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RESEARCH ARTICLE

IMPORTANT ANALYSIS OF TRADITIONAL TRIBAL MEDICINES IN MOSQUITO BORN DISEASES

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ABSTRACT

Background: Malaria and other mosquito vector born diseases prevalent globally. In India, village people often have no or limited hospital facility at their places. Further due to the lack of proper knowledge, local village people have to rely on traditional medicines for treatment of the disease. Ethnomedicinal plants and animals commonly used by tribal people to cure malaria and other fever, in the Meikal hill region of Amarkantak were surveyed and documented.

Method: The present investigation is based on a survey of local medicines in and around Amarkantak region and their documentation.

Result: The study revealed that plants like Van Adarak- *zingiber zerumbet* (L.) Zingiberaceae, kalmegh- *Andrographispaniculata* Acanthaceae, Vanjira- *Centratherum* Asteraceae, Sudarsan- *Crinum asiaticum* Amarryllidaceae, *Asplenium nidus* L. and some special fish species and fish oil are used in the form of decoction, powder, paste and juice for the control of Malaria and other diseases by tribal people. These formulations were found to be effective and needing further scientific validation.

Conclusion: Traditional tribal medicines that are used by the tribal peoples for the treatment of malaria fever and other fever is very effective. Their fore, it is very necessary that is made documentation of tribal medicines for the generation of new medicine that may be possible to control new communicable & vector born diseases like malaria, swine flu, bird flu, etc.

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INTRODUCTION

Mosquito born diseases continue to be a major problem in almost all tropical and subtropical countries. They are responsible for the transmission of the pathogens causing some of the most life – threatening and debilitating diseases of man, like malaria, yellow fever, dengue fever, chikungunya, filariasis, encephalitis, etc. Ethno medicines play a significant role in the treatment of various common ailments and diseases of about 75-80% population of the world. The dominant ayurvedic system of medicine in India has been vogue for over 3000 years. Nevertheless, the folk and ethno medicines, particularly in tribal and rural areas of India, are still playing a significant role in the treatment malaria fever and other fever. But now the traditional knowledge and practices are dying and down their intrinsic value at an alarming rate due to the shrinkage of forest areas and disappearance of indigenous culture and practices due to adaptation of modern lifestyle.

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Keeping in view the above investigation has been carried out to explore and document of such invaluable knowledge in healthcare management. Amarkantak is situated at a height of about 1000m above MSL on the Satpura plateau between 22° 41' N latitude and 81° 46' 6" longitudes in the Anup pur District of Madhya Pradesh. The area is the Eastern most extremity of Meikal range. Meikal hills and surrounding area are mainly inhabited by Baiga peoples.

Aim to study

The present study is an attempt to collect the information and documentation of the use of animals & plants to treat malaria and other fever by Baiga tribes.

MATERIALS AND METHODS

For the data collection from local tribal peoples & local Vaid were conduct during September and October 2014 in Amarkantak. Total 500 houses were selected for study with systematic random sampling. Data was collected during

transmission season of vector born diseases. The study was conducted by interview technique using an open ended questionnaire, which included questions related to perceptions of people on mosquitoes, their breeding places, the diseases spread by them, control measures, personal protection measures used in community and source of treatment. Questionnaire was filled in by trained and untrained interviewers. Interview was carried out with a respondent from each house, preferably a head of family. Pilot study was carried out to find out any deficit and accordingly corrected. The results were analyzed using the SPSS software.

RESULTS

Present study shows the observations based upon responses received from 500 respondents. Among respondents, all were adults; 34.8% were male and 65.2% were female. Responses to each question have been analyzed separately. Table 1 presents details on the part used, local name and the prescribed form of use of an individual plant.

Table 1. Systematic Position of Medicinal Plants and uses against malaria fever & other fever by the tribal peoples

S. No.	Local name	Scientific name	Family	Used part
1.	Van Adrak	<i>Zingiber zerumbet</i>	Zingiberaceae	Root
2.	Kalmegh	<i>Andrographis paniculata</i>	Acanthaceae	Root
3.	Vanjira	<i>Centratherum anthmanticum</i>	Asteraceae	fruit
4.	Sudarsan	<i>Crinum asiaticum</i>	Amaryllidaceae	Root
5.	Guduchi	<i>Tinospora cordifolia</i>	Menispermaceae	Stem
6.	Kalesar	<i>Aristolochia indica</i>	Aristolochiaceae	Root
7.	Nimb	<i>Azadirachta indica</i>	Meliaceae	Bark

The study revealed that tribal peoples use seven plant species for the cure of malaria & other fever. In response to a question whether they perceived mosquitoes as a problem or not, 80 percent of the respondents agreed that mosquitoes are a problem. Out of which 50.3% gave the reason of nuisance from mosquito bite, while only 29.7 percent mentioned that mosquitoes cause disease. 96% respondents did not know mosquito breeding sites of mosquitoes. More than half (2%) responded drains or polluted water, while 2% of people associated clean water collections with mosquito breeding presented in Table 2.

Table 2. Knowledge about breeding places of mosquito

Answers for breeding places of mosquito*	Respondents (n=500) (%)
Drains/ Polluted water	10 (2)
Clean water	10 (2)
Don't know	480 (96)

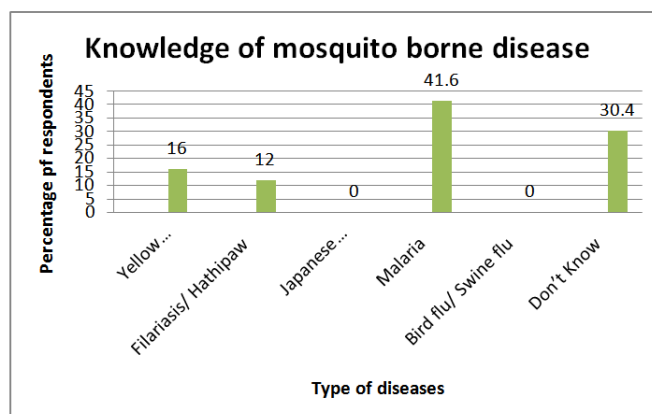
*Multiple responses

Table 3. Knowledge about mosquito born diseases

Responses Diseases transmitted by mosquito*	Respondents (n=500) (%)
Dengue/ Yellow fever/Jaundice	80 (16)
Filariasis/ Hathipaw	60 (12)
Japanese Encephalitis/ Brain fever	0(0)
Malaria	208 (41.6)
Bird flu/ Swine flu	0 (0)
Don't Know	152 (30.4)

Regarding diseases transmitted by mosquito, 41.6% answered malaria. 30.4% interviewees were not aware of any disease being transmitted. Only few (12%) people mentioned about Filariasis, 16 % Dengue or Yellow fever, Japanese encephalitis

and Bird flu, Swine flu rest (0%) reacted with other diseases. When it was asked how you would identify mosquito born disease, (66.8%) people could not reply. About 22.6 percent responded fever, while 10.6% people mentioned fever and body ache/ shivering.



On asking about fever in last fifteen days in family, 185 fever cases were found. Majority of them (2%) consulted private practitioner for that. Only 5% went to government health system for taking treatment. 77 percent cases took self-medication, while a very few 16% went to local Vaid Table 4. When asked what they could do to reduce mosquitoes, 3 % did not know anything about it. About 16 percent identified fish derivatives, while 81 % people agreed uses of plants derivatives, very simple accept by community Table 5.

Table 4. Source of treatment

Source of treatment	Fever cases (n=500)(%)
Government health system	25 (5)
Private practitioner	10 (2)
Self medication	385 (77)
Local Vaid	80 (16)

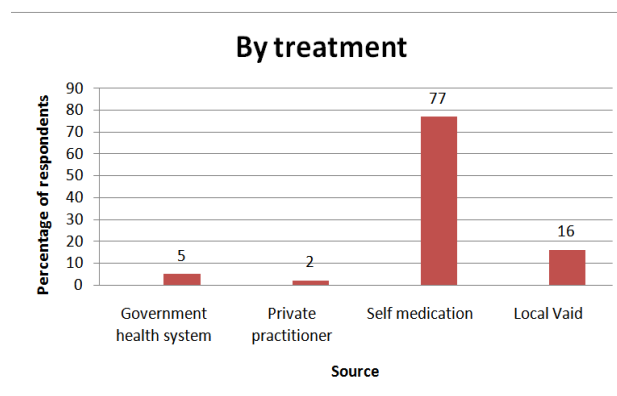
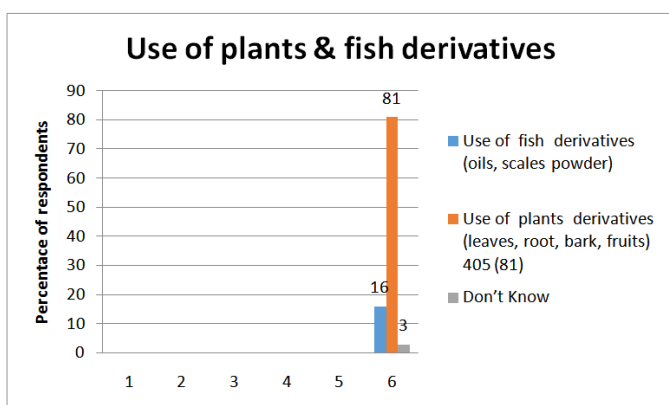


Table 5. Use of plants and fish derivatives

Treatments	Respondents (n=500) (%)
Use of fish derivatives (oils, scales powder)	80 (16)
Use of plants derivatives (leaves, root, bark, fruits)	405 (81)
Don't Know	15 (3)

**Figure. Interaction with local tribal peoples about mosquito born diseases**

DISCUSSION

Plants like Van Adarak- *zingiber zerumbet* (L.) Zingiberaceae, kalmegh- *Andrographispaniculata* Acanthaceae, *Vanjira-Centratherum* Asteraceae, Sudarsan- *Crinum asiaticum* Amarryllidaceae, *Asplenium nidus* were observed to be common as a remedy for malaria and other fever by Baiga tribes of the study area. Srivastava *et al.* (2012) has shown pharmacological basis for the medicinal use of the plant in cold fever and other disorders. These plants have been reported

for use in malaria, Yellow fever (Tripathi and Sikarwar 2013) by tribals in Chitrakoot location of Majhgawan block. Kapale (2012) was recorded Van Adarak, kalmegh, Vanjira, Sudarsan for the control of malaria, head ache, red spot on skin and relief after fever. Singh and Upadhyay (2014), Manish (2013), Shukla *et al.* (2012),

Singh and Sharma (2011) were mentioned ethno medicines have very effective for the treatment of any type of fever which has been used by more than one tribe.

Conclusion

The present study provides information on ethno medicinal uses of plant and animal species in Amarkantak region. It is clear from the investigation that the local tribal people have great expertise with the plants and animals of their environment. Hence, this study supports ethno medicine and pharmaceutical research into new drugs and treatments. Such studies will help us towards knowledge dissemination on medicinal plant and animal based treatments to common people.

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