ASSOCIATION BETWEEN KNOWLEDGE, ATTITUDES AND SEXUAL PRACTICES AMONG UNMARRIED INDONESIAN YOUNG ADULTS: A STUDY FROM INDONESIAN YOUNG ADULT REPRODUCTIVE HEALTH SURVEY (IYARHS) 2007

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ABSTRACT:

The main aim of this study is to explore the unmarried Indonesian young adult's sexual reproductive health experiences. Even the number of Indonesia young adult's practicing sex before married was relatively low comparing with the other countries (less than 6.5%). The issue should be given an attention because the number tends to increase from 5% to 6.4% between 2002 and 2007.

This study is derived the secondary data from quantitative research of Indonesia Young Adult's Reproductive Health Survey (IYARHS) 2007. Among 6887 selected respondent between 20-24 years old, it was illustrated that the most of respondents (88.3%) have not practiced premarital sex, while from 11.7% of respondents who had engaged in sex before married, 1.6% of them practicing unsafe sex or sex without condoms. Multinomial logistic regression indicates that knowledge of SRH and attitudes had an influence on young adults' sexual practices controlling for social-demographic factors, namely, education, resident, sex, age and source of SRH information.

Therefore, further young adult's sexual reproductive education programs should scale up to increase unmarried Indonesian young people's knowledge and to shape positive attitudes towards their sexual practices.

KEY WORDS: PREMARITAL SEX/ KNOWLEDGE/ ATTITUDES/ SEXUAL PRACTICES

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CHAPTER I
INTRODUCTION

1.1 Background and Rationale of Study

The globalization forces have affected young people's life style and sexual behavior. Mass media, materialism, migration and urbanization may enlarge their chance of sexual activity (Salvago & Cheetham, 2003). Present generation of adolescents experience earlier puberty while they get married later than in the past. Thus, they have greater chance to engage in premarital sex. (Cheetham, 2003; Silva, Karunathilake, & Perera, 2009). Issues of concern related to premarital sex among young people are unwanted pregancy, abortion and sexually transmitted infections (STI) including HIV/AIDS (Silva et al, 2009).

According to the United Nations, youths are defined as those aged 15 to 24 years old, adolescents as those aged 10 to 19 years old and young people from 10 to 24 years old. The United Nations Population Fund estimated that around 16 percent of the world population was youth of 15-24 years old in 2006 (UNFPA, 2007). In 2005, the estimated population of young people in the world is 1.5 billion and there is a significant rise from half a billion in 1951 (UNFPA, 2005). They are more concentrated in Africa and Asia, around 78 percent, while nine in ten youths are in developing countries (UNFPA, 2005).

Nowadays, young people's sexual and reproductive health (SRH) is complicated because of the sensitivity and controversial issues towards the subject. Young people tend to be marginalized in some societies. As a result of lack of knowledge on sexual and reproductive health (SRH) and access to services, less life experience and sexual exploitation, they are more vulnerable to sexual risk behavior than those who are more mature (Silva et al, 2009; Shaw, 2009).

The challenges of addressing young people's SRH encounter the whole aspects of religious, cultural, social and community attitudes (Mayhew, 2006).

Literature demonstrated that differences of social expectations and norms of young males and young females play a key role in controlling their sexual attitudes and behavior. Furthermore, young ladies face strict cultural norms regarding their sexuality, particularly relating to their virginity. They are expected to keep their virginity untill marriage and face sexual double standards and barrier to contraceptive use (Ricardo, Barker, & Rocha, 2006; Christine, 2006; Jameela, 2008; Utomo & Mc Donald, 2009).

In some countries, there are complicated dificulties for adolescents and unmarried young adults to access SRH information and services. They face misconception of SRH information and inappropriate SRH services. Moreover, there are a lot of unmarried young people's personal barriers to contraceptive use. For example they fear of their parents finding, have a difficulty in negotiating condom use with partner, and the consider side effects of contraceptive use (Salvago& Cheetham, 2003; Mohammadi et.al, 2006; Utomo & Mc Donald, 2009). Though there are services provide to young people, they are unwilling to seek help nor face difficulty to overcome these barriers. Some efforts have been done to inform, educate and communicate SRH matters in an appropriate action to overcome the problems (UNFPA, 1998).

In Indonesia, sex issues are taboo, considered as matters only for married couples. Young adults' SRH needs are ignored. Adolescents and young adults are reluctant to discuss about sexual matters (Jameela, 2008). The topic of sexuality is marginalized in health and education agenda. Hence, there are inappropriate sex educations providing in school. Moreover, the parents have a limited of experiences concerning sexual matters. They face a difficulty to communicate with their children, beside that the children have a little capacity to deal with the emotional and personal dimensions of relationships (Utomo & McDonald, 2009). For those reasons, Indonesian young people face many challenges to maintain sufficiently knowledge of SRH and safe sex to prevent serious situations, such as unwanted pregnancy, abortions, STI including HVI/AIDS (Hidayat, 2005).

As a result of adolescent's earlier puberty and delay in marriage later than in the past, Indonesian young people experience a longer period of risk to engage in premarital sex. Furthermore, various factors trigger premarital sex in the globally

changing situations (Hidayat, 2005). Several studies found that Indonesian young people have to deal with daily sexuality explicit materials from the mass media, the internet, entertainments and even their peers. The media has encouraged young people learning about a recreational sex, while rarely given information about safe sexual practices (Utomo & McDonald, 2009). Based on Indonesia Demographic and Health Survey (DHS) 2003 there were less than 1 percent of women and 5 percent of men who admitted openly that they have had sexual intercourse. In 2007, the incidence of premarital sex increased slightly to 1.3 percent among girls and 6.4 percent among boys (BPS, 2004, BPS, 2008).

According to Indonesia Family Welfare Law no.10/1992, family planning services are not provided for unmarried young people (Jameela, 2008). The government promotes the national contraceptive programs for married couples only, while adolescents, young adults and even single people have a greatly strict access contraception services and methods. (Pangkahila, 2001; Utomo & McDonald, 2009).

Unmarried sexually active young people are seldomly reported using contraception, as they have limited knowledge (Situmorang, 2003). Furtehermore, Utomo and colleagues' research (2001) presented that because of unaccessibility to contraception services, the national estimation of an abortion level shows a highly number, 33 abortions to 100 live births per year. (Utomo & McDonald, 2009). The survey found that an unwanted pregnancy is often ended in abortion (60%), while the rest (40%) continue their terms (BPS, IYARHS 2007, 2008). Moreover, cited from UNAIDS (2002), in 2001 there were 23 percent are in at 15-24 group age among 635 reported in Indonesia's AIDS cases, while the highest mode of transmission is through heterosexual intercourse, accounted for fifty five percent. (Utomo & McDonald, 2009).

Due to Indonesian policy concerning unmarried young adult's SRH, this thesis will examine the relationships among knowledge, attitudes, and sexual practices concerning the social demographic factors of SRH. It is important that young people, particularly unmarried young adults, have appropriate knowledge and positive attitudes toward their sexual and reproductive health.

1.2 Research Statement

Recently, global challenges of SRH force young people facing several difficulties. Sex before marriage is largely practiced in all regions of the world (Cheetham, 2003; Indralal De Silva, Karunathilake, & Perera, 2009). The unmarried young people find barriers in receiving SRH information, which leads to misconceptions and tends to expose them to consequences of their risk behavior. These situations push them into unsafe sexual activities, unwanted pregnancies and STI including HIV (Lema, Katapa , Musa, 2008).

There are around 20 percent of the Indonesian population under 15-24 age group. The number was growing from 35 million to more than 42.2 million between 1980 and 2007 (BPS, 2008). Even though the number of Indonesian young adults practicing sex before marriage was relatively low (less than 6.5%) compared with other countries, Thailand (51%), Cambodia (36%), and Vietnam (65%) (BPS, 2008; Bergenstrom & Isarabkahdi, 2009; GSO, 2006). The issue should be given an attention because the number tends to increase from 1% to 3% for females and from 5% to 6.4% for males between 2002 and 2007 (Hidayat, 2005; BPS, 2003; BPS, 2008). The main aim of this study is to explore sexual practices related especially to safe sex behavior among unmarried Indonesian young adults in Indonesia.

Following previous studies, safe sex practices for unmarried people in this study include abstinence or not practicing premarital sex and using condoms for sexually active people (Simon & Paxton, 2004; Underhill et al, 2007). There are three important components in this study, unmarried young adult's SRH knowledge, attitudes, and their sexual practices. Sexual practices , whether unmarried Indonesian young adults practice safe sex or not, the study's dependent variable, is the main focus of this thesis. The independent variables are their knowledge about risks of female pregnancy, contraceptive methods and condom use and their attitudes towards premarital sex and contraceptive use. The association between the dependent variable and the independent variables will be examined using a statistical method of multinomial logistic regression model controlling for socio- demographic factors.

1.3 Research Questions

1. Does knowledge about the risk of female pregnancy, contraceptive methods and condom use influence unmarried Indonesian young adult's sexual practices?
2. Does attitude towards premarital sex and contraceptive use influence unmarried Indonesian young adult's sexual practices?

1.4 Scope of Research

This research focuses on the unmarried Indonesian young adults aged from 20 to 24 years old. The respondents are both males and females living in urban and rural areas from 33 Indonesian provinces. There are 6,887 unmarried Indonesian young adults selected from the Indonesian Young Adult's Reproductive Health Survey (IYARHS) 2007 with different levels of education.

1.5 Research Objectives

1.5.1 General Objective

This study analyzes the relationship between sex practices and knowledge and attitude regarding reproductive health (SRH) among unmarried Indonesian young adult.

1.5.2 Specific Objectives

1. To examine how knowledge about the risk of female pregnancy, contraceptive methods and condom use influence sexual practices among unmarried Indonesian young adults.
2. To assess how attitudes towards premarital sex and contraceptive use influence unmarried Indonesian young adult's sexual practices.

CHAPTER II
LITERATURE REVIEW

2.1 Relevant Theory

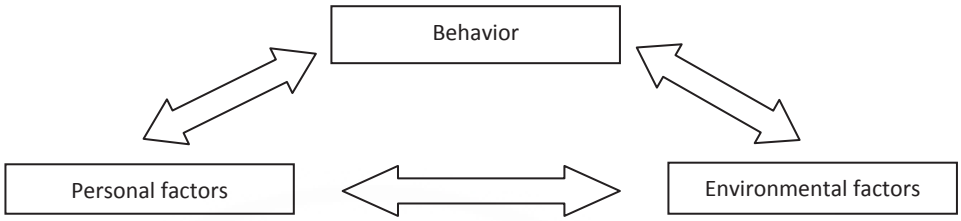
The main focus of this study is to analyze the relationship between young adult's sexual practices and their knowledge and attitudes. Moreover, there are social demographic factors as controlling variables to young adult's sexual behavior. According to previous research, two theories, Social Cognitive Theory (SCT) and Health Belief Model Theory (HBM), explain the linkage among these three components. Social Cognitive Theory highlights behavior, including sexual behavior, as both a consequence and determinant of personal and environment factors. Health Belief Model Theory expands to focus on the relationship between individual health attitudes, practices, and general health motivations in determining health risk behavior. The two theories thus can be well applied in this study on the relationship between young adult's sexual practices and their knowledge and attitudes.

2.1.1 Social Cognitive Theory

This theory explains a framework of three components while they affect each other, between personal factors and environments of social human believes which determining their behavior. In turn, behavior is adapted by personal factors which are influenced by external environments (Baranowski, Perry, & Parcel, 2006).

The interventions of personal factors of cognitive, affective and biological events in behavior influence someone thinking and practicing. The stage of self-control, observational learning, reinforcement, self-efficacy and emotional coping responses of person lead them to outcomes of behavior. Environmental factors, such as family members, friends and mass media, can affect individual behavior and create person perceptions (Baranowski et al, 2006).

Figure 2.1 Social Cognitive Theory

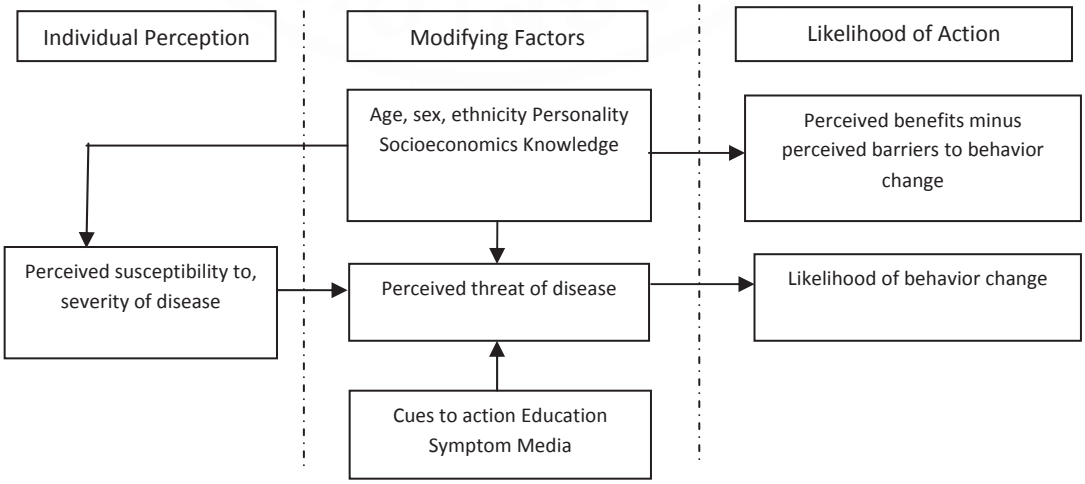


Personal factors in this thesis are defined as young adults' knowledge and attitudes, which influence their sexual practice behavior. Social demographic factors as environment factors have a controlling power to shape young adult's behavior.

2.1.2 Health Belief Model Theory

Health Belief Model Theory expands and clarifies health behavior focusing on the relationship of the individual health attitudes, practices and general health motivations to distinguish health risk behavior. The value-expectancy concepts put together and it is interpreted as the four central believes; (1) individual perceptions of the perceived susceptibility; (2) the perceived severity of conditions; (3) the perceived efficacy of the behavior in dealing with conditions; (4) the perceived barriers to adopt the behavior (Janz & Victoria, Champion, 2007).

Figure 2.2 Health Belief Model Component and Linkage



The four central believes have desire to avoid risks, while it will continue with the belief of person prevention of unexpected conditions. The HBM theory has been

used to examine a variety of the health behavior, including sexual risk behavior and transmission of sexually transmitted infections (STI) (Twente, 2010). Some studies have applied to the health behavior, like preventing sexual risk behavior. The knowledge may determine perceptions of threatening unwanted pregnancy or sexual transmitted infections. Thus, understanding of perceived benefit can overcome the barriers of doing abstinence or using a condom as behavior changes (Wang, 2009).

Knowledge as modifiying factors of perceived threat of sexual risk behavior can shape attitutes of premarital safe sex. Eventually, young adults perceive benefits of positive attitudes and overcome barriers to practice safe sexual behavior.

2.2 Relevant Previous Studies

Numerous studies showed that knowledge is an essential precursor of sexual risk behavior reduction, as a result of sexual reproductive health (SRH) knowledge increase young people's awareness towards safe sexual practices (Anwar, Sulaiman, Ahmadi, & Khan; Bankole, Singh, Hussain, & Oestreicher, 2009; Lindberg, Ku, & Sonenstein, 2000). Even though the right knowledge alone is insufficient to produce changes in attitudes and behavior, it is a necesary component towards a person's health development into practices (Anwar, et al, 2009). Other research examined how knowledge, attitudes and behavior have a significant relationship among each other (Mohammadi et al, 2006).

There are commonly widespread misperceptions whether providing information to young people will encourage them practicing an earlier sexual activity, despite the evident contrary (Shaw, 2009). In some countries, there are complicated barries for unmarried young people to access SRH information and services (Salvago& Cheetham, 2003; Mohammadi et.al, 2006; Utomo & Mc Donald, 2009). In Indonesia unmarried sexually active young people is seldomly reported using contraception, because of their limited knowledge (Situmorang, 2003). Their lack of sufficient knowledge of SRH and safe sex are likely to force in risk behaviors such as unwanted pregnancy, abortion, STI including HVI/AIDS (Hidayat, 2005).

Concerning social, cultural and religious aspects is necessary in adressing young adult's SRH issues. Several literature about South East Asia wherein Indonesia reviewed that social and norm expectations had differences between young men and women. For example, sexual double standard on never practice premarital sex for women relating to their virginity and avoiding sexually emotional appearances, whilst for men premarital sex and sexual expression are more accepted. (Ford et al, 2007; Utomo & Mc Donald, 2009).

Furthermore, some studies found that there are inconsistencies between young people's positive attitudes and their sexual practices. The high proportion of them would like to postpone sex until after marriage, and a lot of unmarried people feel that a relationship without sex is desirable, but many are sexually active (Shaw, 2009). These conditions are likely to indulge young adults in unsafe sexual activities making them vulnerable to STI including HIV. Although condom use has been successfully promoted affecting an increase of percentage condom use at the last sexual intercourse, but the levels still remained very low (Lema et al, 2008; Hong & Chhea, 2009; Othero, 2009).

In the United State changes towards safer sexual behavior was reported happened after implementing teenagers' SRH education. There are a decrease percentage of unsafe sexual practices, an increase number of condom use and a fallen number of the teenage birth rate among young people (Lindberg et al, 2000; Underhill et al, 2007). The abstinence strategy is effectively reducing sexual risk behavior among young people. Thus, encouraging them delaying the first age sexual intercourse is an approach for inexperienced sexual adolescents, and to cease the premarital sex for sexually active person. The considerable benefit of the abstinence strategy is because mostly young people, especially early teenagers might have insufficient knowledge and lack of choice methods to protect themselves from unintended consequences. On the other hand, using a condom needs knowledge to use correctly and consistently, because highly failures in using condoms mostly happened among those who have been sexually active during the early adolescent (Simon & Paxton, 2004; Underhill et al, 2007). Thus, it is necessary of condom use education among young people.

Research of sexual vulnerability pattern among adolescents and youths in Sri Lanka and China discovered how they practice unsafe premarital sex. The sexual activities among the unmarried people are often sporadic, unplanned, infrequent and less use of condom or contraceptive (Silva et al, 2009).

On the other hand, base on some studies many adolescents and young adults have been eager to increase their awareness of human sexual behavior, especially in terms of knowledge, attitudes, and safe sexual practices (Silva et al, 2009). One study in Cambodia analysed that knowledge and attitudes were significantly indicators related to HIV prevention and sexual practices improvement substantially (Hong & Chhea, 2009).

2.3 Social-Demographic Factors

2.3.1 Education

Education is an important role to transfer SRH knowledge to adolescents and young adults. One finding showed that education supports provided significantly better knowledge outcomes. A study by Bosh showed that adolescents with secondary level education have two times higher SRH knowledge than their friends with less than primary level education (Khan, 2009). Moreover, one study in Sub-Sahara showed that young men with secondary or the higher education are more likely to use condom than their counterpart (Bankole et al, 2009).

2.3.2 Residence

Various studies prove that there are significant effects of residence on knowledge and awareness towards SRH practices. In some part of Africa, Latin America and Asian countries, studies found that the urban people have more levels of knowledge acceptances about HIV/AIDS preventions and are more likely to practice a condom use than the rural people. It is explained that the urban people commonly have a higher social status, a better education and an easier SRH access than the rural people (Hong & Chhea, 2009; Chanthavong, 2009).

2.3.3 Sex

One study in Kenya found that male students are more sexuality active than female students and the similar patterns happened in Malaysia and China. Moreover, the boys initiated earlier sexual activity than girls, while the early sex debut was more likely to be associated with the risky sexual behavior. Nevertheless, there are more young females believed in possibilities of having a relationship without sex than young males. Hence, compare with males, females show a low tendency to engage in premarital sex (Anwar et al, 2009; Silva et al, 2009; Ma et al, 2009; Othero et al, 2009)

The findings reported that adolescent males are less motivated to receive SRH information formally. (Duberstein & Singh, 2008; Nikula et al, 2009). Boys are less likely to discuss sexual matter with their parents than girls. However, some abstinence education massages are targeted only at females reaching out to young males with the gender sensitive of SRH (Lindberg et al, 2000).

2.3.4 Age

Derived from several studies the older teenagers are more possible to initiate sexual intercourse and become sexually active than the younger. Moreover, age has relation with condom use, while the younger adolescents are less likely to use a condom at the first sexual intercourse (Ma et al, 2009). In contrast, the older young people reported are preferably to use a condom most as the first contraceptive use method when they had first sex or with new or casual partners (Bankole, et al., 2009). A lot of research explained that young adults have knowledge and experiences better than early adolescents. Even though there are different information needs between the older and younger age (Khan, 2009).

2.3.5 Source of Information

A study in Pakistan found that there are many sources of knowledge of HIV information such as family, medical personnel, friends/neighbors, the TV/radio and the print media. After getting information, people have a positive effect on their knowledge towards awareness, attitudes and sexual practices (Chanthavong, 2009).

Friend

In Indonesia a lot of studies reported that the peer pressure forces young people to connect with risky attitudes and behavior (Moeliono, 2003; Hidayat, 2005). Young adults are more comfortable to discuss the sexual behavior and sensitive daily topics with friends than their parents and adults (Moeliono, 2003; Hidayat, 2005; Chanthavong, 2009). One study in Kenya described that there are a high proportion of university students to become sexually active at the first and the second years of school, as peer pressure (Othero, et al., 2009). Therefore, peer education should become an important approaches addressing SRH context (UNFPA, 2007).

Family

A study in Pakistan found that sources of knowledge of HIV prevention are parents, siblings and other family members (Chanthavong, 2009). Regarding teenager's behavior, parental attitudes considerably influence their children's sexual practices (Thornton & Camburn, 1989; Moeliono, 2003; Hidayat, 2005).

School

A number of studies have shown that sex eduction programs in the schools increase student's knowledge of SRH and contraception methods. It showed significant improvement in knowledge and attittude after the education programs (Dawson, 1986; Jaiswal et al, 2005)

Mass Media

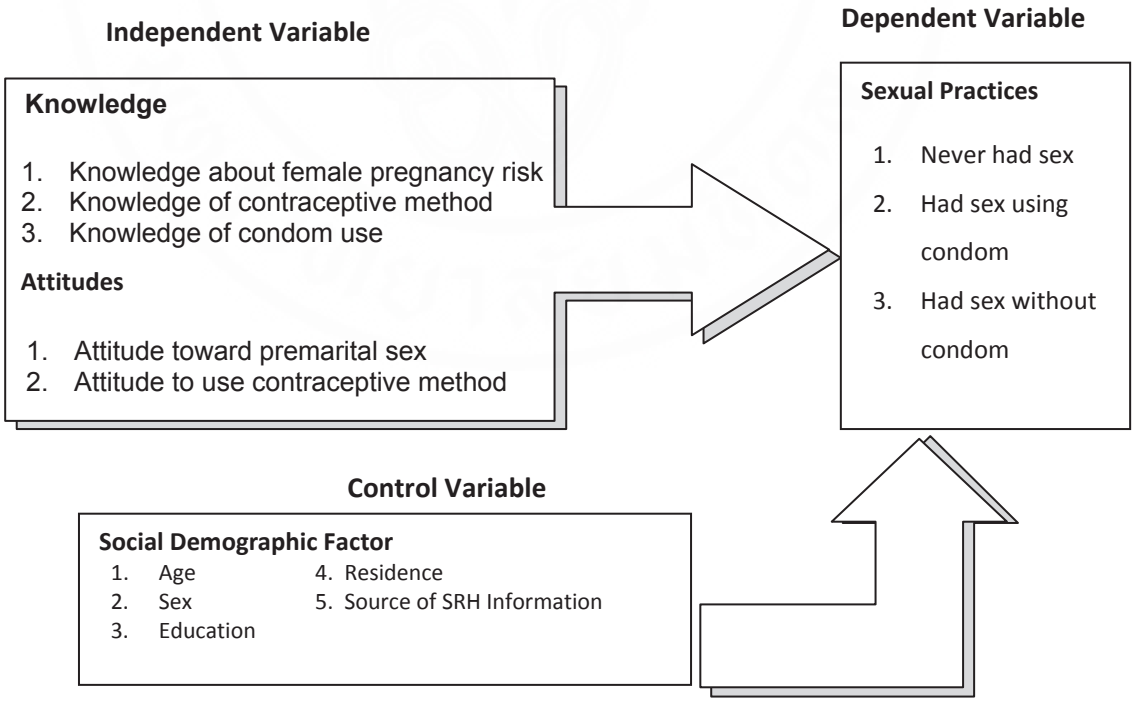
A study in 12 countries in Sub-Sahara Africa showed that regularly exposure of television program was a reason for condom use at the last intercourse among young men (Bankole, et al., 2009). Moreover, according to the Demographic Health Survey (DHS) from some countries that cited from the United Nations (2002) found that the radio and televisions have important roles for disseminating information of SRH matters including HIV/AIDS. A positive effect on the knowledge towards awareness and attitudes after watching weekly TV programs, reading the newspapers, magazine articles, and surfing in the internet about this issue in Uganda and Thailand (Chanthavong, 2009).

2.4 Research Conceptual Framework

Based on the literature review a research conceptual framework has been developed wherein showing theoretical supports of selected variables. Conceptually, the sexual practices are influenced by knowledge and attitudes controlling for socio-demographic factors (Baranowski et al, 2006).

In this study sexual practice is defined into 3 categories; never had sex (abstinence), have sex using a condom, and have sex without using a condom. This classification of the dependent variable is based on the safe sex concept. Previous studies explain that unmarried young adults' safe sex practices include practicing abstinence and using condom in their sexual intercourse (Simon & Paxton, 2004; Underhill et al, 2007).

Figure 2.3 A Conceptual Framework



The framework is divided into three parts. In the first part, the independent variables consist of knowledge and attitudes, as personal factors in Social Cognitive Theory and as part of individual perceptions in Health Belief Model Theory. The second part includes control variables equivalent to environment factors in SCT and

modifying factors in HBM theory. Finally, the sexual practices as the dependent variables are considered as behavior in SCT and as likelihood of action in HBM theory. The probability of sexual experiences is presented by equation:

$$Y = \alpha + \beta 1\,(\text{knowledge}) + \beta 2\,(\text{attitude}) + \beta 3\,(\text{modifying factors})$$

In which:

- Y is probability of practicing safe sex
- **α** is a constant
- β1, β2 and β3 are coefficients

Individual perceptions include:

- *Knowledge:* risk of female pregnancy, contraceptive methods and condom use*;*
- *Attitude:* towards premarital sex, and contraceptive methods*;*

Modifying factors include: age, sex, education, resident, and source of SRH information.

2.5 Research hypothesis

1. The young adult who has knowledge of female pregnancy, contraceptive method and condom use is more likely to practice safe sex.
2. The young adult who has approval attitudes towards premarital sex is more likely to practice unsafe sex.
3. The young adult who has an intention attitude towards contraceptive method use are more likely to practice safe sex.

CHAPTER III
RESEARCH METHODOLOGY

3.1 Research Design

This study uses the secondary data from quantitative research of Indonesian Young Adult's Reproductive Health Survey (IYARHS) 2007. This cohort and cross sectional study was carried out by Indonesia Statistic Bureau (BPS) and Macro International Inc at the request of the National Family Planning Coordinating Board (BKKBN). The 2007 IYARHS sample was aimed to provide the reliable estimation of key characteristics for never-married Indonesian males and females' young adult aged 15-24 in 33 provinces (BPS, IYARHS 2007, 2008).

In IYARHS 2007 there were 1,694 selected census blocks (CBs) from the list of CBs Indonesia's National Labor Force Survey (Sakernas), 676 in urban areas and 1,018 in rural areas. The number of selected CBs was proportional to the number of households in each district. For each selected CB, a complete household listing and mapping was used for the second-stage sampling. There were on average 25 households systematically selected from each CB. Moreover, the data collection involved many interviewing teams, and was conducted between June 25 and December 31, 2007 (BPS, IYARHS 2007, 2008).

In total, there were 19,311 unmarried Indonesian young adult interviewed in IYARHS 2007, divided into 2 age groups; 15-19 and 20-24. For respondents age 18-24, consents were sought before starting the interview, while respondents under 18 years old required parental approval. Although the survey exercised private face to face interview, in fact the respondent's parents may have introduced bias due to influence of parent appoval or attandace (BPS, IYARHS 2007, 2008).

In the interviewed households, 12,541 male and 9,398 female respondents were identified for an individual interview. Completed interviews were conducted with

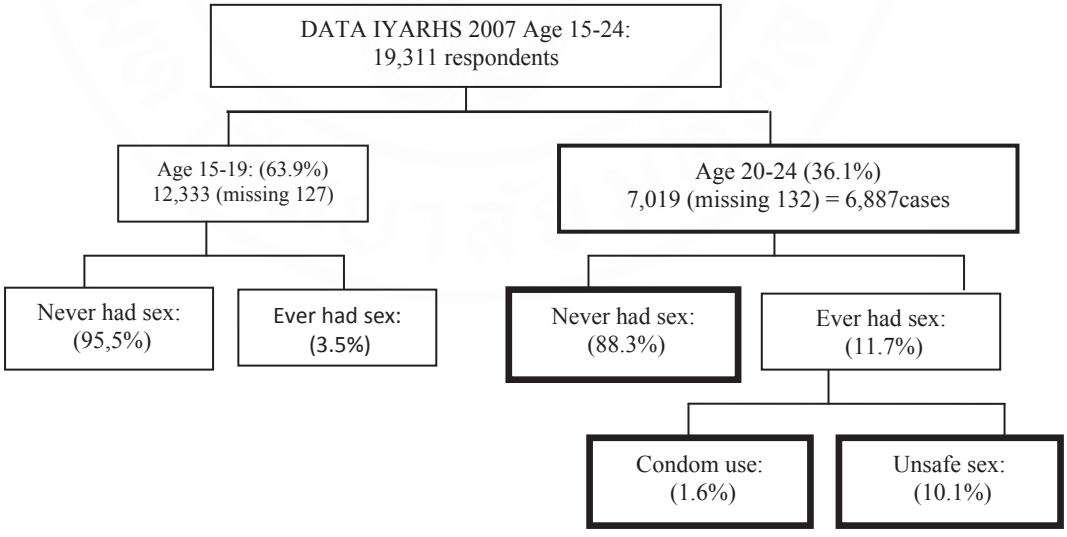
8,481 women and 10,830 men, yeilding response rate of 90 and 86 percent, respectively. (BPS, IYARHS 2007, 2008).

3.2 Sampling Method

This study selects the oldest age of the unmarried Indonesian young adult, 20-24, because of their higher proportion for premarital sex experiences than the younger age. The respondents were both males and females living in urban and rural areas. They had different levels of education.

The justification of selection 20-24 age group sample in this study is divided into three groups base on the respondent's sexual experiences as categorized into never had sex, had sex using condom and had sex without using condom or unsafe sex.

Figure 3.1 Justification of selection 20-24 age group samples



The cases are selected from 7,019 respondents of 20-24 age groups who answered the question whether they ever had sex or never. There are 46 missing cases, which are young adults who did not answer the questions. Moreover, after cleaning the data from missing cases, this study has 6,887 cases in total, which are 6,078 never had sex cases (88.3%), 113 practiced sex using condom (1.6%) and 696 practiced unsafe sex cases (10.1%).

3.3 Operational Definition and Scale of Measurement

3.3.1 Operational Definition

This thesis uses a quantitative approach using a secondary data set. There are in total 6,887 unmarried young adults of 20-24 age group selected from IYARHS 2007, which are 2,615 female respondents and 4,272 male respondents.

a. Dependent Variable

The dependent variable is sexual practices, identified as whether a respondent practiced safe sex or not. The variable is measured in a nominal scale within 3 categorical variables; (1) Never had sex, (2) Had sex using condom and (3) Had sex without condom. This variable is derived from 2 questions (Q.705 and Q715), (1) whether or not young adults had ever had sex before, (2) for those who had sex, whether or not the individual used condom in the last sex. Note that those who did not use a condom, though may use the other contraceptive method, are coded as category (3).

b. Independent Variable

- Knowledge on a fertile period between 2 menstruations which refers to a period that a female will have a chance to get a pregnant if have sex without any contraceptive use (Q.209). The variable is categorized into 2 groups in a nominal scale; 0) No and 1) Yes.
- Knowledge on a female pregnancy risk from one sexual intercourse. This variable assesses whether a respondent knows that a women can become pregnant by having one sexual intercourse without use any contraceptive methods (Q.211). This variable is categorized into 2 groups in nominal scale; 0) No and 1) Yes.
- Knowledge on pregnancy preventions (Q.211A). This variable assesses whether a respondent knows about ways to prevent pregnancy, categorized into 2 groups in a nominal scale; 0) No and 1) Yes.
- Knowledge on contraceptive methods (Q.212) refers to whether a respondent knows contraceptive methods or not. Knowledge on each method will be made a

dummy variable; 1) Yes and 2) No. Then knowledge score of each method is constructed by adding up from 1 to 13 as interval scale.

- Knowledge on condom use as a pregnancy prevention (Q.221) is categorized into 2 groups; 0) No and 1) Yes.
- Knowledge on whether condom use can protect against HIV/AIDS and other STI (Q.221) is categorized into 2 groups in a nominal scale; 0) No and 1) Yes.
- Attitude approves if woman has premarital sex (Q.718) is categorized into 2 groups in a nominal scale; 0) disapprove and 1) approve
- Attitude approves if man has premarital sex (Q.719) is categorized into 2 groups in a nominal scale; 0) disapprove and 1) approve
- Attitude towards use of contraceptive method intention (Q.213) is categorized into 2 groups in a nominal scale; 0) disapprove and 1) approve

c. Control variable

- Education refers to the highest level of the school that the respondent attended (Q.105). It is categorized into 3 groups as an ordinal scale; 1) primary school or less, 2) secondary school and 3) higher than secondary school.
- Place of residence refers the geographical area wherein the respondent lived at the time of survey in 2007 (Q.5) and is divided into 2 groups in a nominal scale; 0) Urban and 1) Rural.
- Sex (Q. 11) is defined as 2 categories in a nominal scale; 0) Female and 1) Male
- Age (Q.103) is defined as how old the respondent at his/her last birthday when the survey was held in 2007 and measure by a ratio scale from 20-24.
- Information source of the SRH defines where a respondent had learned about SRH matters (Q.203). Each source will be made as a dummy variable; 0) if that source not indicated and 1) if source was mentioned.

3.3.2 Description of variables and scale of measurement

To describe the variable, group categories and scale of measurement, conducted tables is made.

Table 3.1 Descriptions of variables and scales of measurement

Variables	Categories	Scale
THE DEPENDENT VARIABLE		
Sexual Practices	1 = Never had sex (abstinence) 2 = Had sex using condom 3 = Had sex without condom	Nominal
THE INDEPENDENT VARIABLES		
Knowledge on female pregnancy risks		
V.1. Fertile period between 2 menstrual periods	0= No 1= Yes	Nominal
V.2. Pregnancy risk from one sexual intercourse	0= No 1= Yes	Nominal
V.3. Pregnancy preventions	0= No 1= Yes	Nominal
The knowledge on contraceptive methods		
V.4. Female sterilization	0= No 1= Yes	Nominal
V.5. Male sterilization	0= No 1= Yes	Nominal
V.6. Pill	0= No 1= Yes	Nominal
V.7. IUD	0= No 1= Yes	Nominal
V.8. Injectable	0= No 1= Yes	Nominal
V.9. Implants	0= No 1= Yes	Nominal
V.10. Condom	0= No 1= Yes	Nominal

V.11. Intravag/Diaphragm	0= No 1= Yes	Nominal
V.12. Lactational amenorrhea method (LAM)	0= No 1= Yes	Nominal
V.13. Rhythm or periodic abstinence	0= No 1= Yes	Nominal
V.14.Withdrawal	0= No 1= Yes	Nominal
V.15. Emergency contraception	0= No 1= Yes	Nominal
V.16.Other methods	0= No 1= Yes	Nominal
Knowledge on condom use		
V.17. Condom as a pregnancy prevention	0= No 1= Yes	Nominal
V.18. Condom can protect against HIV/AIDS and other STD	0= No 1= Yes	Nominal
Attitude toward premarital sex		
V.19. Approved of woman having premarital sex	0= Disapprove 1= Approve	Nominal
V.20. Approved of man having premarital sex	0= Disapprove 1= Approve	Nominal
Attitude towards use of contraceptive methods		
V.21. Intention to use family planning methods	0= Disapprove 1= Approve	Nominal
THE CONTROL VARIABLES		
Socio-demographic factors		
v.1.Education	0= primary school or less 1= secondary school 2= higher than secondary school	Ordinal

v.2. Place of residence	0= Urban 1= Rural	Nominal
v.3. Sex	0= Male 1= Female	Nominal
v.4. Age	From 15-24	Ratio
Source of SRH information		
V.5. Friend	0= No 1= Yes	Nominal
V.6. Family	0= No 1= Yes	Nominal
V.7. School	0= No 1= Yes	Nominal
V.8. Mass Media	0= No 1= Yes	Nominal
V.9. Others	0= No 1= Yes	Nominal
V.10. Never get information	0= No 1= Yes	Nominal

3.4 Method of Analysis

Two methods of analysis are employed in this study.

- Fist, descriptive analysis describes respondent's characteristics and their knowledge and attitudes distribution.
- Second, the multivariate analysis focuses on examining the effect of independent variables on the dependent variable. The major approach for multivariate analysis in this thesis is identifying difference in various estimators using multinomial logistic regression model. It is followed by predicted probabilities of polytomous outcomes for verification purpose and better interpretation.

CHAPTER IV
PRESENTATION OF RESEARCH FINDINGS

This chapter presents research findings of the study. The chapter is organized into two sections: descriptive analysis and multivariate analysis. The descriptive analysis section describes the samples' socio-demographic characteristics. The multivariate analysis section estimates the relationship between the dependent variable and independent variables employing multinomial logistic regression model. The first part of the multivariate analysis assesses the relationship between the respondents' knowledge about sexual reproductive health (SRH) and attitudes towards premarital sex and contraceptive use separately- as the independent variables and sexual practices- as the dependent variable. The second part of this section examines the relationship between both knowledge and attitudes as independent variables, and sexual practices as the dependent variable in the same model. The last part shows relationship between knowledge and attitudes as the independent variables controlling of selected socio-demographic factors.

4.1 Socio-Demographic Characteristics of Samples

The sample size for this study as shown in Figure 3.1 is 6,887. They include unmarried young adult males and females aged 20-24 who were respondents of IYARHS 2007. Five socio-demographic characteristics of the samples including sex, residential area, age, education, and source of reproductive health information are shown in table 4.1. Among the studied samples, there are more males than females (62% and 38% respectively). The proportions of the study young adults living in urban and rural areas are almost equal (53.5% and 46.5% respectively). With regard to age group, around a quarter of the study young adults (25.2 %) aged 20 years old. The proportions aged 21, 22, 23, and 24 are 22.8%, 19.9%, 17.2%, and 14.9% respectively. The majority of respondents have completed secondary level (59%). The study young

adults attained higher than secondary level account for 22.7% and primary or less than primary level for 18.3%.

Table 4.1 Socio-Demographic Characteristics of Samples

Variable	Number (N=6,887)	%
Sex		
Male	4,272	62.0
Female	2,615	38.0
Residence		
Urban	3,684	53.5
Rural	3,203	46.5
Age		
20	1,737	25.2
21	1,567	22.8
22	1,368	19.9
23	1,188	17.2
24	1,027	14.9
Education		
Primary school or less	1,257	18.3
Secondary school	4,066	59.0
Higher than secondary school	1,564	22.7
Source of SRH Information		
Friend	3,476	50.5
Family	758	11.0
School	2,040	29.6
Mass Media	1,141	16.6
Other sources	742	10.8
No Source	501	7.3

When source of information on SRH among the respondents is considered, descriptive analysis indicates that around a half of the respondents (50.5%) reported that they obtained SRH information from friends, whereas 29.6%, 16.6%, 11.0%, and

10.8% reported that they received the information from school, mass media, family and other sources respectively. There are also 7.3% of respondents never have received SRH information from any sources.

Figure 4.1 Proportions of Sexual Practices among Respondents

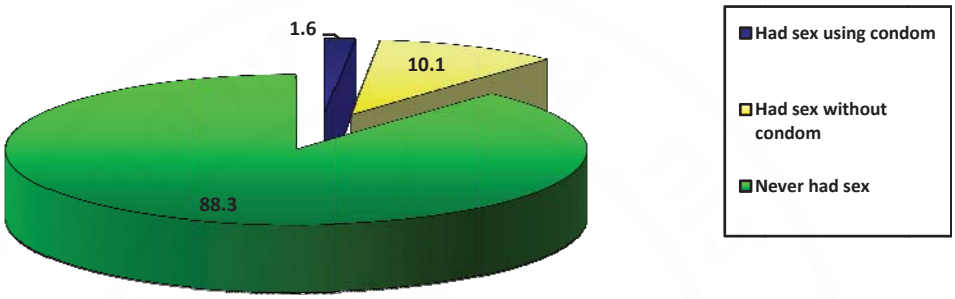


Figure 4.1 illustrates that most of the respondents (88.3%) have not practiced premarital sex. Thus, 11.7% of respondents engaged in sex before married. When taking into account whether safe sex is practiced, results show that only 1.6% of respondents who admitted that they ever had sexual intercourse used condoms, whereas 10.1% had sex without condom.

Table 4.2 Tabulation of Sexual Practices Based on Biological Sex of Respondents

Sexual Practices	Male		Female	
	N	%	N	%
Never had sex	3,561	83.4	2,517	96.3
Had sex using condom	110	2.5	3	0.1
Had sex without condom	601	14.1	95	3.6
TOTAL	4,272	100	2,615	100

Table 4.2 describes the results of cross-tabulation between sexual practices and respondent's biological sex. The data indicates that young adult males (16.6%) who admitted that they ever had sex outnumber young adult females (3.7%). The data also indicate higher proportions of young adult males who had sex without condoms (14%) and used condoms (2.5%) compared to young adult females who had sex without condoms (3.6%) and young adult females who practiced safe sex (0.1%).

Figure 4.2 Sexual Practices Based on Residence of Respondents

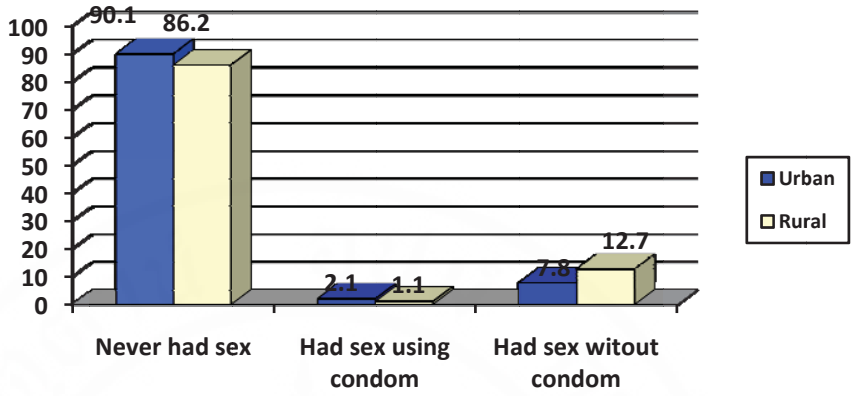


Figure 4.3 shows sexual practices by residence of respondents. It is interesting that the proportion of the study young adults who never had sex is higher in urban area (90.1%) than is in rural area (86.2%). Practicing safe sex is higher among urban young adults (2.1%) than their counterpart (around 1.1%), reflecting that young adults in rural area who practiced unsafe sex is in a higher proportion than urban young adults (13.8% and 8.5% respectively).

Table 4.3 Tabulation of Sexual Practices Based on Respondent's Biological Sex and Residential Area

Resident	Sexual Practices	Male		Female	
		N	%	N	%
Urban	Never had sex	1,784	84.7	1,534	97.3
	Had sex using condom	75	3.5	1	0.1
	Had sex without condom	248	11.8	42	2.66
	TOTAL	2,107	100.0	1,577	100.0
Rural	Never had sex	1,777	82.1	983	94.7
	Had sex using condom	35	1.6	2	0.2
	Had sex without condom	353	16.3	53	5.1
	TOTAL	2,165	100.0	1,038	100.0

Table 4.3 is a three-way cross-tabulation of sexual practices of males and females in urban and rural area. The data confirm that the proportions of young adult males and females in urban area who never had sex are higher than young adults both males and females in rural areas (97.3% VS 94.7% for females and 84.7% VS 82.1% for males). Furthermore, the study shows that both young adult males and females in

rural area practiced unsafe sex more than urban young adults (16.3% VS 11.8% for males and 5.10% VS 2.66% for females).

Table 4.4 Tabulation of Sexual Practices Based on Age of Respondents

Age (1)	Sexual Practices						TOTAL (5)	
	Never have sex (2)		Had sex using condom (3)		Had sex without condom (4)			
	N	%	N	%	N	%	N	%
20	1,584	91.2	19	1.1	134	7.7	1,378	100
21	1,378	87.9	27	1.7	162	10.4	1,567	100
22	1,198	87.6	23	1.7	147	10.7	1,368	100
23	1,030	86.7	22	1.9	136	11.4	1,188	100
24	888	86.5	22	2.1	117	11.4	1,027	100

Mean: 21.7
Median: 22.0
Std. Deviation: 1.4

With regards to sexual practice based on age, table 4.4 illustrates that the older they are, the higher tendency to engage in premarital sex. The percentage of young adults aged 20, 21, 22, 23, and 24 who ever had sex 8.8%, 11.1%, 11.4%, 13.3% and 13.5 % respectively (column 3+4). There is also a tendency that young adults are unlikely to practice safe sex as their age increases. Data show that the percentages of young adults practicing unsafe sex are 7.7%, 10.3%, 10.7%, 11.5% and 11.4% for young adults aged 20, 21, 22, 23, and 24 respectively.

4.2 Multivariate Analysis

The multivariate analysis estimates effects of each independent variable on the dependent variable taking into account of other independent variables simultaneously. In this study, the outcome variables are polytomous. Therefore, multinomial logistic regression model is used to assess the net effect of each independent variable on the dependent variable controlling for socio-demographic factors.

Four models are applied in this study. The first model contains knowledge about SRH including knowledge on female pregnancy, contraceptive use, and condom

use as independent variables, and sexual practices as the dependent variable. The second model includes attitudes towards premarital sex and attitudes towards use of contraceptive methods as independent variables to assess the net effect of attitude on sexual practices as the dependent variable. The third model estimates the relationship between knowledge about SRH and sexual practices as well as the relationship between attitude and sexual practices. The last model describes the relationship between sexual practices and all independent variables of knowledge and attitudes with the controlling of socio-demographic factors.

4.2.1 Knowledge about Sexual and Reproductive Health and Sexual Practices

The first model examines effects of knowledge about female pregnancy, contraceptive use and condom use as independent variables on sexual practices as the dependent variables by using multinomial logistic regression test.

Table 4.5 shows the importance of knowledge on sexual practices. Young adults who had knowledge on contraceptive use are more likely to be those who never had sex compared to those who ever had sex without condom. Knowledge about condom use plays roles of protecting young adults from unsafe sex. While young adults who had knowledge on condom use are more likely to have safe sex and unsafe sex over never had sex, they are also more likely to have safe sex over unsafe sex (safe sex>unsafe sex>never had sex).

Table 4.5 Multinomial Logistic Results Focusing on Knowledge Determinant of Sexual Practices Outcomes

Knowledge	Sexual Practices		
	Had sex with condom/ Never had sex	Had sex without condom/Never had sex	Had sex without condom/Had sex with condom
Knowledge on female pregnancy [1)]	0.07	0.01	-0.06
Knowledge on contraceptive methods	0.00	-0.04*	-0.04
Knowledge on condom use [2)]	1.69***	0.58***	-1.12**

Constant	-5.36***	-2.37***	2.99***
Log likelihood	-2779.4083		
LR chi^2 (6)	79.58***		
N	6,887		

[1)] Ref: Did not have knowledge of female pregnancy
[2)] Ref: Did not have knowledge on condom use
*p< 0.05 **p< 0.01 ***p< 0.001

4.2.2 Attitude and Sexual Practices

The second model (Table 4.6) includes attitudes towards premarital sex as independent variables only. Results show that attitudes on premarital sex have significant associations with sexual practices at P<0.001. At the same time, attitude towards the use of contraceptive methods is significantly associated with sexual practices as well (P<0.01 and P<0.05). Results show that young adults who approved of woman's premarital sex are more likely to practice safe sex and unsafe sex over never had sex. Results are consistent with attitudes on man's premarital status as well. As for attitudes towards use of contraceptive, results indicate that young adults who intended to use contraceptive method are more likely to be those never had sex or had safe over unsafe sex. However, intention to use contraceptive method has no significant effects on the chance of having safe sex over never had sex.

Table 4.6 Multinomial Logistic Results when Focus on Attitude Determinant of Sexual Practices Outcomes

Attitudes	**Sexual Practices**		
	Had sex with condom/ Never had sex	**Had sex without condom/ Never had sex**	**Had sex without condom/Had sex with condom**
Attitude towards premarital sex			
Approved of woman's premarital sex[1)]	1.03***	0.78***	-0.25
Approved of man's premarital sex[2)]	2.49***	2.42***	-0.07
Attitude towards use of contraceptive methods			
Approved of intention to use family planning method[3)]	0.13	-0.30**	-0.43*
Constant	-5.03	-2.84***	2.19***

Log likelihood	-2709.4457
LR chi^2 (6)	1219.50***
N	6,887

[1)] Ref: Disapproved of woman having premarital sex
[2)] Ref: Disapproved of man having premarital sex
[3)] Ref: Disapprove of intention to use family planning method
*p< 0.05 **p< 0.01 ***p< 0.001

4.2.3 Knowledge, Attitude and Sexual Practices

The third model (Table 4.7) estimates effects of independent variables of knowledge and attitudes on sexual practices as dependent variable using multinomial logistic regression model. When attitude variables are included, only a variable of knowledge on condom use has a significant association with sexual practices. The direction of the association remains the same. For attitudes towards premarital sex, the effects remain the same as in the second model. In the meantime, the results of attitude towards use of contraceptive methods shows those young adults who approved of intention to use family planning methods are more likely to be those never had sex compared to having sex without condom.

Table 4.7 Multinomial Logistic Results when Focus on Knowledge and Attitude Determinants of Sexual Practices Outcomes

Knowledge	Sexual Practices		
	Had sex with condom/ Never had sex	**Had sex without condom/ Never had sex**	**Had sex without condom/Had sex with condom**
Knowledge on female pregnancy [1)]	0.12	0.09	-0.02
Knowledge on contraceptive methods	0.03	0.00	-0.03
Knowledge on condom use [2)]	1.44***	0.37**	-1.07**
Attitude			
Attitude towards premarital sex			
Approved of woman having premarital sex[3)]	1.02***	0.76***	-0.25
Approved of man having premarital sex[4)]	2.43***	2.39***	-0.03
Attitude towards use of contraceptive methods			
Approved of intention to use family planning method[5)]	-0.05	-0.36***	-0.31

Constant	-6.28***	-3.09***	3.19***
Log likelihood	-2189.366		
LR chi^2 (12)	1259.66***		
N	6,887		

[1] Ref : Did not have knowledge of female pregnancy
[2] Ref: Did not have knowledge on condom use
[3] Ref : Disapproved of woman having premarital sex
[4] Ref : Disapproved of man having premarital sex
[5] Ref: Disapproved of intention to use family planning method
*p< 0.05 **p< 0.01 ***p< 0.001

4.2.4 Knowledge, Attitudes and Sexual Practices Controlling for Socio-Demographic Factors

The last model (Table 4.8) includes variables of knowledge, attitudes, and other controlling factors as education, residence, sex, age and sources of SRH information. The dependent variable is still sexual practices.

Interestingly, when other variables are controlled, young adults who have knowledge on female pregnancy are more likely to have sex without condom compared to those never had sex. In addition, knowledge on contraceptive use is positively associated with having sex regardless of using condom (P<0.05 and P<0.01). Results showed that young adults who had knowledge on contraceptive use are more likely to practice premarital sex over never had sex. Impacts of knowledge on condom use on sexual practices remain the same as in the model without control variables. Young adults who had knowledge on condom use are more likely to have safe sex over unsafe sex and have unsafe sex over never had sex.

In this forth model, attitude towards premarital sex has the same effect on young adult's sexual practices with the previous model (Model 2 and 3). Meanwhile, it reveals that selected controlling variables in model has change the results of attitude towards use of contraceptive methods, is no significant association between independent variables with sexual practices.

Results show that young adults who approved of woman's premarital sex are more likely to practice safe sex and unsafe sex over never had sex. Results are consistent with attitudes on man's premarital status as well.

Regarding education, this model shows that young adults who attained education higher than secondary level are more likely to practice unsafe sex over never had sex and sex with condom.

By residence, it reveals that young adults in urban area is positively associated with practicing unsafe sex over never have sex and sex with condom (P<0.001).

Table 4.8 Multinomial Logistic Result when Focus on Knowledge and Attitude Determinant of Sexual Practices Outcomes Controlling Socio-Demographic Factors

	Sexual Practices		
	Had sex with condom/ Never had sex	**Had sex without condom/ Never had sex**	**Had sex without condom/Had sex with condom**
Knowledge			
Knowledge on female pregnancy [1)]	0.16	0.22*	0.07
Knowledge on contraceptive use	0.09*	0.07***	-0.02
Knowledge on condom use [2)]	1.05**	0.27***	-0.78*
Attitudes			
Attitude towards premarital sex			
Approved of woman having premarital sex[3)]	0.92**	0.84***	-0.1
Approved of man having premarital sex[4)]	2.21***	2.23***	-0.04
Attitude towards use of contraceptive methods			
Approved of intention to use family planning method[5)]	0.31	-0.07	-.038
Socio-Demographic			
Education[6)]			
Secondary	0.71	-0.06	-0.85
Higher than secondary	0.41	-0.68***	0.02*
Residence[7)]			
Urban	-0.34	0.48***	0.88***

Sex[8)]			
Female	-2.98***	-0.96***	2.01***
Age[9)]			
21	0.59	0.51***	-0.08
22	0.47	0.47**	-0.00
23	0.46	0.48**	0.01
24	0.54	0.51**	-0.04
Source of SRH Information[10)]			
Friend	0.09	0.10	0.08
Family	-0.16	-0.02	0.14
School	-0.23	-0.05	0.18
Mass Media	-0.04	-0.48*	-0.44
Other source	-0.44	-0.04	0.40
Constant	-6.73***	-3.76***	2.97***
Log likelihood	-2076.2623		
LR chi^2 (38)	1485.87***		
N	6,887		

[1)] Ref: Did not have knowledge of female pregnancy
[2)] Ref: Did not have knowledge on condom use
[3)] Ref: Disapproved of woman having premarital sex
[4)] Ref: Disapproved of man having premarital sex
[5)] Ref: Disapproved of intention to use family planning method
[6)] Ref: Primary or less
[7)] Ref: Rural
[8)] Ref: Male
[9)] Ref: 20 years old
[10)] Ref: No Source of SRH Information
*p< 0.05 **p< 0.01 ***p< 0.001

Base on sex, this model finds that female young adults are more likely to have never have sex over unsafe sex and sex with condom, they are also more likely to have sex without condom over unsafe sex (never have sex>unsafe sex>safe sex).

In regard to age, it shows that in every age group has the same pattern. Young adults are more likely to have sex without condom over never had sex.

According to source of SRH information, the finding shows that young adults who received SRH information from mass media are less likely to practice unsafe sex over never had sex.

In this multivariate analysis part has employed multinomial logistic regression to assess the coefficients and the significantly statistic of independent variables in relation to dependent variables. However, the results of this regression are not enough sufficient to explain and interpret the differential between each group of independent variables in relation to young adult's sexual practices. Therefore, for

better interpretation, predicted probabilities of polytomous outcomes are computed for variables in the regression analysis.

Table 4.9 Predicted Probabilities of Sexual Practices by Independent Variables Controlling Social-demographic Factors

	Sexual Practices			TOTAL
	Never had sex	**Had sex with condom**	**Had sex without condom**	
The Independent Variables				
Knowledge on female pregnancy				
Did not have	88.3	1.6	10.1	100.0
Had	87.3	1.6	11.0	100.0
Knowledge on contraceptive methods (range)				
1	90.2	1.3	8.5	100.0
2	89.8	1.3	8.9	100.0
3	89.3	1.4	9.3	100.0
4	88.8	1.5	9.7	100.0
5	88.2	1.6	10.1	100.0
6	87.7	1.7	10.6	100.0
7	87.1	1.8	11.0	100.0
8	86.6	1.9	11.5	100.0
9	86.0	2.0	12.5	100.0
10	85.4	2.1	13.0	100.0
11	84.7	2.3	13.0	100.0
12	84.1	2.4	13.5	100.0
13	83.4	2.5	14.1	100.0
Knowledge on condom use				
Did not Know	90.3	0.7	9.0	100.0
Know	87.5	1.9	10.6	100.0
Attitude towards premarital sex of women				
Disapproved of woman having	89.9	1.3	8.7	100.0
Approved of woman having	81.9	2.6	15.5	100.0
Attitude towards premarital sex of men				
Disapproved of man having	93.6	0.8	5.5	100.0
Approved of man having	65.5	4.2	30.3	100.0

Attitudes towards use of contraceptive methods				
Did not have intention to use contraceptives	88.2	1.4	10.4	100.0
Had intention to use contraceptives	88.3	1.9	9.6	100.0
The Control Variables				
Education				
Primary or less	86.1	1.3	12.5	100.0
Secondary or less	88.3	1.6	10.1	100.0
Higher than secondary	90.1	1.9	8.0	100.0
Residence				
Urban	89.6	1.9	8.4	100.0
Rural	86.9	1.2	11.8	100.0
Sex				
Male	86.1	2.3	11.6	100.0
Female	93.6	0.2	6.2	100.0
Age				
20	89.6	1.5	9.0	100.0
21	88.9	1.6	9.6	100.0
22	88.1	1.6	10.2	100.0
23	87.4	1.7	10.9	100.0
24	86.6	1.8	11.6	100.0
Sources of Information				
Friend				
No	88.7	1.5	9.8	100.0
Yes	87.9	1.7	10.4	100.0
Family				
No	88.2	1.7	10.1	100.0
Yes	88.4	1.5	10.1	100.0
School				
No	88.2	1.7	10.1	100.0
Yes	88.5	1.5	10.0	100.0
Mass Media				
No	87.9	1.6	10.5	100.0
Yes	90.8	1.8	7.4	100.0
Other sources				
No	88.2	1.7	10.1	100.0
Yes	88.7	1.2	10.1	100.0
No source				
No	88.3	1.6	10.1	100.0
Yes	87.8	2.2	10.0	100.0

Table 4.9 shows predicted probability of knowledge and attitude towards premarital sex controlling for social demographic factors. There are slightly different probabilities whether the young adults had knowledge on female pregnancy or not.

Young adults who had knowledge on female pregnancy will have higher probability of practicing premarital sex without condom than those who did not have knowledge on female pregnancy (11.0% and 10.1% respectively).

Regarding knowledge on contraceptive methods, results shows that the higher numbers of contraceptive method known, the higher probability of young adults to practice sex before marriage. When a number of contraceptive methods known are 1, 5, 10 and 13 methods, their probabilities to engage in premarital sex (both safe and unsafe sex) are 9.8 %, 11.7 %, 15.1 % and 16.6 % respectively.

The results reveals that young adults who had knowledge of condom use will have a slightly higher probability of having safe sex than young adults who did not have knowledge of condom use (1.9 % and 0.7 % respectively). At the same time they also have a higher probability of practicing sex without condom than who did not have knowledge of condom use (10.6 % and 9.0 % respectively). Furthermore, young adults who had knowledge of condom use will have small probability of never had sex than who did not have knowledge of condom use (87.5 % and 90.3 % respectively).

As for attitudes towards premarital sex, results (Table 4.9) indicate that unmarried Indonesian young adults who approved of women having premarital sex will have a smaller probability of never experiencing sexual activity than those who disapproved of woman having premarital sex (81.9 % and 89.9 % respectively). They have a higher probability to practicing unsafe sex than their counterparts (15.5 % and 8.7 % respectively). Attitude towards men's premarital sex also reveals similar patterns. Young adults who approved of man having premarital sex (65.5 %) have a smaller probability of never had sex than young adults who disapproved man having premarital sex (65.5 % and 93.6 % respectively). They also have a higher probability of practicing unsafe sex than respondents who disapproved woman had premarital sex (30.3 % and 5.5 % respectively).

There are not much difference of probability of sexual practices between young adults who intended to use contraceptive and those who did not intend. As for education, results suggest that the higher education, the higher probability of never had sex and the smaller probability of having unsafe sex. Regarding place of residence, young adults in urban areas have a higher probability of no sexual experience and smaller probability of having unsafe sex.

By sex, females have a higher probability of no sexual experience than males. Meanwhile, males have a much higher probability of having unsafe sex than females. Regarding age of respondents, it is found that the older young adults have a slightly lower probability of not practicing premarital sex than the younger. The probabilities of young adults aged 20, 21, 22, 23 and 24 years olds are 89.6 %, 88.9 %, 88.1 %, 87.4 % and 86.6 % respectively. At the same time, the older also have a probability of practicing unsafe sex higher than the younger.

For source of information, the predicted probabilities of sexual practices between young adults receiving SRH information are not much different. The exception is for mass media. Results suggest that young adults who received information on SRH from mass media have a higher probability of no sexual experience and have a smaller probability of having unsafe sex than those who did not received information on SRH from mass media.

CHAPTER V
DISCUSSION AND CONCLUSION

This study explores the impacts of knowledge and attitudes as independent variables on sexual practices, the dependent variable. This chapter consists of two sections. The first section presents a discussion of the research findings. The discussion section provides possible explanations of the study research findings and explores the connections with the previous relevant study and theories. The second section is the conclusion that presents a summary of the study. Policy and other recommendation for future research are also included in the second section.

5.1 Discussion

Descriptive statistics present that unmarried Indonesian young adults generally did not practice premarital sex. The average proportion of those engaged in premarital sex is around twelve percent (17% for males and 4% for females). Indeed, the data shows that there are only less than two percent of young adults practicing safe sex (2.6% for males and 0.1% for females). The findings are consistent with the previous researches which highlighted higher percentage of young people who would like to postpone sex until after marriage, and numerous number of unmarried people feel that a relationship without sex is desirable. Nevertheless many are sexually active (Shaw, 2009).

Based on my analysis using multinomial logistic regression model, results reveal that knowledge on female pregnancy has a positive relationship with having sex without a condom over never had sex. It shows that the similar predicted probabilities of sexual practices for young adults whether they had knowledge on female pregnancy or not. In the meantime, knowledge on contraceptive use is statistically significant with practiced premarital sex over never practiced premarital sex. The more knowledge on contraceptive use is the higher probability of young adults practicing premarital sex, regardless of condom use.

As for knowledge on condom use, findings reveal that young adults who had knowledge of condom use are more likely to practice premarital sex over never had sex than who did not have knowledge on condom use. It should be noted, however, that young adults who have knowledge on condom use are more likely to practice safe sex than unsafe sex.

Previous studies demonstrated that knowledge has an influence on the education of sexual risk behavior, because sexual reproductive health (SRH) knowledge could increase awareness towards safe sex practices (Anwar, et al., 2009; Lindberg, et al., 2000). Nowadays, Indonesian young adults have undergone dramatic social transformation from traditional to broader socio-sexual modern lifestyle. The national survey revealed that the number of young people who engage in premarital sex has shown an increasing trend (Ford et al, 2007). Therefore, appropriate SRH knowledge such as about unwanted pregnancy, abortion, and sexual transmitted infection (STI) including HIV/AIDS is essential for young adults due to challenges of premarital sex outcomes.

In terms of attitude towards premarital sex, there is an interesting finding that unmarried Indonesian young adults who approved of man and women having premarital sex are more likely to engage in premarital sex compared to their counterparts. The probability of young adults who approved of man having premarital sex is higher than young adults who approved of women having premarital sex. Indeed, approval of premarital sex tends to support young adults to practice premarital sex. Few in the study who engaged in premarital sex were using condoms, and that the predicted probability of practice safe sex shows less than 5 % for attitude towards premarital sex of both sexes. Regarding attitude towards use of contraceptive methods, findings reveal that young adult's intention to use family planning methods have no association with their sexual practices.

Of interest is the finding of a sexual double standard that premarital sex for males is more acceptable than for females. At the same time, various literatures found that diversity of expectations and norms of young males and females, they have controlled their sexual attitudes and behaviors (Christine, 2006; Utomo & Mc Donald, 2009). A study of sexual norms in Asian countries indicated that a sexual double standard has provided an acceptance for premarital sex for young males but not for

young females (Ford et al,2007). Thus, this condition has influenced the young adults' attitutudes and their sexual behaviors.

Moreover, previous studies presented that an approval of friends practicing premarital sex had a high tendency to encourage adolescents to engage in sex before marriage. Although they had responsible values and attitudes on sexual practices, many of them were unable to translate this into personal behavior. (Zabin at al, 1984; Mohammadi et al, 2009). Hence, the relation between young people sexual behavior and their perception of approval sex before marriage should be concerned in address premarital sex issues.

Knowledge and attitudes are necessary components towards personal health development into practices. Previous studies indicate a significant relationship among each other. However, the approriate SRH knowledge and attitudes are insufficient to shape safe sexual behavior (Mohammadi et al, 2006; Anwar et al, 2009). Therefore, this study includes socio-demographic factors as controlling variables.

My study finds that higher educated unmarried Indonesian young adults are less likely to practice sex before marriage and are less likely to practice unsafe premarital sex. This is consistent with previous study. In regards to education of respondents, one study found that education has an essential role in transferring SRH knowledge to young people and tends to shape positive attitudes towards safe sex (Khan, 2009. In Sub-Sahara Africa, previous study showed that young males with secondary or higher education were more likely to practice safe sex than their counterparts with lower levels of eduction (Bankole, et al., 2009).

Considering residence of respondent, findings from this study observe that young adults in rural area are more likely to engage in premarital sex than young adults in urban area. This similar to study in India also showed the same finding that the percentage of young adult's premarital sex was higher in rural than in urban area, due to lack of SRH knowledge resulting in poor self-sexual awareness (Raghav, 2010). Moreover, a lot of young adults in rural area are laborer in factories, mining and plantation. Most of them have to live independently and stay far from families (BPS, 2010; Depnaker, 2005). Low economic condition makes them share living together

even with different sex, have less entertainment and activities after working hours. These conditions encouraged them to engage in premarital sex.

However, this study results shows that urban young adults practice safe sex at a higher rate than their friends in rural area. This is consistent with studies in some countries that found urban people had a higher acceptance of HIV/AIDS prevention knowledge and were more likely to practice condom use than rural people. It was explained that urban residents commonly have better education and easier SRH accesses than rural residents (Hong & Chhea, 2009; Chanthavong, 2009). By and large, there exist and difficulties to reach out young adults in some rural areas resulting in, imbalance disseminations of SRH programs. Meanwhile, the young adults' SRH programs are more concentrated in urban area.

This study notes that biological sexes of young adults have a significant association with sexual practices. Young females are more likely to have no sexual experience before marriage than young males. Moreover, among those sexually active young males are more likely to engage in unsafe sex than young females. The findings are consistent with the studies in other countries in that they debut of sexual activity earlier than young females. Hence, compared with young males, young females have showed a lower tendency to engage in premarital sex (Anwar et al, 2009; Silva et al, 2009; Ma, et al., 2009; Othero, et al., 2009)

Regarding age, results of this study indicate that the older young adults tend to practice premarital sex at a higher rate than the younger young adults. They are also more likely to practice having sex without a condom than their younger counterparts. By contrast, the earlier findings revealed that the older adolescents used condoms as the first contraceptive method when having first sex or with a new or casual partner compared to younger adolescents (Ma et al, 2009; Bankole et al, 2009).

In terms of source of SRH information, this study found that mass media is considered having an impact on unmarried Indonesian young adults' sexual practices. Exposure to mass media influences young adults' knowledge and attitudes towards premarital sex practices, and should be noted. Likewise, based on previous studies, mass media had important roles for disseminating SRH information in some countries. Indeed, a positive effect on SRH knowledge would be to gear messaging towards

awareness and attitudes of safe sex practices. (Bankole et al, 2009; Chanthavong, 2009).

5.2 Conclusion

The objective of this study is to analyze how SRH knowledge and attitudes towards premarital sex and contraceptive use influence sexual practices of unmarried Indonesian young adults. The secondary data was derived from the Indonesian Young Adults Reproductive Health Survey (IYARHS) 2007. The dependent variable is respondent's sexual practices classified into never had sex, had sex using condom and had sex without condom. Two major independent variables are examined, knowledge and attitudes of SRH.

Multinomial logistic regression is applied in 4 models of multivariate analysis. The first model observes only knowledge variables. The second model examines only attitude variables. The third model includes both knowledge and attitude variables. The last model adds into the third model social demographic factors, namely, sex, resident, age, education, and source of sexual reproductive health information, as a controlling variable.

The study sample included 6,887 respondents aged 20-24 years of the IYARHS in 2007. Sixty two percent of the study samples are males and 53% live in urban areas. More than half of the samples have secondary education (59%), more than one fifth (23%) have more than secondary education, and the rest (18%) have primary or less than primary education. Majority of the samples (88.3%) have no sexual experience, with around one tenth (10.1%) of the sample practicing premarital sex without condom, and only a small fraction (1.6%) of them reported using condoms when having sex.

According to the findings, both knowledge and attitudes have a significant influence on whether unmarried Indonesian young adults practice safe premarital sex. Results of multivariate analysis show that most of the variables included in this study have a significant effect on sexual practices of unmarried Indonesian young adults. In terms of knowledge, knowledge on contraceptive methods and knowledge on condom

use have statistically significant effect on sexual practices. However, knowledge on female pregnancy show statistically significant effect on unsafe sex over never had sex only. Thus, the hypothesis stating that young adult who has knowledge on female pregnancy, knowledge on contraceptive use, and knowledge on condom use are more likely to practice safe sex is accepted. These three types of knowledge on female pregnancy, contraceptive methods and condom use should be inserted into sex education for young adults.

Based on the findings about attitude variables, approving of premarital sex has a statistically significant effect on having premarital sexual practices. Results reflect that socially-accepted attitudes towards premarital sex among unmarried Indonesian young adults through appropriate programs should be addressed. Results support the hypothesis that young adult who has approval attitudes towards premarital sex are more likely to practice premarital sex.

Attitude towards use of contraceptive methods has no significant effect on sexual practices. There are no differences on sexual practices whether they have intention to use contraceptive method or not. Thus, the hypothesis that young adult who has an intention attitude towards use of contraceptive methods is more likely to practice safe sex is rejected.

Social-demographic variables are significant factors with young adults' sexual practices. Levels of education, place of residence, sex, and age of young people have an impact on their sexual practices. Hence, these variables should be considered when establishing the SRH programs for young adults in Indonesia. Based on the findings, mass media as a source of SRH information shows an influence on young adult's sexual practices, thus, these sources should be included into future Indonesian young adult's sex education programs.

Considering the above discussion, results of this study indicate the important roles of knowledge and attitude towards safe sex practices. Furthermore, the efforts of enhancing young adults' SRH knowledge and shaping the attitudes towards safe sex are to overcome premarital sex issues among young people, which may lead them to unwanted pregnancy, abortion and STI including HIV/AIDS.

5.2.1 Policy Recommendation

According to the research findings, recommendations for better SRH of unmarried Indonesian young adults in order to address premarital sex issues among them are as follow:

1. Based on the IYARHS 2007, the number of unmarried Indonesian young adults who never practiced premarital sex is relatively high, around 88 percent. Besides, there are strictly access contraceptive methods and services for young adults in Indonesia. Thus, abstinence or not practicing premarital sex could be strategically promoted among unmarried young adult. As a part of sex education programs, abstinence could be strengthen further in school curriculum material, family resilience programs and mass media campaigns. This will be relevant to Indonesian social norms where premarital sex is strongly disapproved already.
2. This study shows that SRH knowledge and attitudes influence Indonesian young adults' sexual practices, therefore, appropriate SRH knowledge for young people should be disseminated effectively. Peer educators and family involvement in programs could be implemented due to approval of premarital sex, which is mostly practiced by their surrounding people like friends and families, tends to encourage young adults to engage in sex before marriage.
3. The findings reveal that unmarried Indonesian young adults in rural areas practice unsafe sex more than their counterparts. Thus, young people's SRH information should be widely spread through, both urban and rural areas. The rural areas in particular need more scaled up effort to deal with obstacles in targeting young adult's awareness of their SRH matters.
4. According the findings, mass media seem to be a potential source of SRH information for Indonesian young people. Thus this source should be addressed in Indonesian young adult's sex education programs.

5.2.2 Recommendation for Further Research

Since the data used in this study is secondary data from the IYRHS 2007, there are some limitations to select some variables affecting sexual practices among unmarried Indonesian young adults, such as: knowledge of safe premarital sex and attitude towards condom use. Therefore, future research should to include these

variables due to their important roles in sexual practices. Moreover, in order for better understand about premarital sex practices among unmarried young adults in Indonesia, a qualitative study should be conducted.

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