Waste Care Education for Housewives

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Abstract: The issue of waste is a very crucial problem at this time, the behavior of people who do not care about the environment by throwing garbage everywhere, such as in rivers, canals, on the side of the road, and other public area, adds to a series of problems in the environment. In addition, with poor waste management, people use traditional methods of managing waste by burning and the smoke causing air pollution which adds to environmental problems. Then household waste that has not been separated into organic waste and organic waste is simply left without being sorted again. Waste care education for housewives is carried out by socializing good waste management. This research used a quantitative approach was used to examine how waste management training and intervention affected changes in household waste management knowledge and behavior. This kind of study used a single group for pre- and post-testing using a quasi-experimental design. The study was carried out with a sample size of 33 participants. The findings demonstrated a statistically significant improvement in knowledge and practice ratings for home waste management following the intervention (p-value = 0.001; p-value 0.05). In conclusion, offering the intervention is successful in enhancing understanding and practice of household trash management.

Keywords: Education; Housewife; Waste care

Introduction

The waste problem is a very important issue and cannot be avoided anymore. Waste is a very crucial environmental problem for Indonesian society. Can be said the producers of waste every day are households, both organic and inorganic waste. But that is very concerning, the waste is disposed of carelessly in various places, and has a damaging impact (Zamroni et al., 2020). According to Leite et al. (2011), Leachate water is a byproduct of waste. Consumer choices made by households have an impact on the environment. Domestic garbage, solid waste, and industrial waste are some of the toxins that predominately contribute to pollution. Fish deaths, a decline in water quality, and disease transmission are all results of solid waste pollution (Yildis et al., 2017).

According to Nurdiana et al. (2022), the amount of waste produced every year continues to increase along with the increasing population. The government is currently trying to find many ways to solve the waste

problem. The waste problem is an organic. However, it has not yet reached the point of perfection. This is because the amount of Indonesian waste is very high. The government has difficulty finding a suitable method to solve the waste problem. Waste is leftover or discarded objects that are no longer used by the owner. In general, waste is divided into two, organic and an organic waste. Both of these wastes have benefits for humans, but can also have an impact on the environment. Organic waste is waste that comes from the remains of living things such as animals, humans, and plants that experience decay or weathering. This activities involving trash management are carried out through a system that can handle different forms of waste and generate a green environment (Mustafa & Azir, 2017).

Garbage is solid waste consisting of organic and inorganic materials. Organic materials can be processed into liquid and solid compost. Meanwhile, inorganic materials must be processed first so that they do not cause too much harm to the environment and can protect

development investment. Inorganic waste types consist of plastic, paper, metal, glass, and others. Inorganic waste can be reused or must go through a recycling process. Currently, for industrialized countries, the application of packaging that is easily recycled has become one of the factors in increasing the competitive value of products on the market (Donacho et al., 2023).

Organic waste is classified as environmentally friendly waste because it can be broken down by bacteria naturally and occurs quickly. Inorganic waste is that comes from human remains which is difficult for bacteria to decompose and takes for a long time, up to hundreds of years, to be decomposed. If waste is not processed correctly, it will cause many environmental problems, in other words, environmental pollution will occur in water, air, and soil. To overcome the problem of environmental pollution, good handling and control are needed. According to Hemidat et al. (2022), a paradigm shift from a linear economy model to a circular economy model requires the transformation of waste management systems.

Handling and controlling waste will become complex and complicated, and the types of waste produced become increasingly complex in line with the advancement of culture which continues to develop according to the times. The habit of burning rubbish has become a culture in society, both in rural and urban areas. They do not realize that the type of waste today is different from the waste of the past. The types of waste currently tend to be dominated by chemical synthetic waste such as plastic, rubber, styrofoam, metal, glass, also waste from hospital (Halomoan, 2021).

If the waste is burned, it will release toxic gases which can endanger the health of people who inhale it and worsen the quality of the air environment (Akpe et al., 2016). For example, burning plastic waste produces dioxin gas which is 350 times more toxic than cigarette smoke. Dioxin is super toxic and is carcinogenic if it enters human body tissue, especially the nerves and lungs, so it can disrupt the nervous and respiratory systems, including causing cancer. Burning Styrofoam will produce CFCs which can damage the ozone layer and are dangerous for humans and it cause disease (Suhurt et al., 2017).

This condition is supported by human behavior which causes an increase in waste production which reaches the stage of producing more waste than destroying the waste produced. Given these facts, it is necessary to realize that community participation plays an important role in efforts to solve the waste problem because part of the waste problem arises from human behavior itself. Handling waste in urban areas is relatively difficult to handle but in rural areas, it is still relatively easy to overcome because people still use a lot of packaging materials that come from nature, while in urban areas it is very difficult to overcome because many food wrappers use materials that are difficult to recycle.

At the end of the 20th century, various public awareness movements emerged that paid attention to the state of the environment. This is related to awareness of maintaining the earth as a clean, healthy, and green place to live. Various environmental organizations have sprung up and recycled goods have become a trend for the lifestyle of city people even on vacation some activities have come to be known as ecotourism. The process of getting to know the environment continues, children are given environmental education from an early age, taught to love animals and their environment, and to pay attention to endangered animals.

Issues related to the environment are global issues that demand attention from various sectors, including education. Environmental education has a very important role in overcoming environmental problems that arise today. As stated by the Council (1992), currently the need for environmental education is very critical. The current development of nature-based schools born of hope returning essential human values to nature and the surrounding environment in substance nature-based learning is a learning system that offers how to invite children to become more familiar with nature, while at the same time making them enthusiastic about carrying out teaching and learning activities (Santoso & Fitriyani, 2016).

Since this concern for the environment has spread not only among non-governmental organizations or non-governmental organizations but also in the government, many parties do not realize that environmental issues and women are closely related. Women's Journal No. 48 of 2006, Women's Knowledge, p.129 states that the National Meeting of Indonesian Women's Activists on 31 August 2006 produced 12 special agendas for the women's movement for 2006-2011. One of the agendas related to environmental management is the agenda on women and natural resources (SDA), which includes:

1. Integrate natural resources issues into other social movements.
2. Campaigning for women's human rights in the management of natural resources.
3. Community-based natural resources management that is gender-responsive (e.g. farmers, fishermen, and others).
4. Claim the responsibility of the state and corporations that damage the environment and violate women's human rights and customs.
5. Refuse payment of foreign debt originating from the exploitation of natural resources.

6. Policy advocacy and natural resource management cases.

According to Asteria et al. (2022), the role of women is implicitly explained in article 70 concerning the role of society. The role of women in protecting the environment according to the Law on the Protection and Management of the Environment can be in the form of social supervision and the role of women in making environmental policies through the legislature. The 30 percent quota for women in the DPR/DPRD provides opportunities for women's participation in the Environmental Management Plan (RPPLH) and Environmental Strategy Study (Asteria & Haryanto, 2021).

Muang et al. (2021), explains that women can participate as "clean-environment" agents by providing education and insight to families, especially children, about the environment. Education can be in the form of lessons for them not to litter. In addition, according to Dana (2009), women or housewives can also be actively involved in managing household waste by separating household waste based on its type. Housewives can also participate in reducing environmental pollution by playing a role in determining environmentally friendly household products. Asmara et al. (2020) said that mothers can become environmental educators. Women or housewives are the first educational medium for children. Women and the environment are a combination of beautiful interactions between the wisdom of womenfolk and the best benefits of nature. Women in their role as household managers often use nature as an element of fulfilling their daily needs. Given the importance of the existence of nature in family life, women also continue to maintain the balance of nature (Darmastuti et al., 2012).

Besides, mothers are the first and main educational media for their children. Through mothers, education and awareness about concern for the environment can be instilled in children from an early age. According to Wulandari et al. (2021), the implementing an environmentally friendly lifestyle carried out in a family, children will get used to protecting their environment. If these habits and awareness are rooted in children then in the future a generation that cares for the environment will be formed.

Through mothers, education and awareness about environmental care can be instilled in children from an early age and it will be affect to community (Zakianis et al., 2018). By applying waste management methods and selecting environmentally friendly products, it can be done in the family, children will also get used to protecting the environment. If later environmental habits and awareness take root in children, then in the future there will be generations who care about the

environment. Education about the pro-environment from an early age is very important because children are in the pre-contemplation stage (the formation of the ability to reason about a behavior). With parents providing exemplary examples, children's concern for pro-environmental behavior including environmentally friendly waste management will emerge.

Housewives are taught to process waste that can still be used, such as used plastic bottles or plastic sachets so that they can later be turned into handicrafts, bags, toys, hats, boxes, pencils, robes, and so on into items that still have economic value. Recycling activities start from household waste such as children's toys, buckets, flower pots, household items, newspapers, magazines, and others.

Recycling inorganic waste can be a very useful material. According to Abarca-Guerrero et al. (2022), when recycled by the factory, it can produce trash cans, household appliances made of plastic, brooms, and others. If it is processed by waste producers, namely individuals, it is necessary to conduct counseling or prepare a team that will guide the community to be creative with waste so that it becomes more valuable than worthless, such as making folders and bags from plastic cooking oil, dishwashing soap plasticizers making bags from packs of packaged coffee or making mats out of candy wrappers. Recycling activities start from household waste such as children's toys, buckets, flower pots, household items, newspapers, and magazines, or waste management by composting (Ayilara et al., 2020).

The implementasions of zero waste and recycling inorganic waste can be a very useful material (Bogusz et al., 2021). When recycled by the factory, it can produce trash cans, household appliances made of plastic, brooms, and others. If it is processed by waste producers, namely individuals, it is necessary to conduct counseling or prepare a team that will guide individuals to be creative with waste so that it turns from worthless into more valuable, such as making folders and bags from plastic cooking oil, dishwashing soap plasticizers making bags from packs of packaged coffee or making mats out of candy wrappers (Choiriyah, 2018).

Method

The impact of intervention and waste management training on changes in household waste management knowledge and behaviors was examined in this study using quantitative methodologies practices (Jamshed, 2014). It was a quasi-experimental research with a single pre- and post-test design group. The elements of both independent and dependent variables were used in this investigation. The study's independent variables

included the following advice and instruction in garbage management. The dependent variables included family and knowledge waste management training. The study's samples were 33 individuals. Data were gathered by performing an interviewing and asking some inquiries, such as names, age, level of education (elementary/junior high, university/higher education, senior high school), and profession.

To acquire baseline data for the intervention, a pretest was administered prior to its delivery. The respondents' training and experience; furthermore. The respondents got the therapy that was offered, and taking trash management training. The responders received the identical inquiries after the intervention as in test to determine the knowledge and ignorance gaps practice of respondents in controlling home trash.

The interview method was used to uncover more details on the waste management practices. Some of which dealt with home waste management practices, efforts to make compost, and difficulties with making compost. 33 residents who participated in counseling and demonstration plots were interviewed. One method of gathering qualitative research data is through interviews, when respondents are asked to reply to specific research questions (Stuckey, 2013). Plot demos are a successful technique for boosting improved technology adoption (Seguya et al., 2021). Demonstrations are intended to inspire partners to do the same in regular practice.

Result and Discussion

Both univariate and bivariate analysis were used in this study. Age, educational attainment, and occupation were among the characteristics of respondents that were described using a univariate analysis. The knowledge and behavior of respondents before and after counseling and training were compared using bivariate analysis.

Table 1. Frequency Distribution of Respondent

Variable	Classification	f	%
Age	26 – 35 years	1	3
	36 – 45 years	18	54.5
	46 – 55 years	14	42.4
Occupation	Employed	9	27.3
	Unemployed	24	72.7
Education	Junior High School	9	27.3
	Senior High School	16	48.5
	Bachelor Degree	8	24.2

The 18 respondents (54.5%) that fit the criteria for the late adult group of respondents were between the ages of 36 and 45. The late adolescent (17–25 years), early adult (26–35 years), late adult (36–45 years), early elderly (46–55 years), and late elderly (56–over 65 years) are included in this age group. A total of 16 people (48.5%) graduated from senior high school, while 24 people (72.57%) were unemployed. Traders, laborers/farmers, civil servants, army/police officers, pensioners, business owners, and other occupations fall within the category of the employed. Housewives fall under the umbrella of the unemployed.

The late adult group of 18 people (54.5%), who were the most active group engaging in waste management activities, ranged in age from 36 to 45 years. Compared to the age group of 40 years and younger, people aged 60 and older frequently manage their domestic garbage poorly.16 responders in total (48.5%) have finished at least one year of senior high school. In general, those who had completed their senior year of high school knew and understood that unmanaged garbage will have negative effects on both the environment and human health. The mentality and capacity for knowledge absorption are related to education level. Information can be absorbed more readily the more educated a person is, and vice versa. In comparison to men and younger people, women and the elderly manage waste more effectively (Nepal et al., 2023).

With a total of 24 respondents, the unemployment rate was 72.57%, which is the majority. The respondents that were all unemployed were all wives. According to Hadiningrat (2020), the mother's position in families with newborns and/or young children serves as a foundation for actualizing and enhancing happy, healthy families. Good waste management can lead to the establishment of an affluent and successful household and the effectiveness of waste management awareness efforts can be impacted by educational attainment (Handayani et al., 2018). Additionally important to family members' growth and hygiene is the mother's role. Every day, the mother looks after the home, maintains the family's hygiene and health, organizes, and serves as an example of a clean and healthy lifestyle for the other family members. Mothers' disregard for the hygiene of their homes and family members has a negative impact on health. According to Chukwuone et al. (2022), the amount of women's participation in waste management is significantly increased by the dissemination of knowledge on trash management.

Table 2. Table of Descriptive Analysis

Variable	Pre test			Post Test		
	Mean	Min	Max	Mean	Min	Max
Knowledge	23.82	13	27	25.85	18	28
Practice	3.39	2	4	5.79	3	7

The scores of 33 respondents were the lowest knowledge score (min), highest knowledge score (max), and mean knowledge score (mean). It is clear from the

table above that there was an increase in value between the pretest and posttest. Wilcoxon test findings yielded a p-value of 0.001. It indicates that there was any discernible difference between the knowledge score prior to and following the intervention. Therefore, it may be said that there was a difference between the knowledge score on the pretest and the knowledge score on the posttest. This showed that the intervention's ability to improve the respondents' understanding of waste management was successful.

Table 3. Bivariate Analysis

Variable	p-Value
Knowledge	0.000
Practice	0.001

The Wilcoxon test findings showed a p-value of 0.001, or a value of 0.05. Therefore, it may be said that there was a difference between the knowledge score on the pretest and the knowledge score on the posttest. This demonstrated that the offered intervention was successful in enhancing the respondents' knowledge. Knowledge of the neighborhood's current trash management is positively correlated with that knowledge. Recommendations to encourage community involvement in trash management are based on recycling potential.

Low levels of community participation are caused by a lack of contact with and guidance to the community. Helping the community manages garbage, particularly household organic waste and its usage, is therefore vital. From the highest to the lowest levels of waste management knowledge, knowledge affects behavior and provides both economic and non-economic benefits, such as a clean and healthy environment. Based on Choon et al. (2017), one of the waste-sorting habits is influenced by lifestyle choices, such as a lack of motivation to change and a hectic schedule.

The difference in practice score between before and after the intervention (p-value 0.05) was similar to the rise in knowledge score. This demonstrated that the intervention on the respondents was successful in enhancing their capacity to manage waste. Environmental pollution can be avoided by using good waste management techniques (Nizar et al., 2018). Additionally, waste might attract pests like flies. Increased disease transmission, diminished environmental beauty, and effects on global warming are all results of environmental degradation (Morris et al., 2012). In order to improve community health status and to create economic value from the managed trash in the future, efficient waste management procedures should be used to prevent the development of waste. According to Putri et al. (2019), there are two factors that

affect housewives' motivation for entrepreneurship: first, internal ones such as the experience and skills they have, as well as their own drive; second, external ones such as education level, occupation, family support, social environment, and business opportunities.

Malik et al. (2018) showed that women's engagement today not only calls for equality of rights but also expresses their role in contributing to the growth of their communities. In addition, this study's responders were entirely female. Concerns about women's participation in society revolve with tradition and change. According to the findings of the study by Dewi, Made, and Ngurah, women contribute 45.53% of the average household income, which is a significant contribution. Scavenging is one way that women can control trash and increase the family's financial stability.

Women who frequently compost acknowledge that their actions have a positive impact on the environment and the economy. This situation is consistent with Farhidi et al. (2022) assertion that one of the environmentally favorable methods of reducing organic waste is by composting. Environmental awareness seems to be higher among women than among men. The residence's location also has an impact, with residents in regional housing having a comparatively higher awareness of the environment (Givano & Ismail, 2020).

The ability to sort garbage is highly influenced by the presence of supporting infrastructure and facilities (Mugambe et al., 2022). More garbage is produced by humans who are more active. Waste management requires actions that are both simple to carry out and advantageous for the environment. The quality of the water will be impacted by improper waste management. There will be a huge need for clean water due to the human population. Clean water supplies may become contaminated by home, industrial, and agricultural activities. Home waste also includes potentially dangerous and toxic items like batteries, electric lamps, electronics, pesticide packaging, clothing bleach, floor cleaners, paints, pressurized cans (aerosols), leftover medications, thermometers, and syringes.

Limited knowledge is one of the barriers that reduces community participation in controlling the garbage created (Limon & Villarino, 2020). The community has needs, including the need for timely socializing and access to relevant information. The way households to manage their waste and their awareness of recycling has a big impact on how much waste they produce. Lifestyle characteristics, especially the amount of household spending and consumption, have an impact on waste creation as well. This is consistent with the assertions made by Eshete et al. (2023), who claim that most households have undesirable habits such discarding trash in the backyard.

Households in Indonesia especially practice garbage sorting, which led to the government enacting rules on waste banks and recycling programs, are unfortunately frequently utilized (Sabarinah, 2017). According to Sultana et al. (2021), there is a statistically significant correlation between training in domestic solid waste management and recycling waste management for households. A fundamental requirement for waste management is the separation of trash beginning at the source. If the government implements provisions to ensure that the process proceeds sustainably, this step will be effective (Lange et al., 2022). As a result, attitudes, subjective standards, and perceived behavioral control all have a significant impact on the intention and awareness of composting (Rahman et al., 2022).

Composting home organic waste will raise public awareness of the need to participate actively in waste management (Ridwan, 2014). The general lack of understanding of waste management among Indonesians makes a special case for waste management difficult (Susilo et al., 2021). According to Rajaona et al. (2012) the quality of the water will be impacted by improper waste management. There will be a huge need for clean water due to the human population. Clean water supplies may become contaminated by home, industrial, and agricultural activities.

Conclusion

Following the intervention, there is an improvement in understanding of waste management, with a p-value of 0.001. After the intervention was given, waste management practices increased with a pvalue of 0.001. Based on these findings, it can be said that offering an intervention has a positive impact on household waste management knowledge and practice.

Author Contributions
Arin Khairunnisa take doctor of Community Education Postgraduate at the Indonesian University of Education. Prof. Ace Suryadi, M.Sc. Ph.D. Prof. Dr. Achmad Hufad, M.Ed and Prof. Dr. Uyu Wahyudin, M.Pd are lecturer of Department of Community Education Postgaraduate UPI Bandung.

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