



PACE CARE YOUTH: Preventive Action & Community Empowerment as an Effort to Improve Reproductive Health and Handling Infectious Diseases in Pace Village

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ABSTRACT

Background: Pace Village in Silo District, Jember Regency faces significant public health challenges, particularly in adolescent reproductive health, low immunization awareness, and the increasing incidence of infectious diseases such as Dengue Hemorrhagic Fever (DHF). **Objective:** This program aimed to enhance community knowledge, awareness, and skills related to reproductive health, immunization, and infectious disease prevention through a promotive-preventive and community empowerment approach. **Method:** The program was implemented from June to September 2025 using a participatory method involving Silo II Public Health Center, Posyandu cadres, adolescents, and village stakeholders. Activities included health education, demonstrations, cadre training, product development practices, and evaluations through pre-tests, post-tests, observations, and group discussions. **Results:** All activities showed improvement in participants' knowledge: TAMARA (60.61%), IMUNAKU (53.71%), BISA KU (7.5%), and SIGAP DBD (6.59%). The program also generated two innovative outputs: CYZA Lotion and the JARIPACE educational module. **Conclusion:** PACE CARE YOUTH effectively improved health literacy, strengthened community capacity, and enhanced awareness regarding reproductive health and infectious disease prevention in Pace Village.

Keywords: Adolescents; community empowerment; dengue; immunization; reproductive health

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A. BACKGROUND

Reproductive health and infectious diseases remain major global public health concerns, contributing to morbidity and mortality across various populations. Adolescents aged 10–19 years represent a vulnerable group facing challenges such as early marriage, anemia, and sexually transmitted infections (Anggraini et al., 2022). Limited health literacy and inadequate access to accurate information further exacerbate these issues.

In Pace Village, Silo District, Jember Regency, interviews with village officials, Posyandu cadres, and Silo II Public Health Center revealed several urgent health problems including high rates of early marriage, low immunization uptake, and the increasing occurrence of DHF, with 32 reported cases and one death in early 2025. Although the village has 20 Posyandu units, many have not yet adopted the Integrated Primary Care (ILP) model, and the youth Posyandu established in 2024 has not operated optimally due to insufficient cadre training.

Previous research supports the need for community-based interventions. Studies show that low reproductive health literacy contributes to early marriage practices (Azza et al., 2022; Laeli & Prayogo, 2021). Educational interventions have proven effective in improving adolescents' reproductive health knowledge (Anggraini et al., 2022). Similarly, strengthening Posyandu cadres enhances the success of community health programs (Nurjanah et al., 2023). Preventive education and community participation are also crucial in reducing DHF transmission (Antoro et al., 2021).

In line with evidence from community empowerment initiatives, the studies highlight that structured training-based interventions significantly enhance skills and knowledge among targeted groups. Considering these issues, a comprehensive and integrative community empowerment program is essential to improve public health literacy and community resilience. The PACE CARE YOUTH program was developed to strengthen adolescents' and families' understanding of reproductive health, immunization, and infectious disease prevention.

Thus, the objective of this program is to enhance community capacity, promote preventive behaviors, and develop sustainable health education models through participatory and collaborative approaches.

B. METHOD

The PACE CARE YOUTH program was conducted from June to September 2025 in Pace Village with multidisciplinary student involvement. Program partners included Silo II Public Health Center, Posyandu cadres, adolescents, prospective brides and grooms, and village residents, with a total of approximately 120 participants.

1. Pre-Activity Stage

Activities included problem assessment through interviews, collection of secondary data, preparation of the JARIPACE educational module, and development of four subprograms: TAMARA, BISA KU, IMUNAKU, and SIGAP DBD.

2. Main Activities

The program utilized health education, demonstrations, training, and hands-on practice:

- a. IMUNAKU: immunization awareness campaigns, interactive games, and distribution of child immunization record bags.
- b. TAMARA: interactive reproductive health education and early marriage prevention.
- c. BISA KU: sexuality education and reproductive awareness sessions using educational props.
- d. SIGAP DBD: DHF prevention training, early symptom recognition, larval surveillance, and CYZA Lotion production demonstration.

3. Monitoring and Evaluation

Evaluation included pre-tests, post-tests, weekly monitoring, and reflective discussions. Effectiveness was assessed through improvements in knowledge scores and observation of behavior changes. Follow-up evaluations also included mosquito larva-free index monitoring and cadre engagement.

C. RESULTS AND DISCUSSION

The village-based student service activities in Pace Village were carried out as a continuation of community empowerment programs in the field of health and household product innovation. This program had two main focuses: reproductive health and infectious disease education, as well as training and demonstrations on the production of mosquito-repellent lotion. The health education activities were conducted in collaboration with program partners, including Silo II Public Health Center, Posyandu cadres, and target community groups through presentations and interactive discussions supported by presentation media and the JARIPACE Module. In addition, a demonstration of CYZA Lotion production was conducted as a form of community empowerment aimed at enabling villagers to produce their own mosquito-repellent lotion as a solution to control Dengue Hemorrhagic Fever (DHF) cases. To further enhance participants' understanding, informational brochures on health education and guidelines for using mosquito-repellent lotion were also provided.

These activities were held from July 30, 2025, to September 27, 2025, at the Pace Village Hall, Silo District, Jember Regency, involving participants consisting of housewives, adolescents, and health cadres. Participants joined the activities enthusiastically, as the topics discussed were considered relevant and beneficial for increasing awareness and improving the health of the village community.

An evaluation was conducted to determine the effectiveness of the implemented program through weekly monitoring sessions. Collaborative evaluations with program partners were carried out based on mutual agreements to assess program success and sustainability efforts. Implementation outcomes were deemed successful when the predetermined indicators for each subprogram were achieved. If any challenges were identified during program implementation, improvements were made for subsequent activities. The evaluation results were then discussed with program partners to formulate strategies for ensuring program sustainability.

The IMUNAKU program focused on pregnant women and mothers with infants and toddlers to address limited access to health services and the lack of information related to vaccine-preventable diseases. This program was conducted on July 11, 2025, together with cadres of Posyandu 85 Pace Village. The socialization activities covered the importance of immunization, types of vaccines, and their administration schedules. To reinforce participants' understanding, interactive games were

conducted to increase participation and improve knowledge. Participants also received immunization bags as tools to help record their children's vaccination schedules. The evaluation results showed an increase in knowledge by 53.71% (average pre-test score: 55.43; post-test score: 85.20). These findings indicate that the IMUNAKU program effectively improved mothers' knowledge and awareness regarding child immunization.



Figure 1. Implementation of the IMUNAKU Program

The next activity, TAMARA (Adolescent Response, Prevent Early Marriage), was held on July 13, 2025, for adolescents aged 10–19. The materials included sexuality education, the impacts of early marriage, and the consumption of iron tablets (TTD). The education began with a pre-test to assess participants' initial knowledge regarding reproductive health and early marriage issues.

The material delivered included comprehensive and age-appropriate sexuality education, physical, mental, and social impacts of early marriage, as well as strategies to avoid pressure to marry early. Evaluation results showed an increase in participants' understanding by 60.61% (from 56.57 to 90.86). This increase proves the effectiveness of the TAMARA program in equipping adolescents with knowledge and awareness to make wise decisions regarding their lives and reproductive health. This activity also led to the formation of the SEHATI Cadres, who serve as agents for adolescent health education.



Figure 2. Formation of SEHATI Youth Cadres

The next program, BISA KU (Wise Sexuality and Reproductive Awareness Activities), was conducted on September 30, 2025, involving health cadres and prospective brides and grooms. This program aimed to enhance participants' understanding of comprehensive reproductive health, prevent unintended pregnancies, and introduce the Family Planning (KB) Program as part of healthy family preparation.

The activity began with a pre-test to measure participants' baseline knowledge on sexuality, reproduction, and preconception preparation. The material was then delivered using a participatory approach with reproductive and contraceptive teaching aids provided by BKKBN. The materials included reproductive system anatomy, the importance of communication within the family, prevention of sexually transmitted infections (STIs), and accessible contraceptive methods.

The activity concluded with a post-test, which showed a knowledge improvement of 7.5%, with the average pre-test score increasing from 90.91 to 97.73. These results indicate that the participants already possessed a strong foundational understanding, and the BISA KU program successfully sharpened and reinforced their knowledge concerning more in-depth reproductive health topics.



Figure 3. Delivery of Reproductive Health Material to Prospective Couples and Community Members

The final activity, the SIGAP DHF Program (Screening to Address the Spread of DHF), was held on September 30, 2025, in response to the increasing dengue cases in Pace Village. The activity began with a pre-test to assess participants' baseline knowledge regarding the causes, symptoms, and prevention measures of DHF.

Following this, the team provided educational material on the life cycle of *Aedes aegypti* mosquitoes and ways to minimize transmission risk through the

implementation of 3M Plus and clean-living behavior. Participants then took the post-test, which showed a positive increase in understanding, indicating the effectiveness of the education provided.

As a preventive follow-up activity, participants were guided to produce CYZA Lotion, a natural mosquito-repellent lotion made from kaffir lime leaf extract, pandan extract, citronella oil, and virgin coconut oil (VCO). The lotion-making process involved a two-phase heating technique, emulsification, and packaging in sterile containers before distribution to the community.



Figure 4. Presentation of Material and Demonstration of CYZA Lotion Production

Table 1. CYZA Lotion Formulation

Ingredient	Amount
Virgin Coconut Oil (VCO)	50 gr
Citronella oil	10 ml
Pandan leaf extract	50 ml
Kaffir lime leaf extract	50 ml
Water	50 ml
Beeswax	5 gr
Essential oil	5 ml

The product demonstrated favorable texture, aroma, and mosquito-repellent effectiveness. The results of the SIGAP DBD program included the successful formulation of CYZA lotion, an environmentally friendly household product made from natural ingredients. The CYZA lotion exhibits physical characteristics of a thick white consistency with a distinctive lavender-like aroma. Trial results confirmed that the lotion effectively repels mosquitoes and provides a comfortable sensation when applied to the skin. The demonstration concluded with the distribution of key ingredients, such as citronella seedlings, pandan leaves, and kaffir lime leaves, to community members.

Program evaluation was conducted using pre-tests and post-tests, along with monitoring of the larva-free index before and after the intervention.

The PACE CARE YOUTH activities showed that community-based approaches effectively enhance health literacy and participation. The use of interactive methods and visual educational media significantly improved information retention, especially among adolescents and housewives. Similar findings were reported by Nurjanah et al. (2023), who found that youth Posyandu programs improved through cadre training. The integration of education, local product innovation, and cadre development contributed significantly to program sustainability. Knowledge improvement of more than 50% demonstrates the effectiveness of the implemented program.

D. CONCLUSION AND SUGGESTION

The PACE CARE YOUTH program effectively enhanced community knowledge, soft skills, and preventive behaviors related to reproductive health, immunization, and DHF prevention. Knowledge improvements ranged from 6.59% to 60.61%, demonstrating the program's impact. It is recommended that local health authorities strengthen youth cadre involvement and consider developing CYZA Lotion as a sustainable community product for D prevention.

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