

Overcome Anemia, Boost Productivity

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ABSTRACT Indonesian Migrant Workers (IMWs) are Indonesian citizens employed abroad, with approximately 2.7 million IMWs working in Malaysia. Female workers are particularly vulnerable to anemia, and the health and nutritional status of workers significantly impact their productivity. The objective of this community service activity is to enhance knowledge about anemia, provide solid solutions to prevent and address anemia, and thereby improve work productivity. The method employed involves health education using hybrid audio-visual media presentations. The implementation of this community service activity was divided into several stages, including face-to-face sessions with IMWs on December 9, 2023, at the Hasanuddin Hall of the Indonesian Embassy in Kuala Lumpur. Additionally, virtual meetings through Zoom were conducted on October 14, 2023, and November 11, 2023. Around 60 IMWs in Malaysia participated in these activities. The recorded video content of these activities had been uploaded to YouTube @lsm-sharing, enabling replay, dissemination, and personal use by IMWs themselves. Efforts to enhance IMWs' knowledge through health education strongly support the eradication of anemia to improve work productivity. Increased knowledge must be complemented by tangible efforts to address anemia through a healthy and clean lifestyle. This includes regular health check-ups, taking anti anemic tablets as per medical advice, deworming twice a year, maintaining personal and environmental hygiene, including the workplace, and consuming a balanced diet with sufficient animal-based nutrition as a good source of iron. Maintaining a balance between work and rest is also crucial. The creation of varied and engaging educational media, with short durations yet easy accessibility, is a suggestion to enhance the quality of education that can encompass a broader audience, including IMWs.

Keywords: Anemia; Indonesian Migrant Workers; Work Productivity

1. INTRODUCTION

A significant number of Indonesian citizens (WNI) seek opportunities abroad to enhance their income and quality of life. They are known as Indonesian Migrant Workers (PMI), working across diverse sectors including domestic work, construction, healthcare, and other industries. Malaysia stands out as a key destination for migrant workers in Southeast Asia, hosting the largest contingent of Indonesian PMI, estimated at 2.7 million, engaged primarily in construction, agriculture, and household sectors. Every prospective PMI are required to meet specific criteria,

including being physically and mentally fit and be at least 18 years old, as outlined in the regulations of the Indonesian Migrant Worker Protection Agency 2022.

The participation of women in economic activities is not a recent phenomenon in Indonesia. Many women, particularly from lower socioeconomic backgrounds, actively engage in various employment sectors, including as migrant workers (Widiastuti & Dieny, 2016). Achieving optimal health conditions among workers is paramount for obtaining high levels of work productivity. The productivity of individuals varies and is influenced by factors such as the availability of essential nutrients in the body. Insufficient intake of nutrients, particularly among female workers, can predispose them to anemia, exacerbated by factors such as heavy workloads and the physiological demands of monthly menstrual cycles (Ulfah & Purnamasari, 2015).

Anemia, characterized by low levels of hemoglobin (Hb) in the blood, results in impaired oxygen transportation throughout the body. Consequently, individuals afflicted with anemia may experience symptoms such as reduced concentration and diminished physical stamina, hindering their ability to perform tasks effectively (Ministry of Health, 2016). Research indicates that workers suffering from anemia exhibit a 20% reduction in work productivity compared to their healthy counterparts with adequate nutrition (Hardiyanti et al., 2018). This underscores the critical importance of addressing nutritional deficiencies and anemia to optimize workforce productivity.

In Indonesia, the prevalence of anemia is notably high, with rates of 22.7% among women of childbearing age, 37.1% among pregnant women, and ranging from 30.0% to 46.6% among female workers (Mansyur et al., 2019). The significant burden of anemia both globally and within Indonesia has prompted the World Health Organization to devise comprehensive strategies and targets for maternal, infant, and child nutrition, with a commitment to halve the prevalence of anemia in Women of Childbearing Age (WUS) by 2025 (Ministry of Health, 2016).

One pivotal effort to mitigate the prevalence of anemia involves health promotion initiatives supporting early diagnosis and treatment. This includes the administration of blood supplement tablets (TTD) and advocating iron-rich diets for WUS (Notoatmodjo, 2012). In addition to TTD, empowering community health promotion efforts through educational interventions plays a crucial role in anemia prevention. Health education serves as a key tool in promoting behavioral change, aiming to enhance knowledge and attitudes towards healthy practices. By behavioral changes, health education not only fosters the adoption of new health-conscious behaviors but also reinforces and sustains existing ones within individuals and community at large. Through these concerted efforts, it is hoped that the incidence of anemia can be reduced (Nurmala et al., 2018).

Anemia, particularly iron deficiency anemia, represents a significant health issue associated with nutritional deficiencies and constitutes a national health concern. The nutritional knowledge of female workers can be influenced by various factors, including the social environment, access to health services, and mass media (Widiastuti & Dieny, 2016a). Mass media platforms such as television, radio, newspapers, and the internet, including YouTube, serve as potent communication channels capable of disseminating suggestive messages that augment knowledge, shape attitudes, and induce behavioral changes (Notoatmodjo, 2012).

In addition to individual nutritional knowledge, effective health promotion within the workplace needs support from leaders or employers. This support includes allocation of financial resources and other essential provisions, fostering a culture of health by prioritizing adequate rest periods, minimizing exposure to hazards, managing stress, and facilitating regular health assessments (Nurmala et al., 2018). Such comprehensive measures are pivotal in cultivating a better work environment that promotes employee's well-being and contributes to overall productivity.

Anemia has to be dealt seriously among Women of Reproductive Age (WUS), including migrant workers, because it not only affects individual health and work productivity but also affects the growth and development of their children, the nation's competitiveness, and overall national prosperity. Community Service Activities (PKM) with the theme "Empowering Indonesian Migrant Workers (PMI) in Country of Placement Malaysia to Increase Capacity and Prepare for Independence" aim to address the issue of anemia comprehensively. One of the primary objectives is to augment knowledge regarding anemia among PMIs, offering real solutions to prevent and mitigate its effects. Additionally, efforts are directed towards enhancing PMIs work productivity through early diagnosis and treatment of anemia.

2. METHOD

This PKM activity employed health education strategies aimed at enhancing knowledge, fostering empathetic and informed attitudes towards anemia, and instigating changes in clean and healthy living behaviors to bolster the health and work productivity of PMI. Engaging approximately 60 PMIs in Malaysia, this service was held across three stages: preparation, implementation, and evaluation. Notably, the activity adopted a hybrid approach, incorporating both online and offline components in separate several sessions. Each session was tailored to address specific challenges, guided by the expertise of resource persons from universities across Indonesia to provide targeted solutions.

3. RESULT AND DISCUSSION

Community Service Activities (PKM) with the theme "Empowering Indonesian Migrant Workers (PMI) in Country of Placement Malaysia to Increase Capacity and Prepare for Independence" was carried out in three stages: preparation, implementation, and evaluation.

A. Preparatory Stage.

The preparatory phase started with a comprehensive survey aimed at identifying the challenges experienced or voiced by PMIs. This included interviews and online discussions with individuals responsible for PMIs affairs in Malaysia. After gathering relevant data, the community service team analyzed the findings to discern prevalent issues faced by PMIs and to ascertain the expertise of the community service experts. Subsequently, based on the identified challenges and the suggestions from the experts, the team devised a plan for community service activities. Tasks were assigned and responsibilities delineated among team members, ensuring alignment with the identified needs and the team's collective competencies. Finally, with clear instructions in hand, the team embarked on individual tasks, creating information media, developing learning tools, and executing other preparatory activities as delineated in the plan.



Figure 1. On-site background media



Figure 2. Poster media showing speakers' information



Figure 3. Video and PPTs media

B. Implementation stage.

The implementation of the PKM was divided into several stages, including face-to-face sessions with PMIs scheduled for 9 December 2023 at the Hasanuddin Hall of the Indonesian

Embassy in Kuala Lumpur. Additionally, online meetings via Zoom were planned for 14 October 2023 and 11 November 2023.



Figure 4. PMIs attending health education session

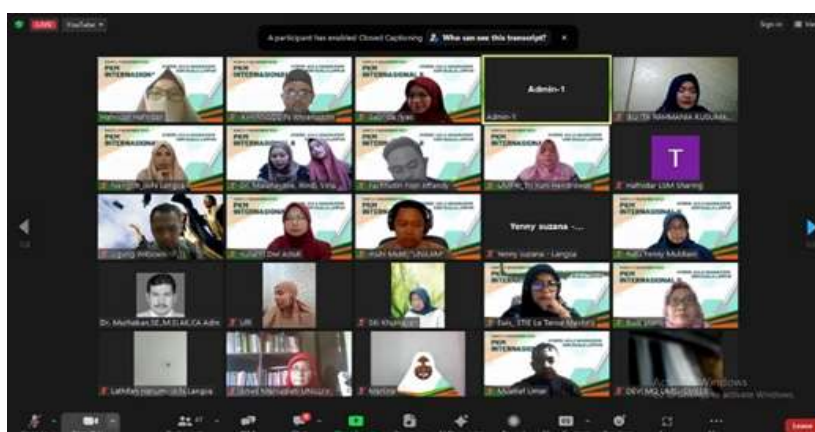


Figure 5. Health education online session via Zoom

In addition to conventional offline delivery methods, educational material is disseminated online through Zoom sessions and educational videos broadcasted via the YouTube channel @lsm-sharing/videos. This online approach serves to broaden the audience reach and facilitate access to educational content, thereby maximizing the impact of the dissemination efforts.



Figure 6. YouTube channel @lsm-sharing

The presentation of counseling materials, demonstrations, interactive practice sessions, question and answer discussions, and self-learning through YouTube videos collectively constitute the comprehensive package of health promotion activities in the 2023 International PKM II initiative. Through this multifaceted PKM activity, it is hoped that there will be an enhancement in knowledge, positive shifts in attitudes, and behavioral changes regarding anemia among PMIs, with the ultimate goal of reducing anemia cases and increasing work productivity, and ultimately the overall health and welfare of migrant workers and their improved quality of life.

C. Evaluation stage.

This evaluation of PKM activities underscores the importance of interesting presentations through interactive, two-way communication that incorporates workers' daily experiences and addresses real, pertinent issues, particularly within the health realm. Utilizing audiovisual methods, which combine auditory and visual elements to convey information, is deemed more effective in information dissemination. The duration of videos varies depending on the platform used for dissemination. Videos intended for platforms such as Instagram Reels, YouTube Shorts, and TikTok typically span 15-60 seconds, serves to shorter attention spans prevalent in these mediums. Conversely, videos intended for classroom settings or more traditional platforms may extend between 5-20 minutes to allow for comprehensive coverage of content.

During the COVID-19 pandemic, the landscape of health education has seen significant evolution, with online counseling emerging as a prominent medium. In the post-pandemic era, social media platforms such as Instagram, TikTok, and YouTube Shorts have continued to flourish, offering short videos as a primary communication medium. Additionally, applications like Zoom facilitate interactive learning experiences, with the capability of live broadcasting on platforms like YouTube. The accessibility of information via these channels greatly bolsters promotive and preventive health initiatives. However, the spreading of inaccurate news poses a notable challenge, necessitating careful discernment in selecting reliable sources. Health education hold the potential to boost knowledge, shape attitudes, and foster positive behavior change, thereby contributing to overall health improvement and empowerment.

Dissemination of health information via traditional methods such as bulletins or leaflets is considered ineffective among workers, who often cite fatigue, do not have time or interest to read the written materials. Similarly, programs delivering health information through lecture-style presentations to large audiences tend to elicit limited interest, resulting in predominantly one-way communication. Verbal communication alone is said far less effective. Meanwhile, the audiovisual methods, particularly short videos comprising 10-15 segments lasting 2-5 minutes each, emerging as a more impactful approach. These videos can be dispersed across multiple sessions spanning 1-

12 months. Short videos demonstrate greater efficacy in knowledge enhancement, whereas longer videos yield significant knowledge gains, albeit with diminished message retention towards the video's conclusion (Surya, 2019).

The health and productivity of workers are strictly linked to their nutritional status. Workers with optimal nutrition will have better work capacity and bodily endurance. Conversely, insufficient energy levels render the body weak and incapable of performing tasks efficiently. Biochemical assessment of nutritional status often involves measuring hemoglobin (Hb) levels, where low levels indicate anemia. Anemia afflicts approximately half a billion women of reproductive age globally, with nearly 40 million female workers in Indonesia, 25 million of whom are within the reproductive age. Anemia stems predominantly from deficiencies in key nutrients such as iron, folic acid, and vitamin B12. Iron deficiency anemia (IDA) is the most common form of anemia, typically arising from inadequate iron intake and absorption, compounded by increased iron requirements during menstruation, growth, development, pregnancy, and lactation.

The lower work productivity observed among workers with anemia can be attributed to disruptions in energy metabolism, where inadequate oxygen supply leading to impaired muscle metabolism and accumulation of lactic acid. Consequently, fatigue ensues, impeding performance even during minimal exertion. The resultant lethargy deters workers from fulfilling their responsibilities, thereby impeding the attainment of work targets. Female workers who suffer from anemia have an average 5-10% lower work output, with their weekly work capacity reduced by an average of 6.5 hours compared to non-anemic counterparts.

Various factors contributing to the prevalence of anemia among female workers have been studied, including family income, education level, knowledge, physical activity, nutritional intake, and dietary habits such as tea consumption and other substances which can reduce daily iron absorption. Female workers from low-income households have a staggering 15-fold greater risk of anemia compared to their counterparts from higher-income families. It is important for women to always allocate resources to ensure good and balanced nutritional needs for themselves and their families. Furthermore, the lack of household financial knowledge and management may result in improper family expenditures. Women with lower education level have an eightfold higher risk of developing anemia compared to those with higher education (Widiastuti & Dieny, 2016). While formal education ideally correlates with better knowledge, women lacking higher educational qualifications can increase their understanding of anemia through reading habits, participation in counseling and training sessions, and using information media as supplementary educational resources.

Numerous studies have identified inadequate dietary intake as the main cause of anemia, both energy and essential micronutrients such as iron, folic acid, and vitamin B12. A typical meal time in Indonesia involves concurrent consumption of tea with meals, despite its well-established interference with iron absorption, including that from dietary sources and supplementation with TTD. Also, traditional Indonesian cuisine often includes raw vegetables, posing risks of contamination with parasitic worm eggs, a significant contributor to the onset and exacerbation of anemia among female workers. While deworming initiatives mainly target school-aged children, the emergence of anemia in adult women underscores the importance for routine deworming interventions, particularly among occupations prone to worm infection risks, such as farmers and gardeners.

Female workers engaged in heavy physical activity face a significantly elevated risk of developing anemia, with a staggering 17-fold higher likelihood compared to those undertaking lighter physical exertion. This susceptibility aligns with inherent physiological differences, as women typically have smaller muscle mass relative to men, plus the added burden of household chores after work. It is also crucial to have a good rest patterns, alongside the imperative for women to allocate time for physical exercise, which in turn will enable a healthy body, enhances blood circulation, optimizes organ function, and preserves ideal body weight conducive to sustained productivity in the workplace.

The World Health Organization (WHO) advocates and endorses various programs, including iron supplementation, food fortification, health education, and parasitic infection control, to mitigate the prevalence of anemia on a global scale. Among these interventions, the utilization of iron supplementation tablets, known as blood supplement tablets (TTD), is prominent. TTD formulations not only contain iron but also include essential vitamins and minerals crucial for red blood cell and hemoglobin synthesis. However, adherence to TTD intake remains suboptimal, largely stemming from misconceptions. Some individuals erroneously fear that regular TTD consumption may elevate blood pressure, thereby deterring uptake. And disturbing side effects such as headaches, nausea, and loss of appetite contribute to hesitancy among workers to consume TTD, despite contrary beliefs suggesting that TTD may enhance appetite and promote weight gain. Although it is not true, some workers argue that iron supplementation could increase blood volume, consequently exacerbating blood loss during menstruation and childbirth, despite lacking empirical support for such assertions.

Green vegetables contain a lot of non-heme or inorganic iron, which is more difficult to absorb than iron derived from animal sources like meat, eggs, and fish. Notably, heme iron constitutes over 95% of the functional iron within the human body which is mostly found in meat,

poultry, and fish. Individuals adhering to a vegetarian diet are susceptible to iron deficiency anemia. Additionally, consumption of tea, coffee, and chocolate has been shown to diminish iron absorption, whereas intake of vitamin C-rich foods, such as oranges, can enhance the absorption of non-heme iron.

Efforts to promote healthy dietary habits within workplace environments align with the objectives outlined in the WHO Global Strategy on Diet, Physical Activity, and Health. Specifically, factory canteens are encouraged to offer various and suitable food options, supplemented by additional provisions tailored to the needs of workers. However, the current utilization rate of canteens remains suboptimal, primarily caused by inadequate food quantity and substandard quality that fail to meet workers' preferences. To address this challenge, it is recommended that canteen services undergo continuous enhancement, prioritizing the availability of nutritious meal that compensates for familial food scarcity, which is constrained by both financial or cultural barriers (Marcus et al., 2021). Furthermore, the supplementation of additional food should be accompanied by comprehensive educational efforts and active involvement of workers in food preparation processes, thereby encouraging greater acceptance and transforming canteens into valuable sources of nutrition.

4. CONCLUSION

PMI's efforts to increase health education significantly bolster initiatives aimed at eradicating anemia, consequently also boost work productivity. This more understanding of health issues must be followed by obvious action to combat anemia through the adoption of a health and clean and hygienic lifestyle. This involve regular personal health check-up, compliance to prescribed blood supplementation regimens, biannual deworming treatments, maintaining personal and environmental hygiene, including the workplace milieu, and adherence to a diet comprising balanced nutrition, with adequate intake of animal-based foods as prime sources of iron, and finally, maintaining a balance between work and rest time.

The creation of diverse and eye-catching outreach media, characterized by brief yet easily accessible duration, constitutes a proposed enhancement to the quality of dissemination efforts capable of reaching a broader spectrum of society, including the Indonesian Migrant Workers (PMI).

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CONFLICT OF INTERESTS

No conflict of interests in this publication.

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