Lack of Changes in Community Behavior and Environmental Factors after Filariasis Elimination Program in Kodi Balaghar District, Southwest Sumba Regency: A Qualitative Studies

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ABSTRACT

Introduction: Filariasis is a tropical disease that is very common in several regions in Indonesia and is caused by the transmission of microorganisms through mosquito bites. The causes of filariasis in Indonesia are three filarial species, namely *Wucherria bancrofti, Brugaria malayi, and Brugaria timori*. Filariasis does not cause death, but it is the main cause of disability, social stigma, psychosocial barriers, and causes a decrease in the work productivity of individuals and families, as well as causing large economic losses. One of the efforts to eliminate filariasis in Indonesia has been carried out through the provision of preventive mass drugs (MDA) in endemic districts / cities since 2013. Treatment is carried out once a year for five consecutive years. MDA has entered its fifth year in Kodi Balaghar District, Southwest Sumba Regency, East Nusa Tenggara (NTT). The situation that is often encountered is the decline in filariasis cases due to mass drug administration but not followed by changes in community behavior and changes in the environment in which they live. The research objective was to evaluate knowledge, behavior change and environmental changes in the community after the MDA program for 5 years. **Materials dan Methods:** In-depth interviews were conducted with 10 informants (puskesmas nurse, program holder, head of puskesmas, head of Malando village and head of Kahale village and community members). The factors studied were public knowledge, daily behavior and control of the living environment as awareness efforts to prevent filariasis. **Results:** The results of the study are summarized in 3 categories; increased knowledge and adherence to taking medication, found no change in daily life behavior, no change in the environment. It is feared that filariasis cases will increase after 2020 because the elimination program is not followed by changes in community behavior and also changes in the environment for filariasis prevention. **Conclusion:** The success of filariasis elimination is strongly influenced by community participation in the form of attitudes and concrete actions towards filariasis.

Keywords: filariasis, behavior change, environmental change

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INTRODUCTION

Filariasis is an infectious disease that still causes serious problems in Indonesia and the Province of NTT in particular. (Willa Monika, 2015)·(2). Filariasis causes long suffering, pain, physical disability, poverty in the family because the sufferer can no longer be productive and the emergence of psychosocial problems in the community(3)(4). Disability due to filariasis experienced by sufferers at productive age causes dependence on other people so that socially and economically it will greatly harm the sufferer's family and lead to community poverty(5)(4). Filariasis can have physical, social and economic impacts(6). The physical impact is swelling caused by damage to the lymphatic system, resulting in swelling of the motor organs, breasts and testicles.(4), while the social impact is in the form of disruption of social interaction and involvement in social activities, as well as minimal opportunities to enjoy entertainment time(7). In addition, sufferers and their families will experience a financial decline because medical costs are not proportional to productivity during the treatment process(8)(9).

Since 2000, the World Health Organization (World Health Organization) has declared "The global goal of elimination of lymphatic filariasis as a public health problem by the year 2020"(10)(11). Indonesia agreed to this global agreement by declaring the start of the elimination of filariasis since 2002.The declaration was implemented in Musi Banyuasin Regency and established the elimination of filariasis as one of the priority programs for eradicating infectious diseases in Indonesia.(12)·(13)·(14).

There are more than 120 million people suffering from filariasis infection in the world and 40 million of them suffer from chronic filariasis which causes disability. (15). It is estimated that 856 million people in 52 countries are at risk for filariasis infection(16). As many as 25 million men have had an impact on their genitals (scrotal hydrocele) and more than 15 million have lymphodema(17). (Indonesian Ministry of Health, 2019)(Fasting, 2016). In the 2019 Ministry of Health's report, the number of filariasis cases in Indonesia until 2018 was 10,681 cases. This figure decreased compared to the previous year 2017 (12,677 cases), this was due to the fact that several cases were reported to have died and there was a change in diagnosis. The five provinces with the highest chronic filariasis cases in 2018 were Papua (3,615 cases), East Nusa Tenggara (1,542 cases), West Java (781 cases), West Papua (622 cases), and Aceh (578 cases).(Indonesian Ministry of Health, 2019)(Minister of Health RI, no date).

NTT is the second largest contributor to filariasis cases after Papua (Indonesian Ministry of Health, 2019)(21). This case is spread in almost all cities / districts in NTT, including 4 districts on the island of Sumba. The number of cases reported was 311 cases from 3 districts, namely Central Sumba, Southwest Sumba and West Sumba(22)(23) (Dinkes NTT, 2018).

In 2011 in Southwest Sumba District, it was reported that the number of chronic cases was 90 people, while the microfilaria rate Mf rate was> 1%. The value of the Mf rate was determined based on the results of a survey of blood sample collection (SDJ) conducted in Buru Kaghu and Mata Kapore villages in 2009.(Willa Monika, 2015). The SDJ survey results became the basis for the implementation of mass treatment for the first time in Southwest Sumba Regency in 2011 (P2M Dinkes Kab SBD, 2011)(24). 2020 is the fifth period for the implementation of mass filariasis treatment in Southwest Sumba Regency but is the fourth period for the mass treatment of filariasis in Kodi Balaghar District.(8),(24)(25). Yunarko, 2016 reports that Kodi Balaghar sub-district has an mf-rate of 4.2% based on the results of SDJ taking in 2012 with a sample size of 500 people(25).

Filariasis elimination is the achievement of a condition where the transmission of filariasis is so low that the disease does not become a public health problem. There are still 18 districts in the Province of NTT that are still endemic for filariasis and 14 districts are still implementing MDA for filariasis. The success of the filariasis elimination program is influenced by community participation. The magnitude of community participation is influenced by knowledge, attitudes and actions towards filariasis(Willa Monika, 2015)(2)(26)(17). Many studies have reported that the risk factors for filariasis include physical environmental factors, mosquito breeding grounds, biological and social environmental factors. Behavioral factors, such as the habit of going out at night, wearing a mosquito net while sleeping, using gauze at home, etc.(2)(4)(27).

This study aims to evaluate knowledge, behavior change and environmental changes in the community of Kodi Balaghar sub-district, Southwest Sumba district after the filariasis elimination program which is in its fifth year of MDA. The decline in filariasis cases is expected not only because of mass treatment but because of changes in knowledge levels that have an impact on behavior and environmental changes.

MATERIALS AND METHODS

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This type of research is a qualitative research. The research was conducted in Malando village and Kahale village, Kodi Balaghar sub-district, Southwest Sumba Regency for 10 days from

9-19 November 2020. The number of informants was 10 people consisting of the main informant, namely 1 nurse at the Puskesmas Panenggo Ede, 1 holder of the District Health Office Program Southwest Sumba, the head of the Panenggo Ede Community Health Center and the triangulation consisting of the Head of Malando Village and the Head of Kahale Village, 3 members of the Malando Village community, 2 members of the Kahale Village community. The data collected would be analyzed using interactive analysis techniques that refer to the theory of Miles and Huberman (1984), which suggests that the data would be analyzed continuously until it is complete, so that data was saturated. That is, the data would be processed until no new information was obtained. The research instrument was the researcher himself and assisted by data collection tools, namely in-depth interview guides, focus group discussion (FGD) guides, observation guides, recording devices (Cellphone), laptops and cameras. The research data analysis was carried out when data collection took place and after data collection, which consisted of (1) data reduction, namely after the data from in-depth interviews, FGD, observation and documentation were collected, the researcher sorted out the main things, focused the data,This research has received research ethics permission from the Health Research Ethics Commission of the Ministry of Health, Kupang with the registration number LB.02.03/I/0075/2020, dated 20 October 2020. All respondents signed the informed consern as a sign of willingness to take part in the research.

RESULTS

Description of the Implementation of the Filariasis Elimination Program in Kodi Balaghar District after 2016-2020 Filariasis Elimination Program

According to the informant, the series of drug administration activities were the same for each period and were summarized below:

1. Implementation is given in October each year. The target is all people aged 2 to 70 years, except those experiencing hypertension and pregnant women. Data collection was carried out at the end of September, health workers had carried out data collection around the house by measuring height, weight, and blood pressure. People who experience chronic disease have been recorded and are not included in the data for drug recipients.
2. Each puskesmas establishes a medicine post in every village and is open from 10 am to evening and is not provided at night. The community has received an invitation to send in advance by the village head to gather at the medicine post. In 1 village there can be 4 posts depending on the population. When taking medicine, it is done directly in front of health workers. The health worker is assisted by the village head and puskesmas cadres.

3. Drug administration is also carried out in schools. People who have received are given a finger mark as in the regional head election. House-to-house sweeps were conducted for people who did not come to the post to take medicine.
4. The drugs given by Albendasol and methyl. In adults, given 1 Albendasol and 2 Methyl.
5. No serious side effects were reported by the population. The side effects of taking the drug are nausea, dizziness, headaches. If you experience side effects, the community is taken to the health center and given treatment. Mild symptoms will go away on their own.

According to the informants the people of Kodi Balaghar sub-district obey the government's recommendation to follow the treatment program. The MDA program has also been running in accordance with the guidelines prepared by the government.

"If we are not present, we will go to the houses to provide services. The number of drugs is adjusted to the number of people based on data. The level of community attendance is 50%, if we don't attend we go to the village door to door ".(P3)

Changes in Community Knowledge of Kodi Balaghar Subdistrict regarding Filariasis after the Implementation of 2016-2020 Filariasis Elimination Program

Efforts to increase public knowledge that have been carried out are through health promotion, counseling, house-to-house counseling. Extension involved cross-sectoral from religious leaders, traditional leaders, sub-district officials, village heads, and puskesmas cadres.

"They are the tip of our milestone because we cannot walk alone, the sub-district head instructs the village head to oblige the community to take part in drug administration activities. The village head then mobilizes Posyandu cadres, these cadres help us convey information as well as collect community data."(P4)

The Ministry of Health, the Director General of P2P, together with the regent, have been directly involved in providing initial outreach training to doctors, nurses and health workers at puskesmas in SBD Regency, this activity has been carried out 3 times. In the implementation in the field, people are obedient to taking medicine because most of them have proven the benefits of filariasis medicine.

"Many of them said that they did not have worms so they did not need to take medicine. For this group, they were still given education about prevention. But there are also those who say that after taking the medicine they think the worms do not come out during defecation but come out through the nose and even when vomiting there are worms "(P1)

"There are still people who complain about the amount of medicine and its large size, there are 3 items, 4 items, 6 items depending on age. In principle, people are happy because they are helped to recover and they report the worms coming out during defecation ".(P5).

Changes in Community Behavior in Kodi Balaghar Subdistrict after the Implementation of 2016-2020 Filariasis Elimination Program

There has not been any significant change in behavior in the context of preventing the transmission of filariasis in Kodi Balaghar District even though it has entered its 5th year. The use of mosquito nets, hanging clothes, the habit of wearing clothes / trousers outside the house at night is still lacking.

"Until now, when we went down to the village, what we saw was that people's behavior was still far from good. Even in the city itself, the use of mosquito nets is still rare even though the distribution of mosquito nets is carried out regularly every year, both from the health office and from the village. Public awareness of using mosquito nets to prevent mosquito bites is still lacking. People complain, feel hot when using the mosquito net. It is very rare to see people who sleep in trousers while sleeping in the day. When I leave the house too. Moreover, it can be seen the condition of people's houses, namely the bale-bale house, where under the house they raise pigs. This pig eating place, which can hold water ".(P6)

Environmental Changes in Kodi Balaghar Subdistrict After Implementation of the 2016-2020 Filariasis Elimination Program

There were no significant environmental changes found in Kodi Balaghar District even though knowledge and compliance with taking medication had increased. The information obtained shows the low level of public awareness to clean the environment in which they live as an effort to prevent the development of mosquito breeding.

"The condition of the community's environment is still not maximally clean, especially for those whose houses are in the forest and the coast. The environmental condition of the community is still far from healthy. This causes people to be susceptible to diseases such as malaria and dengue fever ". (P1)

"The living environment of the community is also not considered slum, but it is still not clean, such as grass that is not cleaned and the habit of eating coconut and then the place is thrown away so that if it rains water can get trapped in the coconut shell so that it becomes a nest for mosquitos. There are still puddles of swamps, bushes ". (P8)

.DISCUSSION

Southwest Sumba Regency is one of the endemic areas for filariasis in NTT with 90 chronic cases in 2011, while the microfilaria rate Mf rate> 1% based on the results of a survey on finger blood supply (SDJ) by the Ministry of Health in 2009 (Willa Monika, 2015). The SDJ survey results became the basis for the implementation of mass treatment for the first time in 2011 (P2M Dinkes Kab SBD, 2011)(24). 2020 is the seventh period of mass filariasis treatment in Southwest Sumba Regency and the sixth period of mass filariasis treatment in Kodi Balaghar District.(24)·(25).

According to the informants, the success of the mass drug administration program was influenced by the community's compliance to attend the medication post. Overall, it can be judged that the people of Kodi Balaghar sub-district obey the government's recommendation to follow the treatment program. Another factor that is considered important by the health workers themselves, when they come down to the community to explain, what is the benefit of this medicine, what if they don't take the medicine, so the public's desire to take medicine is high. Cross-sectoral cooperation between village officials, security forces, village heads, hamlet heads, elements of the police, TNI, and officials from the sub-districts is also considered very important to support the achievement of the program's success. Several studies have reported that the elimination program has worked well in endemic cities / districts in Indonesia. In 2019 it was reported that the five provinces with the highest cases and that had also implemented MDA well were Papua(28), East Nusa Tenggara(3), West Java(29)(30), West Papua(31) and Aceh(Indonesian Ministry of Health, 2019).

The efforts to increase public knowledge that have been carried out are through health promotion, counseling, house-to-house counseling which involved cross-sectoral from

religious leaders, traditional leaders, sub-district officials, village heads, and puskesmas cadres. Beside that, The Ministry of Health, the Director General of P2P, together with the regent, have been directly involved in providing initial outreach training to doctors, nurses and health workers at puskesmas in SBD Regency, this activity has been carried out 3 times. The success of the elimination program is closely related to the level of public knowledge, good knowledge and high awareness of infection prevention will greatly support the achievement of elimination.(32). Non-compliance with taking medication can be caused by lack of knowledge and also because of the vulnerability of negative self-perceptions, people already feel safe and do not need preventive action.(33)(34). Overall the results of interviews with informants have shown that the people of Kodi Balaghar sub-district already have good knowledge, this can be assessed from their compliance with the program.

There has not been any significant change in behavior in the context of preventing the transmission of filariasis even though it has entered its 5th year. The use of mosquito nets, hanging clothes, the habit of wearing clothes / trousers outside the house at night is still lacking. Several studies have reported that the behavior of the control group and the case group of filariasis has a significant effect on the incidence of filariasis(35)(2). Adherence to good behavior such as using mosquito repellent lotion, using mosquito nets, wearing clothes and trousers, using gauze as an effort to prevent mosquito bites were also reported to reduce the incidence of filariasis infection.(36)(37). Based on the results of the interview, it was concluded that the behavior of preventing mosquito bites had not been demonstrated by the people of Kodi Balaghar sub-district. This is an important finding in our research, the local government, especially the health office, puskesmas and village officials, are likely to pay attention to this finding.

The information obtained shows the low level of public awareness to clean the environment in which they live as an effort to prevent the development of mosquito breeding. Environment is one of the most reported risk factors for filariasis. Environmental factor is one that affects the density of the filariasis vector. The ideal environment for mosquitoes can be used as a potential breeding ground for mosquitoes to rest so that the density of mosquitoes will increase(11). The physical and biological environment that is suitable for a particular vector will increase the density of the filariasis vector(38). The biological environment includes the presence of aquatic plants, the presence of predatory fish, the presence of bushes and the presence of livestock. The physical environment includes standing water, the presence of ponds, the existence of trenches, the presence of rice fields and swamps. Mosquitoes usually breed in polluted waterways or contaminated organic matter are also found in polluted water, drains, sewers and stagnant water

that are directly connected to the soil.(34). Windiastuti reports that environmental factors that are a risk factor for filariasis are the presence of mosquito breeding places around the house, the presence of mosquito resting places in the house.(37).

After the filariasis elimination program in Kodi Balaghar sub-district, our finding that there is no change in environmental conditions that will support the elimination of filariasis incidents is very important to note. We recommend the local government to take quick and appropriate steps in handling the environment. Even though the MDA program has been completed but it is not followed by proper environmental handling, there is a big chance that new cases will emerge in the coming year.

CONCLUSION

Based on the research conducted, it can be concluded that the implementation of the filariasis elimination program in Kodi Balaghar sub-district, especially Malindo and Kahale villages, has been good and is in accordance with applicable regulations. The behavioral aspect of filariasis prevention practice in society that changes is knowledge and behavior of taking filariasis medicine. Aspects of community behavior and environmental changes have not changed. It is feared that filariasis cases will reappear after 2020 because the elimination program is not followed by changes in community behavior and also changes in the environment.

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