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**UNDERGRADUATES
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BREAKTHROUGH**

E-BOOK OF EXTENDED ABSTRACTS

INNOVATIVE DIGITAL EMPOWERMENT: A CROSS-BORDER HEALTH PROMOTION ON DEMENTIA AWARENESS LED BY MEDICAL UNDERGRADUATES

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ABSTRACT

This project showcases an innovative, student-led approach to community empowerment through digital health promotion, bridging Malaysia and Indonesia in a shared mission to raise dementia awareness. Organised by the medical undergraduates from Universiti Teknologi MARA (UiTM), Malaysia, in collaboration with Yayasan Rumpun Nurani, Indonesia, the initiative leveraged digital platforms to reach 150 elderly individuals and caregivers via an interactive Zoom-based webinar. The program featured expert talks, personal caregiver stories, a student-created e-book, and a live chairrobic demonstration—delivering accessible, culturally relevant health education. Post-event data revealed a significant increase in dementia knowledge (mean score from 33.63 to 45.08), underscoring the impact of digital tools in enhancing community health literacy. Uniquely, this initiative moved beyond traditional bedside learning, empowering students to become proactive health educators while developing leadership, communication, and digital competencies. By combining innovation, cross-cultural collaboration, and technology, the project exemplifies a scalable model for empowering underserved communities and redefining undergraduate medical education through real-world public health engagement.

Keywords: *Empowerment, Digital, Dementia, Medical, Undergraduates*

INTRODUCTION

Dementia is a growing global public health concern, with significant social, psychological, and economic implications for individuals, families, and healthcare systems. In Southeast Asia, where populations are ageing rapidly, the burden of dementia is intensifying. Despite this, public awareness and understanding of dementia remain limited, particularly in rural and underserved communities. This knowledge gap often contributes to stigma, delayed diagnosis, and inadequate care for individuals living with dementia.

Traditional medical education largely emphasises bedside clinical skills and disease management, often overlooking the broader socio-behavioural dimensions of health and the importance of preventive strategies. In the digital age, however, health professionals must be equipped not only with clinical competencies but also with skills in communication, leadership, and digital technology to effectively engage and empower communities.

Recognising the urgent need to foster a new generation of socially responsive, tech-savvy medical professionals, the Department of Public Health Medicine at Universiti Teknologi MARA (UiTM), Malaysia, spearheaded an innovative, student-led digital health promotion initiative. This cross-border collaboration with Yayasan Rumpun Nurani in Indonesia aimed to raise awareness about dementia while simultaneously nurturing essential non-clinical competencies among undergraduate medical students.

OBJECTIVES

The overarching aim of the initiative was twofold:

- i. **Community Impact:** To improve dementia awareness and knowledge among elderly individuals and caregivers in Indonesia and Malaysia using an accessible, technology-driven platform.
- ii. **Educational Innovation:** To provide undergraduate medical students with experiential learning opportunities in leadership, health promotion, and digital engagement—skills crucial for 21st-century medical practice.

Specific objectives included:

- Designing a culturally appropriate, engaging digital health promotion campaign on dementia.
- Evaluating knowledge improvement in participants post-intervention.
- Assessing student growth in soft skills through structured self-evaluation metrics.

The initiative aimed to:

- Empower students to design and deliver an impactful digital health campaign.
- Strengthen students' digital literacy, leadership, teamwork, and communication skills.
- Create sustainable educational materials and experiences for communities and caregivers.
- Evaluate both community impact (in terms of knowledge improvement) and student development (in terms of self-evaluated competencies).

DESCRIPTION – CONCEPT, DESIGN, AND IMPLEMENTATION

Held on 12 October 2024 via the Zoom platform, the initiative was led by medical undergraduates under faculty guidance and supported by partners at Yayasan Rumpun Nurani, a non-governmental Indonesian organisation dedicated to elderly care. A total of 150 elderly individuals and caregivers attended the webinar.

The session included:

- **Chairobic Demonstration:** A fun, low impact seated aerobic exercise session designed to promote physical and cognitive health among the elderly.
- **Expert's Talk:** A simplified, engaging overview of dementia by a public health expert, tailored to a lay audience.
- **Caregiver's Sharing Session:** Personal reflections and lessons learned from family caregivers, humanising the dementia journey.
- **E-Book Launch:** A downloadable, student-created e-book offering practical information and self-care tips for dementia caregivers. This book, entitled "Demensia KITA © Buku Saku (Versi Bahasa Indonesia)" was published with International Standard Book Number (ISBN) 9786299885887 and copyrighted (CRLY2024W09030).

Digital tools, including Canva, Google Forms, and video conferencing platforms, were utilised to design, promote, and deliver the event. The interactive structure encouraged participation through real-time quizzes, polls, and Q&A, ensuring two-way communication rather than passive learning.

RESULTS

Community Outcomes:

Among the 150 participants, 97 completed pre- and post-webinar knowledge assessments. Results indicated a statistically significant increase in dementia knowledge, with mean scores rising from 33.63 to 45.08 out of 60. This demonstrates that the digital health promotion event effectively enhanced participants' understanding of dementia, its symptoms, and caregiving principles.

Student Outcomes:

Students involved in the program also demonstrated significant personal and professional growth. Using a structured self-assessment tool focused on leadership, teamwork, communication, and digital competencies, students reported increased scores from a pre-intervention mean of 16.72 to 21.42 out of 25.

These findings reflect improved confidence and skill acquisition through their engagement in real-world, community-focused digital health promotion.

DISCUSSION

This initiative presents a novel educational approach that combines community service, digital health promotion, and interprofessional collaboration, providing mutual benefits for both community members and student facilitators.

The uniqueness of the project lies in its departure from traditional bedside medical training. Students were entrusted to lead a real-time public health intervention, transitioning from passive learners to active agents of change. This shift from classroom to community empowered them to understand the social determinants of health and the importance of health literacy at the grassroots level.

Furthermore, the cross-border collaboration between Malaysia and Indonesia added a rich intercultural dimension. Students had to adapt communication styles, content, and delivery to suit a multicultural audience. This experience fostered cultural competence and digital skills, enabling them to achieve the course learning outcome and possess an increasingly vital skill in global health practice. The use of technology as a delivery and engagement tool further distinguishes the program. Students gained hands-on experience using digital platforms for not only logistics and communication but also for creating educational content. By producing e-books, interactive media, and social media campaigns, students learned how to translate scientific knowledge into accessible, actionable health messages.

From the perspective of health promotion theory, the initiative was grounded in several principles:

- Empowerment: The session helped caregivers and elderly participants gain knowledge, tools, and confidence in understanding/managing dementia.
- Participation: Both students and community members played active roles, ensuring mutual learning.
- Multisectoral collaboration: The partnership with a community NGO (Yayasan Rumpun Nurani) exemplified how academia and civil society can collaborate for greater impact.
- Equity: The digital nature of the initiative ensured wider reach, especially to rural and remote participants who may not have access to in-person events.

Importantly, this initiative also contributed to capacity-building among future health professionals. In line with the WHO's recommendations on transforming and scaling up health professional education, this project serves as a model for integrating competency-based education with community needs and global health priorities.

In summary, the program's novelty is reflected in:

- Its student-led, digital-first design.
- Its cross-national, culturally contextualised implementation.
- It has a bidirectional benefit for both learners and the public.
- Its grounding in public health and health promotion principles, offering a real-world application of theory into practice.

CONCLUSION

This technology-driven, student-led dementia awareness initiative successfully achieved its dual mission: to empower communities through accessible health education and to cultivate future-ready, socially responsible medical professionals. By stepping beyond the hospital walls and embracing digital platforms, students learned how to lead, communicate, and innovate in ways that traditional clinical rotations may not afford.

The project's success also underscores the potential for scalable, replicable models of digital health promotion that can be embedded into undergraduate medical curricula. By embracing digital tools and emphasising community engagement, academic institutions can train a new generation of doctors who are not only clinically competent but also digitally fluent, culturally aware, and committed to health equity.

The initiative stands as a compelling example of what can be achieved when students are given ownership, mentorship, and a meaningful cause. As the global burden of dementia continues to grow, especially in ageing societies like Malaysia and Indonesia, empowering both caregivers and future health professionals through such innovative educational models will be crucial to shaping resilient and compassionate health systems.

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