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Community-Based Wellness Education for Indonesian Migrant Workers: Outcomes and Lessons from an International Health Engagement Program

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Abstract

The health of Indonesian migrant workers remains a critical public health concern, particularly in relation to physical and mental well-being influenced by occupational risks, lifestyle changes and limited access to health information. This article examines the implementation of a community-based wellness education program aimed at improving health knowledge and behaviours among Indonesian migrant workers in Malaysia. Using a participatory and community-engaged approach, the program was developed and delivered through collaboration between academic institutions, healthcare professionals and migrant worker communities to ensure contextual relevance and cultural appropriateness. The intervention integrated education on non-communicable diseases, occupational health and safety, reproductive health, mental resilience and rational drug use, using interactive methods such as discussions, demonstrations and practical activities. Findings indicate a marked improvement in participants' knowledge and awareness, alongside positive shifts in attitudes towards preventive health practices and self-care behaviors. The program also fostered active participation and strengthened community capacity in promoting health independently. These findings highlight the value of community-based and participatory approaches in addressing complex health challenges among migrant populations. The study contributes to ongoing discussions on community-engaged health promotion and underscores the importance of integrated, multidisciplinary strategies to support sustainable improvements in migrant worker health and well-being.

Keywords: Migrant Health; Indonesian Migrant Workers; Community Engagement; Wellness Education; Health Literacy; Preventive Behavior

1. Introduction

Migrant workers constitute an important part of the global labor force and contribute

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substantially to economic development through labor participation, remittances and transnational social support. For Indonesia, migrant workers also play a significant role in sustaining household livelihoods and strengthening economic connections across countries. Despite these contributions, migrant workers remain a population that is often insufficiently reached by preventive health programs. Their health vulnerabilities are shaped by working conditions, limited access to health information, gaps in social protection, barriers to healthcare services and limited opportunities for routine health education. In Southeast Asia, Malaysia is one of the major destination countries for Indonesian migrant workers. Many Indonesian migrant workers in Malaysia are employed in labor-intensive sectors where occupational demands, long working hours and restricted flexibility may affect both physical and psychosocial well-being (Laczko, Vidal, & Rango, 2023).

The health challenges experienced by migrant workers are multidimensional. They may include occupational hazards, fatigue, musculoskeletal discomfort, psychosocial stress, irregular dietary patterns, limited physical activity and delayed access to healthcare. These risks are particularly relevant to the prevention of non-communicable diseases, which require sustained health literacy, regular self-care, early recognition of risk factors and timely access to preventive services. In addition, separation from family, cultural adaptation, job insecurity and unfamiliarity with the host-country health system may contribute to anxiety, stress and social isolation (Moyce & Schenker, 2018). These intersecting risks indicate that migrant health cannot be adequately addressed through disease-specific education alone. Health promotion for migrant workers requires a broader approach that recognises occupational realities, social determinants of health, cultural context and the lived experience of migration.

Conventional health education programs are often delivered through top-down models in which experts define the problem, design the intervention and deliver information to the target population. While such approaches can be efficient in disseminating health messages, they may not adequately capture the specific needs, cultural meanings, daily constraints and practical priorities of migrant communities (Brunton et al., 2017; Wallerstein et al., 2020). Without meaningful community involvement, health education may be less relevant to participants' realities, less acceptable in delivery and less likely to be sustained beyond the initial program period (Faiz & Collins, 2018; O'Mara-Eves et al., 2015). This limitation is particularly important for migrant workers, whose health behaviors are shaped not only by individual knowledge, but also by employment conditions, income, housing arrangements, food access, social support and the accessibility of healthcare services (Moyce & Schenker, 2018; Organization, 2023b).

Community-based and participatory approaches offer an alternative by positioning community members not merely as recipients of information, but as partners in identifying health priorities, shaping program content, supporting implementation and reflecting on outcomes. This orientation is consistent with community-based participatory research and community-engaged practice, which emphasise shared learning, contextual relevance, trust-building and co-ownership of knowledge (Faiz & Collins, 2018; Wallerstein et al., 2020) In the context of migrant health, such approaches are important because they enable health promotion programs to be adapted to participants' language, cultural background, work patterns and perceived health needs. Community engagement also provides a practical pathway for strengthening program acceptability, improving participation and generating lessons that can inform future interventions.

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Community-based wellness education is particularly relevant for Indonesian migrant workers because it integrates several health domains within a single practical framework (Laverack, 2007). Rather than focusing narrowly on one disease or isolated risk factor, wellness education can address physical health, mental well-being, occupational safety, nutrition, physical activity, self-monitoring and rational medicine use, reflecting the principles of comprehensive health promotion and health literacy (Nutbeam & Lloyd, 2021; Permatasari & Suprayitno, 2021), Such integration reflects the reality that migrant workers' health problems are often interconnected and strongly influenced by occupational and social determinants of health (Moyce & Schenker, 2018). For example, long working hours may contribute to fatigue and stress, which in turn may influence dietary habits, physical activity, sleep quality and the use of medicines or supplements (Moyce & Schenker, 2018). A wellness framework allows these issues to be discussed as part of daily self-care and preventive health behaviour, using practical messages that are relevant to participants' working and living conditions while strengthening individuals' capacity to make informed health decisions (Laverack, 2007; Nutbeam & Lloyd, 2021).

Despite increasing attention to migrant health, limited evidence is available on integrated wellness education programs specifically designed for Indonesian migrant workers in international community settings (Moyce & Schenker, 2018; Office, 2021; Organization, 2023a). Existing studies on migrant worker health often focus on particular issues, such as occupational safety, infectious disease prevention, mental health or access to healthcare (Office, 2021). Fewer studies have examined multidimensional wellness education as a community-engaged intervention that combines health literacy, prevention of non-communicable diseases, mental well-being, occupational health and rational medicine use (Wallerstein et al., 2020). There is also limited documentation of how academic institutions and migrant communities can collaborate across borders to design, implement and evaluate health promotion activities that are responsive to community needs (O'Mara-Eves et al., 2015; Wallerstein et al., 2020). This gap is important because international community engagement programs are increasingly expected not only to deliver short-term services, but also to generate transferable lessons, strengthen community capacity and inform sustainable models of health (Brunton et al., 2017).

In response to this gap, this article examines a community-based wellness education program for Indonesian migrant workers in Malaysia. The program was developed as an international health engagement initiative that integrated health literacy, non-communicable disease prevention, mental well-being, occupational health and rational medicine use (Nutbeam & Lloyd, 2021). Rather than focusing solely on outcome measurement, this article documents both the program outcomes and the implementation lessons generated through community engagement (Wallerstein et al., 2020). Specifically, the article aims to describe how the program was designed and delivered, evaluate its short-term outcomes on health knowledge and preventive health behaviour, and reflect on lessons for developing culturally responsive, measurable and sustainable health promotion programs for migrant communities (Laverack, 2007).

2. Literature Review

2.1 Previous research

Previous studies have consistently shown that migrant workers experience multiple and interconnected health risks arising from hazardous working environments, long working hours, limited social protection, language barriers, restricted access to healthcare, and uncertainty regarding their employment status. A systematic review and meta-analysis by Hargreaves et al.

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(2019) found that international migrant workers had a substantial burden of occupational morbidity and injury (Hargreaves et al., 2019). Among 7,260 migrant workers included in the meta-analysis, approximately 47% experienced at least one occupational morbidity, while around 22% of 3,890 workers experienced at least one occupational injury or accident. These findings demonstrate that migrant workers require not only curative services after illness or injury occurs, but also preventive education that improves their ability to recognize workplace hazards, practice self-protection, and seek healthcare appropriately.

The health needs of migrant populations extend beyond occupational injuries. (Riza et al., 2020) reviewed 118 publications concerning community-based healthcare for migrants and refugees and identified promising practices across mental health, general health services, non-communicable diseases, primary care, and maternal and child health. The review highlighted the value of culturally appropriate communication, community health workers, outreach services, interdisciplinary collaboration, and interventions delivered in accessible community settings. These findings support the development of integrated wellness programs because migrant health problems frequently occur simultaneously and cannot be addressed effectively through isolated, disease-specific education.

Evidence also indicates that culturally and linguistically adapted health education can improve migrants' knowledge and readiness to adopt preventive behaviour. (Lara et al., 2021) evaluated a short, community health worker-led video intervention among 98 immigrant day labourers who faced occupational risks. Participants who received the intervention demonstrated significantly higher occupational safety knowledge and stronger intentions to perform preventive safety behaviours than those in the control group. The intervention was effective because it used culturally familiar narratives, community health workers, and practical examples related to workers' experiences. This study suggests that health education is more likely to be understood and accepted when the language, examples, and delivery methods are relevant to the target community.

A larger occupational health intervention was implemented among internal migrant workers exposed to organic solvents in small and medium-sized enterprises in China. The intervention combined conventional health education, mobile health messages, and peer education. Workers who complied with the intervention were more likely to use respiratory protective equipment appropriately than workers in the control group. The implementation evaluation also showed high participant satisfaction and strong intentions to maintain protective behaviour. However, peer education was affected by barriers such as limited time and unfamiliarity among workers. These findings show that multi-component programs can improve migrant workers' preventive practices, but their success depends on participation, intervention fidelity, work schedules, and organisational support.

Community health workers and community navigators have also been used to reduce barriers faced by migrant and minority populations. (Shommu et al., 2016) found that community navigators can help immigrants and ethnic minority groups understand health information, access appropriate services, overcome language barriers, and communicate with healthcare providers. Similarly, a systematic review by (Kim KyoungHae et al., 2016) showed that community-based health worker interventions can improve health outcomes among vulnerable populations affected by chronic non-communicable conditions. These findings are relevant to migrant worker wellness programs because community facilitators may serve as trusted intermediaries between healthcare professionals and migrant communities.

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Research on community engagement further demonstrates that involving community members in program planning and implementation can improve the relevance, acceptability, and effectiveness of public health interventions. (O'Mara-Eves et al., 2015) concluded that community engagement interventions were associated with improvements in health behaviour, health outcomes, self-efficacy, and social support, particularly among disadvantaged groups. (Brunton et al., 2017) subsequently developed a conceptual framework showing that the effectiveness of community engagement depends on how communities are involved, how power and decision-making are shared, and how programs are adapted to local contexts. Therefore, community engagement should be viewed not merely as a participant-recruitment strategy, but as an important mechanism through which health interventions become socially and culturally meaningful.

Community-based participatory research provides a stronger framework for such involvement. (Faiz & Collins, 2018) explained that community-based participatory research promotes equitable collaboration among community members, researchers, service providers, and other stakeholders throughout the research process. Community members contribute to identifying problems, designing interventions, interpreting findings, and disseminating results. This approach can reduce the limitations of expert-driven health education and improve trust, contextual relevance, shared ownership, and program sustainability. These principles are particularly important for migrant workers, who may be reluctant to engage with formal institutions because of language differences, social marginalisation, employment insecurity, or unfamiliarity with the host-country healthcare system.

Despite the growing body of evidence, several gaps remain. Many previous interventions have focused on a single health domain, such as occupational safety, diabetes management, infectious disease prevention, reproductive health, or healthcare navigation. Fewer studies have examined an integrated wellness program combining non-communicable disease prevention, occupational health, mental well-being, reproductive health, nutrition, physical activity, and rational medicine use for Indonesian migrant workers. There is also limited documentation of international university–community partnerships that evaluate both program outcomes and implementation lessons. Therefore, this study contributes to the literature by examining a multidimensional, community-engaged wellness education program developed specifically for Indonesian migrant workers in Malaysia.

2.2 Community-Based and Culturally Responsive Wellness Education

Community-based wellness education delivers health promotion activities within the target population's social environment and actively involves community members in identifying health needs, planning program content, supporting implementation, and evaluating outcomes. Unlike conventional health education that is primarily delivered through one-way communication, a community-based approach emphasizes dialogue, shared learning, practical application, and the use of existing community strengths. Community participation is especially important when programs involve socially or economically disadvantaged populations because health behaviour is influenced not only by individual knowledge but also by employment conditions, social support, cultural values, financial capacity, housing arrangements, and access to services.

This approach is closely related to Community-Based Participatory Research (CBPR). CBPR seeks to establish equitable partnerships in which researchers and community members share knowledge, responsibilities, and decision-making authority. (Collins et al., 2018) emphasised

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that CBPR recognises community members as experts in their own lived experiences rather than as passive recipients of professional knowledge. Through meaningful participation, interventions can be adapted to community priorities, cultural values, preferred language, and practical constraints. For migrant workers, this approach is particularly relevant because their health-related decisions are often shaped by occupational demands, migration experiences, limited time, and unfamiliarity with formal healthcare systems.

Cultural responsiveness is another essential element of migrant health education. It refers to the adaptation of program language, examples, communication strategies, materials, and delivery methods to the cultural and social characteristics of participants. Henderson et al. (2011) identified several strategies for improving culturally competent healthcare, including bilingual providers, interpreter services, culturally appropriate educational materials, workforce diversity, and culturally specific service settings. (Henderson et al. 2011) similarly found that culturally appropriate interventions could support the prevention and management of chronic diseases among culturally diverse populations. These findings suggest that educational content alone is insufficient when participants experience language barriers or perceive the program as disconnected from their everyday lives.

An integrated wellness framework is appropriate for migrant workers because their health risks are multidimensional and mutually reinforcing. Occupational fatigue may reduce physical activity, disrupt eating patterns, contribute to stress, and increase reliance on self-medication. Limited access to healthcare may also delay disease detection and increase the likelihood that migrant workers manage symptoms without professional guidance. Consequently, wellness education should combine information about non-communicable disease prevention, nutrition, physical activity, stress management, occupational safety, reproductive health, medicine use, and timely health-seeking behaviour. The review by (Riza et al., 2020). supports this multidimensional orientation by showing that successful migrant health practices often combine outreach, health literacy, mental health support, primary care, and community participation.

Interactive learning methods are also important in community-based wellness education. Discussions, demonstrations, storytelling, simulations, videos, and question-and-answer sessions allow participants to connect new information with personal experiences. The study by (Lara et al., 2021) demonstrated that a brief video delivered through culturally familiar community health workers could improve occupational safety knowledge and behavioral intention among immigrant day laborers. Similarly, the multi-component intervention evaluated among migrant workers in China showed that combining direct education, mobile health communication, and peer support could strengthen preventive occupational behavior. These studies demonstrate that blended and participatory learning may be more effective than passive lectures, particularly when participants have different educational backgrounds and limited time.

Digital health communication may strengthen the continuity and sustainability of community-based education. Mobile messages, digital leaflets, short educational videos, and messaging groups can reinforce learning after face-to-face activities. This is particularly useful for migrant workers, whose working hours, mobility, and limited availability may prevent regular attendance at health programs. However, technology should complement rather than replace interpersonal and community-based engagement. The success of digital follow-up depends on accessibility, digital literacy, language appropriateness, trust in the information provider, and

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the relevance of messages to workers' actual circumstances.

Based on the reviewed literature, community-based wellness education can be conceptualised through four interrelated components. First, the program must be based on a needs assessment reflecting participants' actual health and occupational concerns. Second, educational content must be culturally and linguistically appropriate. Third, program delivery should be participatory, practical, and supported by trusted community representatives. Fourth, evaluation should measure not only changes in knowledge but also acceptability, behavioural intention, implementation barriers, and the potential for sustainability. These components provide the conceptual basis for the current program among Indonesian migrant workers in Malaysia.

The present study therefore applies a community-engaged and culturally responsive wellness education framework. It positions Indonesian migrant workers as active participants, integrates several interconnected health topics, uses Bahasa Indonesia and practical examples, and combines educational outcomes with reflective evaluation of implementation. This approach is expected to generate both immediate improvements in health knowledge and broader lessons for the development of sustainable international community engagement programs.

3. Research Method

3.1 Approaches and Types of Research

3.1.1 Study Design

This study used a community-engaged evaluative case study design with a one-group pre-test and post-test evaluation. This design was selected because the program was implemented in a real-world community setting and aimed not only to assess short-term changes in participants' knowledge and preventive health behavior, but also to document the process of community engagement and implementation. The study was informed by a community-based participatory orientation, which emphasized collaboration between the university team, health professionals, community facilitators and Indonesian migrant workers. Rather than adopting a top-down intervention model, the program was designed to be responsive to the lived experiences, needs and cultural context of the target community. This approach allowed the study to capture both measurable program outcomes and practical lessons for sustainable migrant health promotion.

3.1.2 Setting and Participans

The program was conducted in April 2026 at a migrant worker community centre in Malaysia. The setting was selected because it served as a gathering point for Indonesian migrant workers and provided access to participants from different occupational sectors. Participants were Indonesian migrant workers living and working in Malaysia, including those employed in construction, manufacturing, domestic services and other labour-intensive sectors. Participants were recruited through community networks and local coordinators who were familiar with the migrant worker community. Eligible participants were Indonesian migrant workers aged 18 years or older, able to communicate in Bahasa Indonesia and willing to participate in the education session and evaluation process. Individuals who were unable to complete the pre-test and post-test questionnaires were excluded from outcome analysis. Participation was voluntary, and no participant was required to disclose sensitive employment or legal status information.

3.2. Intervention

The intervention consisted of a community-based wellness education program delivered through structured and participatory educational activities. The program was facilitated by a

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multidisciplinary team consisting of academics, health professionals and community facilitators. The education session was delivered in Bahasa Indonesia to ensure accessibility and to reduce communication barriers. The program used an integrated wellness approach covering several key topics: prevention of non-communicable diseases, occupational health and safety, mental resilience, reproductive health and rational medicine use, including the DaGuSiBu principle, which refers to obtaining, using, storing and disposing of medicines appropriately.

The intervention combined knowledge transfer with participant engagement. Educational delivery included short lectures, interactive discussions, question-and-answer sessions, practical demonstrations and simple simulations related to self-care and preventive health behavior. Participants were encouraged to share experiences, discuss common health concerns, and reflect on feasible actions they could apply in their working and living conditions. Educational materials were prepared using accessible language and practical examples relevant to migrant workers' daily routines. This participatory format was intended to improve comprehension, strengthen relevance and support participants' readiness to adopt healthier behaviors.

3.3. Program Phase

The program was implemented in four sequential phases. The first phase involved community engagement and needs assessment. During this phase, informal discussions, observations and communication with community leaders and local organizations were used to identify common health concerns, available resources and implementation challenges. Baseline information on participants' knowledge and health-related behavior was also collected through pre-test questionnaires.

The second phase involved program development and co-creation. Findings from the needs assessment were used to refine the educational content and delivery strategy. Educational materials were tailored to participants' literacy level, language preference and practical needs. Community input ensured the content was culturally sensitive, understandable, and relevant to migrant workers' realities.

The third phase focused on program implementation. Participants completed the pre-test before receiving the educational intervention. The education session was then delivered using interactive and participatory methods, followed by practical discussion and participant reflection. After the session, participants completed the post-test and program evaluation questionnaire.

The fourth phase involved evaluation and reflection. Quantitative data from pre-test and post-test questionnaires were used to assess short-term changes in knowledge and preventive health behavior. Participant feedback, satisfaction responses and facilitator observations were used to identify perceived benefits, barriers to behavior change and lessons for future program improvement.

3.4. Data Collection and Analysis

Data were collected before, during and immediately after the program. Before the education session, participants completed a pre-test questionnaire assessing baseline health knowledge and preventive health behavior or behavioral intention. After the intervention, participants completed a post-test questionnaire containing similar items to evaluate short-term changes.

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Participant satisfaction and feedback were also collected after the session.

Quantitative data were analyzed using descriptive statistics, including frequencies, percentages, means and standard deviations, or medians and interquartile ranges when appropriate. Pre-test and post-test scores were compared to assess changes in knowledge and behavioral intention. If the data were normally distributed, paired t-tests were used. If normality assumptions were not met, Wilcoxon signed-rank tests were applied. Where appropriate, effect sizes were calculated to estimate the magnitude of change. Qualitative feedback from participants and facilitator reflections was analyzed thematically by identifying recurring patterns related to program relevance, perceived benefits, barriers to implementation and recommendations for future activities.

3.6 Ethical Consideration

The program was conducted as a voluntary community health education activity with minimal risk to participants. Participants received information about the purpose of the program, the evaluation process, and the voluntary nature of participation before completing the questionnaires. Informed consent was obtained prior to data collection. Participant responses were anonymized, and no personally identifiable or sensitive employment-related information was collected. Data were used only for program evaluation and academic reporting. Ethical approval or an institutional exemption should be reported in the final manuscript according to the requirements of the author's institution.

4. Findings and Discussions

The findings demonstrate that community-based wellness education was feasible, acceptable, and associated with meaningful short-term improvements in health knowledge and preventive health awareness among Indonesian migrant workers in Malaysia. The program involved 47 participants from diverse occupational backgrounds and addressed interconnected health concerns, including non-communicable disease prevention, occupational safety, reproductive health, mental well-being, nutrition, self-care, and rational medicine use. The results also indicate that culturally accessible communication, participatory learning, and the use of Bahasa Indonesia contributed to active engagement and improved understanding among participants.

4.1 Participant characteristics

A total of 47 Indonesian migrant workers participated in the community-based wellness education program and completed both the pre-test and post-test assessments (Tabel 1). Participants represented diverse occupational backgrounds commonly found among Indonesian migrant workers in Malaysia, including domestic work, manufacturing, construction, caregiving and service-related employment. This diversity reflected the heterogeneous nature of the migrant worker community and provided a relevant context for implementing an integrated wellness education program.

All participants could communicate in Bahasa Indonesia and voluntarily took part in the education and evaluation activities. The use of Bahasa Indonesia during the program supported communication, reduced language barriers and allowed participants to engage more actively in discussions. Although the program was open to migrant workers from different work sectors, the shared experience of living and working away from their country of origin created common concerns related to health access, self-care, occupational strain and psychosocial well-being.

Participant attendance throughout the program was high, and all participants who joined the

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initial session completed the post-intervention evaluation. This level of completion suggests that the program format, timing and delivery strategy were acceptable for the participating community.

Table 1. Characteristics of participants

Characteristic	Result
Total participants completing pre-test and post-test	47
Nationality	Indonesian
Setting	Migrant worker community in Malaysia
Occupational background	Domestic work, manufacturing, construction, caregiving, service work
Language used in the program	Bahasa Indonesia
Evaluation completed	Pre-test and post-test

Source: Primary data collected during the preliminary community assessment (2026).

4.2 Baseline health concerns and wellness needs

The baseline assessment and preparatory engagement process showed that participants had several health-related concerns relevant to their daily work and living conditions (Tabel 2). These concerns included limited knowledge of non-communicable disease risk factors, low awareness of occupational safety, limited understanding of reproductive health, psychosocial stress and uncertainty regarding appropriate medicine use. These findings supported the need for an integrated wellness education approach rather than a single-topic health education session.

Before the intervention, many participants had limited understanding of preventive health practices. This was reflected in the pre-test knowledge distribution, where most participants were classified in the poor knowledge category. The baseline condition suggested that participants needed practical and accessible health information, particularly on disease prevention, rational medicine use, occupational health, mental well-being and self-care strategies.

The needs identified during the preparation phase also indicated that participants required health messages that could be applied within the constraints of migrant work, including long working hours, fatigue, limited time for healthcare visits and restricted access to routine health screening. Therefore, the program was designed to address practical wellness needs in a culturally and contextually relevant manner.

Table 2. Baseline health concerns and wellness needs identified among participants

Health concern or wellness need	Description
Non-communicable disease prevention	Limited awareness of risk factors and early prevention
Occupational safety	Low awareness of work-related health risks and safety practices
Reproductive health	Need for accessible and understandable health information

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Mental well-being	Stress, fatigue and emotional burden related to migration and work
Rational medicine use	Uncertainty regarding appropriate use, storage and disposal of medicines
Preventive self-care	Need for practical strategies applicable to migrant workers' daily routines

Source: Primary data collected during the preliminary community assessment (2026).

4.3 Changes in health knowledge

The community-based wellness education program was associated with a marked improvement in participants' health knowledge (Table 3). The mean knowledge score increased from 30 before the intervention to 78 after the intervention, indicating an average improvement of 48 points. This increase suggests that participants gained a better understanding of the health topics delivered during the program.

Before the education session, the majority of participants were classified in the poor knowledge category. Specifically, 27 participants were in the poor category, 8 participants were in the fair category, and 12 participants were in the good category. After the intervention, the distribution shifted substantially. The number of participants in the good knowledge category increased to 38, while the fair category decreased to 4 and the poor category declined to 5.

This shift indicates that the educational program improved participants' understanding across several health domains, including non-communicable disease prevention, occupational safety, reproductive health, mental well-being, nutrition and rational medicine use. The greatest practical relevance appeared in topics closely related to participants' daily needs, particularly rational medicine use through DaGuSiBu, occupational health awareness and prevention of non-communicable diseases.

Table 3. Knowledge Level Before And After The Wellness Education Program

Knowledge category	Pre-test, n
Good	12
Fair	8
Poor	27
Total	47

Source: Primary data collected during the preliminary community assessment (2026).

4.4 Changes in preventive behaviour or behavioural intention

In addition to improved knowledge, participants showed increased awareness of preventive health practices after the program (Table 4). Post-intervention responses indicated greater readiness to adopt healthier behaviors, particularly related to lifestyle modification, self-care, occupational safety, and appropriate medicine use. Because the evaluation was conducted immediately after the education session, these findings are best interpreted as short-term changes in behavioral intention and health awareness rather than confirmed long-term behavior change.

Participants reported that the program helped them recognize the importance of healthier dietary practices, physical activity, stress management and routine health monitoring. The rational medicine use component also encouraged participants to be more careful in obtaining, using,

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storing and disposing of medicines. This finding is particularly relevant because self-medication may occur among migrant workers who face barriers to formal healthcare access.

The participatory format, including discussion, demonstration and question-and-answer sessions, appeared to support participants' understanding of how preventive health practices could be adapted to their daily routines. The program therefore contributed not only to improved knowledge, but also to participants'perceived ability and intention to practice healthier behaviors within their work and living conditions.

Table 4. Short-term changes in preventive health awareness and behavioural intention

Domain	Observed post-program change
Healthy lifestyle	Increased awareness of diet, activity and self-care
Occupational safety	Improved recognition of work-related health risks
Mental well-being	Increased awareness of stress management and resilience
Reproductive health	Improved understanding of relevant preventive information
Rational medicine use	Greater awareness of appropriate medicine use through DaGuSiBu
Health-seeking behaviour	Increased recognition of the need for timely health consultation

Source: Primary data collected during the preliminary community assessment (2026).

4.5 Participant feedback and program acceptability

Participant feedback indicated that the program was perceived as relevant, accessible and useful (Table 5). Participants responded positively to the use of Bahasa Indonesia, practical examples and interactive delivery methods. The education topics were considered relevant because they reflected common health issues experienced by migrant workers, including fatigue, stress, occupational strain, limited access to healthcare and uncertainty about medicine use.

The participatory methods encouraged active engagement during the session. Participants asked questions, shared experiences and discussed practical strategies for maintaining health despite time and work-related constraints. This interaction suggested that the program created a space for shared learning rather than one-way information delivery. Facilitator observations also showed that participants were more engaged when health messages were linked to real-life situations, such as choosing healthier meals, managing pain or fatigue, recognizing warning signs of illness and using medicines safely.

Feedback also identified several barriers to sustained behavior change. These included long working hours, limited rest time, financial constraints, restricted access to health facilities and difficulty maintaining healthy routines in shared living or demanding work environments. These barriers indicate that future programs should include follow-up education, digital materials and community-based peer support to sustain the benefits of the intervention.

Table 5. Themes from participant feedback and program acceptability

Theme	Summary of finding
Relevance	Participants considered the topics appropriate to their daily health concerns

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Accessibility	Bahasa Indonesia and simple explanations improved understanding
Practical usefulness	Participants valued examples that could be applied in daily life
Active engagement	Discussion and demonstrations encouraged participation
Barriers to change	Workload, fatigue, time constraints and limited healthcare access remained challenges
Sustainability needs	Participants would benefit from follow-up education and digital health materials

Source: Authors' observation, community discussion, and baseline assessment (2026).

Overall, the results suggest that the community-based wellness education program was feasible, acceptable, and associated with short-term improvements in health knowledge and preventive health awareness among Indonesian migrant workers. The findings also show that participatory and culturally accessible delivery methods can support engagement and generate practical lessons for future international health engagement programs.

4.6 Meaning of improved health knowledge

The improvement in health knowledge is an important outcome because health literacy is a key foundation for preventive behavior, early risk recognition and appropriate use of healthcare services. For migrant workers, health literacy has practical significance because access to formal health services may be limited by time, work demands, financial constraints, language barriers and unfamiliarity with the host-country health system. In such contexts, the ability to recognize health risks, understand preventive measures and make informed decisions about self-care becomes particularly important.

The increase in knowledge across several domains, including non-communicable disease prevention, occupational health, mental well-being, reproductive health and rational medicine use, suggests that participants benefited from an education model that addressed their health needs in a broad and practical manner. The baseline findings showed that many participants had limited understanding of common health risks and preventive practices. After the intervention, most moved into the good knowledge category, indicating that the educational messages were understandable and relevant to participants.

However, improved knowledge should not be interpreted as definitive evidence of sustained behavioral change. The evaluation was conducted immediately after the education session, so the results primarily reflect short-term knowledge gain and increased preventive health awareness. Behavior change requires longer time, supportive environments and repeated reinforcement. Nevertheless, the observed improvement is meaningful because knowledge and perceived relevance are important early steps in the pathway towards healthier behaviour. These findings are consistent with the broader literature indicating that community-based health promotion can improve health literacy and support behavioral readiness when interventions are delivered in ways that are accessible and responsive to the target population.

4.7 Community engagement as a mechanism of relevance

One of the most important lessons from this program is that community engagement functioned as a mechanism for increasing program relevance and acceptability. The program was not delivered as a one-way transfer of information from experts to participants. Instead, it was developed and implemented through communication with community representatives, local

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coordinators and participants. This process allowed the education content, language, timing and delivery format to be adapted to the realities of Indonesian migrant workers in Malaysia.

This community-engaged orientation was important because migrant workers' health behaviours are shaped by daily routines, employment conditions, social networks, financial limitations and access to services. A standardized health education session designed without community input may not fully address these realities. For example, general advice on healthy eating or physical activity may be difficult to implement if participants have limited control over food choices, work long hours or live in shared accommodation. Through discussion and feedback, the program framed wellness messages in more practical terms, such as choosing feasible dietary options, recognizing symptoms that require attention, using medicines appropriately, and applying simple stress-management or self-care strategies.

The use of Bahasa Indonesia also strengthened the community relevance of the program. Language accessibility reduced communication barriers and allowed participants to express concerns more comfortably. This was especially important for topics such as reproductive health, mental stress and medicine use, which may require trust and cultural sensitivity. Participants' active involvement during discussions and question-and-answer sessions indicated that the program created a safe space for shared learning. This aligns with the principles of community-based participatory research and community-engaged practice, which emphasise trust-building, shared learning, contextual relevance and co-ownership of knowledge (Faiz & Collins, 2018; Wallerstein et al., 2020).

The findings therefore suggest that the value of the program lies not only in the educational content, but also in the process through which the content was delivered. Community partnership helped the university team reach participants, understand their needs and deliver health messages in a form that was acceptable and meaningful. This process is central to the mission of community engagement, where communities are not positioned merely as beneficiaries, but as contributors to the design, implementation and interpretation of health promotion activities

4.8 Integrated wellness approach for migrant health

The results also support the relevance of an integrated wellness approach for migrant worker health. Migrant workers often face interconnected health challenges rather than isolated health problems. Occupational strain, fatigue, psychosocial stress, irregular meals, limited rest, low physical activity and inappropriate self-medication may occur simultaneously. These conditions can increase the risk of non-communicable diseases and reduce the capacity for preventive self-care. Therefore, a single-topic education program may be insufficient to address the complexity of migrant health.

In this program, wellness education integrated several domains: non-communicable disease prevention, occupational health and safety, mental resilience, reproductive health and rational medicine use through the DaGuSiBu principle. This integration allowed participants to understand health as a connected set of daily practices rather than as separate disease-specific issues. For instance, stress and fatigue were not discussed only as mental health concerns, but also as factors that may influence sleep, diet, physical activity, work safety and medicine use. Similarly, rational medicine use was linked to participants' limited access to healthcare and the potential risks of self-medication.

Improved knowledge of rational medicine use and occupational safety is particularly relevant

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for Indonesian migrant workers. Migrant workers may rely on self-care strategies when access to professional healthcare is delayed or difficult. Without adequate knowledge, this situation may increase the risk of inappropriate medicine use, unsafe storage of medicines or delayed treatment-seeking. Occupational safety is also critical because many migrant workers are employed in labor-intensive sectors where work-related discomfort, fatigue and injury risk may be common. By addressing these topics in a practical and integrated manner, the program provided participants with knowledge that was directly applicable to their daily lives.

4.9 Implications for Practice and Policy

The findings of this study have several implications for migrant health promotion, international community engagement and policy development. For migrant worker health promotion, the program demonstrates that community-based wellness education can be used as a practical strategy to strengthen health literacy and preventive health awareness among Indonesian migrant workers. The improvement in participants' knowledge suggests that health education is more likely to be meaningful when it addresses everyday health concerns, uses accessible language and is delivered through participatory methods. For migrant workers, health promotion should not be limited to disease-specific messages. It should also integrate nutrition, physical activity, stress management, occupational health, reproductive health and rational medicine use because these issues are interconnected in their daily lives.

For universities, this program provides a model for developing international community engagement activities that are measurable, contextual and academically meaningful. International community service should not only be reported as an outreach activity, but should also include systematic needs assessment, community partnership, structured intervention, outcome evaluation and reflective learning. By embedding evaluation into program design, universities can generate evidence-based outputs while maintaining the social mission of community engagement. This approach also supports the role of higher education institutions in contributing to global health equity, migrant health promotion and sustainable community empowerment.

For community organisations and diaspora networks, the findings highlight the importance of acting as bridges between migrant workers and health educators. Community representatives can support participant mobilisation, identify relevant health needs, reduce communication barriers and help adapt educational content to local realities. Their involvement is essential because migrant workers may be more willing to participate in programs facilitated through trusted community networks. Future programs should therefore strengthen collaboration with migrant associations, religious groups, worker communities, embassy-linked networks and local health partners to improve reach and sustainability.

At the policy level, the findings suggest integrating preventive health education into migrant worker support systems before departure and during employment abroad. Pre-departure health education can prepare migrant workers with basic knowledge on occupational health, non-communicable disease prevention, mental well-being, reproductive health, medicine safety and healthcare access in the destination country. However, health education should not stop before departure. Continuous education is needed during the migration period because health risks may change according to work conditions, living arrangements and access to services in the host country. Digital materials, peer educators and community-based follow-up sessions could support this continuity.

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The program also has potential for replication in other migrant worker communities. Its core components—community needs assessment, culturally adapted wellness education, participatory delivery and pre-test/post-test evaluation—can be adapted to different countries, occupational groups and community settings. Nevertheless, replication should not simply copy the same materials or format. Each implementation should be adjusted to the local context, language, working conditions, health system access and priority needs of the migrant community. In this sense, the main contribution of the program is not only the educational content, but also the community-engaged process used to design, implement and evaluate it. This model can inform future international health engagement programs that aim to promote migrant health in a sustainable and culturally responsive way.

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