

EDITED RESEARCH ARTICLE

Knowledge, Attitude and Practice of Public Health in the Island of Ende, Central Flores, Indonesia

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Acknowledgement: "EDITED RESEARCH ARTICLE" means that the co-editors decided to publish a publishable paper by editing the submitted paper without significantly change the meaning and interpretation from original author. This treatment is made especially for the papers sent from remote regions of NTT where academic writing should be promoted and facilitated for proper academic publication. Paper ini di edit dari kertas penelitian berbahasa Inggris oleh Kanisius Rambut dan Team di Kecamatan Pulau Ende, Kabupaten Ende, Nusa Tenggara Timur 2007. Co-editors mengedit dari format kertas penelitian ke dalam working paper IITTS. Berhubung penulis belum memiliki email, komentar dan kritik serta apresiasi bisa disampaikan pada editor: jonatan.lassa@gmail.com. Terima kasih di sampaikan kepada pendukung penelitian ini, yang memberikan teladan bagaimana memberdayakan peneliti lokal, dalam hal ini Universitas Flores melalui proyek riset yang diberikan pada Kanisius Rambut dkk.

Abstracts. This research paper presents findings on knowledge, attitude, and practice (KAP) of hygiene, sanitation, and water management in Ende Island (in 7 villages such as Aijeti, Rorurangga, Puutara, Paderape, Rendoraterua, Ndoriwoi, and Redodori). The paper asks why the public health problem persisted in the Ende Island? We found some of the underlying factors of persistent risk of diarrhoea were shaped by KAP of sanitation and water quality problems.

Keywords: KAP, public health, sanitation, water quality

1. Introduction

Diarrhoea is one of the most public health persisted problem in Ende Island, one of sub-districts in Ende Regency (Figure 1). During August-September 2008, above 60% of diarrhoea outbreak in Ende district were concentrated in Ende Island, while less than 30% cases (of 100 recorded cases) were distributed in the rest of other 19 Kecamatan of Kabupaten Ende.¹ The other problems were associated with skin and vector problems.

Kecamatan Ende Island is known today as "island with a thousand tanks" as one source mentioned that UNICEF have distributed 1550 rain water harvesting for 8,621 people (1,515 households). Unknown to many, the vast majority of Ende island is Moeslim.



Figure 1 Ende Island, South of Kabupaten Ende

In order to understand the problems above, the local government decided to conduct a research on understanding why the public health problem persisted in the island?

This is part of governmental plan to reduce the risk of public health problems in general in Ende Regency, especially in the island based sub-districts. This later led to the UNICEF BAPS campaign (to set the island as a free indiscriminate defecation *a.k.a* "buang air besar sembarangan"). The research is conducted in Ende Island, a sub-district consists of seven villages: Aijeti, Rorurangga, Puutara, Paderape, Rendoraterua, Redodori, and Ndoriwoi.

¹ See nasional.kompas.com/read/2008/09/26/20451554/kasus.diare.meningkat.tajam.di.ende. Akses 10 November 2010.

2. KAP Concept

This research uses the knowledge, attitude and practice (KAP) framework in the context of hygiene, sanitation and water management. The purpose this framework is to help researcher identify the level of people's knowledge, attitude and practice (KAP) about hygiene, sanitation, and water management.

KAP is a behaviourist approach to understand the causes of the public health problem commonly adopted by development organisation before a project intervention. Recent exercise can be read from Mahamud (2005), UNICEF (2005), Mission East - KIRDARC (2009). This has been one familiar tools for public health practitioners for more or less the last 25 (Stanton et. al. 1987).

There are five major aspects of knowledge, attitude and practice (KAP) in public health issues (UNICEF 2005). Research is focused on describing aspects of:

1. *Self cleanliness*, in which we identify people's knowledge, attitude and practice of hand washing, taking shower, hair washing and nail cutting.
2. *Sanitation*, which focuses on defecation and Water Closet (WC).
3. *Water management* in which we identify water resources, water treatment, water collection, local practices concerning water quality.
4. *Environmental management*, this includes rubbish treatment, how to treat solid and fluid waste, and cattle pen (See previous study on KAP such as Mahamud (2005) and Stanton (1987).
5. *Communication facility*, to identify common facilities to disseminate the information on health and the effectiveness of those media and the messages conveyed. We will also look into external intervention which deals with people's basic needs, people's participation in various programmes such as government's and NGO's programmes.

3. Research Method

This paper presented the findings based on the Focus group discussions (FGD (Table 1). This method is designed to collect information from informants with respect to the knowledge, attitude, and practice of the people on hygiene, sanitation, and water management in Ende Island.

Key informants are the village elites (government officials such as Chief of village, Administrator of neighbourhood units (RT/RW) and leaders of local organizations, as well as religious leaders and teachers). Other informants include women (mothers), administrators of PKK (government's program on family

welfare), administrators of Posyandu (integrated service for infants and toddlers' health), housewives with small children (under 5 years old) and housewives from poor families. Men (fathers or married men who work as farmers and carpenters), teenagers (or students from senior and secondary high school, age 15-20) and children (students of primary school) are also included as informants in FGD.

Detail questions of the FGDs can be seen from the next link (page 25 onwards: <http://ntt-academia.org/WP/WP14.Rambut-2009.pdf>).

Table 1. FGD Location

No	Villages (Sub District)	Group FGD	Group FGD	FGD Team	Time
1	Aijeti	Village elites	Women (PKK and cadre)	I, II	Morning
2	Rorurangga	Village elites	Women (Pregnant and lactating)	I, II	Morning
3	Puutara	Village elites	Poor women group	I, II	Morning
4	Paderape	Village elites	Women (workers)	I, II	Morning
5	Rendoraterua	Girls (youth - SMP)	Women (PKK and cadre)	I, II	Morning
6	Redodori	Girls (youth - SMA)	Women (Pregnant and lactating)	I, II	Morning
7	Ndoriwoi	Girls (youth - 15-20)	Poor women group	I, II	Morning

4. Key Research Findings

In general people washing hands with soaps before and after eating is not seen as necessary . Our findings show that washing hands after defecating, pissing and feeding their castles are seldom done due to economic reason (such as because they do not have enough money to buy soaps and water. However awareness actually existed as most people they do understand the impact of washing hands without soaps after doing activities stated above.

Most of the teenagers and children clean themselves by taking shower, brushing their teeth, washing their hair, and cutting their nails. Most mothers wash their hands soap after defecating and pissing because they are afraid of bad smelling and disease that cannot be disappeared by water. ²

The research also indicated that there is a small number of the teenagers and children who use soaps when they wash their hands. They understand that if they

² They will use water and soaps to wash their hands when water and soaps are available. When there are no soaps, they only use water to wash hands (a mother participant in FGD from Aijet village).

do not use soaps when they wash their hands, it can cause diseases.³ While men wash hands with soap depends on their awareness. For them the most important thing is water. If soaps are available then they must wash their hands with water too.

Some key informants explain that people in their village usually take shower before and after working. So, they generally take shower twice a day. Most of the children take shower before going to school and after playing at home. Generally they take shower twice a day and sometimes three times a day depending on the situation. Sometimes they use soap if it is available.⁴ This however may be linked to the economic condition of each household.

Women and girls wash their hair for the reason of beauty not health. The findings indicate that most of the girls always wash their hair.⁵ The children cut their nails once a week. Older children can cut their own nails, but younger children are assisted by their mothers.⁶

In general children said that they brush their teeth every day. Usually twice a day such as after eating and before going to bed. They really understand the benefit of cleaning their teeth.⁷

The vast majority of the people in the area think that beach and garden are good choice for defecating and pissing. These two places are good for disposing waste because the in their view, local government does not provide special places for rubbish. Most people defecate around the beach, garden or yard. Few of them defecate in water closet (WC). Only those who have their own WC or live near the public toilet choose to defecate in toilet. Beside that, research indicates that people who live near their garden (field) or during their work in the field, usually defecate by first digging a hole then after defecating cover the hole with soil.⁸ Most of the children defecate in the beach while they are playing then after

³ When we come back from school, we must wash our hands because our teacher will be angry with us if we do not wash hands. If the soaps are provide, we wash hands with soaps. (Children participants in FGD, from Rorurangga Village).

⁴ "We usually take a bath in the sea after working. We take a bath in the sea because there is no water. We do not use soaps because it is very slippery as the soaps do work in sea water (key informants FGD from Rorurangga village) Sometimes we take a bath without soap, we use stone to clean our body" (children participants in FGD, from Rorurangga)

⁵ "We clean our hair because we feel itchy" (children FGD from Rendoraterua village)

⁶ "We must cut our nails because otherwise our teacher at school will hit us" (children FGD from Aijeti village)

⁷ "We brush our teeth every day, otherwise we may get tooth-ache" (children participants in FGD, from Rorurangga village)

⁸ "We defecate in the beach for the people who live near the beach, while the people who live near the garden defecate and piss in the garden". Key informants from Redodori village.

defecating they can wash their hands and bottoms with sea water.⁹ In spite of this, people do understand the impact of their action.

There are public health facilities such as toilets which are often cleaned by the people in Ende Island. They work together to clean those facilities. This activity is organized by the mosque. This program is called *Jumat bersih* (Clean Friday) i.e. every Friday youth groups work together to clean the public health facility. The mother and young girls usually clean the toilet with soaps and brush even though the soaps are very expensive for the people in the island.¹⁰

The findings indicate that few of the mothers in the area of study do not know how to clean the toilet because they have no toilet. Furthermore, some children said that they barely clean the toilet because they do not have enough knowledge in how to clean it.¹¹

Generally water resources in Ende Island come from wells. However most of the wells have salty water. Only three wells provide fresh water for the island. These wells are located in Ndoriwoi and Redodori village. Other resources are rain water collection or from buying water of the ship, which have brought water from the main island (Flores).

The condition of water resources like wells is appalling, because people shower and wash their clothes around them. Only few people aware that wells should be cleaned in order to keep people from diseases. For this reason, few people make very simple septic tank, but in general collectively people do not keep the wells as clean as possible partly because they are not used to it.

The people in Ende Island take water from wells or they buy water from the ship. They can also buy water from local water traders who use motorcycle to sell water in pots.

Another established practice is to harvest water during the rainy season and either use it or sell it when needed. In general, mothers and children usually carry water from the wells to their house. According to their tradition, fathers may not carry water.¹²

⁹ "We usually defecate in the beach and garden and we clean our bottoms by leaves or sand." Children FGD from Rorurangga village.

¹⁰ "After defecating mother usually clean the toilet with water and brush." Mother FGD from Rendoraterua.

¹¹ "There are some of us do not keep the cleanliness of our toilet. After defecating sometimes they do not wash the toilet directly." Young girl and boy from Rorurangga village.

¹² "We take water from faraway in the afternoon or in the morning. Mother'sFGD from Rorurangga village." "Fathers may not carry water because our tradition forbid it." Young girl's FGD from Paderape village.

People know that water needs to be boiled before drinking, otherwise people are vulnerable to stomach-aches or diarrhoea. In practice, mothers and young girls always boil water and keep it in the clean place like basin before consumed. But sometimes children drink water directly from the well. If their condition is fit or strong, the impact of drinking un-boiled water do not cause immediate effect. However if the children are weak, they usually get stomach ache directly.¹³

The people assess the water quality based on the physical appearance such as the colour and taste of water. They use water when the water is clear and not salty. If it is so, they consume it immediately. If not they must cook it before drinking like rain water that collected during the rainy season.¹⁴

Waste management is done according to local tradition. Some collect rubbish in the garden and then burn it. Some dig a big hole on the ground then cover it by soil. Few of the young girls and mothers throw rubbish into the sea or beach. However they really understand that throw rubbish into the sea or beach is wrong. But there are also few people who throw rubbish anywhere because they do not know or confused where to place them, since there is no designated place for waste management.

For solid waste people, people will dig a hole in their garden and burn the waste in it. This is a good, generally accepted tradition in Ende Island.

For liquid waste, such as water used in shower or washing clothes, people will just throw them around the house or yard, or even on the road. This helps their houses to be less dusty. But for water that is used in cleaning fishes, people will throw it into a hole and then cover it with soil, to prevent the smell.¹⁵

Most of the people in Ende Island have chicken and goats. These animals are put next to their houses. The reason is to control them easily, although they know that having cattle pen near their houses is not good for health. To minimize the risk they need to always clean the cattle pen. Some key informants suggest cattle owners to make cattle pen far from houses because they produce bad smell. But this can create internal conflict in the village.

5. Health promotion information

Information related to hygiene, sanitation and water management (HSWM) is conveyed through national television (TVRI), radio, posters or local newspaper

¹³ “we boil water for 10 minutes after that we keep in the bucket with cover.” Mother’s FGD from Rorurangga village.

¹⁴ We drink fresh water without cooking. Mother’s FGD from Puutara village.

¹⁵ “We just dump water that we used in shower and washing clothes in the yard.” Mother’s FGD from Aijeti village.

(Flores Post). There are also some announcements from the mosque every Friday. However, access to the information is largely constrained by the economic conditions of the households.

Most of the women (mothers) participated in this research admit that they do get information related to hygiene, sanitation and water management (HSWM) from TV, radio and *Posyandu* (the integrated service unit for infants and toddlers) or *Puskesmas* (community health centre provided by the government).

People think that the most appropriate media in delivering messages related to health issues is a public training. Local government (health department) is seen as the most responsible agency which should coordinate with NGO and village apparatus to initiate such kind of training. Officers from the health department and administrators of PKK are seen capable of conducting such training.

Health department is suggested to give the people regular information on hygiene, sanitation and water management. Officers should give example to the people, which can motivate them to do the right things when dealing with hygiene, sanitation, and water management. This can help them to improve their knowledge and transform their bad practices.

The majority of the people in Ende Island are Moslems and they often get health information from their mosques, given by their religious leaders. Religious leaders persuade people to keep the environment clean, so as to keep them from disease. There is also a regular program called *Jumat Bersih* (cleaning Friday). Every Friday, after praying, youths supervised by their religious leader, work to clean the mosque and its surrounding. Despite their good participation in this activity, it does not change people's bad practices. In fact, only on Friday we can find clean houses and clean yards on Ende Island, because on the very next day, rubbish are everywhere.

In order to have programs with more permanent effect, people of Ende Island think that government and NGO should help them by providing much needed healthy facilities such as public waste disposal units, public toilets and containers to collect rain water. Participation can be provided in the form of labour.

The research found that as a matter of fact people of Ende Island already have the benefit of government's program like PPK and IP. While UNICEF as an international NGO had facilitate the building of containers for rain water collection in every village and people admit that these facilities are indeed very useful.

Nevertheless those kinds of programs do not transform their bad practices on hygiene, sanitation and water management. People are not motivated to lead a healthier life. Beside, the government's program does not apply to all villages,

thus some people choose to ignore those programs, whilst others admit that they do not fully understand the procedure, mechanism, aim and benefit of the program.

6. Conclusion

People of Ende Island is not unique. There still many places in Indonesia we believe experience more or less the same KAP regarding HSWM. People in Ende Island do have some level of knowledge about HSWM but their isolation and economic condition of constraint the the villagers to have proper KAP. This is not to suggest that poor people are not in favour of better and healthier life but several factors such as environmental context, coupled with a set of economics and local behaviour context shape people behaviour towards better HSWM.

Another factor that affects their lack of knowledge and incorrect attitude on hygiene, sanitation and water management is one indication of the inadequate external intervention (both government and NGO). For instance, the number of field officers from health department is not enough to give equal service to the population of Ende Island. Intervention from other actors then is needed to complement the local government.

In the context of current talk on climate change adaptation, Ende Island have shown some existing adaptation mechanism such as the adoption of rain water harvesting (through external intervention), diverse alternatives available such as bringing drinking water from outside the island as well as improving the local capacity to get water from the existing wells. The idea of having more wells should be treated with care as the risk of sea water intrusion (as in the case of many existing wells) can make things worse.

We found that KAP as a framework help us to understand the behaviour of the respondent and help us understand the problem. What is interesting is that knowledge and awareness do not necessarily lead to better practice as some constraints occur to prevent the local actors do better HSWM.

7. Recommendation for intervening agencies

The use of public health facilities is depending on the availability of facilities such as public toilet. These facilities should be built up in strategic places, so as to enable people to access them easily. However there are other important factors that need to be considered:

- a. The use of public or communal toilet should be consistently promoted
- b. It is essential to get the active participation of the people in building the public facilities i.e. public toilets

- c. It is essential to get the active participation of the people in maintaining the public facilities regularly

For an effective waste management, it is important to have people's participation in designing a system of disposing both solid and liquid waste, particularly septic tank. The limitation of area and financial support are main factors to be considered.

At present people in Ende Island have great difficulties to access fresh and clean water resources. Therefore, it is very important to develop a system that enable people to access fresh and clean water easily and this system needs to be supported by a simple and cheap technology. As a preliminary step, village administrators need to take the lead in making a system of collection and distribution of fresh and clean water for all people. They also need to formulate a regulation that enables people to keep the environment around water resources clean.

Health messages through radio, poster, local newspaper and weekly announcement in the local mosques are proved to be quite accessible for the people in Ende Island, despite the lack of effect in transforming their bad habits. Therefore it would be helpful to increase the role of *Posyandu* and local mosques in disseminating health messages, particularly on hygiene, sanitation and water management. Religious and local leaders can also take more significant role if they were given adequate knowledge (i.e. training). Such chance will enable people, especially children and young people, to participate better in health activities.

Health education especially on hygiene, sanitation, and water management has to be introduced to students, from primary school to senior high school. This should be integrated in school or local curriculum. Teachers particularly sport and health teacher need to be trained on health issues as hygiene, sanitation and water management. It would be helpful if a module is specifically composed for this purpose

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