Hanifiya: Jurnal Studi Agama-Agama
ISSN 2089-8835

Strategies for Improving Clean and Healthy Living Behavior in Families: Daily Practices

Feby Indah Azzahra[1*], Haekhal Ahmad Gumilang[2], Muhammad Hikmal[3], Mohammad Virdas[4], Naajiah Siti Fadhlulariibah,[5] Siti Muslikah[6]

[1,2,3,4,5,6] Universitas Islam Negeri Sunan Gunung Djati Bandung, Indonesia

[*]Corresponding Author, Email: febyindahazzahra88@gmail.com

Received: February 2026; *Accepted*: February 2026; *Published*: March 2026

Abstract: This study aims to explore strategies for improving Clean and Healthy Living Behavior (PHBS) within families as a fundamental effort to enhance community health. PHBS is defined as a set of behaviors practiced consciously to maintain hygiene, health, and disease prevention. The research employed a descriptive approach using observation, interviews, and documentation focusing on families' daily practices related to PHBS, such as household environmental management, handwashing habits, food handling, and other hygiene practices. The findings reveal that PHBS interventions play a significant role in raising health awareness, reducing the risk of infectious diseases, and strengthening families' participation in maintaining a healthy environment. Challenges included limited knowledge, low motivation among families, and cultural or habitual barriers that hinder behavioral change. Practical recommendations emphasize the need for continuous health education programs, intensive family mentoring, and government support to integrate PHBS into local health development agendas. This study contributes to the literature by reaffirming the role of families as the primary agents of community health and offering a strategic model of PHBS implementation adaptable to diverse social and cultural contexts.

Keywords: clean living; community health; empowerment; family; health education; healthy lifestyle.

1. Introduction

Public health is currently seen as a key foundation for achieving the Sustainable Development Goals (SDGs), particularly Goal 3, which emphasizes the importance of ensuring healthy lives and promoting well-being for all at all ages (Das et al., 2021). The World Health Organization (WHO) emphasizes that behavior-based health promotion is a key strategy in reducing the burden of communicable and non-communicable diseases (Hareru et al., 2024). In many countries, lifestyle changes have proven more impactful than medical interventions alone. For example, the Healthy People 2030 campaign in the United States demonstrated that simple interventions, such as increased handwashing, balanced nutrition, and smoking control, reduced the incidence of environmentally related diseases by more than 20% within a decade (Vande Velde et al., 2021). Similarly, the Health Promotion Board program in Singapore consistently links the promotion of healthy behaviors to people's quality of life, resulting in the country ranking among the best in global health indices (Khow et al., 2021). Meanwhile, in South Asia and Sub-Saharan Africa, the main challenge is not only access to health services, but also low adherence to healthy lifestyles at the household level (Alkhatib et al., 2021). A contemporary study by UNICEF (2022) highlighted that many families still struggle to implement basic hygiene habits, such as using healthy latrines or consuming clean water (Matta et al., 2022). This then triggers a high prevalence of diarrheal diseases, acute respiratory infections, and malnutrition, which are the main causes of death in children under five. From this context, it is clear that public health transformation cannot be separated from efforts to strengthen clean and healthy

lifestyle practices, which are also a global strategy for reducing health disparities between countries.

From a contemporary theoretical perspective, the behavioral change model approach emphasizes that health behavior change can only be achieved if interventions address three fundamental aspects: knowledge, attitude, and practice (A. Singh & Barnard, 2023). This theory aligns with the Health Belief Model (HBM), which asserts that individuals are motivated to adopt healthy behaviors when they perceive susceptibility, perceive the dangers of a particular disease (perceived severity), believe in the benefits of healthy behaviors (perceived benefits), and perceive barriers as relatively surmountable (Orji et al., 2012). This theoretical framework has been widely used in both developed and developing countries to intervene in behavior-based health issues, including PHBS in Indonesia. When put into the context of sustainable development, the implementation of clean and healthy living behaviors at the household level has enormous strategic value. The United Nations Development Programme (UNDP) emphasizes that families are the most important agents of change in human development because they are the smallest unit that shapes the lifestyles of the next generation (U. K. Singh, 2024). Behavioral changes at the family level not only reduce disease rates but also increase economic productivity, reduce national health costs, and strengthen social cohesion in society (Spagano, 2025). Thus, the discourse on clean and healthy living behaviors is not merely a domestic health issue but also part of the country's contribution to the global development agenda.

Within this international framework, Indonesia faces unique challenges. Although the government has established Regulation of the Minister of Health of the Republic of Indonesia Number 2269/MENKES/PER/XI/2011 as a guideline for implementing PHBS, its implementation still faces various structural and cultural obstacles (Sari & Yamistada, 2023). This challenge is evident in densely populated areas, such as RW 08 in Mekarsari Village, Selaawi District, Garut Regency, where field surveys revealed a significant gap between health indicators that have been met and hygiene aspects that are still lagging. This condition emphasizes the importance of viewing PHBS not only as a national health program, but also as part of a global agenda to improve the quality of life of communities at the grassroots level. Families play a crucial role in developing healthy lifestyle habits. Children first acquire health behaviors from their family environment, making the household the primary agent in shaping healthy behaviors across generations. Successful implementation of PHBS at the family level will directly impact overall community health. However, family compliance with PHBS indicators remains low (Ruliyandari et al., 2022). The main PHBS indicators at the household level encompass various aspects, such as childbirth assisted by health workers, exclusive breastfeeding, regular monthly infant weighing, clean water use, handwashing with soap, use of healthy latrines, weekly mosquito larvae eradication, daily fruit and vegetable consumption, regular exercise, and no smoking inside the home (Jumadewi et al., 2022).

The Indonesian government, through the Ministry of Health, has targeted 80% of households implementing PHBS (Clean and Healthy Living) in the 2014–2019 period. However, achievements in the field are still far from this target. For example, in 2016, the PHBS rate in West Java was only 52.5%, with the highest rate in Depok City at 77.2%. Meanwhile, data from the Garut Regency Health Office in 2016 showed that only 34% of households had implemented PHBS, while the remaining 66% had not. Although there was an increase in 2017 to 56.13%, an increase of around 22.13% compared to the previous year, this figure still fell short of the national target of 75% (Rosidin et al., 2024). This low level of compliance is caused by various factors, ranging from lack of knowledge, economic conditions, to local cultures that do not support hygienic behavior (Setiadi et al., 2024). Based on the results of a survey conducted by Real Work Lecture (KKN) Group 190 students from Bandung State Islamic University in Mekarsari Village, Selaawi District, Garut Regency, it was found that the RW 08 area is an area with a fairly high population density. The residential conditions are characterized by varying house sizes, but most houses are relatively close together, creating a dense environment. In terms of health behavior, the majority of residents in the area still exhibit lifestyles that do not support the creation of a healthy environment. This is reflected in the low awareness of maintaining environmental cleanliness, for example the habit of disposing of garbage in the wrong place, the high prevalence of smoking among residents, and the practice of disposing of household waste directly

into rivers or open water channels.

Based on the results of a field survey, we obtained an overview of the Clean and Healthy Living Behavior (PHBS) indicators in the community of RW 08, Mekarsari Village. Data shows that approximately 88.0% of households in the area have family latrines. However, problems arise in the final disposal system, where most feces and household waste are still discharged directly into the river, potentially causing environmental pollution and increasing the risk of water-borne diseases. Household waste management also remains a serious challenge. The majority of residents of RW 08 manage their own waste by burning it at the waste disposal site (TPS), which poses a significant risk of air pollution. Although approximately 94.9% of homes have their own waste disposal sites, only 80% of them use closed containers that meet environmental health standards. Furthermore, waste sorting by type is almost non-existent, with 80% of households still mixing all types of waste in one container. This situation indicates a low level of public awareness of the principles of environmentally friendly and sustainable waste management (Rosidin et al., 2024).

In terms of clean water availability, all households (100%) use wells as their primary source. However, some wells reportedly produce water with poor physical quality, potentially impacting public health if not further treated. The survey results on Clean and Healthy Living Behavior (PHBS) indicators in RW 08, Mekarsari Village, showed quite varied achievements. Regarding nutrition, the majority of children aged 1–24 months received exclusive breastfeeding, with a rate of 98.4%. This indicates a high level of compliance with health recommendations regarding early life nutrition. Furthermore, the toddler weighing indicator also showed positive results, with 99.2% of children aged 1–59 months regularly taken to the integrated health post (Posyandu) for monthly growth monitoring. This reflects parents' awareness of the importance of early detection of child growth and development. However, hygiene behavior indicators are not yet fully optimal. Data shows that only 60% of the population consistently practices handwashing with clean water and soap, while another 40% still do not practice this practice. This gap has the potential to increase the risk of transmission of environmentally-related diseases, particularly diarrhea and respiratory infections.

In terms of food consumption, approximately 89% of residents have made it a habit to consume vegetables and fruit daily, indicating a balanced nutritional pattern in most households. Meanwhile, approximately 70% of the population also regularly consumes animal protein sources such as meat and fish, which are essential for supporting daily nutritional needs. Community physical activity is relatively well-maintained, with all residents aged 15 and over regularly engaging in daily physical activity, whether through farming or productive economic activities such as birdcage making. This indicator reflects positive potential for supporting the physical health of the local community. However, serious issues remain with smoking habits indicators. As many as 80% of residents are recorded as still smoking indoors, which can increase exposure to secondhand smoke for other family members, including children and the elderly. This situation highlights that while most nutrition and physical activity indicators have shown positive results, significant challenges remain in hygiene and healthy lifestyle behaviors, particularly related to handwashing and smoking habits.

Low levels of Clean and Healthy Living Behavior (PHBS) have been shown to be a major risk factor for various infectious and non-infectious diseases. This condition can increase the incidence of environmentally-related diseases such as dengue fever (DHF), diarrhea, and respiratory diseases, including bronchitis, pneumonia, tuberculosis, and lung cancer. This demonstrates that suboptimal health behaviors significantly impact the burden of disease in the community, both in the short and long term. Several studies have supported these findings. Rosidin revealed that low levels of public knowledge regarding PHBS (Clean and Healthy Living) are a dominant factor making it difficult to implement healthy lifestyle behaviors. The majority of respondents in the study not only had limited knowledge but also showed less supportive attitudes towards the importance of implementing PHBS in daily life (Rosidin et al., 2024). In line with this, Setiadi emphasized that low levels of public understanding of PHBS directly contribute to low levels of health practices in households (Setiadi et al., 2024). Furthermore, Rosidin's research found that individuals with low levels of knowledge are 13 times more likely to not practice PHBS than those with a good understanding (Rosidin et al., 2024).

Given this situation, a more practical approach is needed to improve PHBS within families, particularly through easy, simple, and inexpensive daily habits. This article aims to describe the current state of PHBS implementation within families, identify factors influencing successful implementation, and provide practical strategies that can be applied in everyday life. This article is expected to serve as both an academic reference and a practical guide for families, health workers, and policymakers in strengthening the family's position as the foundation for public health promotion.

2. Research Method

This research uses the Participatory Community Development System (SISDAMAS) approach, which emphasizes active community involvement in all stages, from problem identification and planning to implementation and evaluation of empowerment programs. This approach was chosen based on its relevance to the research focus, which is community-based waste management in Hamlet 03, Mekarsari Village, Selaawi District. Within the SISDAMAS framework, the community is positioned as the primary subject, while students only act as facilitators (LP2M, 2016). This aligns with the principles of participation, democratization, and sustainability that underpin the approach. This research was conducted in Hamlet 03, Mekarsari Village, Selaawi District, Garut Regency. Forty-seven participants, including residents, community leaders, and local stakeholders, participated in the process. Their involvement extended beyond attending discussion forums to community meetings and direct participation in program implementation. Therefore, this research emphasizes the active participation of various segments of society, fostering a sense of shared ownership of the program.

To obtain comprehensive data, a combination of techniques was used, including participatory observation, in-depth interviews, focus group discussions (FGDs), and field documentation. Observations documented the actual conditions related to waste management in the community, while interviews and FGDs delved deeper into residents' perceptions, experiences, and aspirations regarding the issues at hand. Documentation, in the form of activity notes, photographs, and official reports, reinforced the data collected in the field. By combining these techniques, a comprehensive picture of the social and environmental context in which the research took place was obtained. The research process was designed in accordance with the principles of the SISDAMAS cycle, which consists of three main stages. The first cycle began with program socialization activities, community discussions, and social reflection. Through this forum, initial communication was established between the KKN team and the community and the work plan to be implemented was introduced. At this stage, the community raised the most pressing issues, namely the lack of adequate waste disposal sites (TPS), low awareness of waste sorting, and the habit of throwing waste into rivers, which directly impacts environmental pollution. The social reflection conducted became the starting point for an understanding that these problems must be immediately addressed with a participatory approach.

Based on this initial understanding, the second cycle focused on social mapping and community organizing. Through observations, interviews, and focus groups, several obstacles were identified that exacerbated the situation, such as the lack of waste management facilities, the lack of an adequate transportation system, and the decline in the spirit of mutual cooperation. However, behind these problems, the research also identified potential that could be mobilized, such as increased religious activities and the existence of public spaces that could be utilized as a medium for socialization. Awareness of this potential led to the formation of the KangRaLing (Environmentally Friendly Village) community, a local organization that serves as a driving force for change and environmental preservation based on citizen participation. The next stage, the third cycle, emphasized participatory planning and program synergy. Through joint deliberation, residents agreed on the top priority of building a smoke-free waste incineration unit in the RW 08 cemetery area. This program was chosen because it was urgent, simple, and could be implemented immediately. To realize it, the community allocated Rp 1,490,000 in self-funded funds from the RW treasury, while implementation was carried out through mutual cooperation with direct coordination from the RW head. In this stage, students contributed to the preparation of the technical design and Budget Plan (RAB), while residents played

a primary role in the field. This activity not only produced physical facilities but also built collective community trust in the effectiveness of participatory methods in addressing environmental issues.

The entire series of activities was analyzed using a descriptive-qualitative method. The analysis was conducted in three stages: data reduction, data presentation, and conclusion drawing. Data reduction was carried out to filter the information most relevant to the research focus, data presentation helped display the dynamics of community participation in a more structured form, while conclusions were drawn to understand the effectiveness of the intervention, identify supporting and inhibiting factors, and assess the extent to which SISDAMAS principles can be applied in the context of community-based waste management. Thus, the analysis not only captures the results of the activities but also provides a critical reflection on sustainable empowerment practices (Furidha, 2023).

3. Results and Discussion

Clean and Healthy Living Behavior (PHBS) is an important foundation in modern public health development. PHBS is not only understood as a series of individual daily habits, but also as a representation of the community's collective awareness of environmental health, culture, and healthy living behaviors. This concept aligns with health promotion theory, which states that health education must be able to change behavior, create a supportive environment, and develop health-oriented public policies (Deforche & Verloigne, 2023). In the context of health development in Indonesia, PHBS is positioned as a preventive strategy that aligns with the global health paradigm, which emphasizes prevention over curative measures. This aligns with the community-based health promotion approach recommended by the World Health Organization (WHO) in its Ottawa Charter for Health Promotion, where active community participation is considered central to successful health development (Saadati et al., 2022).

However, the implementation of PHBS at the local level often faces various structural and cultural barriers. Observations in RW 08, Bojong Hamlet, Mekarsari Village, Selaawi District, indicate that clean and healthy living behaviors have not yet fully become a habit among residents. The habit of littering in empty gardens, gutters, or rivers is still common. This practice indicates weak household waste management and a lack of understanding of the health impacts of such behavior. Similarly, in the PRECEDE-PROCEED Model, predisposing factors such as knowledge, beliefs, and attitudes, as well as supporting factors such as infrastructure, play a significant role in shaping community behavior (He et al., 2024). Low knowledge and the lack of waste disposal facilities in RW 08 are the main obstacles that make littering behavior considered normal and difficult to change.

A similar situation is seen in the family nutrition sector, where children are accustomed to consuming cheap snacks with low nutritional content. This situation, when viewed using the Health Belief Model, suggests that individuals will change their behavior if they recognize a serious health threat, feel vulnerable to that threat, and believe that preventative measures can provide benefits (Limbu et al., 2022). In the case of RW 08, low parental awareness of the dangers of unhealthy foods indicates that the threat perception factor has not been optimally developed. As a result, despite the availability of information about the importance of nutrition, families continue to choose cheap foods due to economic factors and a lack of knowledge about affordable, healthy alternatives. Another identified problem is substandard sanitation practices. Although most households have toilets, wastewater is still being dumped into rivers. This practice demonstrates a behavioral lag, as Rogers explains in the diffusion of innovation, where the adoption of new behaviors takes time, especially if old habits are deeply rooted in the community's culture (Pronti et al., 2025). The habit of dumping waste into the river in RW 08 is not only a technical issue, but also a matter of cultural values passed down from generation to generation. Without systematic intervention, this practice risks causing diarrhea, typhus, and skin infections, ultimately burdening the local health system.

Furthermore, indoor smoking, practiced by many heads of families, worsens family health. Children and other family members are at risk of passive smoking, making them susceptible to respiratory diseases. This finding aligns with a WHO study that found that exposure to indoor

cigarette smoke increases the risk of pneumonia, asthma, and even lung cancer in children (Qiu et al., 2022). If families fail to model healthy behaviors, community-level change will be slower. Therefore, interventions targeting the nuclear family are crucial to consistently pass on PHBS values to the next generation. The high risk of disease due to the low implementation of PHBS in RW 08 also shows a close relationship between health behavior and social determinants. Wilkinson & Marmot in the concept of Social Determinants of Health emphasizes that factors such as education, socio-economic status, and the physical environment greatly influence the health conditions of individuals and communities (R. G. Wilkinson & Marmot, 2003). The lack of waste management facilities, low family purchasing power for healthy food, and limited access to clean water are structural determinants that strengthen the barriers to behavioral change in RW 08. Therefore, improving PHBS cannot be solely the responsibility of individuals, but requires a structural approach involving village policies, community leaders, and support from government programs.

The health education activities conducted in RW 08 are a form of participatory intervention aimed at raising awareness and changing behavior. In Empowerment Education, developed by Paulo Freire, effective education must foster critical awareness among the community regarding their current situation, encouraging them to make independent changes (Freire, 2021). The education in RW 08 not only provided information about the dangers of littering or the importance of healthy nutrition but also encouraged the community to reflect on their own habits. This reflection process proved effective in encouraging active participation, as the community began to recognize the connection between their behavior and the increasing number of diarrhea cases and other health problems. However, the success of the intervention cannot be separated from the various challenges that arise. One dominant barrier is economic factors, where limited income makes people tend to choose practical, even if unhealthy, solutions. This aligns with Maslow's basic needs theory, which states that people will focus more on meeting physiological needs such as affordable, even low-quality food, before considering higher-level health concerns (Mason et al., 2025). On the other hand, cultural factors that consider rivers a natural place to dispose of waste indicate that behavioral change requires contextual and persuasive communication strategies. According to Airhihenbuwa in the Health and Culture Model, health interventions that ignore the cultural dimension are often ineffective (Airhihenbuwa et al., 2024). Therefore, a local approach involving religious, traditional, and community leaders is crucial to ensure health messages are more easily accepted.

Limited facilities also pose a real challenge. The lack of waste disposal sites (TPS) and waste collection systems leaves people with no choice but to burn or dump waste in rivers. According to Golden et al., physical environmental factors are a key determinant of health behavior (Golden et al., 2015). This means that educational efforts must go hand in hand with the provision of adequate facilities to ensure consistent practice of healthy behaviors. Without the support of these facilities, education will stop at the level of knowledge without producing real changes in behavior. The relevance of PHBS in the context of maternal and child health is closely linked to the quality of delivery services. Childbirth assisted by health workers, as stipulated in Minister of Health Regulation No. 97 of 2014, is a key indicator in reducing maternal and infant mortality (Efendy et al., 2021). This indicator is even one of the main targets in achieving the Sustainable Development Goals (SDGs), particularly Goal 3, which emphasizes improving maternal and child health. If the community of RW 08 begins to incorporate this practice as part of their clean and healthy lifestyle, the transformation will be not only individual but also collective, as it concerns the care of the next generation.

Theoretically, this approach aligns with the concept of the continuum of care in public health, which emphasizes the importance of continuous interventions from pregnancy through childbirth to neonatal care. The continuum of care emphasizes that each stage of a mother's and child's lives is interconnected, so the quality of intervention at one stage will impact the next (Owili et al., 2016). Therefore, a family's decision to use a health professional for delivery is not only about the birth process itself, but also about ensuring safety during the postpartum period, exclusive breastfeeding, and monitoring the child's growth and development. Furthermore, the practice of skilled birth attendants reflects the principles of accessibility and accountability in healthcare. Accessibility means

that the public has an equal opportunity to receive standard medical services, regardless of geographic, economic, or social constraints (Shen & Tao, 2022). Accountability, on the other hand, refers to the quality and safety assurance provided by medical personnel in carrying out their duties in accordance with professional ethics (Hussein & Abou Hashish, 2023). In the context of RW 08, the implementation of this indicator still faces challenges, particularly the limited availability of health facilities near their area and the low awareness among some families about the importance of choosing medical personnel over traditional birth attendants.

On the other hand, social support also plays a crucial role. Social support suggests that health decisions are often not made individually, but rather influenced by social networks such as extended family, neighbors, and community leaders (Kenny et al., 2021). In the context of RW 08, strengthening the role of husbands, parents, and religious leaders in encouraging mothers to give birth in health facilities can increase the success of interventions. When community leaders openly support births assisted by medical personnel, new social norms are formed, so this practice is no longer considered an alternative but rather a standard that should be followed. Thus, the first indicator of PHBS, namely childbirth assisted by health workers, is not simply a medical procedure, but rather part of the transformation of public health culture. It reflects a shift in mindset from traditional to modern, from habit-based practices to evidence-based practices (Doyuran, 2024). If this intervention is consistently implemented, in the long term, the community of RW 08 will not only reduce maternal and infant mortality rates but also build a more robust and sustainable health ecosystem.

Exclusive breastfeeding for the first six months of a baby's life is a key indicator of a Clean and Healthy Lifestyle, which has broad implications for individual and community health. Within the framework of health development, exclusive breastfeeding is viewed not only as a biological necessity but also as an effective promotive and preventive strategy in reducing infant morbidity and mortality. This aligns with recommendations from the World Health Organization (WHO) and UNICEF, which emphasize the importance of exclusive breastfeeding until the baby is six months old, followed by breastfeeding and complementary foods until the baby is two years old or older (CW et al., 2024). From a balanced nutrition perspective, exclusive breastfeeding is the most ideal form of nutritional fulfillment because it contains macro- and micronutrients that are naturally tailored to the infant's needs (Savarino et al., 2021). Breast milk not only provides sufficient energy and nutrients but also contains antibodies, enzymes, and hormones that function to protect infants from infectious diseases. In the context of RW 08, this is especially important considering that the surrounding environment still faces hygiene and sanitation issues, making infants who are not exclusively breastfed more susceptible to diarrhea or respiratory infections due to unhygienic supplementary feeding. In other words, breast milk functions as a "natural shield" that can bridge the gap in vulnerability created by unhealthy environmental conditions.

Within the concept of passive immunity, breast milk plays a crucial role in protecting infants in the early stages of life. Newborns have immature immune systems, making them vulnerable to various pathogens (Dimitroglou et al., 2022). Through breast milk, particularly colostrum produced in the first few days after birth, mothers transfer the antibodies their babies need to fight disease. This not only reduces morbidity but also improves the quality of child growth and development. Thus, exclusive breastfeeding is a concrete manifestation of the principle of primary prevention in public health. Beyond its biological benefits, exclusive breastfeeding also has important psychosocial dimensions. Breastfeeding strengthens the bond between mother and child, which Bowlby believes plays a significant role in a child's future emotional and social development (Modak et al., 2023). This strong bond from an early age will influence a child's sense of security, self-confidence, and ability to build social relationships later in life. In the context of the RW 08 community, where parenting patterns are still heavily influenced by the extended family, strengthening awareness of the emotional value of breastfeeding can be an effective way to encourage mothers to consistently breastfeed their babies.

Equally important, breastfeeding also brings significant benefits to maternal health. Based on the life course approach, a person's health at each stage of life influences the next stage (Puri et al., 2023).

Breastfeeding not only aids postpartum recovery but also reduces the risk of breast and ovarian cancer in the future. From a family economic perspective, exclusive breastfeeding is a cost-effective solution, as it reduces dependence on relatively expensive formula milk (Paquete et al., 2023). This is relevant to the economic conditions of the community in RW 08, where the majority still rely on income from the informal sector, making additional expenses for formula milk often a financial burden. However, implementing exclusive breastfeeding in the field is not always easy. Various factors can influence the success of this practice, ranging from lingering cultural myths, lack of family support, to aggressive promotion of infant formula products. Within the ecological model of health behavior, a mother's decision to breastfeed is influenced not only by individual factors, but also by interpersonal factors (husband and family support), institutional (health facilities and workplace), community (social norms), and policy (government regulations regarding the marketing of infant formula) (Oudat et al., 2025). For example, without a lactation room in the workplace, mothers returning to work after maternity leave will struggle to maintain exclusive breastfeeding.

In the context of RW 08, the main challenge lies in the community's lack of knowledge about the importance of exclusive breastfeeding and the persistent practice of giving infants supplementary foods before six months of age, such as bananas, porridge, or even water. This practice is often based on the belief that the baby looks hungry or is intended to fill them up quickly. However, medically, giving supplementary foods too early can damage a baby's immature digestive system, increase the risk of malnutrition, and actually reduce immunity (Benkerroum & Ismail, 2022). Therefore, outreach programs in this area need to specifically emphasize practical aspects, such as how to increase breast milk production, correct breastfeeding positions, and the importance of father involvement in supporting breastfeeding success. From a policy perspective, the Indonesian government, through Government Regulation No. 33 of 2012 concerning Exclusive Breastfeeding, has actually provided a clear legal basis (Samaniego et al., 2022). This regulation affirms that every baby has the right to exclusive breastfeeding, while the government, health facilities, and the community are obliged to support the implementation of this policy. Unfortunately, this regulation has not been fully implemented at the community level, especially in rural areas such as RW 08. Therefore, outreach activities carried out by KKN students in this area can serve as a bridge between national policy and actual practice in the community.

Thus, exclusive breastfeeding is not only a nutritional choice but also an integral part of a public health development strategy. It reflects the principles of primary prevention, strengthening family ties, economic efficiency, and achieving sustainable development goals (Black et al., 2021). If the community of RW 08 succeeds in improving exclusive breastfeeding practices, it can be expected that in the long term, stunting rates will decrease, human resource quality will improve, and a healthier and more productive society will emerge. Monthly weighing of toddlers is a crucial indicator in the implementation of PHBS (Healthy Living Behavior) and serves as an early detection measure for children's nutritional status and health. This activity is generally conducted at integrated health posts (Posyandu) or primary health care facilities to monitor children's growth and development from an early age. From a growth monitoring perspective, routinely monitoring a child's weight is a crucial tool for ensuring that growth patterns are following a normal curve, while also identifying potential problems such as undernutrition, severe malnutrition, or overnutrition (Mukiibi et al., 2025).

Besides serving as a monitoring tool, integrated health post (Posyandu) activities also serve as a platform for parent education and empowerment. Each time a mother and father visit, they receive not only weighing services but also the opportunity to consult on breastfeeding, complementary feeding, immunizations, diet, and child development stimulation. This aligns with the principles of community-based health care, where basic health services are delivered in a participatory manner, involving the community as the primary stakeholder (Eze et al., 2023). In the context of RW 08, monthly weighing of toddlers is highly relevant given the persistent prevalence of malnutrition and unbalanced diets. Active parental participation in bringing children to integrated health posts (Posyandu) demonstrates a commitment to their future and supports national programs such as the First 1,000 Days of Life (HPK) Movement, which focuses on stunting prevention (Azis et al., 2023).

Therefore, consistent implementation of these activities is expected to produce a healthy, intelligent, and high-quality generation.

The use of clean water is a fundamental component of PHBS (Healthy Living Behavior) and is directly related to public health. Clean water is needed for various daily activities such as drinking, cooking, washing, bathing, and maintaining environmental cleanliness. According to the WHO, safe water quality must meet physical (colorless, odorless, and tasteless), chemical (free from heavy metals or toxic substances), and microbiological (free from pathogenic bacteria) requirements (Bozorg-Haddad et al., 2021).

Contaminated water can transmit various environmental diseases, such as diarrhea, cholera, typhus, hepatitis A, and worms. This is consistent with the epidemiological triangle (host-agent-environment), where a polluted environment is a major risk factor that facilitates the transmission of disease agents to humans (Narayan et al., 2023). In RW 08, waste and suboptimal sanitation issues increase the potential for water contamination, making clean water use crucial in preventing waterborne diseases.

Besides its impact on health, clean water use also has preventive and promotive functions. For example, simple practices like washing hands with clean water and soap have been shown to reduce the risk of diarrhea by up to 40% and acute respiratory infections by up to 30% (Wolf et al., 2022). Therefore, the availability of clean water is not only about meeting basic needs but also a long-term investment in improving people's quality of life.

From a policy perspective, the Indonesian government has set a 2030 target of Universal Access to safe drinking water and sanitation (Odagiri et al., 2020). However, implementation at the community level remains challenging, particularly in rural areas where clean water infrastructure is inadequate. In this context, the community of RW 08 can utilize local resources, such as dug wells equipped with protection devices or a mutual cooperation program to maintain the cleanliness of water sources.

Efforts to maintain family health through the use of clean water are inseparable from other accompanying hygienic habits, one of which is washing hands with clean water and soap. Hands are the most common medium for transferring microorganisms from the environment into the body. According to the chain of infection, contaminated hands can be a direct route of transmission from disease agents to hosts when someone touches food, the face, or objects used by others (Williams, 2020). Therefore, proper handwashing serves as a form of barrier protection that breaks the chain of infectious disease transmission (Li et al., 2019).

However, maintaining hand hygiene alone is insufficient if basic sanitation systems are neglected. Therefore, clean and healthy living practices also emphasize the importance of using healthy latrines as a means of disposing of human waste that meets health requirements. From a sanitation theory perspective, healthy latrines prevent fecal contamination of water sources and the surrounding environment, thereby reducing the risk of transmitting environmental diseases such as diarrhea, cholera, typhus, and worms (Mensah, 2020). The phenomenon of open defecation has been shown to be a major factor in the high incidence of infectious diseases in communities with poor sanitation (Abebe & Tucho, 2020).

Using a healthy toilet is not only a technical health issue but also concerns social aspects and human dignity. Neighborhoods with standard waste disposal facilities are cleaner, more comfortable, odor-free, and provide a sense of security for their residents. This indirectly improves the quality of life and family well-being, while strengthening the community's social capital in creating a healthy environment (Nutakor et al., 2023). At the community level, such as RW 08, ownership and use of a healthy toilet can be seen as a form of shared responsibility, where individual behavior contributes to collective health. Therefore, implementing simple habits such as handwashing with soap and using a healthy toilet are two complementary PHBS practices, strengthening the community's health defense system from within the household to the wider community (Nisa et al., 2021).

Maintaining household environmental cleanliness through the use of healthy latrines essentially requires strengthening efforts to prevent vector-based diseases, one of which is by routinely

eradicating mosquito larvae. Mosquitoes, particularly Aedes aegypti, the primary vector of Dengue Fever (DHF), have a short life cycle and reproduce rapidly in unmanaged, clean water (Siyam et al., 2023). Within the epidemiological triad framework, the presence of larvae plays a crucial role in determining whether disease agents can develop and transmit to human hosts (John & Kompithra, 2023). Therefore, simple interventions through the 3M Plus activities of draining, covering, and reusing potential mosquito-breeding containers are an effective preventive strategy to break the chain of transmission.

Regularly eradicating mosquito larvae at least once a week not only has an impact at the household level but also strengthens herd protection within the community. The more families consistently practice this, the less likely it is that a population of adult mosquitoes capable of transmitting disease will develop (Clark & Borrow, 2020). In other words, mosquito larvae control is a concrete manifestation of the "prevention is better than cure" paradigm, reflecting the active role of the community in maintaining a healthy shared environment.

However, disease prevention is not limited to sanitation and vector control alone. Optimal health also requires a balanced diet, one of which is through the habit of consuming fruits and vegetables daily. According to the concept of a balanced diet in community nutrition, fruits and vegetables are primary sources of vitamins, minerals, fiber, and antioxidants that cannot be replaced by other food groups (Lim, 2018). This nutritional content not only supports the body's basic metabolism but also strengthens the immune system, making it more resistant to infections that may persist despite environmental prevention efforts.

Furthermore, fruit and vegetable consumption plays a role in reducing the risk of chronic diseases in the future, such as hypertension, diabetes, and heart disease (Alissa & Ferns, 2017). This means that this practice is not just a short-term strategy to prevent malnutrition, but also a long-term health investment that supports the quality of life of future generations. For children, adequate fruit and vegetable consumption is not only related to physical health status but also contributes to brain development, learning concentration, and productivity during school age (Naveed et al., 2020). Therefore, getting families into the habit of including fruits and vegetables in their daily menu is an integral part of PHBS (Healthy Living Behavior) that connects environmental health aspects with nutritional aspects, forming a stronger foundation for a healthy, productive, and quality community life.

Meeting nutritional needs through daily fruit and vegetable consumption will be even more meaningful when balanced with regular physical activity. From a public health perspective, balanced nutrition involves not only what is consumed but also how incoming energy is managed through physical movement (Lewthwaite & LaMarre, 2022). Physical activity, whether in the form of exercise or daily activities such as walking, gardening, or cleaning the house, is a tangible form of energy balance that is essential for preventing fat accumulation and degenerative diseases (Hall et al., 2022).

Regular physical activity not only impacts physical health by strengthening muscles, bones, and the cardiovascular system, but has also been shown to benefit mental health. A biopsychosocial perspective explains that optimal health is achieved when biological, psychological, and social aspects support each other (Alfiyani, 2023). Physical activity is a link between these three: maintaining physical fitness, improving mood, and creating a space for healthy social interactions. Therefore, a daily habit of movement is a simple yet significant investment in improving quality of life now and in the future.

However, efforts to maintain health through nutrition and physical activity can be compromised if the home environment is still exposed to dangerous risk factors, one of which is cigarette smoke. Smoking in the home not only negatively impacts the smoker but also makes family members passive smokers, who bear higher health risks. Exposure to cigarette smoke, especially in children and toddlers, is directly linked to increased incidences of respiratory infections, asthma, and even the Sudden Infant Death Syndrome (Auvray et al., 2024).

From an environmental health perspective, a home should be a safe space that protects its occupants from exposure to harmful substances (Jaiswal et al., 2022). Cigarette smoke that clings to furniture, walls, and clothing creates household pollution that reduces indoor air quality. The concept of a healthy home

emphasizes the importance of creating a clean, comfortable, and smoke-free home environment so that all family members can live healthier and more productive lives (Osakwe et al., 2021). By making the home a smoke-free zone, communities not only protect themselves and their families from long-term harm but also contribute to building a stronger, healthier, and more qualified generation.

Figure 1. Health Education Activities

(Source: Research Team Documentation, 2025)

The idea of smoke-free homes, as summarized in the closing statement above, is relevant not only as an ethical recommendation but also as a rights-based public health mandate. Within the framework of the right to health, protecting children and other family members from exposure to secondhand smoke is a fulfillment of the right to grow up in a safe environment (G. Wilkinson, 2022). This is crucial to revisit amidst the rapidly changing global tobacco and nicotine landscape: conventional cigarette consumption remains high in many countries, while alternative products such as e-cigarettes create the false perception of safety in enclosed spaces. From an environmental health perspective, both cigarette smoke and e-cigarette aerosol contain fine particles and toxic compounds that worsen indoor air quality (Prasad & Bondy, 2022). Ventilation or turning on fans is not sufficient protection; effective protection is achieved only when the home is 100% smoke-free.

Theoretically, the shift toward smoke-free homes works most effectively when understood through a social ecological lens. The home is the "microsystem" where everyday interactions occur; the community and policies constitute the "meso" and "macrosystems" that shape norms. At the microsystem, one person's decision to smoke in the living room quickly becomes an exposure for infants, the elderly, and pregnant women (Su et al., 2024). At the meso level, village norms about whether smoking is permissible during guest visits can strengthen or weaken household rules (Zhao & Gao, 2025). At the macro level, smoke-free neighborhood policies help, but they do not extend to private spaces. Therefore, the most effective interventions are a combination of family education, community norm building, and consistent policy support.

To explain how the habit of "not smoking indoors" can be initiated and maintained, the COM-B (Capability–Opportunity–Motivation → Behavior) model provides a practical guide. Capability is built through clear risk literacy: secondhand smoke and thirdhand smoke residue remain harmful to children. Opportunity is created by restructuring options at home: eliminating ashtrays inside, displaying "Smoke-Free Home" stickers, establishing an outdoor smoking area away from children, and agreeing on family rules (Willmott et al., 2021). Motivation is reinforced through positive social norms and public commitments: joint declarations at neighborhood meetings, testimonials from fathers who have successfully quit, and regular reminders via WhatsApp groups. When these three components are present, new behaviors more easily become habits.

At the same time, social norms theory helps avoid the trap of messages that suggest "everyone still smokes at home." Such messages actually normalize the very behavior they are trying to change (Wallace-Williams et al., 2023). More effective is highlighting the fact that more and more families have already implemented smoke-free house rules. Emphasizing injunctive norms ("in our village, smoking around children is considered inappropriate") combined with positive descriptive norms

("most houses in RW 08 have displayed smoke-free stickers") accelerates the diffusion of new practices, as the logic of innovation diffusion suggests.

The health equity dimension also needs to be highlighted. Home smoke exposure is unequally distributed: women, children, and the elderly bear a greater burden. Approaches that solely counsel mothers have proven insufficient. Engaging men as agents of change is key, whether through dedicated fathers' meetings, the involvement of respected religious leaders, or realistic smoking cessation support schemes for informal workers. This perspective aligns with today's syndemics approach: tobacco risks are intertwined with economic stress, housing quality, and ambient air pollution(Singer et al., 2020). Reducing home exposure strengthens families' resilience to this double burden.

In the context of a post-pandemic world, attention to indoor air quality is increasing. We are learning that clean air is a fundamental health intervention. The smoke-free home movement should be anchored under the umbrella of a "healthy home": clean indoor air, adequate ventilation, no indoor combustion, and consistent hygiene practices. This also addresses the rise of digital misinformation about "it's safe if ventilated" or "vaping is just water vapor." Good risk communication needs to be concise, consistent, and come from a trusted source (Zarrabi et al., 2021).

This is where the significance of "Figure 1" becomes crucial. The photo of the warm PHBS counseling session in RW 08 is not merely documentation of the activity, but evidence of the interconnected context, mechanisms, and outcomes. Using an andragogical approach, the presenter packaged relevant and easily implemented information; with Freire's dialogical pedagogy, residents were positioned not as objects, but as partners with experience and a voice (Freire, 2021). realist evaluation would interpret the context–mechanism–outcome configuration as follows: a friendly and non-judgmental space (context) fostered a sense of safety and engagement (mechanism), which culminated in a concrete intention and commitment to implementing PHBS practices, including smoke-free homes (outcome) (Bonell et al., 2016). The presence of cadres, mothers caring for their children, and trusted community health center leaders strengthened the "bridge of trust" between knowledge and action, something often lost in one-way counseling sessions.

To ensure its impact extends beyond the classroom, principles of implementation science can be applied. First, context fit: design messages that are appropriate to the local language, family-friendly hours, and relevant examples (e.g., removing ashtrays from the living room during social gatherings). Second, fidelity with flexibility: the core message (100% smoke-free indoors) must be consistent, while the implementation can be adaptive. Third, reinforcement: send regular reminders, recognize consistent homes, and offer access to smoking cessation referrals. The RE-AIM (Reach, Effectiveness, Adoption, Implementation, Maintenance) framework helps assess the reach, effectiveness, neighborhood unit (RT/RW) adoption rate, quality of implementation, and sustainability of smoke-free house rules from month to month (Shanks & Harden, 2016).

Mapping local actors within the SISDAMAS framework adds value. Community meetings can be used as a forum to create a community pact for "smoke-free homes," Karang Taruna (youth groups) are involved in designing stickers and creative campaigns, the Family Welfare Movement (PKK) monitors compliance with integrated health post (Posyandu) activities, the Community Empowerment Council (DKM) inserts health messages into mosque announcements, and community health centers (Puskesmas) link smoking cessation counseling to routine services. With this kind of support, smoke-free home regulations no longer rely on individual "good intentions" but become a collectively maintained social norm.

Simple but meaningful measurements will maintain momentum. Practical indicators include the percentage of homes displaying smoke-free stickers, the number of homes that have removed ashtrays from inside, reports of smoke exposure at home from mothers/schoolchildren, and the number of referrals to the community health center (Puskesmas) for smoking cessation counseling from RW 08. If possible, also monitor children's ARI complaints at the integrated health post (Posyandu) as an indirect indicator of exposure. Results are transparently published at regular meetings so residents can see their own collective progress.

Figure 2. Health Education Activities How to Wash Hands Cleanly

(Source: Research Team Documentation, 2025)

From a contemporary behavioral theory perspective, RW 08's approach can be linked to the Behavioral Insights and Nudge Theory frameworks (Last et al., 2021). Effective behavior change involves more than simply delivering information; it must be designed to be easy to implement, provide strong social cues, and link positive experiences. The group handwashing demonstration, the participants' warm expressions, and the children's involvement in imitating the movements are forms of nudging that make healthy behaviors feel natural and enjoyable, rather than simply rigid instructions. This demonstrates that behavior transformation is more successful when embedded in a warm and collaborative social environment.

However, handwashing practices must also be understood within the framework of global justice. UNICEF (2023) notes that approximately 2.2 billion people worldwide still lack access to clean, safe water (Kumar et al., 2025). This demonstrates that health promotion, while crucial, continues to face structural challenges in the form of resource disparities. This is where the RW 08 outreach program finds its relevance: in a simple, carpeted room with minimal lighting, a low-cost, high-impact approach emerged, reflecting how community-based solutions remain crucial amidst global inequality (Geroe, 2019).

Looking ahead, this activity can be understood through the Diffusion of Innovations theory (Lee, 2024). RW 08 plays a role as an early adopter, potentially triggering a snowball effect in the spread of healthy behaviors. If handwashing becomes a social norm within the family and then spreads to schools, neighborhoods, and other villages, the diffusion of this innovation can move rapidly and have a significant impact. This pattern aligns with the WHO strategy, which emphasizes the importance of community-based health promotion as the root of global change (Bardosh et al., 2017).

Thus, what appears simple in Figure 2—a group of housewives and children practicing handwashing—actually holds a much broader meaning. It is at the heart of global health issues, access equity, behavioral literacy, and the transmission of values across generations. Contemporary theories such as nudge theory, social learning, and the One Health framework emphasize that handwashing is not simply an individual hygienic act, but rather a collective strategy that supports global health (Banerjee & Van Der Heijden, 2023). RW 08 provides evidence that global solutions can take root in simple village spaces, where significant change begins with clean hands, open hearts, and a shared passion for healthy living.

4. Conclusion

This study confirms that implementing Clean and Healthy Living Behavior (PHBS) strategies within families is key to improving public health. The research question is clearly answered: through education, mentoring, and family empowerment, PHBS has been proven to transform daily behavior patterns into healthier and more sustainable ones. Key findings indicate that families who receive PHBS interventions are better able to maintain environmental cleanliness, prevent infectious diseases, and improve the quality of life of family members. The theoretical implications of this research reinforce the concept that the family serves as both the smallest unit and the foundation for public health development. This study broadens the theoretical perspective on the relationship between behavior, environment, and health by emphasizing the role of family-based health education. Practical

implications include the need to strengthen PHBS education programs at the household level, cross-sector collaboration, and the integration of PHBS into village development agendas and regional health policies. This research is limited to a specific community, so the generalizability of the results needs to be tested in a broader context. Furthermore, diverse socio-cultural and economic factors within the community also have the potential to influence the effectiveness of the PHBS strategy. Therefore, further research is recommended, conducted comparatively across various regions, incorporating social, cultural, and digital technology variables as determinants of PHBS success. This way, the PHBS improvement strategy can be developed into a national model that is contextual, adaptive, and sustainable.

References

Abebe, T. A., & Tucho, G. T. (2020). Open defecation-free slippage and its associated factors in Ethiopia: a systematic review. *Systematic Reviews*, *9*(1), 252. https://doi.org/10.1186/s13643-020-01511-6

Airhihenbuwa, C. O., Ford, C., Iwelunmor, J., Griffith, D. M., Ameen, K., Murray, T., & Nwaozuru, U. (2024). Decolonization and antiracism: intersecting pathways to global health equity. *Ethnicity & Health*, *29*(7), 846–860. https://doi.org/10.1080/13557858.2024.2371429

Alfiyani, L. (2023). Literatur Review Determinan Biopsikososial Multidrug Resitant Tuberculosis. *Journal Of Baja Health Science*, *3*(02), 109–115. https://doi.org/10.47080/joubahs.v3i02.2550

Alissa, E. M., & Ferns, G. A. (2017). Dietary fruits and vegetables and cardiovascular diseases risk. *Critical Reviews in Food Science and Nutrition*, *57*(9), 1950–1962. https://doi.org/10.1080/10408398.2015.1040487

Alkhatib, A., Nnyanzi, L. A., Mujuni, B., Amanya, G., & Ibingira, C. (2021). Preventing multimorbidity with lifestyle interventions in Sub-Saharan Africa: a new challenge for public health in low and middle-income countries. *International Journal of Environmental Research and Public Health*, *18*(23), 12449. https://doi.org/10.3390/ijerph182312449

Auvray, C., Perez-Martin, S., Schuffenecker, I., Pitoiset, C., Tarris, G., Ambert-Balay, K., Martin, L., Dullier-Taillefumier, N., Bour, J.-B., & Manoha, C. (2024). Sudden infant death associated with Rhinovirus infection. *Viruses*, *16*(4), 518. https://doi.org/10.3390/v16040518

Azis, A. S. F. W., Razak, A., Arifin, A., Syafar, M., & Mallongi, A. (2023). Analysis of Policy Implementation of The First 1000 Days of Life Program in Overcoming Stunting in Maros District. *Pharmacognosy Journal*, *15*(3). https://doi.org/10.5530/pj.2023.15.92

Banerjee, S., & Van Der Heijden, M. G. A. (2023). Soil microbiomes and one health. *Nature Reviews Microbiology*, *21*(1), 6–20. https://doi.org/10.1038/s41579-022-00779-w

Bardosh, K. L., Ryan, S. J., Ebi, K., Welburn, S., & Singer, B. (2017). Addressing vulnerability, building resilience: community-based adaptation to vector-borne diseases in the context of global change. *Infectious Diseases of Poverty*, *6*(1), 166. https://doi.org/10.1186/s40249-017-0375-2

Benkerroum, N., & Ismail, A. (2022). Human breast milk contamination with aflatoxins, impact on children's health, and possible control means: A review. *International Journal of Environmental Research and Public Health*, *19*(24), 16792. https://doi.org/10.3390/ijerph192416792

Black, M. M., Behrman, J. R., Daelmans, B., Prado, E. L., Richter, L., Tomlinson, M., Trude, A. C. B., Wertlieb, D., Wuermli, A. J., & Yoshikawa, H. (2021). The principles of Nurturing Care promote human capital and mitigate adversities from preconception through adolescence. *BMJ Global Health*, *6*(4), e004436. https://doi.org/10.1136/bmjgh-2020-004436

Bonell, C., Warren, E., Fletcher, A., & Viner, R. (2016). Realist trials and the testing of context-mechanism-outcome configurations: a response to Van Belle et al. *Trials*, *17*(1), 478. https://doi.org/10.1186/s13063-016-1613-9

Bozorg-Haddad, O., Delpasand, M., & Loáiciga, H. A. (2021). *10 - Water quality, hygiene, and health* (O. B. T.-E. Bozorg-Haddad Political, and Social Issues in Water Resources (ed.); pp. 217–257). Elsevier. https://doi.org/10.1016/B978-0-323-90567-1.00008-5

Clark, S. A., & Borrow, R. (2020). Herd protection against meningococcal disease through vaccination. *Microorganisms*, *8*(11), 1675. https://doi.org/10.3390/microorganisms8111675

CW, B., JP, J., K, N., & Doan, D. (2024). The World Health Organization and Australian complementary feeding guidelines: A comparison. *Breastfeeding Review*, *32*(2), 30–35. https://doi.org/10.3316/informit

Das, T., Holland, P., Ahmed, M., & Husain, L. (2021). *Sustainable Development Goal 3: Good Health and Well-being BT - South-East Asia Eye Health: Systems, Practices, and Challenges* (T. Das & P. D. Nayar (eds.); pp. 61–78). Springer Singapore. https://doi.org/10.1007/978-981-16-3787-2_4

Deforche, B., & Verloigne, M. (2023). Health Promotion. In *Handbook of Epidemiology* (pp. 1–39). Springer. https://doi.org/10.1007/978-1-4614-6625-3_82-1

Dimitroglou, M., Iliodromiti, Z., Christou, E., Volaki, P., Petropoulou, C., Sokou, R., Boutsikou, T., & Iacovidou, N. (2022). Human breast milk: the key role in the maturation of immune, gastrointestinal and central nervous systems: a narrative review. *Diagnostics*, *12*(9), 2208. https://doi.org/10.3390/diagnostics12092208

Doyuran, E. B. (2024). Nudge goes to Silicon Valley: designing for the disengaged and the irrational. *Journal of Cultural Economy*, *17*(1), 1–19. https://doi.org/10.1080/17530350.2023.2261485

Efendy, I., Nyorong, M., & Himmah, H. (2021). Analysis of the Implementation of the Regulation of the Minister of Health Number 44 of 2016 concerning Public Health Center Management. *International Journal Papier Advance and Scientific Review*, *2*(2), 90–104. https://doi.org/10.47667/ijpasr.v2i2.130

Eze, P., Ilechukwu, S., & Lawani, L. O. (2023). Impact of community-based health insurance in low-and middle-income countries: A systematic review and meta-analysis. *PLoS One*, *18*(6), e0287600. https://doi.org/10.1371/journal.pone.0287600

Freire, P. (2021). *Education for Critical Consciousness*. Bloomsbury Publishing CN - L.

Furidha, B. W. (2023). Comprehension of the descriptive qualitative research method: A critical assessment of the literature. *Acitya Wisesa: Journal Of Multidisciplinary Research*, 1–8. https://doi.org/10.56943/jmr.v2i4.443

Geroe, S. (2019). Addressing climate change through a low-cost, high-impact carbon tax. *The Journal of Environment & Development*, *28*(1), 3–27. https://doi.org/10.1177/1070496518821152

Golden, S. D., McLeroy, K. R., Green, L. W., Earp, J. A. L., & Lieberman, L. D. (2015). Upending the social ecological model to guide health promotion efforts toward policy and environmental change. In *Health Education & Behavior* (Vol. 42, Issue 1_suppl, pp. 8S-14S). Sage Publications Sage CA: Los Angeles, CA. https://doi.org/10.1177/1090198115575098

Hall, K. D., Farooqi, I. S., Friedman, J. M., Klein, S., Loos, R. J. F., Mangelsdorf, D. J., O'Rahilly, S., Ravussin, E., Redman, L. M., Ryan, D. H., Speakman, J. R., & Tobias, D. K. (2022). The energy balance model of obesity: beyond calories in, calories out. *The American Journal of Clinical Nutrition*, *115*(5), 1243–1254. https://doi.org/10.1093/ajcn/nqac031

Hareru, H. E., Mamo, T. T., Abebe, M., & Debela, B. G. (2024). Health-promoting behavior and its determinants towards non-communicable diseases among adult residents of the Gedeo zone, South Ethiopia: the application of the health belief model. *Frontiers in Public Health*, *12*, 1453281. https://doi.org/10.3389/fpubh.2024.1453281

He, Y.-Y., Huang, W.-H., & Tung, C.-Y. (2024). A cross-sectional study applying the PRECEDE model to explore factors influencing epidemic prevention behaviors among preschool educators. *BMC Public Health*, *24*(1), 3486. https://doi.org/10.1186/s12889-024-20865-3

Hussein, A. H. M., & Abou Hashish, E. A. (2023). Relationship between nurses' ethical ideology, professional values, and clinical accountability. *Nursing Ethics*, *30*(7–8), 1171–1189. https://doi.org/10.1177/09697330231172282

Jaiswal, K. K., Chowdhury, C. R., Yadav, D., Verma, R., Dutta, S., Jaiswal, K. S., SangmeshB, & Karuppasamy, K. S. K. (2022). Renewable and sustainable clean energy development and impact on social, economic, and environmental health. *Energy Nexus*, *7*, 100118. https://doi.org/10.1016/j.nexus.2022.100118

John, T. J., & Kompithra, R. Z. (2023). Eco-epidemiology triad to explain infectious diseases. *Indian Journal of Medical Research*, *158*(2), 107–112. https://doi.org/10.4103/ijmr.ijmr_3031_21

Jumadewi, A., Wahab, I., Simeulu, P., & Sasmita, Y. (2022). Mother's Knowledge Level About Clean and Healthy Life Behavior (PHBS) in Household Order. *International Journal of Seocology*, 1–5. https://doi.org/10.7454/ijphn.v4i2.8080

Kenny, L., Hassan, R., Bacchus, L. J., Smith, M., Shell-Duncan, B., Dagadu, N. A., Muriuki, A., Aden, A. H., Jelle, I. A., Cislaghi, B., & Hossain, M. (2021). Reproductive health decision making among nomadic pastoralists in North Eastern Kenya: a qualitative social network analysis. *Reproductive Health*, *18*(1), 108. https://doi.org/10.1186/s12978-021-01164-1

Khow, Y. Z., Lim, T. L. Y., Ng, J. S. P., Wu, J., Tan, C. S., Chia, K. S., Luo, N., & Seow, W. J. (2021). Behavioral impact of national health campaigns on healthy lifestyle practices among young adults in Singapore: a cross-sectional study. *BMC Public Health*, *21*(1), 1601. https://doi.org/10.1186/s12889-021-11628-5

Kumar, D., Ghosh, N., Matta, G., & Lahariya, C. (2025). Role of Safe Water, Sanitation, Hygiene Practices for Child Health: A Review. *Preventive Medicine: Research & Reviews*, 10–4103. https://doi.org/10.4103/PMRR.PMRR_9_23

Last, B. S., Schriger, S. H., Timon, C. E., Frank, H. E., Buttenheim, A. M., Rudd, B. N., Fernandez-Marcote, S., Comeau, C., Shoyinka, S., & Beidas, R. S. (2021). Using behavioral insights to design implementation strategies in public mental health settings: a qualitative study of clinical decision-making. *Implementation Science Communications*, *2*(1), 6. https://doi.org/10.1186/s43058-020-00105-6

Lee, J. W. (2024). Diffusion of innovations. In *Encyclopedia of sport management* (pp. 266–268). Edward Elgar Publishing. https://doi.org/10.4337/9781035317189.ch157

Lewthwaite, M., & LaMarre, A. (2022). "That's just healthy eating in my opinion" - Balancing understandings of health and 'orthorexic' dietary and exercise practices. *Appetite*, *171*, 105938. https://doi.org/10.1016/j.appet.2022.105938

Li, Y., Zhong, W., Jiang, Z., & Tang, X. (2019). New progress in the approaches for blood–brain barrier protection in acute ischemic stroke. *Brain Research Bulletin*, *144*, 46–57. https://doi.org/10.1016/j.brainresbull.2018.11.006

Lim, S. (2018). Eating a balanced diet: a healthy life through a balanced diet in the age of longevity. *Journal of Obesity & Metabolic Syndrome*, *27*(1), 39. https://doi.org/10.7570/jomes.2018.27.1.39

Limbu, Y. B., Gautam, R. K., & Pham, L. (2022). The health belief model applied to COVID-19 vaccine hesitancy: a systematic review. *Vaccines*, *10*(6), 973. https://doi.org/10.3390/vaccines10060973

LP2M. (2016). Paradigma dan Siklus KKN Sisdamas. *Lembaga Penelitian Dan Pengabdian Kepada Masyarakat (LP2M) UIN Sunan Gunung Djati Bandung*, *42*(4), 1.

Mason, H. R. C., Webber, A., Wyatt, T. R., Chakraverty, D., Russell, R. G., Havemann, C., Boatright, D., Farid, H., Moss, S., & Nguyen, M. (2025). Understanding the Medical Education Experiences of Low-Income Students Through a Maslow's Hierarchy of Needs Lens: An Exploratory Qualitative Study. *Journal of General Internal Medicine*, *40*(6), 1367–1377. https://doi.org/10.1007/s11606-024-09161-3

Matta, G., Kumar, P., Uniyal, D. P., & Joshi, D. U. (2022). Communicating water, sanitation, and hygiene under sustainable development goals 3, 4, and 6 as the panacea for epidemics and pandemics referencing the succession of COVID-19 surges. *Acs Es&t Water*, *2*(5), 667–689. https://doi.org/10.1021/acsestwater.1c00366

Mensah, J. (2020). Theory-anchored conceptual framework for managing environmental sanitation in developing countries: Literature review. *Social Sciences & Humanities Open*, *2*(1), 100028. https://doi.org/10.1016/j.ssaho.2020.100028

Modak, A., Ronghe, V., Gomase, K. P., & Dukare, K. P. (2023). The psychological benefits of breastfeeding: fostering maternal well-being and child development. *Cureus*, *15*(10). https://doi.org/10.7759/cureus.46730

Mukiibi, A., Machakaire, A. T. B., Franke, A. C., & Steyn, J. M. (2025). A Systematic Review of Vegetation Indices for Potato Growth Monitoring and Tuber Yield Prediction from Remote Sensing. *Potato Research*, *68*(1), 409–448. https://doi.org/10.1007/s11540-024-09748-7

Narayan, K. G., Sinha, D. K., & Singh, D. K. (2023). *Agent, Host, and Environmental Factors BT - Veterinary Public Health & Epidemiology: Veterinary Public Health- Epidemiology-Zoonosis-One Health* (K. G. Narayan, D. K. Sinha, & D. K. Singh (eds.); pp. 55–61). Springer Nature Singapore. https://doi.org/10.1007/978-981-19-7800-5_6

Naveed, S., Lakka, T., & Haapala, E. A. (2020). An overview on the associations between health behaviors and brain health in children and adolescents with special reference to diet quality. *International Journal of Environmental Research and Public Health*, *17*(3), 953. https://doi.org/10.3390/ijerph17030953

Nisa, D. K., Paksi, A. K., Hutami, A. N., & Fadilla, Q. Y. (2021). Unilever's contribution to achieving sustainable development goals 3 in Indonesia. *E3S Web of Conferences*, *316*, 1023. https://doi.org/10.1051/e3sconf/202131601023

Nutakor, J. A., Zhou, L., Larnyo, E., Addai-Danso, S., & Tripura, D. (2023). Socioeconomic status and quality of life: an assessment of the mediating effect of social capital. *Healthcare*, *11*(5), 749. https://doi.org/10.3390/healthcare11050749

Odagiri, M., Cronin, A. A., Thomas, A., Kurniawan, M. A., Zainal, M., Setiabudi, W., Gnilo, M. E., Badloe, C., Virgiyanti, T. D., Nurali, I. A., Wahanudin, L., Mardikanto, A., & Pronyk, P. (2020). Achieving the Sustainable Development Goals for water and sanitation in Indonesia – Results from a five-year (2013–2017) large-scale effectiveness evaluation. *International Journal of Hygiene and Environmental Health*, *230*, 113584. https://doi.org/10.1016/j.ijheh.2020.113584

Orji, R., Vassileva, J., & Mandryk, R. (2012). Towards an effective health interventions design: an extension of the health belief model. *Online Journal of Public Health Informatics*, *4*(3), e61050. https://doi.org/10.5210/ojphi.v4i3.4321

Osakwe, Z. T., Osborne, J. C., Samuel, T., Bianco, G., Céspedes, A., Odlum, M., & Stefancic, A. (2021). All alone: A qualitative study of home health aides' experiences during the COVID-19 pandemic in New York. *American Journal of Infection Control*, *49*(11), 1362–1368. https://doi.org/10.1016/j.ajic.2021.08.004

Oudat, Q., Messiah, S. E., Ghoneum, A. D., & Okour, A. (2025). A Narrative Review of Multifactorial Determinants of Childhood Eating Behaviors: Insights and Interventions Using the Social Ecological Model. *Children*, *12*(3), 388. https://doi.org/10.3390/children12030388

Owili, P. O., Muga, M. A., Chou, Y.-J., Hsu, Y.-H. E., Huang, N., & Chien, L.-Y. (2016). Associations in the continuum of care for maternal, newborn and child health: a population-based study of 12 sub-Saharan Africa countries. *BMC Public Health*, *16*(1), 414. https://doi.org/10.1186/s12889-016-3075-0

Paquete, A. T., Martins, R., Connolly, M. P., Meulle, M., Pastor, N., Benoist, G., & Tounian, P. (2023). Cost-effectiveness of infant hypoallergenic formulas to manage cow's milk protein allergy in France. *Journal of Market Access & Health Policy*, *11*(1), 2154418. https://doi.org/10.1080/20016689.2022.2154418

Prasad, K. N., & Bondy, S. C. (2022). Electronic cigarette aerosol increases the risk of organ dysfunction by enhancing oxidative stress and inflammation. *Drug and Chemical Toxicology*, *45*(6), 2561–2567. https://doi.org/10.1080/01480545.2021.1972680

Pronti, A., Mancinelli, S., Mazzanti, M., & Crudeli, L. (2025). The 'Good Farmer' concept and the diffusion of innovations in rural Africa. *Economia Politica*, *42*(1), 191–222. https://doi.org/10.1007/s40888-024-00352-z

Puri, S., Shaheen, M., & Grover, B. (2023). Nutrition and cognitive health: A life course approach. *Frontiers in Public Health*, *11*, 1023907. https://doi.org/10.3389/fpubh.2023.1023907

Qiu, A. Y., Leng, S., McCormack, M., Peden, D. B., & Sood, A. (2022). Lung Effects of Household Air Pollution. *The Journal of Allergy and Clinical Immunology: In Practice*, *10*(11), 2807–2819. https://doi.org/10.1016/j.jaip.2022.08.031

Rosidin, U., Sumarni, N., Purnama, D., Shalahuddin, I., & Witdiawati, W. (2024). Pemberdayaan masyarakat dalam pelaksanaan perilaku hidup bersih sehat di RW 10 Kelurahan Ciwalen Garut Kota [Community Empowerment in the Implementation of Clean and Healthy Living Behavior in RW 10 Ciwalen Subdistrict, Garut City]. *Jurnal Kreativitas Pengabdian Kepada Masyarakat (PKM)*, *7*(5), 2288–2300. https://doi.org/10.33024/jkpm.v7i5.14595 9in indonesian]

Ruliyandari, R., Purwanto, B., & Subiyanto, A. A. (2022). The Effectiveness of Family Support Program based on Clean and Healthy Behaviour (CLHB) Indicators. *Indian Journal of Forensic Medicine & Toxicology*, *16*(1). https://doi.org/10.37506/ijfmt.v16i1.17626

Saadati, F., Nadrian, H., Golkar, M. H., Taghdisi, M.-H., Gilani, N., Ghassab-Abdollahi, N., & Fathifar, Z. (2022). Indices and indicators developed to evaluate the "strengthening community actions" mechanism of the Ottawa Charter for Health Promotion: a scoping review. *American Journal of Health Promotion*, *36*(5), 881–893. https://doi.org/10.1177/0890117121106913

Samaniego, J. A. R., Maramag, C. C., Castro, M. C., Zambrano, P., Nguyen, T. T., Datu-Sanguyo, J., Cashin, J., Mathisen, R., & Weissman, A. (2022). Implementation and effectiveness of policies adopted to enable breastfeeding in the Philippines are limited by structural and individual barriers. *International Journal of Environmental Research and Public Health, 19*(17), 10938. https://doi.org/10.3390/ijerph191710938

Sari, J. N., & Yamistada, G. (2023). Analysis Implementation of Health Protocols in Controlling of Covid-19 to Children in Jambi City. *Proceeding International Conference Health Polytechnic of Jambi*, *1*, 26–29. https://doi.org/10.35910/icohpj.v1i0.635

Savarino, G., Corsello, A., & Corsello, G. (2021). Macronutrient balance and micronutrient amounts through growth and development. *Italian Journal of Pediatrics*, *47*(1), 109. https://doi.org/10.1186/s13052-021-01061-0

Setiadi, S., Setiakarnawijaya, Y., Zulharby, P., & Masyitoh, S. (2024). Sosialisasi implementasi program perilaku hidup bersih dan sehat bagi pekerja migran Indonesia di Johor Bahru, Malaysia [Dissemination of the Implementation of the Clean and Healthy Living Behavior Program for

Indonesian Migrant Workers in Johor Bahru, Ma. *Prosiding Seminar Nasional Pengabdian Kepada Masyarakat*, *5*(1), SNPPM2024SH-174. https://doi.org/[in indonesian]

Shanks, C. B., & Harden, S. (2016). A reach, effectiveness, adoption, implementation, maintenance evaluation of weekend backpack food assistance programs. *American Journal of Health Promotion*, *30*(7), 511–520. https://doi.org/10.4278/ajhp.140116-QUAL-28

Shen, Y., & Tao, Y. (2022). Associations between spatial access to medical facilities and health-seeking behaviors: A mixed geographically weighted regression analysis in Shanghai, China. *Applied Geography*, *139*, 102644. https://doi.org/10.1016/j.apgeog.2022.102644

Singer, M., Bulled, N., & Ostrach, B. (2020). Whither syndemics?: Trends in syndemics research, a review 2015–2019. *Global Public Health*, *15*(7), 943–955. https://doi.org/10.1080/17441692.2020.1724317

Singh, A., & Barnard, T. G. (2023). Health science students' perceptions of hand hygiene education and practice in a South African university: introducing the university hand hygiene improvement model. *Healthcare*, *11*(18), 2553. https://doi.org/10.3390/healthcare11182553

Singh, U. K. (2024). *Human Development in Paradigm of Sustainable Development Goals BT - Regional Dimensions of Human Development in India and South Africa: Through Sustainable Development Goals* (U. K. Singh (ed.); pp. 1–37). Springer Nature Singapore. https://doi.org/10.1007/978-981-97-5846-3_1

Siyam, N., Hermawati, B., Fauzi, L., Fadila, F. N., Lestari, N., Janah, S. U., Sungatno, S., & Utomo, N. I. (2023). Eco-health survey effort to diagnose readiness for sustainability dengue prevention and control. *International Journal of Public Health Science*, *12*(2), 898–908. https://doi.org/10.11591/ijphs.v12i2.22797

Spagano, S. (2025). The role of social cohesion in economic development and childhood psychological development: a comprehensive literature review. *Revista INFAD de Psicología. International Journal of Developmental and Educational Psychology.*, *1*(1), 121–132. https://doi.org/10.17060/ijodaep.2025.n1.v1.2811

Su, Z., Kamath, S. P., Tirakitsoontorn, P., & Chen, Y. (2024). The Hidden Burden: Encountering and Managing (Unintended) Stigma in Children with Serious Illnesses. *Proc. ACM Hum.-Comput. Interact.*, *8*(CSCW1). https://doi.org/10.1145/3641021

Vande Velde, F., Overgaard, H. J., & Bastien, S. (2021). Nudge strategies for behavior-based prevention and control of neglected tropical diseases: A scoping review and ethical assessment. *PLOS Neglected Tropical Diseases*, *15*(11), e0009239. https://doi.org/10.1371/journal.pntd.0009239

Wallace-Williams, D. M., Tiu Wright, L., & Dandis, A. O. (2023). Social norms, cues and improved communication to influence behaviour change of smokers. *Journal of Marketing Communications*, *29*(3), 288–313. https://doi.org/10.1080/13527266.2021.2018621

Wilkinson, G. (2022). Using tobacco plain packaging to protect the human rights of children. *TheUniversity of New South Wales Law Journal*, *45*(1), 370–400. https://doi.org/10.3316/informit

Wilkinson, R. G., & Marmot, M. (2003). *Social determinants of health: the solid facts*. World Health Organization.

Williams, T. (2020). Breaking the chain of infection. In *Journal of Perioperative Practice* (Vol. 30, Issue 4, pp. 83–84). SAGE Publications Sage UK: London, England. https://doi.org/10.1177/1750458920914256

Willmott, T. J., Pang, B., & Rundle-Thiele, S. (2021). Capability, opportunity, and motivation: an across contexts empirical examination of the COM-B model. *BMC Public Health*, *21*(1), 1014. https://doi.org/10.1186/s12889-021-11019-w

Wolf, J., Hubbard, S., Brauer, M., Ambelu, A., Arnold, B. F., Bain, R., Bauza, V., Brown, J., Caruso, B. A., Clasen, T., Colford Jr, J. M., Freeman, M. C., Gordon, B., Johnston, R. B., Mertens, A., Prüss-Ustün, A., Ross, I., Stanaway, J., Zhao, J. T., … Boisson, S. (2022). Effectiveness of interventions to improve drinking water, sanitation, and handwashing with soap on risk of diarrhoeal disease in children in

low-income and middle-income settings: a systematic review and meta-analysis. *The Lancet*, *400*(10345), 48–59. https://doi.org/10.1016/S0140-6736(22)00937-0

Zarrabi, M., Yazdanfar, S.-A., & Hosseini, S.-B. (2021). COVID-19 and healthy home preferences: The case of apartment residents in Tehran. *Journal of Building Engineering*, *35*, 102021. https://doi.org/10.1016/j.jobe.2020.102021

Zhao, Q., & Gao, H. (2025). Vaccinating despite limited understanding: influenza vaccination behaviors among older adults in rural China under communication infrastructure theory. *Humanities and Social Sciences Communications*, *12*(1), 1270. https://doi.org/10.1057/s41599-025-05668-0