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Enhancing Maternal and Child Health: Training on Fetal Doppler Operation and Maintenance in South Krembangan, Surabaya

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ABSTRACT This community service activity focuses on counseling and training related to the operation and maintenance of fetal Doppler devices as an effort to improve maternal and child health services in the South Krembangan Village area, Surabaya. Fetal Doppler is a critical medical device used to monitor fetal heart rate and ensure the well-being of the fetus during pregnancy. However, its effectiveness greatly depends on the users' knowledge and skills, particularly among midwives and health workers at Community Health Centers (Puskesmas). The activity involved structured training sessions combining theoretical explanations and practical demonstrations, aiming to enhance participants' understanding of safe device operation, routine maintenance procedures, and early detection of equipment malfunctions. The results showed increased competency among participants in both operating the device and performing basic troubleshooting. This initiative not only supports the continuity of quality antenatal care but also strengthens local health capacity in the effort to reduce maternal and infant morbidity and mortality. Continuous follow-up and evaluation are recommended to sustain the impact of the program.

INDEX TERMS Fetal Doppler; maternal and child health; training; maintenance; community health center; Surabaya.

I. INTRODUCTION

Maternal and child health remains a primary concern in public health, particularly in developing regions. According to the World Health Organization (WHO), the reduction of maternal and infant mortality rates is one of the global health priorities [1], [2]. In Indonesia, efforts to improve maternal and child health services have been intensified through the provision of early detection tools and improved health personnel competencies at the primary healthcare level [3], [4]. One such tool is the fetal Doppler, a non-invasive device used to monitor fetal heart rate and ensure fetal well-being during pregnancy [5], [6].

Fetal Doppler devices play a vital role in antenatal care, especially in areas with limited access to advanced medical facilities [7], [8], [9]. However, the effectiveness of this tool is highly dependent on the users' knowledge and skills [10]. Improper use or lack of regular maintenance may lead to inaccurate readings or device failure, potentially endangering both mother and fetus [11], [12]. Therefore, counseling and training for midwives and health personnel are essential to ensure optimal use and sustainability of the equipment[13], [14].

South Krembangan Village, located in Surabaya, is one of the urban areas where maternal and child health services are provided through Community Health Centers (Puskesmas). Although the availability of fetal Doppler devices is adequate, observations indicate a gap in knowledge regarding proper operation and maintenance among healthcare providers [15], [16]. This condition underscores the need for capacity building through targeted training and counseling programs[17], [18], [19].

The participants of this community service project consisted of 10 healthcare providers, primarily midwives and nurses serving at the South Krembangan Community Health Center. Their demographic background varied in terms of age, years of professional experience, and prior exposure to maternal and child health services. While most participants had routinely assisted in antenatal care, only a limited number reported having formal training or structured experience in using fetal Doppler devices. Some participants indicated that their prior use of the device was limited to basic functions, often relying on senior colleagues for guidance, and they had minimal knowledge about equipment maintenance. These variations highlight the heterogeneity of baseline competencies, making it essential to design training that

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Vol.4 No.4, pp 97-103, December 2025

addresses both fundamental operation and advanced troubleshooting. By providing detailed demographic and professional profiles, the evaluation of training outcomes can be better contextualized, allowing assessment of how different levels of prior experience influence the effectiveness of capacity building.This community service project aims to improve the competency of healthcare providers at the South Krembangan Community Health Center through counseling and hands-on training in the use and maintenance of fetal Doppler devices. By enhancing the skills of midwives and health workers, it is expected that the quality of antenatal care services will improve, contributing to the broader effort of reducing maternal and infant mortality in the area.

Several previous studies have shown that training programs on the use of fetal Doppler and similar fetal monitoring devices have a positive impact on improving healthcare workers' skills. For instance, Mubuuke (2023) reported that point-of-care obstetric ultrasound training programs enhanced the confidence of midwives and nurses in rural hospitals to conduct pregnancy examinations [7]. Another study by Setyowati and Astuti (2021) emphasized that fetal Doppler training for midwives significantly improved their ability to detect early pregnancy complications in primary care settings [14]. Similar findings were also reported by Widyastuti and Nurhidayah (2020), where the combination of theory and practice was proven effective in increasing understanding and skills in the use of fetal Doppler [17]. These findings support the urgency of conducting training programs in various regions, including urban community health centers such as Krembangan Selatan, Surabaya.

II. METHODOLOGY

This activity is part of a community service program implemented with an educational-participatory approach, using counseling, training, and hands-on training. The activity location is the Krembangan Selatan Community Health Center in Surabaya City, selected based on the need to improve the competency of healthcare workers in the use of fetal Doppler devices.

1. Activity Design

Participant Selection and Training Curriculum

Participants in this program were selected purposively based on their direct involvement in antenatal care (ANC) services and their routine access to fetal Doppler devices at the Community Health Center. The inclusion criteria included: (1) active role as midwives or nurses in ANC examinations, (2) willingness to participate in the full training program, and (3) availability to engage in follow-up monitoring. Healthcare providers who were not directly involved in ANC or who could not commit to the entire training and evaluation process were excluded.

The training curriculum was structured into three main learning modules:

1. Theoretical Module – covering the importance of fetal heart rate (FHR) monitoring, principles of Doppler technology, safety standards, and early detection of pregnancy complications.
2. Operational Module – providing step-by-step instructions on Doppler preparation, probe selection, correct positioning, FHR tracking techniques, and interpretation of results.
3. Maintenance and Troubleshooting Module – focused on routine cleaning, calibration, early recognition of device malfunctions, and simple troubleshooting procedures to ensure sustainability of device use.

Each module combined lectures, visual demonstrations, and guided discussions. Practical sessions involved supervised hands-on exercises using Doppler units, where participants practiced skills repeatedly under the guidance of instructors until competency was demonstrated. The curriculum design emphasized competency-based learning, ensuring that participants not only understood the theory but also developed confidence and accuracy in practical application.

This detailed description of the training curriculum provides a clear framework that can facilitate replication of the program in other community health settings with similar contexts.The activity design uses a one-group pretest-posttest approach, measuring participants' knowledge and skills before and after the training. This approach is used to assess the effectiveness of the training quantitatively and qualitatively (Sugiyono, 2020).

2. Activity Subjects

The participants in this activity were 10 healthcare workers, consisting of midwives and nurses who actively provide pregnancy services at the Community Health Center. Participants were selected purposively, namely those who directly handle antenatal care (ANC) examinations and have access to fetal Doppler devices.

3. Activity Stages

The activity was conducted in three main stages:

Stage I: Counseling

Counselling was conducted through interactive presentations on the importance of fetal heart rate (FHR) monitoring, the working principles of fetal Doppler, and its role in the early detection of pregnancy complications. The material was delivered by lecturers and biomedical practitioners.

Stage II: Training and Demonstration

Participants were trained in standard fetal Doppler operation, from initial calibration, probe selection, correct FHR tracking techniques, and interpretation of results. Participants were also taught basic maintenance and troubleshooting of the device.

Stage III: Evaluation and Monitoring

Evaluation was conducted through pre- and post-tests to measure understanding, as well as observation of skills using a hands-on practice checklist. After the training, the monitoring team monitored the use of the device in ANC practice for two weeks.

4. Instruments and Data Analysis

Data were collected using:

a. Knowledge questionnaire (pre-posttest);
b. Skills observation sheet;
c. Participant satisfaction questionnaire

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Vol.4 No.4, pp 97-103, December 2025

Analysis was conducted using descriptive quantitative methods by calculating the percentage increase in knowledge and skills scores, as well as qualitative analysis of participant feedback.

III. RESULT

Fetal Doppler use and maintenance training was held in June 2025 at the Krembangan Selatan Community Health Center, Surabaya. Ten participants, including midwives and nurses active in antenatal care (ANC) services, participated in the training. The training included counseling sessions, theoretical training, hands-on practice, and evaluation using pre-tests, post-tests, skills observations, and a satisfaction questionnaire.

FIGURE 1. Level of Public Knowledge about Health Preparedness during Disasters Counseling to midwives about how operate fetal doppler

FIGURE 1., shows the counseling process using a direct practical method for midwives on how to use a Doppler properly and correctly to produce correct data.

FIGURE 2. Knowledge Pre-Test and Post-Test Results

FIGURE 2., shows documentation of the provision of 1 fetal doppler unit to reduce the limited number of doppler units available at the Community Health Center for fetal measurements in pregnant women.

1. Knowledge Pre-Test and Post-Test Results

Knowledge was measured using 10 multiple-choice questions. The results showed an increase in knowledge as follows:

TABLE 1. KNOWLEDGE PRE-TEST AND POST-TEST RESULTS

Indicator	Average Pre Test Score	Average Post Test Score	Improvement (%)
FHR Knowledge	6,1/10	9,0/10	47,5%

From the results on TABLE 1, the counseling and training, an average score increase of 2.9 points or 47.5% was obtained, which indicates a significant increase in participants' understanding after the training.

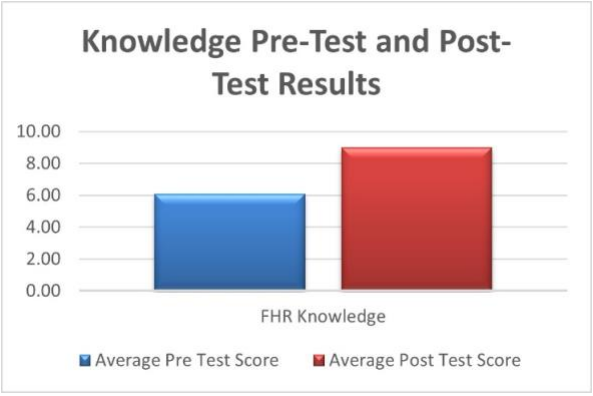

FIGURE 3. Level of Public Knowledge Pre-Test and Post-Test Results

FIGURE 3., shows an increase in the average score of 2.9 points or 47.5%, indicating a significant increase in participants' understanding after the training.

2. Skills Observation Results

Participant skills were evaluated through practical observations using a 10-criteria assessment sheet.

TABLE 2. SKILSS OBSERVATION RESULTS

Score Category	Participants (n=10)
Excellent (31-40)	6 people
Fair (21-30)	4 people
Need Guidance (<20)	0 people

From **TABLE 2**, it can be seen that most participants (60%) demonstrated excellent skills in operating and maintaining fetal Doppler devices, including detecting fetal heart rate (FHR) and performing basic troubleshooting.

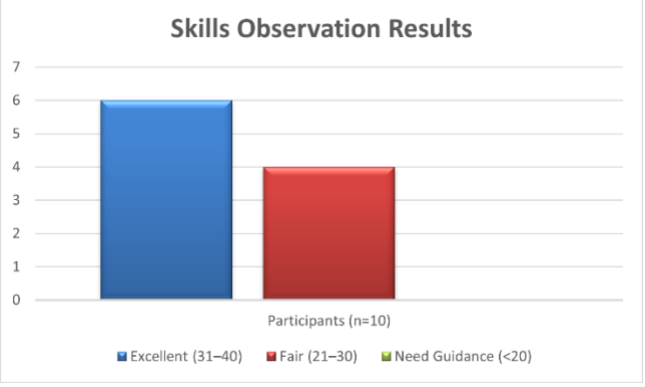

FIGURE 4. Skill Observation Results

FIGURE 4., shows most participants (60%) demonstrated excellent skills in operating and maintaining the fetal Doppler device, including detecting fetal heart rate (FHR) and performing basic troubleshooting.

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Vol.4 No.4, pp 97-103, December 2025

3. Participant Satisfaction

The satisfaction questionnaire used a Likert scale of 1–5 for 8 statements. The results are as follows:

TABLE 3. PARTICIPANT SATISFACTION RESULTS

Score Category	Participants (n=10)
Excellent (31-40)	6 people
Fair (21-30)	4 people

From the results on TABLE 3, it can be seen that most participants (60%) the satisfication results all participants expressed great satisfaction with the training and suggested periodic follow-up or in-depth training.

FIGURE 5. Participant Satisfaction Results

FIGURE 5., shows that the majority of participants (60%) are in the Excellent category, while the remainder (40%) are in the Fair category.

4. Follow-up and Implications

Following the training, the community service team monitored fetal Doppler use for two weeks in ANC services. Health workers began implementing more systematic and precise procedures for using the device and more actively recorded fetal heart rate (FHR) readings regularly. This is predicted to support improvements in the quality of early detection services for pregnancy risks and contribute to reducing maternal and infant mortality rates in the community health center's work area.

IV. DISCUSSION

The training results showed a significant increase in participants' knowledge and skills regarding the use and maintenance of fetal Doppler devices. The increase in the average score from 6.1 in the pre-test to 9.0 in the post-test reflects the effectiveness of the educational and hands-on training method. This finding aligns with a study by Widyastuti and Nurhidayah (2020), which stated that the combination of theory and practice significantly improves healthcare workers' understanding of the use of medical devices.

In terms of skills, observations showed that the majority of participants (60%) achieved the "Very Good" category, particularly in fetal heart rate (FHR) detection techniques, the use of conduction gel, and device maintenance procedures. This demonstrates effective technical skill transfer. No participants fell into the "Not Yet Competent" category, indicating that the training materials and methods were appropriate to the participants' needs.

In addition to technical aspects, participant satisfaction also yielded very positive results. The average satisfaction score was above 4.6 on a maximum scale of 5, indicating that the training was not only educationally beneficial but also well-received psychologically and motivationally by the participants. This satisfaction can encourage participants to more actively use the equipment during antenatal care (ANC) services, ultimately contributing to improving the quality of maternal and child health services.

In general, this activity has a positive impact on efforts to increase the capacity of health workers in primary care. With better mastery of fetal Doppler equipment, it is hoped that health workers will be able to detect pregnancy complications more quickly and accurately, thereby reducing the risk of delays in referral and treatment.

However, there are several important caveats. First, this training only lasted a limited time (one day), so follow-up training or regular refresher programs are needed. Second, ongoing practice in the field needs to be monitored to ensure that acquired skills are not lost. Third, this training needs to be integrated with a more systematic recording and reporting system for fetal heart rate (DHR) at community health centers (Puskesmas).

This activity also demonstrated the importance of a participatory and contextual approach, where training materials are tailored to local needs and take into account the availability of equipment in the field. Therefore, this type of training is highly relevant for replication in other areas with similar service characteristics.

Ensuring the sustainability of training outcomes requires systematic follow-up beyond the initial intervention. Regular refresher courses are essential to prevent skill degradation and to update healthcare providers on best practices and technological developments related to fetal Doppler use. Follow-up assessments, conducted at intervals of 6 to 12 months, could help evaluate retention of knowledge and skills, identify areas that need reinforcement, and provide data for continuous program improvement.

In addition, ongoing supervision and mentorship from senior health workers or biomedical technicians are recommended to support participants in integrating newly acquired skills into daily clinical routines. Embedding periodic monitoring sessions into the community health center's standard operating procedures would allow for real-time feedback and troubleshooting, thereby maintaining consistency in device usage and data recording.

From a policy perspective, collaboration with local health authorities is necessary to establish sustainable funding mechanisms for refresher training and technical support. Incorporating Doppler competency indicators into routine maternal health program evaluations can also ensure accountability and sustained attention to skill maintenance. By aligning these efforts with broader maternal and child health

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Vol.4 No.4, pp 97-103, December 2025

strategies, the long-term impact of the training can be strengthened, ultimately contributing to more sustainable improvements in antenatal care quality.

Despite the positive outcomes of the training program, several potential barriers to the effective use and maintenance of fetal Doppler devices in community health settings should be acknowledged. First, resource limitations remain a challenge, including restricted budgets for acquiring additional Doppler units, conduction gel, and replacement parts. To mitigate this, collaboration with local governments and non-governmental organizations (NGOs) could provide supplementary funding or equipment donations.

Second, the availability of devices is not always guaranteed, particularly in health centers with high patient loads. Strategic allocation of devices, accompanied by routine monitoring of usage and maintenance schedules, can help optimize their utility. The introduction of a shared equipment pool across several health centers in close proximity may also ensure broader access.

Third, the workload of healthcare staff often limits the time available for device use and maintenance. Integrating Doppler screening into routine ANC workflows, rather than treating it as an additional task, may reduce this burden. Furthermore, task-sharing between nurses and midwives can distribute responsibilities more evenly.

Finally, technical knowledge gaps and limited opportunities for refresher training can lead to skill decay over time. Establishing regular refresher courses, mentorship programs, and embedding Doppler skill assessments into annual professional evaluations will ensure continued competency.

By explicitly recognizing these barriers and proposing context-appropriate solutions, this program can provide a more realistic framework for implementation and scalability in other community health centers with similar challenges.

The current evaluation primarily relied on pre- and post-test scores, skill observation checklists, and satisfaction questionnaires to assess the effectiveness of the training program. While these tools provide valuable insights into knowledge acquisition and skill development, the inclusion of more objective clinical impact measures would significantly strengthen the evaluation framework. Such measures could include tracking maternal and neonatal outcomes, such as reductions in delayed referrals, earlier detection of fetal distress, or decreased incidence of pregnancy-related complications following the intervention.

Integrating these outcome indicators into routine antenatal care (ANC) data collection systems would allow for long-term monitoring of the real-world benefits of training. For example, systematic recording of complications identified via Doppler use, along with follow-up on maternal and neonatal health status, can demonstrate tangible improvements attributable to the program. This approach not only validates the clinical relevance of the intervention but also provides compelling evidence for policy-makers to support wider implementation and scaling of similar capacity-building initiatives.

By complementing educational and skill-based metrics with clinical outcome data, future studies will be able to present a more comprehensive evaluation of the training's effectiveness in improving maternal and child health.

V. CONCLUSION

The Fetal Doppler counseling and training program at the Krembangan Selatan Community Health Center has proven effective in improving the knowledge, skills, and awareness of health workers regarding early fetal detection. Significant improvements in pre-post test results, practical skills, and participant satisfaction levels demonstrate that a structured, hands-on learning approach can strengthen the capacity of maternal and child health services at the primary level. In the long term, this type of training has the potential to positively impact maternal and child health outcomes. Mastery of early pregnancy risk detection skills allows health workers to intervene more quickly and accurately, thereby reducing late referrals, reducing delivery complications, and contributing to a reduction in maternal and neonatal morbidity and mortality. Furthermore, integrating new skills into daily practice also has the potential to consistently improve the quality of antenatal care (ANC) services, ultimately supporting the achievement of national and global targets for maternal and child health. However, short training courses provide only an initial impact. Follow-up is needed in the form of regular training, field supervision, and the integration of Fetal Doppler use with a more systematic ANC recording and reporting system. Policy support from local and central governments is crucial for expanding the program's implementation to other regions with similar characteristics. Future research requires long-term evaluation of participants' willingness to learn skills, the impact on maternal and child morbidity and mortality rates, and the effectiveness of practice-based training models across various healthcare contexts. From a policy perspective, regulations are recommended to encourage standardization of training in the use of simple medical devices in primary care, strengthen the capacity of non-physician healthcare workers, and provide a sustainable funding scheme to expand the program's benefits nationally..

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REFERENCES

[1] S. D. Yanti and K. Indahsari, "Dampak Pembangunan Desa Wisata Terhadap Pencapaian Sustainable Development Goals (Sdgs) Desa," *Bul. Ekon. Pembang.*, vol. 5, no. 1, pp. 152–170, 2024, doi: 10.21107/bep.v5i1.26135.

[2] M. H. Jupri, Lume, and M. Widyaningrum, "Pemetaan Potensi Wisata, Peluang Dan Tantangan Pengembangan Desa Wisata Pengadangan Barat, Kabupaten Lombok Timur," *J. Tour. Econ.*, vol. 5, no. 1, pp. 32–45, 2022, doi: 10.36594/jtec/01a88690.

[3] Y. T. Wahyuningrum, "Dampak Ekonomi Dan Partisipasi Masyarakat Dalam Pengembangan Pariwisata Di Desa Wisata Rumah Dome, Kecamatan Prambanan, Kabupaten Sleman, Daerah Istimewa Yogyakarta," *Din. Ekon. Pembang.*, vol. 9, no. 1, pp. 21–34, 2017.

[4] I. Junaid, "Tantangan dan Strategi Pengelolaan Desa Wisata: Perspektif Peserta Pelatihan Pariwisata," *J. Mandalika Rev.*, vol. 2, no. 2, pp. 1–14, 2023, doi: 10.55701/mandalika.v2i2.87.

[5] N. I. B. Sitorus, "Peran Dan Kolaborasi Stakeholder Pariwisata Dalam Mendukung Peningkatan Kunjungan Wisata Di Kawasan Danau Toba," *J. Hosp. dan Pariwisata*, vol. 6, no. 2, pp. 83–92, 2020, doi: 10.30813/jhp.v6i2.2416.

[6] Viona Amelia and Danang Prasetyo, "Peluang Dan Tantangan Pengelolaan Desa Ekowisata Berbasis Masyarakat Di Desa Wisata Tegal Loegood," *J. ISO J. Ilmu Sos. Polit. dan Hum.*, vol. 5, no. 1, p. 10, 2025, doi: 10.53697/iso.v5i1.2576.

[7] Dinas Kesehatan Provinsi Jawa Timur, *Profil Kesehatan Provinsi Jawa Timur Tahun 2023*. Surabaya: Dinas Kesehatan Provinsi Jawa Timur, 2023. [Online]. Available: https://dinkes.jatimprov.go.id/userfile/dokumen/PROFIL KESEHATAN PROVINSI JAWA TIMUR TAHUN 2023.pdf?utm_source=chatgpt.com

[8] A. Ruhban, N. L. A. Indraswari, and R. Rismayanti, "Analisis Kondisi Fasilitas Sanitasi Pada Objek Wisata Di Pantai Dewata Wakka Kabupaten Pinrang," *Sulolipu Media Komun. Sivitas Akad. dan Masy.*, vol. 23, no. 1, pp. 1–11, 2023, doi: 10.32382/sulolipu.v23i1.3208.

[9] BPBD Jawa Timur, *Indeks Risiko Bencana Provinsi Jawa Timur Tahun 2019-2023*. BPBD Kabupaten Trenggalek, 2024. [Online]. Available: https://inarisk.bnpb.go.id/IRBI-2022/mobile/index.html#p=56

[10] P. E. Terry, "Health Promotion Planning and an Interview With Dr. Lawrence Green," *Am. J. Heal. Promot.*, vol. 35, no. 6, pp. 760–765, 2021, doi: 10.1177/08901171211022560.

[11] N. Mouchrek and M. Benson, "The theory of integrated empowerment in the transition to adulthood: concepts and measures," *Front. Sociol.*, vol. 8, 2023, doi: 10.3389/fsoc.2023.893898.

[12] F. Usman, S. Hariyani, and F. Shoimah, "Perencanaan Partisipatif Tanggap Darurat Bencana Tsunami Di Pesisir Selatan Watulimo, Trenggalek," *Tataloka*, vol. 23, no. 1, pp. 138–150, 2021, doi: 10.14710/tataloka.23.1.138-150.

[13] I. Isfanda, "Pendampingan Program Desa Wisata Sehat Melalui Peningkatan Sarana Dasar di Desa Iboih Sabang," *J. Abdimas*, vol. 3, no. 2, pp. 375–379, 2022.

[14] J. Budhiana, A. Rahman La Ede, R. Marta Dipura, and S. Janatri, "Hubungan Pengetahuan Masyarakat Tentang Kesiapsiagaan Bencana Dengan Kesiapsiagaan Masyarakat Dalam Menghadapi Bencana Tsunami di Desa Bayah Barat Wilayah Kerja Puskesmas Bayah Kabupaten Lebak," *J. Heal. Soc.*, vol. 10, no. 1, pp. 75–83, 2021, doi: 10.62094/jhs.v10i1.28.

[15] N. Andari, E. Amalijah, and T. Jauhari, "Tata Kelola Pariwisata Dalam Perwujudan Desa Wisata Tangguh dan Berkelanjutan," *Plakat J. Pelayanan Kpd. Masy.*, vol. 5, no. 1, p. 1, 2023, doi: 10.30872/plakat.v5i1.9182.

[16] A. F. Rahman, A. A. Wardana, and Mufarrohah, "Measuring community empowerment in the development of tourism village: Evidence from Batu City, Indonesia," *J. Tour. Culinary, Entrep.*, vol. 5, no. 1, pp. 1–18, 2025, doi: https://doi.org/10.37715/jtce.v5i1.5551.

[17] Dionisius Jalung, Sri Kamariyah, and Ika Devy Pramudiana, "Community Empowerment Strategy in Tourism Village Development," *An Int. J. Tour. Community Rev.*, vol. 2, no. 1, pp. 9–24, 2025, doi: 10.69697/tourcom.v2i1.197.

[18] I. A. S. Huda *et al.*, "Peningkatan komunitas Desa Tangguh Bencana dalam Pengurangan Risiko Bencana (PRB) kebakaran di Desa Mendahara Ilir, Kabupaten Tanjung Jabung Timur," *PERDIKAN (Journal Community Engag.*, vol. 6, no. 1, pp. 40–52, 2024, doi: 10.19105/pjce.v6i1.12153.

[19] M. T. Ghozali *et al.*, "Pelatihan Simple Emergency Management untuk Peningkatan Kapasitas Kader LLHPB ' Aisyiyah Gamping," *J. Med.*, vol. 4, no. 3, pp. 253–263, 2025.

[20] M. Mu'arifuddin, R. A. Rifandi, and Y. N. Ifriza, "Eco-educational culture tourism: Efforts to improve community welfare in Timpik Village," *Community Empower.*, vol. 10, no. 5, pp. 1184–1194, 2025, doi: https://doi.org/10.31603/ce.12897.

[21] F. Nurhasna, E. A. Saepudin, N. Revita, R. Cahya, and S. M. Dewi, "Efektivitas Kebijakan Manajemen Bencana Dalam Mengurangi Dampak Sosial dan

e-ISSN: 2827-8747 p-ISSN: 2829-3029
Vol.4 No.4, pp 97-103, December 2025

Ekonomii," *PENG (Jurnal Ekon. dan Manajemen)*, vol. 2, no. 1, pp. 1984–1992, 2025.

[22] A. Julianto, S. Nugroho, A. Haris, A. N. Jati, and D. Wanito, "Pengembangan Potensi Wisata Bahari Berbasis Peningkatan Kualitas Layanan Obyek Wisata Pantai Desa Jatimalang Purworejo," *Univ. Widya Dharma Klaten*, vol. 5, no. 1, pp. 348–356, 2024.

[23] B. Mulyana, R. A. Pamungkas, and A. Abdurrasyid, "Desa Tanggap Darurat Melalui Pemeriksaan Kesehatan dan Edukasi Penatalaksanaan Kegawatdaruratan Bencana di Ciherang Pacet Cianjur Jawa Barat," *J. Abdi Masy. Indones.*, vol. 3, no. 2, pp. 563–570, 2023, doi: 10.54082/jamsi.679.

[24] I. Irwan and M. R. Nakoe, "Kesiapsiagaan Bencana Berbasis Masyarakat Melalui Pendekatan Partisipatif," *JPKM J. Pengabdi. Kesehat. Masy.*, vol. 2, no. 1, pp. 73–83, 2021, doi: 10.37905/jpkm.v1i2.10312.

[25] V. Damayanti, I. H. Agustina, A. M. Ekasari, and R. R. A, "Penentuan Jalur Evakuasi dalam Upaya Kesiapsiagaan Bencana di Desa Cikole Lembang," *J. Pengabdi. Masy. Progresif Humanis Brainstorming*, vol. 8, no. 2, pp. 305–315, 2025, doi: 10.30591/japhb.v8i2.8221.

[26] S. N. Hijrawadi *et al.*, "Peningkatan Kapasitas Kelompok Sadar Wisata Terhadap Risiko Bencana Di Desa Wisata Cisaat, Kecamatan Ciater Kabupaten Subang," *Pros. Semin. Nas. Pengabdi. Kpd. Masy.*, pp. 110–118, 2022.

[27] I. M. M. Y. Saifudin *et al.*, "Disaster Health Literacy, Risk Perception, and Preparedness towards Resilience in a Volcano-Prone Community: A Cross-sectional Study in Yogyakarta, Indonesia," *J. Community Empower. Heal.*, vol. 6, no. 3, pp. 154–160, 2023, doi: 10.22146/jcoemph.86343.

[28] T. D. Pamungkas, S. A. Aliyan, I. Nurfalah, E. Ningrum, and E. Maryani, "Preparedness of the community in facing disasters like earthquakes (Case: Cisarua, Indonesia)," *Jàmbá - J. Disaster Risk Stud.*, pp. 1–9, 2023, doi: 10.4102/jamba.v17i1.1800.

[29] M. D. Fitriana, N. Rohmah, and M. A. Hamid, "Hubungan Pengalaman Bencana Dengan Kesiapsiagaan Masyarakat Dalam," *J. Ilm. Wahana Pendidik.*, vol. 11, no. A, pp. 162–169, 2025.

[30] R. Andini, "Pengaruh Pengalaman Bencana Terhadap Kesiapsiagaan Menghadapi Tsunami Pada Masyarakat Desa Caringin Kecamatan Labuan Kabupaten Pandeglang," Universitas Islam Negeri Syarif Hidayatullah Jakarta, 2021.