have knowledge about mosquito breeding places [20]. A study in Karnataka found less than 60% respondents in urban areas having correct knowledge regarding breeding sites of mosquitoes which was low as compared to our study [16].

This study reveals that most of the respondents (90.5%) had knowledge that mosquito borne diseases can be prevented by taking personal protective measures this is quite comparable to study done by vala mayor *et al* in Rajkot district [5] . However, a considerable number was not aware of preventive measures against mosquitoes at community level. This shows that the reach of health education campaigns has been quite limited.

Regarding practice, most of the respondents used liquid repellent vaporizer and mats (44.7%) in urban area, which is higher than found in study by Yadav SP *et al* (4%) [5]. Nalongsack S *et al* (2%) [22]; but lower than study by Patel AB *et al* (61%).[23] Mosquito nets were used by 85% respondents in rural area, which is quite similar found in other studies. [5,24,27] But higher than study by Itrat A *et al* (1.9%) [26] and Patel AB *et al* (10%). [27]

CONCLUSION

Overall, knowledge regarding mosquito borne diseases was satisfactory while knowledge regarding other mosquito-borne diseases was poor. Knowledge regarding malaria was found satisfactory but knowledge regarding other mosquito-borne diseases was unsatisfactory. Knowledge regarding the prevention of mosquito-borne disease was good and the majority of the households were lacked practice Overall knowledge regarding prevention was found more in urban respondents than in rural respondents. So, it is recommended that the community should be encouraged to take the necessary actions at the household level to prevent mosquito borne diseases and the treating doctors and physicians should be encouraged to provide health education to the patients about the appropriate and affordable preventive measures.

REFERENCES

1. Caraballo, H., & King, K. (2014). Emergency department management of mosquito-borne illness: malaria, dengue, and West Nile virus. *Emergency medicine practice*, *16*(5), 1-23.
2. World Health Organisation. Vector-Borne Diseases in India Report of a Brainstorming Session,9 November 2006. (Accessed June 21, 2021, Available:http://www.searo.who.int/LinkFiles/CDS_vectorborne_diseases_in_India, pdf.
3. Malaria, R. B. (2002). Community involvement in rolling back malaria. *Geneva: WHO*.
4. Sharma, A. K., Bhasin, S., & Chaturvedi, S. (2007). Predictors of knowledge about malaria in India. *Journal of vector borne diseases*, *44*(3), 189.
5. Yadav, S. P., Kalundha, R. K., & Sharma, R. C. (2007). Sociocultural factors and malaria in the desert part of Rajasthan, India. *Journal of Vector Borne Diseases*, *44*(3), 205.
6. Prakash, A., Bhattacharyya, D. R., Mohapatra, P. K., Goswami, B. K., & Mahanta, J. (2008). Community practices of using bed nets & acceptance & prospects of scaling up insecticide treated nets in north-east India. *Indian Journal of Medical Research*, *128*(5), 623.
7. Gunasekaran, K., Sahu, S. S., Vijayakumar, K. N., & Jambulingam, P. (2009). Acceptability, willing to purchase and use long lasting insecticide treated mosquito nets in Orissa State, India. *Acta Tropica*, *112*(2), 149-155.
8. Muninarayana, C., Hiremath, S. G., Iyengar, K., Anil, N. S., & Ravishankar, S. (2008). Awareness and perception regarding malaria in Devarayasamudra primary health centre area. *Indian J Pract Dr*, *5*, 20-5.
9. Singh, S. P., Reddy, D. C., Mishra, R. N., & Sundar, S. (2006). Knowledge, attitude, and practices related to Kala-azar in a rural area of Bihar state, India. *The American journal of tropical medicine and hygiene*, *75*(3), 505-508.
10. Ghosh, A., Mukherjee, S., Dutta, T., Roy, S., & Mondal, F. B. (2013). Community perceptions regarding mosquito borne diseases in some selected localitities of Bankura, a Peri-Urban Area of West Bengal, India. *Journal of Mosquito Research*, *3*(1).
11. Davidson, A. R. (1995). From attitudes to actions to attitude change: The effects of amount and accuracy of information. *Attitude strength: Antecedents and consequences*, 315-336.
12. Wood, W., Rhodes, N., & Biek, M. (1995). Working knowledge and attitude strength: An information-processing analysis. *Attitude strength: Antecedents and consequences*, *4*, 189-202.
13. Parks, W., & Lloyd, L. (2004). *Planning social mobilization and communication for dengue fever prevention and control: a step-by-step guide* (No. WHO/CDS/WMC/2004.2). World Health Organization.
14. Morrison, A. C., Zielinski-Gutierrez, E., Scott, T. W., & Rosenberg, R. (2008). Defining challenges and proposing solutions for control of the virus vector Aedes aegypti. *PLoS medicine*, *5*(3), e68.
15. Aertsens, J., Mondelaers, K., Verbeke, W., Buysse, J., & Van Huylenbroeck, G. (2011). The influence of subjective and objective knowledge on attitude, motivations and consumption of organic food. *British food journal*.
16. Kumar, K. R., & Gururaj, G. (2006). Community Perception Regarding Mosquito-borne Diseases in Karnataka State, India.
17. Mayur, V., Umed, P., Nirav, J., Dipesh, Z., Chirag, B., & Ankit, V. (2013). Knowledge and Practices regarding commonly occurring mosquito borne diseases among people of urban and rural areas of Rajkot District, Gujarat. *J Res Med Dent Sci*, *1*, 46-51.
18. Heymann, D. L. (2004). Control of communicable disease manual Eighteenth ed. *Washington, DC. American Public Association*, 146-52.
19. Mehta, D., Solanki, H., Patel, P., Umat, P., Chauhan, R., Shukla, S., & Singh, M. P. (2015). A study on knowledge, attitude & practice regarding mosquito borne diseases in an urban area of Bhavnagar. *Health*, *6*, 29-32.
20. Sharma, S. K., Jalees, S., Kumar, K., & Rahman, S. J. (1993). Knowledge, attitude and beliefs about malaria in a tribal area of Bastar district (Madhya Pradesh). *Indian journal of public health*, *37*(4), 129-132.
21. Mayur, V., Umed, P., Nirav, J., Dipesh, Z., Chirag, B., & Ankit, V. (2013). Knowledge and Practices regarding commonly occurring mosquito borne diseases among people of urban and rural areas of Rajkot District, Gujarat. *J Res Med Dent Sci*, *1*, 46-51.
22. Nalongsack, S., Yoshida, Y., Morita, S., Sosouphanh, K., & Sakamoto, J. (2009). Knowledge, attitude and practice regarding dengue among people in Pakse, Laos. *Nagoya J Med Sci*, *71*(1-2), 29-37.
23. Patel, A. B., Rathod, H., Shah, P., Patel, V., Garsondiya, J., & Sharma, R. (2011). Perceptions regarding mosquito borne diseases in an urban area of Rajkot city. *National Journal of Medical Research*, *1*(02), 45-47.
24. Matta, S., Bhalla, S., Singh, D., Rasania, S. K., & Singh, S. (2006). Knowledge, attitude and practice (KAP) on dengue fever: a hospital based study. *Indian Journal of Community Medicine*, *31*(3), 185-186.
25. Nalongsack, S., Yoshida, Y., Morita, S., Sosouphanh, K., & Sakamoto, J. (2009). Knowledge, attitude and practice regarding dengue among people in Pakse, Laos. *Nagoya J Med Sci*, *71*(1-2), 29-37.
26. Itrat, A., Khan, A., Javaid, S., Kamal, M., Khan, H., Javed, S., ... & Jehan, I. (2008). Knowledge, awareness and practices regarding dengue fever among the adult population of dengue hit cosmopolitan. *PloS one*, *3*(7), e2620.
27. Patel, A. B., Rathod, H., Shah, P., Patel, V., Garsondiya, J., & Sharma, R. (2011). Perceptions regarding mosquito borne diseases in an urban area of Rajkot city. *National Journal of Medical Research*, *1*(02), 45-47.