BIoHS - Journal
Britain International of Humanities and Social Sciences Journal
| Publish : February - June - October |
E-ISSN: 2685-3868
P-ISSN: 2685-1989
http://biarjournal.com/index.php/biohs

Illustration of Filariasis Surveilans in South Labuhanbatu Regency

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Abstract:
Filariasis is a chronic infectious disease caused by filarial worms and transmitted by mosquito. Filariasis elimination program in Indonesia set with two pillars that are filariasis mass drug administration (POMP filariasis) in endemic areas and preventing or limiting disability due to filariasis. POMP minimum coverage by eighty five percent must be achieved to break the chain of transmission. This study is to describe filariasis mass drugs administration in south Labuhanbatu regency. Data were obtained from interview with the supervisor of filariasis program. The results show number of filariasis sufferer until two thousand sixteen is twenty nine patients. Every year founded new filariasis sufferer even some of them are died and there are puskesmas that has POMP coverage under eighty five percent or minimum standard.
Keywords:
POMP; filariasis; South Labuhanbatu

I. Introduction

Filariasis or elephantiasis is a disease caused by infection of filarial worm transmitted by mosquito bites that cause lifelong disability, decreasing productivity, become a burden for the family, social stigma for the patient and his family (Filariasis & schistomiasis subdit Directorate p2b2, 2011).

WHO's data shows that there are 1.3 billion people in the world who had risk of being infected by filariasis in over 83 nations and 60% cases are in Southeast Asia. It is estimated that more than 120 million people have been infected with 43 million people already show clinical symptoms of swollen limbs in the legs or arms or other body parts (Filariasis & schistomiasis subdit Directorate p2b2, 2010).

The global agreement prioritizes the elimination of filariasis proclaimed since 1997, the World Health Assembly (WHA) defined the resolution of "Elimination of Lymphatic Filariasis as a Public Health Problem" and then in 2000 was reinforced by the WHO's decision by declaring "The Global Goal of Elimination of Lymphatic Filariasis as a Public Health Problem by the Year 2020 "(Filariasis & schistomiasis subdit Directorate p2b2, 2010).

Filariasis spreads almost in all of Indonesia. Based on the results of rapid survey in 2000, the number of chronic sufferers that have been reported is 6.233 people spread in over 1.553 villages, in 231 regencies, and 26 provinces (Filariasis & schistomiasis subdit Directorate p2b2, 2011).

Estimated until 2009 the population who had risk of being infected by filariasis were up to 125 million people spread in 337 filariasis endemic regencies/cities with 11.914 chronic cases that had been reported and estimated prevalence microfilaria 19%, more or less this disease will affect 40 million population (Filariasis & schistomiasis subdit Directorate p2b2, 2011).

Filariasis is one of the disease in the tropical and sub-tropical area that have been neglected before. Because of the widespread deployment in Indonesia, if it is not handled well, disability and psychosocial stigma may result in decreased patient productivity, family burdens and economic losses for the sufferer, family and nation. If the disease continues it will affect to the family economic and be a burden for family. Filariasis can causes lifelong disability and social stigma for the sufferer and his family when it has caused swelling of the hands, feet, mammary glands, and scrotum. This situation brings the impact of the economic burden suffered by the community that is for medical expenses (including transport costs), productive days lost due to illness, death and productive days of other household members lost because of having to care for the sufferer. While the social impact is social activities will be disturbed, cannot enjoy the recreation time, the discomfort due to illness and painful because of lost a family member.

The result of health department and public health faculty's research, Universitas Indonesia in 1998 shows that economic losses for the chronic filariasis sufferers every year is more or less 17,8% from all the family costs or 32,3% from food family costs (Data and Information Center Ministry of Health RI, 2015).

The impact of economic loss of the nation due to filariasis every year is 43 trillion rupiah. Effective interventions and efficient the usage of resources through systematic and strategic efforts will result in savings for the nation. For that we need a systematic plan at the National level to cope that by setting two pillars of activities that will be pursued by breaking the chain of transmission with taking filariasis prevention medicine massively (POMP) and treatment of clinical filariasis cases in both acute and chronic clinical cases. And nation only needs costs 273 billion rupiah per year if POMP done (Filariasis & schistomiasis subdit Directorate p2b2, 2010).

Based on reference (Regulation of the Minister of Health of the Republic of Indonesia Number 94 Year 2014 Counter Filariasis) the elimination of filariasis into a national priority program with the main agenda to carry out the filariasis mass prevention drug (POMP) activity as an effort to break the chain of filariasis transmission to residents in all filariasis endemic regency/city by giving DEC (Diethylcarbamazine Citrate) and Albendazole with an appropriate dose of age taken after meals and in front of the medical staff given once a year for five consecutive years. The filariasis POMP activity in endemic areas aims to reduce the microfilaria rate to <1% with coverage of more than 85% of the target population and 65% of the total population.

Every regency / city that has chronic sufferers is obliged to conduct a Finger Blood Survey. Regency / city that do not have chronic filariasis sufferers but are at risk of transmission of filariasis, also conduct a Finger Blood Survey. Finger Blood Surveys is the identification of microfilariae (child of filaria worm) in the peripheral blood of each person in a population, which aims to determine the endemism of the area and the intensity of the infection with the provision if Microfilaria (Mf) rate <1% then defined non-endemic areas whereas Microfilariae (Mf) rate ≥1% set endemic area, because the implementation of POMP program taking filariasis prevention medicine massively.

The level of filariasis endemic in Indonesia based on the result of Finger Blood Survey (SDJ) in 1999 is still high with microfilariae (Mf) rate 3,1%. Based on the results of Finger Blood Survey (SDJ) in the villages in Indonesia, the largest number of patients is in 2002-2005, especially in Sumatera and Kalimantan, has identified 84 regencies / cities with microfilaria

rate is 1% or more. That data illustrates that all areas in Sumatera and Kalimantan are filariasis endemic areas. In filariasis elimination requires a long time span of 5 years, then to achieve the success of the program required adherence to drink filariasis drug regularly (Filariasis & schistomiasis subdit Directorate p2b2, 2011).

II. Research Method

This research uses a quantitative research with cross sectional analytic survey design. The population of this research was all officers P2 Puskesmas around of south Labuhanbatu regency which amounted to 17 officers and the sample used the population of the officers from 2015-2016. The data which is obtained from the annual report of the filariasis person in charge. Information obtained from the Provincial Health Office through the person in charge of Filariasis that the Regency of South Labuhanbatu is declared as filariasis endemic area.

III. Discussion

3.1 Result

a. Respondents Characteristics

Based on Table 1 shows that every year female are more participating in POMP filariasis than male, this figure can be seen in 2015, female's participation is higher (51%) than male (49%) as well as in 2016 participation of female followed the implementation of filariasis POMP activity higher (52%) than male (48%). 2015 to 2016 female's participation in POMP activities also increased (from 51% to 52%) while male participation in the implementation of filariasis POMP activity decreased (from 49% to 48%). Based on the age range of the participating population following the implementation of filariasis POMP activity in 2015-2016 increased by 6-14 years old (24.4% to 24.8%) and age> 15 years (62.2% to 63.5%) while the age range of participating population followed the implementation of filariasis POMP activity in 2015-2016 which decreased is age (2-5 years old (13.4% to 11.7%).

Table I. Frequency Distribution of General Characteristic of Population in South Labuhanbatu Regency in 2015-2016

Category	2015		2016	
	n	%	n	%
Gender				
Male	116999	49	114462	48
Female	121951	51	123830	52
Age				
2-5 Years old	32036	13,4	27778	11,7
6-14 Years old	58246	24,4	59103	24,8
>15 Years old	148668	62,2	151411	63,5
Total	238950	100	238292	100

b. Filariasis Sufferer Based on Respondent Characteristics

Tab. II shows that every year female filariasis patients are higher than male filariasis patients, the table shows that in 2015 female is higher (63%) than male (37%) the same thing is happen in 2016 female is higher (62.3%) than male (37.5%). However, female filariasis sufferers decrease (from 63% to 62,5%) it is relevant to table I that more higher participation in implementing POMP will break the chain of filariasis transmission in accordance to Permenkes No.94 in 2014 stating that the implementation of filariasis POMP activity aims to

break the chain of transmission of filariasis. It is also occurs in male patients that increase every year (from 37% to 37.5%) due to decreasing partition of filariasis POMP activity. (According to Table 1).

Table 2. Frequency Distribution of Filariasis Based on Respondent Characteristics in South Labuhanbatu Regency

Category	Filariasis sufferer			
	2015		2016	
	n	%	n	%
Gender				
Male	10	37,0	12	37,5
Female	17	63,0	20	62,5
Age				
2-5 Years Old	0	0	0	0
6-14 Years Old	0	0	2	6,9
>15 Years Old	29	100	27	93,1
Total	**29**	**100**	**29**	**100**

The description of table 2 also shows filariasis sufferers based on age from 2015-2016 that 6-14 years old has increased filariasis patients (from 0% to 6.9%) while at >15 years old there is decreasing of filariasis patients (from 100% to 93.1%).

c. Taking Medicine Based on Target and Population

Table 3 shows that the prevalence of population that take medicine in the implementation of filariasis POMP based on total target until 2016 is still <85% for several Puskesmas (Puskesmas Aek Batu, Puskesmas Bunut, Puskesmas Sisumut and Puskesmas Tanjung Medan).

Table 3. Prevalence of Population Taking Medicine in the Framework of Filariasis Pomp Implementation Based on Target Question and Based on Number of Population in South Labuhanbatu Regency in 2015-2016

Puskesmas	Prevalence Population Takes Medicine In Implementation Filariasis POMP Activity			
	Based On Total target		Based on Total Population	
	2015	2016	2015	2016
Aek Batu	64,7	67,3	78,6	84,1
Aek Goti	95,4	92,2	99,3	97
Aek Raso	55,9	64,9	74,6	95,4
Batu Ajo	89,4	80,3	98,4	90,2
Beringin Jaya	91,7	96,2	96,5	99,4
Bunut	100	71,8	96,7	74
Cikampak	74,8	77,3	93,6	96,6
Huta Godang	76,2	84,7	95,2	100
Kota Pinang	46,3	62	50,6	88,6
Langga Payung	100	100	100	100
Mampang	72,1	69,2	99,8	92
Pekan Tolan	68,7	75,8	70,8	94,8
Rasau	80,8	90,1	95,7	100

Sisumut	96,4	72	98,2	73,5
Tanjung Medan	87,6	72,1	92,1	76,7
Teluk Panji	95,6	94,9	97,6	97,9
Ulumahuam	77,3	76,7	85,8	85,9

In accordance to Permenkes. 94 in 2014, the achievement of filariasis elimination which aims to break the chain of filariasis transmission has not been achieved because it is still <85%.

The description also shows that the increasing of medicine-taking population in the implementation of filariasis POMP based on target implemented by Puskesmas 2014-2015 (Aek Batu, Aek Raso, Beringin Jaya, Cikampak, Huta Godang, Kota Pinang, Langga Payung, Pekan Tolan, Rasau , Teluk Panji, Ulumahuam) there is also decreasing in the population who taking medicine in the implementation of filariasis POMP activity based on the target implemented by Puskesmas in 2014-2015 (Aek Goti, Batu Ajo, Bunut, Mampang, Sisumut, Tanjung Medan).

So it can be concluded that the Puskesmas with the result <85 population who take the medicine in the implementation of filariasis POMP activity based on the target and the decreasing of the population who take the medicine in the implementation of filariasis POMP based on total of population is Puskesmas Bunut, Puskesmas Sisumut and Puskesmas Tanjung Medan.

d. Taking Medicine Based on POMP years 2015-2016

Table 4 shows that the distribution of frequency population taking medicine in the implementation of filariasis POMP that has increased was Puskesmas Aek Batu (4% to 5%), Puskesmas Beringin Jaya (4% to 5%), Puskesmas Cikampak 7% to 9%), Puskesmas Huta Godang (6% to 7%), Puskesmas Langga Payung (13% to 14%), Puskesmas Mampang (2% to 3%), Puskesmas Teluk Panji (8% to 9%) while the distribution of frequency population taking medicine in the implementation filariasis POMP activity that has decreased was Puskesmas Bunut (5% to 4%), Puskesmas Kota Pinang (8% to 7%), Puskesmas Pekan Tolan (2% to 1%), Puskesmas Sisumut (5% to 4%), and Puskesmas Tanjung Medan (11% to 9%).

Table 4. Distribution of Frequency Population Taking of Filariasis Medicine in the Framework of Filariasis Pomp Activity in South Labuhanbatu Regency in 2015-2016

Puskesmas	**n**	**%**	**n**	**%**
Aek Batu	11.220	4	11.962	5
Aek Goti	17.230	6	14.946	6
Aek Raso	23.507	9	21.602	9
Batu Ajo	4.772	2	4.322	2
Beringin Jaya	11.373	4	11.479	5
Bunut	14.366	5	9.079	4
Cikampak	19.834	7	21.208	9
Huta Godang	14.917	6	15.670	7
Kota Pinang	22.471	8	15.779	7
Langga Payung	33.960	13	33.962	14
Mampang	6.531	2	6.245	3
Pekan Tolan	4.501	2	3.516	1
Rasau	4.579	2	4.939	2
Sisumut	14.519	5	10.557	4

Tanjung Medan	28.980	11	22.316	9
Teluk Panji	20.748	8	20.520	9
Ulumahuam	11.752	4	10.090	4
Total	**265.260**	**100**	**238.192**	**100**

e. Filariasis Sufferer in South Labuhanbatu Regency in 2015-2016

Table 5 shows that the frequency distribution of filariasis sufferers that has decreased is Puskesmas Bunut (17,2% to 13,8%) but this is due to filariasis sufferer who was died while the frequency distribution of filariasis sufferer that has increased was only Puskesmas Tanjung Medan (69 % to 72.4%). The increasing is supported by Table IV that the frequency distribution of the population taking filariasis medicine that has decreased is Puskesmas Tanjung Medan.

Table 5. Frequency Distribution of Filariasis Sufferer in South Labuhanbatu Regency in 2015-2016

	2015		**2016**	
Puskesmas	n	%	N	%
Aek Batu	0	0	0	0
Aek Goti	1	3,4	1	3,4
Aek Raso	0	0	0	0
Batu Ajo	0	0	0	0
Beringin Jaya	0	0	0	0
Bunut	5	17,2	4	13,8
Cikampak	3	10,3	3	10,3
Huta Godang	0	0	0	0
Kota Pinang	0	0	0	0
Langga Payung	0	0	0	0
Mampang	0	0	0	0
Pekan Tolan	0	0	0	0
Rasau	0	0	0	0
Sisumut	0	0	0	0
Tanjung Medan	20	69,0	21	72,4
Teluk Panji	0	0	0	0
Ulumahuam	0	0	0	0
Total	**29**	**100**	**29**	**100**

3.2 Discussion

This research shows that in 2015 until 2016, female's obedience in the implementation of POMP activity is higher (from 51% to 52%) compared to male (from 49% to 48%). This is in line with reference (Alamsyah, et al: 2016) that states there is meaningful relationship between gender with taking filariasis prevention medicine. Female are more adherent to taking filariasis prevention medicine (50.6%) than male (18.5%). This is because most of male is a worker, then they didn't come when the medicine distributed. Another reason is male respondents feel stronger than female, so male is less obedient to swallow filarial prevention medicine. The results of (Santoso, et al: 2010) also proved that there was a relationship between gender and adherence taking filarial prevention medicine which female was more (59.2%) taking filariasis medicine than male (40.8%).

This research shows that achievement of taking filariasis medicine is low which is <85% followed by decreasing achievement of taking filariasis medicine supported by filariasis sufferer shows that taking filariasis medicine massively (POMP) has small chance to success.

The results of this research is supported by (Mufti, et al: 2016) research stating that there is a correlation between taking medicine and success rate of filariasis prevention program (0.049 <α = 0.05) that taking medicine is necessary to ensure that no more positive population contains microfilaria in their blood. So that filariasis prevention program can be declared success.

This is in line with the results of (Puhilan, 2012) that shows there is a correlation between taking filariasis prevention medicine massively (POMP) to the success of filariasis eradication at 2.04 times (PR = 2.04; 1.019-4.05), coverage of taking medicine massively high category in success chance in filariasis eradication is 1,591 times (PR = 1,591; 0,561-4,512). With taking filariasis prevention medicine massively (POMP) given once a year for five consecutive years, so that the elimination of filariasis in Indonesia can be achieved.

IV. Conclusion

Unsuccessful in achievement filariasis elimination in South Labuhanbatu Regency until 2016 is due to there is still Puskesmas which implementation of filariasis POMP activity to total target population <85% and from 2015 until 2016 filariasis sufferer increase, it means breaking the chain of transmission of filariasis is not reached.

Puskesmas which need special attention is Puskemas Tanjung Medan. Until 2016 Puskesmas Tanjung Medan is the largest contributor of filariasis sufferer in South Labuhanbatu Regency (21 of 29 people total filariasis sufferer). The number of population taking medicine in the implementation of filariasis POMP activity based on total target held by Puskesmas Tanjung Medan <85% and distribution of frequency population taking medicine in the implementation of filariasis POMP activity from 2015 to 2016 has decreased (from 11% to 9%) and the prevalence of population taking medicine in the implementation of filariasis POMP activity based on total population also shows a decreasing (from 92.1% to 76.7%).

It is recommended that the community adhere to taking filariasis drugs, in order to maximize this behavior, the need for health workers to provide counseling prior to drug distribution.

Acknowledgment

We are grateful to the head of officer for their assistance in this study, we also thankful to all of the participant and people who were involved in this study.

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