

# Assessment of Knowledge, Attitude, Practice, and Associated Risk Factors of Communities Towards to Malaria Prevention and Control in Adaberga District, Oromia Regional State, Ethiopia

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## Abstract

**Background:** In Ethiopia, more than three-quarter of the landmass (altitude <2000 mas) of the country is malarious, and about 68 % (>50 million people) of the total population is residing in areas at risk of malaria infection. Pregnant women and children are the most vulnerable groups. **Objective:** To assess Knowledge, Attitude, Practice and associated risk factors of the community towards to malaria prevention and control in Adaberga district Biyo wagadi kebele. **Methods:** Cross sectional study design was used to assess knowledge, attitude and practice towards to malaria prevention and control options. The source population was all households of the kebele's. The questionnaires were translated to Afan Oromo. Totally 212 households participated. About 69 (32.5%) of the respondents were between 18-24 years old. **Results:** This study revealed that 203(95.8%) of the respondents had information about malaria, but 9(4.2%) had no information about malaria. Sign and symptoms raised were Fever 103(48.6%), headache 92(43.4%), vomiting 11(5.2%), muscle pain 17(8%), loss of appetite 23(10.9%). 43.9% knew that malaria is transmitted through mosquito bite; where as 34.4% responded that malaria transmitted through mosquito bite and other insects, 9.4% responded that malaria transmission is through drinking contaminated water. **Conclusion:** This study indicated that most of the respondents knew that fever as signs and symptoms of malaria. The levels of knowledge, attitude and practice of study participants on prevention and control of malaria were high, so the study participants had been regarded as knowledgeable. Associated risk factors were sex, age, educational level, occupation, and religion of respondents. **Keywords:** Malaria, KAP, Adaberga District, Ethiopia

## I. Introduction

Malaria affects the health and wealth of nations and individuals alike. In Africa today, malaria is understood to be both a disease of poverty and a cause of poverty. Annual economic growth in countries with high malaria transmission has historically been lower than in countries without malaria. Economists believe that malaria is responsible for a „growth penalty“ of up to 1.3% per year in some African countries [1]. In Ethiopia, malaria is at the forefront among the health problems of the country. The actual number of malaria cases that occur annually throughout the country are estimated to be about 4-5 million. Due to climatic and geographic factors, the disease occurs in different parts of the country in epidemic form. About 75% of the total area of the country is estimated to be malarious wherein 68% of the total populations live, 40 million people, being at risk of infection [2]. In Ethiopia, more than three-quarter of the landmass (altitude <2000 mas) of the country is malarious, and about 68 % (>50 million people) of the total population is residing in areas at risk of malaria infections, pregnant women and under-five children being the most vulnerable groups. The Plasmodium species which have epidemiological importance in Ethiopia are *Plasmodium falciparum* and *Plasmodium vivax*; *Anopheles arabiensis* is the major malaria vector and it breeds in small sun exposed pools mainly produced during the rains. In 2010, in Ethiopia the disease accounted for 98/100,000 admissions and 4/100,000 deaths [3]. The World Health Organization (WHO) recommends the use of insecticide-treated nets (ITNs) as a measure to reduce the mentioned adverse effects during pregnancy. Similarly, one of the goals of the National Malaria Strategy in Ethiopia is to ensure that vulnerable individuals such as pregnant women benefit from preventative measures, such as ITNs. Even though, the Abuja declaration targets agreed upon by African heads of state in 2000 aims to provide at least 80% of pregnant women with ITNs by the year 2005, only 63% of pregnant women presently make use of an ITN in Ethiopia which hampered the effectiveness of ITNs. This is mainly due to issues related to replacement of nets, seasonality of malaria, and poor knowledge with regard to the link between mosquitoes and malaria as well as proper utilization of ITNs [4]. Therefore, assessment of knowledge, attitudes and practices about malaria and the effective use of ITNs in this vulnerable group contribute immensely to sustainable control of the disease. Ethiopia progress in malaria prevention and control demonstrate that with committed leadership, donor support and strong partnership African countries can produce remarkable results in scaling up anti malaria intervention in short time. This scale up of malaria intervention is probably the largest of its kind in sub Saharan Africa. Sustaining the scale up of malaria intervention is now of paramount importance for the Ethiopian FMOH and in country malaria stoke holder, so that gains in term of malaria prevention and control are not reversed and that malaria elimination becomes truly achievable goal [5]. As far as affected

communities are concerned, more than any other disease malaria affects the poor malaria endemic countries of the world. Cost of countries including costs for control and lost work days estimated by 1-5% of GDP in Africa [6].

The community based malaria control strategy was planned and started to be implemented in the country where malaria risk is more sever and endemic. The system of community involvement in the program was by forming the malaria control committee, whose main role is to coordinate the community participation in epidemic control programs, environmental management activities. Many researchers conducted in different parts of Ethiopia had been tried to determine the level of malaria prevalence, but these studies did not function on the level of community awareness which has great impact on malarial preventive and control activities [7].

## 2. Methods

### The Study area and Study Period

The study conducted in Adaberga district which is located in West Shoa Zone of Oromia Regional State, Ethiopia. It is about 74 km far from Addis Ababa the capital city of Ethiopia. The agro-climatic condition of the district is 29% Daga, 34% woynadega and 37% Kolla/lowland/. We have selected this district for this study because it is located in one of the malariour areas of the country. In the district currently there are 3804 populations and out of this 1902 are female and 1902 are male. Majority of the district's populations are Oromo in ethnics, and some of them are Amhara. Orthodox Religion is the dominate one in this district and some of them are Protestant [8].

### 2.1. Study Period

The study was carried out from March to June 2017 at Adaberga district.

### 2.2. Study Design

A community based descriptive cross sectional study design used to assess knowledge, attitude and practice of the community towards malaria prevention and control options.

### 2.3. Source Population

The source population for this study was all households of Biyyo Wagidi kebele of Adaberga district. (Kebele means the lowest administrative structure of Government of Ethiopia). The Biyyo wagadi kebele was selected by simple random sampling technique out of all Adaberga's kebeles.

### 2.4. Study Population

Selected households

### 2.5. Sampling Unit

All Biyyo wagadi kebele households selected by systematic sampling technique

### 2.6. Sample Size Determination

The selection of sample was undertaken from 793 households who are living in Biyyo Wagidi kebele. The sample size determined by single proportion formula considering an estimate of 25% expected proportion of knowledge of malaria, giving any particular outcome to be within 5% marginal error and 95% confidence interval of certainty (alpha= 0.05). Based on this assumption, the sample size was determined as:-

$$n = \frac{288}{\left(1 + \frac{288}{793}\right)} = 212$$

### 2.7. Inclusion and exclusion criteria

Households who had been in the selected kebele for at least 6 months were included in this study, while those who had been in the selected kebele for less than 6 months were excluded from the study.

### 2.8. Study Variables

#### 2.9. Dependent Variable

Knowledge, attitude and practice of the community

#### 2.10. Independent Variables

Socio-demographic variables are (Educational level, Household size, Age, Sex, Income, Marital status, and Occupation).

### 2.11. Sampling technique and Procedure

Simple Random sampling technique used to select one kebele among kebeles of Adaberga District. After one kebele was selected, using households of the selected kebele as sampling unit and Systematic sampling method was used to involve the list of households in the study from an ordered list of source of population (1, 2, ..., 793). The first households in the kebele selected randomly then every  $K^{\text{th}}$  household selected. According to the following formula:

Where  $K$  is given by  $K = 793/212 = 4$ , this means that at interval of 4th the needed sample selected, and then, one individual was selected from each household using lottery method where there are more than one members in the select household. When there was no eligible person in selected we considered the next household till a household with eligible person obtained.

### 2.12. Data Collection Instrument

The Data was collected by structured questionnaires which can be prepared from the existing literatures regarding KAP towards malaria prevention and control information about prevalence, reason, attitudes, knowledge and practice toward prevention and treatment of malaria.

### 2.13. Data collection procedure

The data was collected by principal investigators and health extension workers who engage in kebele. Data collection method by using face to face interview method of semi- structured questionnaire which was prepared by English and translated to local language Afan Oromo by language expert re-translation was done to assure the consistency.

### 2.14. Data Quality Assurance

To assure the quality of the data, properly designed data collection instrument was developed. Pre-testing was made in adjacent Kebele before actual data collection carried out. Every day, the collected data were reviewed and checked for completeness and consistency by the principal investigator.

### 2.15. Data Management and Analysis

Collected data were manually checked for completeness. The data coded, entered and processed using SPSS for windows version 20. The Analysis was done for different variables using frequency and percentages. Finally, the result was presented using findings frequency tables, graphic and figures. Chi-square was used to see the association between the outcome and dependent variables value was used to identify statistically significant variables.

### 2.16. Ethical Consideration

Ethical clearance was obtained from Ambo University, College of Medicine and Health Sciences. Verbal and written informed consent was taken from all the study participants. Everything which was related to this study clearly described to all participants, including the significance of the study. They were also granted their freedom to withdraw from their participation at any time during the study period. Besides to this, all the information collected from the study subjects were handled confidentially and data were used for the research purpose only.

## 5. Result

**Socio-Demographic Characteristics of Study Participants:** The study enrolled a total of 212 households in Biyo Wagadi kebele Adaberga district of the Oromia Regional State. About 69(32.5%) of the respondents were between ages of 18-24 years old. All of the respondents were from rural kebele, about 125(59%) were orthodox Christians by religion, 105(49.5%) and 107(50.5%) were male and female respectively, 118(55%) married, and 76(35.8%) of the study participants were illiterate. 155(73%) of the study participants were farmers by profession. The socio-demographic characteristics of study participants displayed (Table 1).

### **Knowledge of the Respondents towards to Malaria Prevention and Control**

The study indicated that 203(95.8%) of the respondents had information about malaria, but 9(4.2%) of the respondents had no information about malaria. Majority of the respondents knew the sign and symptom of malaria. So that commonly mentioned manifestations of malaria were Fever 103(48.6%), headache 92(43.4%), vomiting 11(5.2%), muscle pain 17(8%) and loss of appetite 23(10.9%) (Table-2).

Regarding knowledge on transmission of malaria, 94.3% of the respondents knew that malaria is a transmittable disease which means it is transmitted from one person to another person. Mode of malaria transmission 43.9% of the respondents knew as malaria transmitted through mosquito bite from one person to another person, 34.4% of the respondents have said that malaria can be transmitted from one person to another through mosquito bite and other insects, 9.4% of the respondents responded that malaria transmission is through drinking contaminated water (Table -2). Regarding prevention of malaria, 201(94.8%) of the respondents stated

that malaria is a preventable disease. The mechanisms of malaria prevention known by the respondents were elimination of breeding site of mosquito 125(59%), DDT spray 92(43.4%), use of mosquito bed net 186(86.3%) and 10(4.7%) of the respondents knew other mechanisms of preventing malaria transmission (Table - 2).

#### **Attitude of the Respondents towards to Malaria Prevention and Control**

About 53 (25%) of the respondents strongly agreed and 148(69.8%) of the respondents agreed on that malaria is a preventable disease, so that they were considered as that favorable attitude towards to malaria prevention, but the rest had unfavorable attitude towards to malaria prevention. Regarding anyone can get malaria disease/infection/, 60(28.3%) of the respondents strongly agreed and 113(53.3%) of the respondents agreed on the statement of anyone can get malaria disease, so they were considered as favorable attitude towards to anyone can get malaria disease but the rest had unfavorable attitude towards to anyone can get malaria disease.

Based on the serious of malaria disease, 49(23.1%) of the respondents strongly agreed and 142 (67%) of the respondents agreed on the statement of malaria is a serious disease, so they were considered as favorable attitude towards to malaria is a serious problems as media advocates but the rest had unfavorable attitude towards to malaria is a serious disease/infection/.

Regarding on treat yourself immediately after you get malaria disease, 15(7.1%) of the respondents strongly agreed and 186 (87.7%) of the respondents agreed on the statement of treat yourself after you get malaria disease, thus, they were considered as favorable attitude towards to treat yourself after you get malaria disease but the rest had unfavorable attitude towards to treat yourself after you get malaria disease.

Regarding prevention of malaria disease, 112(52.8%) of the respondents agreed and 90(42.5%) of the respondents strongly agreed on the statement of proper use of bed net in the home is important in the prevention of malaria transmission. Therefore, they were considered as favorable attitude towards to prevention of malaria disease that is proper use of bed net in the home is important in prevention of malaria transmission (Table - 3).

#### **Practice of the Community towards to Malaria Prevention and Control**

Regarding participation on malaria control activities, 115(54.2%) of the respondents had participated in any type of environmental management activities for mosquito control. Among the activities in which they participated were filling, draining and clearing of vegetation in shaded areas, 83(39.2%), 52(24.5%), and 77(36.3%) participants respectively. Furthermore 165(77.8%) of the respondents were ever participating in malaria epidemic control activities. However, 47(22.2%) of the respondents did not participate in malaria epidemic control activities. Among the epidemic control activities they participated 59(27.8%) of respondents were filling and drainage of mosquito breeding sites, 13(6.10%) of respondents had participated in public health education campaigns and 136(64.2%) of respondents participated in reporting problems to local health workers. From the total respondents, 203(95.8%) of respondents reported that they used currently prevention methods of malaria. Among them 20(9.4%) took tablet prevention method, 125(59%) of respondents used bed net, 52(24.5%) of respondents used drain stagnant water and 13(6.2%) of respondents used clearing of vegetations as a prevention method of malaria disease (Table - 4)

#### **KAP of the Community towards Malaria prevention and control**

The levels of knowledge, attitude and practice study participants regarding to prevention and control of malaria indicated that 121(57.1%), 198(93.4%) and 81(38.2%) of the study participants had been regarded as knowledgeable about causes and transmission, clinical manifestations, and prevention of malaria, respectively. While 91(42.9%), 14(6.6%) and 131(61.8%) of the study participants were considered as having positive attitude towards to malaria prevention, treatment, and good malaria prevention practices, respectively. (Table - 5)

#### **Measuring the Association of Risk Factors of KAP of the respondents**

The associated risk factors of each independent variable with dependent variable, based on the given result, the association between sex and knowledge of the community towards to malaria prevention and control is significant ( $P = 0.00$ ), and also age, marital status, occupation, religion, and education level of the respondents were significantly associated with knowledge on malaria prevention and control. Since the p-value of the selected factors were less than the level of significance ( $\alpha = 0.05$ ), age, sex, educational status, and occupation of the respondents were selected as risk factors that associated with knowledge of the community towards to malaria prevention and control (Table - 5).

## **6. Discussion**

Community Knowledge on malaria prevention and control options is important and the effort is related to either environmental management or personal protection. This study indicated that only 93(43.9%) knew that as mosquito bite is responsible for malaria transmission which is almost consistent with KAP study done in Tripal community of Baigachaek area which revealed that 37.6% of them knew that mosquito bite transmits malaria [9]. However, our finding was lower than the finding of studies done in Ethiopia, for instance: surveys done in Gondar (74%), Butajira (48%), and Assosa (48%) [10], revealed that mosquito bite is responsible for malaria transmission. This difference might be due to the communities' knowledge, area difference, study period difference and awareness creation made by the concerned body about malaria prevention and control activities.

On the other side, this study result is higher than the result of Ethiopia national malaria indicator survey of Amhara national regional state which was 26.7% [11] also this disagreement might be due to study period and geographical difference. In general the differences between this study result and other study findings might be due to geographical, societal culture, awareness and educational level participants. This study indicated that 43(34.4%) knew that malaria is transmitted by mosquito bite & other insects. Similarly, a qualitative study done in Amhara and Oromia national regional states supported this study result [12]. Also a study done in North West Tanzania indicated that only 6% of the respondents have mentioned plasmodium organisms as a cause of malaria [13]. This low knowledge level of the community may be related with malaria prevention activity gives emphasizes on mosquito related problems rather than the parasite. This study indicated that 103(48.6%) of the respondents mentioned fever as signs and symptoms of malaria. This was lower than the study done in Amhara regional state 50.2% recognizing fever as signs of malaria [14]. This finding was supported by a study done in Butajira district Southern Ethiopia reported fever, headache and shivering and chills as signs and symptoms of uncomplicated malaria. Also the present study revealed that headache, loss of appetite and vomiting were the most frequently mentioned sign and symptoms of malaria disease by respondents which was 92(43.4%), 23(10.9%), and 11(5.2%) respectively. This finding was supported by a study done in Myanmar which reported vomiting and convulsion were the most frequently mentioned signs and symptoms of malaria [15]. In our study regarding to malaria prevention options, 200(94.8%) of the respondents reported that malaria is a preventable disease which is consistent with a study done by Wagari in Ethiopia indicated 85.7% and a study in Swaziland indicated 78% of the respondents Knew that malaria is preventable disease. Also about 186(87.7%) knew that malaria is a treatable disease, this result agreed with a study done in Nepal indicated that, 86.4% were knew that malaria is treatable [16].

## **7. Conclusion and Recommendation**

### **7.1. Conclusion**

Health sectors and health extension workers are the main sources of information about malaria control and prevention activities in the community. This study indicated that most of the respondents knew that fever as signs and symptoms of malaria. The levels of knowledge, attitude and practice of study participants regarding to prevention and control of malaria indicated that high, so the study participants had been regarded as knowledgeable about causes and transmission, clinical manifestations, and prevention of malaria, respectively. Sex, age, educational level, occupation, and religion of the respondents were considered as risk factors associated with knowledge of respondents towards to malaria prevention and control.

### **7.2. Recommendation**

To achieve the intended plan of the intervention program, it is recommended to focus on common misconceptions about malaria causes, means of transmission and clinical manifestations through community involvement activities as a main strategy.

Regional, Zonal and district health bureaus and different partners are expected to work on it actively and also they are supposed to provide adequate information, Education and communication (IEC) on malaria prevention and control activities in order to bring good knowledge as well as behavioral change to the community.

Public health education enlightenment efforts need to be intensified, effective malaria prevention methods should be affordable and support should be provided and malaria treatments at hospitals and health centers need to be free of charge.

## **8. Acknowledgements**

I thank all Biyo Wagadi kebele and Adaberga district administrators

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## **9. Competing Interest**

I have declared that there is no any relevant competing interest to disclose in this research.

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## 8. List of tables

**Table 1: Frequency Distribution of Socio-Demographic Characteristics of Study Participants in Malaria Prevention and Control, Adaberga District, Oromia Region, June, 2017**

Variable	Variable category	Count/Frequency	Percent (%)
Sex	Male	105	49.5
	Female	107	50.5
Age	18-24	69	32.5
	25-34	59	27.8
	35-44	32	15.2
	45-54	27	12.7
	+55	25	11.8
	Marital status	Single	61
Marital status	Married	118	55.7
	Divorced	10	4.7
	Widowed	23	10.8
	Education level	Illiterate	76
Education level	1-6 Grade	38	17.9
	7-12 Grade	43	20.4
	+12	55	25.9
Average monthly income	<100	151	71.2
	152-200	17	8.1
	201-400	16	7.5
	+401	28	13.2
Occupation	Employed	21	9.9
	Farmer	155	73.1
	Merchant	8	3.8
	Others	28	13.2
Household size	<1	50	23.6
	2-3	141	66.5
	>4	21	9.9
Religion	Orthodox	125	59.0
	Muslim	7	3.3
	Protestant	55	25.9
	other	25	11.8

**Table 2: Frequency Distribution of Knowledge of the Respondents towards to Malaria Prevention and Control, Adaberga District, Oromia Region, June, 2017**

Variable	Variable category	Count	Percent (%)
Do you know about Malaria?	Yes	203	95.8
	No	9	4.2
What are the symptoms of malaria?	Fever	103	48.6
	Headaches	92	43.4
	Vomiting	11	5.2
	Muscle pain	17	8.0
	Loss of appetite	23	10.9
	Others	12	5.7
Is malaria transmittable?	No	12	5.7
	Yes	200	94.3
What are the ways of transmission of malaria?	Mosquito bite	93	43.9
	Mosquito bite & other insects	43	34.4
	Drinking contaminated water	20	9.4
	Cold exposure	19	9
	Others	7	3.3
Is malaria preventable?	Yes	201	94.8
	No	11	5.2
What are the measures to be taken to prevent malaria?	Elimination of breeding site	125	59
	DDT spray	92	43.4
	By bed net	183	86.3
	Mosquito repellent	17	8
	Burning tree leaves	5	2.4
Others	10	4.7	

**Table 3: Frequency Distribution of Attitude of the Respondents towards to Malaria Prevention and Control, Adaberga District, Oromia Region, June, 2017**

Variable	Variable category	N° of participants	Percent (%)
Is malaria preventable?	Strongly agree	53	25
	Agree	148	69.8
	Disagree	8	3.8
	Strongly disagree	3	1.4
Do you think that anyone can get malaria?	Strongly agree	60	28.3
	Agree	113	53.3
	Disagree	30	14.2
Do you think that malaria is a serious disease?	Strongly disagree	9	4.2
	Strongly agree	49	23.1
	Agree	142	67
Do you think that if you get malaria you can treat yourself?	Disagree	13	6.1
	Strongly disagree	8	3.8
	Strongly agree	15	7.1
Do you think that using bed net can prevent malaria transmission?	Agree	186	87.7
	Disagree	11	5.2
	Strongly disagree	0	0
	Strongly agree	90	42.5
	Agree	112	52.8
	Disagree	10	4.7
	Strongly disagree	0	0

**Table 4: Frequency Distribution of Practice of the Respondents towards Malaria Prevention and Control, Adaberga District, Oromia Region, June, 2017**

Variable	Variable category	N°of participants	Percent (%)
Do you use currently prevention method of malaria	Yes	203	95.8
	No	9	4.2
Which prevention method(s) of malaria currently use	Take tablets	20	9.4
	Bed net (ITN)	125	59.0
	Drain stagnant water	52	24.5
	Clear the vegetation	13	6.2
	Other	2	0.9
Have you ever participated in malaria epidemic control activities?	Yes	165	77.8
	No	47	22.2
In which methods of malaria epidemic controlling activities do you participants	Filling and drainage of mosquito breeding sites	59	27.8
	In health education campaigns	13	6.1
	Reporting problems to local health worker or authority	136	64.2
	Others	4	1.9
Do you participant in any type of environmental management activities for mosquito control?	Yes	115	54.2
	No	97	45.8
Which type of environmental management activities do you use for mosquito control?	Filling	83	39.2
	Drainage	52	24.5
	Clearing of vegetation in shaded areas	77	36.3

**Table 5: Frequency Distribution of Knowledge, Attitude and Practice towards Malaria Prevention and Control, Adaberga District, Oromia Region, June, 2017**

Variables	N°of participants	Percentage (%)
Knowledge level of the respondents	Knowledgeable	121 57.1
	Not Knowledgeable	91 42.9
Attitude level of the respondents	Favorable	198 93.4
	Unfavorable	14 6.6
Practice level of the respondents	Good practice	81 38.2
	Poor practice	131 61.8

**Table 6: Association between Factors and Knowledge towards to Malaria Prevention and Control, Adaberga District, Oromia Region, June, 2017**

Crosstab of Dependent & Independent Variables			knowledge		Chi-Square test				
			Not knowledgeable	knowledgeable	Value	df	P-value		
Sex	Male	Count	91	14	162.475	1	0		
		Expected							
		Count	45.1	59.9					
	Female	Count	0	107					
		Expected							
		Count	45.9	61.1					
Marital status	single	Count	61	0	120.68	3	0		
		Expected							
		Count	26.2	34.8					
	married	Count	30	88					
		Expected							
		Count	50.7	67.3					
divorce windowed	Count	0	10						
	Expected								
	Count	4.3	5.7						
	Count	0	23						



		Expected					
		Count	9.9	13.1			
		Count	76	0			
	illiterate	Expected					
		Count	32.6	43.4			
		Count	15	23			
Education status	6-Jan	Expected					
		Count	16.3	21.7	175	3	0
		Count	0	43			
	12-Jul	Expected					
		Count	18.5	24.5			
		Count	0	55			
>12	Expected	Count	23.6	31.4			
		Count	21	0			
	Employed	Expected					
		Count	9	12			
		Count	70	85			
	Occupation	Farmer	Expected			55.314	3
Count			66.5	88.5			
		Count	0	8			
Merchant		Expected					
		Count	3.4	4.6			
		Count	0	28			
Others	Expected	Count	12	16			
		Count	91	34			
	Orthodox	Expected					
		Count	53.7	71.3			
		Count	0	7			
	Religion	Muslim	Expected			110.969	3
Count			3	4			
		Count	0	55			
Protestant		Expected					
		Count	23.6	31.4			
		Count	0	25			
Age	other	Expected					
		Count	10.7	14.3			
		Count	69	0			
	18-24	Expected					
		Count	29.6	39.4			
		Count	22	37			
25-34	Expected	Count	25.3	33.7			
		Count	0	32			
	35-44	Expected			155.7	4	0.0
		Count	13.7	18.3			
		Count	0	27			
	45-54	Expected					
Count		11.6	15.4				
	Count	0	25				
+55	Expected						
	Count	10.7	14.3				