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Research article

Evaluating effect of a community-based participatory action program on knowledge of melioidosis in Northeastern Thailand

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Abstract

Background and Purpose: Melioidosis is a public health problem in northeast Thailand, where it is associated with high mortality. We aimed to determine awareness and knowledge of melioidosis among the community in this region to inform prevention and education work. We also aimed to develop and implement an appropriate educational campaign using focus group discussions. **Methods:** We carried out community-based participatory action research in the Thawat Buri district of Roi Et Province in northeastern Thailand. We administered a structured pre-test questionnaire on knowledge and awareness of melioidosis to 372 residents. We also held five focus group discussions with a total of 39 participants to develop a strategy to increase knowledge of melioidosis in their community. After implementing the campaign, we re-assessed knowledge of melioidosis among the same 372 residents using the post-test questionnaire. **Results:** Overall, 36% of respondents had heard of melioidosis, mainly from healthcare providers (35.1%). Of those unaware of melioidosis, 61.8% had only elementary education, and 73.9% worked in agriculture. The focus group discussions suggested using local songs (Mor-Lam music) to raise awareness of melioidosis. A Mor-Lam song was created to describe the symptoms, transmission, and prevention of melioidosis, and it was broadcast daily. Residents' knowledge about melioidosis improved significantly from 14% to 80% after the campaign. **Conclusion:** This community's

baseline knowledge and awareness of melioidosis were poor. We recommend providing information about melioidosis and strengthening engagement of stakeholders at different levels in the health system. Using Mor-Lam music may be helpful to educate people about this disease.

Keywords: awareness, knowledge, melioidosis, participatory action research, Thailand

Introduction

Melioidosis is an often fatal emerging infectious disease caused by the gram-negative bacterium *Burkholderia pseudomallei*, and is a serious public health threat in tropical areas [1]. In Northeast Thailand, the number of culture-confirmed melioidosis cases is approximately 2,000 annually, with a case fatality rate of 25%–40% [1,2]. Thai national passive surveillance data over ten years (2006-2015) showed the highest incidence of melioidosis was in the provinces in Northeast Thailand [3]. In a retrospective study of hospital data, the incidence of melioidosis cases was higher (8.73 per 100,000 population per year) in Northeast Thailand than other areas of the country [4].

B. pseudomallei is common in the environment in Northeast Thailand. It was found in 32% of soil samples and 60% of six water samples collected from a single paddy field in Ubon Ratchathani Province in Northeast Thailand [5]. Another study in Buriram Province in Northeast Thailand found *B. pseudomallei* in 25% of environmental samples (soil, rice rhizosphere, and water) collected near the homes of people with melioidosis [6]. Skin inoculation with *B. pseudomallei* from contaminated soil and water is considered the main route of infection [7].

High-risk groups for melioidosis include people with diabetes, hypertension, chronic kidney disease, chronic lung disease, thalassemia, excessive alcohol intake, and occupational exposure [4,6]. Treatment for melioidosis is timely administration of parenteral antibiotics (intensive phase), such as ceftazidime and carbapenems, followed by a prolonged oral antibiotic (eradication phase) to prevent mortality and relapse [8]. Trimethoprim sulfamethoxazole is Thailand's recommended oral antimicrobial regimen for melioidosis [9]. Recurrent melioidosis can result either from relapse or re-infection with a new *B. pseudomallei* strain [1].

Melioidosis places a substantial burden on healthcare resources in Northeast Thailand, where it has a high mortality rate. The general population in the community of this region may have limited knowledge about the transmission and prevention of melioidosis. Northeast Thailand is known for its unique cultural practices and rural communities. Understanding the local context, including cultural beliefs and practices, is essential for designing effective awareness and prevention strategies. There is little public sharing of information about melioidosis and doctors and healthcare workers are reluctant to explain about the disease to patients and their families. This has led to poor awareness of melioidosis in endemic areas [2]. Lack of awareness of the disease in the community, late recognition, and misdiagnosis are associated with infection and poor outcomes from melioidosis in Thailand [10]. A survey about public awareness of melioidosis and knowledge of its prevention in 928 districts in Thailand found that knowledge about melioidosis was low in the general Thai population [11]. The study also found that video clips helped to increase awareness and knowledge about preventing melioidosis.

Other cultural tools, such as local songs, have previously been used to convey accurate information about different diseases and promote prevention [12].

A community-based participatory research program for melioidosis in Northeast Thailand is considered a good way to increase awareness and knowledge about diseases [13]. This approach can address specific challenges in the region, engage local communities, and contribute to improved prevention, reducing the impact of melioidosis on public health. Providing the community with accurate information about diseases is crucial for effectively controlling infections and reducing mortality. This study aimed to assess and increase knowledge and awareness of melioidosis among community residents in the Thawat Buri district of Roi Et Province in Northeast Thailand, using a community-based participatory research program.

Methods

Study design and participants

This study was approved by the ethical committee of the Faculty of Tropical Medicine, Mahidol University (approval number MUTM 2020-001-01, project title: Empowerment of awareness in Roi Et Province, a community at risk of melioidosis). Community-based participatory action research involving researchers and community residents [13] was conducted from February to June 2020 in the Thawat Buri district of Roi Et Province in Northeast Thailand **(Figure 1)** using three steps: (1) identification of the problems, (2) problem-solving, and (3) evaluation.

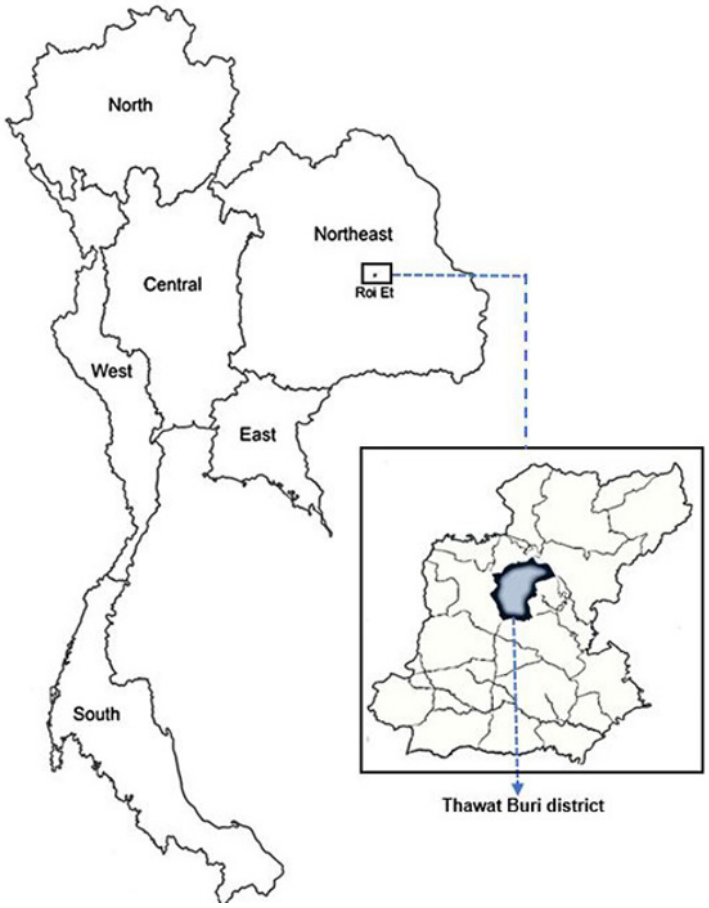

Figure 1. An map showing the regions of Thailand and the study site in Thawat Buri district, Roi Et Province, Northeast Thailand

This study included community members (residents, healthcare providers, village health volunteers, community leaders, and people with experience of melioidosis) at all steps **(Figure 2)**. To identify the size of the problem, we assessed residents' knowledge of melioidosis. To address awareness and knowledge about melioidosis, we convened focus group discussions to design an appropriate educational campaign, and then implemented this campaign. In the final step, we evaluated improvements in awareness and knowledge by repeating the knowledge assessment. Data from a recent melioidosis study in Northeast Thailand (Determinant of Outcomes and Recurrent Infections in Melioidosis, DORIM) [1] found that 25 of 190 (13.2%) melioidosis patients admitted to Roi Et Hospital lived in ten villages and seven sub-districts in the Thawat Buri district. We therefore selected this district, which has a population of 68,257, for our study.

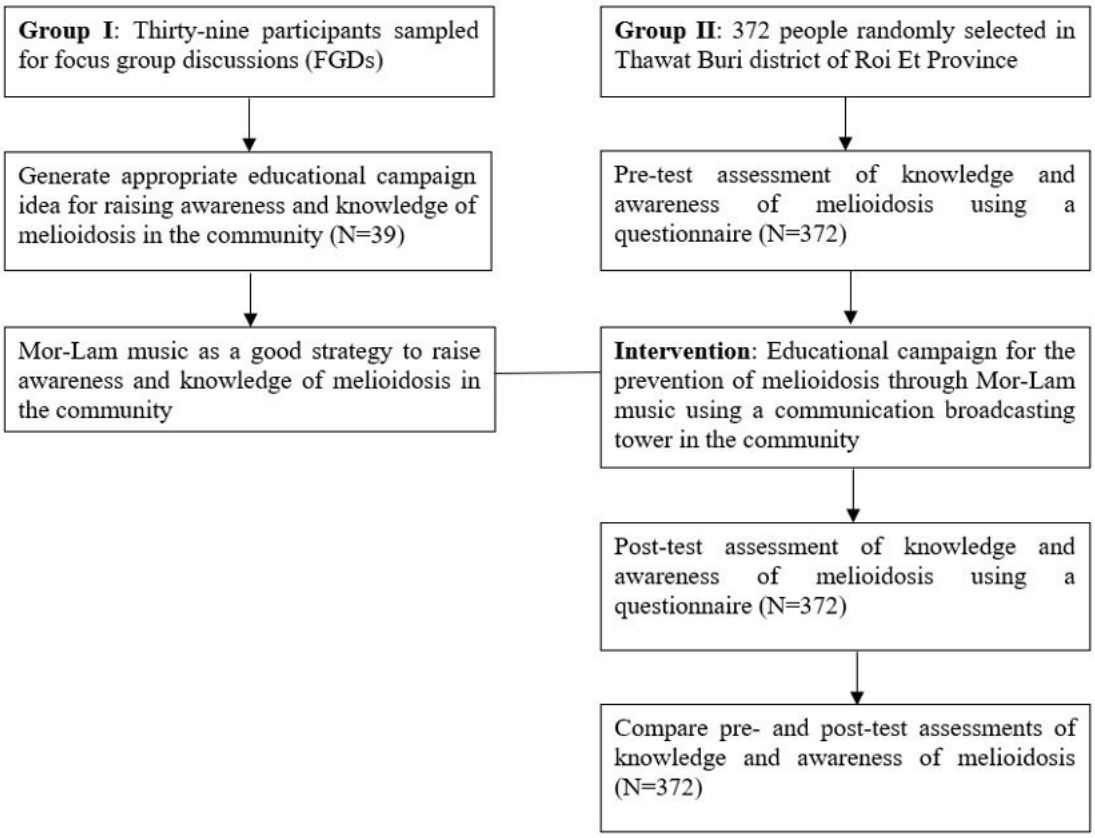

Figure 2. Flow chart of the study

Sample size and sampling technique

The sample size for the pre-and post-campaign questionnaires was calculated using the formula $n = N/(1+Ne^2)$ [14], (where n = sample size, N = total population, and e = error tolerance level). Based on a 95% confidence level and P = 0.05, the sample size was rounded to 400.

Sample size calculation;

*n = 68,257/(1+68,257(0.05*0.05) = 398*

N = 68,257 total population (2018), e = 0.05 (±5%)

For each focus group discussion, we used a purposive sampling technique [15] to select participants who lived in the target community, had heard of melioidosis, and were not part of the questionnaire group.

Inclusion and exclusion criteria

Inclusion criteria to recruit the participants for the survey were: (i) men or women aged ≥18 years, who were (ii) willing to participate and provided written informed consent, (iii) living in ten villages in Thawat Buri district, Roi Et Province, and (iv) able to answer the questions, with no disorders of perception such as vision, hearing, speech, or psychological problems.

The following inclusion criteria were used to recruit participants for the focus groups: (i) men or women aged ≥18 years, (ii) living in Thawat Buri district, Roi Et Province, (iii) either a member of the healthcare team, village health volunteer, community leader, someone with experience of melioidosis or a community member, and iv) willing to provide written informed consent to participate in the study.

Data collection

Data on awareness of melioidosis in the community were collected through a structured pre-and post-test questionnaire (Supplementary file A). The questionnaire consisted of three sections. The first section covered the participants' sociodemographic and professional characteristics. The second contained questions about lifestyle habits, including ill, and awareness of infectious diseases, including melioidosis. The third section contained questions about the respondents' perception of information from the media, asking about their usual source of news and the frequency with which they obtained news, which source provides information that is easiest to remember, and their preferred health news media.

For the focus groups, we developed a semi-structured interview guide for moderators, corresponding to the research questions. The guide contained questions on key themes such as (i) general knowledge of melioidosis, (ii) sources and causes of melioidosis, (iii) risk factors for melioidosis, (iv) severity of melioidosis, (v) treatment of melioidosis, (vi) prevention of melioidosis, (vii) innovative approaches to educate the community about melioidosis, and (viii) building a network to disseminate knowledge of melioidosis in the local community. The focus groups were recorded and documented by the research team. All discussions were audio- and video-taped to be reviewed later by the research team. Data from group discussions were analyzed using quantitative methods as previously described [16]. Audio recordings from the focus groups were transcribed, saved into Word files, and categorized by focus group participants. Data were acquired by searching for keywords or similar words or phrases and categorized. For content analysis, we created a framework for analysis, setting out the concepts of the study and interpreting them in line with the research questions and objectives.

Statistical analysis

Statistical analysis used SPSS version 18.0 (SPSS, Chicago, IL). Descriptive statistics were used to summarize sociodemographic characteristics and responses to questions on knowledge and understanding of melioidosis. Categorical variables were expressed as frequency and percentage (%). A paired sample t-test was used to analyze the difference in pre-and post-test knowledge and levels of risk factors of melioidosis. A P-value < 0.05 was considered statistically significant.

Results

Overall, 372 participants **(Figure 2)** completed the pre-intervention questionnaire. **Table 1** shows the sociodemographic characteristics of the participants. Three-quarters of the respondents were

female (75.3%), and the majority (58.6%) were aged 51 to 70 years, with the second-largest group aged 31 to 50 years (26.6%), and just 1.9% aged 30 and below. Most respondents (60.8%) only had elementary education, with 24.2% having completed senior high school, and 8.6% junior high school only. Just 2.7% were university graduates with Bachelor's degrees. The main occupations were agriculture (73.9%), contractor (8.6%), business owner (4.8%), and government official/state enterprise employee (1.6%).

Sociodemographic characteristics	Frequency (%)
Gender	
Female	280 (75.3)
Age (years)	
30 and below	7 (1.9)
31-50	99 (26.6)
51-70	218 (58.6)
70+	48 (12.9)
Educational level	
Elementary	226 (60.8)
Junior high school	32 (8.6)
Senior high school	90 (24.2)
Bachelor's degree	10 (2.7)
Others[a]	14 (3.8)
Occupation	
Agriculture	275 (73.9)
Contractor	32 (8.6)
Business owner	18 (4.8)
Government official/state enterprise employee	6 (1.6)
Others[b]	41 (11.0)

[a] None, diploma, high vocational certificate, non-formal education, and no record

[b] Not working, homemaker, monk, and student

Table 2 shows the responses of the study participants when asked if they had heard of different infectious diseases. The best-known disease was leptospirosis, familiar to 339 (91.1%) participants, followed by flu (90.6%), acquired immunodeficiency syndrome (AIDS) (88.2%), tuberculosis (85.2%), and malaria (71.8%). Melioidosis was known to only 36.0% of the respondents, and just 23.7% of participants had heard of Zika fever.

Of the 64% of participants who had never heard about melioidosis (n = 238) at the pre-test point, 61.8% only had elementary education, 7.1% had completed junior high

school and 23.5% senior high school. Seven (2.9%) had a Bachelor's degree. Most (69.7%) of the respondents worked in agriculture, with 9.2% working as contractors, 5.5% owning businesses, and 1.3% being state employees. The rest (14.3%) were unemployed, homemakers, monks, and students.

Table 2. Participants' responses to infectious diseases questions in the pre-test

Infectious diseases	Heard about the disease *n* (%)
Flu	337 (90.6)
Melioidosis	134 (36.0)
Leptospirosis	339 (91.1)
Malaria	267 (71.8)
Tuberculosis	317 (85.2)
Acquired immunodeficiency syndrome (AIDS)	328 (88.2)
Zika fever	88 (23.7)
Total	372 (100.0)

Participants who reported knowing about melioidosis (N = 134) in the pre-test questionnaire were asked about their knowledge of melioidosis and their primary source of information **(Table 3)**. Overall, 39.6% of the participants had some knowledge of symptoms, transmission, and prevention of melioidosis. Most of the respondents (35.1%) had received their information from healthcare providers, followed by health volunteers (26.1%) and others in the community (17.9%). Overall, 9.0% were aware of melioidosis because they or a relative had contracted it. Just 6.7% were informed by social media, 3.0% by community leaders, and 1.5% by local news announcements from the village broadcasting tower.

Table 3. Pre-test knowledge and source of information about melioidosis among participants who had heard of the disease (N = 134)

Variables	Frequency (%)
Knowledge about symptoms, transmission, and prevention	
Yes	53 (39.6)
No	81 (60.4)
Source of information	
Healthcare providers	47 (35.1)
Health volunteers	35 (26.1)
Others in the community	24 (17.9)
History of melioidosis or experience of relatives	12 (9.0)
Social media (TV, news, radio, internet, and newspaper)	9 (6.7)

Variables	Frequency (%)
Community leaders	4 (3.0)
Local news announcement (village broadcasting tower)	2 (1.5)
Not specified	1 (0.7)

Preferences for media tools to promote melioidosis awareness in the community

In the pre-test questionnaire, we asked participants about the best tools to help them remember information and promote awareness of melioidosis in their community. The majority (59.7%) recommended television, followed by local news announcements by village health volunteers and community leaders through the communication broadcasting tower (13.2%), and social media (7.8%). Radio was mentioned by 5.9% and smartphones by 4.6% of respondents. Only 4.3% of the respondents preferred healthcare providers to provide the information, and fewer than 1% suggested advertisements and print media, such as brochures, books, and announcements **(Table 4)**.

Table 4 Pre-test preferences for memorable sources of information about melioidosis (N = 372)

Sources	Frequency (%)
Television	222 (59.7)
Local news announcement by village health volunteers and community leaders through the communication broadcasting tower	49 (13.2)
Social media (Facebook/Internet/YouTube/LINE/webpage)	29 (7.8)
Radio	22 (5.9)
Smartphone	17 (4.6)
Healthcare provider	16 (4.3)
Advertisement	3 (0.8)
Print media (brochure, book, announcement)	3 (0.8)
Not specified	11 (3.0)

Focus group discussions

Five focus groups were convened with a total of 39 participants (Group I, Figure 2). These included village health volunteers (N = 10), community leaders (N = 7), healthcare providers (N = 9), previous melioidosis patients (N = 6), their relatives (N = 4), and people living in the community (N = 3). The median age of the participants was 50 years, and 27 (69.2%) were women.

Three groups of participants, village health volunteers, community leaders, and community residents, reported hearing about melioidosis from patients in the community. They also had some fundamental knowledge about it. However, melioidosis patients

and their relatives were less informed. One said,

> "We had never heard of melioidosis until a member of the family was diagnosed with it. We had basic knowledge about this disease, but communication about it from the health personnel was unclear. The name, melioidosis, is not Thai, and we consider it a foreign disease."

The focus group participants from the healthcare team did not see melioidosis as a severe threat to the community. They therefore did not communicate effectively about it to the community members. One said,

> "We had heard of melioidosis and knew about the disease. We don't really think it is an urgent problem, and knowledge about it is not communicated to the community."

Focus group participants were asked to recommend approaches that would increase knowledge of melioidosis and raise awareness among community members. Participants suggested advertisement or music through a communication broadcasting tower (100%), using the village health volunteer (80%), infographics (40%), a seminar about melioidosis (40%), and a brochure (20%) (Table 5). All five focus groups suggested using a local form of music, Mor-Lam. They recommended the broadcasting tower as a direct and effective channel for information via a Mor-Lam song. A song about melioidosis was therefore written and sung by a local musician in the Isan dialect. The piece explains the nature of the disease, how outbreaks occur, and preventive measures. The song was broadcast through the communications tower in the targeted community and also shared on YouTube (https://youtu.be/tr3N7cYg2fI).

Table 5 Approaches recommended by focus group members to increase knowledge of melioidosis among the community members

Approaches	Frequency of group (%)
Advertisement or music through a communication broadcasting tower	5 (100.0)
Village health volunteers	4 (80.0)
Infographic	2 (40.0)
Seminar about melioidosis	2 (40.0)
Brochure	1 (20.0)

Promoting awareness and knowledge of melioidosis in the community

Using a communication broadcasting tower, we promoted the campaign to prevent melioidosis through Mor-Lam music. The community leaders and village health volunteers in the target communities promoted the Mor-Lam song by playing it for a month, before and after the regular news broadcast in their community. The song delivered the message about the source, transmission, symptoms, and prevention of melioidosis (Supplementary file B). The content translated into English was as follows:

Oh... It is raining. The rain is falling on the ground, wetting the hard soil.
The rice in the field is waiting for the rain to pour down. People are still waiting for the rain to fall from the beautiful sky, the cold breeze from the rain.
Oh... sky, how are you doing, my precious family? Did aunt and uncle make up their differences?
Your nieces and nephews have warned you that your lifestyle could make you ill. Please be careful.
When the rainy season brings the cold breeze and the mist, we know it is the farming season.
The rain was not the only thing that came, it also brought infectious diseases.
There are many kinds of contagious diseases that many people do not know. These diseases can be life-threatening and can take the lives of your loved ones.
There are new diseases that physicians have just discovered and are still trying to find cures for.
Melioidosis is one disease that your nieces and nephews wanted to warn you about.
It comes from the water and the soil and can enter your body without you knowing.
If you have an open wound, the bacteria will enter your body through the wounds.
You might have a high fever, prolonged cough, cysts, and skin infections which can lead to sepsis. The disease can be fatal and can cause death.
There are simple ways to prevent the infection.
First, wash hands and clean the body after exposure to water or soil in the field.
Second, wear shoes until this becomes a habit, because it will help to prevent the bacteria from entering the body.
Lastly, drink clean water and eat fully-cooked meals.
Melioidosis is a scary disease. Everyone needs to be aware and take good care of themselves. Oh...
Warning of severe diseases, please be careful, uncles and aunties.
Please be cautious in the farming season to prevent and avoid melioidosis.
If you are safe from melioidosis, your life will be happier and your health better.
Stay away from diseases with no stress and worries.
Your nieces and nephews came to warn you through this song.
The disease has taken many of our family members' lives and made us sick.
Melioidosis will be around us even when the seasons change, so please be careful.
Please be prepared and do not forget to use protective equipment so you will not get infected. Oh...

Table 6 shows that knowledge about symptoms, transmission, risk factors, and prevention of melioidosis was significantly improved among study participants after the campaign. At the post-test point, 79.8% of participants knew about the symptoms, transmission, and prevention of melioidosis compared with only 14.2% at the pre-test. Most participants mentioned direct contact with soil and water (88.2% for soil and 87.9% for water) as a risk factor for melioidosis.

Table 6 Pre- and post-test knowledge about melioidosis and its risk factors among the participants (N = 372)

Variable	Frequency (%)		*p*-value[a]
	Pre-test	Pre-test	
Symptoms, transmission, and prevention of melioidosis	53 (14.2)	297 (79.8)	< 0.001
Risk factors			
Diabetes	144 (38.7)	315 (84.7)	< 0.001
Renal disease	113 (30.4)	287 (77.2)	< 0.001
Thalassemia	75 (20.2)	277 (74.5)	< 0.001
Direct contact with soil	153 (41.1)	328 (88.2)	< 0.001
Direct contact with a natural water source	151 (40.6)	327 (87.9)	< 0.001
Open wounds	166 (44.6)	326 (87.6)	< 0.001
Inhalation of dust	135 (36.3)	299 (80.4)	< 0.001
Smoking cigarettes	125 (33.6)	295 (79.3)	< 0.001
Drinking alcohol	125 (33.6)	291 (78.2)	< 0.001
Taking steroids or steroid-containing drugs	75 (20.2)	266 (71.5)	< 0.001
Drinking contaminated water	149 (40.1)	308 (82.8)	< 0.001
Consuming contaminated food	140 (37.6)	300 (80.6)	< 0.001

[a] A paired sample t-test was used to evaluate the score difference. p-value < 0.05 was considered statistically significant.

Melioidosis network in the community

To create a network in the community to share experiences and knowledge of melioidosis, we created a Facebook page (https://www.facebook.com/Public-Engagement-Melioidosis-2514442165272770) and a LINE group. We followed up on progress by chatting in the LINE group and received questions and comments about melioidosis on the Facebook page. The community leader and village health volunteers said they knew more about melioidosis after the study, with one commenting:

> "We understood more about melioidosis after the study process started in our community."

Discussion

This study assessed awareness and knowledge of melioidosis among people living in Thawat Buri district, Roi Et Province, Northeast Thailand. Only 36.0% of respondents had heard about melioidosis, and only 14.2% knew about its symptoms, transmission, and prevention. Knowledge about melioidosis improved significantly after the rollout of an education campaign using a song on melioidosis prevention and treatment.

About 64% of study participants had not heard of melioidosis. Chansrichavala and colleagues reported similar findings, and suggested that public awareness of melioidosis

across Thailand was very low [11]. They suggested using video clips about melioidosis and its prevention in the local dialect as a tool to educate people about disease prevention. Information about melioidosis is rarely disseminated to the Thai public by the mass media, which contrasts with the situation for other common infectious diseases [2]. Our findings suggest that it may be helpful for the government to implement a nationwide campaign to raise awareness to prevent infections and death from melioidosis.

Most of the respondents in our study worked in agriculture (73.9%). The majority (60.8%) also had only elementary-level education, which may have contributed to the lack of awareness of melioidosis. The National Health Examination Survey (NHES) III reported a high prevalence of diabetes in Northeast Thailand, indicating that this population is a high-risk group for melioidosis [17]. This raises a concern, because they may become infected from the environment in several ways. A study in Northeast Thailand found *B. pseudomallei* in public tap water [18]. Another study investigating the factors associated with melioidosis in Northeast Thailand reported that working in occupations involving high exposure to soil or water was a risk factor for melioidosis [19]. Another study investigating the risk factors for melioidosis in Northeast Thailand showed that 84.9% of patients with melioidosis were rice farmers [20].

Providing appropriate information about prevention and control of melioidosis should help to reduce the spread of melioidosis in the target community. Community education programs play a crucial role in enhancing individuals' awareness and knowledge of diseases and empowering people to understand and prevent infection [21]. Public health communications are crucial in delivering preventive health messages and helping people adopt precautionary measures [22]. During the pre-intervention test, about 90% of the respondents who had heard about melioidosis reported obtaining information from health volunteers, community leaders, local news announcements, or healthcare providers. This shows that knowledge dissemination in the local community creates awareness among residents. The focus groups discussed practices for prevention and promoting awareness of melioidosis. They were used to generate ideas or tools to promote prevention campaigns. We found that most of the focus group participants had good knowledge about the signs and symptoms of melioidosis, sources of infection, risk factors, the severity of the disease, and its treatment and prevention. The participants knew that diabetes, hypertension, drinking alcohol, smoking cigarettes, and exposure to soil and water were risk factors associated with melioidosis. Previous studies have identified diabetes, chronic renal disease, thalassemia, chronic pulmonary disease, steroid therapy, and regular contact with soil or water in the endemic area [23]. The focus group participants believed wearing boots when working in the fields, washing hands before eating, drinking clean water, and stopping drinking alcohol and smoking cigarettes could prevent the transmission of melioidosis in high-risk communities. Suntornsut and colleagues previously identified knowledge, beliefs about consequences, intention and goals, environmental context and resources, and social influence as barriers to adopting recommendations for melioidosis prevention in Northeast Thailand [24]. The burden of melioidosis in Thailand is also increasing, perhaps suggesting that current measures are not effective [4,25].

To date, there are no licensed vaccines to prevent melioidosis in humans. In endemic

areas, the burden of melioidosis will probably increase if preventive measures are not implemented among high-risk groups. Mass media for health promotion can spread focused messages to large audiences [26]. Focus group participants suggested that using local music could be an effective way to change behavior and reduce the risk of melioidosis infection. However, the weaknesses of these media for health promotion are that the audiences reached are diverse, and the campaigns are less effective in conveying complex information and changing behavior without other enabling factors [27] In this study, we emphasized reaching the target audiences by using a song that provided knowledge about melioidosis. The song explained the source of the infection, set out the signs and symptoms, and explained preventive measures. We built a network to disseminate knowledge of melioidosis in the local community via social media. Social media provides a unique opportunity to develop interpersonal communication and deliver helpful information without geographical and physical access barriers [28,29]. The social media platforms used in our study, Facebook and LINE groups, proved effective in the short term. However, with more interactions, their use might raise the issue of erosion of privacy.

This study had some limitations. It used an identical questionnaire to compare melioidosis knowledge before and after the intervention, so there could have been a social desirability bias. Secondly, only those with internet access and social media accounts could interact on social media. Third, the study was only conducted in one district and may not be generalizable to other locations. However, the study provided an intervention model that successfully filled a knowledge gap and raised awareness and knowledge melioidosis in an at-risk community.

Conclusion

The study showed that residents of the Thawat Buri district of Roi Et Province in Northeast Thailand had low awareness and knowledge of melioidosis. Low education levels among the participants might have influenced their knowledge of melioidosis. Knowledge of melioidosis improved among the participants after an educational campaign in the community, using a song about melioidosis prevention and treatment. This study suggests the potential of music and social media to provide memorable information for the population at risk for melioidosis, to support behavioral changes and prevent diseases. However, it is necessary to change attitudes to the disease at the policy and decision-making level in the Thai national health systems. This may encourage public precautions against melioidosis infection. Further studies might focus on behavioral attitudes and practices preventing melioidosis infection in the target communities.

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