

**DISCIPLINE GENDER AS DETERMINANTS OF KNOWLEDGE AND ATTITUDE
TOWARDS MALARIA CONTROL STRATEGIES AMONG SECONDARY SCHOOL
TEACHERS IN UYO SENATORIAL DISTRICT**

BY

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ABSTRACT

This study investigated discipline gender as determinants of knowledge and attitude towards malaria control strategies among secondary school teachers in Uyo senatorial district. The population of this study consisted of all secondary school teachers in Uyo Senatorial District. The study adopted descriptive survey design while stratified random sampling technique was used in selecting the respondents. Data was obtained using a research questionnaire “Knowledge and Attitude Towards Malaria Control Strategies Questionnaire (KATMCSQ).” Data obtained from respondents was analysed using descriptive statistics, while Pearson Product Moment Correlation analysis and independent t-test analysis was used in testing the hypotheses. It was concluded that there is significant difference in the attitude of male and female secondary school teachers towards malaria control strategies in Uyo senatorial District and also significant difference in the knowledge of malaria control strategies between science and art inclined secondary school teachers in Uyo senatorial District. It was therefore recommended that government should organize interventions in schools to improve the knowledge of malaria control strategies for teachers.

Introduction

Currently, one of the cardinal tools of malaria control programmes by the World Health Organization (WHO) is community participation, especially in home management of malaria (Njama et al., 2003), and success depends largely on the behaviour of caregivers of young children (Wagstaff, 2002). According to the Federal Ministry of Health (2005), more than 20% of humanity is affected by malaria. The human and economic costs associated with declining quality of life, consultations, treatments, hospitalisation and other events related to malaria are enormous and often lead to low productivity and lost incomes. In sub-Saharan Africa, where 90% of the world’s malaria occurs, about 500 million cases are recorded annually with hundreds of thousands of child deaths. In Nigeria, like in many west-African countries, malaria is a major

cause of morbidity and mortality. It is estimated that over 50% of Nigerians suffer at least one bout of malaria every year (Erhun, Agbani and Adesanya, 2005).

Among school adolescents, malaria is responsible for school absenteeism, poor performance in school, examination failures, school dropouts and even death. The problem of malaria among adolescents has largely been overshadowed by the huge burden of HIV/AIDS among this younger age group (Sachs and Malaney, 2002). Pasvol (1998) said that as much as 60% of school children's learning may be impaired by malaria. Experiences with malaria have shown that prevention is better and cheaper than cure; however, the practice of malaria preventive measures has been related to the knowledge and belief of people (Mazigo, 2010). Malaria-related knowledge, attitudes and practices have been examined in many rural and partly urban multi-ethnic populations in Africa. Within Nigeria, surveys of residents of the Atlantic coast revealed a lack of knowledge and many misconceptions about the transmission and treatment of malaria, which could adversely affect malaria control measures and antimalarial therapy (Udonwa, Gyuse, and Etokidem, 2010).

Adeneye and Jegede (2007), also state that school teachers, constitute a formidable community entry point for the control of malaria under the people-oriented malaria control strategy, the RBM programme. A critical mass of knowledgeable school teachers, with the right attitude towards the RBM programme, could act as a catalyst for community involvement in rolling back malaria. This is critical for the right practice of the RBM programme as well as programme sustainability. Studies of malaria-related knowledge, attitudes and practices, have been widely used in research on malaria and have proved useful tools in shaping policy formulations as well as guiding programme implementation. Studies pertaining to knowledge, attitude and practices (KAP) showed that direct interaction with community plays an important role in circumventing malaria problem (Sharma et al., 2000).

Statement of the Problem

The failure to consider community's knowledge, attitude and practice about malaria has contributed to the inability of programs to achieve sustainable control as people's behavior may increase malaria risk. Malaria awareness campaigns are often restricted to providing information at health post and through the media, however these media are not readily available to all schools especially in the rural areas and to people with low levels of education. These practices often results in a culture of dependency where the affected people in the rural areas are in most part dependent on the formal control programmes to provide all protection against the vector mosquitoes .

In many cases, the perception of the local people is that they do not have the resources or knowledge to actively participate in malaria control. The lack of accurate knowledge at community level also results in problems such as negativity towards certain insecticides and increasing refusal to indoor spraying. It is not only vector control activities that are affected, for instance with Malaria rapid tests resembling HIV rapid test, uninformed individuals may be skeptical of "getting tested". Fear of the unknown and poorly understood can severely hamper the effectiveness of good measures. There is therefore the need to get school community and teachers educated on malaria control strategies to such an extent that they will not solely be reliant on formal programmes to protect themselves from mosquito borne diseases, but will actively participate in anti-malaria activities, contributing towards true integration of all

resources, this will go a long way in protecting school adolescents. Thus, the problem of this study is to examine discipline and gender as determinants of knowledge and attitude towards malaria control strategies among secondary school teachers in Uyo senatorial district.

Objectives of the study

The main objective of the study is to examine discipline and gender as determinants of knowledge and attitude towards malaria control strategies among secondary school teachers in Uyo senatorial district while the specific objectives are as follows:

1. To examine the difference in the attitude of male and female secondary school teachers towards malaria control strategies in Uyo senatorial District.
2. To find out the difference in the knowledge of malaria control strategies between science and art inclined secondary school teachers in Uyo senatorial District.

Research questions

The following research questions will be answered:

1. To what extent do male and female secondary school teachers in Uyo senatorial District differ in their attitude towards malaria control strategies.
2. What is the difference in the knowledge of malaria control strategies between science and art inclined secondary school teachers in Uyo senatorial District.

Research hypotheses

The following null hypotheses will be tested:

1. There is no significant difference in the attitude of male and female secondary school teachers towards malaria control strategies in Uyo senatorial District.
2. There is no significant difference in the knowledge of malaria control strategies between science and art inclined secondary school teachers in Uyo senatorial District.

Sex of Teachers and Attitude Towards Malaria Control Strategies

According to Joshi and Banjara (2008), attitudes between malaria appear different between male and female teachers in schools. Women take a more proximate perspective of malaria. As the primary caregivers at home, women are the first to notice the child's illness and decide on initial treatment. Also, female teachers are more aware of preventive measures when a student is sick in the school. Edson and Kayombo (2007) said women do not discuss broader causes or consequences of malaria. In contrast, men discuss environmental factors and political factors affecting malaria and complain about poor infrastructure for treatment seeking. They are also able to identify causes of malaria more clearly than the women. According to Midzi (2011), a man's role is to protect, defend, conduct external relations and farm the land; activities which they describe as being higher status than those of women. The literacy rate amongst women is reported as 35% compared with 65% of men (UNICEF, 1998). This low education level affects understanding of diseases; for example a survey in villages found whilst men could classify diseases using names, women referred to them as groups of symptoms (Booth and MacLean, 2001).

According to WHO (2005), the understanding of malaria prevention and recognition of the disease along with reported treatment behavior amongst women and men in rural and urban schools is now a priority. Enough knowledge, experience and expertise in malaria control and research exist in schools in Nigeria in spite of financial and operational constraints (Dash et al. 2008). Disseminating malaria knowledge through schools appears to be an effective strategy to improving community knowledge of malaria transmission (Yunnan Institute of Malaria Control, 1999). According to World Health Organization, (2004), those children having higher educational status were more likely to have heard something about malaria. This indicates that there may also be language or literacy barriers resulting in low knowledge of malaria. Such barriers to knowledge may be overcome by the use of spoken messages about malaria prevention such as community plays and workshops through the teachers.

According to Edson and Kayombo (2007), the main reason why it was difficult to eradicate malaria in Nigeria was people's lack of knowledge and illiteracy. Secondly, malaria prevention and treatment were considered to be difficult to achieve because of poverty, which coincides with other research saying that poverty is one of the main reasons that malaria still is a problem in low income countries (Savigny, 2004; WHO, 2009). The third reason mentioned was that prevention was difficult to implement because of resistance to changed lifestyle, such as growing plants near the houses, sleeping without bed nets and allowing stagnant water (Fergusson Trust and Fergusson Trust, 2007; CDC, 2010).

Teaching Area or Discipline of Teachers and Knowledge of Malaria Control Strategies

The school's environment plays a significant role in determining whether interventions to promote positive health behaviours and malaria awareness will be effective and sustainable (Bundy, Lwin, Osika, McLaughlin, Pannenberg, 2000). According to Boivin (1993), a Health-Promoting School provides a safe and healthy environment that presents a realistic and attractive range of health choices to encourage a healthy lifestyle. It also helps students and others develop their physical, psychological and social potential. School health teachers appreciate scientific models for malaria prevention and as such make children aware that good health is imperative to their future and that they should try to promote health by taking measures to reduce the chance of infection caused by preventable diseases such as malaria. Hence the need for health related courses in schools (WHO Information Series on School Health, 1997). This can be accomplished through in-class educational activities as well as take home assignments that are designed to make children aware of their home environment and encourage parental or guardian participation.

Guyatt and Snow (2001) assert that school teachers ought to be professional in disseminating information in and out of the school community. Schools can serve as a gateway to the community by providing entry points for malaria prevention and control by serving as a liaison to children, parents and the community at large. According to Jones and Williams (2004), schools can work with local governments and health facilitators to become a distribution point for insecticide treated mosquito nets (ITNs) and net retreatment. Schools can also distribute malaria information packs to children to take home to their parents and other family members. School children and teachers can also be involved in community campaigns during ITN

distribution, retreatment of nets and activities for behavioural changes (such as dramas, concerts, mobilization of communities and volunteers).

Schools are a central part of the community and can serve as a central medium in raising malaria awareness and prevention in both the children whom they serve and the community at large and also inculcate it in their course curriculum (Lopez and Schmunis, 1990). Their capacity to reach many people enables schools to serve as affordable and cost-effective options for raising malaria awareness through teaching skills-based health education programmes and by incorporating malaria awareness into existing school health programmes. Children can be important agents for change. Thus, health education in schools can help promote a community wide understanding of malaria and the need for control and can create a demand for health services (both private and public) to provide access to affordable and appropriate treatment (Kofoed, 2004).

According to Murphy and Breman (2001), learning experiences in school can significantly influence students' attitudes and behaviours as such teachers can teach malaria awareness and information needed to adopt health behaviours to children in different age groups. Teachers can also involve children in malaria awareness activities that will help children correlate what they learn and do in class to what they do once they leave the classroom. Cropley (2004) asserts that health education based on understanding the scientific and improved practices, individual knowledge, attitudes and practices (KAP) on malaria is moving to the forefront as a measure necessary for malaria control. A compendium of reports on knowledge, attitudes and practices related to malaria disease are available from around the world (UNICEF, 2002). All these studies indicate that misconceptions on malaria transmission and risk factors still exist and impact negatively on malaria control programmes. Malaria control programmes must therefore also consider the broad, complex and interrelated factors that influence human behavior as decisions made by individuals or communities to practice protective measures are related to knowledge and beliefs of the people.

RESEARCH METHOD

Research Design

Descriptive survey design will be used for the study. This design fits this study, because it focuses on the investigation of the knowledge and attitude of secondary school teachers towards malaria control strategies in Uyo Senatorial District.

Population of the Study

The population of the study will consist of all secondary school teachers in Uyo Senatorial District.

Sampling and Sampling Technique

The respondent for the study will consist of 600 teachers in the study area. These will be obtained through the stratified random sampling technique.

Instrumentation

The researcher will develop an instrument tagged: "Knowledge and Attitude Towards Malaria Control Strategies Questionnaire (KATMCSQ)."

Validation of the Instrument

The instrument was face and content validated by the researcher's supervisor. One expert from test, measurement and evaluation also helped in validating the instrument. They assessed the

validity of the items measuring the variables in the research objectives. All the corrections and comments were incorporated into the final form of the instrument.

Reliability of the Instrument

Pearson product correlation was used to determine the reliability of the instrument (BATI), using 20 respondents who were not part of the main study but possess the character of the population. The reliability co-efficient was 0.87 showing that the instrument is reliable.

Method of Data Analysis: Descriptive statistics will be used to answer the research questions, while Pearson Product Moment Correlation analysis and independent t-test analysis will be used in testing the hypotheses.

Data Analysis and Results

Research Question One

The research question sought to find out the extent to which male and female secondary school teachers in Uyo senatorial District differ in their attitude towards malaria control strategies. To answer the research question, descriptive analysis was performed on the data (see table 1)

Table 1

Descriptive analysis of the extent to which male and female secondary school teachers in Uyo senatorial District differ in their attitude towards malaria control strategies.

Groups	N	X	Mean Difference	Remarks
Male	328	15.61	1.99*	*Remarkable Difference
Female	263	13.62		

** The highest mean score

* The least mean score

Source: Field Survey

The result of the above table 1 presents the descriptive analysis of the extent to which male and female secondary school teachers in Uyo senatorial District differ in their attitude towards malaria control strategies. From the result of the analysis it was observed that the level of male secondary school teacher (15.61) was remarkably higher than that of their female counterpart (13.62) with remarkable mean difference of (1.99). The result therefore means that there is remarkable difference in the attitude of male and female secondary school teachers towards malaria control strategies in Uyo senatorial District.

Research Question Two

The research question sought to find out the difference in the knowledge of malaria control strategies between science and art inclined secondary school teachers in Uyo senatorial District. To answer the research question, descriptive analysis was performed on the data (see table 2)

Table 2

Descriptive analysis of the difference in the knowledge of malaria control strategies between science and art inclined secondary school teachers in Uyo senatorial District.

Groups	N	X	Mean Difference	Remarks
Science	361	15.46	1.90*	*Remarkable Difference
Art	230	13.56		

** The highest mean score

* The least mean score

Source: Field Survey

The result of the above table 2 presents the descriptive analysis of the difference in the knowledge of malaria control strategies between science and art inclined secondary school teachers in Uyo senatorial District. From the result of the analysis it was observed that the level of science secondary school teacher (15.46) was remarkably higher than that of the art secondary school teacher (13.56) with remarkable mean difference of (1.90). The result therefore means that there is remarkable difference in the knowledge of malaria control strategies between science and art inclined secondary school teachers in Uyo senatorial District.

Hypothesis One

There is no significant difference in the attitude of male and female secondary school teachers towards malaria control strategies in Uyo senatorial District. In order to test the hypothesis, two variables were identified as follows:-

1. Male and female secondary school teachers as the independent variables
2. Attitude towards malaria control strategies as the dependant variables

Independent t-test analysis was used in comparing the two independent variables (See table 3).

Table 3

Independent t-test Analysis of the difference in the attitude of male and female secondary school teachers towards malaria control strategies in Uyo senatorial District.

Groups	N	\bar{X}	SD	t
Male	328	15.61	1.28	16.48*
Female	263	13.62	1.65	

***Significant at 0.05 level; df = 589; N = 591; Critical t value = 1.96**

The above Table 3 presents the obtained t –value as (16.48). This value was tested for significance by comparing it with the critical t-value (1.96) at 0.05 levels with 589 degree of freedom. The obtained t-value (16.48) was greater than the critical t-value (1.96). Hence, the result was significant. The result therefore means that there is significant difference in the attitude of male and female secondary school teachers towards malaria control strategies in Uyo senatorial District.

Hypothesis Two

There is no significant difference in the knowledge of malaria control strategies between science and art inclined secondary school teachers in Uyo senatorial District. In order to test the hypothesis, two variables were identified as follows:-

1. Science and art inclined secondary school teachers as the independent variables
2. Knowledge of malaria control strategies as the dependant variables

Independent t-test analysis was used in comparing the two independent variables (See table 4).

Table 4

Independent t-test Analysis of the difference in the knowledge of malaria control strategies between science and art inclined secondary school teachers in Uyo senatorial District.

Groups	N	\bar{X}	SD	t
Science	361	15.46	1.56	15.00*
Art	230	13.56	1.40	

***Significant at 0.05 level; df =589; N =591; Critical t value = 1.96**

The above Table 4 presents the obtained t –value as (15.00). This value was tested for significance by comparing it with the critical t-value (1.96) at 0.05 levels with 589 degree of freedom. The obtained t-value (15.00) was greater than the critical t-value (1.96). Hence, the result was significant. The result therefore means that there is significant difference in the knowledge of malaria control strategies between science and art inclined secondary school teachers in Uyo senatorial District.

Discussion of the Findings

The result of the data analysis in table 3 was significant due to the fact that the obtained t-value (16.48) was greater than the critical t-value (1.96) at 0.05 level with 589 degree of freedom. This result implies that there is significant difference in the attitude of male and female secondary school teachers towards malaria control strategies in Uyo senatorial District. The result is in agreement with the research findings World Health Organisation, WHO (2005), who stated that the understanding of malaria prevention and recognition of the disease along with reported treatment behavior amongst women and men in rural and urban schools is now a priority. The result of the analysis caused the null hypotheses to be rejected while the alternative one was retained.

The result of the data analysis in table 4 was significant due to the fact that the obtained t-value (15.00) was greater than the critical t-value (1.96) at 0.05 level with 589 degree of freedom. This result implies that there is significant difference in the knowledge of malaria

control strategies between science and art inclined secondary school teachers in Uyo senatorial District. The result is in agreement with the research findings of Webster (2000), who opined that school children groomed by science oriented teachers appreciated the improved methods of malaria prevention than their counterparts trained by art oriented teachers who were aware of malaria and its prevention methods but not well informed of the benefits of using ITNs. The result of the analysis caused the null hypotheses to be rejected while the alternative one was retained.

Conclusion

Based on the findings of the research work, the following conclusions are deemed necessary: There is significant difference in the attitude of male and female secondary school teachers towards malaria control strategies in Uyo senatorial District. There is significant difference in the knowledge of malaria control strategies between science and art inclined secondary school teachers in Uyo senatorial District.

1. Both science and art inclined secondary school teachers should understand malaria control strategies adequately.
2. Malaria control strategies should not only be understood and practiced by science inclined secondary school teachers but also by the art inclined primary school teachers.
3. Both male and female secondary school teachers should show equal attitude towards malaria control strategies.
4. Government should organize interventions in schools to improve the knowledge of malaria control strategies for teachers.

References

- Adeneye, W. O., Jegede, E. O. & Adesanya, S. O. (2007) *Malaria prevention: Knowledge, attitude and practice in a south-western Nigerian community*. Afr J Biomed R;8:25–29.
- Boivin, S. M. (1993) “Knowledge on the transmission, prevention and treatment of malaria among two endemic populations of Bangladesh and their health-seeking behaviour,” *Malaria Journal*, vol. 8, no. 1, article 173,
- Booth, C. M. & Maclean, J. D. (2001) *Knowledge, treatment-seeking and socio-economic impact of malaria on the Essequibo Coast of Guyana*. McGill J Med. 6:17–25.
- Bundy, B. E., Lwin, E. U., Osika, M. J., McLaughlin, R. Q. & Pannenborg, G. Y. (2000). *Evaluation of an educational strategy on malaria in rural areas of the Colombian Pacific Coast*. Biomedica. ;26:342–52. [PubMed]
- CDC. (2010) Sensitivity of *plasmodium falciparum* to chloroquine and sulfadoxine pyrimethamine in Nigerian children. Bull WHO.;68:45–52.
- Cropley, E. J. (2004) Knowledge on malaria transmission and its prevention among schoolchildren in Kyela District, south-western Tanzania. Tanzania Health Research Bull.;9(3):207–210.
- Dash, K. N., Vijayakumar, K. G., Sahu, U. J., & Jambulingam E. I, (2008) “Knowledge, attitude and practice on malaria: a study in a tribal belt of Orissa state, India with reference to use of long lasting treated mosquito nets,” Acta Tropica,
- Edson, F. J. & Kayombo, E. J. (2007) ‘Knowledge on malaria transmission and its prevention among schoolchildren in Kyela District, south-western Tanzania. Tanzania Health Research Bull. 9 (3):207–210.
- Erhun, W. O., Agbani, E. O. & Adesanya, S. O. (2005) Malaria prevention: Knowledge, attitude and practice in a south-western Nigerian community. Afr J Biomed R.; 8:25–29.
- Federal Ministry of Health, (FMOH) (2005); *National Malaria Control Program*. Abuja.
- Fergusson, T. & Fergusson, T. (2007) How local community knowledge about malaria affects insecticide treated net use in northern Ghana. Trop Med Int Health.
- Guyatt, A. D. & Snow, R. P. (2001) “Knowledge and beliefs about malaria transmission and practices for vector control in Southern Mexico,” *Salud Pública de México*, vol. 45, no. 2, pp. 110–116,
- Jones, W. Y. & Williams W. K. (2004) “Large-scale spraying of bed nets to control mosquito vectors and malaria in Sichuan, China,” *Bulletin of the World Health Organization*, vol. 73, no. 3, pp. 321–328,

- Joshi, A. B. & Banjara, M. R. (2008) Malaria related knowledge, practices and behaviour of people in Nepal. *J Vector Borne Dis*.
- Kofoed, E. S. (2004) “Perceptions of the causes of malaria and of its complications, treatment and prevention among midwives and pregnant women of Eastern Sudan,” *Journal of Public Health*, vol. 16, no. 2, pp. 129–132,
- Lopez, K. W. & Schmunis, M. L. (1990) “Community knowledge, attitudes and practices (KAP) on malaria in Swaziland: a country earmarked for malaria elimination,” *Malaria Journal*, vol. 8, no. 1, article 29,
- Litsios, M. R. (1996) Malaria related knowledge, practices and behaviour of people in Nepal. *J Vector Borne Dis*.45:44–50. [[PubMed](#)]
- Mazigo, H. D. (2010) Knowledge, attitudes, and practices about malaria and its control in rural northwest Tanzania. *Malar Res Treat*.794261. [[PMC free article](#)] [[PubMed](#)]
- Midzi, L. E. (2011), Malaria and Agriculture in Tanzania. Impact of Land Use and Agricultural Practices on Malaria in Mvomero District, *National Institute for Medical Research, Dar es Salaam, Tanzania*.
- Murphy, T. N. & Breman F. M. (2001) “Knowledge, beliefs and practices relevant for malaria control in an endemic urban area of the Colombian Pacific,” *Social Science and Medicine*, vol. 49, no. 5, pp. 601–609, 1999.
- Njama, S. K., Dunyo, E. A., Afari, K. A., Koram, C. K. & Ahorlu, I. A. (2003) “Health centre versus home presumptive diagnosis of malaria in southern Ghana: implications for home-based care policy,” *Transactions of the Royal Society of Tropical Medicine and Hygiene*, vol. 94, no. 3, pp. 285–288, 2000.
- Pasvol S. M. (1998) Knowledge and practice of unqualified and semi-qualified allopathic providers in rural Bangladesh: Implications for the HRH problem. *Health Policy*.84:332–43. [[PubMed](#)]
- Sachs, S. Z. & Malaney, M. A. (2002) Malaria: Knowledge and behaviour in an endemic rural area of Turkey. *Public Health*. 119:202–8. [[PubMed](#)]
- Savigny, C. M. (2004) “Care-seeking patterns for fatal malaria in Tanzania,” *Malaria Journal*, vol. 3, article 27,. View at Publisher
- Sharma, C. F., Makanga, Z. P., Ortmann, M. S. & Ibarra Y. E. (2000) “Efficacy and safety of artemether-lumefantrine (Coartem®) tablets (six-dose regimen) in African infants and children with acute, uncomplicated falciparum malaria,” *Transactions of the Royal Society of Tropical Medicine and Hygiene*, vol. 99, no. 6, pp. 459–467,
- Udonwa, T. H., Gyuse, D. U. & Etokidem, K. N., (2010) “The level of knowledge, attitude and practice in relation to malaria in Oo-do village, Myanmar,” *Southeast Asian Journal of Tropical Medicine and Public Health*, vol. 29, no. 3, pp. 546–549.