



**UNIVERSITI PUTRA MALAYSIA**

***KNOWLEDGE, ATTITUDE AND PREVENTIVE PRACTICES RELATED TO  
SEXUALLY TRANSMITTED DISEASES AMONG UNIVERSITY STUDENTS  
IN MALAYSIA***

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**FPSK(m) 20**



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**By**

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**Thesis Submitted to the School of Graduate Studies, Universiti Putra Malaysia, in  
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**April, 2015**

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**April, 2015**

**Chairman: Assoc. Prof. Rukman Awang Hamat, PhD**  
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Sexually Transmitted Diseases (STDs) are among the world's most common cause of illness and they are a major health concern for young people around the world. STDs have become a global burden particularly to the health sector because they are deeply connected to human behavior and fundamental society problems. Knowledge about crucial aspects of STDs is very important to enable youths disengage from behaviors that may place them at risk of contracting STDs. However, being knowledgeable may not guarantee that practices related to the prevention of STDs such as correct/consistent condom use will be followed. This study was carried out in a bid to assess the level of knowledge, attitude and preventive practices related to STDs among university students in Malaysia.

This cross-sectional study employed simple random sampling to select the target population. The sample size was 748. The data was collected between May and August, 2014 using modified, pretested, validated, self-administered questionnaires. The response rate was 94%. Data was analyzed using SPSS version 21. Out of the 700 students who took part in the study, majority of the students were females (63.6%) and the age distribution ranged from 17 to 30 with a mean (SD) of 22.14 (2.771). The main source of STDs information was the internet (77.3%). The overall mean (SD) knowledge score of the respondents was 24.13 (8.540). The mean (SD) attitude score was 14.02 (2.674). The mean (SD) practice score was 1.137 (0.994). Logistic regression showed that knowledge level of the respondents was influenced by the students' age group (AOR=1.707, 95% CI=1.183-2.46,  $p=0.004$ ) and preventive practice was influenced by religion (AOR= 1.416, 95% CI= 1.077-1.862,  $p= 0.013$ ). Logistic regression further showed that attitude level was strongly influenced by the students' knowledge level (AOR= 2.349, 95% CI= 1.733-3.181,  $p= 0.001$ ).

Conclusively, the study reveals a lot of gap and misconceptions in the level of knowledge of the students on STDs. Low level of condom use and having sex with multiple partners was reported among the students who had sex. There is a need to implement sustained STDs prevention intervention program that will provide correct, consistent and up to date

knowledge on STDs and also emphasize translation of this knowledge into acceptable/ safe sexual practice.

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

**PENGETAHUAN, SIKAP DAN AMALAN PREVENTIF BERKAITAN  
DENGAN PENYAKIT KELAMIN DALAM KALANGAN MAHASISWA DI  
MALAYSIA**

Oleh

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**April, 2015**

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Penyakit kelamin (STD) merupakan antara penyebab penyakit yang paling lazim di dunia dan merupakan kebimbangan kesihatan yang utama bagi anak muda di dunia. STD menjadi bebanan sejagat, terutama dalam sektor kesihatan disebabkan penyakit ini berkait rapat dengan tingkah laku manusia dan merupakan masalah masyarakat yang fundamental. Pengetahuan tentang aspek yang penting tentang STD adalah sangat perlu bagi membolehkan belia mengelakkan diri daripada tingkah laku yang mungkin menyebabkan mereka dijangkiti STD. Walau bagaimanapun, berilmu pengetahuan tidak menjamin bahawa amalan berkaitan dengan pencegahan STD, seperti penggunaan kondom yang betul dan konsisten akan diikuti. Oleh sebab itu, kajian ini dijalankan bagi menilai tahap pengetahuan, sikap dan amalan preventif dalam kalangan mahasiswa di Malaysia.

Kajian keratan lintang ini telah menggunakan persampelan rawak mudah bagi memilih populasi sasaran. Saiz sampel ialah 748. Data telah dikumpul antara bulan Mei dan Ogos, 2014, menggunakan soal selidik yang ubah suai, dijalankan praujian, yang disahkan dan swaguna. Kadar respon ialah 94%. Data kemudian dianalisis menggunakan SPSS versi 21. Daripada 700 mahasiswa yang mengambil bahagian dalam kajian ini, majoriti mahasiswa ialah wanita (63.6%) dan distribusi umur adalah antara 17 hingga 30 dengan min (SD) 22.14 ( 2.771). sumber utama maklumat tentang STD ialah internet (77.3%). Min keseluruhan (SD) bagi skor pengetahuan responden ialah 24.13 (8.540). Min (SD) bagi skor sikap ialah 14.02 (2.674). Min (SD) bagi skor amalan preventif ialah 1.137 (0.994). Regresi logistik menunjukkan bahawa tahap pengetahuan responden dipengaruhi oleh kumpulan umur responden (AOR=1.707, 95% CI= 1.183-2.46, p=0.004) dan amalan preventif dipengaruhi oleh agama (AOR= 1.416, 95% CI= 1.077-1.862, p=0.013). Seterusnya, regresi logistik menunjukkan bahawa tahap sikap adalah sangat dipengaruhi oleh tahap pengetahuan pelajar (AOR= 2.349, 95% CI= 1.733-3.181, p=0.001).

Kesimpulannya, kajian ini memperlihatkan bahawa terdapatnya jurang yang amat besar dan juga salah tanggapan dari segi tahap pengetahuan pelajar terhadap STD. Tahap penggunaan kondom yang rendah dan hubungan seks dengan pasangan yang berbilang telah dikesan dalam kalangan mahasiswa yang pernah mengadakan hubungan seks. Oleh sebab itu, terdapat keperluan untuk mengimplementasikan program intervensi pencegahan STD yang berterusan yang akan menyediakan pengetahuan tentang STD yang tepat, konsisten dan terkini dan juga yang menitikberatkan terjemahan pengetahuan tersebut kepada amalan seks yang dapat diterima dan selamat.



## DEDICATION

Dedicated to  
**Professor and Mrs J.A Adigun**  
And my dearest siblings **Tola, Toba, Tunmise, Tomiwa**



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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:

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## LIST OF ABBREVIATIONS

AIDS	Acquired Immunodeficiency Syndrome
ART	Anti-retroviral therapy
CDC	Center for Disease Control and Prevention
DALY	Daily Adjusted Life Years
HBM	Health Belief Model
HIV	Human Immunodeficiency Virus
HBV	Hepatitis B virus
HCV	Hepatitis C virus
HSV	Herpes simplex virus
HPV	Human papilloma virus
HRP	Harm Reduction Program
JAKIM	Department of Islamic Development Malaysia
KAP	Knowledge, Attitude and Practice
MWFC	Ministry of Women, Family and Community Development
NADA	National Anti-Drug Agency
LPPKN	National Population and Family Development Board
NSEP	Needle & Syringe Exchange Programme
OST	Opioid Substitution Therapy
PLWHA(s)	People living with HIV/AIDS
PMCT	Preventing mother-to-child-transmission
STDs	Sexually Transmitted Diseases
SRH	Sexual and Reproductive Health
UNAIDS	United Nations Joint Program on HIV/AIDS
UNESCO	United Nations Educational, Scientific and Cultural Organization

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# CHAPTER 1

## INTRODUCTION

### 1.1 Background

Sexually Transmitted Diseases (STDs) are one of the world's most prominent health challenges especially among young, sexually active individuals (McManus & Dhar, 2008). The occurrence of STDs particularly in developing countries, lead to significant decline in work efficiency among individuals and communities where the mass of the population is below 40 years of age (Hawkes, 2008). In addition to their severe magnitude, STDs are a worldwide growing problem due to their alarming sequel and the fact that they facilitate transmission of human immunodeficiency virus (Adebowale, Tiltloye, Fagbamigbe & Akinyemi, 2013; Fageeh, 2008; Röttingen, Cameron & Garnett, 1999). Over the years, the devastating health, social and economic consequences of STDs has become a shocking reality (Pereira & Carmo, 2014).

STDs refer to a number of distinct clinical syndromes caused by a diversity of organisms including bacteria, fungi, virus and parasites which are typically transmitted through sexual contact such as vaginal intercourse, oral sex and anal sex (Gewirtzman, Bobrick, Conner & Tying, 2011; Casey, Rutledge, Johnson, Boyd, Starr & King 2010). The most common of them being gonorrhoeae, chlamydia, syphilis, trichomoniasis, chancroid, genital herpes, genital warts, human immunodeficiency virus, hepatitis B infection (Svensson, 2013). The presence of one or more of these organisms in an individual may result in clinical syndromes which can range from asymptomatic infection to severe life threatening diseases (Gewirtzman, Bobrick, Conner, & Tying, 2011). Usually, the acquisition and transmission of STDs depend primarily on sexual behavior (Wellings, Collumbien, Slaymaker, Singh, Hodges, Patel & Bajos, 2006) but a few infections such as syphilis and human immunodeficiency virus can also be acquired through non-sexual contact such as blood transfusion, tissue transfer and from mother to child during pregnancy and childbirth. This invariably results in significant morbidity and loss of life among infants (Revue, 2008).

Over the past 500 years, STDs have emerged as a major challenge and mystery to the health of nations. The consequences of these STDs are not linked to their prevalence alone but are considered burdensome because of the chances of causing a wide variety of clinical complications and sequel in infected people who remain untreated or do not properly control the infection. The long-term effects of acquiring any of these STDs include acute symptoms, chronic infections and serious delayed consequences such as pelvic inflammatory disease, ectopic pregnancy, infertility, cancer (cervical cancer, anal cancer, penile cancer), spontaneous abortion, increased susceptibility to HIV infection, still birth, congenital syphilis, conjunctivitis, blindness, untimely death of infants and adults (Gotlieb, Low, Newman, Bolan, Kamb & Broutet, 2014; Fape, 2013; Matkins, 2009; Low, Broutet, Adu-sarkodie, Barton, Hossain & Hawkes, 2006). Apparently, the issue of STDs is not only a problem in the health sector but also in other stratum as it is also directly associated with socio-economic and demographic phenomenon of various nations of the world (Ruikar, 2013). The number of new cases of curable STDs worldwide was estimated to be about 499 million as of 2008 (WHO, 2012). The largest

number of these new infections were found to occur in South and Southeast Asia (Anwar, Sulaiman, Ahmadi & Khan, 2010) and the youths have been reported to shoulder more than half of each of this new infection burden (Revue, 2008; Glasier, Gulmezoglu, Schmid, Moreno & Van, 2006).

A report published in Malaysia by UNAIDS revealed that the country had 70,559 cases of STDs by the end of 2005, out of which 10,663 cases were of AIDS and the rest were of other STDs (Anwar *et al.*, 2010). Those within the age group of 13 to 49 years old have shown an increased tendency in acquisition of these diseases. Recent data from Genitourinary Medicine Clinics in Malaysia has also revealed the rising propensity of STDs especially early syphilis, herpes and genital warts (Awang, Wong, Jani & Low, 2013).

The youthful age is characterized with risk taking; inquisitiveness, involvement in adventurous activities even as maturity is being advanced into (Ross, Dick & Ferguson, 2006). It is however of grave concern that many youths underrate their liability of getting infected and most times, they lack adequate awareness about the futuristic impact of their present actions; thus being exposed to devastating health challenges (Rachel, 2006). Young, sexually active people are distinctly vulnerable to the acquisition of STDs (Shiferaw, Alemu, Girma, Getahun, Kassa, Gashaw & Gelaw, 2011; Revue, 2008; McManus, 2008) because they engage in sex at a very early age, feel they are immune and they continually engage in high risk sexual behaviors such as unprotected sex, sex with multiple partners, inconsistent condom use and drug abuse (Almalki, 2014; Pereira & Carmo, 2008; Klai & Vermeire 2006; Hublet, Maes & Vereecken 2006; De Graaf, Meijer, Poelman & Vanwesenbeeck 2005).

To a great extent, each of these risky behaviors is motivated by age, gender, lack of sexual and reproductive health information, peer pressure, lack of access to friendly sexual and reproductive health services, education and socioeconomic status (Watanebe, Kaneko, Fujita & Motohashi, 2014; Ruikar, 2013; Tan, Pan, Zhou, Wang & Xie, 2007; Ng & Kamal, 2006). Watanebe *et al.*, (2014) in a bid to find out the factors responsible for the involvement of some youths in high risk sexual behaviors discovered that pornography also plays a key role in the risky sexual behavior of many youths. If young people possess background knowledge on STDs and motivation to practice safe sex, it would be translated into positive attitude and safe sexual behavior (Pereira & Carmo, 2014).

The significant role of knowledge on safe sexual practice originates from the social-cognitive theories of behavioral change which posits that all things being equal, people with better STDs knowledge will engage in safer sexual practices (Berten & Van, 2009; Fisher & Fisher, 1992; Ajzen, 1991; Fisher & Fisher, 1992). However, the proof of how knowledge affects sexual behavior is conflicting (Berten & Van, 2009). Some studies have shown that there is very little (Sheeran *et al.*, 1999) or no association (Ng & Kamal, 2006; Wulfert & Wan, 1995) between knowledge and safe sexual practices. In actual fact, knowledge has increased compared to the past decade but it's quite alarming that behavior has not changed. This suggests that knowledge is not the only factor that predicts safe sexual behavior (Ng & Kamal, 2006; Opt & Loffredo, 2004; Lewis, Malow, & Ireland, 1997; Anastasi, Sawyer & Pinciaro, 1999; Gupta & Weiss, 1993). The knowledge on STDs will be ineffective unless youths understand the importance of preventive practices. Consequently, it can be rightly stated that in any community, the

knowledge of its members, their attitude towards sexuality and the actual sexual practice of these persons influence to a great extent, the spread of STDs in that community (Shiferaw *et al.*, 2011).

The control of STDs has been a component of global strategies to achieve the millennium development goal (WHO, 2010). The prevention and control of STDs are based on educating and counseling persons at risk on methods to avoid infection by changing sexual behaviors and using recommended prevention strategy, early identification of infected individuals who may either be symptomatic or asymptomatic, effective diagnosis, treatment and counseling of infected persons (Casey *et al.*, 2010). The increasing availability and access to testing and treatment as well as primary prevention efforts such as increased condom use would also prevent STDs. Some viral STDs can be prevented with vaccines and most can be prevented by correct use of the male latex condoms. For people whose sexual behaviors place them at risk for STDs, correct and consistent use of the male latex condom can reduce the risk of many common STDs, including chlamydia, gonorrhoeae, and trichomoniasis. Screening and prompt treatment of sexual partners has also been effective in preventing reinfection and disrupts transmission of many STDs (Casey *et al.*, 2010; CDC, 2011).

In Malaysia, issues of sex and STDs are not freely discussed since the topic is considered sensitive, impermissible and sometimes seen as a *taboo* because of the cultural and religious settings of the country (Manaf, Tahir, Sidi, Midin, Jaafar, Das & Malek, 2014; Wong, Chin, Low, Jaafar, 2008; Low, 2006). This could result in a major set-back in the awareness of the youths on STDs. Due to the debatable nature of sexual issues, previously, only lessons about the human reproductive system were elucidated to school students; sex education and safe sex practices was not formally taught in schools. However, as of 2011, a Social and Reproductive Health Education module was initiated into Malaysian schools. This syllabus contains issues on reproductive system, puberty, risk of premarital sex, sexual identity and STDs (Wong, 2012).

Some studies on Knowledge, Attitude and Practice (KAP) regarding STDs among young people in Malaysia have been carried out but they are rather infrequent and insufficient; in order to effectively grasp the sequel of the various awareness strategies that have been created, it is imperative that sustained and unrelenting efforts be put in place for the evaluation of KAP regarding STDs prevention in the target community (Shiferaw *et al.*, 2011). The importance of obtaining information about the prevalent knowledge, attitude and practices related to STDs and sexuality in the target community cannot be over-emphasized.

## **1.2 Problem Statement**

The major sexual and reproductive health issues that youths encounter are unwanted pregnancy, abortions and STDs. In Malaysia, the incidence of premarital sex has snowballed over the years; report showed that 8.3% of school students have already had sex with mean age of first sexual encounter being 15 years (Rahman, Ismail & Bahri, 2011). Most of these young people lack awareness of the future consequences of their present action and so majority of them have unprotected sex with multiple partners which makes them vulnerable to acquisition of STDs. The sexual health of youths in Malaysia is thus surfacing to be a matter of earnest concern (Rahman *et al.*, 2011; Low, 2006). Although Malaysia with a population of 28 million people has an economy which is

rapidly blooming, the HIV/AIDS phenomenon is like a nightmare that keeps challenging the country (Low, 2006). As of 2013, Malaysia had 86,324 people living with HIV (PLHIV), with a reported cumulative 101,672 HIV cases, 20,235 AIDS cases and 16,340 deaths resulting from HIV/AIDS, thus there was a total of 85,332 PLHIV by 2013. About 34.3% of these reported cases were among young people age 13 to 29 years (MOH, 2014).

One of the successful ways to control the spread of HIV/AIDS is by preventing the transmission of other STDs (Anwar *et al.*, 2010). In spite of the fostered approaches gearing towards prevention and treatment, STDs still persist to be a serious challenge and they remain an indispensable cause of mortality and morbidity (McManus *et al.*, 2008). STDs cannot be easily combatted because they are rooted in human behaviors. Knowledge and attitude study is therefore an important prevention factor for STDs (Sh, Sann & Rampal, 2010; Kraft, 1993). Series of KAP studies related to STDs have been carried out in Malaysia (Al-Naggar & Al-Jashamy, 2011; Anwar *et al.*, 2010). However, majority of the studies have focused mainly on HIV/AIDS; these studies showed that students possess unsatisfactory knowledge and they are still involved in risky behaviors that may predispose them to acquisition of the disease (Aung, Binti, Wei, Htwe, Nwe, Hassan & Kyaw, 2013; Rahnama, Rampal, Lye, & Abd Rahman, 2011; Sh *et al.*, 2010; Tee & Haung, 2008; Wong *et al.*, 2008; Zulkifi & Wong, 2002; Huang, 1999; Choon, Sapiah & Ismail, 1997).

### **1.3 Justification of Study**

Overtime, researchers have observed that effective preventive measures which can reduce the rate of spread of STDs among youths, can only be achieved through assessment of their knowledge of STDs which include signs and symptoms, predisposing factors to infection, their attitudes and the practices related to the prevention of STDs (Berten & Van, 2009; Sekirme, Tamale, Lule, Wabwire-Mangen, 2001).

University students belong to the young and vulnerable age group of the population and their behaviors may put them at risk of contracting STDs. These set of youths are also considered to be much more enlightened and well informed compared to the general population (Maimaiti, 2010). The KAP possessed by these students as regards STDs can thus be used as an index to measure the level of awareness among youths in Malaysia. Likewise, students are the future stakeholders who may be in a position to implement appropriate preventive measures and some might have to give health education sessions to promote knowledge among the public. Thus, it is essential that these future leaders have adequate and updated knowledge about these detrimental diseases. It is important to assess their KAP in order to develop educational and awareness programs to increase their knowledge and improve their attitude and practice towards prevention of STDs.

## 1.4 OBJECTIVES

### 1.4.1 General Objective

The main aim of this research was to assess the level of knowledge, attitudes and preventive practices related to STDs among university students in Malaysia.

### 1.4.2 Specific Objectives

1. To determine the socio-demographic characteristics of the study population
2. To determine the sexual orientation of the study population.
2. To determine the knowledge level related to STDs prevention
3. To determine the attitude level related to STDs prevention
4. To determine the practices related to STDs prevention (including the risky behaviors that may predispose students to the acquisition of STDs).
5. To determine the association between knowledge, attitude, and practices related to STDs prevention and socio-demographic characteristics.
6. To determine the influence of socio-demographic characteristics on knowledge, attitude and practices related to STDs.

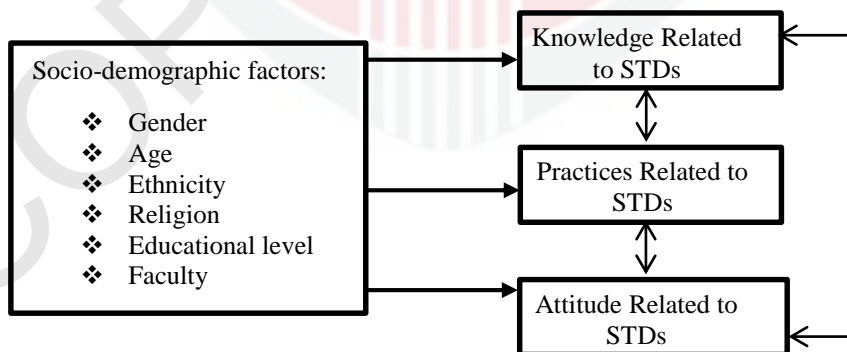
### 1.5 Research Hypothesis

This study was based on assumptions of STDs among youths in Malaysia and other countries in the diaspora:

There is a significant association between knowledge, attitude and practices related to STDs prevention.

There is a significant association between knowledge, attitude and practices related to STDs prevention and socio-demographic characteristics of students in the studied community.

### 1.6 Conceptual Framework



**Figure 1.0: Conceptual Framework for Knowledge, Attitude and Preventive Practices related to STDs among university students in Malaysia**



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