Turkish Online Journal of Qualitative Inquiry (TOJQI)
Volume 12, Issue 9, August 2021: 6404-6413

The Effect of Establishing Village Malaria Cadres on the Participation of Family Head in Malaria Prevention Effort in Bastiong Karance Kelurahan South Ternate City

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ABSTRACT

Malaria is an infectious disease caused by Plasmodium parasites that live and reproduce in human red blood cells and are naturally transmitted through the bite of female Anopheles mosquitoes (Depkes RI, 2006). Malaria is one of the infectious diseases that is a major public health problem in the world, including Indonesia. Malaria has become a global concern because high malaria cases have a broad impact on the quality of life and the economy and even threatens the safety of human life. In North Maluku Province, malaria is still a public health problem, from 2014 to 2019 malaria cases fell significantly from 4,451 cases to 557 cases in North Maluku Province. This study uses a True Experimental Design approach using a pretest and posttest control group design, the population in this study is pregnant women and infants who are a sick-prone group totaling 132 family heads with sampling techniques carried out using experimental formulas or randomly, data analysis includes Univariate and Bivariate analysis. The statistical test used is the T test because the basic scale is only Ordinal categorical to see the difference between the control and treatment groups, with the degree of significance (significant level) used is {α = 0.05 the population in this study were pregnant women and infants who were a sick-prone group totaling 132 family heads with sampling techniques carried out using experimental formulas or randomly, data analysis included univariate and bivariate analysis. The statistical test used is the T test because the basic scale is only Ordinal categorical to see the difference between the control and treatment groups, with the degree of significance (significant level) used is {α = 0.05 the population in this study were pregnant women and infants who were a sick-prone group totaling 132 family heads with sampling techniques carried out using experimental formulas or randomly, data analysis included univariate and bivariate analysis. The statistical test used is the T test because the basic scale is only Ordinal categorical to see the difference between the control and treatment groups, with the degree of significance (significant level) used is {α = 0.05}Statistical test results show that there is only one variable that has a significant value, namely the knowledge variable on malaria prevention in the intervention group with a significance value of 0.050 < .

Keywords: Pregnant Women, Malaria, Knowledge, Attitude, Behavior

preliminary

Malaria is one of the infectious diseases that is a major public health problem in the world, including Indonesia. Malaria has become a global concern because high malaria cases have a broad impact on the quality of life and the economy and even threatens the safety of human life (Erdinal, 2006). The indicators of the Millennium Development targets (MDGs) are to stop the spread and reduce the incidence of malaria in 2015, seen from the indicators of decreasing morbidity and mortality due to malaria. The National Annual Parasite Incidence (API) decreased from 2008-2009 from 2.47 per 1000 population to 1.85 per 1000 population. This still has to be done to achieve the

2010-2011 Ministry of Health Strategic Plan target, namely the API must be reduced to 1 per 1000 population in 2014 (Ministry of Health RI, 2011).

North Maluku Province malaria is still a public health problem, from 2014 to 2019 malaria cases fell significantly from 4,451 cases to 557 cases in North Maluku Province. Of the 10 regencies/cities, there are already 8 regencies/cities with the malaria case rate below 1 per 1000 population, currently there are 2 more regencies that are still above 1 per 1000 population, namely East Halmahera and Taliabo Regency.(jpp, 2019).

For the City of Ternate, the number of malaria sufferers in 2017 amounted to 477 cases, namely cases found during examination at the Public Health Center with 18 patients, private practice doctors with 99 patients and 360 patients at the hospital. Based on the classification for imported cases, 324 cases and indigenous cases or cases originating from transmission in the local area were 153 cases. Until the end of November 2018 the City of Ternate recorded that there were 13 cases of malaria found, but the sufferers did not come from residents of the City of Ternate but from outside the region or imported cases. Eradication efforts carried out by the government have not received maximum results in suppressing the incidence of malaria because so far the community has only been the object of the program and the community has never realized that it is he who should be the subject of the program. Active community participation is very important in the success of the malaria control program, government intervention involving the whole community as cadres of malaria rates has been successfully suppressed. According to William Rojar, et al (2011) community participation in malaria control is effective for preventing malaria. According to Zega (2007), community empowerment efforts through malarai cadres can actually increase community behavior change where the community directly participates in malaria control efforts. This is supported by research by Ririh and Hargono (2006) conducted for 8 weeks that the method of forming and assisting cadres is a key person to increase community participation in malaria control efforts.

A village malaria cadre is a person who carries out continuous, regular and systematic activities in the field of malaria in the collection, processing, analysis and interpretation of malaria data to produce accurate information that can be disseminated and used as a basis for carrying out countermeasures for the discovery and treatment of malaria cases in a comprehensive manner. quickly and precisely adapted to local conditions (Kemenkes RI, 2014).

Research methods

Type of Research used True Experimental Design approach using a pretest and posttest control group design. This study aims to determine the effect of the formation of village malaria cadres on the participation of family heads in malaria prevention efforts in Bastiong Karance Village, South Ternate City in 2019. The sampling technique in this study is to use the sample size formula for the experimental design: (t-1)(r-1) 15) that is, randomly regardless of the strata in the population. The sample size in this study was 132 pregnant women and infants. The independent variable in this study is knowledge, attitude, behavior in addition to the dependent variable is malaria prevention. The data analysis carried out includes unvariate and bivariate analysis, while the statistical test used is the T . testwith a degree of significance (significant level) used is $\{\alpha = 0.05\}$.

Research result

Table 1

Analysis of Paired Sample T test Knowledge of Pre and Post Head of Family in Group Control in Bastiong Karance Kelurahan Village

Paired Samples T Statistics	mean	N	Std. Dev.	Sig.(2 tailed)
Pre_Knowledge_Control	25,7333	30	2,58555	0.000
Post_knowledge_Control	30.8333	30	2.26035	

Source, Primary Data: 2019

From table 1, the significance value (2-tailed) of the data is 0.000 ($p < 0.05$). So that the results of the initial test and the final test of the knowledge of the control group experienced a significant (meaningful) change. So it can be concluded that there is a difference between the scores before and after the intervention in the knowledge control group

Table 2
Analysis of Paired Sample T test Knowledge of Pre and Post Head of Family in the Intervention Group in the Village of Sastiong Karance

Paired Samples T Statistics	mean	N	Std. Dev.	Sig.(2 tailed)
Pre_Knowledge_Intervention	25,80	30	1.324	0.000
Post_knowledge_Intervention	38,90	30	0.845	

Source, Primary Data: 2019

From table 2, the significance value (2-tailed) of the data is 0.000 ($p < 0.05$). So that the results of the initial test and the final test of the knowledge of the intervention group experienced a significant (meaningful) change. So it can be concluded that there is a difference between the scores before and after the intervention in the intervention knowledge group.

Table 3
Analysis of the Paired Sample T test of Pre and Post Attitudes of the Head of the Family in the Control Group in Bastiong Karance Village

Paired Sample Statistics	mean	N	Std. Dev.	Sig.(2 tailed)
Pre_Attitude_Control	27.37	30	1,938	0.000
Post_Attitude_Control	33.23	30	1.006	

Source, Primary Data: 2019

From table 3, the significance value (2-tailed) of the data is 0.000 ($p < 0.05$). So that the results of the initial test and the final test of the attitude of the control group experienced a significant (meaningful) change. So it can be concluded that there is a difference between the scores before and after the intervention in the control attitude group.

Table 4
Analysis of Paired Sample T test Pre and Post Attitudes of the Head of the Family in the Intervention Group in Bastiong Karance Village

Paired Sample Statistics	mean	N	Std. Dev.	Sig.(2 tailed)
Pre_Attitude_Intervention	30,30	30	1,765	0.000
Post_attitude_Intervention	40.00	30	0.000	

Source, Primary Data: 2019

From table 4, the significance value (2-tailed) of the data is 0.000 ($p < 0.05$). So that the results of the initial test and the final test of the attitude of the control group experienced a significant (meaningful) change. So it can be concluded that there is a difference between the values before and after in the intervention attitude group

Table 5
Analysis of Paired Sample T test Pre and Post Behavior of the Head of the Family in Intervention Group in Bastiong Karance Kelurahan Village

Paired Sample Statistics	mean	N	Std. Dev.	Sig.(2 tailed)
Pre_Behavior_Intervention	26,80	30	1,827	0.000
Post_Behavior_Intervention	38.30	30	1,745	

Source, Primary Data: 2019

From table 5, the significance value (2-tailed) of the data is 0.000 ($p < 0.05$). So that the results of the initial test and the final test of the behavior of the intervention group experienced a significant (meaningful) change. So it can be concluded that there is a difference between the scores before and after in the intervention behavior group.

Table 6
Analysis of Paired Sample T test Pre and Post Behavior of the Head of the Family in Control Group in Bastiong Karance Kelurahan Village

Paired Sample Statistics	mean	N	Std. Dev.	Sig.(2 tailed)
Pre_Behavior_Control	26,80	30	1,827	0.000
Post_Behavior_control	38.30	30	1,745	

Source, Primary Data: 2019

From table 6, the significance value (2-tailed) of the data is 0.000 ($p < 0.05$). So that the results of the initial test and the final test of the behavior of the intervention group experienced a significant (meaningful) change. So it can be concluded that there is a difference between the values before and after in the control behavior group.

Table 7
Analysis of Paired Sample T test Pre and Post Participation of the Head of the Family in Intervention Group in Bastiong Karance Kelurahan Village

Paired Sample Statistics	mean	N	Std. Dev.	Sig.(2 tailed)
Pre_Intervention_KK's Participation	1.57	30	0.504	0.000
Post_Intervention_KK's Participation	1.97	30	0.183	

Source, Primary Data: 2019

From table 7, the significance value (2-tailed) of the data is 0.000 ($p < 0.05$). So that the results of the initial test and the final test of the behavior of the intervention group experienced a significant (meaningful) change. So it can be concluded that there is a difference between the scores before and after in the intervention group KK participation.

Table 8
Analysis of Paired Sample T test Pre and Post Participation of the Head of the Family in Control Group in Bastiong Karance Kelurahan Village

Paired Sample Statistics	mean	N	Std. Dev.	Sig.(2 tailed)
Pre_Control_Participation KK	1.70	30	0.466	0.006
Post_Control_Participation KK	1.93	30	0.254	

Source, Primary Data: 2019

Table 8 shows that the significance value (2-tailed) of the data is 0.006 ($p < 0.05$). So that the results of the initial test and the final test of the control group with the participation of the head of the family experienced a significant (meaningful) change. So it can be concluded that there is a difference between the scores before and after in the control group of KK participation.

Table 9
Analysis of Paired Sample T test for Prevention of Pre and Post Malaria of Head of Family in Intervention Group in Bastiong Karance Kelurahan Village

Paired Sample Statistics	mean	N	Std. Dev	Sig.(2 tailed)
Pre_Intervention_Malaria Prevention	1.63	30	0.490	0.003
Post_Intervention_Malaria Prevention	1.90	30	0.305	

Source, Primary Data: 2019

From table 9, the significance value (2-tailed) of the data is 0.003 ($p < 0.05$). So that the results of the initial test and the final test of malaria prevention in the intervention group experienced a significant (meaningful) change. So it can be concluded that there is a difference between the values before and after in the control group of malaria prevention intervention

Table 10
Analysis of Paired Sample T test Malaria Prevention Pre and Post Head of Family in the control group in Bastiong Karance Village

Paired Sample Statistics	mean	N	Std. Dev.	Sig.(tailed)
Pre_Control_Prevention of Malaria	1.40	30	0.498	0.000
Post_Control_Malaria Prevention	2.00	30	0.000	

Source, Primary Data: 2019

From table 10, the significance value (2-tailed) of the data is 0.000 ($p < 0.05$). So that the results of the initial test and the final test of malaria prevention in the control group experienced a significant (meaningful) change. So it can be concluded that there is a difference between the values before and after in the control group on malaria prevention.

Independent Analysis of Sample T test (Difference Test Results)

Table 11
Independent sample T test between Knowledge on Control Group and Intervention Knowledge on Malaria Prevention in Bastion Karance.

Independent Samples Test		Levene's Test for Equality of Variances		**Sig. (2-tailed)**
		F	Sig.	
Knowledge_control	Equal variances assumed	,452	,507	,355
	Equal variances not assumed			,325
Knowledge_Intervention	Equal variances assumed	,176	,678	0.050
	Equal variances not assumed			,220

Source, Primary Data: 2019

Table 11 shows that both groups have the same variance so that the significance value in the more influential group is the knowledge intervention group with a significance value of 0.050 < (alpha). From the two groups, the group that received the intervention had a different value from the control group.

Table 12
Independent sample T test between Attitudes in the control group and Attitudes in the intervention group on Malaria Prevention at Bastion Karance

Independent Samples Test		Levene's Test for Equality of Variances		Sig. (2-tailed)
		F	Sig.	
Attitude_control	Equal variances assumed	0.070	0.794	0.680
	Equal variances not assumed			0.705
Attitude_Intervention	Equal variances assumed	1.059	0.312	0.640
	Equal variances not assumed			0.161

Source, Primary Data: 2019

Table 12 shows that both groups have the same variance. The table also shows that there is no significant value in both the control attitude group and the intervention group with the significance values being 0.680 and 0.640 > (alpha). From the two groups, the group that received the intervention had a value that was not different from the control group.

Table 13
Independent Sample T test between Behavior in the Control Group and Behavior in the Intervention Group on Malaria Prevention at Bastion Karance.

Independent Samples Test		Levene's Test for Equality of Variances		Sig. (2-tailed)
		F	Sig.	
Behavior_control	Equal variances assumed	,976	,332	1,000
	Equal variances not assumed			1,000
Behavior_Intervention	Equal variances assumed	2.851	,102	,178
	Equal variances not assumed			,000

Source, Primary Data: 2019

Table 13 shows that both groups have the same variance. The table also shows that there is no significant value in both the control attitude group and the intervention group with the significance value being 1,000 and 0.178 > (alpha). From the two groups, the group that received the intervention had a value that was not different from the control group.

Discussion

Based on the results of the Independent Sample T Test difference test, it is known that the significance level is = 0.050, so that if p < then the results of statistical calculations are significant and if p > then the results of statistical calculations are not significant. The results of the knowledge intervention group with a significance value of 0.050 < (alpha). From the two groups, the group that received the intervention had a different value from the control group. This means that the knowledge of the head of the family in the intervention group has a very significant influence in malaria prevention efforts.

Dalimunthe (2008) and Hasibuan et al. (2012) also revealed the same thing, namely individuals with good knowledge categories more actively participate in malaria prevention than individuals with less knowledge. Knowledge and increased insight and ways of thinking will have an impact on perceptions, values and attitudes that will determine a person's decision to take an action. This is also related to the ease with which a person gains knowledge either through television, radio, newspapers, magazines, books and also the internet. The social environment can provide a form of information that can increase one's understanding. The information obtained is good from the family environment, neighbors. relatives,

The results of this study stated that the attitude of the head of the family in malaria prevention efforts did not have a significant effect on either the control group or the intervention group. People who have a positive attitude of prevention have a 6,095 times greater tendency to take good malaria prevention actions than people who have a negative attitude of preventing malaria. This is not in line with what Hasibuan et al. (2012) and Dharampal et al. (2012). The attitude of the respondents is needed to improve the behavior of preventing malaria. The more unfavorable the attitude of the respondent in preventing malaria, the easier it is to suffer from malaria. Attitude is closely related to one's view of action. A supportive attitude towards an object will allow someone to take action, because in the formation of attitudes there are emotional factors that influence. Attitudes are influenced by personal experience factors, the influence of other people who are considered important, cultural influences, mass media, educational institutions and religious institutions as well as emotional factors (Wawan and Dewi, 2011).

The results obtained are that the attitude of the head of the family is still not supportive due to the attitude of the people who are less concerned about themselves and their families, besides that there are still many people who are apathetic about malaria prevention measures, even though the results of knowledge are good, the attitudes that are referred to do not refer to malaria prevention efforts. will not change efforts to prevent malaria.

The results of behavioral research have no significant values in both the control attitude group and the intervention group with the significance values being 1,000 and 0.178 > (alpha). This means that the group that gets the intervention has a value that is not different from the control group. According to Hendrik L. Blum (1974) there are 4 factors that influence the degree of health, namely environmental factors, behavior, health services and heredity. Of these 4 factors, behavioral factors are the second biggest factor after the environment that can affect the health of individuals, groups and communities (Notoatmodjo, 2007).

Behavioral problems are the cause of various health problems. Health experts agree that to overcome this, an effort is needed in the process of public health education. Through this process, it is hoped that behavioral changes will occur towards the achievement of healthy behavior in this change process, it needs to be supported by changes in attitudes and knowledge (Ngatimin, 1997, in Arsunan, 2004).

Conclusion

From the results of the study it was concluded that there was 1 variable that had an effect, namely the formation of village malaria cadres on the knowledge of the head of the family in malaria prevention efforts in the intervention group with a significance value of 0.050 < (alpha).

Recommendation

For the Community (Village Malaria Cadre) Suggestions for Village Malaria Cadres who have been formed and trained are to further improve assistance to the community in malaria prevention efforts in Bastiong Karance Village in order to prevent the occurrence of indigenous cases and malaria outbreaks, especially due to the increasing mobility of the population.

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