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# Effectiveness Of Reproductive Health And Sports Education Programs In Supporting The Welfare Of Indonesian Female Migrant Workers

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**Abstract**

*Indonesian migrant workers (IMW) in Singapore face complex health challenges, particularly those related to reproductive health and limited access to quality health information. Workplace stress, social isolation, and a lack of opportunities for exercise that improves mental and physical health all contribute to this vulnerability. By combining interactive reproductive health education with exercise, this community service program aims to address these issues. Through planning, preparation, implementation, and assessment, pre- and post-test instruments were used, utilizing a service-based learning approach. Twenty female PMI participants participated in the activity. Understanding reproductive health, the menstrual cycle, myths and facts about menstruation, physical activity recommendations, and exercise using resistance bands were all discussed in the activity materials. Participants also participated in educational mini-game cards. The average understanding score was 56% (fairly effective) in the pre-test and 79% (effective) in the post-test, a 23% increase in the final test. This demonstrates that the program successfully increased participants' awareness, knowledge, and practical skills. Thus, through a comprehensive approach combining reproductive health education and exercise, this community*



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*service program has successfully improved the quality of life of female PMI. This activity model is worth replicating in other migrant worker communities.*

**Keywords: Reproductive health; Indonesia migrant workers (IMW); Physical activity; Quality of life improvement**

## INTRODUCTION

In recent years, there has been an increase in the number of Indonesian migrant workers (Fazira & Kesumawati, 2024). The total number of foreign workers in Indonesia as of September reached 133,979, up from 73,011 in 2023, a significant increase of approximately 83.4%, according to data from the Indonesian Ministry of Manpower (Kemnaker) (Fazira & Kesumawati, 2024). Singapore is a major tourist destination for Indonesian migrant workers. According to data from the Indonesian Migrant Workers Protection Agency (BP2MI), the number of Indonesian migrant workers working abroad, including in Singapore, reaches millions, with the majority being women, particularly those working as domestic workers (Nurchayati, 2010). Although women represent a significant proportion of Indonesian migrant workers in Singapore, appropriate and gender-sensitive migration policies are still lacking. As a result, female migrant workers are more vulnerable to human rights violations (Fazira & Kesumawati, 2024; Nurchayati, 2010). They set off with the hope of improving their families' economic conditions and enhancing their quality of life. However, their journey was not always easy and was often fraught with challenges.

For female migrant workers (PMI), reproductive health is a crucial concern. In terms of education and access to health services, many of them lack information about reproductive health (Rahmadhani et al., 2024). "A state of complete physical, mental and social well-being and not merely the absence of disease or infirmity, in all matters relating to the reproductive system and to its functions and processes" is the definition of reproductive health (Munakampe et al., 2024). Sexually transmitted infections (STIs), unwanted pregnancies, and mental health disorders are among the health problems more likely to be experienced by women who lack information about reproductive health (WHO, 2020). Gender, social class, and ethnic vulnerabilities are interconnected for women who migrate for work (Llácer et al., 2007). Furthermore, physical, psychological, and sexual violence against female PMI is also common (Alessi et al., 2021; Degani & Stefani, 2020).

Female migrant workers (PMI) often experience psychological difficulties that can reduce their quality of life, in addition to reproductive health issues. Their mental health can be impacted



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by social isolation, work-related stress, and lack of support (Mucci et al., 2020). Female PMI often experience high levels of stress, which can lead to anxiety and depression (Anjara et al., 2017). Therefore, holistic programs that combine physical activity and health education are needed to improve their quality of life. For female PMI, exercise can be a powerful tool to improve their quality of life. Physical activity has positive effects on mental health, in addition to physical health.

For female migrant workers (PMI), exercise can be a powerful tool to improve their quality of life. According to Teychenne et al. (2020), physical activity has a positive effect on mental health in addition to physical health. Research by Carek et al. (2011) explains that exercise can improve mood and reduce symptoms of anxiety and depression. It is believed that by incorporating exercise into community service programs, female PMI will feel fitter and more prepared to face the challenges they face. Furthermore, to provide female PMI with the knowledge they need, reproductive health education is crucial. They can maintain their health by taking preventative measures after learning about reproductive health issues. Female PMI can benefit from educational programs that provide information about reproductive health, PMI rights, and access to health services. These programs can increase their awareness and ability to maintain their health. This aligns with the Sustainable Development Goals (SDGs), which emphasize the importance of health and well-being for everyone (United Nations, 2015).

Sports and reproductive health education are the two main pillars of this community service program, which seeks to improve the quality of life for female migrant workers in Singapore. In addition to the physical benefits of the exercise program, female migrant workers will have the opportunity to build social networks that can improve their mental health. Furthermore, they will be more confident in making health-related decisions and better prepared to address any health issues that may arise from reproductive health education. It is hoped that by understanding the underlying causes of these issues, this community service activity will significantly improve the quality of life for female migrant workers in Singapore. The program is expected to have a long-term positive impact on female migrant workers, their families, and the wider community by taking a holistic approach that focuses on their needs.

## METHODS

Given the aforementioned issues, service-based learning is an appropriate approach to implementing this program, as it provides participants with hands-on experience while also providing immediate benefits to the community. Participants will gain a better understanding of how to address the reproductive health issues faced by migrant workers (PMI).womanIndonesians


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in Singapore participated in various physical activities under the direct supervision of qualified facilitators. Furthermore, these activities are expected to strengthen relationships between Indonesian migrant workers (PMI) in Singapore. As seen in Figure 1 below, the community service team used the following research flow for the technical implementation of the activities:

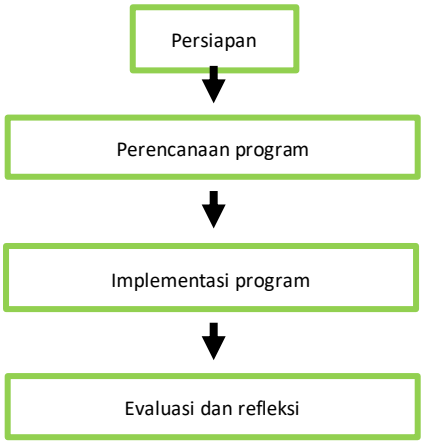



**Figure 1.**Research Flow

The following is an explanation regarding the research flow above:

1. Preparation stage
   - Identifying the problems faced by female migrant workers in Singapore, particularly related to reproductive health and limited opportunities for exercise.
   - Develop program requirements, including reproductive health education materials, variations of simple exercise exercises, and interactive learning media.
   - Collaborate with the Indonesian Embassy in Singapore to arrange the venue and participants for the activity.
   - Developing evaluation instruments in the form of*pre-test* And *post-test.*

2. Program planning stage
   - Establish program objectives, which include increasing PMI knowledge, awareness, and capabilities regarding fitness and reproductive health.
   - Develop an activity framework that includes:
     1) *Pre-test*to measure participants' prior knowledge.
     2) Delivery of reproductive health education materials.
     3) Simple exercise practice with*resistance band*.


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4) *Mini games card*menstruation education.
5) *Post-test*to measure the increase in knowledge.

- Determine resource persons according to their field of expertise (midwifery/reproductive health and sports/fitness).

3. Program implementation stage
   - The activity was carried out at the Indonesian Embassy in Singapore involving 20 female Indonesian Migrant Workers (PMI).
   - The course of the activity:
     1) *Pre-test*to measure initial understanding.
     2) Reproductive health education (topics related to the menstrual cycle, myths and facts, health factors, and diet and exercise recommendations).
     3) Simple exercise practice using*resistance band*which can be done in a confined space.
     4) *Mini games card*Menstrual education as an interactive medium to dispel myths and increase knowledge retention.
     5) *Post-test*to evaluate understanding after the program.
4. Evaluation and reflection stage
   - Evaluation of implementation results*pre-test* And *post-test*by conducting data analysis
   - The community service team also prepared follow-up products in the form of*booklet journal menstrual*as an educational medium as well as a tool for recording menstrual cycles.

Reproductive health education and sports activities can be successfully implemented and offer substantial benefits to PMI.womanin Singapore following the research methodology described above. The results of the community service program implementation, including its successes and shortcomings, were evaluated using the outcome follow-up method. To improve the program in the future, the community service team offered suggestions and consultations to support this strategy. The calculation formula outlined by Sudjiono (2003) was applied to the data analysis.*pre-test* And *post-test*:

$$p = \frac{f}{N} \, x \, 100\%$$

Information:

P = Percentage number

f = The number or frequency of values



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N = Number of frequencies or number of individuals

To make it easier to draw conclusions regarding the results of the percentage analysis, a comparison of the analysis results was made with the criteria table set by Arikunto & Jabar (2010) in table 1, which contains the following assessment categories:

**Table 1.**Assessment Categories

| Percentage | Information |
|---|---|
| 81 – 100% | Very Effective |
| 61 – 80% | Effective |
| 41 – 60% | Quite Effective |
| 21 – 40% | Ineffective |
| <21 % | Very Ineffective |

## RESULTS AND DISCUSSION

Twenty Indonesian migrant workers participated in this community service activity, which took place on July 27, 2025, at the Indonesian Embassy (KBRI) in Singapore. The training began with*pre-test*, followed by the presentation of material related to reproductive health education and recommendations for exercise activities for Indonesian migrant workers. At the end of the training, a 20-question final test was administered, developed by the community service team.

The first presentation was delivered by Ms. Laras Putri Gamagitta, S.Keb, Bd., M.Keb, who has expertise in the field of obstetrics and reproductive health, with a focus on mother-child, child growth and development, stunting, and digital health technology (health tech) innovations for monitoring and preventing health problems. The seven materials presented were: (1) Definition of women's reproductive health; (2) Reproductive rights; (3) Factors related to reproductive health; (4) Menstrual cycle; (5) Factors related to the menstrual cycle; (6) Food recommendations during the menstrual cycle; and (7) Recommendations for physical activity during the menstrual cycle. Figure 2 below shows how the presentation of reproductive health materials was carried out.


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**Figure 2.**Delivery of Reproductive Health Material

The second presentation was delivered by Ms. Prisca Widiawati, M.Pd., who specializes in sports coaching education, focusing on physical training, fitness, and athlete performance. The material covered a variety of simple sports activities designed for easy participation. These exercises utilize aids such as: *rubber band (resistance band),* It's practical, lightweight, and flexible, allowing it to be carried and used anywhere. This type of exercise has the advantage of not requiring much space, making it suitable for locations with limited mobility. Furthermore, female migrant workers can fit this exercise into their busy schedules, helping them stay healthy, manage stress, and stay fit. Figure 3 below provides a concrete example of its use *rubber band (resistance band)* for sports activities.



**Figure 3.**Implementation of Sports Activity Practices

After the delivery of the material and practice, the activity continued with carrying out *mini games card. Games card* Menstruation education is an interactive learning tool designed to make learning about reproductive health topics more enjoyable for participants. This game is played using cards containing questions, myths and facts, or basic instructions on menstruation. In addition to dispelling various myths that still circulate in the community, the main goal of this game is to increase participants' understanding of the menstrual cycle, hormonal fluctuations, and



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related symptoms. Furthermore, *Games card* is an educational tool that encourages two-way communication between facilitators and participants, opening up discussions on topics that are usually taboo. Participants can more easily absorb and retain information in a relaxed and interactive learning environment. The benefits of this game go beyond increasing knowledge and influencing behavioral and attitudinal changes. It can also increase their knowledge of their own bodies, make them feel more comfortable discussing menstruation-related issues, and inspire them to adopt healthy behaviors such as eating a balanced diet, exercising, and maintaining feminine hygiene during menstruation. Thus, *games card* This is an effective means of reproductive health education and building awareness of the importance of maintaining menstrual health from an early age. *mini games card* can be seen in figure 4 below.



**Figure 4.**Implementation*Mini Games Card*

By delivering material and practicing sports, accompanied directly by resource persons and community service facilitators, a number of positive impacts can be achieved for PMI participants in Singapore. Through a series of activities that began with *pre-test*, delivery of material, simple exercise practice, to *mini games card* Through menstruation education, participants have the opportunity to increase their knowledge, raise awareness, and practice practical skills in maintaining reproductive health and fitness. In terms of knowledge, migrant workers gain a deeper understanding of reproductive health, the menstrual cycle, influencing factors, and recommendations for appropriate food and physical activity during each menstrual phase. This knowledge is not only beneficial for themselves but can also be shared with colleagues and family, further expanding the positive impact of this activity.

In addition to increased knowledge, another benefit experienced by participants was increased practical skills in maintaining physical fitness. Through simple exercise materials using rubber bands, participants realized that limited space and time are no barrier to exercise. This activity helped them find practical ways to maintain physical health, manage stress, and increase


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energy in their daily work routines. Equally important, participants were able to learn in a fun way while debunking some of the myths circulating about menstruation through interactive media. *mini games card* This makes them more open, confident, and less awkward in discussing reproductive health issues. A series of activities *workshop* The reproductive health and sports education session concluded with a group photo with the speakers and PMI participants. The group photo session can be seen in Figure 5 below.



**Figure 5.**Group Photo Session

The primary goal of this activity is to improve the physical and reproductive health of Indonesian migrant workers through practical and easily implemented education. This activity is expected to equip participants with the knowledge, attitudes, and skills to support their independence in maintaining their health, even when they are far from their families and homeland. Therefore, this activity goes beyond providing material, but also serves as a concrete step in building awareness, fostering healthy lifestyles, and improving the quality of life of Indonesian migrant workers in their work environment.

The results of the community service activities broadly include several components as follows: (1) success in achieving the participant participation target, namely 20 participants, (2) achievement of the training objectives, namely providing increased knowledge and understanding related to reproductive health and sports, (3) achievement of the planned material targets, namely 7 materials related to reproductive health and 1 material related to recommendations for simple sports activities that can be carried out by female PMI, (4) participants' understanding of the material presented can be proven through the results *post-test* participants. Working on questions *pre-test* And *post-test* The workshop was attended by 20 participants via a Google Form link, with 20 questions prepared by the community service team related to reproductive health and sports. The data was used to measure participants' level of understanding before and after the educational workshop material was presented. The results of the score analysis *pre-test* can


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be seen in table 2.

**Table 2.** Data *Pre-Test*

| No. | Number | Question | | Mark |
|---|---|---|---|---|
| | | Correct | Wrong | |
| 1 | WITH | 13 | 7 | 65 |
| 2 | BS | 12 | 8 | 60 |
| 3 | CN | 12 | 8 | 60 |
| 4 | DF | 13 | 7 | 65 |
| 5 | IN | 9 | 11 | 45 |
| 6 | BUT | 13 | 7 | 65 |
| 7 | GTA | 11 | 9 | 55 |
| 8 | HL | 12 | 8 | 60 |
| 9 | I | 9 | 11 | 45 |
| 10 | JPP | 10 | 10 | 50 |
| 11 | KD | 10 | 10 | 50 |
| 12 | LRR | 13 | 7 | 65 |
| 13 | MZ | 13 | 7 | 65 |
| 14 | NH | 12 | 8 | 60 |
| 15 | YES | 11 | 9 | 55 |
| 16 | PJ | 12 | 8 | 60 |
| 17 | QV | 12 | 8 | 60 |
| 18 | RE | 9 | 11 | 45 |
| 19 | SW | 9 | 11 | 45 |
| 20 | TU | 10 | 10 | 50 |
| **Amount** | | | | **1125** |
| **Percentage (%)** | | | | **56%** |

From the analysis in table 2, it can be concluded that there were 20 female PMI who participated in the training. The results of *pre-test* consisting of 20 questions shows a percentage value of 56%. After being converted using the criteria table, it can be concluded that the data results *pre-test* falls into the fairly effective category.



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**Table 3.**Data *Post-Test*

| No. | Number | Question | | Mark |
|---|---|---|---|---|
| | | Correct | Wrong | |
| 1 | WITH | 15 | 5 | 75 |
| 2 | BS | 9 | 11 | 45 |
| 3 | CN | 14 | 6 | 70 |
| 4 | DF | 14 | 6 | 70 |
| 5 | IN | 16 | 4 | 80 |
| 6 | BUT | 19 | 1 | 95 |
| 7 | GTA | 18 | 2 | 90 |
| 8 | HL | 11 | 9 | 55 |
| 9 | I | 15 | 5 | 75 |
| 10 | JPP | 17 | 3 | 85 |
| 11 | KD | 18 | 2 | 90 |
| 12 | LRR | 15 | 5 | 75 |
| 13 | MZ | 19 | 1 | 95 |
| 14 | NH | 20 | 0 | 100 |
| 15 | YES | 19 | 1 | 95 |
| 16 | PJ | 18 | 2 | 90 |
| 17 | QV | 14 | 6 | 70 |
| 18 | RE | 15 | 5 | 75 |
| 19 | SW | 15 | 5 | 75 |
| 20 | TU | 16 | 4 | 80 |
| **Amount** | | | | **1585** |
| **Percentage (%)** | | | | **79%** |

The results of the data analysis in table 3 show that the completion of 20 questions *post-test* participated by 20 female migrant workers. The data was then calculated using the formula explained by Sudjiono (2008) and obtained a result of 79%. This result is categorized as effective. This 23% increase proves that the workshop program successfully had a positive impact on increasing the knowledge, awareness, and practical skills of female migrant workers related to reproductive health and sports. Therefore, this activity can be considered relevant and beneficial as a real effort to support the quality of life of female migrant workers in Singapore.



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This reproductive health and sports education workshop produced products in the form of *booklet journal menstrual*, which is a *booklet* educational tool designed to increase reproductive health literacy and serve as a medium for recording menstrual cycles. *Booklet* This product contains comprehensive information on reproductive health concepts, the menstrual cycle, hormonal phases, dietary recommendations, and appropriate physical activity for each menstrual phase. Furthermore, it also integrates clarifications on various myths still prevalent in society regarding menstruation, thus helping participants develop a more scientific and rational understanding.

This booklet is not only informative but also practical, providing a journal page that allows users to record their menstrual cycle dates, physical and psychological symptoms, and personal experiences each month. *Journal Menstrual* serves a dual role as an educational tool and a practical health monitoring tool for female migrant workers. This product aligns with the program's goal of providing female migrant workers with the knowledge, skills, and independence to maintain reproductive health, better preparing them to face health challenges in the workplace and daily life. *Booklet journal menstrual* can be seen in figure 6 below.




**Figure 6.** *Booklet Journal Menstrual*

This community service activity, carried out by a team of lecturers and students, was comprehensively designed to increase the knowledge, awareness, and skills of Indonesian migrant women regarding reproductive health and simple exercises. The series of activities included



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delivering reproductive health material and practicing light exercises that can be done independently. *mini games* educational information about menstruation, as well as the distribution of innovative products in the form of *Menstrual Journal: Track Her – A Woman's Step*. This entire activity is projected to not only broaden participants' horizons but also provide participatory and applicable learning experiences that can be sustained in everyday life.

Results *pre-test* And *post-test* showed a significant increase in knowledge, from 56% (moderately effective category) to 79% (effective category), a 23% increase. This increase demonstrates that the educational method used successfully transferred knowledge optimally to participants. These results are consistent with research by Tina et al. (2025), which showed that menstrual health education interventions significantly improved reproductive health literacy among adolescent girls in India. A similar study in Uganda also showed that menstrual education programs were able to reduce stigma and anxiety, and increase women's comfort during menstruation (Yang & Chen, 2023). Thus, this community service activity is proven to be in line with the global trend that educational interventions can have a positive impact, both on cognitive and psychosocial aspects.

The presentation of reproductive health materials in this activity serves as a key foundation for building participant literacy. The material covered the definition of reproductive health, the menstrual cycle, myths and facts about menstruation, and strategies for maintaining reproductive health. The information was designed to be easily understood and contextualized to the lives of migrant workers (PMI), who often face limited access to health information. According to Ayieko et al. (2025), a multicomponent intervention encompassing basic knowledge education, practical skills, and social support has been shown to improve menstrual practices and enhance psychosocial well-being among adolescent girls in Tanzania. This reinforces the argument that providing systematic, needs-based materials is a crucial step in educational activities.

In addition to material, simple exercise activities are also an important element of this program. Participants are introduced to light exercise movements that can be done in between work activities, such as stretching, breathing exercises, and simple gymnastics to improve fitness. Light exercise was chosen because it is appropriate for migrant workers with limited time and facilities. According to research by Kolic et al. (2021), simple but regular physical activity can help maintain hormonal balance and reduce symptoms of premenstrual syndrome (PMS). Therefore, integrating reproductive education with simple exercise activities is a strategic combination that can holistically improve the quality of life of migrant women.

Activity *mini games card* The gamification approach to menstruation myths and facts


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provides an interactive approach that encourages active participant participation. This method has proven effective in reducing stigma, correcting misconceptions, and creating a fun learning environment. A study by Yang & Chen (2023) showed that an interactive approach through educational games increased knowledge retention while strengthening participants' positive attitudes toward menstruation. Therefore, the gamification approach used in this activity serves not only as entertainment but also as a pedagogical strategy that supports the program's success.

Product *Menstrual Journal: Track Her – A Woman's Step*is an important part of the program as a follow-up tool. This booklet provides comprehensive information on reproductive health, along with a menstrual cycle tracking feature that allows users to monitor physical and emotional symptoms. The presence of this journal supports the concept *self-monitoring* which has been proven effective in increasing self-awareness and health management (Shea et al., 2023). Compared to digital menstrual tracking apps that often raise privacy concerns, *Journal Menstrual* offers a safe, simple, and easy-to-use alternative for PMI who may have limited technology or internet access.

All things considered, this community service activity also promotes empowerment. Menstrual stigma remains a major barrier for women in accessing health information. Through material delivery, educational games, and journaling, participants are encouraged to view menstruation as normal and healthy, not something to be ashamed of. This aligns with a study by Maulina et al. (2025), which confirmed that menstrual literacy, both through apps and print media, plays a significant role in building women's self-confidence and their ability to manage their reproductive health.

This activity also emphasized the importance of a holistic approach to reproductive health interventions for migrant women. It goes beyond simply providing information; it also involves creating a safe space for interactive learning, providing personal monitoring tools, and instilling simple exercise habits. A similar approach was implemented in the MENISCUS program in Uganda, which combined puberty education, anti-stigma drama, pain management, and improved school sanitation. It has been shown to be effective in increasing adolescent girls' comfort with menstruation (Kansiime et al., 2022). This demonstrates that the community service program aligns with best practices in global menstrual health interventions.

The practical implication of this activity is that the community-based reproductive education model can be a long-term tactic to improve the quality of life of female migrant workers. Significant improvements in outcomes *pre-test* the *post-test.* This study demonstrated the effectiveness of the methods used. Furthermore, this activity can serve as a model for replication


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in other migrant worker communities, both in Singapore and other destination countries. The integration of education, sports, educational games, and innovative journal-based products can be a sustainable approach to improving women's literacy and reproductive health

## CONCLUSION

The community service activities carried out at the Indonesian Embassy in Singapore successfully achieved their primary goal of increasing the knowledge, skills, and awareness of female migrant workers regarding reproductive health and simple exercise pre-test And post-test, there was a 23% increase in participant understanding, from 56% (in the fairly effective category) to 79% (in the effective category), which indicates that this program is effective in transferring knowledge while building new awareness in participants. Through a series of activities in the form of delivering reproductive health material, simple exercise practices with resistance band, And mini games Through menstruation education, participants gain a comprehensive, participatory, and applicable learning experience. This activity provides not only theoretical understanding but also practical skills that can be directly applied in everyday life. Innovative products include Menstrual Journal: TrackHer – A Woman's StepIt also adds sustainability value to the program by providing a means of recording menstrual cycles and serving as a means of personal health reflection. Thus, this activity can be deemed relevant and beneficial in improving the quality of life of female migrant workers in Singapore. The holistic approach, which combines health education, simple exercises, educational games, and journal-based supporting media, demonstrates that this service model can be a sustainable strategy worthy of replication in other migrant worker communities.

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