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## HEALTH EDUCATION FOR IMMIGRANTS: IMPROVING AWARENESS OF EARLY CANCER SCREENING THROUGH A PARTICIPATORY APPROACH

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### ABSTRACT

Immigrants are a vulnerable population with substantial barriers to accessing health information and medical services, including early detection of chronic diseases such as cancer. Low health literacy among immigrants may be caused by linguistic and cultural differences, uncertain legal status, and financial limitations. These conditions lead to delayed diagnosis and increased risk of cancer-related complications. Early detection through screening has been proven effective in reducing cancer mortality. For instance, colorectal cancer screening may reduce mortality risk by 35%, while mammography can decrease breast cancer mortality by 41%. However, screening coverage among immigrant populations remains low. Studies suggest that sociocultural barriers, limited knowledge, and lack of physician recommendations contribute to poor participation in cancer screening programs. This community service activity aimed to increase immigrants' knowledge of early cancer screening and health education using an interactive and participatory community-based counseling approach. A pre-experimental one-group pre-test and post-test design was employed. The program involved 14 immigrants residing in temporary shelters under the coordination of the International Organization for Migration (IOM). Participants attended a counseling session accompanied by pre- and post-intervention knowledge assessments. Results showed a 37.3% improvement in mean knowledge scores, and the paired t-test produced  $p = 0.0000$  ( $p < 0.05$ ), indicating a statistically significant difference between pre-test and post-test scores. These findings demonstrate that the counseling intervention effectively improved participants' understanding of cancer and the importance of early detection. The activity also highlights the importance of cross-sector collaboration, especially with IOM, in developing sustainable health promotion and disease prevention programs for immigrant communities.

**Keywords:** Cancer, Community Service, Early Screening, Health Education, Immigrants, IOM.

## INTRODUCTION

Cancer is one of the leading causes of global mortality and poses a tremendous burden on individuals, families, and healthcare systems. According to the World Health Organization (WHO), approximately 10 million deaths were caused by cancer in 2020, and this number is projected to reach 13 million by 2030 without effective intervention (World Health Organization, 2020). In Surabaya, a considerable population of immigrants resides in temporary shelters. Data from the International Organization for Migration (IOM) show that around 1,000 refugees and asylum seekers were living in shelters throughout East Java in 2023, including Surabaya. Immigrants face significant limitations in language, healthcare access, and legal status. These conditions contribute to low health literacy and delayed cancer diagnosis. One of the most important strategies to reduce cancer mortality is early detection through screening, which allows identification of cancer at early stages when treatment success rates are higher (National Cancer Institute, 2022).

However, access to cancer screening is not equally distributed among all populations. Vulnerable groups such as immigrants and refugees experience multiple barriers to healthcare, including language difficulties, limited health information, legal uncertainty, and sociocultural stigma (Guerra et al., 2021). Many immigrants originate from countries with low health literacy and insufficient healthcare infrastructure, resulting in low awareness of the importance of cancer screening. Consequently, cancer is often

detected at late stages, leading to poorer prognosis and higher treatment costs (Van der Meer et al., 2013).

Based on the Social Determinants of Health framework (Marmot & Wilkinson, 2006), health outcomes are influenced not only by biological factors but also by socioeconomic and environmental conditions. As a marginalized community, immigrants have limited control over these determinants, increasing their vulnerability to chronic diseases such as cancer. Therefore, interventions aimed at improving health literacy among immigrants are urgently needed.

Community-based health education is an effective method for increasing public awareness and knowledge about disease prevention. This approach is supported by the Health Belief Model (Rosenstock, 1974), which states that behavioral change occurs when individuals recognize their susceptibility to disease, understand its severity, and acknowledge the benefits of preventive action. Communicative and culturally appropriate health counseling can strengthen these perceptions and encourage health-seeking behavior.

This community service activity aimed to educate immigrants living under IOM protection in Surabaya regarding early cancer screening. The program sought to enhance participants' knowledge and awareness through simple, visual, and culturally adapted educational materials. It is expected that this activity will not only increase understanding but also serve as a foundation for preventive behavior related to cancer among immigrant communities.

## OBJECTIVES

The main objective of this community service program was to improve the knowledge and awareness of immigrants regarding early cancer screening through culturally adapted health education. This activity aimed to introduce common cancer types, identify risk factors, recognize early warning signs, and explain recommended screening methods such as mammography, Pap smear, HPV testing, fecal occult blood tests, colonoscopy, and lung cancer screening for high-risk groups. In addition, the program sought to increase health literacy using simple language, visual materials, and interactive discussions. To measure effectiveness, participants were assessed using a pre-test and post-test design to evaluate whether the counseling intervention led to a measurable improvement in understanding, with the expectation that increased knowledge would contribute to better preventive behavior among immigrant communities.

## **PLAN OF ACTION**

This community service program was implemented using a pre-experimental one-group pre-test and post-test design, involving 14 immigrants living in temporary shelters coordinated by the International Organization for Migration (IOM) in Surabaya. The plan of action consisted of three sequential stages: preparation, implementation, and evaluation, all of which were designed to ensure that the educational intervention could be delivered in a structured, culturally adapted, and scientifically measurable manner. During the preparation stage, the team conducted coordination meetings with IOM officers to determine the appropriate location, identify eligible participants, and ensure that translators

were available to overcome language barriers. A set of educational materials was developed in a communicative and visual format, including posters, pictures of cancer symptoms, and anatomical diagrams that would help participants understand information despite differing language backgrounds. Pre-test and post-test instruments containing structured multiple-choice questions were prepared to objectively measure changes in knowledge before and after the intervention.

The implementation stage was conducted face-to-face at the IOM shelter. Participants were first gathered and provided with a brief explanation of the activity's purpose, followed by completion of the pre-test to assess their baseline knowledge related to cancer screening. Afterward, the counseling session was delivered using simple verbal explanations supported by visual media, while translators assisted to ensure bilingual comprehension for participants who did not speak Indonesian. The session covered the definition of cancer, common cancer types, risk factors, early symptoms, and recommended screening procedures. The educational approach was intentionally interactive; participants were encouraged to ask questions, share their personal experiences, and clarify myths or misunderstandings regarding cancer. This interactive model was chosen to foster trust, reduce fear, and improve participants' motivation to adopt preventive health behaviors.

At the end of the educational session, participants completed the post-test containing the same questions as the pre-test. The comparison between pre-test and post-test scores served as a direct indicator of knowledge improvement resulting from

the intervention. The evaluation stage included data entry, scoring, and statistical analysis using a paired t-test to determine whether the observed difference in knowledge scores was statistically significant. In addition to quantitative measurement, informal qualitative feedback was collected through short discussions with participants and IOM facilitators to assess their satisfaction with the activity, perceived usefulness, and suggestions for future programs. This multi-step approach ensured that the intervention was not only educational but also measurable, culturally sensitive, and aligned with real-world health needs of immigrant communities. The involvement of IOM was a critical factor in the success of this plan, as it helped provide logistical support, ensured participant attendance, and created a safe learning environment that encouraged active participation.

## RESULTS AND DISCUSSION

The results of this community service program demonstrated that the educational intervention was effective in improving participants' knowledge regarding early cancer screening. Statistical analysis using a paired t-test indicated a significant difference between pre-test and post-test scores ( $p = 0.001$ ), with a 37.3% increase in average knowledge.



Figure 1. Community service activity at IOM

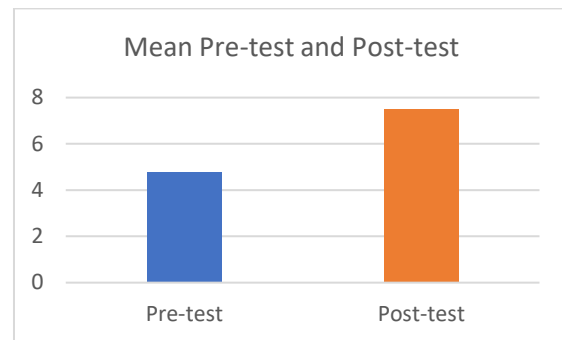


Figure 2. Mean of Pre-test and Post-Test

This finding supports the notion that culturally adapted and visually supported health education is highly beneficial for vulnerable populations with limited literacy and language skills. Previous studies have shown that educational interventions can significantly improve understanding of cancer risks and motivation to seek screening, especially in marginalized groups (Nguyen et al., 2019). The use of visual materials, translations, and simplified explanations contributed to better comprehension, aligning with evidence that visual and bilingual health communication enhances learning outcomes among migrant communities (García et al., 2021).

The interactive nature of the session also played a critical role in knowledge improvement. Participants were encouraged to ask questions, clarify misconceptions, and share previous experiences related to illness and healthcare. This participatory strategy aligns with the principles of adult learning and community-based health promotion, which emphasize communication, relevance, and shared experience as key elements of successful behavioral change (Knowles et al., 2011). Similar interventions targeting refugees in Europe found that interactive counseling significantly increased willingness to

undergo cervical and breast cancer screening (Thomas et al., 2020). In the present activity, translators and IOM facilitators minimized communication barriers, built trust, and increased participants' comfort in discussing sensitive topics. Trust is a crucial determinant of healthcare engagement in migrant communities because refugees often come from backgrounds where medical systems are inaccessible or distrusted (Viswanath & Emmons, 2018).

The increase in knowledge can also be interpreted through a public health perspective in which early screening is regarded as an essential component of secondary prevention. Screening allows detection of disease before symptoms appear, improving survival rates and reducing treatment costs (World Health Organization, 2022). Research has consistently demonstrated that mammography reduces breast cancer mortality by up to 41%, while colorectal cancer screening can reduce mortality by 35% (National Cancer Institute, 2021). However, immigrants often underutilize these services due to structural and cultural barriers such as legal insecurity, low income, lack of transportation, and cultural stigma surrounding cancer (Akhter et al., 2020). In several cultures, discussing cancer is considered sensitive or taboo, leading to avoidance of health checks until symptoms become severe (Thomas et al., 2020). By addressing these misconceptions and normalizing discussion of screening, this program served as an important step in reducing stigma and encouraging preventive health behavior.

In addition, the involvement of IOM proved to be a major contributing factor to program success. Previous literature

confirms that collaboration with trusted community partners improves health promotion outcomes among migrant groups because participants feel safer, more respected, and more willing to engage (Wallerstein & Duran, 2010). Participants responded positively to the educational model, stating that the use of pictures, plain language, and translators made the topic easier to understand. According to Miller et al. (2020), improved health literacy is strongly associated with better health-seeking behavior, including willingness to attend screening. Therefore, beyond short-term knowledge improvement, this intervention carries potential for long-term behavioral impact, such as increasing participants' readiness to undergo screening, recognizing early symptoms, and sharing information with peers within the shelter environment. This ripple effect is valuable because peer-to-peer education has been proven to spread health information more effectively within migrant communities than formal messaging alone (García et al., 2021).

Overall, the significant increase in knowledge, combined with strong participant engagement and positive feedback, indicates that the intervention was both meaningful and impactful. The program demonstrates that community-based health education that is simple, visual, interactive, and culturally sensitive can successfully bridge the knowledge gap experienced by immigrants. In future implementations, combining education with direct onsite screening may yield even greater public health outcomes.

## CONCLUSION

This community service activity effectively improved immigrants'

understanding of early cancer screening, as shown by a 37.3% increase in knowledge and a statistically significant difference between pre-test and post-test results. The use of visual media, simple language, and translator assistance helped overcome communication barriers and encouraged active participation. Collaboration with IOM was also essential for gaining participant trust and ensuring smooth implementation. Although this program focused on health education, it provides a foundation for future activities that may combine counseling with direct screening or follow-up mentoring to further strengthen preventive behavior. Overall, this intervention proves that culturally adapted health education can support early cancer detection efforts in vulnerable populations.

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