

THE EFFECTIVENESS OF THE COMMUNITY-BASED DRINKING WATER SUPPLY SYSTEM IN IMPROVING THE DEGREE OF PUBLIC HEALTH IN TALUAK VILLAGE, PARIAMAN CITY

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ABSTRACT

The level of public health is a measure that reflects the health condition of a population or community determined by environmental factors, behavior, health services and heredity. Environmental and behavioral factors also play a major role in determining water quality, which directly impacts the level of public health. Therefore, it is important to implement a community-based Drinking Water Supply System (SPAM) program, including in Pariaman City, to improve public health status and prevent health impacts. This study aims to analyze how SPAM can impact the level of public health in Taluak Village, Pariaman City. Providing access to clean water and encouraging the community to be active in drinking water management are the program objectives. The background of this research is that SPAM has not been optimal in improving the health status of the community in Taluak Village, Pariaman City and there are health impacts for the community. This type of research is qualitative using a descriptive approach and the selection of informants using purposive sampling technique. The results showed that SPAM in Taluak Village has helped improve access to clean water and reduce the risk of diarrhea and skin infections. However, SPAM faces challenges, such as the lack of financial resources and the lack of community participation in maintaining the water infrastructure. From the results above, it can be concluded that the application of SPAM in improving public health in Taluak Village, Pariaman City is not yet optimal.

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INTRODUCTIONS

The degree of public health is a health condition that occurs generally in society. There are four factors that influence the level of public health, including environmental factors, behavior, health services and heredity (Hendrik L. Blum in Maulana, 2009). Public health also depends on water quality. Water use is influenced by environmental and behavioral factors. Environmental and behavioral factors

play a major role in influencing health status. Environmental and behavioral factors also have an impact on water quality because they interact with each other and can create a situation where water that should be clean becomes polluted, thereby increasing the risk of disease and health problems in the community. According to Gleick (2000), access to clean water and good sanitation is a human right that is very important for public health. Water pollution can cause various infectious and non-communicable diseases that endanger the health of individuals and society. Water can spread diseases such as diarrhea, dysentery, skin diseases, and so on. Nearly 90% of deaths from diarrhea are caused by lack of access to safe drinking water and adequate sanitation, as well as poor hygiene practices (WHO, 2011). Bad water can also cause various skin infections such as dermatitis, fungal infections, and other skin problems because it can contain pathogens such as bacteria, viruses, and parasites. In addition, access to clean water is essential to stop skin infections and improve overall public health (WHO, 2019). Thus, improving the level of public health is very important to achieve community welfare (Suprpto & Arda, 2021).

Drinking water is a basic need of society that must be met to improve the level of public health. According to H.H. Mitchell (Syofia Eryeni, 2023), around 60% of the human body consists of water. Skin consists of 64% water, muscles and kidneys 79%, bones 31%, and lungs 83%. To survive, a person needs a certain amount of drinking water every day. In general, adult men need 3-3.2 liters a day, while adult women need 2.2-2.3 liters a day. If the body does not consume water, it will cause disturbances to the body, causing various symptoms of disease and having an impact on people's health. To improve public health, the Indonesian government is trying to implement sustainable development by combining the right principles through community-based SPAM policies and programs. PUPR Ministerial Decree No. 27/PRT/M/2016 concerning Implementation of SPAM regulates this program. The aim of SPAM is to provide infrastructure and services to guarantee the people's right to drinking water, so that people can live in better conditions.

Providing safe drinking water is still a major problem in Taluak Village, Pariaman City. The results show that only one of three community-based SPAM buildings built since 2009 is still operational. This leads to a lack of access to safe drinking water, which leads to more illnesses related to access to clean water such as diarrhea and skin infections. Decreased drinking water quality is one of the main obstacles that contributes to increased risk of disease and public health problems (Bain et al., 2021). The main obstacles that impact public health are poor water quality, lack of public awareness in paying SPAM fees, and low management capacity of the Drinking Water Supply System Management Group (KPSPAM).

A community-based approach through SPAM has great potential to overcome this problem. Participation in water resources management can improve the sustainability of the system and ensure better water quality. However, KPSPAM's capacity and outreach to the community must be increased. Apart from that, to obtain more stable funds for SPAM maintenance, the local government must collaborate with relevant stakeholders.

In public policy, according to Subagyo in Budiani (2020), effectiveness theory focuses on appropriate program targets, socialization, goal achievement and monitoring. Fulfilling the basic need for clean water is the goal of public policy which includes community-based SPAM. In the case of Taluak Village, providing clean water through SPAM can improve community health by reducing the spread of water-related diseases.

This research aims to evaluate how effective community-based SPAM is in improving the level of public health in Taluak Village, Pariaman City. Apart from that, this research will also determine the

obstacles and efforts made in managing SPAM in improving health status in Taluak Village, Pariaman City.

RESEARCH METHOD

This research uses a qualitative descriptive approach. The location of this research is Taluak Village, Pariaman City. Taluak Village is located in South Pariaman District, Pariaman City. There are three hamlets in Taluak Village, namely Pasar Ilalang Hamlet, Karan Hamlet and Taluak Hamlet. The population in Taluak Village in 2024 will be 940 heads of families (KK) with a total of 3,407 people (Taluak, 2024). Purposive sampling is a technique used in selecting research informants. The research informants consisted of the Pariaman City Perkim-LH Service, Taluak Village Health Center, Taluak Village Head, Pasar Ilalang Mandiri Drinking Water Supply System Management Group (KPSPAM) and the community who are SPAM customers in Pasar Ilalang Hamlet. Data was collected through observation, interviews and documentation studies. Primary data and secondary data are types and sources of data. Source triangulation and techniques are used to test the validity of the data.

RESULT AND DISCUSSION

Effectiveness of Community-Based Drinking Water Supply Systems in Improving Health Levels Community in Taluak Village, Pariaman City

The implementation of SPAM in Taluak Village cannot be separated from certain aspects. This is adapted to Subagyo's theory in Budiani (2020) regarding program effectiveness which includes:

1. Accuracy of Program Targets

Based on the findings of researchers in the field, the targets of SPAM are stated in the guidelines general PAMSIMAS, namely an increase in the number of people who have access to adequate drinking water facilities on a sustainable basis, an increase in the number of people who receive drinking water services through Home Connections (SR), and an increase in the number of villages and sub-districts that have established drinking water service management. The Pariaman City Government through the 2021-2026 RPJPD has determined that the drinking water target in Pariaman City is SPAM users of at least 25% of the population in the villages/districts that receive the program. Taluak Village has 940 Heads of Families (KK). The number of residents who use SPAM is 40 families, this shows that only 17.02% of families have access to drinking water facilities through SPAM out of the total number of families in Taluak Village. The lack of targets achieved is only due to

1. active SPAM building, even though the population is increasing.

This is in line with research conducted by Arief Budiman, M. Husaini and Norjannah (2024) which emphasizes that even though the program has been well planned, its implementation often faces obstacles in the field. One of the contributing factors is inadequate infrastructure and low public awareness which also contributes to this program.

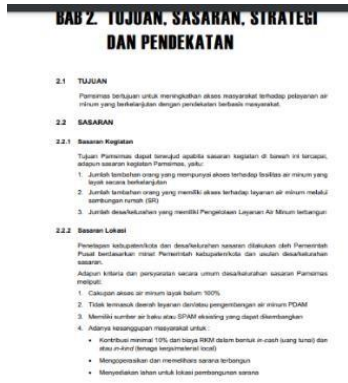


Figure 1. SPAM Activity Targets



Figure 2. SPAM building in Pasar Ilalang Hamlet

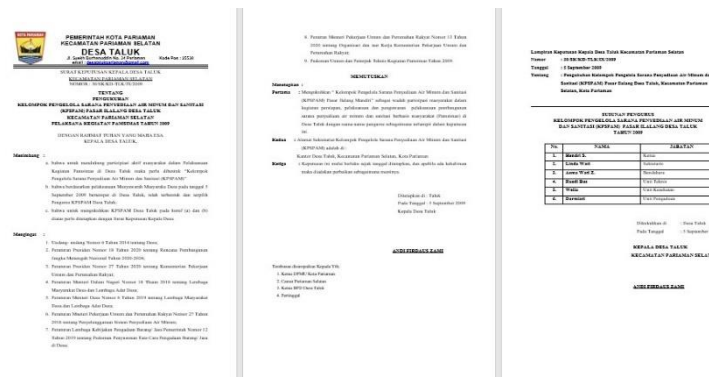


Figure 3. Taluak Village KPSPAM SK document



Figure 4. Taluak village is surrounded by swampy areas

2. Socialization

Based on the findings of researchers in the field, socialization was carried out several times, namely at Before the building is built, outreach is carried out to the community regarding the aims and objectives of the program so that the community understands the program. After the building was completed, city level outreach was also carried out regarding building resilience, which was attended by KPSPAM. Then, after SPAM is ready to be implemented, outreach is carried out to the community regarding the procedures for paying contributions. The Pariaman City Health Service also provides outreach to the community regarding the quality of water sources. Although this outreach was carried out, there was no continuous effort to update information or inform the public about program developments. As a result, people do not understand and are not involved in managing and utilizing existing services. Socialization was not even carried out thoroughly so there are still people who do not know that this socialization exists.

This is in line with research by Sukirman (2018) which states that program outreach is often inconsistent and limited to certain community groups. The low intensity of socialization and low community involvement at each stage of the program causes the community not to understand the program. As a result, community participation is low in managing facilities and paying fees, and program sustainability is threatened. Meanwhile, according to Wardani (2020), continuous communication is very important to ensure active community involvement, especially in terms of sharing responsibilities and understanding the benefits of the services provided.

3. Goal Achievement

Based on the findings of researchers in the field, the aim of SPAM is seen from the implementation carried out by the Department of Public Housing, Settlement Areas and the Environment of Pariaman City, namely to improve the level of public health as regulated in PP No. 122 of 2015, the aim of providing efficient drinking water and effective in expanding drinking water coverage and managing and providing quality and cheap drinking water services. There were 174 cases of diseases related to access to clean water found in Taluak Village in 2024, 48 cases of diarrhea, 68 cases of skin infections, and 6 cases of worms. The cause of this disease is poor water quality. Pasar Ilalang Hamlet is surrounded by swamps. Before using SPAM, people used dug wells. Excavated wells are easily contaminated by sewage water, surface water and overflow water from rain, giving rise to bacteria, while the water source from SPAM never dries up and uses deep drilled wells. However, the quality of water from SPAM still does not meet direct consumption standards, indicating that the main objective of the SPAM program, namely improving the level of public health by realizing quality drinking water management and services, has not been fully achieved.

This is in line with the opinion of Wulandari (2021), who said that diarrhea and skin diseases are still the main causes of water-based diseases, even though water supply infrastructure has been built. Sustainability in providing safe drinking water has not been fully achieved due to lack of maintenance and monitoring of drinking water quality. In addition, Saputra (2020) said that SPAM systems that use

deep drilled wells in some areas do not always provide good water quality for direct consumption, especially if there is no adequate filtering or quality testing mechanism.



Figure 5. SPAM Home Connection

4. Monitoring

Based on the findings of researchers in the field, monitoring is carried out by the village. KPSPAM submits SPAM implementation reports periodically to the Village Head, namely once a year, then reports to the community are reported quarterly. For information media, KPSPAM formed a Whatsapp group containing KPSPAM and customers. The purpose of this group is as a medium for all kinds of information related to SPAM, such as fees, obstacles and so on. The KPSPAM health unit collaborates with the Taluak Village Community Health Center and the Health Service to check water samples from SPAM at least once a year to determine the water quality. Even though monitoring has been carried out, monitoring is not scheduled or carried out regularly so that problems that arise cannot be resolved quickly. This can cause public dissatisfaction, especially if information about the obstacles that occur is not communicated well. This is in line with Ramadhan's (2019) research which states that regular monitoring of SPAM quality and services is very important to ensure community satisfaction. Inconsistent monitoring and lack of effective communication can result in community dissatisfaction, because they feel they are not involved in the service improvement process. Apart from that, Hidayat (2020) said that openness of information and the use of communication media such as WhatsApp groups or direct meetings with the community can increase citizen participation and speed up problem solving. However, more frequent and routine monitoring is still needed.



Figure 6. Customer Whatsapp Group and KPSPAM

2. Obstacles faced in improving community-based drinking water supply systems

a. Degree of Community Health in Taluak Village, Pariaman City a. Lack of Development Funds

Based on the findings of researchers in the field, the lack of development funds for the provision of drinking water through SPAM in Taluak Village causes problems in water management and utilization. Inadequate infrastructure due to limited financial support, such as a water filtration system that does not yet exist, means that water sourced from SPAM is not yet safe for consumption. This is in accordance with research by Putra (2020), which emphasizes that funding is often the main obstacle in the management of drinking water supply systems in rural areas. Lack of funds means that the construction or repair of important infrastructure such as filtering systems and facility maintenance cannot be carried out properly. Apart from that, the situation is getting worse due to limited economic capacity and lack of financial support from the community. Apart from that, Lestari (2018) said that the SPAM program would not be able to guarantee the provision of clean water that is safe for consumption in a sustainable manner and of high quality without adequate financial support.

b. Lack of Customer Awareness in Paying Dues

The next obstacle is the lack of customer awareness in paying fees for using SPAM. Based on the findings of researchers in the field, there is already an agreement regarding the contribution rate, namely IDR 25,000/month for those who are active, and IDR 15,000/month for those who are inactive. However, there are still many customers who are in arrears, which disrupts the use and operational continuity of the water supply system. This causes disruptions in water supplies, further deteriorating public confidence in the service. This is in line with Pratama's (2019) research which states that the sustainability of community-based drinking water supply systems is very dependent on customer awareness and their compliance with payment of fees. Pratama found that many customers were in arrears even though the contribution rates had been agreed upon, which ultimately caused the water system and supply to not function properly. Late payments are often caused by people not understanding the importance of contribution contributions for service continuity. In addition, Nugroho (2021) emphasized that informing the public about the long-term benefits of paying contributions and disclosing information about the use of funds can increase their awareness and involvement in supporting the sustainability of the SPAM program.

3. Efforts to overcome obstacles in the Community-Based Drinking Water Supply System in

a. Improving the Level of Community Health in Taluak Village, Pariaman City a. Collaborating with Stakeholders

Based on the findings of researchers in the field, the management has made efforts to propose water filter infrastructure so that water sourced from SPAM can be safe for consumption, but not yet followed up to date. KPSPAM Taluak Village cannot collaborate with BumDes because BumDes is not yet active so it cannot contribute to projects that can improve clean water supply infrastructure in Taluak Village. This is in accordance with research by Santoso (2020), which found that improving clean water supply infrastructure in rural areas could be hampered if there was no support from local institutions, such as the role of BumDes in supporting village initiatives, including projects to improve water quality through building facilities. However, joint efforts to develop village infrastructure will be difficult if BumDes does not have adequate financial and management strength. Widjaja (2019) also found that SPAM managers often recommend improving infrastructure, but the relevant parties do not immediately respond, which results in delayed water quality improvements and ongoing public health problems.

b. Providing Understanding and Socialization

Based on the findings of researchers in the field, the management, especially the village and KPSPAM always provide information about the rules, responsibilities and benefits of maintaining clean water infrastructure so that it is hoped that it can increase customers' sense of ownership. Socialization has also been carried out, although only at the beginning. Using WhatsApp groups as a communication channel can also speed up the dissemination of information and facilitate interaction between the public

and managers. This is in line with research by Suryani (2021), which found that providing clear and continuous information about the regulations, responsibilities and benefits of infrastructure maintenance can increase the community's sense of ownership of these facilities.

CONCLUSION

From the results of the study, it can be concluded that the value of national insight derived from the It can be concluded that the implementation of SPAM in improving the level of public health in Taluak Village, Pariaman City is categorized as not optimal because only 1 building is active. The SPAM target has not been achieved because SPAM use is only 17.02% of the total existing families. There is no continuous effort to update information, so the public still does not know about socialization. The quality of water from SPAM still does not meet direct consumption standards, so there were 174 cases of disease related to access to clean water found in Taluak Village in 2024, the cause of these diseases was due to unsafe water quality. This shows that the main objective of the SPAM program in realizing good drinking water management and services to improve the level of public health has not been fully achieved. Monitoring is not scheduled or carried out regularly so that problems that arise cannot be resolved quickly. This can cause public dissatisfaction, especially if information about the obstacles that occur is not communicated well. In its implementation, several other obstacles were also found, namely the lack of development funds in providing drinking water that is safe for consumption for the community and the lack of public awareness in paying fees for using SPAM which has a negative impact on the utilization of facilities and the operational continuity of the water supply system.

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