

Health Behavior Models in Utilizing Water Resources to Tidal Waters Community

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Abstract: Water is a basic need of all living things, including human. However, living in tidal areas with large bodies of water does not necessarily mean a society can fulfill their need for water. This happened in Maura Padang sub-district, Indonesia. A large number of areas are peat bogs and deltas of the Musi river. The water sources are acidic, smelly, sticky, and unfit for consumption. This attracted researcher to analyze public health behavior based on water resource utilization in daily needs. It is descriptive qualitative research through interviews, FGD, observations, and study documents. Researchers interviewed migrants, natives, medical workers, communities, and religious leaders. The results found that migrant communities can survive in this area. Nevertheless, part of them return to their hometown since they're unable to adapt to the physical environment. Government programs contribute artificial water reservoirs for families and communities. Due to limitations of water resources, they use rainwater for household consumption and ground water (river, well, and ditch water) to flush their yard, wash their food and clothes, and bathe. Socioeconomic status and environment impact health behavior, including such treatment. This paper is beneficial for residents in tidal areas, the Banyuasin District health office and the University in providing socialization, promoting health living and help the fulfillment of clean water.

1 INTRODUCTION

A number of studies discuss the manifestation of health behavior. The elements that form the difference in social health behavior is a culture (Fox and Alldred, 2016; Singer, 2016). According to Fox, the nature and culture of human beings are a part of the environment and health. The environment also affects the interface between human and environment. It constructs innovative healthcare (Saidi, 2017) with emphasis on social practices, structure, and material. Next, health behavior is also related to lifestyles (Romano and Scott, 2014; Bure, 2016). The arrangement of health education and the height of the intervention towards a healthier lifestyle (Romano and Scott, 2014). Individual lifestyle choices affect physical and emotional health. (Bure, 2016). Furthermore, study of oral health behavior using the Health Belief Models (HBM) (Zetu, 2014) identified there is no significant difference between genders. However, women are known to have more perceived severity and self-efficacy, but have lower perceived barriers. All of these studies discussed health behavior on social

aspects of the environment, culture, and lifestyle, but paid less attention on adaptation and behavior changes to survive. We deliver this gap by explaining the tidal society behavior in utilizing water resources to meet the daily needs.

Water is a basic need and a source of life. It is useful to support all living beings, especially human. Unfortunately, water supplies are unable to meet increasing demand for water. The millennium development goals (MDGs) 2010 report exposed the percentage of sustainable access to drinking water in urban areas is 49,82%, and in rural areas is 45,72%. It has been predicted that there could be a global water scarcity. (Shiva, 2002). Even though Indonesia is an archipelago country, nevertheless it still faces obstacles in providing clean water. What is unique in Banyuasin district, is that a large part of the area is comprised of unconsumable water. Together with the increase of the development of tidal community's health behavior changes in the use of water resources to meet their daily lives.

2 CONCEPT

The World Health Organization (WHO) explains health as a condition that covers one's state in complete physical, mental, and social well-being. It is not only the limited absence of disease or lethargy. In Indonesia, health legislation number 36 of 2009 states that health covers various health conditions, such as physical, mental, spiritual, and social conditions, which allows every person to have a productive social and economic life.

In medical concepts, a disease is an abnormal body condition that can be detected by certain symptoms. But in social science, diseases are biophysiology symptoms that affect the human body. Illness is a social symptom that accompanies disease to the point where it disturbs feelings of health. In this case, disease is related with a subjective meaning.

According to Marshall Becker, health behavior has three variations, which are healthy life behavior, illness behavior, and sick role behavior (Notoadmodjo, 2003; Weitz, 2007). Healthy life behavior is the effort by someone to maintain and improve their health. Illness behavior is a someone's response towards illness, disease perception, causes and symptom knowledge, treatment, etc. Meanwhile, sick role behavior is related to the rights and obligations of sick individuals which are known by themselves and by others. According to sociologist Talcott Parsons, roles and social functions are interconnected. Consequently, someone is considered healthy if they have the maximum capacity to do roles and tasks which are learned through the process of socialization (Sunarto, 2002). Thus, sociology's understanding of health is relative, and is based on the social role of society.

3 METHODS

This paper is constructed on descriptive qualitative research (Denzin, 1994; Creswell, 2003; Neuman, 2007) in Maura Padang sub-district, Banyuasin district, South Sumatera province, Indonesia (Susanto et al., 2016). This location had been selected due to their lack of clean water despite their abundant water resources.

Research sources are sourced from primary and secondary data. The primary data used unstructured guidelines when conducting interviews and focus group discussion (FGD) in five villages. The social categories are migrants, natives, medical workers,

village officials, religious and community leaders who have lived at least for five years and have a family. Analysis was conducted from collecting, coding, and connecting between data and concepts. Data validation was conducted internally and externally.

4 ANALYSIS AND DISCUSSION

Maura Padang sub-district is spread over a wide area, around 944,60Km² in total. Overall, their area consists of low land, marshes, and peats. The marshes found are categorized as brackish water. It is a result of the meeting between fresh water from the Musi River and salt water from the Bangka sea. Tidal wave soaks almost all of the marshes. This result is tidal groundwater is usually salty, acidic, and brackish, and the color of the water ranges from brownish to black. This water condition near inland or low land depends on tidal water from the sea. This natural water becomes very poor and unfeasible for consumption. The tropic areas have the most precipitation in December until January. Meanwhile, rainfall also affects the quality of ground water. Generally, the groundwater will be taste saltier than usual in the dry season. This area also faces tides which causes the land to be drowned in water from the tides. This tide also had an impact on transportation. In the morning, the tides are high, which means speed boat becomes the popular choice for transportation. However, ever since road infrastructure was build in 2000, the resident's mobility no longer depends on the tide.

The transmigration program in this area was implemented by the Indonesian New Order Government in the 1980s. Most of the inhabitants in this sub-district originated from Java. These migrants occupy 12 villages, while native inhabitants from Palembang occupy a mere three river-side villages. Migrants make a living by becoming tidal farmers, while natives usually become fisherman and freelance plantation workers. Unlike migrant inhabitant, natives build their houses on stilt structures, which also influences the culture and the communal patterns of utilizing water resources and fulfilling their daily needs.

In the beginning, migrant communities gained their knowledge about rainwater utilization from the government. They collected rainwater and used it carefully. This happened due to the significant difference topographical areas between Java and Sumatera. In Sumatera, especially in the Banyuasin district, ground water is usually impossible to

consume. Meanwhile, rain water supply exists in limited quantities. The effect of these geographical situation is that many migrants that failed to adapt to the environment moved back to their hometowns.

The limited supply of fresh water has been the center of attention for many stakeholders. For the first time, the nation's government gave each family an artificial water resevoirs. Furthermore, the local government built water deposits with artificial water reservoirs for the whole community to access in the central village and drilled a well in order to access ground water. Some universities also contributed by making ground water filters. However, this effort has yet to be successful.

The community also has local traditions that they follow in the pursuit of fresh water. They try to find fresh water by looking for it as far as the deep end of ricefields, where rain water puddles form. They also try to make reservoirs for both river water and well water by using chlorine. They even use religious and cultural ritual to find water such as fasting, praying at outdoor villages, and putting many of their fruit and food near the river in the central villages. Cultural values and societal norms protect the rivers and ditch from becoming garbage dumpsters.

We've constructed that they've divided the water functions in order to meet their daily necessities (Table 1.). The water difference function influences health behavior in the communities living in the tidal areas. The behavior patterns aim to maintain and improve the health conditions of the individual and their family.

Health behaviour socialization is carried out by health workers, government, or private institutions. One of the socialization methods conducted by government is the promotion of a clean and healthy lifestyle ("*Perilaku Hidup Bersih dan Sehat*"). In fact, many people, especially native residents, still bathe, wash, and defecate in the river water. As a result, water-related diseases are often suffered this community, such as diarrhea, dengue fever, typhus, vomiting, coughs, lung diseases, and respiratory diseases. Other diseases are sweet pea, uric acid, and high blood pressure which are caused by dietary habits and lifestyle choices. Based on past experience, some of the residents feel sore when they consume too much rain water, however there is still a gap among individual manner in symptoms that appear in response to diseases.

Table 1: Sources and function water in tidal community.

Water function	Water sources				
	rain	well	river	ditch	gallon
Cooking and consumption		-	-	-	
Washing food			-	-	-
Washing clothes	-				-
Bathing			-		-
Flushing yard	-				-
Worship ('Wuhu')					-
Transportation	-	-	-		-
Health service		-	-		-

Source: Sununianti, 2015

The variance of knowledge and experience affect the community's efforts to deal with disease. Different disease management methods are also based on social and economic status. If children are ailed with illness, seeking treatment is usually a high priority for parents, compared to when adults are ailed with similar illnesses. When adults are ailed with illness, they will only look for treatment if they can no longer fulfill their societal role, such as working. The treatment provided by health services also differ between lower and upper class communities. Upper class communities usually have direct access to health services when they are diagnosed with symptoms of diseases. Lower and middle class communities that are ailed with illness usually postpone their search for health services until their illness reaches a critical condition. Part of the lower class communities still use "dukun" or traditional medicine to cure their diseases before they attempt to go to Public Health Services ("Puskesmas"), clinics, or hospitals.

Efforts to achieve health have been conducted through a variety of strategies. Researchers found a combination of health behavioral model that emerged in Maura Padang's tidal community that was in line with Health Belief Models (HBM) (Weitz, 2007; Sudarma, 2008; Solhi, 2010; White, 2012; Romano and Scott, 2014). It is based on experiences, culture, and social structures with the environment of the residents having an influence on individual and societal health behaviour. Communities residing in tidal areas were perceived to be in a susceptible and severe situation. They face many difficulties in accessing fresh water and are susceptible to a wide array of water related diseases. These communities must get treatment of diseases caused by ground water, due to the unfeasible consumption, dire health conditions, and the need

for medical assistance. They have felt directly the benefits and barriers of shifting from ground water to rain water. Health behavior changes are through the form of using rain and gallon water for washing and consumption, a practice that has been utilized by many parts of the community except the lower class society. They also require regular maintenance to keep, close, and clean reservoir rainwater. Furthermore, there is an extra expense that needs to be paid for chemical treatment to prevent mosquito larvae, and for using gallons and packaged water, which is relatively expensive. In this case, health behavior towards illness treatment differs from social status, economic situation, and societal culture. Meanwhile, sick role behavior is still relatively dependent on an individual's role in society.

Tidal communities have their own medical system. This medical system includes faith healing and efforts to improve general health. The health behavior in this study is formed due to societal culture and beliefs on susceptibility to illness, malignant diseases, and general societal costs. Geographical conditions affect the behavior of the tidal community in preventing and healing of disease, as well as in improving their health.

5 CONCLUSIONS

This paper discusses the limited access to clean water in areas with abundant water resources. Communities in these areas use different strategies to fulfill their daily need of water. The obstacles they face in accessing various water sources will influence the health behaviour of the community as a whole. The point is that individual and familial health behaviors in tidal communities are related to environmental, social, economic, and cultural conditions.

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