



## A Survey of the Knowledge, Attitude and Practice of Lay Publics' Towards Malaria in Delta State, Nigeria.

Arute John E\*<sup>1</sup>, Okolosi-Patani Emily O<sup>2</sup>, Ahwinahwi Ufuoma S<sup>1</sup> and Agare Goodnews I<sup>1</sup>

1. Department of Clinical Pharmacy and Pharmacy Administration, Faculty of Pharmacy, Delta State University, Abraka, Nigeria.
2. Department of Pharmaceutical Microbiology, Faculty of Pharmacy, Delta State University, Abraka, Nigeria.

### Article info

Article history:  
Received 12 JAN 2016  
Accepted 24 JAN 2016

\*Corresponding author:  
[arute4john@yahoo.com](mailto:arute4john@yahoo.com)

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### Abstract

Knowledge, attitudes and practice (KAP) are essential for control programs. Wrong perception can cause delay in health seeking treatment. It is therefore necessary that people's knowledge and practices with regard to malaria is regularly assessed and promoted. This study aimed to assess the Knowledge, Attitude, and Practice (KAP) of malaria among Lay Publics in Delta State. A cross sectional prospective descriptive randomize sampling study was carried out in six Local Government Areas (LGA) in Delta State. A well-structured questionnaire containing thirty-two closed and open ended questions were administered to the lay publics. Data collected were entered into Microsoft Excel, rechecked for accuracy and loaded into the Statistical Package for Social Sciences (SPSS) software (version 17.0) for descriptive statistical and inferential analysis. The study revealed that 90.9% of respondents identified mosquito as the cause of malaria and 70%, 62.8%, and 61.4% identified high temperature, headache and body pain respectively as the major signs and symptoms of malaria. Also, 56.3% of the respondents were seen to have suffered from malaria in the last one month and 80% of participants seek treatment within 24hours. Over 70% believe malaria is a life threatening disease and 31% never sleeps in mosquito net. Descriptive statistics shows mean score of 22.22±4.355 (6 items variable on a 4 point scale) for Knowledge, 18.64±5.884 (7 items variable on a 5 point scale) for Attitude, 6.99±2.971 (4 items variable on a 3 point scale). The study reveals that lay publics in Delta state has good knowledge and attitude towards malaria but poor practices towards its prevention hence there need for more awareness and enlightenment for malaria prevention measures.

**Keywords:** Knowledge, Attitude, Practice, Malaria.

## **INTRODUCTION**

Malaria, the 'King of Diseases', continues to haunt and taunt mankind. Malaria meaning "bad air" is one of the oldest and re-emerging disease in the world today [1]. Its clinical symptoms were fully described by Hippocrates 400 years before the Christian era [2]. The dreaded disease is difficult to eradicate and its control is possible only with coordinated efforts of the general public, healthcare personnel and government agencies. Malaria continues to be a leading cause of morbidity and mortality in many tropical regions of the world, despite global efforts to eradicate the disease. It is an important cause of death in children and adult especially in tropical countries [3]. While the disease is easily preventable, curable and treatable, it remains a big health threat to many countries over the world. Whilst Africa accounts for over 90% of the disease burden worldwide [4- 8], Sub-sahara Africa is the worst afflicted malaria region [9-10] and malaria is one of top killers [11]. Although there have been advances in terms of new drugs and vaccines, eradication is still a way off and many health strategies now focus on malaria prevention and control. It is a worldwide disease with estimated 234 million cases and 863,000 deaths in 2008 [12]. Malaria remains one of the world greatest public health challenges [13-14]. WHO estimated 216 million cases of malaria occurrence in 2010 of which 81% in the Africa region. WHO also estimated that there were 655,000 malaria deaths in 2010 of which 91% in the Africa region and 86% were children under 5years of Age. Malaria affects 3.3billion people, (half of the World's population) in 106 countries and territories [15] and an estimated 3.4 billion people were at risk of malaria in 2012 [16]. It is the fourth leading cause of death in developing countries [17].

The continued prevalence of malaria in Africa is largely due to the socio-cultural factors which are often at variance with standard control measures [18]. Thirty countries in Sub-sahara Africa account for 90% of global malaria deaths. Nigeria, Democratic Republic of Congo (DRC), Ethiopia and Uganda account for nearly 50% cause of death from infectious disease in Africa, after HIV/AIDS. Almost one out of five deaths of children under five in Africa is due to malaria [15]. In Africa today malaria is understood to both a disease of poverty and cause of poverty. Annual economic growth in countries with high malaria transmission has historically been lowered than in countries without malaria [19]. Current emphasis in malaria control is centered on community- based strategies.

Knowledge, attitudes and practice (KAP) are essential for control programs. The failure to consider community's knowledge, attitude, and practice (KAP) about malaria has contributed to the inability of programs to achieve sustainable control [20]. Without a rational concept of the nature of a disease it is impossible to visualize a management procedure. A sound local understanding of malaria preventive measures and health seeking behavior is crucial for the control of malaria [21] and taking preventive measures is related to ones knowledge of a disease [22]. Twelve years after the first Abuja declaration, Nigeria failed to halve the malaria burden in 2010. 2015 leading up to the Millennium Development Goals' (MDG) deadline, Nigeria is still recording high prevalence (98.4%) of malaria [23], hence it is doubtful if Nigeria could halt by 2016 and begin to reverse the incidence of malaria.

There have been a considerable number of reports on knowledge, attitude and practice relating to malaria and its control from different parts of Africa. These reports conclude that misconceptions concerning malaria still exist and that practices for the control of malaria have been unsatisfactory [24]. Studies have also shown the relevance of people illnesses, recognition of symptom, explanation of causes and treatment seeking behavior even at

household level [25-26, 21]. Local etiology is important and has been shown in several cases, to influence treatment [27].

Wrong perception can cause delay in health seeking treatment [27]. Despite the documentation of numerous health compromising factors, some studies have emphasized the value of adequate knowledge of malaria in order to ensure that people apply preventive measures, and seek prompt and appropriate treatment for themselves and their dependents [29-30]. It is necessary therefore that people's knowledge and practices with regard to malaria is regularly assessed and promoted.

The main objective of this research work was to assess the Knowledge, Attitude, and Practice of Lay Publics in Delta State. However the specific objectives are given below:

- To assess the knowledge gap of the lay public in Delta state on the cause of malaria and its common signs of symptoms
- To determine social demographic characteristics affecting KAP on malaria among lay public in Delta State.
- To assess the treatment seeking behaviors of the lay publics in Delta State toward malaria.
- To assess the various practices of the Lay Publics Delta State towards malaria prevention and control

## **METHODS**

A cross sectional prospective descriptive randomized sampling study was carried out in six Local Government Areas (LGA) in Delta State. These six local government areas were randomly selected from the three senatorial districts in Delta state with two LGA chosen from each of the senatorial districts. In each of these selected local government areas, their headquarters were used for the study. Inclusion criteria for respondents were non-health professionals of 18years and above while the exclusion criteria were all health professionals (Pharmacists, Medical doctors, Nurses, Medical laboratory scientists).

A well-structured questionnaire containing thirty-two closed and open ended questions were administered to the lay publics. The questionnaire was first pretested and suitable modifications were done. The purpose of the questionnaire was explained to the respondents before administration. The questionnaire was divided into five sections namely section A (Social Demographics such as sex, age, educational qualifications, occupation, monthly income and marital status), section B (Basic knowledge about malaria such as have you ever heard of malaria? Which vector can transmit malaria to human?), section C (Treatment Seeking behaviors such as have you ever suffered from malaria in the last four weeks? If you are ill where do you seek treatment? ), section D (Attitude towards malaria such as I think that malaria is a serious and life threatening condition), section E (Practices towards malaria prevention such as how often do you sleep in mosquito net?).

The sample size for the lay public was calculated for each of the six local governments and a sample size gotten were all rounded up to 400 to account for attrition. Consequently, a total sample size of 2400 was used for this study. The estimated minimum sample size was calculated using the Fischer's statistical formula for calculating sample size:

$$N = n/1+n (e)^2$$

Where,

N = Sample size

n = the population size

$e$  = the degree of accuracy required (0.05)

Data collected were entered into Microsoft Excel, rechecked for accuracy and loaded into the Statistical Package for Social Sciences (SPSS) software (version 17.0) and presented using frequency distribution, simple percentages, and descriptive statistical and inferential analyses. The descriptive statistics such as mean and standard deviation were used to summarize the score of items within each domain and also used to cross check the transformed scores of 1-4 for both knowledge and attitude domains while practice domain was rated 1-3, with higher scores indicating a better knowledge, attitude and practice. Two sided independent sample *t*-tests, and one way ANOVA were used to compare means across groups, using Graph Pad Instat (version 3 San Diego USA.) P-values were considered significant if less than 0.05 for both groups. Cronbach's alpha, a measure of internal consistency was the internal reliability coefficient measured. It measures the extent to which the items in the instrument measured the same thing (construct).

## RESULTS

In this study, 2400 questionnaire were administered to the lay public, 1991 were retrieved giving a percentage respondent of 83%.

### Social demographics of Lay Public

The result of the total respondents of the lay public's as shown in Table 3.1 revealed that females were 50.6%, 29.4% were aged 21-25yrs and 83.5% of the respondents had Post basic education. Also, 52.1% of the respondent were civil servant, 36.2% with a monthly income within the range of N30, 000-100,000 and 51.8% were married.

### Lay Public basic knowledge about malaria and Treatment seeking behavior

The result as shown in Table 3.2 indicated that 100% of respondents have heard about malaria. 52.8% and 28.9% of the respondents got information about malaria from Radio/TV and health workers respectively, while 90.9% identified mosquito as the cause of malaria and 76.7% identified the bites of mosquito infected with malaria as the means of malaria transmission.

However 70% indicated high temperature as major sign and symptoms of malaria

Majority of the respondents 88.6% affirmed that malaria can kill if untreated. Respondents indicated sleeping in insecticide treated nets (58.1%), spraying of insecticide (14.6%) and trimming of bushes around the house (12%) as the major ways in malaria prevention. The treatment seeking behavior as shown in Table 3.2a shows that 56.3% of the respondents have suffered from malaria in the last one month. About 1.6% and 2.4% visit their worship centers and traditional healing centers respectively while over 90% visit hospital and pharmacy when ill with malaria. Also, 80% of respondents seek for treatment within 24hours after they suspect the symptoms of malaria (Table 3.2b) and among those who do not seek for treatment after 24hours 1.6% eat and rest well, 3.9% apply traditional intervention and 1.7% prays. Over half of the respondent indicated that they don't have enough information on malaria. Among those who indicated that they need information on malaria 20.9%, 14.9%, 10.1%, 9.4% opted for information on information on prevention and control, information on treatment, information on signs and symptoms and any other information respectively.

### Lay publics Attitudes towards Malaria

As shown in Table 3.3, 42.8% of the respondents agreed that malaria is a life threatening disease with 39.0% strongly agreeing to it. A good number (45.4%) of the respondents also

agreed that anyone can get malaria and 36.7% of the respondents disagreed that one can recover spontaneously from malaria without any treatment. Majority of the respondents (60.9%), strongly disagreed that one with malaria should be avoided and also 44.7% of the respondents indicated that it is dangerous when malaria medicine is not taken completely. Over half of the participant of this study affirmed that they should see the physician/ pharmacist when they suspect the symptoms of malaria.

#### **Lay public Practices towards Malaria Prevention**

Practices towards malaria prevention are depicted in Table 3.5. About 42.3% of the participants sleep in mosquito net sometimes and a vast majority of these participants (64.6%) sometimes make use of anti-mosquito spray in their houses. Over 50% of respondents cut bushes around their houses and also clean stagnant water.

## **DISCUSSIONS**

Results from surveys on knowledge, attitudes, and practices are applicable to design or improve malaria control programs and to identify indicators for a program's effectiveness [31]. The survey shows that vast majority of respondents have at least a secondary education (post basic= 83.5%) and all respondents have heard about malaria. Television/ radio and health workers were known as the best source of health information on malaria and this similar to the study carried out among residents of Bushbuckridge, Mpumalanga, South Africa [32] but contrary to this study is the result reported by Zewdie and Molla [33] which says that health and religious institution are the main source of information about malaria. In another quantitative study carried out over fifteen years ago in five states of Nigeria it was found that health information was often received by electronic media in urban cities like Lagos and Enugu but in rural cities like Borno, Jigawa and Kano states, health information was mainly from health workers [34]. Regarding knowledge of lay public's knowledge on malaria, majority of respondents correctly associated mosquito with malaria transmission and these respondents also correctly identified that malaria can be transmitted specifically not just by the bites of any mosquito but by the bites of mosquito infected with malaria indicating their good knowledge of the relationship between mosquito and malaria. This relatively high level of knowledge may be due to their high level of education, a greater access to media information and contact with modern health services found in urban settlements. Similar reports were gotten from South western Nigeria [35] Columbia [36], Swaziland [37], khartoum state, Sudan [38] and Bangladesh [39]. Unlike many malaria-endemic-prone and malaria-endemic-prone settings in Africa [40, 41], appropriate knowledge of the cause of malaria was relatively good in Delta state.

Majority of the population interviewed in this study identified fever/ high temperature, headache and body pains as the common malaria symptoms which is very similar to the report from a study carried out in 2004, in the South-western region of Nigeria were 68.3%, 67.4% and 61.8% also indicated fever, high temperature and body pain respectively, as the common symptoms of malaria [42].

A vast majority of respondents (88.6%) acknowledged that malaria can kill if untreated. Studies have proved that improved community knowledge of malaria and its source of transmission promote preventive and personal protection practices amongst the affected community [43-44].

However a few believed that malaria could be transmitted by drinking of contaminated water (10.2%) or eating of contaminated food (7.3%). Hence, there is the need for more

sensitization about malaria transmission. A high number of the respondents correctly identified the various ways to prevent malaria which include sleeping in ITNs, spraying of insecticide, trimming of bushes around the house and elimination of stagnant water.

The result of this study indicates that respondents' level of education had no significant association ( $p=0.320$ ) with their knowledge which is likely due to the fact that majority of the respondents had a minimum of secondary education and also most of them were civil servants.

Over half of the respondents indicated that they have suffered from malaria in the last one month which shows that practice towards malaria prevention and control in Delta state is poor considering that Delta state is an endemic area for malaria. The most common places of treatments mentioned by the respondents in this study were hospital/clinic and pharmacy (health facilities). This is consistent with other observations in other African countries and India where health facility services were preferred most frequently when malaria is suspected [45-47]. Nevertheless a few respondents (3.9%) claim to have visited traditional healing centers when they suspect the symptoms of malaria which is similar with previous results from Sudan and Bangladesh [39]. Eighty percent of the respondents seek for treatment within 24 hours as soon as malaria is suspected which is in line with the Roll Back Malaria (RBM) recommendation, which states that at least 80% of those infected with malaria should seek prompt (within 24 hours of the onset of symptoms) treatments [48]. Similarly, a study carried out among the residents in Bushbuckridge, Mpumalanga, South Africa [32] also reported that over 80% of respondents seek for prompt treatment. However, this is below the percentage of another study in Swaziland [37] which reported that 90% of respondents would seek treatment within 24 hours of seeing the first symptoms of malaria. This indicates that there is still room for improvements in Delta state. Results of studies carried out by Erhun [42] reported that 1.7% and 3.0% of respondents will seek spiritual intervention and do nothing respectively when the symptoms of malaria is suspected which is also similar with the results of this study. Out of fifty percent of ( $n=1007$ ) that indicated that they would like to get information on malaria 20%, 14.9%, 10.1%, and 9.4% indicated that they would like to get information on prevention and control, information on treatment, information on signs and symptoms and any other information respectively. This suggests the willingness of the respondent to learn more on malaria which will consequently improve their attitude and practices.

Regarding attitude, the respondents were seen to have a good attitude towards malaria with a small percentage still having some wrong understanding towards malaria such as disagreeing that malaria is a life threatening disease, not sure that anyone can get malaria. This indicates that more sensitization is needed towards malaria such as to improve their knowledge which will in turn affect their attitude.

The result on practices shows that 31.1%, 11.6%, 8.8% and 12.8% never sleep under mosquito net, use anti-mosquito spray in their houses, do not cut bushes around their house and do not clean stagnant water around their house respectively. A vast majority of respondents were also not consistent with the various practices towards malaria prevention and control which suggests why 56.3% suffered from malaria in the last one month. This explains the fact that the respondents do not put to practice their knowledge. Hence knowledge is high but practice is low. Generally the inferential statistics of the lay public shows that the age of the Lay public affects their knowledge, attitude and practice. Respondents of above thirty years of age have a better knowledge, attitude and practice towards malaria.

## CONCLUSION

The study reveals a population of lay public with good knowledge towards the cause of malaria and its major signs and symptoms which are fever/ high temperature, headache and body pains. The lay publics in Delta state also have a satisfactory treatment seeking behavior towards malaria. It is also noted that social demographics such as education and sex has no effects on the knowledge, attitude and practice of Deltans towards malaria. Age was shown to affect the knowledge, attitude and practice of the lay public as population above 30years of age have better knowledge, attitude and practice towards malaria.

The lay public have an average practices towards malaria prevention and control. In all, the study revealed a population of lay public in Delta state with good knowledge and attitude towards malaria but deficient in practice. Understanding the level of Knowledge, Attitude and Practice will enable more efficient process of creating awareness, sensitization and will allow malaria prevention and treatment programs to be tailored more appropriately to the need of the population.

## ACKNOWLEDGEMENT

The authors acknowledge all those who assisted in the data collection.

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**Table 1** Socio demographic characteristics for lay public

Characteristics	Frequency
<b>Sex</b>	
Male	961 (48.1)
Female	1006(50.6)
Not Indicated	24(1.2)
<b>Age (Years)</b>	
18-20years	475(23.9)
21-25years	585(29.4)
26-30years	312(15.7)
31-35years	316(15.9)
36-40years	148(7.4)
41year And Above	155(7.8)
<b>Education</b>	
Basic Education	147 (7.4)
Post Basic Education	1661(83.5)
Non-Formal Education	124(6.2)
Not Indicated	59(3.0)
<b>Occupation</b>	
Students	379(19.0)
Traders	187(9.4)
Civil Servants	1037(52.1)
Self-Employed	272(13.7)
Others	74(3.7)
Not Indicated	42(2.1)
<b>Monthly Income</b>	
Below N5,000	328(16.5)
N5,000-30,000	405(20.3)
N30,000-100,000	649(32.6)
Above 100,000	448(22.5)
No Income	161(8.1)
<b>Marital Status</b>	
Single	872(43.8)

Married	1032(51.8)
Divorced	34(1.7)
Widow/ Widower	53(2.7)

**Table 2a:** lay public basic knowledge about malaria

Item Question	Frequency (N)
<b>Have you ever heard about malaria?</b>	
Yes	1991(100.0)
No	0
I don't know	0
<b>Source of information about malaria</b>	
Radio/ TV	1051(52.8)
Health workers	576(28.9)
Bulletin	82(4.1)
Internet	135(6.8)
Others	147(7.4)
<b>Which vector can transmit malaria to man?</b>	
	47(2.4)
Fly	117(5.9)
Cockroach	1810(90.9)
Mosquito	17(0.9)
I don't know	
<b>Malaria can be transmitted by</b>	
	204(10.2)
Drinking of contaminated water	146(7.3)
Eating of contaminated food	1546(76.7)
Bites of mosquito infected with malaria	95(4.8)
I don't know	
<b>What do you think are the most common signs and symptoms of malaria?</b>	
	393(19.3)
	250(12.6)
High temperature/ fever	123(6.2)
Headache	78(3.9)
Body pains	68(3.4)
Vomiting	51(2.6)
Loss of appetite	1000(50.2)

Loss of energy	
All of the above	1764(88.6)
<b>Do you think malaria can kill of untreated?</b>	116(5.8)
Yes	111(5.6)
No	
I don't know	1157(58.1)
	48(2.4)
<b>Which of these are ways to prevent malaria?</b>	291(14.6)
Sleeping in insecticide treated nets	239(12.0)
Wearing of sweater always	201(10.0)
Spraying of insecticide	55(2.8)
Trimming of bushes around the house	
Elimination of stagnant water	
I don't know	

**Table 2b:** lay public treatment seeking behavior on malaria

Item Questions	Frequency N (%)
<b>Have You Suffered From Malaria In The Last Four Weeks?</b>	
Yes	1120(56.3)
No	871(43.8)
<b>When Ill With Malaria Where Do You Seek Treatment?</b>	
Hospital/ Clinic	1316(66.1)
Pharmacy	517(26.0)
Traditional Centers	78(3.9)
Church/ Mosque	33(1.6)
Do Nothing	47(2.4)
<b>How Soon After Suspecting Malaria Do You Seek Treatment?</b>	
One Day (Within 24hours)	1593(80.0)
2-3 Days	201(10.1)
4-6days	112(5.6)
7days Or More	85(4.3)
<b>If You Do Not Seek Treatment Within 24 Hours, What Will You Do?</b>	

Eat And Rest Well	32(1.6)
Traditional Intervention	78(3.9)
Spiritual Intervention Include Praying	33(1.7)
Take Fruit And Drink Lots Of Water	80(4.0)
Go For Medical Test	75(3.8)
Take Paracetamol	100(5.2)
Not Indicated	1593(80)
<b>Do You Think You Have Enough Information On Malaria?</b>	
Yes	924(46.4)
No	1007(50.6)
I Don't Know	60(30.0)
<b>If, What Information Would You Like To Have?</b>	
Information On Treatment	273(14.9)
Information On Control	406(20.4)
Information On Signs And Symptoms	201(10.1)
Any Information	187(9.4)
Not Indicated	924(46.4)

**TABLE 3:** Attitude towards malaria

Item Questions	Strongly disagree N (%)	Disagree N (%)	Neutral N (%)	Agree N (%)	Strongly agree N (%)
I think that malaria is a life threatening disease	204 (10.3)	105(5.3)	59 (3.0)	852 (42.8)	777(39.0)
I am sure that anyone can get malaria	130 (6.5)	138(6.93)	100(5.0)	903 (45.4)	762 (38.3)
In my opinion only children and pregnant women are at the risk of malaria	842(42.3)	717 (35.8)	95 (4.8)	182 (9.1)	155 (7.8)
I think one can recover spontaneously	628 (31.5)	730 (36.7)	254 (12.8)	244 (12.3)	135 (6.8)

form malaria without any treatment	1213 (60.9)	531(26.7)	54(2.7)	67 (3.4)	126 (6.3)
If someone has got malaria, people should avoid having close contact with him/ her	167 (8.4)	238(12.0)	269(13.5)	890(44.7)	427(23.7)
I think that it is dangerous when malaria medicine is not taken completely	121 (6.1)	64 (3.1)	109 (5.5)	1016 (51.0)	681(34.2)
I think I should see the physician/ pharmacist when I suspect the symptoms of malaria					

**TABLE 4:** lay public practices towards malaria prevention

Item Questions	Always N (%)	Sometimes N (%)	Never N (%)
How often do you sleep in a mosquito net	519(26.7)	853(42.8)	619 (31.1)
How often do you use anti-mosquito spray in your house?	474(23.8)	1286(64.6)	231(11.6)
How often do you cut bushes around you house?	1024(51.4)	792 (39.8)	175(8.8)
How often do you clean stagnant water round your house?	1103(53.4)	634 (31.8)	254(12.8)

**Table 5:** descriptive statistics for lay public's knowledge, attitude and practice towards malaria

Item question	Mean± SD
<b>KNOWLEDGE</b>	
Which vector can transmit malaria to human?	3.82±1.121
Malaria can be transmitted to humans by:	3.52±1.002

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Do you think malaria can kill you if untreated?	3.85±0.459
What do you think are the most common signs and symptoms of malaria?	3.61±0.670
Which of these are ways to prevent and control malaria?	3.93±0.407
When does malaria mosquito feed?	3.48±0.696
<b>Total summation</b>	<b>22.22±4.355</b>

#### **ATTITUDE**

I think that Malaria is a serious and life-threatening disease	4.01±1.181
I am sure that anyone can get Malaria	4.11±1.008
In my opinion, only children and pregnant women are at risk of Malaria	4.44±0.586
I think that one can recover spontaneously from Malaria without any treatment	4.29±1.776
If someone has got Malaria, people should avoid having close contact with him/her	1.61±1.333
I think that it is dangerous when Malaria medicine is not taken completely	1.72±1.301
I think I should see the physician/pharmacist when I suspect symptoms of malaria	1.62±1.423
<b>Total summation</b>	<b>18.46±5.884</b>

#### **PRACTICES**

How often do you sleep in a mosquito net?	2.09±0.751
How often do you use anti-mosquito spray in your house?	1.84±0.556
How often do you clean/cut bushes around your house?	1.52±0.601

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How often do you clean stagnant water near your house	1.52±0.663
<b>Total summation</b>	<b>6.97 ±2.971</b>

**Table 6:** inferential statistics for lay publics

Characteristics	Mean ± S.D	N	p-value
<b>SEX</b>			
<b>Knowledge</b>			
Female	3.718±0.756	969	0.3451
male	3.687±0.669	928	
<b>Attitude</b>			
Female	3.688±1.092	961	0.3730
Male	3.735±1.192	915	
<b>Practice</b>			
Female	1.730±0.632	956	0.3483
Male	1.758±0.654	901	
<b>AGE</b>			
<b>Knowledge</b>			
20years and below	3.653±0.675	456	0.0220
21-30years	3.710±0.633	861	
Above 30years	3.717±0.639	576	
<b>Attitude</b>			
20years and below	3.701±1.229	451	0.0105
21-30years	3.668±0.879	852	
Above 30years	3.779±1.276	573	
<b>Practice</b>			
20 Years and below	1.708±0.662	449	0.0270
21-30years	1.750±0.637	846	
Above 30years	1.770±0.634	563	
<b>EDUCATION</b>			
<b>Knowledge</b>			

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Basic	3.600±0.727	144	0.3207
Post basic	3.713±0.631	1596	
Non formal	3.623±0.713	125	
<b>Attitude</b>			
Basic	3.631±1.019	144	0.7649
Post basic	3.706±1.209	1575	
Non formal	3.699±0.896	124	
<b>Practice</b>			
Basic	1.663±0.641	144	0.2429
Post basic	1.748±0.638	1555	
Non formal	1.703±0.682	124	

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