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Region-Based Lymphatic Filariasis Elimination in Indonesia: A Review of the Bounce Back Case in Pekalongan Regency

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A B S T R A C T

Indonesia has a variety of characteristics, environmental issues, and different Social Determinant of Health (SDH). Indonesia is currently the highest contributor to lymphatic filariasis cases in Southeast Asia. Mapping of lymphatic filariasis endemic areas has been carried out by the government with a management approach to eliminating lymphatic filariasis and it has the possibility of bounce back in endemic areas, lymphatic filariasis is a tropical disease that has been neglected along with the development of COVID-19, which is the government's priority so that an area-based management approach is needed. efforts to prioritize the elimination of lymphatic filariasis in Indonesia. This review aims to illustrate the region-based elimination of lymphatic filariasis in Indonesia.

Kata kunci:

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A B S T R A K

Indonesia memiliki keberagaman karakteristik, isu lingkungan, Social Determinant of Health (SDH) yang berbeda-beda. Indonesia saat ini menjadi kontributor tertinggi kasus Filariasis limfatik di Asia Tenggara. Pemetaan daerah endemis filariasis limfatik telah dilakukan pemerintah dengan upaya pendekatan manajemen eliminasi filariasis limfatik dan memiliki kemungkinan terjadinya bounce back pada daerah endemik, filariasis limfatik termasuk penyakit tropis yang terabaikan seiring dengan berkembangnya penyakit COVID-19 yang menjadi prioritas pemerintah sehingga perlu pendekatan manajemen berbasis wilayah dalam upaya memprioritaskan eliminasi filariasis limfatik di Indonesia. Ulasan ini bertujuan untuk gambaran menggambarkan eliminasi filariasis limfatik berbasis wilayah di Indonesia.

INTRODUCTION

Lymphatic filariasis is a neglected infectious disease. Countries in the world have committed to eliminating lymphatic filariasis by 2020 through the Global Program to Eliminate Lymphatic Filariasis (GPELF) launched by the World Health Organization (WHO) in 2000 (Organization, 2017). But until now, this goal has not been fully achieved, although The elimination of lymphatic filariasis has been successfully eliminated in South Korea and China in 2006 and 2007, respectively(Cheun et al., 2009),(De-jian et al., 2013). Epidemiological data for lymphatic filariasis from

2000-2018 shows a decreasing trend in all parts of the world, but Southeast Asia has the highest number of cases and Indonesia is a contributor highest in Southeast Asia followed by Papua New Guinea (Deshpande et al., 2020). Therefore, Indonesia then proposed to postpone the GPE target of lymphatic filariasis to 2025 (Meliyanie & Andiarsa, 2019).

The Ministry of Health of the Republic of Indonesia has mapped endemic areas for lymphatic filariasis to target the Provision of Mass Preventive Medicine in interrupting the spread of lymphatic filariasis which is one component of the GPELF strategy (*Direktorat Jendral Pengendalian Penyakit Dan Penyehatan Lingkungan Kementerian Kesehatan Republik Indonesia*, 2005). The latest report from the Ministry of Health of the Republic of Indonesia states that there are 38 districts / cities that managed to exit the second phase of the Transmission Assessment Survey (TAS) and 103 districts / cities have succeeded in reaching the microfilarial threshold (Collyer et al., 2020). This can be observed in the case of Lasar and Suak Gual Villages, Belitung Regency (Santoso et al., 2020).

Apart from the controversy over the use of single prevalence levels, technical constraints such as coverage and community adjustment are central issues in the field related to population and Provision of Mass Preventive Medicine issues (Meliyanie & Andiarsa, 2019), (Santoso et al., 2020). On the other hand, the issue of environmental / ecological and / or vector heterogeneity in various endemic areas may play a role. a vital role in the worst-case scenario, namely bounce back in one area but not in another (Pi-Bansa et al., 2019), (Kwarteng et al., 2021). Such matters can become the basis for an important role in using a region-based lymphatic filariasis management approach for the elimination of lymphatic filariasis in Indonesia. In addition, program sustainability is also the key to the success of the lymphatic filariasis elimination program, given the long history of polio eradication and the development situation of lymphatic filariasis elimination itself in Indonesia so far.

How is the health of people living in different countries? Maybe this is a one million dollar question. The simple answer is the impact of health inequalities and this is driven by social determinants of health (Donkin et al., 2018). WHO defines social determinants of health as a condition in which a person is born, grows, lives, works and ages (World Health Organization, 2006). These determinants are shaped by political, social and economic forces. The combination of unfavorable political, social, and economic forces will result in a resultant low quality of life (Islam, 2019). In fact, the phenomenon in this question can occur at the sub-national level, for example rural-urban areas, west-east Indonesia, and outside the Java Island (Hosseinpoor et al., 2018), (Ariteja, 2017) .

This can be confirmed by the decentralized system in Indonesia. Decentralization, which was originally aimed at increasing responsiveness to local needs, can accentuate health inequalities, if financial management and health policies taken are not based on evidence to improve public health status and alleviate local health problems, resulting in health disparities at the national level (Nasution, 2017), (Amil et al., 2020).

Indonesia does not only bear the double burden (double burden), but the triple burden disease. Along with the increasing incidence of non-communicable diseases, persistence of communicable diseases, and neglected tropical diseases, such as lymphatic filariasis, schistosomiasis, and the emergence of emerging / re-emerging infectious diseases (Mboi et al., 2018), (Moeloek, 2017). Where the number of the working age population (15-60 years) is greater than the non-working age population (Ariteja, 2017). This should also be of concern to the government in building a healthy paradigm by investing in promotive and preventive health efforts to overcome post-demographic bonus catastrophs, where the dependency rate will increase and be hit by the burden of the triple burden disease (Hayes & Setyonaluri, 2015).

Currently, the prevention program is contained in the Healthy Living Community Movement program with other supporting programs, such as the decentralized Health Minimum Service Standards at the district / city and provincial levels. the Healthy Living Community Movement also accentuated the vital role of the Community Health Center as a gate keeper. However, the prevention of neglected tropical infectious diseases is not covered by the SPM and has a different legal standing, for example in the case of elimination of lymphatic filariasis. This could have implications for the possibility of excluding and delays in endemic areas in the lymphatic filariasis elimination program (Kandun, 2006). In addition, mitigation and prevention of emerging and re-emerging infectious diseases are also homework for the government as illustrated in the COVID-19 pandemic situation (McCloskey et al., 2014).

The COVID-19 pandemic is a new polemic for all lines of human life regardless of boundaries, including affecting the resilience of the health system in Indonesia. Indonesia is quite 'unique' in dealing with the early emergence of COVID-19. Instead of responding to the results of modeling studies predicting imported cases in Indonesia, which provide suggestions for strengthening domestic surveillance (Salazar et al., 2020), (Djalante et al., 2020). The consequences of negligence must be paid handsomely with premature policy compensation (Djalante et al., 2020). At least, the COVID-19 pandemic has opened our eyes that the system health in Indonesia is very vulnerable, health policies that have been implemented so far have not been based on adequate evidence, weak coordination and communication between central and local governments to overcome problems, and national development that has not been evenly distributed (Susilo et al., 2020),(Solechan, 2020).

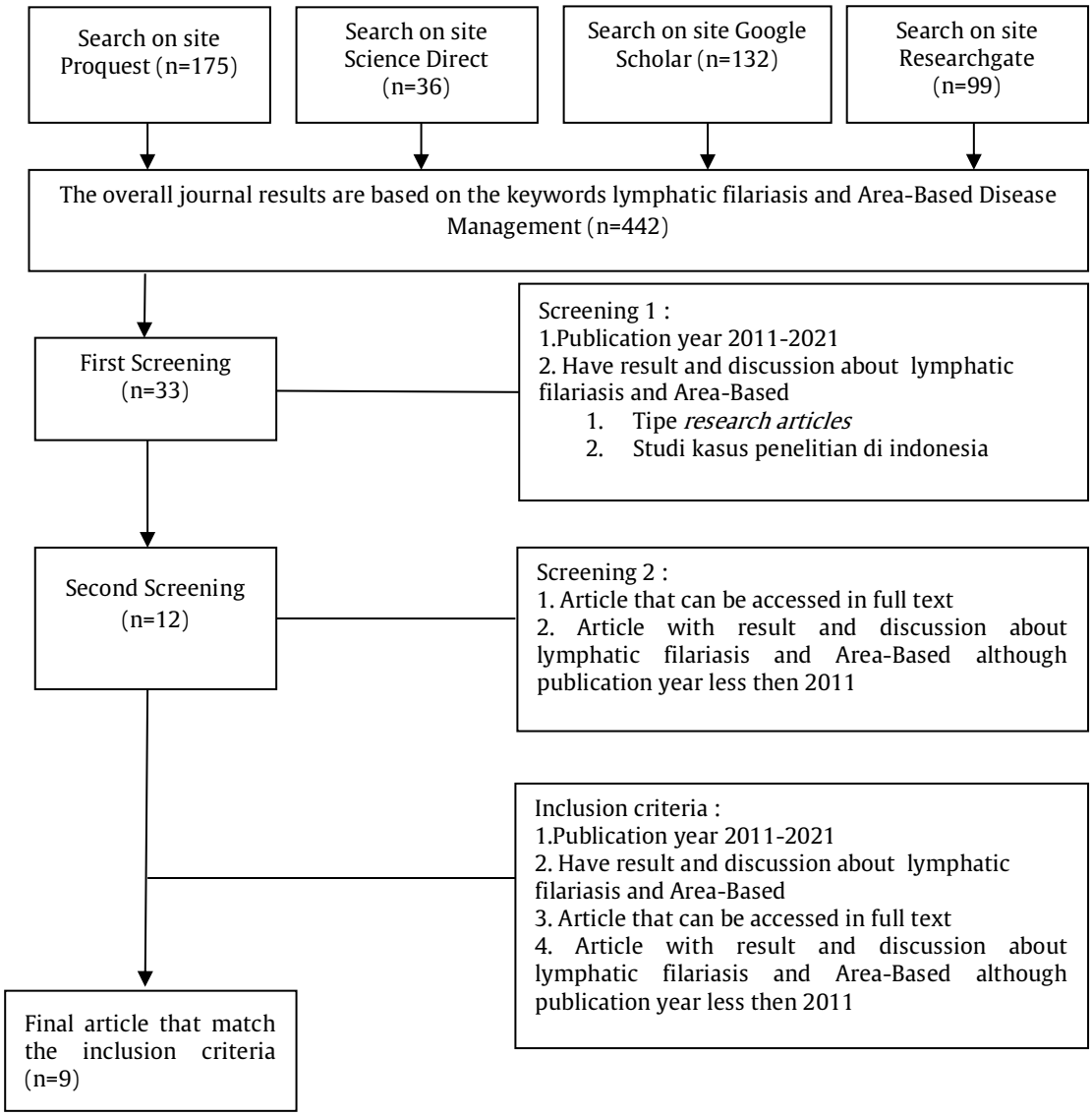
METHOD

This study is a literature review, to provide an overview of how to eliminate region-based lymphatic filariasis. The literature review is taken from research articles published in national and international journals, books, and institutional websites. The following is the flowchart of the article screening.

RESULTS AND DISCUSSION

Lymphatic filariasis should be a national priority in endemic countries where countries in the world have agreed to eliminate lymphatic filariasis. Indonesia has followed up on this with the implementation of Provision of Mass Preventive Medicine since 2002 (Cilloni et al., 2020). Based on the Minister of Health Regulation No. 94 of 2014 concerning Prevention of Filariasis, the implementation of lymphatic filariasis control is carried out by the central government and regional governments by involving the participation of the community. Therefore, the lymphatic filariasis elimination program should also be a priority of

local governments through power decentralization and referring to the priority agenda by WHO (World Health Organization, 2006). Interestingly, each region has certain characteristics in the form of a different Social Determinant of Health, environment, and disease distribution. Therefore, area-based lymphatic filariasis management is one of the priorities for health development in endemic areas in addition to other health programs by taking a very specific, targeted approach according to the characteristics of the Social Determinant of Health, environment, and politics. Regional-based lymphatic filariasis elimination is carried out comprehensively by tracing cases and PROVISION OF MASS PREVENTIVE MEDICINE in a fair, equitable and quality manner and identifying risk factors for lymphatic filariasis related to Social Determinant of Health (Achmadi, 2009). The following is a case study of steps for area-based lymphatic filariasis elimination in Pekalongan Regency, Central Java, Indonesia.



Picture 1. Flowchart of the article screening

Evidence-Based Problem Identification (Giving Bulk Preventive Drugs)

In line with the national priority for the elimination of lymphatic filariasis, lymphatic filariasis endemic areas in Indonesia are responsible for participating in prioritizing the issue of elimination of lymphatic filariasis in areas in accordance with the priority guidelines for setting infectious diseases by WHO (World Health Organization, 2006). On the other hand, Pekalongan District has previously carried out Provision of Mass Preventive Medicine partial (2003-2007) in the lymphatic filariasis endemic sub-district, however, data from the Health Office shows that the microfilarial rate ranges from 1.15% -3.90 (Ginandjar et al., 2018), so that Pekalongan District re-conducted Provision of Mass Preventive Medicine in all sub-districts in 2015, given that Pekalongan Regency is no longer classified as an area low endemic (Kemenkes RI criteria, mf> 1%). 6 Such evidence is sufficient to re-prioritize Provision of Mass Preventive Medicine as a regional health development program.

Determination of Territory

Determination of the region is associated with the determination of the baseline prevalence scale and then continued with spatial analysis to determine the sentinel site (Srividya et al., 2019). Furthermore, the determination of the sample in adult patients with diagnostic tools whose

sensitivity and sensitivity are not yet complete cannot provide insight into whether a single positive result is an active transmission or early infection. , especially in areas with a low prevalence of lymphatic filariasis (in settings that have passed the TAS) (Gass et al., 2017). A baseline prevalence examination was carried out by a population of schoolchildren (9-14 years) which aims to determine the infection rate at which lymphatic filariasis infection is present in older children. (9-14 years) represent infection in the entire population (Amil et al., 2020), (Witt & Ottesen, 2001). On the other hand, sampling method, sample size, and sampling strategy are important issues in determining baseline, particularly in assessing cost-effectiveness in developing country settings (Msyamboza et al., 2010).
Determination of baseline lymphatic filariasis elimination data in Pekalongan District, samples were taken from the population of primary school age children (grades 3-6) to obtain a picture of lymphatic filariasis infection in the community. In addition, Tirto District is the sentinel site for TAS. 33 However, the sampling method and strategy are not described.

Modeling

Modeling or modeling is a description of the dynamic interactions of variables that play a role in the transmission of lymphatic filariasis in society, using either theoretical formulations, numerical, or both (Achmadi, 2009). The modeling provides guidance in compiling lists of activities to be carried out. Various modeling studies before- Previously, it could provide insights for planning lymphatic filariasis elimination programs that are considered to have similarities in theory or to optimize certain outcomes, such as elimination success which is influenced by two key factors (Provision of Mass Preventive Medicine coverage and vector control) (Michael et al., 2004) Local population knowledge regarding lymphatic filariasis, vector density , specific vector biting rate, time difference in elimination of lymphatic filariasis with Provision of Mass Preventive Medicine and vector control in different areas. Prediction of bounce back cases of lymphatic filariasis, and others(Singh & Michael, 2015)
The results of these modeling studies can provide an overview of disease occurrence, persistence, and a list of planning activities, such as socialization and education to the public regarding lymphatic filariasis and Provision of Mass Preventive Medicine, identifying vector eradication, providing repellant or bednet, allocating specific inter-district time, lymphatic filariasis surveillance. continuous and periodic, and others according to the results of research in the field.

Planning, Financing, and Auditing

An overview of the list of activities obtained from modeling with the principles of case management and risk factor control. Various activities are focused in certain areas by taking into account the Social Determinant of Health and risk factors that are closely related to the program. The implementation of programs must integrate service systems, such as Puskesmas as a gate keeper in the clean and healthy life movement preventive model. The audit is carried out to ensure an integrated implementation process which is further compiled in the Guidelines for Regional-Based Lymphatic Filariasis Elimination Management at the Health Center or District.

CONCLUSIONS AND SUGGESTIONS

Indonesia has undergone external health reforms in eliminating lymphatic filariasis from 2002-2018, but Indonesia is still the contributor to the highest number of lymphatic filariasis cases in the Southeast Asia sub-region. In addition, the threat of lymphatic filariasis case bounce back haunts us. In the midst of the COVID-19 pandemic that has plagued Indonesia, health programs have "stopped" temporarily and available resources are focused on overcoming the weak surveillance of emerging diseases in Indonesia. This opens our eyes to improve the health system and catch up with lymphatic filariasis elimination programs by considering the differences in the Social Determinant of Health in each region according to the mandate of the decentralization law and responsive to the needs of health development specifically and targeted with area-based disease management.

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