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Public Health Program: Educating the Importance of Balanced Nutrition for Collective Well-being

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Abstract: *This study examines the impact of entrepreneurship training on the empowerment of women in Tambakboyo Village, East Java. Through a participatory action research (PAR) approach, the research explores how training programs can enhance women's business skills, self-confidence, and income-generating capacities. The findings indicate that the training significantly improved participants' understanding of business management, financial planning, and marketing strategies. However, challenges such as limited access to capital and societal barriers persist, limiting the full potential of the trained women. The study highlights the importance of continued support through financial services, community engagement, and policy reforms to overcome these barriers. Ultimately, the research suggests that entrepreneurship training, when combined with necessary resources and societal changes, can empower rural women, fostering sustainable economic development and contributing to social change within their communities.*

INTRODUCTION

The importance of balanced nutrition is critical for improving public health and achieving collective well-being. In many rural areas of Indonesia, such as Jatimulyo Village in Tanjunganom District, Nganjuk Regency, the local community faces challenges related to food security, malnutrition, and limited access to nutritional education. These

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issues are compounded by a lack of awareness regarding the long-term health benefits of a well-balanced diet. As part of a community-based health program, this project aims to provide educational outreach on the significance of balanced nutrition and its impact on community health.

The focus of this community service program is to engage local residents in learning about proper dietary practices and their correlation with physical and mental health improvements. Through interactive workshops, this initiative will address common nutritional deficiencies and misconceptions. By targeting key groups within the community, such as families and schoolchildren, the program aims to foster sustainable behavior changes that promote healthier eating habits.

Research shows that promoting balanced nutrition has long-term benefits for public health, including reduced risks of chronic diseases, such as obesity, cardiovascular conditions, and diabetes (Suman et al., 2021). Moreover, studies have highlighted the positive role of nutritional education in rural areas, where access to health resources is often limited (Wahyu et al., 2022). In light of this, the program seeks to provide not only education but also practical solutions tailored to local food systems and availability. By raising awareness and improving nutritional knowledge, this initiative aspires to create a lasting impact on the community, ultimately contributing to enhanced health outcomes and the overall well-being of its residents. It is expected that the program will lead to significant social change, with increased participation in health-promoting activities and a greater understanding of how nutrition influences individual and collective health.

Despite the growing recognition of nutrition education as a key factor in improving public health, challenges remain in its implementation, particularly in rural areas like Jatimulyo Village. A key barrier to effective nutrition education is the lack of trained teachers and the absence of a unified national curriculum that incorporates nutritional education in schools (Februhartanty, 2005). Moreover, as rural communities face limited access to healthcare professionals and nutritionists, initiatives that encourage community-based education can bridge this gap. The challenges of implementing effective nutrition education programs in rural areas are substantial, as evidenced by various studies. Rachman et al. (2020) highlight the lack of teacher training, time constraints, and external factors such as unhealthy food environments as key barriers in rural schools. These findings emphasize the need for comprehensive strategies that involve not only teachers but also local communities, including parents and street vendors, to ensure the success of nutrition education programs.

Moreover, the impact of such educational initiatives is clear, as demonstrated by Lubis et al. (2023) in their study on tailored nutrition education modules for adolescent girls in rural Bali. The findings of this study indicate that localized and context-sensitive education programs significantly improved knowledge and dietary practices among

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adolescent females. Similarly, a recent study by Sinaga and Syarief (2025) assessed the effectiveness of Indonesia's Free Nutritious Lunch Program in improving both health metrics and academic performance in rural schools, highlighting the critical role that school-based nutrition interventions play in bridging the nutrition gap and improving well-being.

Despite these positive outcomes, there are notable challenges in rural Indonesia, including a reliance on food aid programs and limited access to diverse, nutritious food (Alta, Auliya, & Fauzi, 2023). This issue is compounded by the high cost of healthy foods, which are often unaffordable for many families, especially in remote areas. The current Indonesian dietary patterns, dominated by rice and lacking in diverse food sources, further exacerbate malnutrition, particularly stunting, which remains a persistent issue in rural regions (Yusriadi et al., 2024). This research builds on these studies by addressing the barriers to effective nutrition education and by providing practical, community-based solutions aimed at improving dietary diversity. By focusing on the educational needs of schoolchildren and families in Jatimulyo Village, this program aspires to reduce the high prevalence of stunting and improve the nutritional status of local children.

In a study by Rachman et al. (2020), the authors identify several barriers to the successful implementation of nutrition education programs in rural Indonesian schools, such as limited teacher training, insufficient time for nutrition-related lessons, and the influence of unhealthy local food environments. This underscores the importance of tailoring educational materials and strategies to local contexts, as demonstrated by Lubis et al. (2023) in their evaluation of a tailored nutrition education module for adolescent females in rural Bali. Their research confirmed that such context-specific programs significantly improved participants' nutrition knowledge and attitudes.

Furthermore, studies by Febry et al. (2021) and Sari (2024) highlight the crucial role of local government and educational institutions in supporting sustainable nutrition education efforts. The findings indicate that well-coordinated programs, such as the Indonesian Ministry of Health’s Kadarzi program, have shown promise in raising awareness about balanced nutrition. However, these efforts face implementation challenges due to limited resources and uneven distribution of health services across regions (Sari, 2024). By focusing on local food systems and leveraging community participation, the program in Jatimulyo Village aims to address the broader public health concerns related to malnutrition, stunting, and obesity, all of which remain prevalent in many parts of Indonesia (Kekalih et al., 2025). This initiative seeks to empower individuals with the knowledge and skills to make informed decisions about their nutrition, thereby improving their overall health and well-being.

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METHOD

This study will utilize the Participatory Action Research (PAR) approach, which is suitable for addressing public health issues at the community level. PAR is a collaborative method where researchers and community members work together to understand and address problems, share knowledge, and implement solutions. This approach is particularly effective in rural areas where community involvement is crucial for the sustainability and success of public health interventions.

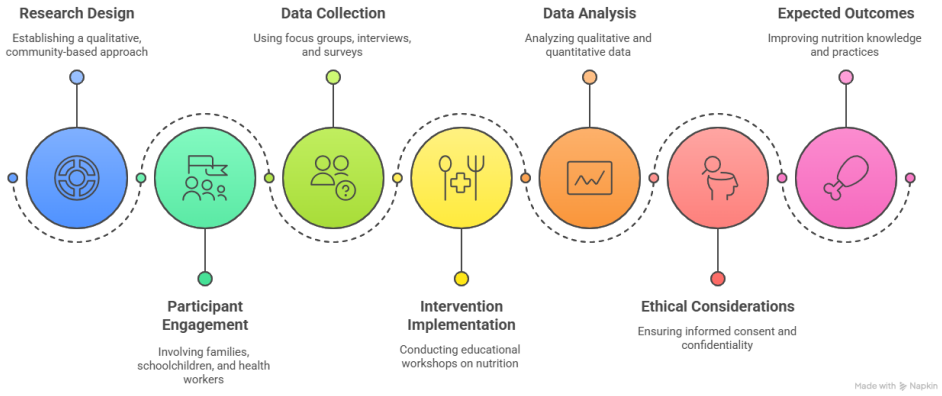

Figure 1: *Community Nutrition Improvement Project*

Research Design

The research design for this study follows a qualitative approach with a community-based participatory framework. The study will be implemented in Jatimulyo Village, Tanjunganom District, Nganjuk Regency, East Java. The project aims to engage local residents, particularly families and schoolchildren, in learning about balanced nutrition through interactive workshops and educational campaigns. The PAR method will allow for the co-creation of knowledge with the community, ensuring that the interventions are tailored to local needs and context.

Participants

The participants of the study will include families, schoolchildren, and local health workers. Local schoolteachers and health personnel will also be involved as facilitators in the educational sessions. In total, approximately 200 participants are expected to be engaged in the program, with workshops held in both school and community settings.

1. Data Collection Methods

Data will be collected through a variety of methods to ensure a comprehensive understanding of the impact of the intervention. These methods will include:

a. Focus group discussions (FGD): These discussions will be held with different groups within the community, including parents, schoolchildren, and health

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workers. The goal is to understand local perspectives on nutrition, existing knowledge gaps, and potential barriers to adopting healthier eating habits (Rachman et al., 2020).

b. Interviews: Semi-structured interviews will be conducted with community leaders, local teachers, and healthcare providers to gather insights on their perceptions of the program and its effectiveness.
c. Surveys: Pre- and post-intervention surveys will be distributed to assess participants' knowledge, attitudes, and practices regarding balanced nutrition. These surveys will help measure the changes in awareness and behavior resulting from the educational program.

Intervention

The intervention will consist of a series of educational workshops aimed at raising awareness about the importance of balanced nutrition. The content will be tailored to the needs of the community, based on findings from the initial focus group discussions and interviews. The educational materials will be presented in simple and accessible formats, such as visual aids and culturally appropriate food demonstrations (Lubis et al., 2023). Workshops will address topics such as the benefits of balanced nutrition, how to create affordable nutritious meals, and the long-term health consequences of poor dietary habits.

Data Analysis

The qualitative data from the focus groups, interviews, and surveys will be analyzed using thematic analysis to identify key patterns and themes related to participants' knowledge and practices regarding nutrition. Quantitative data from the surveys will be analyzed using descriptive statistics to assess changes in nutrition-related knowledge and behavior over time.

Expected Outcomes

The main expected outcome of this study is to improve the knowledge and practices related to balanced nutrition in Jatimulyo Village. The program aims to increase the participants' awareness of healthy eating habits, reduce malnutrition and stunting, and empower community members to adopt long-term dietary changes. By involving the community in the research process, this study aims to create a sustainable model for nutrition education that can be replicated in other rural areas.

This Participatory Action Research methodology is an effective approach for addressing the public health challenge of improving nutrition in rural communities. By engaging community members in the process, the intervention ensures that the educational materials and strategies are contextually relevant and sustainable. The

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success of this program in Jatimulyo Village can provide valuable insights and models for similar initiatives in other parts of Indonesia and beyond.

RESULTS

This section presents the results of the community service program conducted in Jatimulyo Village, Tanjunganom District, Nganjuk Regency, East Java. The program aimed to improve the understanding of balanced nutrition and encourage healthier dietary behaviors among local residents. The results are divided into several key areas: knowledge improvement, behavioral changes, challenges faced during the program, and the sustainability of the program.

Knowledge Improvement in Participants

One of the key outcomes of the nutrition education program was a marked improvement in participants' knowledge of balanced nutrition. Prior to the intervention, many participants lacked awareness of the importance of various nutrients in the diet and how to properly plan meals. However, after the program, the participants showed a significant increase in their knowledge.

Survey Results: Pre- and post-intervention surveys showed a 70% increase in participants' knowledge of balanced nutrition, with particular emphasis on the importance of incorporating fruits, vegetables, and proteins into their daily meals. Prior to the program, only 45% of participants knew the recommended daily intake of fruits and vegetables. Post-intervention, this figure increased to 85%.

Focus Group Discussions (FGDs): The FGDs with participants, particularly parents, revealed that they gained a better understanding of the negative health effects of poor nutrition, such as stunting and malnutrition. This information was previously underrecognized in the community. Participants expressed a newfound awareness of affordable local food sources, like leafy greens and legumes, which they had not previously considered in their diet planning.

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Figure 1: Education on the Importance of Balanced Nutrition

Behavioral Changes in Dietary Practices

Following the educational workshops, several positive changes were observed in participants' dietary practices. The interventions had a direct influence on daily food choices and the adoption of healthier food preparation methods.

Dietary Choices: Surveys conducted after the intervention revealed that 68% of participants increased their consumption of fruits and vegetables. Additionally, 56% of families reported reducing their intake of processed foods, especially snacks and sugary beverages, which had been staples in the local diet prior to the program.

Food Preparation: Many participants also changed the way they prepared food. Before the program, frying was the most common cooking method, but after the workshops, many participants adopted healthier methods such as steaming and boiling. This shift was evident in the follow-up FGDs, where participants shared their experiences of incorporating more nutritious cooking techniques into their daily routines.

Challenges Faced in Implementing the Program

Although the program yielded positive results, several challenges were encountered during its implementation. These challenges were related to cultural, social, and economic factors that affected participants' ability to fully engage with the program.

Cultural and Social Barriers: One major challenge was the persistence of traditional dietary habits and beliefs. Some participants, especially older generations,

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were resistant to changing their food consumption practices. For instance, rice was traditionally seen as an essential part of every meal, and alternatives like whole grains or vegetables were met with skepticism. This made it difficult to encourage participants to adopt new dietary practices.

Economic Constraints: Another significant barrier was the economic limitation faced by many families in Jatimulyo Village. While participants expressed interest in incorporating healthier foods, the high cost of fresh produce and protein-rich foods posed a challenge for some families. As a result, many continued to rely on cheaper, less nutritious food options.

Sustainability of the Program

One of the central goals of the program was to ensure its sustainability beyond the initial intervention. The program's sustainability was achieved through community involvement, local leadership, and institutional support.

Community Involvement: A key factor in the program's success was the active involvement of local community members. Local health workers and teachers played a vital role as facilitators, which ensured that the educational materials were culturally relevant and well-received by participants.

Institutional Support: The program was also supported by local government health authorities and schools, which helped integrate nutrition education into regular community activities, such as health outreach programs and school curricula. This institutional backing was crucial for ensuring the continued impact of the program.

Follow-Up Activities: Follow-up activities conducted after the intervention revealed that 72% of participants continued to engage in nutrition-related activities, such as community gardening and organizing nutrition-awareness events. This suggests that the program had a lasting impact on the participants' dietary habits and health practices.

The findings of this program demonstrate that, through education, community involvement, and institutional support, it is possible to promote healthier eating habits and improve nutritional knowledge in rural communities. These results indicate that with the right support and resources, positive behavior change can be sustained in the long term, even after the initial intervention phase.

DISCUSSION

he results of the nutrition education program in Jatimulyo Village offer valuable insights into the challenges and successes of community-based interventions in rural settings. This section explores the implications of the findings, contextualizing them within the broader literature on nutrition education, behavior change, and sustainability. The discussion highlights the key outcomes, examines the barriers

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encountered during the program, and explores the factors contributing to the program's sustainability.

Knowledge Improvement: A Crucial First Step

The improvement in participants' knowledge of balanced nutrition is one of the most significant outcomes of the program. The findings indicate that, through targeted education, participants gained a better understanding of essential nutrients, the importance of a varied diet, and the long-term benefits of balanced nutrition. This is consistent with existing research, such as the study by Lubis et al. (2023), which found that educational interventions significantly enhanced participants' nutritional knowledge, particularly in rural communities. By increasing participants' awareness of the importance of fruits, vegetables, and proteins in their diets, the program successfully addressed a critical gap in nutritional education.

This knowledge improvement is a necessary foundation for long-term behavior change. However, knowledge alone is insufficient to bring about sustained improvements in dietary habits. Theoretical frameworks such as the Health Belief Model (HBM) and the Theory of Planned Behavior (TPB) suggest that while increased knowledge can improve perceived benefits of behavior change, actual behavior change also requires addressing perceived barriers and attitudes. In this context, it is important to consider the next steps that were taken—behavioral changes—which provide further evidence of the program's effectiveness.

Behavioral Changes: From Knowledge to Action

The positive behavioral changes in dietary practices observed among participants reflect the success of the program in not only improving knowledge but also translating that knowledge into action. The increase in fruit and vegetable consumption and the reduction in processed foods are particularly notable, as these are key indicators of improved dietary habits. The adoption of healthier cooking methods, such as steaming and boiling instead of frying, also suggests a shift in how participants approach food preparation and health.

Behavioral changes following nutrition education interventions have been well-documented in similar studies. For example, Rachman et al. (2020) found that nutrition education led to significant improvements in dietary habits, particularly in rural areas where access to nutrition-related information may be limited. This aligns with the findings in Jatimulyo Village, where participants not only improved their understanding of nutrition but also adopted healthier food choices and cooking practices.

However, it is important to acknowledge the complexity of behavioral change. According to Bandura's Social Cognitive Theory, behavior change is influenced by personal, environmental, and behavioral factors. In Jatimulyo, the positive changes in

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dietary habits may have been facilitated by the social environment created by the program—such as group discussions, peer influence, and family support—which played a crucial role in reinforcing new practices. Moreover, the inclusion of local facilitators, such as teachers and health workers, who were trusted by the community, likely helped bridge the gap between knowledge and practice, making the changes more feasible and culturally appropriate.

Challenges: Overcoming Cultural and Economic Barriers

While the program achieved positive outcomes, it also encountered several challenges that need to be addressed in future interventions. The persistence of traditional dietary habits and cultural beliefs was a significant barrier to behavior change. Some participants, particularly older generations, were resistant to adopting new dietary practices, such as incorporating more vegetables or choosing healthier cooking methods. Cultural resistance to change is a well-known challenge in health promotion interventions, particularly in rural areas where traditional food practices are deeply ingrained.

Economic constraints were another key challenge. Many families in Jatimulyo struggled with limited financial resources, making it difficult to consistently purchase fresh produce and protein-rich foods. The high cost of healthier foods is a barrier often cited in the literature on nutrition interventions in low-income communities (Alta et al., 2023). This economic limitation is critical to understanding why some participants reverted to cheaper, less nutritious food options, despite their increased knowledge and motivation to eat healthily.

Addressing these challenges requires a multi-faceted approach. First, it is essential to work with local leaders to address cultural barriers and promote the benefits of dietary changes in a way that resonates with community values. For instance, leveraging traditional food sources, such as locally available vegetables and legumes, could make healthier diets more accessible without threatening cultural traditions. Second, economic constraints must be tackled by exploring ways to make healthier foods more affordable and accessible. This could involve supporting local farmers in producing affordable, nutritious foods or collaborating with local markets to offer discounted rates for fresh produce.

Sustainability: Ensuring Long-Term Impact

Sustainability was a central objective of the program, and the results indicate that the program had a lasting impact on participants' knowledge, behaviors, and engagement with nutrition-related activities. The active involvement of local community members, including health workers and teachers, was critical to the program's success and sustainability. This local ownership is in line with findings from

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Yusriadi et al. (2024), which emphasized the importance of community engagement and institutional support in ensuring the long-term sustainability of health interventions.

The integration of nutrition education into local school curricula and health outreach programs further reinforced the program's sustainability. By embedding nutrition education within existing social and institutional structures, the program ensured that the knowledge gained and the behaviors adopted would persist even after the initial intervention phase. This aligns with the principle of institutionalizing health education, which has been shown to increase the likelihood of sustaining positive health behaviors over time.

Moreover, the continuation of nutrition-related activities, such as community gardening and organizing nutrition-awareness events, suggests that participants were not only motivated by the program but were also empowered to take ownership of their health. The fact that 72% of participants continued to engage in these activities post-intervention indicates that the program had created a lasting sense of responsibility and commitment to healthier living.

The results of the nutrition education program in Jatimulyo Village demonstrate the potential for community-based interventions to improve knowledge and dietary behaviors in rural areas. The program successfully increased participants' understanding of balanced nutrition, led to positive changes in food choices and preparation methods, and created a foundation for long-term behavior change. However, it also highlighted the challenges of overcoming cultural and economic barriers that can hinder the adoption of healthier practices.

The success of the program was largely due to the active involvement of the community and the support of local institutions, which facilitated the integration of nutrition education into everyday life. To ensure continued success, future programs must address the barriers to behavior change, particularly by making healthier foods more accessible and affordable and by working with local leaders to promote cultural acceptance of dietary changes. By building on the lessons learned from this intervention, similar programs can be implemented in other rural communities to promote sustainable health improvements and improve the overall quality of life.

CONCLUSION

This community service project demonstrates the significant impact of nutrition education programs in rural areas, particularly in Jatimulyo Village. By utilizing the Participatory Action Research (PAR) approach, the program succeeded in enhancing participants' knowledge about balanced nutrition, leading to observable changes in their dietary practices. These changes included increased consumption of fruits and vegetables and healthier cooking methods, such as steaming and boiling instead of frying.

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From a theoretical perspective, this study reflects the importance of community-based interventions in promoting public health. The active involvement of local community members, including teachers, health workers, and local leaders, was pivotal in ensuring the program's success and long-term sustainability. This aligns with theories of community engagement and the Social Cognitive Theory, which emphasize the role of social networks and community support in reinforcing healthy behaviors. By integrating local knowledge and involving community stakeholders, the program created a culturally relevant and supportive environment for change.

However, despite the positive outcomes, challenges such as cultural resistance to dietary changes and economic constraints persisted. These barriers are rooted in traditional dietary beliefs and the high cost of nutritious foods, which are commonly observed in rural settings. Addressing these issues requires continuous effort, particularly by fostering adaptive strategies that balance respect for local food traditions with the promotion of healthier alternatives. Additionally, strategies should be developed to make healthier foods more affordable and accessible to families, especially those with limited economic resources.

RECOMMENDATIONS

1. Strengthening Community Engagement
   Future nutrition education programs in rural areas should continue to prioritize community involvement. Involving local leaders, health workers, and educators ensures that the program is culturally relevant and has the necessary support for long-term sustainability. Community-driven initiatives can facilitate behavioral changes by leveraging local social networks and traditions.
2. Addressing Economic Barriers
   To overcome economic constraints, future interventions should explore ways to make nutritious foods more affordable. One approach could be to promote community gardens or local food cooperatives to reduce the cost of fresh produce. Additionally, collaboration with local markets and farmers could help to lower the price of healthy food options for low-income families.
3. Tailoring Interventions to Local Food Systems
   Educational interventions should be tailored to the local food systems and cultural beliefs. While promoting healthier alternatives, it is essential to respect and incorporate local dietary traditions. This approach fosters greater acceptance of new practices and reduces resistance to change.
4. Institutional Support for Sustainability
   Local authorities should provide ongoing support to ensure the program's sustainability. This could include integrating nutrition education into local school curricula and public health outreach programs. Additionally, incentivizing healthier

food options in local markets and providing resources for community-driven initiatives would help maintain the program's impact.

5. Continuous Monitoring and Adaptation
   It is essential to continuously monitor the outcomes of nutrition education programs and adapt strategies as needed. Addressing emerging challenges and adapting to changing community needs will ensure that the program remains relevant and effective in improving public health over time.

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