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Analysis Of Implementation And Obstacles To Sorting 3r-Based Waste At Dr. Iskak Tulungagung Regional Hospital

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ABSTRACT

Waste management is a crucial issue in maintaining environmental quality, including in healthcare facilities that generate large amounts of solid waste. This study aims to analyze the implementation and barriers to 3R (Reduce, Reuse, Recycle)-based waste sorting at Dr. Iskak Tulungagung Regional General Hospital. The study used a qualitative descriptive method, with data collection techniques including in-depth interviews, observation, and documentation. The results indicate that Dr. Iskak Tulungagung Regional General Hospital has implemented the 3R principles by separating domestic and hazardous waste, processing organic waste into liquid and solid fertilizers, and collaborating with third parties through waste banks for inorganic waste management. The implementation of the 3R program is supported by routine coordination activities, annual training, and daily monitoring and evaluation by sanitation and cleaning staff. The main obstacles to the program's implementation are the low awareness of some employees, visitors, and patient attendants regarding waste sorting according to type, as well as limited human resources for the sorting process. Overall, the implementation of the 3R-based waste sorting system at Dr. Iskak Tulungagung Regional General Hospital is considered successful. Dr. Iskak has been operating well and in accordance with national policies, but increased environmental awareness and ongoing support are needed to achieve optimal and environmentally friendly hospital waste management.

Keywords: 3Rs, Hospita, Dr. Iskak Tulungagung Regional General Hospital, Solid Waste, Waste Management

INTRODUCTION

Waste is a public issue in Indonesia that requires special attention due to its increasing volume each year in line with population growth, which is not matched by proper waste management. Waste is a growing and seemingly never-ending environmental problem, necessitating the search for solutions to address this issue (Supriyanto et al., 2021). Waste has become a serious problem, especially in large cities, both in Indonesia and around the world (Suryani, 2014). According to data from the Central Bureau of Statistics (BPS) in 2023, Indonesia ranks fourth in terms of population in the world. Hospitals, as healthcare institutions, can negatively impact the environment. One type of hazardous waste produced by hospitals is solid medical waste, which includes infectious waste, pathological waste, sharps, pharmaceutical waste, cytotoxic waste, chemical waste, radioactive waste, pressurized containers, and waste containing high levels of heavy metals. The hospital environment, as part of the public health system, serves as a meeting point for sick and healthy individuals,

potentially becoming a hub for disease transmission and causing environmental pollution and health problems.

In the Law of the Republic of Indonesia Number 18 of 2008, it is stated that the waste problem involves various aspects, so that its management must be carried out comprehensively and integrated with new innovations that are more appropriate, both in terms of economics, environmental health, and able to change community attitudes, which means that waste management must start from its source. Community-based waste management with the 3R approach aims to reduce the amount of waste from the start, suppress environmental pollution, provide benefits to the community, and change the community's perspective on waste. The 3R concept is actually very simple and easy to implement, although in practice it often encounters difficulties. The success of implementing the 3R concept depends heavily on community participation that needs to change its behavior, which is generally influenced by socio-cultural and socio-economic aspects that shape community life.

METHODE

This study uses a qualitative descriptive case study design to describe the 3R-based waste sorting management at Dr. Iskak Tulungagung Regional General Hospital. Data collection techniques in this study include in-depth interviews, observation, and documentation. The interviews were conducted in a semi-structured manner that had been prepared by adapting previous research instruments with the informants being the Person in Charge of the Environmental Health Installation as key informants, the Cleaning Officer and the Person in Charge of the TPS as key informants.

RESULTS

Solid Waste Management System and 3R Policy

Based on the results of interviews with the Person in Charge of the Environmental Health Installation, it shows that there are 2 types of solid waste, namely domestic waste and B3 waste. Domestic waste consists of organic and inorganic waste that has been sorted by cleaning staff, inorganic waste is processed into liquid fertilizer and solid fertilizer, organic waste such as cardboard, beverage cans, beverage bottles are collected in the waste bank. While B3 waste such as infusions, jerry cans are processed first into non-B3 waste before being collected in the waste bank. Solid waste in the waste bank is included in 3R waste, in the management of 3R waste Dr. Iskak Hospital collaborates with third parties. The 3R policy at Dr. Iskak Hospital has been implemented for a long time as an effort to realize an Environmentally Friendly Hospital *(Green Hospital,* as well as to reduce the volume of inorganic waste with 3R through waste banks.

Coordination Mechanism for Sanitation, TPS Managers and Cleaning Officers in Implementing 3R

The sanitation team coordinates and provides guidance to cleaning staff and TPS managers regularly through briefings. Adequate facilities have been provided, namely trash bins with different colors according to the Minister of Health Regulation Number 18 of 2020. Before the waste is taken to the TPS, the cleaning staff must ensure and sort the contents of the trash bags according to the bins. This allows waste bank officers to sort 3R waste effectively according to its classification and conduct daily evaluations to ensure optimal implementation of 3R waste (Person in Charge of Environmental Health Installation).

Training and Outreach for TPS Officers and Cleaning Staff

Training is conducted annually for all hospital employees, including sanitation workers, cleaning staff, TPS officers, nurses, and others. The training is delivered during a seminar (for Persons in Charge of Environmental Health Facilities). Sanitation staff also provides training

on waste sorting and disposal according to the appropriate bins. New cleaning staff will receive orientation before starting work (Cleaning Staff).

Evaluation and Monitoring of 3R Activities

Evaluation and monitoring of 3R activities are carried out routinely every day by involving the person in charge of cleaning staff who are accompanied by sanitation staff from the hospital's environmental health installation. Later, TPS officers will report findings of waste that does not comply with the classification through google *form* provided by the sanitation facility. This daily collaboration allows for real-time monitoring of the waste sorting process. This is done to ensure that waste sorting protocols are running properly and correctly and to provide guidance if any inconsistencies are found in their implementation. (Cleaning Officers, TPS Officers, and Sanitation Facility Managers)

Obstacles in 3R Implementation

According to the person in charge of the environmental health installation, the obstacle so far is the lack of awareness of employees, visitors and patient attendants regarding the proper bins for disposing of waste, so that sometimes waste is found that is not in the bins, thus hindering sorting.

According to the TPS Manager, the obstacle in implementing 3R is the high volume of waste but the lack of resources for sorting according to its classification.

According to the Sanitation Officer, the challenge is the large volume of waste, which makes it difficult to sort. If hazardous waste is not properly disposed of in designated bins, it can cause health problems. Furthermore, employees, visitors, and patients frequently dispose of waste in inappropriate bins.

DISCUSSION

The results of research that has been conducted regarding the implementation and obstacles of 3R-based waste sorting at Dr. Iskak Tulungagung Regional Hospital, indicate that solid waste management at Dr. Iskak Tulungagung Regional Hospital has implemented the principle of*Reduce, Reuse* And *Recycle* (3R) in accordance with national guidelines on waste management. Based on interviews and observations that have been conducted, the waste sorting system at Dr. Iskak Regional Hospital is divided into two categories, namely domestic waste and B3 waste. Domestic waste is divided into organic and inorganic waste, where organic waste is processed into liquid and solid fertilizers, while inorganic waste such as cardboard, bottles and cans is managed through a waste bank that is included in the 3R classification supported by a third party. For B3 waste such as infusions and jerry cans, it is processed first into non-B3 waste through a series of processes before entering the waste bank.

The implementation of this system is in line with the provisions of Law No. 18 of 2008 concerning Waste Management, which emphasizes that waste management must be carried out comprehensively and sustainably from its source. The principle of solid waste management based on 3R aims to reduce waste production and reduce negative impacts on the environment. In addition, the hospital's policy in implementing a waste sorting system based on the color of the trash can is also in accordance with the Regulation of the Minister of Health Number 18 of 2020 concerning Medical Waste Management in Healthcare Facilities, which regulates the provision and use of trash can colors according to the type of waste.

The implementation of the 3R program at Dr. Iskak Regional Hospital is supported by regular coordination between sanitation officers, temporary waste disposal site (TPS) managers, and cleaning staff. Coordination is carried out through daily briefings to ensure that waste is properly separated before being transported to the TPS. This step reflects the application of environmental management principles according to Notoatmodjo (2018), which emphasizes that the effectiveness of environmental management behavior is greatly influenced by continuous guidance and supervision. Through continuous coordination, cleaning staff can

better understand the importance of waste separation and can reduce errors in the implementation process.

In addition, training and outreach on waste management are conducted annually for all hospital employees, including cleaning staff, TPS managers, nurses, and the sanitation team. New cleaning staff are given orientation before starting their duties to help them understand the hospital's waste management system. This implementation aligns with research conducted by Nurfitriani.*et al.*(2020) showed that the successful implementation of the 3R concept in healthcare services is highly dependent on improving the knowledge and skills of staff through ongoing training and outreach. Therefore, training is a crucial component in shaping work behaviors that align with standard operating procedures (SOPs) for hospital waste management.

The assessment and monitoring activities for the implementation of 3R at Dr. Iskak Regional Hospital are carried out daily by the cleaning staff supervisor and accompanied by the sanitation installation. Later, TPS officers will report findings of waste that does not meet the classification through google *form* provided by the sanitation facility. The purpose of this evaluation is to ensure that each step in sorting complies with established procedures and to provide guidance if any non-conformities are identified in the field. This is in line with the Deming (PDCA Cycle) approach, which emphasizes the importance of the following stages:*Check* And *Action* in quality management to ensure the program runs efficiently and sustainably. Supported by research conducted by Yulian*et al.*(2022) which shows that regular evaluation and monitoring can increase the success of 3R implementation in hospitals.

However, several challenges arose in implementing the 3R program. Based on interviews conducted, the most significant obstacle was the lack of awareness demonstrated by employees, visitors, and patient attendants regarding the importance of disposing of waste according to its classification. Incorrect waste placement still frequently occurs, thus disrupting the sorting process at temporary disposal sites (TPS). Furthermore, the large amount of waste and limited human resources also pose a problem in the implementation of the 3R. This reflects behavioral issues and a support system that is not functioning optimally. According to Lawrence Green's (1980) behavioral theory, individual behavior is influenced by predisposing factors (knowledge and attitudes), supporting factors (availability of facilities), and reinforcing factors (social support and policies). In the context of this study, low individual awareness and participation in hospitals fall into the category of predisposing factors that impact the success of the 3R program.

This result is also in line with Astuti's study*et al.*(2021) at Yogyakarta City Hospital, which identified that the biggest obstacles in implementing 3R were low levels of awareness, visitors' role in sorting waste, and limited human resources responsible for waste separation. Research conducted by Wulandari*et al.*(2020) revealed that the success of 3R implementation does not only depend on the availability of facilities, but is also influenced by organizational culture and management commitment to implementing environmental management discipline.

The implementation of the 3R program at Dr. Iskak Regional Hospital is part of the implementation of the Green Hospital concept, as regulated in the Minister of Health Regulation Number 52 of 2018 concerning Environmentally Friendly Hospitals. This program aims to create health facilities that serve not only as medical service centers, but also are responsible for environmental sustainability. Through activities such as processing organic waste into fertilizer and collaboration with waste banks, Dr. Iskak Regional Hospital has demonstrated its seriousness in supporting the concept of an environmentally friendly hospital.

In general, the results of this study indicate that the 3R-based waste management system at Dr. Iskak Tulungagung Regional Hospital has been running well and is in accordance with applicable national theories and policies. However, aspects of human behavior and compliance culture remain challenges that need to be addressed through ongoing education, increased

environmental awareness, and stricter supervision. Therefore, the sustainability of 3R implementation in the hospital will be more optimal if supported by synergy between policies, facilities, and the active participation of all hospital elements.

CONCLUSION

The implementation of 3R-oriented waste management at Dr. Iskak Tulungagung Regional Hospital has been running smoothly and in line with national regulations, including Law No. 18 of 2008 and Minister of Health Regulation No. 18 of 2020. The hospital has implemented the principles of*Reduce, Reuse, Recycle* through the separation of domestic and B3 waste, processing organic waste into fertilizer, and collaboration with waste banks. Coordination activities, capacity building, and periodic evaluations support the successful implementation of the 3R program. However, there are challenges in the form of a lack of awareness among some employees and visitors, as well as limited human resources in the 3R inorganic waste sorting process.

In general, the implementation of the 3R system at Dr. Iskak Regional Hospital is adequate, but increased awareness and collective commitment are needed so that waste management can be more optimal and sustainable in accordance with hospital principles.*green house.*

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