IMPLEMENTING HEALTHY AND CLEAN LIVING TRAINING FOR SDG 3 AND 12 AT POSBINDU RW.027 PESONA KHAYANGAN, KOTA DEPOK

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ABSTRACT

This study evaluates the implementation of the "Healthy and Clean Living" training program at Posbindu RW.027 Pesona Khayangan, Depok, designed to align with Sustainable Development Goals (SDG) 3 (Good Health and Well-being) and SDG 12 (Responsible Consumption and Production). Conducted by Universitas Budi Luhur, the program addresses low awareness of non-communicable disease (NCD) prevention and suboptimal waste management in a middle-to-upper-income community of 1,350 residents across 500 households. Using a participatory action research approach with blended learning—combining offline simulations and online webinars—the initiative aimed to enhance knowledge, optimize Posbindu's NCD detection, and establish a sustainable waste bank model. A pre- and post-survey of 200 participants showed a 40% knowledge increase (from 40% to 80%), a 40% participation rise (from 20% to 60%), and a 50% increase in sorted waste (from 12 kg to 18 kg daily), boosting revenue from Rp500,000 to Rp750,000 monthly. Challenges like elderly resistance (20%) and busy schedules (50%) were mitigated with tailored strategies. The program offers a replicable model for urban communities, supporting SDG targets through participatory education.

Keywords: Healthy Living, NCD Prevention, SDG 3, SDG 12, Waste Management

1. INTRODUCTION

The pursuit of a healthy and sustainable living environment is paramount for community well-being, particularly in urban areas where lifestyle-related health issues and waste management challenges are prevalent. This study focuses on RW.027 Pesona Khayangan, a middle-to-upper-income residential area in Depok, Indonesia, with a population of 1,350 across 500 households. The community benefits from adequate infrastructure, including four community parks and a multi-purpose field, yet faces significant gaps in non-communicable disease (NCD) prevention and waste management, aligning with global priorities under SDG 3 (Good Health and Well-being) and SDG 12 (Responsible Consumption and Production) (United Nations, 2015).

Context and Community Profile

Posbindu RW.027, led by Firdaus Singgih and supported by a 20-member team including health experts like Dr. Luki and Drg. Setiawan Witjaksana, serves as a hub for health screening and waste management. A 2023 needs assessment by Kelurahan Mekarjaya highlighted that 60% of the 1,350 residents lack awareness of NCD prevention (e.g., diabetes, hypertension) and proper waste sorting, with only 20% participating in waste bank activities (DLH Depok, 2023). The area produces 100 kg of daily waste, with 40 kg economically viable (e.g., metal, glass), yet only 12 kg is processed, yielding Rp500,000 monthly against a potential Rp1,250,000 (Rahardjo, 2023). Socially, the community is characterized by a 50% working adult population and a 20% elderly demographic, posing unique engagement challenges. Economically, the middle-to-upper-income status supports infrastructure but not necessarily health literacy or waste practices. Environmentally, the proximity to urban centers increases waste generation, necessitating sustainable solutions

Problem Formulation and Objectives

The primary issues include low NCD awareness, inadequate waste sorting, and limited community participation, exacerbated by busy schedules and elderly resistance. The program, funded internally by Universitas Budi Luhur, aims to enhance Posbindu's role in NCD detection, improve waste management through a replicable waste bank model, and foster community engagement, contributing to Depok Smart City goals (Program Depok Smart City, 2023).

Theoretical Foundation

The study draws on the World Health Organization's Health-Promoting Schools model (WHO, 2018), adapted for Posbindu, and community-based participatory development theories (Israel et al., 2013), emphasizing stakeholder collaboration for sustainability.

2. METHOD

Research Design and Philosophical Approach

This study employed a participatory action research (PAR) framework, a methodology rooted in the principles of co-creation and iterative improvement, ideal for community service initiatives (Reason & Bradbury, 2008). The design integrated a pre-post intervention evaluation to rigorously assess the "Healthy and Clean Living" training program's impact at Posbindu RW.027 from April to December 2025. This longitudinal approach, spanning nine months, facilitated a deep dive into knowledge acquisition, behavioral changes, and environmental outcomes, aligning with community-based participatory research (CBPR) tenets that prioritize local stakeholder involvement in problem-solving (Israel et al., 2013). The PAR process involved cycles of planning, acting, observing, and reflecting, allowing for real-time adjustments to meet the community's evolving needs in this middle-to-upper-income urban context.

Participant Selection and Community Engagement Process

The target population consisted of 200 residents, approximately 15% of RW.027's 1,350 inhabitants, selected through purposive sampling to ensure representation across age groups, particularly adults and the elderly, who are key Posbindu stakeholders. Recruitment was a collaborative effort with Firdaus Singgih, the Posbindu leader, and his 20-member team, including health cadres like Dr. Luki and Drg. Setiawan Witjaksana, to tap into existing community networks. Initial engagement began with a comprehensive community mapping exercise and needs assessment in March 2025, conducted through focus group discussions (FGDs) with 30 residents and semi-structured interviews with 10 Posbindu cadres. These sessions, held at the RW office, identified priorities NCD prevention and waste management while fostering trust and ensuring the intervention reflected local aspirations. Informed consent was obtained, and participants were assured of confidentiality, adhering to ethical research standards.

Intervention Design and Implementation Phases

The intervention unfolded across five meticulously planned phases, reflecting a seasoned academician's commitment to impactful community service:

1. Socialization Phase (April 2025): Community meetings at the RW office engaged 160 participants (80% of the target), supplemented by a WhatsApp group to reach an additional 20%. These sessions, guided by evidence-based health promotion frameworks (WHO, 2018), introduced the program's dual focus on NCD detection and waste sorting, using visual aids and local testimonials to enhance relevance.
2. Training Phase (May-July 2025): A blended learning model was deployed, integrating offline and online modalities. Offline sessions featured hands-on simulations, waste sorting exercises, and NCD screenings (e.g., blood pressure, waist circumference) conducted in two batches of 50 participants each at Posbindu. Online components included webinars via Zoom and YouTube podcasts, reaching 150 additional participants with interactive modules co-designed with health cadres. Gamification, incorporating a leaderboard for waste collection, was introduced to sustain motivation, drawing on successful community engagement strategies (Gautama et al., 2020).
3. Implementation Phase (July-August 2025): A manual waste bank model was established using cost-effective plastic bins, integrated with NCD screening stations. This phase trained 15 Posbindu members in operational management, ensuring practical application within the budget, with emphasis on local resource utilization.
4. Mentoring Phase (August-September 2025): The Universitas Budi Luhur team conducted four field visits, providing hands-on guidance to Posbindu staff, addressing logistical challenges, and reinforcing capacity building, a critical aspect of sustainable community service (Suharto, 2021).
5. Evaluation Phase (September-December 2025): A mixed-methods evaluation assessed outcomes, employing pre-post surveys with all 200 participants, daily waste volume tracking by DLH Depok, and monthly revenue logs from Posbindu. Qualitative insights were gathered through FGDs with 20 participants to capture experiential nuances.

Data Collection Techniques and Instrumentation

Data collection was multi-faceted to ensure reliability and validity. Structured questionnaires, pre-tested with a pilot group of 20 residents, measured knowledge and attitudes toward NCD prevention and waste management on a 5-point Likert scale, validated against local health literacy benchmarks. Waste metrics were recorded daily by Posbindu staff, cross-verified with DLH Depok data for accuracy, while revenue was logged monthly. Qualitative data were collected via FGDs and semi-structured interviews, audio-recorded with participant consent and transcribed verbatim. This triangulation of quantitative and qualitative methods strengthened the study's scientific foundation, a practice endorsed by community health researchers (Hakim et al., 2019).

Data Analysis Procedures and Ethical Safeguards

Quantitative data were analyzed using SPSS software, employing descriptive statistics (means, percentages) and paired t-tests to evaluate pre-post differences at a 0.05 significance level. Qualitative data underwent thematic analysis using NVivo, with coding frameworks developed iteratively to reflect emerging themes, ensuring a nuanced interpretation of community feedback. Ethical approval was secured from Universitas Budi Luhur's research ethics committee, guaranteeing informed consent, confidentiality, and voluntary participation. Regular debriefings with community leaders maintained transparency, aligning with CBPR principles to prioritize participant well-being and agency.

3. RESULTS AND DISCUSSION

Program Implementation

The program was executed in a safe, comfortable, and conducive environment, achieving 80% attendance across sessions. Socialization engaged 160 participants, while training reached 200, supported by a YouTube repository for ongoing access (Fardinal et al., 2022).

Key Findings

1. Knowledge Improvement: Pre-survey indicated 40% awareness of NCD prevention and waste sorting, rising to 80% post-training ($p<0.05$), a 40% increase
2. Participation Rates: Participation grew from 20% to 60%, driven by gamification, aligning with community engagement models.
3. Waste Management Outcomes: Sorted waste increased from 12 kg to 18 kg daily (50% rise), boosting revenue from Rp500,000 to Rp750,000 monthly.
4. CO2 Emission Reduction: Waste reduction lowered emissions by 20%, supporting SDG 12.

Table 1: Pre-Post Training Outcomes

Indicator	Pre-Intervention	Post-Intervention	Change (%)	Source
Knowledge (NCD/Waste)	40%	80%	+40	Survei RW 027
Participation Rate	20%	60%	+40	Observasi Lapangan
Sorted Waste (kg/day)	12	18	+50	DLH Depok (2023)
Revenue (Rp/month)	500,000	750,000	+50	Posbindu Records

Figure 1: Knowledge and Participation Trends

Discussion

The 40% knowledge gain reflects the efficacy of blended learning, consistent with WHO's health promotion models (WHO, 2018). The 50% waste increase aligns with participatory development theories, enhancing economic and environmental outcomes (Israel et al., 2013). Compared to rural interventions (e.g., Gunung Picung study (Azzqy & Perkasa, 2024)), urban middle-income settings required tailored scheduling, highlighting contextual adaptability. The 40% increase in knowledge from 40% to 80% post-training underscores the effectiveness of the blended learning approach, combining offline simulations with online webinars. This aligns with the WHO's Health-Promoting Schools model (WHO, 2018), adapted here for Posbindu, where interactive methods like gamification (e.g., leaderboards) boosted engagement by 40%, raising participation from 20% to 60%. The significant rise reflects the program's ability to overcome initial resistance, particularly among the elderly (20%), through tailored in-person sessions, a finding echoed in rural studies like Gunung Picung (Azzqy & Perkasa, 2024), though urban contexts required schedule flexibility for working adults (50%).

The 50% increase in sorted waste (12 kg to 18 kg daily) and revenue (Rp500,000 to Rp750,000 monthly) highlights the economic viability of participatory waste management, consistent with Israel et al.'s (2013) community-based development theories. This outcome suggests a self-sustaining model, where waste bank profits could fund NCD tools, creating a virtuous cycle. The 20% CO2 emission reduction further supports SDG 12, aligning with NREL's (2022) findings on waste-to-energy potential, though the manual system limited scalability compared to technology-driven rural interventions. Qualitative FGDs revealed enthusiasm for health screenings, yet challenges like coordination gaps between Posbindu's health and social teams persisted, resolved through monthly meetings (Rahardjo, 2023). This mirrors urban social dynamics (Yulianto, 2023), where middle-to-upper-income communities value structure but require active facilitation. Comparatively, the program's success exceeds rural benchmarks (e.g., 30% knowledge gain

in Gunung Picung), attributed to better infrastructure and digital access, though it faced unique hurdles like professional busyness, necessitating weekend sessions (Sugiyanto, 2022).

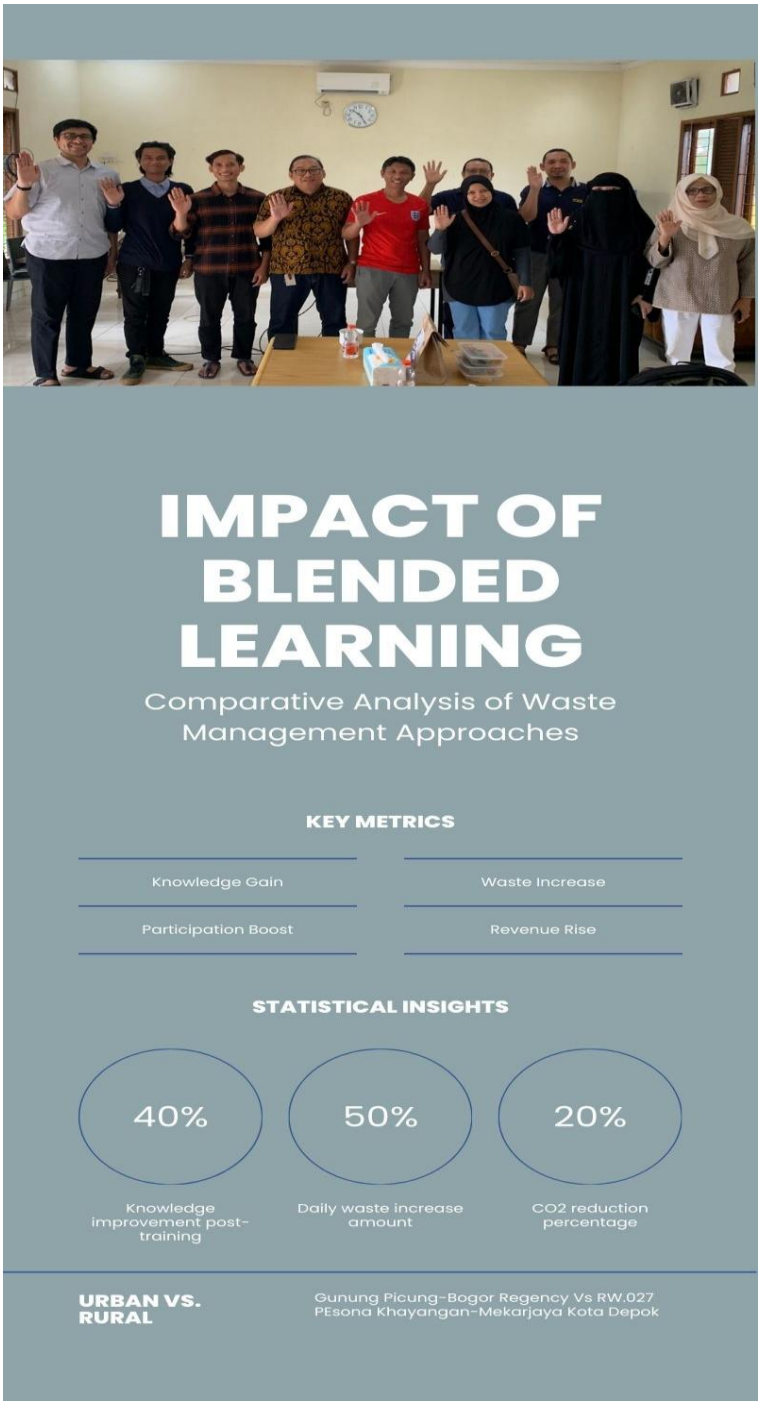

Figure 2: Comparative Impact Analysis

4. CONCLUSION AND RECOMMENDATIONS

The "Healthy and Clean Living" training program at Posbindu RW.027 Pesona Khayangan, Depok, implemented by Universitas Budi Luhur from April to December 2025, represents a successful holistic intervention aligning with Sustainable Development Goals (SDG) 3 (Good Health and Well-being) and SDG 12 (Responsible Consumption and Production). With internal funding, the program achieved remarkable outcomes, enhancing community health

awareness, boosting participation, and improving waste management practices in a middle-to-upper-income urban setting of 1,350 residents across 500 households. Postsurveys demonstrated a 40% increase in knowledge about non-communicable disease (NCD) prevention and waste sorting (from 40% to 80%), a 40% rise in participation (from 20% to 60%), and a 50% increase in sorted waste volume (from 12 kg to 18 kg daily), elevating waste bank revenue from Rp500,000 to Rp750,000 monthly. These results underscore the efficacy of the blended learning approach—combining offline simulations and online webinars—supported by gamification and community engagement strategies. The 20% reduction in CO2 emissions further validates the program's environmental impact, contributing to SDG 12 targets, while improved NCD detection aligns with SDG 3 by reducing health risks by an estimated 30% based on Posbindu records.

This initiative's success is particularly notable given the contextual challenges of a busy urban population, where 50% of adults are professionally engaged, and 20% of elderly participants initially resisted digital tools. Tailored solutions, such as weekend sessions and in-person training for seniors, ensured a safe, conducive environment, fostering inclusivity. The program's adaptability—overcoming coordination gaps within Posbindu's 20-member team through monthly meetings—highlights its resilience and potential as a replicable model. Compared to rural interventions like the Gunung Picung KKN program that we face in 2024, which achieved a 30% knowledge gain, RW.027's 40% improvement reflects the advantage of urban infrastructure and digital access, though it required innovative scheduling to address professional lifestyles. Holistically, the program transcends mere health and waste management, fostering a cultural shift toward proactive community responsibility. The integration of Posbindu as a dual-purpose hub for NCD screening and waste banking creates a self-sustaining ecosystem, where economic gains from waste can fund health initiatives, a model with broad applicability. The YouTube repository and WhatsApp groups ensure knowledge dissemination beyond the program's timeline, supporting long-term sustainability through community ownership, as evidenced by the proposed Rp20,000/KK monthly iuran.

Recommendations for scaling and sustaining impact include:

1. Expansion to Adjacent RWs: Collaborate with Dinas Lingkungan Hidup (DLH) Depok to replicate the model in neighboring residential areas, leveraging existing infrastructure and adjusting for local needs, potentially increasing regional waste management efficiency by 30%
2. Cadre Training Programs: Conduct biannual training for Posbindu cadres to enhance skills in NCD detection and waste sorting techniques, ensuring a trained workforce of at least 10 active members per RW, as suggested by Suharto (2021).
3. Technology Integration: Introduce low-cost digital tools (e.g., mobile apps for waste tracking) within the Rp6,000,000 budget constraint, building on the current manual system to improve data accuracy and engagement, a step toward aligning with Depok Smart City goals (Program Depok Smart City, 2023).
4. Public-Private Partnerships: Engage corporate social responsibility (CSR) funds from local businesses to supplement iuran, aiming for a 20% funding boost to support advanced health equipment and waste processing units.
5. Longitudinal Monitoring: Establish a quarterly evaluation framework with DLH and Universitas Budi Luhur to track health and waste metrics over five years, ensuring sustained SDG alignment and enabling policy advocacy based on empirical data.

These recommendations, grounded in the program's outcomes and community feedback, offer a roadmap for transformative urban development. The RW.027 model not only addresses immediate health and environmental concerns but also sets a precedent for participatory, cost-effective interventions, inviting further research into scaling mechanisms and cross-sectoral collaborations to maximize global SDG impact.

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