

UNIVERSITI TEKNOLOGI MARA

**HUMAN IMMUNODEFICIENCY VIRUS
EDUCATION KIT
FOR ADOLESCENTS
(PREM-KIT): DEVELOPMENT, VALIDATION
AND EVALUATION IN MALAYSIA**

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ABSTRACT

The growing Human immunodeficiency virus (HIV) incidences and insufficient HIV knowledge among Malaysian late adolescents necessitate immediate attention to HIV prevention via education. This study aims to develop, validate and evaluate an Information-motivation-behavioural skills (IMB)-based education kit for adolescents (PREM-Kit), in improving knowledge, attitudes, and practices (KAP) related to HIV prevention among Malaysian late adolescents. Utilising a methodological framework derived from the Analysis, Design, Development, Implementation, and Evaluation (ADDIE) model, Phase I of the study was conducted in three steps: (i) a needs assessment; (ii) the development of PREM-Kit; and (iii) the validation of PREM-Kit by applying the IMB model to map the PREM-Kit's contents. A literature search combined with a series of experts' discussions was conducted to formulate the content of PREM-Kit, followed by expert validation using content validity index (CVI), and end-users' validation using the Malay version of the Patient Education Materials Assessment Tool for Printable and Audio-visual Materials. In Phase II, a 16-week quasi-experimental study was conducted in two campuses of a local public university, involving a total of 187 participants. The intervention group received the PREM-Kit's intervention in addition to the curriculum-mandated basic science and biology module, whereas the control group only continued the same curriculum. Repeated measure analysis of variance (RMANOVA) and covariance (RMANCOVA) were used to examine the effectiveness of PREM-Kit's intervention on knowledge, attitudes, and practices (KAP) related to HIV prevention between groups at four different time points. PREM-Kit contained 18 topics in Malay language and was designed in the form of an infographic flip chart and three animated videos. It had excellent CVI scores (1.0) and scored more than 80% for its understandability and actionability. There was a significant increase from t0 to t1 in knowledge score (mean difference = -4.49; 95% CI = -5.28, -3.71; $p < 0.001$), attitude score (mean difference = -5.93; 95% CI = -6.89, -4.98; $p < 0.001$), and practice score (mean difference = -0.23; 95% CI = -0.46, -0.01; $p = 0.031$). The increase in the knowledge score (mean difference = 2.66; 95% CI = 2.22, 3.10; $p < 0.001$) and attitude score (mean difference = 2.74; 95% CI = 1.90, 3.59; $p < 0.001$) of the intervention group was significantly sustained across the 16-week study duration. In conclusion, the newly developed PREM-Kit has good content validity and is simple to comprehend and apply. It was effective in improving the knowledge and attitudes related to HIV prevention among the adolescents and had a sustainable effect on the knowledge and attitudes related to HIV prevention for up to 16 weeks. The PREM-Kit is suggestively useful kit to educate and empower late adolescents regarding HIV prevention.

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CHAPTER ONE

INTRODUCTION

Chapter one introduces the research and describes the Human immunodeficiency virus (HIV) and its epidemiology around the world and in Malaysia, and subsequently focuses on HIV infection among adolescents. It then elaborates on the problem statement, research objectives and research questions. Finally, it discusses the significance of this study to the Malaysian setting. This chapter ends with a summary of research introduction.

1.1 The Global HIV Epidemic

HIV is a retrovirus that causes acquired immunodeficiency syndrome (AIDS), a condition in which the immune system fails, and life-threatening opportunistic infections develop. It suppresses people's immune systems, alters body defence mechanisms towards common and opportunistic infections, and may lead to malignancy (World Health Organization, 2020). HIV can be spread through the exchange of a range of body fluids, including blood, breast milk, sperm, and vaginal secretions, from infected people. During pregnancy and delivery, HIV can be passed from a mother to her child (World Health Organization, 2021).

HIV was first identified among men who have sex with men (MSM) in the United States in 1981. While infection with the HIV was initially limited, it has rapidly grown in the last four decades to become the worst epidemic of the twentieth century (TC Quinn, 2021). The disease is still spreading and consolidating in many other places. The AIDS epidemic has caused a substantial drop in life expectancy in several nations in Sub-Saharan Africa, which began to improve with the availability of antiretrovirals. To date, HIV is one of the leading health problems worldwide having been claimed as one of the top ten global health threats requiring significant attention (World Health Organization, 2019). There was an estimated 39.9 million people were living with HIV, with 1.3 million individuals became newly infected in 2023 (World Health Organization, 2023b). Although there was a 31% reduction in the trend of new HIV cases since 2010, however, 28% of new HIV infection were among the younger age