

Family Perception Towards Health Role in Filariasis Countermeasures Using the Health Belief Model Approach in Aceh Besar District

Persepsi Keluarga terhadap Tugas Kesehatan dalam Penanggulangan Filariasis dengan Pendekatan *Health Belief Model* di Kabupaten Aceh Besar

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Abstract

Aceh Besar District is a filariasis endemic area. This endemic state is strongly influenced by people's perception of filariasis countermeasures. This study aimed to determine relation between family perceptions towards health role in filariasis countermeasures using the Health Belief Model. An analytical survey was applied with a cross-sectional study approach. The study population was families at three villages that are Lambaro Bileu, Lambaet, and Cot Preh of Kuta Baro Primary Health Care. This represents 1,113 families with a sample of 92 families that were selected using a proportionate stratified random sampling technique. The study instrument was a questionnaire and data were analyzed in a univariate, bivariate, and multivariate. This study showed that the families' perceived susceptibility to filariasis disease and the families' perception of the benefits from filariasis preventive actions are influenced the health role in filariasis countermeasures (p value = 0.012 and 0.0001). However, the families' perception of the seriousness of filariasis disease and the families' perception of barriers in filariasis preventive action did not influence the health role in filariasis countermeasures (p value = 0.259 and 0.230). The families' perceived benefits of preventive action were the dominant factor related to the families' health role in filariasis countermeasures (OR = 12.863; 95% CI = 2.566–93.537) after adjusting with perceived susceptibility to diseases (OR = 8.316; 95% CI = 1.769–26.949).

Keywords: Family's health role, filariasis, Health Belief Model, perception

Abstrak

Kabupaten Aceh Besar merupakan daerah endemis filariasis di Aceh. Hal ini sangat dipengaruhi oleh persepsi masyarakat tentang penanggulangan filariasis dengan menggunakan *Health Believe Model*. Penelitian ini bertujuan mengetahui pengaruh persepsi keluarga terhadap tugas kesehatan dalam penanggulangan filariasis. Desain penelitian yang digunakan adalah survei analitik dengan pendekatan potong lintang. Populasi penelitian adalah keluarga di tiga desa dalam wilayah kerja Puskesmas Kuta Baro, yaitu Lambaro Bileu, Lambaet dan Cot Preh yang berjumlah 1.113 keluarga dengan jumlah sampel 92 keluarga yang dipilih dengan teknik *proportionate stratified random sampling*. Instrumen penelitian menggunakan kuesioner dan dianalisis dengan statistik univariat, bivariat, dan multivariat. Hasil penelitian menunjukkan bahwa persepsi keluarga tentang kerentanan penyakit filariasis dan persepsi keluarga tentang manfaat tindakan penanggulangan filariasis memberikan pengaruh terhadap tugas kesehatan (nilai p = 0,012 dan 0,0001). Sedangkan persepsi keluarga tentang keseriusan penyakit filariasis dan persepsi keluarga tentang hambatan tidak memberikan pengaruh terhadap tugas kesehatan dalam penanggulangan filariasis (nilai p = 0,259 dan 0,230). Persepsi keluarga tentang manfaat dari tindakan pencegahan merupakan faktor paling dominan yang mempengaruhi tugas kesehatan keluarga (OR = 12.863; 95% CI = 2.566–93.537) setelah dikontrol oleh persepsi keluarga terhadap kerentanan penyakit filariasis (OR = 8.316; 95% CI = 1.769–26.949).

Kata kunci: Peran kesehatan keluarga, filariasis, *Health Belief Model*, persepsi

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Introduction

Filariasis is a parasitic chronic infectious disease caused by filarial worms. Filariasis is transmitted through mosquito bites containing filarial worms in its body. In the human body, the worm grows into an adult worm and settles in the lymph tissue, causing swelling in the legs, limbs, breasts, arms, and genital organs.¹

The number of filariasis patients in Indonesia is increasing every year. In 2016, the provinces of East Nusa Tenggara (2,864), Aceh (2,732), West Papua (1,244), Papua (1,184), and West Java (955) had the highest cases of chronic filariasis. The Aceh Province ranks the second in the number of filariasis patients after East Nusa Tenggara.¹

Aceh Besar District is one of the districts in the Aceh Province recorded as a filariasis-endemic district. In 2015, they were 49 cases of filariasis in Aceh Besar District. The subdistrict with the highest number of filariasis case was Kuta Baro Subdistrict with 17 cases.²

Filariasis elimination program becomes a priority in Aceh Besar District and the main agenda is to perform Mass Drug Distribution activities to break the chain of filariasis transmission in all the filariasis-endemic subdistricts. The Aceh Besar District Government through the Health Office provides filariasis drugs for the people in 2016.² In 2015, only 75% of the population wanted to take filariasis drugs, and in the district, the coverage was more than 65%, but this coverage was not evenly distributed, and several subdistricts had low coverage.³

To achieve the elimination of filariasis, people need to understand the dimensions of the problems and influential risk factors associated with filariasis. Therefore, people’s active participation in filariasis countermeasures is very important.⁴

Taken together, the main factors in filariasis countermeasures are people’s behavior in protecting themselves and taking filariasis drugs. The complete eradication of filariasis becomes challenging when people’s behavior toward maintaining the environment hygiene is poor and the level of filariasis drug compliance is low. One of the models associated with the people’s perception of filariasis countermeasures is the *Health Belief Model* (HBM), which was first developed in the 1950s by the social psychologists Hochbaum, Rosenstock, and Kegels from the United States of America. HBM produces a set of perception patterns that give rise to possible behaviors of countermeasures.⁵

According to Hayden,⁶ the application of HBM in a study on people’s behavior in filariasis countermeasures can predict the likelihood of taking the recommended preventive health actions based on the results of the assessment of the people’s perceived susceptibility to diseases, perceived seriousness of diseases, perceived benefits of preventive action, and perceived barriers to pre-

ventive action.

There is a great paucity in regards to research on the families’ perception of health role in filariasis countermeasures in Aceh Besar District. Therefore, the aim of this study was to determine the relation of the families’ perception of health role in filariasis countermeasures in the working areas of Kuta Baro Primary Health Care, Aceh Besar District using the HBM approach.

Method

This study used an analytical survey with a cross-sectional approach. The study population involved families from three villages in the working areas of Kuta Baro Primary Health Care, namely Lambaro Bileu, Lambaet, and Cot Preh. A total of 92 families were selected using a proportionate stratified random sampling technique. Data collection was conducted from January 22 to February 20, 2018. The independent variable in this study was families’ perception based on HBM construct, which are the perceived susceptibility to diseases, perceived seriousness of diseases, perceived benefits of preventive actions and perceived barriers to preventive actions. The dependent variable was the family’s health role in filariasis countermeasures in filariasis countermeasures are people’s behavior in protecting themselves and taking filariasis drugs. A questionnaire was administered, and its results were analyzed by univariate, bivariate, and multivariate statistics. The results are presented in tables. The study was reviewed and approved by the Ethics Committee of the Faculty of Nursing, University of Syiah Kuala Banda Aceh (Number 160551622).

Results

According to results as shown in Table 1, the variable of families’ perceived susceptibility to diseases was present in 55 families with good health perception, and 48 (87.3%) families played a good health role in filariasis countermeasures. Further, 37 families had poor health perception, and 14 (37.8%) families had a good health role in filariasis countermeasures. The results of the chi-square test indicated that there was a relation between the family’s perceived susceptibility to diseases and the health role in filariasis countermeasures (p value =

Table 1. Relation between Families’ Perceived Health and the Health Role in Filariasis Countermeasures

Variable	Category	Health Role		p Value
		Good	Poor	
Susceptibility	Good	48 (87.3%)	7 (12.7%)	0.000
	Poor	14 (37.8%)	23 (62.2%)	
Seriousness	Good	46 (76.7%)	14 (25.35)	0.012
	Poor	16 (50.0%)	16 (50.0%)	
Benefit	Good	50 (86.2%)	8 (13.8%)	0.000
	Poor	12 (35.3%)	22 (64.7%)	
Barrier	Good	47 (83.9%)	9 (16.1%)	0.000
	Poor	15 (41.7%)	21 (58.3%)	

Table 2. Summary of Logistic Regression Analysis for Family's Perception as the Predictors

Family's Perceived	OR	p Value	95% CI	
			Lower	Upper
Susceptibility	8.316	0.012	1.769	26.949
Seriousness	0.340	0.259	0.052	2.210
Benefit	12.863	0.000	2.566	93.537
Barrier	2.256	0.230	0.597	8.522
Constant	0.057	0.001		

0.000).

Results also showed that 60 families had a good perception of the seriousness of the diseases, and 46 (76.7%) families played a good health role in filariasis countermeasures. Further, 32 heads of families had a poorly perceived seriousness of the diseases, and 16 (50.0%) families had a good health role in filariasis countermeasures. The results of the chi-square test showed that there was a relationship between the families' perceived seriousness of diseases and the health role in filariasis countermeasures (p value = 0.012).

Results revealed that the family's perceived benefits of preventive actions had 58 families with good perception, 50 (86.2%) families played a good health role in filariasis countermeasures. Further, 34 families had poor perception, and 22 (64.7%) families played a good health role in filariasis countermeasures. Based on the results of the chi-square test, there was a relation between the family's perceived benefits of preventive actions and the health role in filariasis countermeasures (p value = 0.001).

The study also shows that 56 families had well-perceived barriers to preventive actions, 47 (83.9%) families played a good health role in filariasis countermeasures. Further, 36 families had poorly perceived barriers to preventive actions, 21 (58.3%) families played a good health role in filariasis countermeasures. Based on the results of the chi-square test, there was a relation between the family's perceived barriers to preventive actions and the health role in filariasis countermeasures (p value = 0.001).

Based on the results of the logistic regression analysis method (Table 2), the families' perceived susceptibility to diseases (p value = 0.012) and the families' perceived benefits of preventive action (p value = 0.001) were significant to predictors of families' health role in filariasis countermeasures. The families' perceived benefits of preventive action were the dominant factor related to the families' health role in filariasis countermeasures (OR = 12.863; 95% CI = 2.566–93.537) after adjusting with perceived susceptibility to diseases (OR = 8.316; 95% CI = 1.769–26.949).

Discussion

Based on the results of this study, it can be concluded

that most families felt susceptible to or at risk of filariasis disease, thus they followed a health role to prevent filariasis. This is as stated by Hochbaum, Rosenstock, and Kegels that mentioned perceived susceptibility includes an estimation of susceptibility to diseases and is one of the stronger perceptions in promoting healthy behavior adopted by people. The greater the perceived risk, the greater the possibility to get involved in a decreasing risk behavior.⁷

When persons believe that they are at risk of diseases, they will do something to prevent the disease to happen. Otherwise, when a person believes that they are not at risk or less likely to suffer from a disease, they tend to perform unhealthy behaviors.⁸ For example, adults generally do not consider themselves at risk of filariasis, therefore, they do not make the maximum efforts to prevent mosquito breeding such as eradicating man-made mosquito nests from garbage cans, used tires, or other water storage containers.⁹

Based on the explanation above, it can be concluded that the health role in the forms of filariasis countermeasure practices through mosquito bite preventive actions, vector control through home hygiene maintenance, and participation at filariasis mass treatment would be performed by families if they felt susceptible to or at risk of mosquito bites and suffering from filariasis. The findings of this study can be an example for the Kuta Baro Primary Health Care, Aceh Besar District, for preparing filariasis-related health promotion programs in the community.

Perceived seriousness/severity of diseases refers to an individual belief about the seriousness and severity of a disease.¹⁰ According to results, most of the families in Kuta Baro Primary Health Care, Aceh Besar District had not considered filariasis as a serious/severe disease. This will affect the families understanding of the filariasis consequences and not perceive filariasis as a serious health threat which needs an immediate response.

Perceived seriousness or severity of diseases includes how a person sees any bad consequences of any serious health issue. Severity is considered as the person's belief about the importance or the magnitude of a health threat. Perceived seriousness is often based on medical or insight information. It also may come from a belief of someone who has experienced the pain of illness previously and it impacts on his/her life.¹¹

One factor of poor families' perceived seriousness/severity of diseases is the lack of medical and insight information on bad consequences of filariasis. One mistake families make is the assumption that filariasis symptoms are common and not serious symptoms, hence the family tends to take self-treatment. However, if the family knows the examination results of the symptoms, which may indicate positive filariasis, then the perception of the family will change and they will start taking any

filariasis symptoms seriously. As Carpenter¹² points out, the understanding of perceived seriousness/severity of diseases can be illustrated with the example that most people consider fever a common symptom of illness. However, if a person has a fever and the examination result causes him/her to be hospitalized, then his/her perception of fever will change into a serious illness.¹²

To increase families' perceived seriousness/severity of diseases, the health workers at Kuta Baro Primary Healthcare, Aceh Besar Subdistrict must improve the families' knowledge of filariasis dangers and consequences.

This study found a relation between the families perceived benefits of preventive action to the health role in filariasis countermeasures. The results of this study pointed that most families perceived that filariasis countermeasure actions such as avoiding mosquito bites, controlling vectors through home hygiene maintenance, and participation at filariasis mass treatment provide benefits and preventive actions to family members from filariasis disease. This result was closely associated with the good families' perceived susceptibility to diseases.

A similar statement is also expressed by Jones, Christina Jane, Helen Smith, and Carrie Llewellyn,¹³ that mention the actions taken by a person for disease countermeasures (or treatment) depends on the consideration and evaluation from the perceived susceptibility to diseases and the perceived benefits of preventive actions. Therefore, the person would accept the recommended health actions if considered beneficial. A person tends to adopt healthy behaviors if they believe that healthy behavior will decrease their risk (susceptibility) of diseases. The perceived benefit plays an important role in adopting the behavior for secondary countermeasures like screening.¹³

Based on the explanation above, the steps needed to be taken by the health workers, especially at Kuta Baro Primary Health Care, Aceh Besar District is to facilitate and actively motivate families to avoid mosquito bites, vector control through home hygiene maintenance, and participation at filariasis mass treatment. These are important actions, and if completed families would perceive the good benefits of filariasis countermeasure actions they have taken.

Results also indicated that there was a relation between the families' perceived barriers to preventive action and the health role in filariasis countermeasures. The families perceived that there was no barrier to filariasis countermeasures action, thus the families perceived barriers to preventive action was a related variable in carrying out the health role for filariasis prevention.

The similar statement is also expressed by Amarillo where perceived barriers are the individual self-evaluation on barriers to adopting new behaviors. Of all HBM

constructions, the most important barrier is determining the change of a person's behavior. The family's perceived seriousness of diseases did not significantly influence to the health role in filariasis countermeasures. However, the families' perceived seriousness/severity of diseases can influence the families' perceived barriers in filariasis countermeasures.¹⁴ Jones and Barlett,⁷ also stated that to improve people's behavior in filariasis countermeasures, the real threat of seriousness/severity of filariasis disease would motivate the people to take countermeasure actions by avoiding mosquito bites, controlling vector through home hygiene maintenance, and participating in filariasis mass treatment. Any barriers felt by people in mosquito nest eradication, it can be overcome if people have a high perception of the seriousness/severity of filariasis disease.

The results of the logistic regression showed that the family's perceived susceptibility to diseases (p value = 0.012) and the family's perceived benefits of preventive action (p value= 0.001) were the significant predictors of families' health role in filariasis countermeasures. This result aligns with Hayden,⁶ that previously described that the actions taken by a person to prevent (or cure) the disease depends on the evaluation and consideration of the perceived susceptibility to diseases and the perceived benefits of any preventive action. A person will accept a health action if beneficial to them. A person tends to adopt health behaviors that decrease their risk of disease exposure. Perception of the perceived benefit had an important role in adopting secondary preventive behaviors.⁶

Results of the logistic regression analysis showed predictors for both perceived susceptibility to diseases and perceived benefits of preventive action. The most dominant factor related to the family's health role in filariasis countermeasures was the perceived benefits of preventive action (OR = 12.863; 95% CI = 2.566–93.537) after adjusting for perceived susceptibility to diseases (OR = 8.316; 95% CI = 1.769–26.949). Jones and Bartlett,⁷ had similar findings and suggestions. The construct of perceived benefits is a person's opinion of the value or usefulness of a new behavior to decrease the risk of developing a disease. People tend to adopt healthier behaviors when they believe the new behavior will decrease their likelihood of developing a disease.⁷

Conclusion

The families' perceived susceptibility to diseases and the families' perceived benefits of preventive action are significant predictors of the families' health role in filariasis countermeasures. The families' perceived benefits of preventive action are the dominant factor related to families' health role in filariasis countermeasures such as protecting themselves and taking drugs after adjusting for perceived susceptibility to diseases.

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