

HIV/AIDS Education among Young Adolescent for Better Quality of Life: Health Belief Model

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Abstract

HIV remains a significant global public health challenge, having caused the loss of 40.1 million lives to date, with ongoing transmission in all countries worldwide (World Health Organization, 2023). By the end of 2021, there were approximately 38.4 million people living with HIV/AIDS (World Health Organization, 2023). HIV/AIDS education targeted at young individuals plays a crucial role in ending the AIDS epidemic on a global scale. In Malaysia, by the end of 2021, an estimated 81,942 people were living with HIV (PLHIV) (Ministry of Health, 2022). 600 Penang students between the ages of 15 and 17 participated in the study, which had three sessions total—a pre-test, an intervention, and a post-test. The findings were analyzed using SPSS 22.0 software. The results revealed a positive change in the respondents' knowledge following the implementation of the intervention process. This study demonstrates that early health education can effectively reduce the risk behaviors associated with HIV/AIDS among young adolescents. The aim is to ensure that they lead a better quality of life and maintain their overall well-being.

Keywords: *Health Belief Model, HIV/AIDS Education, Public Health Education, Quality of life, Social Work in School.*

Introduction

In Malaysia, HIV and AIDS represent a serious threat to the health and welfare of children and young people. Being one of the top 10 deadliest diseases in the world, HIV/AIDS is a huge problem globally, especially in poorer countries [1]. AIDS is a condition caused by the Human Immunodeficiency Virus (HIV), a retroviral virus that gradually weakens the body's immune system. People living with HIV often appear healthy and can carry out their daily activities like anyone else. There are three primary modes of HIV/AIDS transmission. The first is through unprotected sexual intercourse with individuals already infected with HIV/AIDS. The second is by sharing syringes that are contaminated with the virus. It is important to note that oral drug

use alone does not lead to HIV infection; the virus can only be transmitted through injectable drugs, facilitating transmission from one person to another. The third mode of transmission occurs from an HIV-positive mother to her child during pregnancy, childbirth, or breastfeeding. These three methods are the primary routes of HIV/AIDS infection. Additionally, other modes of transmission include organ transplants and needlestick injuries. It is worth mentioning that in Malaysia, donated blood undergoes thorough screening, significantly reducing the likelihood of HIV infection through blood transfusions [2]. AIDS is the final stage of HIV infection where the body's immune system against infection has been disabled. In the final stage of HIV, individuals can experience symptoms such as candidiasis, shingles, lung infection,

and skin cancer and end in death [2]. Although many awareness and prevention programs have been carried out by various parties, the number of deaths due to AIDS is continuing and even increasing [3].

Numerous studies have consistently demonstrated that individuals within the community, including students, social workers, teachers, counsellors, and others, still possess limited understanding and perspectives regarding HIV/AIDS. The presence of inadequate or incorrect information about HIV/AIDS stands as a contributing factor to the ongoing prevalence of HIV infections and deaths related to AIDS. Early exposure to young adolescents with HIV/AIDS makes this group more likely to learn and increase their knowledge about HIV/AIDS and things that are at high risk of contracting HIV/AIDS. Therefore, an education pattern that is appropriate to the age factor so that this group better understands the essence of HIV and AIDS is seen as necessary to prevent the transmission of HIV and AIDS among teenagers, especially among school students [4].

Empowering school students with appropriate HIV/AIDS information is seen as important in helping prevent the spread of HIV and AIDS. Young people can safeguard themselves against infection by being exposed to basic HIV/AIDS education. Young adolescents face the potential of HIV exposure through sexual contact and drug use, making it crucial for them to acquire accurate knowledge and skills. By doing so, they can effectively avoid or minimize engaging in risky behaviours that may lead to infection. Even those who haven't yet engaged in such behaviours should receive comprehensive HIV/AIDS education to ensure they are well-prepared for any future situations that might put them at risk. Sufficient knowledge about HIV could reduce high-risk behaviour among adolescents [5]. Adolescent knowledge about HIV, infection, and prevention is very important because knowledge affects attitudes in determining a

person's behavior. The findings revealed a considerable change in the knowledge and attitudes of teenagers concerning HIV/AIDS after the intervention. A study titled Knowledge and Attitude on HIV/AIDS among Adolescent School Children in Urban Mysuru, Karnataka, India: A Cross-Sectional Study stated that insufficient and inaccurate knowledge about health information taboos associated with sex education at home and at school, involvement in risky behaviour and lack of access to adequate means of transmission will cause teenagers to be exposed to the HIV/AIDS epidemic [6]. Adolescents also have a high tendency to engage in high-risk activities for HIV infection, including early engagement in sexual activities, infrequent condom use, and having multiple sexual partners [7].

A study on HIV/AIDS knowledge among South African youth aged 14-35, and the findings revealed that young people are aware of AIDS but lack knowledge about HIV infection and its prevention [8].

Research within the country also focuses on issues related to HIV/AIDS among adolescents. A good level of knowledge and education about HIV/AIDS is crucial to ensure individuals make informed decisions to avoid engaging in risky behaviours, ultimately preventing infection [9]. Therefore, it is important to assess and evaluate the level of knowledge about HIV/AIDS and the stigma faced by adolescents. Research from foreign countries also focuses on adolescents regarding HIV/AIDS issues. There is also a study regarding Students in Nigeria to assess their knowledge levels about HIV/AIDS and their perceptions of risky activities based on their sexual behaviour. The study aims to understand how these students obtain information about HIV/AIDS. Additionally, the study explains that adolescents are a risk-taking group and a target for HIV/AIDS prevention because engaging in these risky activities can lead them to be exposed to the virus at a young age [10].

Furthermore, a study titled "*Kenya Program: HIV/AIDS Education in the Implementation Context in Secondary Schools in Kisii County*" emphasizes the importance of exposing adolescents to HIV/AIDS knowledge as a preventive measure against the spread of the virus. HIV/AIDS education serves as a social vaccine against the virus, considering that a medical vaccine has not yet been successfully developed to date [11].

Education is one of the mediums serving as a social vaccine for young people. They contend that students who gain knowledge about HIV/AIDS, along with skills and values, are better equipped to protect themselves as they grow older. It is like providing young people with a "social vaccine" through awareness education, offering opportunities for a productive life [12].

Over the years, Malaysia has experienced significant progress, propelling the nation forward in alignment with other developing and developed countries. While the term "development" often emphasizes the construction of skyscrapers, it encompasses much more, including the effectiveness of public transportation, advancements in housing, and the reduction of societal issues like poverty. These transformative changes in Malaysia can have an impact on the resident's quality of life (QOL), whether it manifests in positive or negative ways. Within the context of Malaysia, the concept of quality of life (QOL) encompasses personal growth, maintaining a healthy lifestyle, having opportunities and freedom to acquire knowledge, and attaining a standard of living that goes beyond fulfilling basic and psychological needs. The aim is to achieve a level of social well-being that aligns with the nation's aspirations [13]. To adequately capture the quality of life (QOL), it is essential to consider indicators that encompass not only the availability and accessibility of improved environments and facilities but also the way goods, services, and facilities are delivered, as

well as the overall experience associated with their consumption.

Health Belief Model

The Health Belief Model is a psychological paradigm that emphasizes individual attitudes and beliefs to explain and forecast health-related behaviours. Initially formulated in 1950 by social psychologists Hochbaum, Rosenstock, and Kegels, who were affiliated with the United States Public Health Service, this model has subsequently been adapted to examine a wide range of both short-term and long-term health behaviors, such as engaging in sexually risky behaviours and the risk of HIV/AIDS infection. Its versatility allows for a comprehensive exploration of various health-related phenomena. [15]. In general, this model assumes that individuals make decisions based on rational principles where there is a sequence of relationships between demographic factors, attitudes, and behaviour [15]. This model contains a total of six descriptions. Specifically, the perception of the likelihood of contracting the condition, the perception of its severity, the perception of its benefits, the perception of its challenges, the indications for acting, and the perception of one's own confidence [16].

The first idea is the perception of susceptibility, which refers to a person's perception of how likely it is that they would contract an illness [15]. The individual's perception of the seriousness of the sickness is related to the second idea, which is the perception of severity. The third concept is the perceived benefits, which refers to the individual's belief in the effectiveness of various actions to reduce the threat of illness or disease. The individual's decision to take preventive or curative actions depends on their consideration and evaluation of these perceived benefits. The fourth concept is the perceived barriers, which encompasses the individual's perception of obstacles or hindrances to engaging in recommended health actions. These barriers can vary and may include factors such

as time constraints or unpleasant side effects. The fifth concept is cued to action, which acts as a trigger in the decision-making process to prompt individuals to accept recommended health actions. Examples of cues to action can include advice from others, personal experiences, or information from media sources like newspapers. Finally, self-efficacy describes a person's belief in their capacity to carry out a particular conduct successfully. It has to do with how much confidence a person has in their ability to successfully carry out the intended health action [15].

Individuals who do not experience symptoms may be less inclined to adhere to prescribed treatments. To address this, it is crucial to raise awareness among individuals about the potential complications that may arise if they do not follow the recommended recommendations. This aims to enhance their perception of the likelihood of developing an illness. Furthermore, it is important to inform them that failure to adhere consistently to treatment may lead to the progression of more severe disease. This helps to strengthen their perception of the severity of the illness. Therefore, taking the prescribed medication or following the recommended program can reduce the risk of complications that may occur (perception of benefit). Any negative perceptions regarding the recommended behaviour such as lack of time, difficulty, and negative side effects should be corrected (perceptions of barriers). In addition, supporting methods such as the use of health education media materials can be used (hints for action). For those who still have difficulty following treatment, demonstrations and behavioural contracts may help in building self-confidence to continue practising the recommended behaviour (self-confidence). A study states that this model explains that people will avoid unhealthy behaviours for this disease and believe that the disease will result in consequences severe. This model also argues that if individuals believe that preventive

behaviour is useful in reducing the risk of disease, barriers are available to healthy behaviour [17].

The relevance of this model in this study is that we can see a person's behaviour toward the issue of HIV/AIDS after receiving an intervention using this model. For example, if a person has understood the benefits of not getting involved in things that are at high risk of getting HIV/AIDS, then their behaviour may also change and avoid getting involved with HIV/AIDS, for example not using drugs, not practising promiscuous sex and others.

Methods

In this study, secondary school students from ten schools in Penang who are classified as early adolescents and are between the ages of 15 and 17 make up the sample. A study employing a questionnaire was utilized to determine the level of behaviour and acceptability of middle-aged teenagers toward the HIV/AIDS issue. A pre-test and a post-test are also included in this study. Where attitudes concerning HIV/AIDS among young adolescents are explored and evaluated. Analyzing quantitative data is used in this investigation. Software from the Statistical Package for Social Science (SPSS) Version 22.0 was used to analyze the survey data.

Initially, the researcher sought permission from the Research and Policy Planning Division of the Malaysian Ministry of Education to carry out the study in schools. Once approval was granted, the researcher proceeded to contact the Penang State Department of Education to acquire permission specifically for conducting research in schools located in Penang. The researcher then assembled the participants involved in the study and provided them with a briefing on the purpose and details of the research. Subsequently, with the assistance of an assistant, the researcher distributed questionnaires to the participants for completion. This marked the initial stage where

the participants were asked to answer the questionnaire based on their existing knowledge of HIV/AIDS. To ensure confidentiality, the respondents were not required to provide their names, but instead, they were assigned individual unique codes that would be used to match their pre-test and post-test responses.

Results and Discussion

This survey had responses from 600 participants in total. The following is an examination of the respondent's age, gender, and race background. In this study, there are three age groups: 15 years old, 16 years old, and 17 years old. Since this study uses

systematic random sampling, the researcher first set and asked the school to give the same number of students according to age. With that, as noted in Table 1, there are a total of 200 respondents for each age group of 15, 16, and 17 years, making a total of 600 respondents. Apart from that, for the gender distribution for this study, it was found that 291 people (48.5%) were male students and 309 people (51.5%) were female students involved in this study. Out of the total number of respondents, a total of 453 people (75.7%) were Malay respondents. Next are 88 (14.7%) Chinese respondents and 57 (9.5%) Indian respondents. Apart from that, a total of 2 people (3%) are others.

Table 1. Paired T-Test Analysis Pre and Post for Knowledge, Behavior, and Perception

| Paired Differences | | | | | | |
|--------------------|-----------------------------------|--------|-------|-----|----------|-----------------|
| | | Mean | SD | SEM | <i>t</i> | Sig. (2-tailed) |
| Paired 1 | Pre Knowledge – Post Knowledge | -5.098 | 2.682 | 600 | -46.561 | 0.000** |
| Paired 2 | Pre-Behavior – Post Behavior | -0.238 | 0.668 | 600 | -8.716 | 0.000** |
| Paired 3 | Pre- perception – Post Perception | -0201 | 0.325 | 600 | -15.146 | 0.000** |

**P<0.01

Based on the study's results, the mean score for post-behavior (4.067) was higher than that for pre-behavior (3.829). This indicates an increase in the overall mean score, suggesting a positive change in the respondents' negative behaviour. Additionally, the statistical analysis revealed a significant difference between the two types of tests, as evidenced by a t-value of -8.716 and sig<0.05. There was a significant change in the respondents' negative behaviour after intervention in HIV/AIDS education.

Similarly, for the level of knowledge, a significant difference was found between the pre-test and post-test scores, with a t-value of -46.561 and sig<0.05. The mean post-knowledge score (13.813) was higher than the mean pre-knowledge score (8.715), suggesting that the post-test scores were higher than the pre-test

scores. This indicates an improvement in knowledge after the educational intervention.

Regarding perception, a significant difference was observed between the pre-test and post-test scores, with a t-value of -15.146 and sig<0.05. Moreover, the mean post-perception score (3.343) was higher than the mean pre-perception score (3.141), indicating a positive change in the respondents' perception. The overall mean score showed an increase, providing evidence that the level of negative perception among the respondents shifted towards a more positive outlook.

In summary, the study results demonstrate that the educational intervention had a positive impact on the respondents' behaviour, knowledge, and perception related to HIV/AIDS.

Table 2. Correlation Analysis between Post score Knowledge, Behavior and Perception

| | | Post- Intervention Behavior | Post – Intervention Perception | Post- Intervention Knowledge |
|--------------------------------|-----------------|--|---|---|
| Post -Intervention Behavior | r | 1 | 0.166** | 0.146** |
| | Sig. (2-tailed) | | 0.000 | 0.000 |
| | N | 600 | 600 | 600 |
| Post – Intervention Perception | | 0.166** | 1 | 0.040 |
| | Sig. (2-tailed) | 0.000 | | 0.328 |
| | N | 600 | 600 | 600 |
| Post- Intervention Knowledge | | 0.146** | 0.040 | 1 |
| | Sig. (2-tailed) | 0.000 | 0.328 | |
| | N | 600 | 600 | 600 |

**Correlation is significant at the 0.01 level (2-tailed).

To test the correlation analysis, the variables selected are the post-intervention knowledge score, the post-intervention behaviour level, and the post-intervention perception level. Based on the table above, it was found: i) There is a weak relationship between the level of knowledge and the level of behaviour (r- 0.146, sig. = 0.000). ii) There is no relationship between the level of knowledge and perception about HIV/AIDS (sig. > 0.05). iii) There is a weak relationship between the level of perception and the level of behaviour towards HIV/AIDS (r = 0.166, sig. = 0.000). The results show that there is a relationship between the level of knowledge and the level of behaviour of respondents regarding HIV/AIDS (r- 0.146, sig = 0.000). This proves that the respondent's behaviour will change to be more positive toward the issue of HIV/AIDS if HIV/AIDS knowledge is given to them.

Young children are more susceptible to HIV infection due to teenagers' higher risk of hazardous sexual conduct as well as their physical, psychological, social, and economic status. This is because they do not have the right information and information that can reveal to them the effects of doing those risky activities [19]. Therefore, a good and interesting way of presenting information

indirectly affects the level of understanding of the target group.

The health belief model for this study implies that the notion of this model yields favourable results. These models, for instance, characterize and forecast health behaviours. This is accomplished by emphasizing personal attitudes and beliefs [15]. The results of a study titled "*Using the Health Belief Model Regarding HIV/AIDS Prevention among Female High School Students*" show that participants in an educational program on HIV/AIDS have a higher level of knowledge than those who did not participate in the program. This is consistent with the findings of the study because the researchers discovered that the respondents' level of conduct shifted to a more positive one following the basic educational intervention on HIV/AIDS [18].

The use of the health belief model theory can explain more clearly that we can relate a person's behaviour to matters related to using this model. For example, if a person has understood the benefits of not engaging in things that have a high risk of getting HIV/AIDS, then it is possible that his behaviour will also turn positive when faced with people living with HIV/AIDS and will also avoid getting involved with risky activities that can get stuck with HIV/AIDS. This model relates

that an individual will make decisions based on rational principles where there is a relationship between demographic factors, attitudes, and behaviour. Additionally, medical social workers can practice using the health belief model. This is because medical social workers in the community provide promotional services, health education, supportive therapy, and social, physical, and welfare activities. The implications of using the health belief model in social work are positive because it can help medical social workers in doing interventions such as developing community health services by identifying the needs of the population, and holding health promotion activities such as physical activity, seminars, and health care training.

The Malaysian Ministry of Health places great importance on health promotion, aiming to create a healthy nation for individuals, families, and communities. The national vision encompasses a fair, affordable, efficient, and technologically advanced healthcare system that prioritizes quality, innovation, and health promotion. The goal is to enhance the overall quality of life within the community. Health promotion activities are a key focus, as evident in the strategies outlined in the 12th Malaysia Plan, which includes the promotion of health awareness and the adoption of a healthy lifestyle. The government believes that imparting knowledge to the community is instrumental in fostering a healthy environment and ensuring a good quality of life.

Overall, the findings of this study have direct and indirect impacts on social work practice. It has an impact on the development of interventions based on the research findings. In this study, an intervention module was developed first, and its effectiveness was tested. In addition to testing the intervention module, information was obtained regarding the knowledge, perceptions, and behaviors of 15, 16, and 17-year-old students in Penang. It is crucial to provide accurate information to students about HIV/AIDS issues to prevent the

HIV/AIDS problem from worsening. As known, when a problem persists and worsens in a society, it can create stress and affect the social functioning and social well-being of the community. Social work is a professional response aimed at helping individuals, groups, and communities to ensure they can function to meet social needs and sustain life [20].

In a school setting, school social workers intervene as social workers with individuals, families, groups, communities, and systems related to the school's development. A social worker can collaborate with various social individuals related to the school system, such as principals, clerks, teachers, counsellors, general workers, and supervisors at the District and State Education Departments [21]. Their tasks are not limited to the social development aspect of students but also include assistance in the development of a school or educational system. Overall, school social workers can contribute positively to schools in terms of learning, teacher-to-teacher relationships, families, communities, and the systems or programs provided by the school. Conducting effective HIV/AIDS education can also have a positive impact on students' awareness of risky activities such as unprotected sex that can lead to HIV/AIDS. In Malaysia, unprotected sex has become a critical social issue. A study by the Ministry of Health Malaysia in collaboration with the Ministry of Education.

The rate of sexual activity among adolescents aged 13 to 17 increased from 0.9% in 1994 to 8.3% in 2012 related to improper behavior involving adolescents before marriage [22]. Educating school students about HIV/AIDS awareness and prevention can be effectively carried out by professionals from various sectors, such as teachers, social workers, counselors, and others. They must be trained, committed, possess good communication skills, and have the desire to integrate HIV and AIDS education into their teaching. In general, the objective of school social work is to improve or restore the social

functioning of students to a maximum and higher-quality level, paying attention to the environment that can influence the functioning of students, such as peer factors, teachers, families, and communities. Four objectives of school social work. First, the problem-solving ability involving students in school is improved [23]. Therefore, school social workers should respond to the problems faced by students at school. The process of solving problems should involve students, peers, teachers, and student families. Second, school social workers act as brokers. This means that school social workers can connect individuals with other resources that can help them achieve their functionality. For example, the problems faced by students may not be related to their school life. Therefore, school social workers should act as brokers to identify the problems facing students.

Furthermore, for the third and fourth objectives of school social work, the focus is on the functioning of the education system and education policies. School social workers also serve as advocates to ensure the effectiveness of the education system in a country. Additionally, school social workers play a role as researchers who can have a positive impact on the effectiveness of an education system run by the education authorities. Social problems among school students are currently alarming. This necessitates the need for trained social workers in schools. He suggested that social workers can be placed in schools, the Education Department, or other agencies/departments but still focus on providing services to school students [24].

Their social services can use various approaches and modules that are suitable to ensure at-risk students receive the right assistance. As of now, social workers in Malaysia still do not have a place in the school setting [24]. Government policies play a significant role in this matter because they still do not understand and there is no specific act to support the interests and professionalism of

social workers in Malaysia. HIV/AIDS education in schools should focus on specific students at each school while maintaining close relationships with parents and the wider community. They also assist teachers in obtaining support to introduce and maintain HIV awareness and prevention education in schools.

Conclusion

The effectiveness of imparting this information relies on timely delivery to school students and teenagers, aiming to reinforce positive health attitudes and behaviours that discourage risky actions. In Malaysia, high school students, aged between 13 and 18, possess excellent resources for the effective dissemination of HIV/AIDS education. These resources include interactive teaching methods that unfold over time, suitable materials, and approaches, as well as the potential involvement of parents in their children's learning. Schools bear a significant responsibility in combating HIV infection, stigma, and discrimination. They must educate high school students within the adolescent group on how to prevent both contracting the virus and transmitting it to others. Moreover, educational institutions play a crucial role in shaping HIV-related policies by incorporating up-to-date scientific knowledge about HIV and AIDS.

This approach allows social workers to actively contribute to enhancing the standard of health education targeted at adolescents, both within Malaysia and on a global scale. By taking these measures, significant strides can be made toward enhancing global health and overall quality of life.

Conflict of Interest

The authors declare there is no conflict of interest in the course of producing this article.

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