

ISLAMIC KNOWLEDGE AND ATTITUDES TOWARD HIV/AIDS AMONG UNDERGRADUATES IN UPM SERDANG

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Abstract

Research has been conducted attitudes related HIV/AIDS issue particularly among university students because students are the group of younger generation that may be parents advising their children in future or they may have to contact with HIV infected and AIDS people in their future work. The purpose of research design is to identify the most economical method in conducting the research. The non-experimental quantitative research design which is in questionnaire tools has used to finalize results that are based on hypothesis testingThe population of this study is targeted to the undergraduates from Human Ecology in UPM, Serdang. The sample size for the study is determined by the calculation formula (Israel, 2009). The minimum sample size for FEM is approximately 271, which is calculated by the formula of known population size ($N = 835$) with the 95% confidence level and confidence interval of 5%.to achieve the objectives for this current study. Besides, three techniques of research design are descriptive, correlation and comparative also have been chosen in this study. Descriptive design is used to gather the quantitative information and then organizes, tabulates, depicts, and describes the data collection. Descriptive involved in this study will be given a general description about respondent's personal characteristic (gender), level of knowledge in HIV/AIDS and attitudes toward HIV/AIDS. The correlation design is applied to determine the linear relationship between personal characteristic (gender), knowledge and attitudes towards HIV/AIDS among FEM undergraduates. The result of the correlation can be positive and negative. If the result is positive correlation, then the changes in value of one variable will make the changes of the other variables in the same direction, or vice versa.

Keyword : Knowledge, attitudes, HIV, Islamic

Background of the Study

HIV is defined as the virus that causes the disease AIDS. It has become one of the most serious health and development challenges in both

developed and developing countries around the world (www.aids.gov, 2011). HIV infection and AIDS can affect physical, mental, emotional, social and spiritual dimensions of

human development life. Besides, HIV/AIDS is not merely a health problem but also impact on social, economical, security and development. It is significant reducing the life expectancy of those infected persons, increasing in the number of orphaned children, creating turbulence in health care systems, and contributing to economic insecurity, potentially leading to political instability (Sowell, 2004). HIV infection pandemic poses a great threat to human life and cause significant morbidity and mortality throughout the world population (WHO, 2004).

According to the United Nations Agency for International Development (UNAIDS, 2011), about 34 million people worldwide as December 2010 were living with HIV, the virus that causes AIDS. UNAIDS also reported that every year around 2.7 million more people become infected with HIV and 1.8 million die of AIDS. In Malaysia, the first three HIV case were reported in 1986. Between of 1986 to 2000, it was recorded about 38,340 cases. Then, the total number of HIV infection cases continued to grow with the highest number recorded in the end of 2011 at 94,841 (www.moh.gov.my, 2012). The HIV infection in Malaysia affected more men than women initially but the percentage of women infected by HIV keeps increasing year by year. Every day, an average of 10 people tested with positive HIV in Malaysia (Ministry of Health Malaysia, 2012). According to Ministry of Health of Malaysia, young populations are at higher risk exposed to HIV infection. Of the total 94,841 HIV infection cases, 2.4% cases were aged 19 years and below. In 2011, children and young people for aged 19 years and below were 3.5% of 3,479 for that year out of which 54% aged below 13 years who acquired infection through vertical transmission.

The HIV/AIDS diseases significantly slow the growth of the labour force and also affect the most productive members especially younger generation in several sectors since previous study found that young people are particularly vulnerable to sexually transmitted HIV/AIDS infection (Suominen, Karanja-Pernu, Kylma, Houtsonen & Va"lima"ki, 2011). Therefore, this phenomenon has makes government and public worried about the unhealthy attitudes of nowadays younger people of the society especially students are engage in risky behaviour related to HIV/AIDS transmission such as use of alcohol, intravenous drugs, unprotected homosexual or heterosexual intercourse and free sex that could increase their risk of HIV infection and AIDS diseases due to the lack of general knowledge on HIV/AIDS exposure and transmission.

The epidemic of HIV/AIDS stigma has consequences and can result in attitudes and actions that may prevent infected people from seeking or obtaining the health care and social support. HIV/AIDS is labeled as a stigmatized disease from the past research of stigma in HIV positive women, indicated that women infected with HIV/AIDS faced the consequences of stigmatization in their life such as being stigmatized and rejected by their partners, relatives, friends, employers, co-workers and also health care providers (Sandelowski, Lambe & Barroso, 2004). Besides, a past study also mentioned that healthcare workers expressed their fear to care for HIV/AIDS patients (Turan, Miller, Bukusi, Sande & Cohen, 2008). People's negative attitude toward people living with HIV/AIDS (PLWHA) is a major community challenge to fight against HIV/AIDS. People who may be infected with HIV/AIDS are more reluctant to disclose their status due to feeling

stigmatized, rejected and isolated (Colbert, Kim, Sereika&Erlen, 2010; Naing, Hakim, Ang, Koo, Tan, Kong &Siew, 2010) and potentially less engaged in care (Colbert et al., 2010).

Studies also stated that poor knowledge about HIV/AIDS can make people to have negative attitudes towards HIV/AIDS and this will directly contribute to the global problem of stigmatization against PLWHA. According to Ojebuyi (2009), the factors probably that cause the stigma and discrimination attitudes against people with HIV/AIDS are the public's inadequate knowledge and strong misconceptions about the pandemic. Knowledge on HIV/AIDS means facts, information, and understanding about the HIV/AIDS. Knowledge influenced by cultural factors and gained especially through learning and experience. Level of knowledge on HIV/AIDS frequently related with the attitudes toward PLWHA, and those with less HIV/AIDS knowledge are often those possess negative stigma attitudes. Result of previous research study proved that attitude was significantly positive correlated with knowledge (Montazeri, 2005; Meundi, Amma, Rao&Shetty, 2008). A study about HIV knowledge, attitudes and misconceptions was conducted in Turkey reported that respondents who were well educated and living in the city showed more positive attitudes toward people living with HIV/AIDS (Ayranci, 2005). Study in knowledge, attitude and behaviour of the students from medicine faculty, dentistry faculty, and medical technology vocational training school mentioned that about HIV/AIDS infectious diseases is crucial because it will affect the students of these professions' care toward HIV/AIDS patients in the future (Turhan, Senol, Baykul, Saba &Yalçin, 2010). Besides, another previous study indicated that exist of fear in HIV/AIDS due to the

poor understanding of the disease in Nigerian population, even among the healthcare providers are reluctant to treat people infected with HIV/AIDS (Monjok, 2009). Thus, the positive attitudes and knowledge on HIV/AIDS should be emphasized and implemented into the students especially those who will become health care providers in the future.

1.1 Statement of Problem

Research has been conducted attitudes related HIV/AIDS issue particularly among university students because students are the group of younger generation that may be parents advising their children in future or they may have to contact with HIV infected and AIDS people in their future work (Serlo, 2008). It is prudent to conduct the study among university students to ascertain their knowledge and attitudes regarding HIV/AIDS. Therefore, the present study investigated the relationships between knowledge and attitudes toward HIV/AIDS among undergraduates in UPM (Universiti Putra Malaysia), Serdang.

The purpose of this study is to identify the knowledge HIV/AIDS and attitudes toward HIV/AIDS among undergraduates in UPM, Serdang. Specifically, this study will identify respondent's personal characteristic (gender) related to knowledge and attitudes toward HIV/AIDS. In addition, this study determines the relationship between respondent's personal characteristic (gender) with HIV/AIDS knowledge and attitudes toward HIV/AIDS. In summary, the following are the researches questions will be addressed in this study:

- a) What is the level of knowledge on HIV/AIDS among the respondents?

- b) To what extent is respondent's personal characteristic (gender) related to knowledge of HIV/AIDS and attitudes toward HIV/AIDS?
- c) To what extent is knowledge of HIV/AIDS related to respondent's attitudes toward HIV/AIDS?
- d) What factors uniquely predict attitudes toward HIV/AIDS of the respondents?

1.2 Conceptual Framework

This framework consists of antecedent variable (respondents' personal characteristic), independent variable (HIV/AIDS knowledge) and dependent variable (attitudes toward HIV/AIDS). As studies suggest that attitudes toward HIV/AIDS is greatly influence by people's knowledge (Montazeri, 2005; Meundi et al., 2008), therefore knowledge on HIV/AIDS will be used in the model to access the attitudes of respondents.

Knowledge is the perception of reality acquired through learning and investigation expressed in a form that can be shared. The level of knowledge of students will affect their perception of how HIV/AIDS is acquired and this can contribute on how they express either positive or negative attitude toward HIV/AIDS. Naing, Hakim, Ang, Koo, Tan, Kong & Siew (2010) stated that to have better perceptions toward HIV/AIDS depends on an improved the knowledge of HIV/AIDS mode transmission.

The study of the knowledge and attitudes toward HIV/AIDS is important to understand how attitudes would be affected by the personal characteristic and knowledge of HIV/AIDS among undergraduates in UPM. This finding may contribute significantly to the development at three various levels. The first is individual level, next at society level and finally at national

level. At individual level, findings may benefits to the students themselves as the study may create or increase awareness of the effects of the HIV/AIDS knowledge on their attitudes toward HIV/AIDS. Perhaps that the students will be more tolerance and understandings of those that have been affected by HIV/AIDS so that the HIV/AIDS stigmatization and discrimination issues can be reduce to the minimum.

At society level, essential information may gain from the findings and thus provide a better understanding toward HIV/AIDS on younger people and education. Parents, teachers and many more related social institutions could be benefited from the findings in order to provide better guides according the ways to promote more positive understanding toward HIV/AIDS among their younger generation. For example, policy makers in the educational institutions may benefit from this result in planning for general knowledge of HIV/AIDS related courses to be taught in throughout curriculum. At national level, the findings from this study may provide useful information that can be referred by the government, non-government agencies and also education centre as guidance to organize appropriate plan or program on HIV/AIDS to educate public or students. This appropriate program can enhance the knowledge and attitudes toward HIV/AIDS and this also will indirectly to reduce the prevalence of HIV/AIDS stigmatization and discrimination issues that happen in our society.

1.3 Definition of Terminology

Personal Characteristic,
Conceptual: The personal characteristic include gender; motivation; sexual orientation; values, attitudes, and beliefs; education;

personality; focus on relationship function; leadership style; and political beliefs (O'Connell & Cuthbertson, 2009). Personal characteristics are unique to a particular person. Operational: Personal characteristic in this study refer to the gender of the respondent. Gender is indicated by male and female.

HIV/AIDS Knowledge Conceptual: Knowledge represents reality in thought or experience the way it really is on the basis of adequate grounds (Moreland, 2009). Knowledge of HIV/AIDS means facts, information, and understanding about the HIV/AIDS. Operational: Respondent's score on HIV/AIDS knowledge Scale for Hispanics was proposed by Luquis and Koch (1991). High score indicates higher level in the knowledge of HIV/AIDS.

HIV/AIDS Attitudes Conceptual: Attitudes often correlated with behavior and can be defined as positive or negative feelings toward a fact (Population Council, 2011). Attitudes generally can be defined as positive or negative views about HIV/AIDS. Operational: Report on scores obtained by respondent in HIV/AIDS Attitudes Scale for Hispanics was proposed by Luquis and Koch (1991). Respondent who get higher score indicates positive attitudes toward HIV/AIDS.

Undergraduate Conceptual: A university or college student who is studying for their bachelor's degree (Piero, 2010). Operational: UPM's undergraduate student.

Knowledge on HIV/AIDS

Knowledge is a cognitive component of attitude that describes what people think and perceived. The students' general knowledge about HIV/AIDS was associated with the program of

study or faculty they attend such as the earlier study indicated that students from Faculty of Health Sciences were more knowledgeable about HIV/AIDS compared to Faculty of Arts and other selected faculties of the university (Aluede, Imhonde, Maliki & Alutu, 2005). In an addition, the study in New Delhi high school reported that knowledge of HIV/AIDS was significantly correlated with the exposure of HIV/AIDS education (Pramanik, Koopman & Chartier, 2006), which means the greater exposure to the HIV/AIDS education showed that higher knowledge of HIV/AIDS.

The study by Pramanik and colleagues (2006) also revealed that majority of students agreed that schools and universities should teach HIV/AIDS and sex education, and also believed that it was a society' duty to educated people about the HIV/AIDS. Similarly, a study stated that majority of Arab University students agreed that young people need to know more information and should be given education on how to protect themselves against HIV/AIDS and about half of them expressed that they had not been taught enough at school (Ganczak, Barss, Alfaresi, Almazrouei, Muraddad & Al-Maskari, 2007). Another study about knowledge and attitude towards HIV/AIDS among Iranian students, also mentioned that majority of students said that wish to know more information about HIV/AIDS and most of students agreed with the response in the question of investment on youth education, which is the best way to fight AIDS diseases (Tavoosi, Zaferani, Enzevaei, Tajik & Ahmadinezhad, 2004). Thus, HIV/AIDS must be addressed by education that recognized the attitudes toward HIV/AIDS, which can increase the awareness among young people on how to protect themselves from the risk of HIV/AIDS infection (Ganczak et

al., 2007; Pramanik, Koopman & Chartier, 2006).

Additionally, the level of knowledge was significant associated with attitudes (Montazeri, 2005; Meundi et al., 2008; Rahnama, Rampal, Lye & Rahman, 2011; Suominen et al., 2011), those who possess stigma attitudes are often those with lower levels of HIV/AIDS knowledge or vice-versa. Some previous studies indicated that misconception or inadequate of knowledge about how HIV is transmitted have significantly correlated with stigmatizing and negative attitudes towards PLWHA (Ganczak et al., 2007; Sallar, 2009; Zhang, Li, Mao, Stanton, Zhao, Wang & Mathur, 2008). In addition, people with better understanding of HIV/AIDS knowledge tended to view PLWHA in a more positive perception than those without the knowledge (Varas-Díaz, Serrano-García & Toro-Alfonso, 2005). Similarly, several research studies also found that students with high levels of knowledge about HIV/AIDS showed more positive attitudes toward HIV/AIDS (Montazeri, 2005; Meundi et al., 2008; Suominen et al., 2011).

Furthermore, the study on knowledge, attitudes, and educational needs among Arab University students in United Arab Emirates was carried out by Ganczak and colleagues (2007), they reported that most students had a good knowledge on main route of HIV transmission mode such as HIV can be infected through mother to fetus and having unprotected sexual intercourse with an HIV-infected person, but misconception was still existed. Similarly, study also found that tertiary students in Papua New Guinea overall had high level of knowledge about the transmission and causes of HIV/AIDS (Jose, Totona, Begani, Andrew, Tombe & Begani, 2011). However, many misconceptions about HIV/AIDS such as they

perceived that a person can be infected with HIV by eating HIV-infected food, sharing comb and hairbrush, casual kissing, donating blood and mosquito bites. This study result showed that knowledge scores about HIV/AIDS were low because only one student had a high HIV/AIDS knowledge level. Besides, the another study about AIDS knowledge and attitudes among the general public in Tehran, Iran by Montazeri (2005) also showed that there was also exist of misconception about the diseases among Iranian although they had a fairly good in knowledge of HIV/AIDS.

Other studies also showed that students lack of knowledge or misinformation about virus transmission include drinking water, sharing utensils, shaking hand, sneezing and coughing, using public swimming pools, using public toilets, and mosquito bites (Meundi et al., 2008; Koksai, Namal, Vehid & Yurtsever, 2005; Pramanik, Koopman & Chartier, 2006; Tung, Ding & Farmer, 2008). Additionally, previous studies also found that misconceptions about HIV/AIDS transmission still existed, such as the belief HIV/AIDS can be contracted from mosquito bites, saliva or physical touch (Naing et al., 2010); children would never be contracted by HIV/AIDS, HIV-positive people can be recognized by their appearance, and believed that there is a cure and vaccine for AIDS (Tavoosiet al., 2004). Meanwhile, a study found that students who do not have misconceptions of HIV transmission modes, but still possess stigmatizing attitudes towards PLWHA (Zhang et al., 2008). Moreover, some studies also found that stigma and intolerant attitude toward HIV and AIDS was not associated with the level of HIV/AIDS knowledge among students (Pramanik, Koopman & Chartier, 2006; Zhang et al., 2008; Serlo, 2008). Study

by Norman, Carr and Jimenez (2006) proposed that intolerant attitudes toward PLWHA associated with the disapproval of socially unacceptable behaviors, such as drug use, homosexuality and commercial sex. Therefore, knowledge itself does not always enough to change attitudes alone and more consideration needed to find appropriate and effective ways to educate the general public, students and health care professionals.

Attitudes toward HIV/AIDS

An attitude toward HIV/AIDS is the perception or how a person views HIV/AIDS disease. The perception of how HIV/AIDS was acquired is crucial on how people will treat a people infected with HIV/AIDS. Attitude often correlated with behavior and can be defined as positive or negative feelings toward a fact (Population Council, 2011). According to Uutela (1985), concept of attitude defined in three components which are involve cognitive such as knowledge that describes what people think, affective such as feeling, and behaviour such as action describes how they would like to behave in a specific way. Moreover, attitudes can be define as a positive, negative, or mixed reaction to a person, object or idea (Brehm, Kassin & Fein, 2002). It means at times people also can posses both positive and negative evaluation to the same attitude object towards a person or object, and it is not simply represented along a single continuum ranging from wholly positive to wholly negative.

People whose has right knowledge normally has right attitude towards one object. Previous studies have identified that some factors such as level of knowledge on HIV/AIDS (Serlo, 2008; Lau & Tsui, 2005) and gender (Visser, Makin & Lehobye, 2006; Serlo, 2008) were closely associated with attitudes towards

HIV/AIDS. Besides, the earlier findings found that students' attitude are affected by the factor of faculty they attend, which mentioned that medical students had more acceptable attitudes toward HIV/AIDS or infections victims than non-medical students (Maimaiti, Shamsuddin, Abdurahim, & Tohti, 2010; Tan, Pan, Zhou, Wang & Xie, 2007). Apart from these factors, other studies also found that age (Visser, Makin & Lehobye, 2006; Zhang et al., 2008), race and ethnicity (Varas-Díaz, Serrano-García & Toro-Alfonso, 2005), culture (Abiona, 2006; Ellepola et al., 2011), religion (Vasan, Sarma & Thankappan, 2000), and experience of personal interaction with HIV/AIDS infected people (Visser, Makin & Lehobye, 2006) were significant impact one's attitudes toward victims of and HIV/AIDS.

The unfavorable attitudes toward HIV/AIDS could also be influenced by the prevalent negative attitudes toward people with HIV/AIDS. A previous study by Sallar (2009) in Africa found that people had negative attitudes toward and fear of PLWHA, where the adolescents in a Nigerian viewed that PLWHA should be quarantined and they also would reject relatives and also stop seeing friends who develop AIDS. Moreover, the research of knowledge and attitudes toward HIV/AIDS among Turkish students by Koksall and colleagues (2005) found that more than half of the young students expressed that people who infected with HIV should not be allowed to work. Besides, study of knowledge and attitudes toward HIV/AIDS by Tavoosi and colleagues (2004) indicated that negative attitude were common among Iranian students, with they expressed that HIV/AIDS-infected students should not allowed to attend an ordinary schools, they avoid to sit in a class near an infected person, and they would not

willing to shake hands with a HIV positive person.

Additionally, a study was conducted in Hong Kong also found that HIV/AIDS infected people are often discriminated and stigmatized against by others (Lau & Tsui, 2005). Lau and colleagues (2005) indicated that nearly half of the residents would not make any physical contact with PLWHA and one third of them agreed medical staff infected with HIV should be dismissed and the other half agreed there should be legislation barring PLWHA from visiting Hong Kong. Similarly, the study was conducted in a semi-urban community, Malaysia reported that household setting was afraid to make physical contact and reluctant to share food and drinks with infected victims (Naing et al., 2010) and this can lead to physical and social ostracization of HIV/AIDS-infected person and discrimination that would reduce supportive networks and increase isolation especially in communities.

Besides, previous study by Chen, Choe, Chen, and Zhang (2007) also indicated that fear of becoming infected with HIV infection can lead to the stigmatization and discrimination of PLWHA. Other studies also revealed that students had a sense of fear and negative intolerant attitudes toward PLWHA (Ganczak et al., 2007; Parker & Aggleton, 2002; Kokslet et al., 2005). Studies also indicated that students had negative feelings due to the fear of infected with the HIV/AIDS virus since there is currently no cure available for HIV/AIDS (Abiona, 2006; Serlo, 2008) and majority of students perceived that AIDS as a serious disease (Ganczak et al., 2007).

On the other hand, research study by Norman and colleagues (2006) found that groups like sex worker, homosexuals and having sex with multiple partners have socially marginalized syndrome as they are

being blamed for their disease and they are likely received less sympathy and compassion than others group of HIV/AIDS infected person. It is because students associated HIV/AIDS with immoral sexual behavior such as having sex with prostitutes or promiscuous that is often regarded as shameful and embarrassing. Pramanik and colleagues (2006) also stated that adolescents perceived the sexual relationship out of marriage and homosexual is wrong; and agreed that people who have HIV/AIDS deserve it and also is a God's punishment for bad behavior.

Furthermore, attitude towards HIV/AIDS will affect the tendency of help and care giving to PLWHA. Some studies showed that students with positive attitudes toward HIV/AIDS were more willing to care for PLWHA when compared to students with negative attitudes. For example, Suominen et al. (2011) and Vasan, Sarma and Thankappan (2000) found that students with positive attitudes toward HIV/AIDS disease or PLWHA were willing to take care of them despite never have any personal contact with such persons before. However, stigmatization problem was occurred among university students in Malaysia since the finding by researches showed that the majority of the students were not willing to care a person with HIV in their own house (Rahnama, Rampal, Lye & Rahman, 2011).

Interestingly, another study by Jose et al. (2011) indicated that tertiary students in Papua New Guinea had considerate, compassionate and positive attitudes toward those who are HIV/AIDS-infected people. From the result of this study showed that great majority of the students were afraid of getting the disease, and less than half of them prefer to keep away from those infected with HIV/AIDS

disease. Most of the students also disagree with the statement that those people with HIV disease should be separated from their normal community life. Such attitudes are considered very positive and healthy attitudes regarding HIV/AIDS toward the HIV/AIDS victims in confronting this HIV/AIDS pandemic.

Personal Characteristics (gender) and Gender versus HIV/AIDS Knowledge

Previous study was conducted among Tertiary Students in Papua New Guinea found that there was a gender difference in knowledge about HIV/AIDS (Jose et al., 2011). Other past research literature studies also showed that females exhibited a significantly higher level of knowledge about modes of transmission of HIV/AIDS than males (Albrektsson, Alm, Tan & Andersson, 2009; Meundi et al., 2008). However, other findings by the prior researches revealed that male had higher knowledge as compared to female (Ganczak et al., 2007; Jose et al., 2011; Pramanik, Koopman & Chartier, 2006; Vasan, Sarma & Thankappan, 2000).

Moreover, the study by Ng and Kamal (2006) also indicated that a gender difference in how adolescent perceived sexual risk of contracting HIV/AIDS and attitudes toward condom use. Furthermore, another study indicated that more males performed better in the two questions of knowledge and practice than females, where transmission of the disease via oral transmission and prevention by using condoms correctly during sexual intercourse (Tan et al., 2007). Besides, the result of the study from Pramanik and colleagues (2006) reported that male had better knowledge because of their greater exposure to the HIV/AIDS education as compare to female. Study

on tertiary students in Papua New Guinea by Jose and colleagues (2011) attributed similar findings to the fact that more peer education among males than females due to the reason of the males feel comfortable to talk and learn about HIV/AIDS more than females who may be feel shy or not comfortable when talk about such sensitive issue.

Gender versus Attitudes toward HIV/AIDS

Previous studies also indicated that the gender difference closely connected with attitudes toward HIV/AIDS (Serlo, 2008; Visser, Makin & Lehobye, 2006). Research study showed that male expressed more acceptance and positive attitudes toward HIV/AIDS-infected people than females (Tan et al., 2007). In contrast, a study indicated that females had more tolerant and better attitudes toward PLWHA compare to males because females showed more compassionate and empathy toward people with HIV/AIDS (Ganczak et al., 2007). Previous studies also mentioned that the gender role of females as caregivers in families were more understanding and sympathetic with the diseases (Baron & Byrne, 2002) and more female than male students felt that they could talk about HIV/AIDS matters to their parents (Albrektsson et al., 2009).

In comparison, other prior research studies proved that there was no significant difference of attitudes toward AIDS between male and female (Ellepola, Joseph, Sundaram & Sharma, 2011; Meundi et al., 2008; Montazeri, 2005). Although the findings by Montazeri (2005) showed that there was no significant difference in attitudes score across gender, and positive attitudes toward AIDS and people with AIDS infection was found among the general public in Tehran, Iran. Unlike the findings of Montazeri

(2005), study conducted by Ellepola and colleague (2011) in Kuwait University indicated that majority of students expressed negative attitudes toward HIV/AIDS although the findings was not significant.

Meanwhile, the results of previous study by Tavoosiand colleagues (2004) demonstrated that males and females students were probably same unfavorably attitudes toward HIV/AIDS disease, with males (50%) vs. females (48%) were agreed that HIV/AIDS-infected students should not allowed to attend an ordinary schools; males (37%) vs. females (36%) prefer not to sit in a class near a person with HIV positive; and males (24%) vs. females (24%) expressed they would not shake hands with a HIV positive person.

METHOD

The purpose of this chapter is to discuss the research methodology which would be used in this current study. Discussions are divided into seven subtopics, which include research designs, location of the study, sampling, instrumentations and measurements, pilot study (reliability), data collection, and data analysis. The purpose of research design is to identify the most economical method in conducting the research. The non-experimental quantitative research design which is in questionnaire tools has used to finalize results that are based on hypothesis testing to achieve the objectives for this current study. Besides, three techniques of research design are descriptive, correlation and comparative also have been chosen in this study. Descriptive design is used to gather the quantitative information and then organizes, tabulates, depicts, and describes the data collection. Descriptive involved in this study will be given a general description about respondent's personal characteristic (gender), level of knowledge in

HIV/AIDS and attitudes toward HIV/AIDS.

The correlation design is applied to determine the linear relationship between personal characteristic (gender), knowledge and attitudes towards HIV/AIDS among FEM undergraduates. The result of the correlation can be positive and negative. If the result is positive correlation, then the changes in value of one variable will make the changes of the other variables in the same direction, or vice versa. Comparative design is used to survey the knowledge and attitudes toward HIV/AIDS between male and female. The gender differences can be study by comparing the difference in level of knowledge and attitudes toward HIV/AIDS.

The location of this present study conducted at FEM in UPM, Serdang, Selangor DarulEhsan, Malaysia. One of the reasons for the FEM students were choose to access in this study as they are expected to be expert in the related fields of social science, humanities and development such as anthropology, psychology, social work, community development and urban and rural studies. This is good idea for me to investigate whether the students had a good knowledge and positive attitudes toward HIV/AIDS or not since their field of study is more associated to the humanities.

The population of this study is targeted to the undergraduates from Human Ecology in UPM, Serdang. The sample size for the study is determined by the calculation formula (Israel, 2009). The minimum sample size for FEM is approximately 271, which is calculated by the formula of known population size ($N = 835$) with the 95% confidence level and confidence interval of 5%. Sample size of FEM is 326 after an extra 20% is included for the purpose of accuracy and in projection of any incomplete

filled or missing data. However, there is only 275 online answered questionnaire will be randomly selected and used it in actual sample size of the research study.

Besides, the respondents in this current study were surveyed using a method of simple random sampling design with probability proportionate to size. This sampling technique is used in this study due to the problem of gender imbalance where females now in a substantial majority as students in most university faculties, including FEM in UPM, Serdang. Therefore, male and female students have been selected with the ratio 4:6 where 110 of males and 165 of females from the sample size of 275 as shown in the Figure 2.

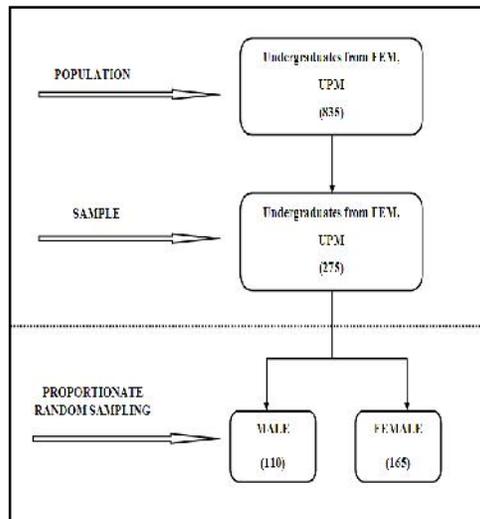


Figure 2: Proportionate random sampling method

Instrumentations and Measurement

This current study involved two variables which are knowledge of HIV/AIDS and attitudes toward HIV/AIDS. Both variables were measured by HIV/AIDS Knowledge and Attitudes Scale for Hispanics. The instrument was developed by Luquis and Koch (1991).

The knowledge of HIV/AIDS was measured by the HIV/AIDS Knowledge

scale. The scale is internal consistent as it has reliability of Cronbach's alpha of 0.61. There are two parts of HIV/AIDS knowledge are measured by the scale. The first part is General Knowledge, which contains 21 items about the prevalence, risk factors, course of the disease, diagnosis, and prevention of HIV/AIDS. The second part is Likelihood of Transmission, concentrates on the modes of HIV transmission and contains 16 items about possible ways to transmit HIV. The highest possible score for these two parts in HIV/AIDS Knowledge scale is 44.

For the General Knowledge part of the HIV/AIDS knowledge scale, respondents need to answer the 21 items as either (1) *definitely true*, (2) *probably true*, (3) *probably false*, (4) *definitely false*, or (5) *don't know*. While responses to the items of Likelihood of Transmission, concentrates on the modes of HIV transmission and contains 16 items about possible ways to transmit HIV are (1) *very likely*, (2) *somewhat likely*, (3) *somewhat unlikely*, (4) *very unlikely*, (5) *definitely not possible*, or (6) *don't know*. The overall knowledgescore is computed based on simple sum scores, means one point is given for every correct answer. Higher scores indicate greater HIV-related knowledge or vice-versa.

One point is given for every correct answers in the first part of the HIV/AIDS Knowledge scale, with the highest possible score is 21: (1) *definitely true* for items 1, 3, 5, 8, 10, 11, 12, 14, 15, 18, 19, 20, 21; (1) *definitely true* or (2) *probably true* for items 7; and (4) *definitely false* for items 2, 4, 6, 9, 13, 16, 17. While one point is given for the correct answers in second part of the HIV/AIDS Knowledge scale, with the highest possible score is 23: (1) *very likely* for items 28, 35, 36; (4) *very unlikely* for items 24, 29; and (5) *definitely not*

possible for items 22-23, 25-27, and 30-34. For item 37, one point each is given for ticking b, c, f, h and not ticking a, d, e, g.

The list of Knowledge of HIV/AIDS questionnaire had shown as below:

Part 1 : This Part is to measure general knowledge level which contains 21 items about the prevalence, risk factors, course of the disease, diagnosis, and prevention of HIV/AIDS

No.	Statement
1.	AIDS can reduce the body's natural protection against diseases.
2.	AIDS is especially common in older people.
3.	AIDS can damage the brain.
4.	AIDS usually leads to heart disease.
5.	AIDS result from an infectious disease caused by a virus.
6.	College students are not at risk of contracting AIDS.
7.	AIDS leads to death.
8.	A person can be infected with HIV and not have the disease AIDS.
9.	Looking at a person is enough to tell if he or she has HIV.
10.	Any person with AIDS can pass it on to someone else during unprotected sexual intercourse.
11.	A person who has HIV can look and feel healthy and well.
12.	A pregnant woman who has HIV can give the virus to her baby.
13.	There is a vaccine available to the public that protects a person from getting HIV.
14.	There is no cure for AIDS at the present time.
15.	It may be more than 5 years before a person infected by HIV develops AIDS.
16.	A person can be diagnosed with AIDS by taking one special blood test.
17.	Using any type of condom can help protect you from AIDS.
18.	Younger are at greater risk of getting AIDS than the rest of the population.
19.	The epidemic of HIV/AIDS remained stable in Malaysia.
20.	Everyday, an average of 10 people tested with positive HIV in Malaysia.

Part 2: This Part is to measure the knowledge on the possible ways to transmit HIV which contains 16 items about the likelihood of

transmission and concentrates on the modes of HIV transmission.

No.	Statement
21.	There arean estimated 100,000 or more people living with HIV in Malaysia.
22.	Living near a hospital or home for AIDS patients.
23.	Working near someone with HIV.
24.	Kissing with exchange of saliva someone who has HIV.
25.	Eating in a restaurant where the cook has HIV.
26.	Shaking hands, touching, or kissing on the cheek someone who has HIV.

27.	Using public toilets.
28.	Sharing needles for drug use with someone who has HIV.
29.	Receiving a blood transfusion from a hospital blood bank.
30.	Mosquito or other insect bites.
31.	Donating blood.
32.	Being coughed or sneezed on by someone who has HIV.
33.	Attending class with a student who has HIV.
34.	Sharing a dorm room with a student who has HIV.
35.	Unprotected (without a condom) sexual intercourse with an HIV-infected person.
36.	Unprotected (without a condom) anal intercourse with an HIV-infected person
37.	Tick () the fluids through which HIV has been transmitted:
(a)	saliva ()
(b)	semen ()
(c)	vaginal secretions ()
(d)	perspiration ()
(e)	urine ()
(f)	blood ()
(g)	tears ()
(h)	mother's milk ()

Attitudes toward HIV/AIDS

The attitudes toward HIV/AIDS are measured by the HIV/AIDS Attitudes scale. The scale is high internal consistent as it has high reliability of cronbach's alpha of 0.85. There are 26 items of attitudes about the HIV and people who may be infected, sexual behavior and safer-sex practices, and discussions and learning about HIV/AIDS. There are 26 items in a 5-point Likert scale, ranging from (1) - (5) where (1) *strongly agree*, (2) *agree*,

(3) *are uncertain*, (4) *disagree*, and (5) *strongly disagree*. The highest possible score for the scale of attitudes toward HIV/AIDS is 130. A mean score is calculated for the HIV/AIDS Attitudes scale. The items are reversed scored are 1, 5, 8, 9, 10, 12-13, 15-16, 20-23, 25-26.

The list of Attitudes toward HIV/AIDS questionnaire had shown as below:

No.	Statement
1.	I believe I have enough information about AIDS to protect myself.
2.	I believe women should not have sexual intercourse before marriage.
3.	Activities that spread AIDS, such as some forms of sexual behavior, should be illegal.
4.	I feel uncomfortable when coming in contact with gay men because of the risk that they may have for AIDS.
5.	Civil rights laws should be enacted/enforced to protect people with AIDS from job and housing discrimination.
6.	Male homosexuality is obscene and vulgar.
7.	I believe men should not have sexual intercourse before marriage.
8.	AIDS antibody blood test results should be confidential to avoid

	discrimination against people with positive results.
9.	I feel that more time should be spent teaching students about AIDS.
10.	People should not blame the homosexual community for the spread of AIDS in the Malaysia.
11.	AIDS is a punishment for immoral behavior.
12.	I feel secure that I have reduced all risk of personally contracting AIDS.
13.	It would not bother me to attend class with a person with AIDS.
14.	Anyone who has had more than one sexual partner is promiscuous.
15.	I could comfortably discuss AIDS with a friend.
16.	I would not avoid a friend if he/she had AIDS.
17.	If I discovered that my roommate had AIDS, I would move out.
18.	I do not believe in using condoms.
19.	I could not discuss AIDS with my parents.
20.	I would date a person with HIV.
21.	I would feel comfortable discussing AIDS in a classroom situation.
22.	I would not engage in sexual intercourse before marriage.
23.	I would feel comfortable asking a new partner about his/her sexual history.
24.	I would use AIDS as an excuse to avoid any sexual relationships.
25.	I would limit myself to one sexual partner.
26.	I would use a condom every time I had sex.

Pilot Study

The purpose of this pilot study is to test the reliability and validity of the instrument and ensure that the scales were suitable to be applied in this research. This pilot study was carried out in February, 2012 and a total number of thirty undergraduates from FEM in UPM were randomly selected to answer the questionnaire through online. From the result of pilot study, it

was produced a reliable Cronbach's alpha value for the HIV/AIDS Knowledge and Attitudes Scales for Hispanic. The summary of the reliability result for Knowledge and Attitudes Scales for Hispanic in original study, pilot study and current study were shown in the below Table 1 Table 1: Summary of the reliability cronbach alpha value

Scale	Cronbach's Alpha Value ()		
	Original Study	Pilot Study (n=30)	Current Study (n=275)
HIV/AIDS Knowledge	0.610	0.635	0.856
HIV/AIDS Attitudes	0.850	0.766	0.766

Data Collection

The online survey method by using Google Documents has been utilized in the present study to collect sufficient

data in the selected faculty. Google Documents is a free, web-based spreadsheet, form and data storage services offered by Google. To create

this online questionnaire must have a Gmail account. To conduct this online survey must also need to obtain the email addresses from those undergraduates of FEM as the respondents. After that, invitation link of online questionnaires will be sent out to the respondents. Later, all the completed response to the questions will be reply from those respondents and their answers will automatically collected and saved in an Excel spreadsheet and that makes it easier for me to input the large sets of data into the SPSS to analyse the desired result

Table 2: Section division for the questionnaire

Part A	Respondent's Personal Characteristic
Part B	Knowledge of HIV/AIDS
Part C	Attitudes toward HIV/AIDS

The online questionnaire divided into three parts as shown in the above Table 2. Each respondent is required to answers all parts in the questionnaire. For the Part A, respondent need to indicate their gender either male or female. In Part B and Part C, respondent required to answer questions on all items regarding the knowledge and attitudes toward HIV/AIDS. The confidentiality of the survey also was assured to protect all the respondents' privacy since Google Documents is an anonymous survey inside Google applications. The duration of this online survey has been carried out for three weeks to collect all the data and information.

Data Analysis

The data gathered will be analysed by using Statistical Package of the Social Science (SPSS). Types of statistical measures, i.e. Descriptive, Pearson correlation, T-test and Multiple regression statistics are used to

analyse the findings in this study. The univariate analysis described by using the descriptive statistics while bivariate analysis used to determine the relationship between two variables in this study. Two types of bivariate analysis that used in data analysis are Pearson Correlation and T-test.

Descriptive analysis is used to identify and describe the distributional characteristics of the variables in the study. The univariate data (Specific objective (1)) is described by using the descriptive statistics to give general descriptions of the data. Descriptive statistics result would be reported using frequency (N), percentage (%), standard deviation, mean, minimum and maximum.

The correlation between two variables reflects the degree to which the variables were related, while Pearson's correlation reflects the degree of linear relationship between variables. Pearson Correlation test is employed to analyze bivariate data (Specific objective (2)) in this study to measure linear relationship between two variables. Hence, hypothesis (Ho1) would test to indicate the significance of the variables. The Pearson correlation coefficient (r) is a measure of the strength of the relationship between two variables, which ranges from +1 to -1. Whereas, T-test used for hypothesis (Ho2, Ho3) was to compare the means of two independent groups such as gender (male and female) is statistically different from each other.

Meanwhile, the Multiple Regression analysis is applied to test on the multivariate data (Specific objective (5)). The significant predictors were combined and the result from this analysis is used to determine factors that can uniquely predict dependent variables. The multiple regression analysis is employed to test

hypothesis (Ho4), which is determine the unique predictor of attitudes toward HIV/AIDS among undergraduates in UPM.

Research Findings And Discussion

This chapter presents and discusses the findings based on the research objectives and hypotheses. This research aims to examine the relationships between knowledge and attitudes toward HIV/AIDS among undergraduates of Human Ecology in UPM. In summarize, all the results from the analyses are based on significance level of $p = 0.05$, $p = 0.01$ and $p = 0.001$, will be discussed according to the following subtopics.

Personal Characteristic (gender), Level of Knowledge on HIV/AIDS and Attitudes toward HIV/AIDS

Respondents' Personal Characteristic

The descriptive analysis of student's personal characteristic according to gender was presented in Table 3. A total of 275 respondents had participated in this study where 110 (40%) were males and 165 (60%) were females from the Faculty of Human Ecology.

Table 3: Respondents' personal characteristic

Variable	n	%
Gender		
Male	110	40
Female	165	60

Level of HIV/AIDS Knowledge

Respondents' level of HIV/AIDS Knowledge was measured by obtaining the undergraduates' total score in HIV/AIDS Knowledge scale (Luquis & Koch, 1991). The total score was computed based on simple sum

score where one point is given for every correct answer. The highest possible score for the HIV/AIDS Knowledge scale was 44 and the score range was within 0 to 44. For the present study, the knowledge score of HIV/AIDS for the respondents was divided into two categories which were low (25 and below) and high (26 and above). The higher score indicated higher level of knowledge in HIV/AIDS or vice-versa.

Based on the findings in the Table 4, majority of the undergraduates (n=197, 71.64%) obtained the low score whereas a few of undergraduates (n=78, 28.36%) achieved high score of knowledge in HIV/AIDS. The minimum score was 49 whereas the maximum score was 123. The mean score was 21.97 and a standard deviation of 7.151. Thus, the result revealed that the level of knowledge on HIV/AIDS for most undergraduates of Human Ecology in UPM was low since less than one third of the respondents (n=78, 28.36%) had the higher score in HIV/AIDS knowledge.

In this study, the possibly reasons for the low level of knowledge among undergraduates of Human Ecology in UPM might be due to the lack exposure of knowledge such as a few of programs and curriculum regarding of HIV/AIDS education are organized in UPM, which also could directly contribute to their low knowledge about HIV/AIDS since they did not have a good knowledge and clear understanding on the HIV/AIDS aspect. This idea can be supported by Pramanik, Koopman and Chartier (2006) which demonstrated that the greater exposure to the HIV/AIDS education tends to be more knowledgeable in HIV/AIDS.

Table 4: Level of HIV/AIDS knowledge

Variable	n	%
Level of HIV/AIDS Knowledge	275	100
Low (25 and below)	197	71.64
High (26 and above)	78	28.36
<i>Mean</i>	21.97	
<i>Sd.</i>	7.151	
<i>Min.</i>	7	
<i>Max.</i>	42	

Note. *Sd.* = Standard deviation, *Min.* = Minimum, *Max.* = Maximum

Attitudes toward HIV/AIDS

Respondents' attitudes toward HIV/AIDS was assessed by the instrument created by Luquis and Koch in year 1991 which consisted of 26 items. Response ranged by likert scale from (1) *strongly agree* to (5) *strongly disagree*. The highest possible score for the scale of attitudes toward HIV/AIDS was 130 and the score range was within 26 to 130. The attitudes toward HIV/AIDS score for the respondents was divided into 2 categories which were low (86 and below) and high (87 and above). The higher score indicated more positive attitudes toward HIV/AIDS or vice-versa.

From the result in the Table 5, more than half of the respondents (n=178, 64.73%) had low score in 86 and below whereas only few of respondents (n=97, 35.27%) gained the high score range in 100 and above. The minimum and maximum score of the respondents were 7 and 42 respectively. The reported mean was 82.25 and the standard deviation was 11.534 in this study. The findings in this present study showed that most undergraduates of Human Ecology in UPM had negative attitudes toward HIV/AIDS.

In this study, the reason to undergraduates of Human Ecology who had negative attitudes toward HIV/AIDS was due to their low level of knowledge or some misconception on HIV/AIDS education, which could directly contribute to their unfavourable and negative attitudes toward HIV/AIDS. This idea can be supported by the prior studies, which indicated that knowledge about HIV/AIDS was significant influence the attitudes toward HIV/AIDS (Montazeri, 2005; Meundi et al., 2008; Rahnama et al., 2011; Suominen et al., 2011).

Table 5: Attitudes toward HIV/AIDS

Variable	n	%
Attitudes toward HIV/AIDS	275	100
Negative(86 and below)	178	64.73
Positive(87 and above)	97	35.27
<i>Mean</i>	82.25	
<i>Sd.</i>	11.534	
<i>Min.</i>	49	
<i>Max.</i>	123	

Note. *Sd.* = Standard deviation, *Min.* = Minimum, *Max.* = Maximum

Relationship between Knowledge and Attitudes toward HIV/AIDS

The correlation of knowledge and attitudes toward HIV/AIDS was presented in Table 6. The Pearson Correlation was computed to determine the relationship between knowledge and attitudes toward HIV/AIDS. Finding reveals that there was a significant relationship between knowledge and attitudes toward HIV/AIDS with the $r = 0.315$ and $p < 0.001$. The positive correlation indicated that low level knowledge of HIV/AIDS generally showed more negative attitudes toward HIV/AIDS or

vice-versa. Hence, null hypothesis was rejected.

The result in this present study was found similar in the previous literature researches studies which indicated that a correlation between knowledge and attitudes toward HIV/AIDS. These prior studies concluded that students with higher knowledge in HIV/AIDS had more positive attitudes toward HIV/AIDS (Meundi et al., 2008; Montazeri, 2005; Suominen et al., 2011; Tavoosi et al., 2004). Besides, this similar result was also consistent with the past research which indicated that misconceptions or inadequate of knowledge about HIV/AIDS was correlated to students' attitudes toward people with HIV/AIDS (Zhang et al., 2008; Ganczak et al., 2007; Sallar, 2009) since negative attitudes toward HIV/AIDS was influenced by the prevalent unfavourable attitudes toward people with HIV/AIDS.

In this current study, the undergraduates of Human Ecology had low level of knowledge and negative attitudes toward HIV/AIDS. The reason could be due to the lack of exposure in HIV/AIDS aspects that lead to misconception and low knowledge of HIV/AIDS (Pramanik, Koopman & Chartier, 2006). For example, deficiencies in the curriculum and inconsistencies in the way information about the HIV/AIDS disease was delivered to the students could contribute to their low knowledge of HIV/AIDS, and this will directly lead to their negative attitudes toward HIV/AIDS. This reason can also be found from the past studies which indicated that knowledge was significantly affect attitudes toward HIV/AIDS (Montazeri, 2005; Meundi et al., 2008; Rahnama et al., 2011; Suominen et al., 2011).

Table 6: Relationship between knowledge and attitudes toward HIV/AIDS

Variable	Attitudes toward HIV/AIDS	
	Correlation (r)	Sig.(2-tailed) (p)
HIV/AIDS Knowledge	0.315	0.000

Note: p is significant at value 0.001

The Level of Knowledge on HIV/AIDS between Male and Female

The HIV/AIDS knowledge between male and female was presented in the Table 7. In the study, T-test was employed to compare the level of knowledge on HIV/AIDS across gender. Finding showed that there was a significant difference level of knowledge on HIV/AIDS between male and female with the t-value 3.958 (p 0.001). Thus, null hypothesis was successfully rejected. This result was similar with the past research finding which found that there was a gender difference in knowledge about HIV/AIDS (Albrektsson et al., 2009; Ganczak et al., 2007; Jose et al., 2011; Pramanik, Koopman & Chartier, 2006; Vasan, Sarma & Thankappan, 2000).

The two mean values for the level of HIV/AIDS Knowledge were 24.14 (male) and 20.53 (female), and this revealed that male and female undergraduates of Human Ecology in UPM had low level of knowledge on HIV/AIDS. However, these two different mean values distinguish that male had higher level of HIV/AIDS knowledge than female. This result was supported by the prior researches which suggested that male had higher knowledge level in HIV/AIDS as compared to the female (Ganczak et al., 2007; Jose et al., 2011; Pramanik,

Koopman&Chartier, 2006; Vasan, Sarma&Thankappan, 2000).

Based on the past literature studies, the reason for male undergraduates had better knowledge than their female counterparts in this current study because of that the males had greater exposure of education on HIV/AIDS (Pramanik, Koopman&Chartier, 2006), and might be also that the males were more comfortable to talk and learn about HIV/AIDS more than females who may be feel shy or not comfortable to talk about such sensitive issue (Jose et al., 2011).

Table 7: HIV/AIDS knowledge between male and female

Variable	Mean		t	Sig.(2-Tailed) (p)
	Male	Female		
HIV/AIDS Knowledge	24.14	20.53	3.958	0.000

Note. p is significant at value 0.001

The Attitudes toward HIV/AIDS between Male and Female

From the Table 8, T-test was applied to compare the attitudes toward HIV/AIDS between male and female. The findings reported that there was a significant difference of attitudes toward HIV/AIDS across gender with the t-value 3.334 (p 0.001). Therefore, null hypothesis was successfully rejected. This current finding was consistent with the prior research studies which indicated that there was a significant gender difference with attitudes toward HIV/AIDS diseases (Baron & Byrne, 2002; Ganczak et al., 2007; Tan et al. 2007; Tavoosi et al., 2004).

The reported mean values of attitudes toward HIV/AIDS were 85.04 (male) and 80.39 (female), and this revealed that both male and female

had negative attitudes toward HIV/AIDS. However, these two different mean values showed that male had better attitudes toward HIV/AIDS as compared to female. This result was in contrast with the results of earlier research studies where found that females were more tolerant and positive attitudes toward HIV/AIDS (Baron & Byrne, 2002; Ganczak et al., 2007; Tavoosi et al., 2004).

However, it was consistent with the finding of Tan and colleagues (2007) which mentioned that male showed more acceptance and positive attitudes than their female counterparts. The reason of that the male showed more favourable attitudes could be due to the male had high level of knowledge about HIV/AIDS than female, which directly lead their positive attitudes toward HIV/AIDS. This reason can be supported by the past findings which found that there was a significant correlated between knowledge and attitudes toward HIV/AIDS (Montazeri, 2005; Meundi et al., 2008; Rahnama et al., 2011; Suominen et al., 2011).

Table 8: Attitudes toward HIV/AIDS between male and female

Variable	Mean		t	Sig.(2-Tailed) (p)
	Male	Female		
Attitudes toward HIV/AIDS	85.04	80.39	3.334	0.001

Note. p is significant at value 0.001

The Unique Predictor of Attitudes toward HIV/AIDS

Multivariate regression was used to study the association of multiple variables with select the unique

predictors of the scores for attitudes toward HIV/AIDS. From the the analysis in Table 9 showed that both variables where gender and level of HIV/AIDS Knowledge to predict the attitudes scores toward HIV/AIDS were statistically significant (p 0.001). Hence, null hypothesis was successfully rejected. The adjusted R square value was 0.114 and this indicated that students' gender and knowledge contribute only 11.4% of variance in attitudes toward HIV/AIDS. However, the level of HIV/AIDS Knowledge emerged the most unique predictor of the overall attitudes scores among undergraduates of the Human Ecology, UPM (F = 17.559, p 0.001 and $\beta = 0.283$).

Table 9: Unique predictor of attitudes toward HIV/AIDS

Variable		p

Table 10: Summary of findings on hypotheses testing

Specific Objectives	Hypothesis	Statistical Test	Result	Conclusion
To describe personal characteristic (gender), level of knowledge on HIV/AIDS, and attitudes toward HIV/AIDS.	-	Descriptive	Majority of respondents had low level of knowledge and negative attitudes toward HIV/AIDS.	Level of knowledge and attitudes toward HIV/AIDS were significant predictors of attitudes toward HIV/AIDS.
To determine the relationship between knowledge and attitudes toward HIV/AIDS.	H 1	Correlation	There was a significant positive relationship between knowledge and attitudes toward HIV/AIDS.	Rejected
To compare the knowledge of HIV/AIDS between male and female.	H 2	T-test	There was no significant difference between male and female on knowledge of HIV/AIDS.	Accepted
To compare the attitudes toward HIV/AIDS between male and female.	H 3	T-test	There was a significant difference between male and female on attitudes toward HIV/AIDS.	Rejected
To determine what factors uniquely predict attitudes toward HIV/AIDS.	H 4	Multiple Regression	Undergraduates had higher knowledge and more positive attitudes toward HIV/AIDS if compared to the female	Rejected

Student's gender	-0.128	0.031
HIV/AIDS Knowledge	0.283	0.000
Constant	74.015	0.000
R^2	0.114	
F	17.559	
p	0.000	

Note. p is significant at value 0.001

Summary of the Findings

Table 10 in the below showed the summary of the result of research objectives based on hypotheses testing in the current study. A total of 7 hypotheses were tested in this study and all hypotheses were successfully rejected.

In general, the findings of this

study revealed that the majority of respondents had low level of knowledge and negative attitudes toward HIV/AIDS. A summary of the findings in this study can be explained according to the research objectives and its hypotheses. First, findings presented that the level of knowledge in HIV/AIDS was significant predictor for the attitudes toward HIV/AIDS of the respondents. There was significantly showed that respondents who gained high score in the knowledge of HIV/AIDS generally had positive attitudes toward HIV/AIDS. Secondly, the result also showed that there was a significant difference between male and female on knowledge of and attitudes toward HIV/AIDS. There was significantly indicated that more male undergraduates had higher knowledge and more positive attitudes toward HIV/AIDS if compared to the female

undergraduates. Lastly, the analyses also reported that the level of knowledge in HIV/AIDS was the most unique predictor as compared to the factor of personal characteristic (gender) that contributed to the attitudes toward HIV/AIDS among undergraduates of Human Ecology in UPM, Serdang. Therefore, this study in overall concluded that knowledge of HIV/AIDS play an important role to influence undergraduates' attitudes toward HIV/AIDS.

In conclusion, this research of study has reached the research objectives that have been addressed as below: Objective 1: To describe personal characteristic (gender), level of knowledge on HIV/AIDS and attitudes toward HIV/AIDS. The first objective in this study was to identify the respondents' gender, knowledge and attitudes toward HIV/AIDS. The total sample of this study consists of 110 (40%) males and 165 (60%) females from Faculty of Human Ecology in UPM, Serdang. Meanwhile, the HIV/AIDS Knowledge and Attitudes Scales for Hispanic were used to access respondents' knowledge and attitudes toward HIV/AIDS. Result of the item analyses concluded that majority of the undergraduates (71.64%) had low level of HIV/AIDS knowledge (25 and below score, $M = 21.97$, $SD = 7.151$) and they also showed negative attitudes toward HIV/AIDS ($M = 82.25$, $SD = 11.534$). The students' knowledge and attitudes toward HIV/AIDS in this current result was consistent with the findings in the previous studies which indicated knowledge about HIV/AIDS was significant influence the attitudes toward HIV/AIDS (Montazeri, 2005; Meundi et al., 2008; Rahnama et al., 2011; Suominen et al., 2011). This means that low understanding of knowledge on HIV/AIDS education can directly contribute to their negative attitudes toward HIV/AIDS.

The result showed that there was a significant relationship between knowledge and attitudes toward HIV/AIDS of the respondents ($p = 0.001$). The positive correlation ($r = 0.315$) indicated that the undergraduates who had higher level of HIV/AIDS knowledge generally had more positive attitudes toward HIV/AIDS. Therefore, this finding was generally supported by the idea of several prior researchers which they have found that those students with high level of knowledge on HIV/AIDS had more favourable attitudes toward HIV/AIDS (Meundi et al., 2008; Montazeri, 2005; Suominen et al., 2011; Tavoosi et al., 2004).

Objective 3: To compare the knowledge of HIV/AIDS between male and female. The result of Objective 3 was computed by using T-test, found that there was a significant difference level in knowledge of HIV/AIDS between male and female undergraduates of Human Ecology, UPM ($t = 3.958$, $p = 0.001$) where the male undergraduates ($M = 24.14$) had higher level of knowledge about HIV/AIDS than the female undergraduates ($M = 20.53$). This result was consistent with several past studies which reported a high knowledge on HIV/AIDS among male than their female counterparts (Ganczak et al., 2007; Jose et al., 2011; Pramanik, Koopman & Chartier, 2006; Vasan, Sarma & Thankappan, 2000).

Objective 4: To compare the attitudes toward HIV/AIDS between male and female. The finding of Objective 4 was also computed by using T-test, showed that there was a significant difference in attitudes toward HIV/AIDS across gender among undergraduates of Human Ecology, UPM ($t = 3.334$, $p = 0.01$) where the male had more positive attitude toward HIV/AIDS ($M = 85.04$) compared to their female counterparts ($M =$

80.39). This current finding was general similar with the previous research result which indicated that male showed more acceptance and positive attitudes as compared to the female (Tan et al., 2007). However, it was inconsistent with the findings of earlier research studies where found that females were more tolerant and positive attitudes toward HIV/AIDS (Baron & Byrne, 2002; Ganczak et al., 2007; Tavooosi et al., 2004) Objective 5: To determine what factors uniquely predict attitudes toward HIV/AIDS The result of Objective 5 was analyzed by using a multiple regression revealed that the regression coefficient was significant ($R^2 = 0.114$, $F = 17.559$, $p < 0.001$) where the level of HIV/AIDS knowledge indicated the most unique predictor in predicting the attitudes toward HIV/AIDS among undergraduates of Human Ecology, UPM. ($\beta = 0.283$, $p < 0.001$).

Implications

This current research study offers some important contributions. In short, the findings showed that the knowledge as more significant predictors of attitudes toward HIV/AIDS and there also was a significant relationship between the knowledge and attitudes toward HIV/AIDS. Hence, this showed that knowledge play an important role to influence the attitudes among undergraduates of Human Ecology. As evidenced by the present results, the higher level of knowledge about HIV/AIDS could lead to more favourable attitudes toward HIV/AIDS and this finding was consistent with past studies (Montazeri, 2005; Meundiet al., 2008; Rahnama et al., 2011; Suominen et al., 2011). Thus, it is quite important to have a deeper understanding on HIV/AIDS education among undergraduates of Human Ecology since they will possibly recognized as an important role to

take the responsibility of social welfare in their future work. Therefore, this precise information can be useful for UPM to implement the relevant program, intervention and prevention strategies in aiding them to enhance their awareness about the right perception on HIV/AIDS and this can contribute them to develop more humanistic and positive attitudes toward HIV/AIDS.

Additionally, the result of the study also revealed that undergraduates of Human Ecology had a low level of knowledge and attitudes toward HIV/AIDS. From the findings, male performed better in knowledge and showed more positive attitudes than their female counterparts. These findings imply that there is need to address, especially emphasizes on the female undergraduates' misconceptions about the HIV/AIDS and attitudes toward the disease. As stated by Chen et al. (2007), the increase in accurate knowledge and improve understanding of HIV/AIDS are important to reduce the negative attitudes. Thus, this is a good time to promote more HIV/AIDS education program to disseminate facts about HIV/AIDS among relevant university students especially female students of Human Ecology in UPM, in order to raise their knowledge level such as a clearer understanding of how HIV/AIDS can be transmitted and this most likely to bring about a highly positive attitudes toward HIV/AIDS.

Recommendations

From the findings of this study, several recommendations are made for future research. First, the current study only examined the knowledge and attitudes toward HIV/AIDS among undergraduates in UPM, Selangor because of the constraint of time and cost. Hence, future researchers are suggested to implement higher representativeness sampling method

and also increase the sample size such as included the other universities in Malaysia. This can get more comprehensive information or data so that can generalize to wider population. Secondly, the target samples of this study only focus on university undergraduates. It is suggested that future studies to conduct a research that included the people from different age range and broader personal background so that the characteristics of whole transitional stage of human development that occur between childhood to adulthood which could explore the difference in knowledge level and attitudes toward HIV/AIDS among Malaysians. This can help our country to find the best and effective strategic to increase the awareness of HIV/AIDS among Malaysian citizen of different transitional stage. Lastly, there are many other factors (antecedent characteristics) that can influence the knowledge and attitudes toward HIV/AIDS which have been investigated by past literature studies. Other factors such as faculty (Maimaitiet al., 2010; Tan et al., 2007), age (Visser, Makin&Lehobye, 2006; Zhang et al., 2008), race and ethnicity (Varas-Díaz, Serrano-García& Toro-Alfonso, 2005), culture (Abiona, 2006; Ellepola et al., 2011), religion (Vasan, Sarma&Thankappan, 2000), and experience of personal interaction with HIV/AIDS infected people (Visser, Makin&Lehobye, 2006). However, this current research only considers the respondents' gender to review the knowledge and attitudes toward HIV/AIDS. Thus, it is highly recommended to increase the scope in future study so that researchers able to draw stronger conclusion and more relevant implications. A better research should be going into depth of the scope for investigating the real profile of the respondents.

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