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Waste management training intervention on knowledge and attitude of integrated health service cadres and housewives in West Kalimantan

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Abstract

Background: Healthy village is an innovative concept prioritizing health and well-being in community development, encompassing basic health services, sanitation, clean water, environmental cleanliness, public health, food safety, and community empowerment.
Purpose: To analyze the impact of Waste management training provided to integrated health service cadres and housewives.
Method: A quantitative quasi-experiment study, participants were selected using purposive sampling and the Slovin formula, resulting in 82 participants from Sungai Asam village. Univariate statistical analysis was conducted, including a paired t-test to assess changes within groups and an independent t-test for between-group comparisons.
Results: Support for waste management was influenced by the knowledge and attitudes of both cadres and housewives. In the cadre group, knowledge increased from an average of 15.780 in the pre-test to 18.439. For the housewives group, knowledge rose from an average of 14.561 in the pre-test to 15.634. Attitudes in the cadre group improved from 50.122 in the pre-test to 62.609, while in the housewives group, attitudes increased from 42.170 to 47.365.
Conclusion: Waste management training significantly enhanced knowledge and attitudes in both groups, with a more substantial improvement observed among cadres. The study effectively demonstrated the impact of Waste management training on fostering a healthier village environment.

Keywords: Cadres; Healthy Village; Housewives; Waste Management.

INTRODUCTION

Healthy village is an innovative concept prioritizing health and well-being in community development, encompassing basic health services, sanitation, clean water, environmental cleanliness, public health, food safety, and community empowerment (Sakdiyah, 2022). This concept aims to support healthy lifestyles, ensuring easy access to health services, and encourage active community participation in disease prevention (Mangemba, 2021). Creating a healthy village requires collaboration between the government, health workers, and the community, involving health education programs, promoting healthy lifestyles, and developing health infrastructure. Active community participation in health decision-making is crucial. Continuous community education through health training helps promote proactive healthy behaviors (Bahri, Aswad, Ahmad, Saprudin, Dewi, Ardianti & Hilma, 2023).

Kubu Raya regency is committed to supporting the healthy village program with its vision of "Realizing a happy, dignified, leading, quality, and

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religious Kubu Raya regency" and the mission of "Improving work culture and governance that is clean and authoritative". The initiative includes the healthy family movement, supported by local government departments. A healthy environment plays a crucial role in quality of life and well-being, extending beyond physical health to include social, economic, and environmental dimensions. Clean air, clean water, and good sanitation are essential. Waste, a product of human activities, impacts environmental quality and health (Rehana, Setiabudi, Sulistiawati, & Wahyunitisari, 2021).

Waste management involves handling waste from daily activities and requires systematic, comprehensive, and sustainable efforts. Reducing and managing waste through recycling and reuse are key steps. Empowering the community for active participation in waste management is essential. Research indicates inadequate waste management, with most having poor knowledge, negative attitudes, and low motivation. Improving knowledge can change attitudes towards proper waste management. Sungai Asam village, with a population of 1,796, lacks its own waste processing facility. Preliminary studies indicate unmet needs in healthy environmental conditions, health education, and health awareness (Husna, Safitri, Darmawi, Azwar, & Reyaldi, 2020).

RESEARCH METHOD

A quasi-experimental approach, specifically focusing on two-group pretest-posttest. The study took place from February 20 to March 20, 2024, in Sungai Asam village. The independent variable was waste management training intervention while the dependent variables is a knowledge and attitude of integrated health service cadres and housewives in west kalimantan

Using purposive sampling and the Slovin formula, 82 participants were selected, consisting of 41 integrated health service cadres and 41 housewives who met specific inclusion and exclusion criteria. The inclusion criteria required active participation in the study and completion of the questionnaire, while exclusion criteria involved a lack of engagement in waste management and incomplete questionnaire responses.

Waste management training will be provided through discussions and presentations covering topics such as types of waste, the impact of waste, and waste sorting. A demonstration on waste sorting and composting will involve inviting participants to practice sorting household waste. The team will also show a video on managing organic waste using ecoenzymes, illustrating how to create ecoenzymes from organic materials to encourage participants to see waste as a resource for household use. Additionally, a hands-on composting session will be guided by researchers, using waste materials that participants have sorted and collected over a three-day period.

Data was gathered from village and health center heads for supplementary information on integrated health service cadres and housewives, as well as from the public works department regarding waste disposal facilities in the village.

Data collection utilized two instruments: a knowledge questionnaire with demographic questions and 20 items related to waste management (with correct answers scored as 1 and incorrect as 0), and an attitude questionnaire using a 22-item Likert scale (with response options ranging from strongly agree = 5 to strongly disagree = 1).

The data was analyzed following a step-by-step process, beginning with a normality test using the Shapiro-Wilk test. With p-values greater than 0.05, the data was determined to follow a normal distribution. The analysis proceeded with a univariate test to determine the frequency distribution of respondents' characteristics, followed by bivariate analysis using paired t-tests and independent t-tests. All analyses were conducted using SPSS 24.

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RESEARCH RESULTS

Table 1. Characteristic of the Participants (N=82)

Variables	Results
Age (n/%)	
(Mean±SD)(Range)(Year)	(35±6.924)(20-35)
20-35	46/49.9
>35	36/50.1
Education (n/%)	
Uneducated	2/2.43
Elementary school	37/45.1
Junior high school	20/24.3
Senior high school	16/19.5
College	6/7.3

Table 1 shows the characteristics of participants with a mean age and standard deviation (35±6.924) ranging from 20-35 years old. Majority of respondents completed their education only up to elementary school level 37 (45.1%).

Table 2. Differences in Knowledge and Attitudes between Housewives and Cadres

Variable	Group		*p-value*
	Cadres (n=41) *(Mean ± SD)*	Housewives (n=41) *(Mean ± SD)*	
Knowledge			
Pre-test	15.780±2.031	14.561±1.858	0.000
Post-test	18.439±2.739	15.634±1.996	
Behavior			
Pre-test	50.122±2.325	42.170±2.072	0.000
Post-test	62.609±5.300	47.365±3.176	

Table 2 indicates that in the cadre group, knowledge increased from an average of 15.780 in the pre-test to 18.439. In the housewives group, knowledge rose from 14.561 in the pre-test to 15.634. Attitudes in the cadre group improved from an average of 50.122 in the pre-test to 62.609, while in the housewives group, attitudes increased from 42.170 to 47.365. The hypothesis test results show a significance value of 0.000 ($p < 0.05$), indicating that Waste management training is influenced by the knowledge and attitudes of both cadres and housewives.

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DISCUSSION

Accelerating healthy villages reflects efforts to speed up the achievement of health goals and targets at the village level. This may involve specific programs, increased resource allocation, and innovative approaches to enhance the well-being and health conditions of the community (Pambudi, & Sudaryantiningsih, 2017). The goal of acceleration is to enhance the pace of implementing healthy villages to achieve the vision of the healthy village forum. Efforts needed for acceleration include training in healthy village management, assistance with waste management activities, assistance in preparing work programs, and assistance in monitoring and evaluation activities (Sunarto, Suparji, Nugroho, Surtinah, & Miranti, 2023).

Various methods and media have their advantages and disadvantages. The lecture method conducted by health workers at the integrated health service has not yet fully achieved the intended health education goals. Through assistance provided by researchers, supported by integrated health service cadres and housewives, it is possible to achieve healthy village indicators, allowing for consistent continuation in the future. These indicators can be adjusted based on national health policies, local conditions, and the specific goals of the implemented healthy village program. A holistic approach that covers various aspects of health and the environment will provide a more comprehensive view of health conditions at the village level (Nugroho, & Suprapto, 2021).

The primary objective of developing healthy villages is to create communities that are not only physically healthy but also have heightened awareness and responsiveness to health issues in their surroundings. This program aligns with national health development initiatives aimed at raising awareness, motivation, and skills for leading a healthy lifestyle. It seeks to optimize public health improvements (Rais, 2022).

The involvement of researchers, integrated health service cadres, and housewives plays a significant role in accelerating the effectiveness of the healthy village program. This collaboration helps bridge the gap between planned health initiatives and their practical implementation within communities. It allows health information to be delivered in a way that is more relevant, practical, and easily understood by the village population. Providing assistance strengthens relationships between the community and health workers, encouraging active participation in health programs and fostering a sense of ownership and responsibility for maintaining a healthy environment. As a result, villages can adopt practices suited to their local context and cultivate a sustainable health culture (Indirawati, Salmah, Arde, & Hutagalung, 2023).

There is a clear difference in post-test knowledge improvement between cadres and housewives, with average scores of 18.439 for cadres and 15.634 for housewives, indicating that cadres gained more knowledge about waste management than housewives.

Knowledge, as defined by Ashar (2020), is the understanding formed in the human mind through sensory experiences, distinct from beliefs, superstitions, or misinformation. A low level of community knowledge can hinder proper waste management. Even though waste management is generally understood by the community, not everyone actively participates in keeping their environment clean. In some densely populated areas, piles of waste remain despite high levels of knowledge, as knowledge must be accompanied by action (Ilma, Nuddin, & Majid, 2021).

Approximately 85% of individuals with strong waste management knowledge actively participate in managing waste in their villages, highlighting the connection between good knowledge and active involvement (Natalia, Wihardja, & Ningsih, 2021). In contrast, a lack of knowledge can diminish the perceived importance of environmental upkeep and the consequences of improper waste disposal (Ahmad, 2022).

This is consistent with cognitive process theory, which describes how individuals acquire, organize, and apply knowledge to interpret and understand their surroundings. The mental processes involved in managing household waste are shaped by the knowledge people possess, and the more varied their sources of information and training, the better their understanding becomes. Similar studies have shown that socialization improves knowledge, which then fosters environmental awareness and

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encourages waste separation practices (Simatupang, Veronica, & Irfandi, 2021).

Waste management knowledge among respondents increased to 78.5%, with a p-value of 0.001. Before the intervention, 4.3% of respondents had very poor knowledge, but after the intervention, none remained in this category (Ruhmawati, Karmini, & Tjahjani, 2017). Additionally, other studies indicate that community commitment to waste management gradually strengthens as awareness grows, with mentoring helping to enhance waste management practices (Lustiyati, Fadli, & Puspiwati, 2022).

Accelerating healthy village programs has a significant impact on increasing both cadres' and housewives' knowledge of waste management. This knowledge improvement is essential as it promotes active community participation in maintaining a clean and healthy environment. Although there are differences in knowledge gains between cadres and housewives, both groups experienced positive changes due to the intervention. The study highlights the importance of Healthy Village acceleration programs and assistance in enhancing community knowledge and awareness about waste management. This is consistent with cognitive process theory, which suggests that knowledge gained from diverse information sources and training can influence understanding and behavior (Setyowati & Mulasari, 2013).

Waste management information is now integrated into both formal and non-formal education in communities, with recycling training being a key part of non-formal education targeted at specific groups. This education promotes behavioral changes in waste management not only in coastal regions but also in urban and mountainous areas. Following socialization and training, some respondents began applying the knowledge they gained, with some becoming motivators by sharing and promoting waste management practices. This demonstrates that enhancing community capabilities enables independent waste management, active participation in development, and acting as change agents for sustainable development (Marta, 2014).

There was a noticeable difference in positive attitude changes between cadres and housewives after the Healthy Village acceleration program. The average attitude score for cadres was 62.609, compared to 47.365 for housewives, showing that cadres demonstrated a greater improvement in attitudes toward waste management.

Attitude refers to an individual's evaluation of activities like sorting organic and inorganic waste, which benefits them and is shaped by their beliefs about actions and outcomes (Humaira & Falatehan, 2021). Attitudes are often understood in three ways: as emotional reactions, as a readiness to respond to specific objects, and as part of a triadic model. While attitude is not an action, it reflects a tendency to act, with actions representing the manifestation of attitude. To translate attitudes into action, supportive resources like waste management facilities are necessary (Ilma et al., 2021).

Improper waste disposal habits are common in daily life and influence the behavior of children and adolescents, who often mimic the behaviors they observe (Ningrum et al., 2021). A study in South Africa showed that without reinforcement, such as praise or punishment, parental habits at home have little impact on children's waste management awareness (Matsekoleng, 2020).

Before socialization, only 3.3% of housewives in modern settlements had very good waste management behavior, while 96.7% had good behavior. In traditional settlements, 37.5% of housewives had good behavior and 62.5% had fair behavior. After socialization, the behavior improved significantly in both settlement types (Maghfiroh, Puji & Ariefin, 2018).

A similar study found that out of 57 respondents, 45.6% exhibited negative attitudes inconsistent with household waste management, while 8.8% had negative attitudes consistent with practices. A correlation coefficient of 0.689 was observed, indicating a strong relationship, with a 47.5% contribution to waste management practices. Additionally, 22.8% had positive attitudes but inconsistent practices, while another 22.8% had positive attitudes consistent with practices. The chi-square analysis showed a p-value of 0.014, demonstrating a statistically significant relationship between housewives' attitudes and waste management at $\alpha = 0.05$ (Muhtar & Zacharias, 2024).

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CONCLUSION

The waste management guidance for accelerating healthy villages in Sungai Asam village has a positive impact on improving the knowledge and attitudes of both integrated health service cadres and housewives.

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