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ASSESSMENT OF MALARIA PREVENTION AND CONTROL METHODS IN SHENDI LOCALITY, SUDAN 2015

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ABSTRACT

This paper represented the founding of community based cross sectional study conducted to assess methods of prevention and control of malaria in Shendi city. Specifically it aims to evaluate the different methods of prevention service offered by local health authorities. Evaluation of community participation towards control of malaria and evaluation of personal protection against mosquito bite. Sample size of 192 was selected randomly out of 9000 households. An interview' questionnaires and observations were used to collect the data from households, then the data was analyzed using both Microsoft Excel and Statistic Package for Social Sciences program (SPSS).The main results showed that Most dominant level of education of shendi population was university and secondary school. The study concludes that most population used personal protection against mosquito bites.

Keywords:
Methods, prevention, control, Malaria, community.

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1. INTRODUCTION

Malaria is a preventable and curable disease and yet more than one million people die from it each year. It is a disease that significantly affects the poor who suffer economic, social and educational deprivation. Malaria is one of the most successfully parasites ever known to mankind After thousands of years it remains the world's most pervasive infection, affecting at least about 300-500milion clinical cases each year, with 90% of these occurring is sub-Saharan African and mostly caused P Falciparum.(National protocol for treatment of malaria,2010) .

(WHO, 2014) The World Health Organization (WHO) stated that, approximately 40% of the world's population in developing countries at risk of malaria Tropical, with the majority of the cases found in the developing world (WHO, 2007). Each year over 500 million people become ill with the disease and between 700,000 t0 2.7 million people, mostly children, die as a result in

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addition to the human health toll, the disease is also associated with significant economic losses, estimated at some US12 billion annually for sub-Saharan Africa alone (WHO, 2000; Gallup and Sachs, 2001 ; Amerasinghe, 2006; WHO,2007).

Malaria is a complex disease. Its severity is a function of the interaction between the parasite, the *Anopheles* mosquito vector, the human host and the environment. The risk of malaria infection is determined by the number of vectors, their survival rate, the incubation rate for both the vector and the parasite and the probability of the vector feeding off a human host. These parameters are directly influenced by meteorological variables such as rainfall, temperature and humidity that give rise to differences in stability of disease transmission and seasonal variations in disease incidence.

Behavioral traits, genetic variation and immune status in the human population will also influence the degree of exposure and the disease outcome (WHO, 2014).

Around the world, the malaria situation is serious and getting worse. Malaria threatens the lives of 40% of the world's population – over 2 200 million people. Each year, there are an estimated 300-500 million clinical cases. Malaria is estimated to kill more than 1 million people annually, the majority of whom are young children. Ninety per cent of malaria cases in the world occur in Africa south of the Sahara. Children under 5 years of age and pregnant women are the worst affected by malaria. It is one of the leading causes of death among young children.

Together with pneumonia, diarrhea, measles and malnutrition, malaria is responsible for over 70% of deaths in young children especially in developing countries. Malaria during pregnancy causes severe maternal illness and anemia, and is also associated with low birth weight among new born infants, a leading risk factor for infant mortality (UNICEF, 2000)

Malaria is thought to kill 1-1.5 million death worlds wide each year. Malaria is one of the major five courage of mankind in the developing countries, military conflicts and civil unrest, unfavorable ecological changes have greatly contributed to malaria epidemic un protected non immune and physically weakness refuge move in to malarias area.

Though to large extent, it has been eradicated from a large parts of North American and Europe, it is common in the most areas of the tropics. Distribution varies greatly from country to country and with the country themselves. In year(1989), WHO declared malaria control to be a global priority due to worsening situation, and with 1993 the words assembly of with urged to increase control efforts, as well as control measures such as spraying with DDT coating mar shed with paraffin, drainage stagnant water and with wide spread of nets. There were an estimated247 million episodes of malaria in 2006,with wide uncertainty interval from 189million to327 million cases86%(112 million) cases were in Africa Region 80% of these cases were in 13 countries ,and over half were in Nigeria, Democratic Republic of the Congo ,Ethiopia, United Republic of Tanzania ,Kenya and Sudan, Park, 2009)

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2. JUSTIFICATION AND PROBLEM STATEMENT

Malaria is a major public health problem, about half of the world's population lives under exposure. The problems are increasing day by day in magnitude and complexity because it is associated with low socio-economic status, which makes African women and Children particularly vulnerable.

In Sudan it is significant public health problem, since its leading cause of death, searching on methods of control and prevention of malaria is very important for health community.

This paper aim to verify methods of control and prevention as well as introducing solutions for the major problems of malaria in shendi Town.

3. MATERIALS AND METHODS

This descriptive cross sectional study was done in Shendi city during a year 2015 to assess methods of control and prevention of malaria in the city. Simple sample size of 192 was selected randomly out of 9000 households. Interviews questionnaires were conducted to collect data from household. Then the collected data was analyzed manually and computerize using both Microsoft *excel and spss, then the results presented in tables and figures.*

4. RESULTS

Table 1: Educational level of mothers

Educational level	*Frequency*	*Percentage*
Illiteracy	21	11%
Primary	49	25.5%
Secondary	72	37.5%
University	50	26.5%
Total	192	100

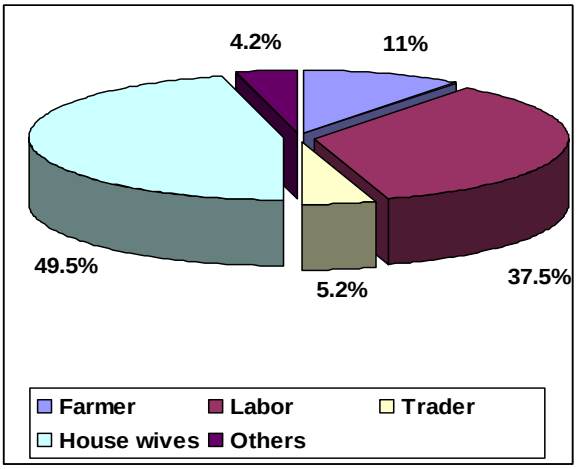

Figure 1: Occupational level of mothers in shendi

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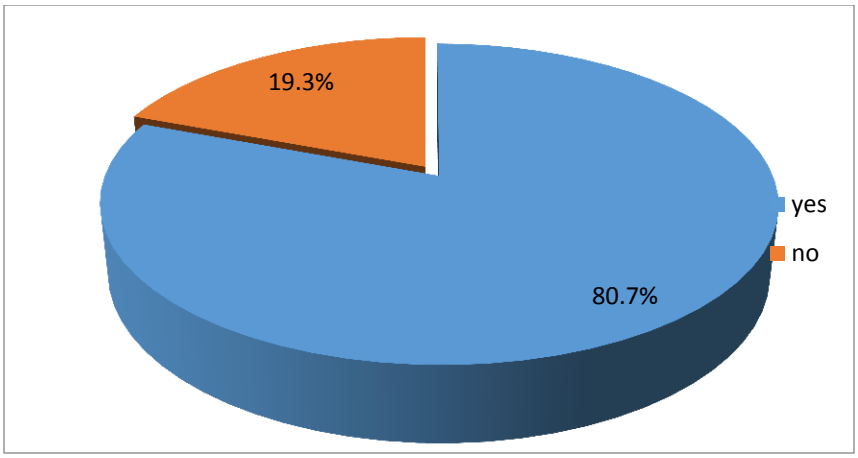

Figure 2: Presence of mosquito in the houses

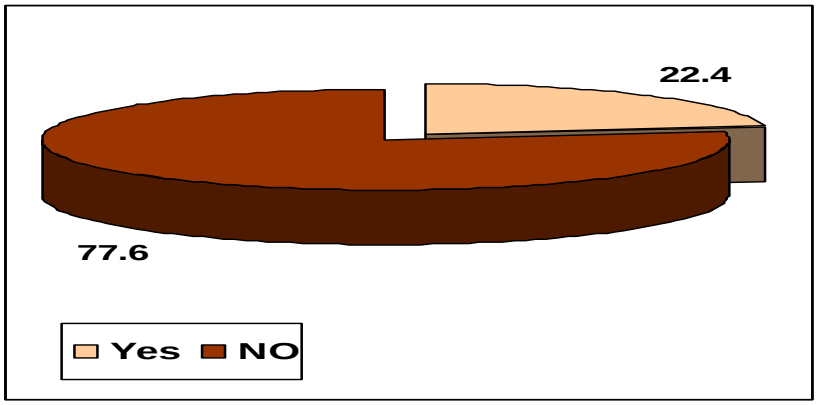

Figure 3: Malaria incidence in Shendi

Table 2: Mosquito breedingcites

Cites of mosquito breeding	*Frequency*	*Percentage*
Garden	29	15.1%
Tank	83	43.3%
toilets	75	39.1%
Others	5	2.5%
Total	192	100%

Table 3: Personal protection against mosquito bites

Personal protection	*Frequency*	*Percentage*
Yes	145	75.5%
NO	47	24.5%
Total	192	100

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Table 4: Mode of personal protection against mosquito bite

Personal protection	*Frequency*	*Percentage*
Impregnated mosquito net	98	67.6%
Repellents	31	21%
Screening	4	2.8%
Smoking	11	7.6%
Others	1	1%
Total	145	100

Table 5: Residual insecticide spraying during this year2015

Residual insecticide	*Frequency*	*Percentage*
Yes	91	47.4%
NO	101	52.6%
Total	192	100

5. DISCUSSION

The study showed that the main educational level of mothers was secondary level and university level with about 37.5% and 26% respectively these higher educational levels participate positively increase health awareness for the mother, utilization of health service and source reduction of mosquito breeding. Table (1) most occupational level of mother are house wives this may positively increase mothers participation in malaria control, due to their highly educational level and having enough knowledge about malaria, and also participates in mother's monitoring for their Children's health and nutritional status for them, In comparison with other study that was made in Sudan migrants families living in Saudi Arabia (Riyadh) in 1993 and was conducted by the international union for the scientific-study of population (IUSSP), this study became differ, while this study revealed that 70% of women were labors such as teachers and secretaries and 20% are house wives, while the above study showed that 49.5% were house wives, and 37.5% are labor. These factors and others increased skills and knowledge of prevention and control of malaria thus participate effectively in reduction of incidence of malaria in shendi town, Figure (1).

Most houses of the study area presented flying mosquitos this illustrated the need of strong program to control and prevention of malaria and need of protection against mosquitos bites, figure (2), and tanks represented the most appropriated location of breeding cites as well as toilets ,that means there were *Anopheles* as well as culex mosquitos ,thus the measures of prevention and control must include both of them , table(2)

The study reveals that most of population of shendi town uses personal protection against mosquito bite while significant number of them don't protect them self's against mosquito bites,

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this increase incidence of malaria because most of population suffer of malaria, table (3). This application of protection measures is the one of the factor that interrupts the transmission of malaria in the communities, thus decreasing the incidence of malaria in shendi city, especially the susceptible groups such as Children and pregnant women. In comparison of this study with other study that was done in 2005 by the American society and tropical medicine and hygiene for the personal protection against mosquitoes bite in this studCote d'Ivoire became nearly the same results, where this study revealed 80% of personal protection of mosquito bite in the community, while the above study showed 75.5% of personal protection from mosquito bites in shendi, table (3). Also the study reveals that the most dominant method of personal protection was impregnated mosquito net ,while the repellents and used of smoke take place in such population, table(4).

Finally the study showed that the most of population said that: there was no larvacide spraying done by local health authorities to prevent breeding of mosquitos, table (5)

6. CONCLUSIONS

- The dominant educational level of study population was university and secondary school level.
- Most houses present flying mosquitos.
- Tanks represented the appropriate breading cite of mosquitos in city.
- Most of populations used personal protection against mosquito bite.
- Most of population said that there was no larvacide praying against mosquitos by local health authorities of shendi city

7. RECOMMENDATIONS

- Health authorities must improve the health education in the communities
- Ministry of health must provide the population with equipment and supplies such as bed-net, drugs of malaria, repellents.
- Public health administration must eliminate the favorable places of mosquito breeding.
- Local public health authorities must adopt spraying program to control and prevent malaria.

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