



**KNOWLEDGE AND PERCEPTION OF SEXUALLY-TRANSMITTED  
DISEASES OF SCIENCE AND NON-SCIENCE UNDERGRADUATE  
STUDENTS IN A PUBLIC UNIVERSITY IN MALAYSIA**

By

**TANYA LAM SZEE EE**

**Thesis Submitted to the School of Graduate Studies,  
Universiti Putra Malaysia, in Fulfillment of the Requirements for the  
Degree of Master of Science**

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Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfillment of the requirement for the degree of Master of Science

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**TANYA LAM SZEE EE**

**May 2021**

**Chairman : Huda binti Zainuddin, MD**  
**Faculty : Medicine and Health Sciences**

Sexually Transmitted Diseases (STDs) are among the significant public health challenge that can lead to serious complications if left untreated. STDs are most common in persons aged 25 and younger, regardless of male or female gender, which is also the adolescent group or undergraduate students age range in this study. STDs exacerbate the problems in health sector because directly associated with individual behavior and social issue. Knowledge of STDs is crucial for adolescent to practice appropriate behaviors that can prevent them from contracting STDs. However, a knowledgeable adolescent may not guarantee that they will have the right perception towards the prevention of STDs, such as proper way to use condom consistently will be followed. Some adolescent even think that sexually transmitted diseases are not dangerous because they can be cured. That is the reason why this study were carried in order to assess the knowledge and perception regarding to STDs among undergraduate students.

The objective of this study was to determine the level of knowledge and perception on sexually transmitted diseases among science and non-science undergraduate students in Universiti Putra Malaysia.

This cross-sectional study was carried out at Faculty of Modern Languages and Communication, Universiti Putra Malaysia and Faculty of Medicine and Health Sciences, Universiti Putra Malaysia. Purposive sampling with probability proportionate to size was employed in this study to select 2 faculties out of 16 faculties from Universiti Putra Malaysia. The sample size was 120 and simple random sampling technique was conducted to select the participants. Data was obtained using questionnaire which was modified, pretested and validated for this study. Data of this study was collected within March and June 2017 using self-administered questionnaires. Knowledge and perception level on STDs questionnaire of respondents

was assessed using English Malay bilingual which had been translated and validated. Data analysis was carried out using IBM SPSS version 25. Descriptive analyses of the participants were collected as frequency, mean, median, and percentage. Logistic regression analysis were applied as inferential statistics for determining predictors of knowledge and perception of STDs, as well as chi square test were used.

Participation rate was 98.3% for all faculties combined. Among 118 of the students who participated in this study, majority (66.1%) of the students were aged 17 to 21 years old while the remaining (33.9%) were aged 22 to 26 years old with the mean (SD) age of the respondents of  $21.42 \pm 2.243$ . Most of the respondents were female (63.6%) and Malays (57.6%). Majority (68.6%) of the respondents were from semester 1 to 3 and from rural locality (63.6%). Majority (75.4%) of the students obtained STDs knowledge from the internet. 56.8% of the respondents had good knowledge, while 43.2% had poor knowledge. The overall mean (SD) knowledge score for correctly answered questions were  $33.11 (\pm 7.413)$ . 78.3% of respondents from science faculty scored good knowledge while only 34.5% of the respondents from non-science faculty had good knowledge. The comparison of the overall mean knowledge between both groups demonstrated that science undergraduate students had good knowledge level (66.89%) regarding STDs while the non-science undergraduate student had poor knowledge level (46.52%). 66.9% of the respondents possessed positive perception, 33.1% had negative perception. The mean (SD) perception score of the undergraduate students were  $12.19 (\pm 2.271)$ . Logistic regression revealed that the knowledge level of student was influenced by their age (AOR= 1.831, 95% CI= 1.276 – 2.544, p-value= 0.003) while faculty (AOR =1.763, 95% CI= 1.287 – 2.365, p value= 0.004) was a significant predictor for perception level. The logistic regression analysis using knowledge level as independent variable demonstrated that respondents knowledge level was very strong predictor for perception level in this study (AOR= 2.865, 95% CI= 2.284 – 3.657, p= 0.001).

In conclusion, the study reflects that there is overall low knowledge level on STDs among the non-science undergraduate student group and good knowledge level among science undergraduate students. Even though there is slightly higher knowledge level among students of science background but they do not implement a right perception towards STDs, so as the arts stream students. Most of the students answered that they were not worried at all if they contracting an STDs. Probably due to they thinking most of the STDs can be cured. It is important to implement continuous STDs prevention intervention program to provide the right perception and increase the level of knowledge on STDs especially among adolescent group. It is also recommended that further research should be carried out to determine if there is any difference of knowledge and perception of STDs between adolescent from rural and central areas of Malaysia.

Keywords: Knowledge, Perception, STDs, Associated Factors, Undergraduate Students

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi keperluan untuk ijazah Master Sains

**PENGETAHUAN DAN PERSEPSI TERHADAP PENYAKIT MENULAR SEKSUAL DALAM KALANGAN PELAJAR PRASISWAZAH SAINS DAN BUKAN SAINS DI SEBUAH UNIVERSITI AWAM DI MALAYSIA**

Oleh

**TANYA LAM SZEE EE**

**MEI 2021**

**Pengerusi : Dr. Huda binti Zainuddin**  
**Fakulti : Perubatan dan Sains Kesihatan**

Penyakit Kelamin (STD) merupakan antara cabaran kesihatan awam yang ketara yang boleh membawa komplikasi yang serius jika tidak dirawat. STD sering kali dihidapi oleh remaja dalam lingkungan usia 25 ke bawah, sama ada lelaki atau perempuan, iaitu dalam lingkungan usia prasiswazah dalam kajian ini. STD menambah bebanan sejangat dalam sektor kesihatan kerana berkaitan secara langsung dengan tingkah laku individu dan isu sosial. Pengetahuan STD adalah penting kepada remaja agar boleh mengamalkan tingkah laku yang sesuai untuk mengelakkan diri mereka daripada dijangkiti STD. Walau bagaimanapun, remaja berpengetahuan tidak menjamin bahawa mereka akan mempunyai persepsi yang betul ke arah pencegahan STD, misalnya cara yang betul untuk menggunakan kondom secara konsisten akan diikuti. Sesetengah remaja berpendapat bahawa penyakit kelamin tidak berbahaya kerana ia boleh diubati. Oleh itu, kajian ini dijalankan untuk menilai pengetahuan dan persepsi berkaitan STD di kalangan pelajar prasiswazah.

Tujuan utama kajian ini adalah untuk menilai tahap pengetahuan dan persepsi mengenai penyakit kelamin di kalangan pelajar prasiswazah aliran sains dan bukan sains di Universiti Putra Malaysia.

Kajian keratan rentas telah dijalankan di Fakulti Bahasa Moden dan Komunikasi, Universiti Putra Malaysia dan Fakulti Perubatan dan Sains Kesihatan, Universiti Putra Malaysia. Kajian ini menggunakan persampelan bertujuan dengan kebarangkalian berkadar dengan saiz untuk memilih 2 fakulti daripada keseluruhan 16 fakulti dari Universiti Putra Malaysia. Saiz sampel adalah 118 dan teknik persampelan rawak mudah telah dijalankan untuk memilih peserta. Data telah diperolehi dengan menggunakan soal selidik yang telah diubahsuai, dijalankan praujian dan disahkan untuk kajian ini. Data kajian ini dikumpul dari bulan Mac hingga Jun 2017 dengan menggunakan soal selidik yang dijawab oleh responden sendiri. Tahap pengetahuan dan persepsi responden dinilai

menggunakan bahasa Melayu dan bahasa Inggeris, dwibahasa diterjemahkan dan disahkan. Analisis data telah dijalankan menggunakan IBM SPSS versi 25. Data kemudian dijalankan analisis menggunakan frekuensi, min, median, dan peratusan untuk analisis deskriptif. *Logistic regression* telah digunakan sebagai statistik inferensi untuk mengenalpasti pemboleh ubah yang meramalkan pengetahuan dan persepsi STD, *chi square* analisa digunakan untuk kajian hubungan antara pemboleh ubah telah digunakan untuk kajian pemboleh ubah berkategori.

Kadar penyertaan adalah 98.3% untuk kesemua fakulti. Antara 118 pelajar yang mengambil bahagian dalam kajian ini, kebanyakan (66.1%) daripada pelajar adalah berumur di antara 17 hingga 21 tahun manakala yang lain (33.9%) berumur 22 hingga 26 tahun dengan min (SD) umur responden adalah  $21.42 \pm 2.243$ . Kebanyakan daripada responden adalah perempuan (63.6%) dan Melayu (57.6%). Majoriti (68.6%) responden adalah dari semester 1 hingga 3 dan dari kawasan luar bandar (63.6%). Majoriti (75.4%) pelajar mendapat pengetahuan mengenai penyakit kelamin melalui internet. 56.8% daripada responden mempunyai pengetahuan yang baik, sementara 43.2% mempunyai pengetahuan yang lemah. Min keseluruhan (SD) untuk skor pengetahuan yang dijawab dengan betul adalah  $33.11 (\pm 7.413)$ . 78.3% responden daripada fakulti sains memperolehi skor pengetahuan yang baik manakala hanya 34.5% responden daripada fakulti bukan sains memperolehi pengetahuan yang baik. Perbandingan min keseluruhan pengetahuan antara kedua-dua fakulti menunjukkan bahawa pelajar prasiswazah sains mempunyai tahap pengetahuan yang baik (66.89%) mengenai penyakit kelamin manakala pelajar bukan sains memaparkan tahap pengetahuan yang lemah (46.52%). 66.9% daripada responden mempunyai persepsi positif, 33.1% mempunyai persepsi negatif. Min (SD) skor persepsi untuk pelajar prasiswazah ialah  $12.19 (\pm 2.271)$ . Regresi logistik mendedahkan bahawa tahap pengetahuan pelajar dipengaruhi oleh umur mereka (AOR = 1.831, 95% CI = 1.276 – 2.544,  $p = 0.003$ ) manakala fakulti (AOR = 1.763, 95% CI = 1.287 – 2.365,  $p = 0.004$ ) adalah satu peramal yang signifikan bagi tahap persepsi. Analisis regresi logistik yang menggunakan tahap pengetahuan sebagai pemboleh ubah bebas menunjukkan bahawa tahap pengetahuan responden adalah peramal yang sangat mempengaruhi tahap persepsi dalam kajian ini (AOR = 2.865, 95% CI = 2.284 – 3.657,  $p = 0.001$ ).

Kesimpulannya, kajian ini memperlihatkan bahawa tahap pengetahuan keseluruhan mengenai STD adalah rendah di kalangan kumpulan pelajar prasiswazah. Walaupun terdapat sesetengah pelajar yang mempunyai tahap pengetahuan yang lebih tinggi di kalangan pelajar latar belakang sains tetapi mereka tidak melaksanakan persepsi yang sewajarnya terhadap STDs, tiada beza kebimbangan antara pelajar aliran sains dan bukan sains. Kebanyakan pelajar memberikan jawapan bahawa mereka tidak bimbang sama ada mereka menghidap STD. Mungkin disebabkan mereka menganggap bahawa kebanyakan STD boleh diubati. Pelaksanaan program intervensi pencegahan STD secara berterusan adalah penting untuk memberikan persepsi yang sewajarnya dan meningkatkan tahap pengetahuan mengenai STD terutamanya di kalangan remaja. Penyelidikan selanjutnya perlu dijalankan untuk menentukan sama ada terdapat perbezaan pengetahuan dan persepsi STD antara remaja dari kawasan pedalaman dan kawasan bandar di Malaysia.

Kata kunci: Pengetahuan, Persepsi, Penyakit Menular Seksual, Faktor-faktor Yang Mempengaruhi, Pelajar Prasiswazah



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This thesis was submitted to the Senate of Universiti Putra Malaysia and has been accepted as fulfilment of the requirement for the degree of Master of Science. The members of the Supervisory Committee were as follows:

**Huda Zainuddin, MD**

Senior Medical Lecturer  
Faculty of Medicine and Health Sciences  
Universiti Putra Malaysia  
(Chairman)

**Dato' Faisal Ibrahim, MBBS, MPH, MPH M**

Associate Professor  
Faculty of Medicine and Health Sciences  
Universiti Putra Malaysia  
(Member)

**ZALILAH MOHD SHARIFF, PhD**

Professor and Dean  
School of Graduate Studies  
Universiti Putra Malaysia

Date: 20 January 2022

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Name of Chairman of  
Supervisory Committee: Huda Zainuddin  
\_\_\_\_\_

Signature: \_\_\_\_\_  
Name of Member of  
Supervisory Committee: Dato' Faisal Ibrahim  
\_\_\_\_\_

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## LIST OF ABBREVIATIONS

AIDS	Acquired Immunodeficiency Syndrome
Anti-HBs	Hepatitis B surface antibody
AOR	Adjusted Odd Ratio
ART	Anti-retroviral therapy
CDC	Center for Disease Control and Prevention
CI	Confidence Interval
DALY	Daily Adjusted Life Years
DNA	Deoxyribonucleic acid
HBM	Health Belief Model
HIV	Human Immunodeficiency Virus
HBV	Hepatitis B virus
HCV	Hepatitis C virus
HEDIS	Healthcare Effectiveness Data and Information Set
HSV	Herpes simplex virus
HPV	Human papilloma virus
HRP	Harm Reduction Program
IF	Immunofluorescence Test
IgM	Immunoglobulin M
KAP	Knowledge, Attitude and Practice
MOH	Ministry of Health
MWFCD	Ministry of Women, Family and Community Development
NAAT	Urine Nucleic Acid Amplification Testing
NSPEA	National Strategic Plan for Ending AIDS
LPPKN	National Population and Family Development Board

PCR	Polymerase Chain Reaction
PID	Pelvic Inflammatory Disease
PLHIV	People living with HIV/AIDS
PMTCT	Preventing mother-to-child-transmission
SD	Standard deviation
STDs	Sexually Transmitted Diseases
UNAIDS	United Nations Joint Program on HIV/AIDS
UNICEF	United Nations Children's Fund
WHO	World Health Organisation

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# CHAPTER 1

## INTRODUCTION

### 1.1 Background

Sexually Transmitted Diseases (STDs) are amongst the top five diseases categories worldwide and one third new cases of STDs occur globally are among adolescent who younger than 25 years old, generally aged 14 to 24 years old (UNAIDS, 2016). Globally, the highest rates of STDs occur among 20 to 24 years old age group, which is then followed by 15 to 19 years old group. There are 400,000 new cases of STDs occur daily from South East Asia region which estimated by World Health Organization. One in every 20 young people is believed to contract a bacterial STDs in any given year. Centers for Disease Control (CDC) estimates that 19 million new infections occur annually, almost half of them were among young people age 15 to 24 years (Ravi et. al., 2014).

STDs is generally infected from the spread of person to person through sexual contact such as vaginal intercourse, anal sex, or even from oral sex. Some STDs are treatable and some might not show symptoms of the infection (Casey, Rutledge, Johnson, Boyd, Starr & King, 2010; Gewirtzman, Bobrick, Conner & Tyring, 2011).

The prevalence of new cases reported chlamydia, gonorrhea, trichomoniasis and syphilis in both male and females from aged 15 to 49 increased from 333 million cases in 1995 to 357 million of cases in 2012 (Newman et. al, 2015). The first sexual intercourse age decreasing and not constant usage of condom or not proper used of condom have been proposed as possible causal for the increase in STDs (Samkange-Zeeb FN, Spallek & Zeeb , 2011). STDs are synergistic, which was defined as acquiring one STDs can lead to increase the possibility of acquiring another STDs, including HIV (Mayaud & McCormick, 2001). In spite of the fact that most STDs can be treated by timely and effective treatment, but most of them are asymptomatic or cannot be detected that lowered the treatment of STDs efficiency (WHO, 2012). Reported cases of some STDs that without undergo treatment may lead to serious complications, such as miscarriage, intrauterine growth retardation, *in utero* death, cervical cancer, ectopic pregnancy, sepsis, inflammation of the epididymis or testis, infertility, and penile or anal cancer. They also can cause neonatal illness or death, or long term sequelae. However, the magnitude of the congenital syphilis burden, globally, rivals that of HIV infection in neonates yet receives little attention. Congenital syphilis results in serious adverse outcomes in up to 80% of cases and is estimated to affect over 1 million pregnancies annually (Higgins, Hoffman & Dworkin, 2010); (MacDonald & Wong, 2007). The U.S. Preventive Services Task Force recommends that high intensity behavioral counseling are important to at-risk adults and adolescents to prevent STDs. The presence of STDs such as gonorrhea, *Chlamydia*, and herpes increases the likelihood of HIV transmission. The majority of patients with herpes simplex virus infection will not show recognizable symptoms. Therefore, screening for HSV immunity is of questionable value. The World Bank estimates that STDs excluding HIV

are the second most common cause of healthy life lost after maternal morbidity in 15 to 44 year old women. STDs cost \$16 billion annually to the health care system (O'Connor et al., 2014). There is rapid converting of trend of sexual and reproductive behavior among adolescent which needs more provision from the health care professionals to provide necessary sexual or reproductive care and knowledge to the adolescent (Low WY, 2009).

There are limited studies on knowledge and perception regarding STDs among adolescent in Malaysia have been carried out. However, they are inadequate and infrequent. In order to fill in the gap of various strategies to minimizing STDs in addition to awareness programs that have been created, it is crucial that continuous efforts on obtaining evaluation data on knowledge, perception and practice regarding STDs prevention in the target community should be put in place (Shiferaw et al., 2011). Many of the studies found out that STDs caused 17% of financial losses towards developing countries among all poor health categories (Gewirtzman, 2011). STDs were found commonest among never married persons and adolescent (Svensson & Waern, 2013; Chinsebu, 2009; Almalki, 2014; Rachel, 2006). Adolescent who constitute tertiary education population were exposed to high level of risk toward STDs, hence concentration should be placed on their sexual health (Pereira et al., 2014). There are many determinants associated with sexual health of youths. For example, the behavioral patterns, economic, gender, religion and beliefs, social and their ethnicity. It is crucial to pay more attention on adolescent's knowledge and exposure of risk groups that affect their sexual behavior in order to prevent the widespread of the diseases (Rachel, 2006). It is important for adolescent to know the risky behavior of associated sexual behavioral patterns and lifestyle that may cause unfavorable effect on their health, and prevention methods. STDs burden among adolescent was reported all over the world, as proven by many of the studies done in recent years (Awang, Wong, Jani & Low, 2014).

The aim of this study is to evaluate the level of knowledge and perception among the students at a public university in Malaysia in regards to sexually transmissible disease. In order for students to increase awareness of sexually transmissible disease, their knowledge and perception play an important role.

## **1.2 Problem Statement**

Sexually Transmitted Diseases (STDs) are one of the major public health challenges globally especially among the adolescent age group (McManus & Dhar, 2008). Sexually transmitted diseases rank among the most important health issues for the people especially the young adults worldwide. Young people tend to engage in sexual activity at younger ages. Knowledge is an essential precursor of sexual risk reduction (Tilson et al., 2004). Recent bulletin published by World Health Organisation showed that approximately one billion people infected with genital herpes, while oral herpes infected by another billion of population (WHO, 2020). Ministry of Health Malaysia demonstrated that there are approximately 87,041 cases of positive HIV at end of 2018 in Malaysia (MOH, 2019).

Several studies done in Malaysia showed that the knowledge among undergraduate students is still unsatisfactory. For instance, there is a study revealed that there are about 90% of the university students in Selangor thought that STDs are transmissible through handshakes (Soleymani, 2015). Another study of health sciences university students from Negeri Sembilan and Selangor revealed that there was only 63.9% heard of syphilis, 45.4% of them could identify gonorrhoea as one of the STDs, and half of them do not aware that STDs could be asymptomatic (Folasayo et al., 2017). There is another study from five states in Malaysia revealed that only 78.7% of the male adolescent below age 24 years old knew that condom could prevent against STDs (Awang et al., 2014).

Cases of STDs in Malaysia are increasing constantly, especially the rate of people diagnosed with herpes, genital warts and chlamydia was increased drastically. The highest positive cases were among the adolescent age group 16 to 24 years old (MOH, 2019). The main public health challenges occur in accordance with reproductive health issues among adolescent are premarital sexual intercourse, undesirable pregnancies, illegal abortions and STDs especially AIDS (Soleymani et al., 2015). According to the UNAIDS report published, the widespread of STDs in Malaysia was reported at 70,559 cases. The prevalence for HIV or AIDS reported at 10,663 cases, while there were more than 50,000 cases for STDs other than AIDS (Anwar et. al., 2010). A report in Sarawak showed that 683 cases of gonorrhoea were reported with 514 cases patients aged within 18 to 29 and 49 cases involved teenagers within the age of only 10 to 17 years old (Utusan Sarawak, 2015). From the 683 cases, the areas in Sarawak namely Samarahan and Asajaya reported that 96 total cases of STDs from the areas in year 2014, 64 cases out of the 96 cases of gonorrhoea are adolescent aged between 18 to 29 years old. However, another 12 cases were teenagers age from 10 to 17 years old (Utusan Sarawak "Gonorrhoea semakin membimbangkan", 2015). Despite of Malaysia having a population of 28 million people and has an economy which is consider good, but to combat the HIV or AIDS occurrence is still a frightening prospect to deal with that keeps provoke challenging to the country (Low, 2006). In year 2013, Malaysia reported that 86,324 people were contracted with HIV (PLHIV), with reported of progressive cumulative 101,672 HIV cases, 20,235 AIDS cases and causing 16,340 deaths following as the consequence of HIV or AIDS, therefore there was a sum up of 85,332 PLHIV in the year of 2013. Approximately 34.3% of the demonstrated cases above were actually the cases among adolescent from the age of 13 to 29 years old (MOH, 2014).

Most of the STDs and reproductive health problems that adolescent encounter are STDs, undesirable pregnancy and abortions. Cases of premarital sex has increased over the years at an alarming rate in Malaysia. It was reported that 8.3% of school students admitted that they have already had sex with the mean age of 15 years old during their first sexual experience (Rahman, Ismail & Bahri, 2011). Majority of the adolescent with poor perception of the future outcome of their current behavior or wrongdoing and hence most of the adolescent have unprotected sex, without condom use and with multiple partners which makes them more easily contract an STDs (Rahman et al., 2011; Low, 2006).

The only successful way in reducing the occurrence of contracting HIV or AIDS is by



combatting the transmission (Anwar et al., 2010). Even though with plenty of the programs promoted in order to increase prevention and treatment approach within the society, STDs still continue to be a significant health challenge and they continue consistently to be a crucial cause of mortality rate and morbidity (McManus et al., 2008). STDs are not simply easy to combat because they deeply associated with human behaviors. Therefore, the human knowledge and perception study that related with human behavior is consequently a crucial prevention factor to combat STDs and bring down the prevalence rate (Sh J, Sann Lye & Rampal, 2010; Kraft, 1993). A number of previous KAP studies regarding STDs have been conducted in Malaysia to evaluate current trends of public health related to STDs (Al-Naggar & Al-Jashamy, 2011; Anwar et al., 2010). Nevertheless, most of the studies have concentrated majority on HIV or AIDS instead of STDs. These studies demonstrated that most of the students revealed unsatisfactory knowledge and they were involved in risky behaviors that may put them more vulnerable in contracting the disease (Aung et al., 2013; Sh et al., 2010; Wong et al., 2008; Rahnama, Rampal, Lye, & Abd Rahman, 2011; Zulkifi & Wong, 2002; Huang, 1999; Tee et al., 2008; Choon, Sapiah & Ismail, 1997).

Over many years ago, sexually transmitted diseases were well studied extensively. Syphilis had been studied for 500 years. Firstly, professional thought that it would be just a rare disease. It was misinterpreted and unexpectedly become other forms of STDs. The increasing cases of antibiotic resistance in gonorrhoea has always further complicate the treatment progress. Knowledge of Chlamydia is so poor among young people that it affects many of fertility issues among them (Gross & Tyring, 2011). Adolescent are often viewed as being not mature enough to make their own right decisions on important sexual health related quality of their lives, for example the usage of contraceptives, timing their first sexual experience, selection of their sexual partners. In spite of that, parents, guardians, health care professionals and teachers are expected to monitor and participate in provision of adolescent's decisions regarding sexual and reproductive health (Wood & Aggleton, 2002). These important aspect in adolescent lives, however, often related to sociocultural norms about sexuality (O'Byrne & Watts, 2014; Wood & Aggleton, 2002; Kidd SA, 2007). Plenty of Muslim adolescents were sent over to the shelter homes by their respective family members because of having premarital pregnancies from premarital sexual relationship (Women Aid Organisation, 2011). The result from a study showed that the knowledge about causative organisms, high risk activities, mode of transmission, symptoms, prevention and treatment of STDs was very poor. This study shows the evidence of poor knowledge of STDs amongst the patients that receive STD diagnosis or treatment service in the General Hospital in Malaysia (Anwar, Sulaiman & Khan, 2010).

According to UNICEF report, during the age of adolescent life was average phase where many people try their first sexual experience (UNICEF, 2002). The report from National Health and Morbidity Survey of Malaysia, demonstrated that 7.3% of the participants whom was teenagers aged 13 to 17 years old already had their sexual experiences (MOH, 2018). It is regrettably alarmed that during this phase most of the studies have shown that the adolescent were poorly informed regarding STDs knowledge and the way of prevention (Duong, Debpuur & Kahn, 2008; Folasayo, Oluwasegun, Samsudin, Saudi, Osman & Hamat, 2017; Trajman, Belo, Teixeira, Dantas, Salomão & Cunha, 2003).

Throughout the time, researchers have found out that the only efficient way to combat STDs or to inhibit the rate of spread of STDs infections within the adolescent, can be obtained by evaluating the knowledge of STDs amongst adolescent which comprise of the signs and symptoms manifestation of STDs, factors that put them at high risk to contract the infection, their perceptions and the practices implementation that associated to the preventive measures of STDs (Sekirime, Tamale, Lule, Wabwire-Mangen, 2001; Berten et al., 2009). The tertiary education students that also belong to the member of youths age group were young and more vulnerable among all other age group especially their mentality and social behaviors may usually increase their predisposing risk factors in contracting an STDs. The group of adolescent are also supposed to be much more rational, literate, and well-informed in regards to STDs if differentiate amongst all other population age groups (Maimaiti, 2010).

This research was done at Universiti Putra Malaysia due to it is located in the central region of Malaysia as compared to most previous studies were done at north peninsula Malaysia such as Penang (Anwar et al., 2010), among undergraduate students at Perak (Yip et al., 2019) and south peninsula Malaysia, Melaka (Mansor et al., 2020). Locality of south or north peninsula Malaysia mindset among the students is not biased and students from central region of Malaysia can be compared, since UPM is located in central region of Malaysia. And this university comprised of students from various hometown states from east and west of Malaysia due to it is a public university, students were chosen by Ministry of Higher Education to enter after their application from multiple locality according to quota. Different from private university where students usually chose the renowned or nearby university to enter. Therefore, hometown locality can be one of the sociodemographic in this study due to broad range of students from both rural and urban locality. Hence, their level of knowledge and perception can represent students from many parts of the states in Malaysia. Students of UPM were chosen as part of this study because UPM were among top university in Malaysia and should it be better knowledge and perception regarding STDs as compared to other studies done at other universities in Malaysia.

### **1.3 Significance of Study**

Even with the enormous amount of research, economic, effort, and time placed into the consequences and outcomes of sexually transmitted diseases, many studies have mainly focused on the risk factors involved. There is only small number of studies that focused on knowledge and perception of the students. Moreover, most of the researches done in Malaysia majority are concentrated on HIV or AIDS instead of sexually transmitted diseases. Even though AIDS is also one of the STD but other venereal diseases is little known by citizen in Malaysia and should not be negligible. There is also little known about differences in knowledge and perception on STD across different states in Malaysia.

A cross-sectional study in Malaysia is important to produce the baseline information about student knowledge and perception about STD and their sexual activity to help establish control and education programs in the near future. Studies on STD among

youth are very few. Therefore, conducting research on STD in general and among youth in particular is an important input to design policy and strategy aimed at preventing and controlling the infections. Many of the research results in evident that there is a lack of knowledge of STD, other than HIV.

This study will reveal the magnitude of problem on sexually transmitted disease among students in the university, which can guide public health professionals in developing health promotion programs in future to enhance a more knowledgeable and good perception population at university level.

The knowledge and perception studies resulted from adolescent age group students related to STDs can therefore be used as an index scale in estimation for the level of knowledge or perception among overall adolescent in Malaysia. Students may be a public health officer in the future who may need to responsible in planning out or execute appropriate guidelines of preventive measures and students might also in the responsible of need to give health education and promotions sessions to increase the knowledge among the public. Therefore, it is important that these future leaders can commands no matter in a group, organization, or country level with satisfactory sufficient and up to date knowledge regarding STDs which was one of the major health concerns. It is crucial to evaluate their knowledge and perception in order for the university management to establish educational programs and awareness health promotion to increase the knowledge regarding STDs among youth and to enhance their perception towards prevention of STDs. Findings from this study would provide useful information for the development of policies regarding prevention of STDs among youths.

#### **1.4 Research Questions**

- i. What is the level of knowledge and perception on sexually transmitted diseases among undergraduate students?
- ii. What are the factors associated with knowledge and perception on sexually transmitted diseases among undergraduate students?
- iii. What are the predictors for knowledge and perception on sexually transmitted diseases among undergraduate students?

## **1.5 Objectives**

### **1.5.1 General Objective**

The aim of this study is to determine the level of knowledge and perception and its risk factor on sexually transmitted diseases and its association among undergraduate students in Universiti Putra Malaysia.

### **1.5.2 Specific Objectives**

1. To determine the socio-demographic factors (age, gender, faculty, educational level, type of secondary education, ethnicity, and hometown) of students in Universiti Putra Malaysia.
2. To assess the level of knowledge related to STDs of undergraduate students.
3. To assess the level of perception related to STDs of undergraduate students
4. To determine the association between socio-demographic factors and the level of knowledge and perception of sexually transmitted disease.
5. To determine the association between knowledge and perception towards sexually transmitted disease.

## **1.6 Research Hypotheses**

The alternative hypotheses are:

H1: There is a significant association between socio-demographic characteristics (age, gender, types of secondary education, ethnicity, religion and hometown locality) with either the level of knowledge and perception of sexually transmitted diseases.

H2: There is a significant association between knowledge and perception of sexually transmitted disease.

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