KNOWLEDGE ATTITUDE AND INTENTION OF PREVENTING THE UNWANTED PREGNANCY AMONG FEMALE UNDERGRADUATE STUDENTS IN BANGKOK THAILAND

Miss Chatprapa Sirirat

A Thesis Submitted in Partial Fulfillment of the Requirements
for the Degree of Master of Public Health Program in Public Health
College of Public Health Sciences
Chulalongkorn University
Academic Year 2014

ความรู้ ทัศนคติ และความตั้งใจในการป้องกันการตั้งครรภ์ไม่พึงประสงค์ของนิสิตนักศึกษาหญิงระดับปริญญาตรี กรุงเทพมหานคร ประเทศไทย

นางสาวฉัตรประภา ศิริรัตน์

วิทยานิพนธ์นี้เป็นส่วนหนึ่งของการศึกษาตามหลักสูตรปริญญาสาธารณสุขศาสตรมหาบัณฑิต
สาขาวิชาสาธารณสุขศาสตร์
วิทยาลัยวิทยาศาสตร์สาธารณสุข จุฬาลงกรณ์มหาวิทยาลัย
ปีการศึกษา 2557

Thesis Title	KNOWLEDGE ATTITUDE AND INTENTION OF PREVENTING THE UNWANTED PREGNANCY AMONG FEMALE UNDERGRADUATE STUDENTS IN BANGKOK THAILAND
By	Miss Chatprapa Sirirat
Field of Study	Public Health
Thesis Advisor	Tepanata Pumpaibool, Ph.D.
Thesis Co-Advisor	Professor Vorapong Phupong, M.D.

Accepted by the Faculty of College of Public Health Sciences, Chulalongkorn University in Partial Fulfillment of the Requirements for the Master's Degree

.....Dean of the College of Public Health Sciences
(Associate Professor Sathirakorn Pongpanich, Ph.D.)

THESIS COMMITTEE

.....Chairman
(Associate Professor Ratana Somrongthong, Ph.D.)
.....Thesis Advisor
(Tepanata Pumpaibool, Ph.D.)
.....Thesis Co-Advisor
(Professor Vorapong Phupong, M.D.)
.....Examiner
(Robert S. chapman, M.D., M.P.H.)
.....External Examiner
(Nanta Auamkul, M.D., M.P.H.)

ฉัตรประภา ศิริรัตน์ : ความรู้ ทัศนคติ และความตั้งใจในการป้องกันการตั้งครรภ์ไม่พึงประสงค์ของนิสิตนักศึกษาหญิงระดับปริญญาตรี กรุงเทพมหานคร ประเทศไทย (KNOWLEDGE ATTITUDE AND INTENTION OF PREVENTING THE UNWANTED PREGNANCY AMONG FEMALE UNDERGRADUATE STUDENTS IN BANGKOK THAILAND) อ.ที่ปรึกษาวิทยานิพนธ์หลัก: ดร. เทพนาฏ พุ่มไพบูลย์, อ.ที่ปรึกษาวิทยานิพนธ์ร่วม: ศ. นพ. วรพงศ์ ภู่พงศ์, 93 หน้า.

งานวิจัยแบบตัดขวางนี้มีวัตถุประสงค์เพื่อประเมินระดับความรู้ ทัศนคติ และความตั้งใจในการป้องกันการตั้งครรภ์ไม่พึงประสงค์ และเพื่อระบุปัจจัยที่มีผลต่อความรู้ ทัศนคติ และความตั้งใจดังกล่าวในกลุ่มนิสิตนักศึกษาหญิงระดับปริญญาตรี งานวิจัยนี้ใช้เทคนิคการสุ่มแบบหลายขั้นตอน และใช้แบบสอบถามแบบตอบเองเพื่อเก็บข้อมูลจากนิสิตนักศึกษาหญิง 440 คน การวิเคราะห์ข้อมูลใช้การทดสอบของแมนและวิทนีย์ การทดสอบของครัสคาลและวัลลิส สัมประสิทธิ์สหสัมพันธ์ของสเพียร์แมน และการวิเคราะห์การถดถอยพหุคูณ ผลการศึกษาพบว่า ร้อยละ 42.5 ของนิสิตนักศึกษามีความรู้เรื่องการตั้งครรภ์ไม่พึงประสงค์ในระดับต่ำ มีเพียงร้อยละ 20.9 ที่มีความรู้ในระดับสูง ร้อยละ 63.9 ของนิสิตนักศึกษามีทัศนคติต่อการตั้งครรภ์ไม่พึงประสงค์ในระดับปานกลาง ประมาณร้อยละ 65 ของนิสิตนักศึกษาตั้งใจที่จะป้องกันการตั้งครรภ์ไม่พึงประสงค์อยู่ในเกณฑ์ปานกลาง ความรู้มีความสัมพันธ์กับความตั้งใจ (การทดสอบแบบสเพียร์แมน = 0.199, $p < 0.001$) อย่างมีนัยสำคัญทางสถิติ ผลจากการวิเคราะห์การถดถอยพหุคูณ พบว่า ที่พักอาศัย ($p = 0.043$) วิธีการป้องกันการตั้งครรภ์ ($p < 0.001$) ความถี่ของการดื่มแอลกอฮอล์ ($\beta = -0.66$, $p < 0.001$) และความรู้ ($\beta = 0.48$, $p < 0.001$) มีความสัมพันธ์กับความตั้งใจในการป้องกันการตั้งครรภ์ไม่พึงประสงค์อย่างมีนัยสำคัญทางสถิติ โดยสรุป ผลการวิจัยนี้ชี้ให้เห็นถึงความจำเป็นในการให้โปรแกรมความรู้โดยเน้นในเรื่องการป้องกันการตั้งครรภ์ไม่พึงประสงค์แก่นิสิตนักศึกษาให้มากขึ้นเพื่อเพิ่มศักยภาพในการป้องกันการตั้งครรภ์ก่อนวัยอันควรและการตั้งครรภ์ไม่พึงประสงค์

สาขาวิชา สาธารณสุขศาสตร์ ลายมือชื่อนิสิต .....

ปีการศึกษา 2557 ลายมือชื่อ อ.ที่ปรึกษาหลัก .....

ลายมือชื่อ อ.ที่ปรึกษาร่วม .....

5778804253 : MAJOR PUBLIC HEALTH
KEYWORDS: KNOWLEDGE / ATTITUDE / INTENTION OF PREVENTING UNWANTED PREGNANCY / FEMALE UNDERGRADUATE STUDENTS

CHATPRAPA SIRIRAT: KNOWLEDGE ATTITUDE AND INTENTION OF PREVENTING THE UNWANTED PREGNANCY AMONG FEMALE UNDERGRADUATE STUDENTS IN BANGKOK THAILAND. ADVISOR: TEPANATA PUMPAIBOOL, Ph.D., CO-ADVISOR: PROF. VORAPONG PHUPONG, M.D., 93 pp.

The aims of this cross sectional study were to assess the level of knowledge, attitude and intention of preventing the unwanted pregnancy; and to determine factors associated to them among female undergraduate students. The multistage sampling technique was used to recruit and self-administered questionnaire was used to collect data of 440 female students. Data analysis by Mann-Whitney U test, Kruskal-Wallis test, spearman's correlation and multiple linear regression. The results indicated that 42.5% of students had poor level of knowledge and only 20.9% had high knowledge about unwanted pregnancy. In term of attitude, 79.3% of them had moderate attitude towards the unwanted pregnancy. Nearly 70% of them intended to prevent unwanted pregnancy at moderate level. The statistically significant correlation between knowledge and intention (Spearman's correlation = 0.199, $p < 0.001$) was found. In multiple linear regression models, types of living arrangement ($p = 0.043$), the method used to prevent pregnancy ($p < 0.001$), frequency of alcohol consumption ($\beta = -0.66$, $p < 0.001$) and knowledge ($\beta = 0.48$, $p<0.001$) were statistical significantly associated with intention. In conclusion, the findings from this study highlighted the need to provide more education program emphasizing the knowledge about unwanted pregnancy to students to improve young people's long-term potential by avoiding early and unwanted pregnancies.

Field of Study: Public Health
Academic Year: 2014

Student's Signature .....
Advisor's Signature .....
Co-Advisor's Signature .....

ACKNOWLEDGEMENTS

This research project would not have been possible without the involvement of the involvement of the following people:

First, I would like to express my sincere and deep gratitude to my thesis advisor Dr. Tepanata Pumpaibool for this kindness, valuable comments, suggestions and supports thoughout the learning process of this master thesis as well.

Most importantly, I am grateful to Prof. Vorapong Phupong, my co-advisor, who thought out my entire period of the study, and provided me with valuable knowledge, guidance, and encouragement.

I would like to extend my gratitude to the members of the examining committee, Assoc. Prof. Dr. Ratana Somrongthong for the accurate comment and necessary revision in my study, Dr. Robert Sedgwick Chapman for the generosity with your time in teaching me on many statistic techniques, and Dr. Nanta Auamkul for giving valuable advises and comments.

Special appreciations are extended to Dr. Wanlop Jaidee for helping me with explanation about statistic.

Finally, I take this opportunity to express gratitude to all the College of Public Health Sciences members for their help and support. I also thank my beloved family for the unceasing support, encouragement and attention.

CONTENTS

Page

Page

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

ABAC	Assumption University of Thailand
AIDS	Acquired Immune Deficiency Syndrome
ANC	The African National Congress
CDC	Centers for Disease Control and Prevention
GPA	Grade Point Average
HIV	Human Immunodeficiency Virus
NC	North Carolina
STDs	Sexually Transmitted Diseases
UNFPA	United Nations Population Fund
USA	The United States of America
WHO	World Health Organization

CHAPTER I
INTRODUCTION

1.1 Background and rationale

Nowadays, teenage pregnancy is a major public health problem in many countries, both in developed and developing countries. Most of all, teenage pregnancy is the major contributor to the cause of the unwanted pregnancy in most part of the world including Thailand. Due to the fact that teenage girls are married after menarche, fertility was high and cause of health effects of children were born from adolescent mothers, it is negatively correlated of social and health out comes to both the maternal and children (WHO, 2004).

Projection of worldwide pregnancy for 2012 was 213 million in which 190 million of pregnancies (89%) were accounted from developing world. Among them 56 percentage were from Asia and 25 percentage were from Africa. Unintended pregnancy rate for 15-44 year old women globally for 2012 was 53 in 1000 women. Africa is highest regional contributor rate, has 80 unintended pregnancies per 1000 reproductive women while Asia has 46 unintended pregnancies for every 1000 reproductive women (Gilda et al, 2014). Among the high income countries, USA has the highest rate of teenage pregnancy in the world. Approximately rate of teenage pregnancy was 67.8 per 1000 teenagers aged 15-19 year and nearly 750,000 teenagers get pregnant every year (Kost and Henshaaw, 2012). Majority of those estimated 82% are unwanted or unintended pregnancy (Finer and Zolar, 2011).

Pregnancies that occur worldwide every year was estimated approximately 210 million, among them 38 percent are contributed by unintended pregnancies and 22 percent was abortions (Amin et al, 2009). Globally, one out of ten pregnancies ends up with unsafe abortion and tragically most of all unsafe abortions happen in the developing countries (WHO, 2003).

In Thailand, according to Health Statistics reports, there were 801,737 totals of births in 2012 and the number 129,451 were the childbearing of adolescent female aged 15-19 years, in which there are 2.4 million adolescences in the same age group. The childbearing ratio of adolescent aged groups (15-19 years) is 53.8 per 1000 girls in the

same group, which increase from 31.1 cases per 1000 in year 2000. Every day there are 355 cases of mothers aged less than 20 years which found that 1 in 3 became unintended pregnancy. The numbers of adolescent births in Thailand between female adolescents aged 15-19 years is higher than in neighboring countries and also in Asian developed countries, While Japan, Korea, China and Singapore, only 2-6 cases per 1000 people was reported. Moreover, the adolescent birth rate in Thailand is still classified under the less developed regions close to Indonesia, Philippines, Cambodia, Timor-Leste, and many countries in Latin America, such as Chile, Costa Rica and Cuba. However, the adolescent birth rate in Thailand is higher than Asia-Pacific region's with an average of 35 per 1000)UNFPA Thailand, (2013.

In addition, the unwanted pregnancy of adolescent can lead to induced abortion which is one of the important consequences. According to Abortion Surveillance in Thailand Report (2012), 23.8 percent of abortions are in aged 15-19 and 19.1 percent occurred in age 20-24. Among them 30.8 percent is student either undergraduate or postgraduate, 27.4 or 46.5 percent is less than 20 years and less than 25 years, respectively.

Nowadays as a part of the globalization, modern society and culture undergo the rapid changes within the global and local scales. This phenomenon has certain effects on the external environment of the teenagers. Certain effects of the globalization and blooming technologies, wide ranges of social media are introduced to the teenagers. Drawback is allowing them to expose sexual stimulation and arouse them and persuade them to expose to the early intercourse with less constrains and more freedom. From the lack of reproductive knowledge and contraceptive awareness, modern life style and open relationship which lead the young people to live together results in high prevalence of the teenage pregnancies (Taneepanichskul, 2012). Unexpectedly teenagers in Thailand have sex since an early adolescent-hood and unprotected sexual practice that may cause the unwanted pregnancy, sexually transmitted diseases and AIDS. (Ministry of Social Development and Human Security, 2012).

In addition, there are 30 universities in Bangkok divided into 16 public and 14 private universities. Both of universities type, there are difference in many aspect such as context of universities, admission into universities, the regulations about academic living or uniform, tuition fees, size and degree offerings, class size and demographics

etc. (Peterson, 2014). Moreover, Students came from different backgrounds, family, peer group and life style. All of these lead to the difference in knowledge, attitude, perception, intention and behavior.

The teenage pregnancy rates in Thailand increase every year which lead to the problem of unwanted pregnancy and induced abortion. Besides, an unwanted pregnancy maybe make young mothers have health problem related to the complications from childbirth such as preterm labor, low birth weight of infants, sexually transmitted infections, anemia and premature membrane ruptures. Furthermore, most of female adolescents do not have the awareness about consequence of unprotected sex (Cheng et al, 2009). Therefore, researcher's interest was to determine the level of knowledge, attitude and intention to prevent the unwanted pregnancy in female undergraduate students in Bangkok, Thailand and find out the factors associated with the intention to prevent the unwanted pregnancy. So, the findings may be used to develop unwanted pregnancy prevention guidelines and intervention program to reduce the incidence of unwanted pregnancy in adolescent.

1.2 Research questions

1. What are the levels of knowledge, attitude and intention of preventing the unwanted pregnancy among female undergraduate students in Bangkok?
2. What factors determine the knowledge, attitude and intention of preventing the unwanted pregnancy among female undergraduate students in Bangkok?

1.3 Objective

General Objective

1. To evaluate the level of knowledge, attitude and intention of preventing the unwanted pregnancy among female undergraduate students in Bangkok.
2. To determine factors associate to the knowledge, attitude and intention of preventing the unwanted pregnancy among female undergraduate students in Bangkok.

Specific Objective

1. To describe the socio-demographic characteristics of female undergraduate students in Bangkok.
2. To assess the level of knowledge on the unwanted pregnancy of female undergraduate students in Bangkok.
3. To assess the level of attitude on the unwanted pregnancy of female undergraduate students in Bangkok.
4. To assess the level of intention of preventing the unwanted pregnancy of female undergraduate students in Bangkok.
5. To examine the association between socio-demographic characteristics, knowledge, attitude and intention of preventing the unwanted pregnancy among female undergraduate students in Bangkok.
6. To examine the association between knowledge and intention of preventing the unwanted pregnancy among female undergraduate students in Bangkok.
7. To examine the association between attitude and intention of preventing the unwanted pregnancy among female undergraduate students in Bangkok.

1.4 Research Hypothesis

1. There is an association between socio-demographic characteristics and knowledge on unwanted pregnancy of female undergraduate students.
2. There is an association between socio-demographic characteristics and attitude towards the unwanted pregnancy of female undergraduate students.
3. There is an association between socio-demographic characteristics and intention of preventing the unwanted pregnancy of female undergraduate students.
4. There is an association between knowledge and intention of preventing the unwanted pregnancy of female undergraduate students.
5. There is an association between attitude and intention of preventing the unwanted pregnancy of female undergraduate students.

1.5 Operational Definitions

Female undergraduate students refer to female students who are studying in 1st year to 4thyear and enrolled within the year 2011-2014 at public and private universities in Bangkok, Thailand.

Unwanted pregnancy refers to teenage pregnancies that are mistimed, unplanned or unintended of at the time of conception.

Socio-demographic characteristics include age, class year, GPA, monthly income, family status, types of family, types of living arrangement, having a boyfriend, sexual relationship with current boyfriend, the method for used to prevent pregnancy, alcohol consumption, frequency of alcohol consumption and using substance abuse.

- **Age** refers to the age of the respondent between 18-24 years old at the time of survey.
- **Public universities** are called government universities that mean received some financial from Bureau of Budget.
- **Private universities** refers to the universities that supported by their owned individual budget.
- **Year of study at university** refers to year 1 – 4 of undergraduate students.
- **GPA** refers to cumulative grade-point average of the respondents at the time of interview.
- **Type of family** refers to single family (father, mother and child) and extended family (grandparent, father, mother, and relatives).
- **Type of living arrangement** refers to the respondents living along, with boyfriend, with family/relatives, sharing the room with same sex friend and other.
- **The method for use to prevent pregnancy** refers to the respondents using condoms, birth control pills, the shot (depo), the ring or the patch and other if they have sexual intercourse.
- **Frequency of alcohol consumption** refers to drinking in everyday, 3-4 times/week, 1 time/week, 2-3 times/month, 1 time/month and other.

Knowledge on the unwanted pregnancy refers to understanding and ability to answer the basic knowledge questions regarding the risk factors and methods of prevention the unwanted pregnancy.

Attitude on the unwanted pregnancy refers to beliefs, feelings, values and disposition to act in certain way of respondents towards the unwanted pregnancy in aspect of the relationship with the opposite sex, contraception, family and risk factors.

Intention of preventing the unwanted pregnancy refers to the intention to avoid risk situations lead to sexual intercourse and to prevent the unwanted pregnancy.

1.6 Conceptual Framework

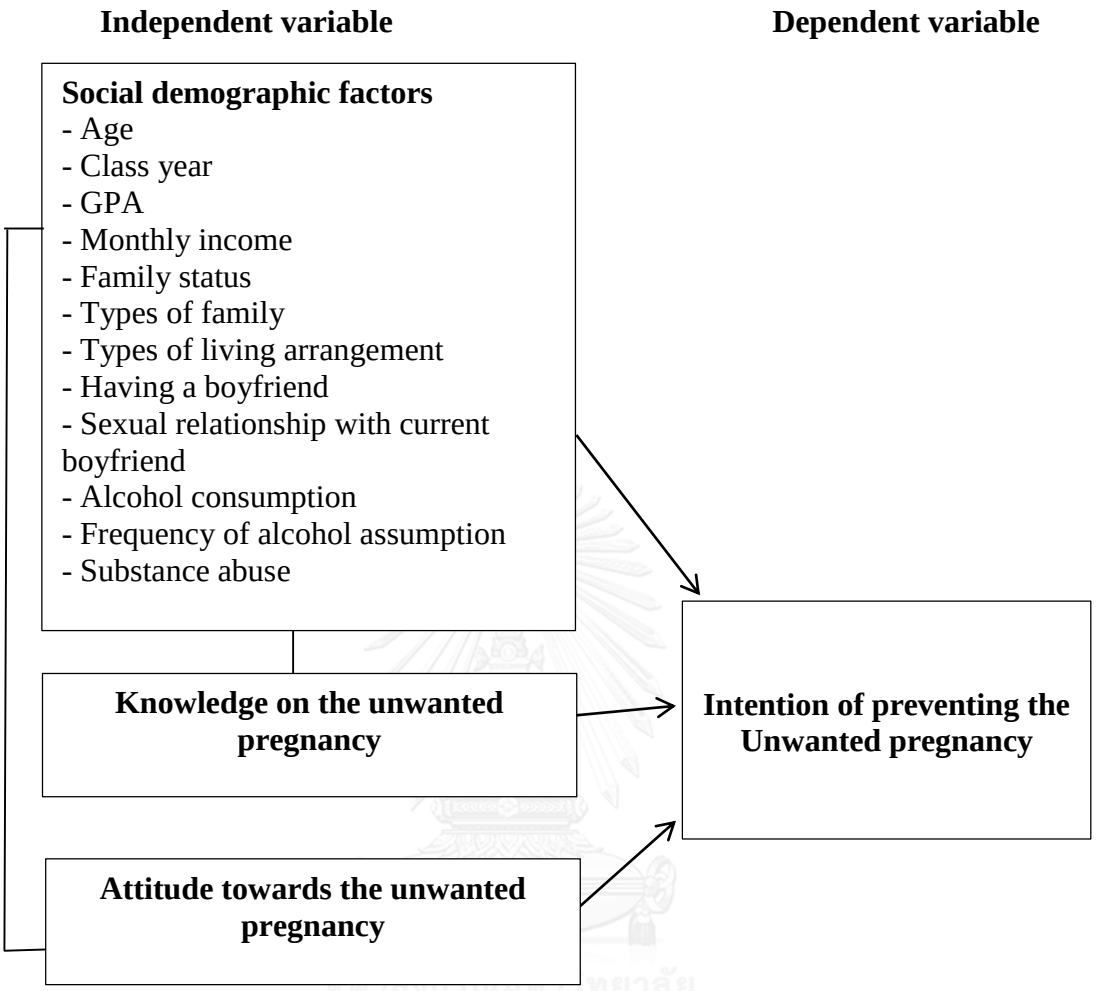

Figure 1 Conceptual Framework

CHAPTER II
LITERATURE REVIEW

2.1 Unwanted pregnancy

Londono gave the meaning of unwanted pregnancy in the notion that women do not want to be pregnant. Since she is not ready to be a mother, or does not want child or when the pregnant does not want to continue the motherhood until delivery. Most of the pregnant mothers are the cause of the unwanted pregnancy. But later there are problems or complications either of the following reasons (Londono, 1989):

1. Husband or partner died suddenly.
2. A divorce or separation with her husband.
3. Cause serious illness in the family, such as their children, husband, parents and the whole family and they need to rely heavily pregnant.
4. An emotional crisis or facing the emotional high pressure conditions.
5. Lack of economic assistance
6. Being successful in life or career advancement opportunities.
7. Experiencing legal problems or situations that threaten violence. The living conditions of their own.

Unwanted pregnancy is not only a matter that has traumatic affect to mind and feelings for women herself but also to the life or lives of one altogether. Medically regarded as unwanted pregnancy as risk category. Because these girls will be known clearly that they did not want to have children when they start their gestation period. This will cause an abortion is a relatively high risk of life or the decision to continue the pregnancy. Antenatal care will be rather delayed compare to the normal mother that makes the unwanted pregnant woman and fetus have not been properly cared. So, lead to risk of high mortality of maternal and infant.

A study found that a woman on the risk of having unwanted pregnancy in the developing country will look like the following (Kabir, 1989; Mashalaba, 1989; Pinotti, 1989)

1. Adolescent girls under the age of 20 and do not know how to prevent pregnancy.

2. The woman is married and has several children.

3. Married woman is planning to have child. But she cannot get cooperation from her husband.

4. Contraceptive failure.

5. High illiteracy and lack of knowledge about contraceptive methods.

6. The economic problems.

7. Limited access to legitimate places for abortion or rather high cost for induced abortion.

8. In oriental and conservative society that does not accept the child from single mother.

9. In a pressured environment for abortion from being criticized or being rejected by family, friends and society.

2.2. Determinants of adolescent pregnancy

The problems of reproductive health, including adolescent pregnancy are associated with social, culture, economic and behavioral factors. According to research supported by WHO in 2004 protective factors of adolescent pregnancy in developing country are high education, received educations in school system, knowledge about contraception and condom, live with parent. While living with the friends who had sexual intercourse before is risk factor (Mmari and Blum, 2004). In addition, there are several organization mention other factor as causes of adolescent pregnancy according to the report of United Nation's Children Fund (2008) such as popular culture that premature married (especially in developing country). Sexual intercourse in adolescent usually occurs from use alcohol and drug, poverty, lack of chance in education, lack of information on reproductive health, lack of access to contraception, incorrect to use contraception, pressure from peers, sexual abuse including rape, violence in family, low ambition and goals in terms of education and low self-esteem are the factors associated to each other. Marriage is one of factors related to adolescent pregnancy especially in society women had less education or culture of marriage as early age or poverty which these causes female adolescent to leave school and make them lack of knowledge,

potential in relation to protection from sexual harassment and do not know how to correctly use contraceptive etc.

The Senate Standing Committee on Public Health report 2011 indicates that factors leading to adolescent pregnancy such as all of children cannot receive the appropriate knowledge due to comprehensive sexuality education was not cover in all schools.

Moreover, social and economic changes are factors stimulating the children to have sex in school age including 1) media, 2) living together in dorms without their parent to take care them and 3) late-night entertainment. Also, adolescent lack of the skills to negotiate safe sex or to deny sex and they do not aware the important of preventing themselves and using contraception.

In Thailand problems and obstacles of children and youth are lack of initiate to take action to solve urgent problems. One of the problems of sexual behavior outside the traditional are more and more like choosing a spouse because love is the key factors and arranged marriage is not like the opposite sex is liberated. The wrong understanding of sex makes risky teen sexual behavior and coupling premature. Sexual promiscuity, sexual deviations, such as homosexuality, etc., and various problems, for example, is a sexually transmitted disease, unwanted pregnancy and the issue of abortion are the cause or causes of teenage pregnancy (Hawanon, 1995)

2.2.1 Socio- economic status

(a) Standard of living

Many studies stated that poor women have the earlier exposure their marriage compared to the women with the high social economic status (UNFPA, 2007). They also have the earlier childbearing age and lesser ability to negotiate sexual activity and delay the pregnancy. These are the clear evidence that poverty has huge impact on the fertility and reproductive life of the adolescents (Georges, 2012).

In some parts of the world, women are discriminated and discourage from the high level of education. As a result they will face the inequity and difficulties in labor market. With the low income, they have the limited access to household resources. Consequently, they have to rely on their marriage and sex to expand their asset

(Georges, 2012). This is the significant proof that the level of education has the effect on the reproductive life of the women.

In both situations with poor finical access, many adolescent becomes unemployed and out of the school. According to social construction of reality, the interaction between these children will develop the new behavior pattern. This is the challenging condition for the reproductive health as some of the behaviors are personal risk factors e.g. street children, smoking and alcohol use which will in turn lead to unsafe and unprotected sex.

(b) Places of resident

Places of resident are the one of the external environmental factors which has the indirect effect on the fertility (Naidoo and Wills, 2000). In this study 60% of the girl from the rural area has the pregnancy. The possible justification is better income, higher education and more access to health care and contraception. Another feasible solution is the girl in the urban area prefers the smaller family compared to their counterpart in the rural area. (Georges, 2012).

(c) Sex education

Many young people are being taught sex education in schools. However, many students still lack knowledge and understanding about sex. It also does not provide comprehensive sexuality and reproductive health education because the teaching of sex education in Thailand is still limited. The part from teachers who have an attitude is conservative, not talking about sex as much as they should and the lack of positive communication about sexuality. According to the Bureau of reproductive health of Thailand found that adolescents aged 15-24 to learn about sex education about family planning. It has been teaching in the secondary school 65.4%, primary 12.5% and there are those who have never been taught about the percentage of 11.2% is also a group who do not remember and not sure taught 3.6%, respectively. Considering the age group 15-19 years and found that the age group 20-24 years age group, most have been teaching in the secondary school and the proportion of those aged 20-24 years that had not been taught about sex education beyond the age group 15-19 years was 14.2% and 8.2%, respectively (The National Statistical Office, 2009).

(d) Family and community attitudes

The influential role of the family and community play important part in personal sex behavior. Many respondents high light the barrier of communication between teenage and adults in strong cultural environment to discus and gain the information about the sex topics. Most of the girls in that society receive the sex information from their friends as they afraid to approach their parents regarding sex issues. This norm and attitude prevent the girls from receiving the sex education. In some country, some family encourages the early child bearing and marriage and also dislikes the reproductive health education on children.

(e) Peers and partners behavior

Peers pressure is important for each individual's decision of the sex. Most of the adolescents are influenced by peers or parents to smoke, drink and engage in sex activity. The large portion of the adolescent consults with their peers or parents about their sexual problems.

Adolescent always stay and familiar with their friends because all days they would take much more time in school with the friends. So adolescent's friends would influence to their think, opinion and behavior especially about boyfriend and sex. When adolescent follow to their friends and had emergency sex then situation of early pregnancy come later. According to other study they found more than 29 percent of pregnant teens reported that they felt pressured to have sex, and 33 percent of pregnant teens stated that they felt that they were not ready for a sexual relationship so peer group were influence and pressure to have adolescent pregnancy (Langham, 2015)

(f) Gender equality and age

The study revealed that most of the girls with early marriage are the victims of the harmful traditions. They were forced to marriage before 18 years, sexually abused and child labor. Most of the marriage in the rural area were arranged or planned by the family with the incentive from the rich man to marry the girl. In some tradition, child bearing was believed as social norm to ensure the stability of the marriage and one of the social statuses in the community. There is other social inequality between genders in the family, as young girls were forced to marry the older man as their family was draw from the rich of that man. And they were also prevented from the using contraceptive as they had the recessive role in the family as they were socio-

economically depended to their husbands. In contract boy are prioritized to send out to the school while the girls are left to do the household work (Georges, 2012).

(g) Mass media

Mass media does not only play an important role in providing health information but also has huge influence on the decision making and shaping the idea of the young people. There was no difference between gender and media exposure but the level of education was related with exposure (Georges, 2012).

The role of movie industry and the media have a lot of influence which contribute to teenage pregnancy by fancying teen pregnancy in modern in both stories and movies. Movies show beautiful images of teen pregnancy as something to be desirable encouraging teens to join in careless sexual activity, according to a well-known ABC's "Good Morning America." Teens become more concentrate on their images and how their peers think about them during their adolescents. They want to be participated as part of their groups, so if teen pregnancy is seen as agreeable in their schools or amongst their friends, they may want to become pregnant as a way to involve in social acceptance (Langham, 2015)

2.2.2 Sexual values and norms of society

Generally, when there is a debate or argument about unwanted pregnancy often speak in terms of legal, economic, medical and ethical issues mostly. Oblivious to the fact that an unwanted pregnancy is the result of social failure. From The values and norms of males in terms of education, politics and employment, sexual relationships, societal values and adhere to the double standard of sexual chastity of women are important. If any woman has violated the norms of such behavior would result in a pregnancy that occurs as unwanted pregnancy (Pinotti, 1989) The sexual prematurity and problems of inappropriate in sexual behavior of adolescents which are serious social problem and increasing every day. The study of Prasittimet found that male and female of vocational education had history of having sex for the first time minimum age is 9 years and 11 years.

Sexual behaviors which are inappropriate for adolescent in Thailand are caused by the current trend of seeing some the expression of sexual behavior is normal. Because these children absorb into western culture that forget to preserve culture of

Thailand. The results of the ABAC poll about "experiences and attitudes of youth on the sexual behavior in present" found that respondents 61.7% admitted the experience of having a lover and 37.5% had girlfriend or lover than one person, and 11.2% had a girlfriend or lover than 4 people. In the survey of acceptance of sexual behavior that most adolescences have a habit of shaking hands and arms to hold the shoulder or waist with couple and more than 52.9% to accept a handshake and 40.2% admitted to walk arm in arm with who is just to know or meet in vary place such as pubs, disco and malls. Moreover there are many adolescent amount 46.9% admitted to having sex with their boyfriend or lover and 13.9% admitted having sex with people who know the different places can be seen that the decision in love and sexual intercourse of adolescent happen fast and lack of preparation while society of Thailand is a sexual double standard. Therefore, the premature sex behavior or early marriage of girls, it is not concealed, which can lead to unwanted pregnancies (Sedthapongkul and Teerawanviwat, 1998).

2.2.3 Learning about sex does not correspond to reality in Thailand

Sexuality is seen as a private matter; do not talk openly in society. Teaching sex education to children is point out the way for the villain but Thai social changes. Borderless world society stimulate adolescent to interest and want to learn about sex. But most young people learn about sex in a wrong way, from friends and the media. Moreover, there is also a social failure, the failure of families and schools to educate teens about sex which is the most important causes of unwanted pregnancy. When teenagers entering puberty without knowledge, correctly understanding about their body or fear of their own bodies and it is difficult to communicate to achieve a better understanding of how to control their own fertility. In addition, ignorance or know little about sex. And sexual nature It leads to the idea that when they get pregnant and how to prevent pregnancy and to know how to avoid and protect themselves from being exploited sexually by men.

2.2.4 Weaknesses of family planning

A weakness of family planning is a source of unwanted pregnancy. Studies have shown that youth to still lack of knowledge, correctly understanding about pregnancy and prevention of pregnancy become particularly apparent in adolescents aged 15-16 years and unmarried teens having sex often infrequent and unintentional. It lacks the experience of preparing for the prevention of pregnancy. As the research of America found that only quarters of teens have sex and use contraception correctly and adolescents are more likely to have sexual experiences.

2.2.5 Lack of information and consulting services

Recently, evidence on women with health problems or want to use family planning services to find a way to support themselves by consulting with friends or family only. Because health services system of the government has no clear or sufficient. Especially not give priority to young teenage girls are at risk of pregnancy by the most ignorant, lack of necessary information to achieve an understanding of their practice to be about sex. Including social values upheld the judgment was not that teens learn about this. Young people are not willing to consult on family planning and this causes pregnancy in adolescent girls tend to increase.

2.2.6 The use of drugs and alcohol

Teenagers who use drugs or alcohol have a higher chance of getting pregnant than their abstemious peers, probably because their judgement of what is safe is impaired. People who are not fully sober or aware are more likely to forget to take contraceptives. The study found the prevalence and factors that influence pregnancy in vocational students aged 15 - 21 years in Chiang Rai Province in 1999 showed that In addition to age and level of education are associated with pregnancy. The group is using drugs such as amphetamine and female students, male students who smoked marijuana is likely to have early exposure of sex, or cause others to become pregnant than those not using drugs 2-3 times (Manopaiboon et al., 2003) as well as the ANC Youth League at Siriraj Hospital which found that using drugs than teens who do not conceive (Kumphangphan, 2009).

2.2.7 The family status of the adolescent

Family characteristics as the adolescent were growing up as part of determine the behavior of young people like to live in a single family or extended family. Characteristics of adolescents living alone or in dormitory including social status and economic status of families, affecting taught methods, how to take care, education, and attitude of the youth.

Moreover, the relationship between the family and adolescents, it is very important factor. From a survey of adolescent and adult run by College of Population Chulalongkorn University pointed out that family factor is a major cause of teenage pregnancy (Rakamnuaykij et al, 2013) and found that in families with a warm, affectionate teen to have good relationships with parents and family members, discipline in the family, cultivation, exchanged opinion which the trend of adolescent pregnancy less than adolescents from families with different characteristics.

Consistent with other research that found that adolescent growing and living in an extended family will have marriage or couple not premature. Because the family to take care of the behavior of adolescent (Jahan, 2008) and teens who are pregnant often be raised without the use of reason in families, probably due to parental education, income, instability in the work and the divorce of the parents higher than young women who are not pregnant. In addition, the status of the parents, total income of the family, history of teenage pregnancy and maternal relatives, raised in a family style and found that the relationship with the teenage siblings who are pregnant and not pregnant there are statistically significant difference (Kumphangphan, 2009).

However, some of this research find that the family is an important factor, followed by or that are important, such as the study of (Podhisita et al, 2004) pointed out that the income of the parents and education level, the severity of the family and relationships of adolescents with parents, relatives do not affect the sexual prematurity or (Manopaiboon et al., 2003) who studied in vocational students in Chiang Rai found that family structure whether the relationship of adolescents with a family member, Separation of father and mother, isolated to live alone, all of this no effect on adolescent pregnancy.

2.2.8 Adolescent sexuality

Most men experience sexual intercourse for the first time before their 20th birthdays in some countries. Men in Western developed countries have sex for the first time sooner than in undeveloped and culturally conservative countries such as Sub-Saharan Africa and much of Asia.

Kaiser Family Foundation study of USA teenagers in 2005 found that, 29% of teens reported feeling pressure to have sex, 33% of sexually active teens reported "being in a relationship where they felt things were moving too fast sexually", and 24% had "done something sexual they didn't really want to do" (Kaiser Family Foundation, 2002). Several surveys have indicated peer pressure as a factor encouraging both girls and boys to have sex. The increased sexual activity among adolescents is manifested increased teenage pregnancies which increase sexually transmitted disease.

2.2.9 Lack of contraception

Adolescents are lack of knowledge or access, conventional methods of preventing pregnancy, as they may be too embarrassed or frightened to seek such information (NC Department of Health and Human Services, 2015). Young women often consider about contraception use either as oral tablets or condoms and they have less knowledge about other methods. They are strongly influenced by negative, unsuccessful stories about contraception methods from their peer group and the multimedia (Slater, 2000) Prejudices are extremely hard to overcome. The adolescent concern about effects from oral tablets which can result in weight gain and acne so they usually refuse the contraceptive methods (Adams and Souza, 2009; Amin et al, 2009).

2.3. The problem of unwanted pregnancies among adolescents

Generally, the unwanted pregnancies in the developed society are likely to increase. The World Health Organization (WHO) reported that in every year, the problems of unwanted pregnancy cause lead to unsafe abortions of women at least 20 million people which more than 100000 people have died in the end because of various complications. Moreover, a millions of women suffer chronic health problems due to unsafe abortions. In particular, the survey results in Thailand indicate that many women both married and pregnant have unwanted pregnancy 30% of the all total. This is

number is quite high. Especially, if consider that this is an exploration only those who are married not include many women that pregnant without marriage whose unwanted pregnancy is a lot of decisions to terminate their pregnancy. So, caused of problems are the economic, social and medical risks to the health of adolescent mothers. The fetus was normal, especially the preterm birth and anemia, social issue of education, instability family and a great opportunity to work less, it also has other problems, such as being angry parents, punishment and not to help some people after abortion or after lifting the ball to someone else to feed it. Guilt and depression problems in teenage pregnancy problems and the effects of pregnancy are as follows (Carrie, 1998).

2.3.1 Physical problems

Adolescent mothers and babies there are high risk of death and illness. Especially teenage mothers are poor, do not get good nutrition, not receive prenatal care or who are younger than 17 years, complication as anemia to cause harm to adolescent mothers and fetal growth, fewer development of brain or could be disrupted, newborns low birth weight, adolescent mothers may have high blood pressure, preeclampsia, the rate of draw was higher than normal, breech presentation, the delivery time is longer than usual because of the growth of the pelvic floor is not completely full and premature is doubled.

2.3.2 Mental problems

Most adolescent pregnancy gets pregnant before marriages without planning before. These accidental pregnancies are often not accepted by the family and society. Sometime they are condemned by society increasing stress and anxiety for older teenage mothers themselves. And when a man is the father of the unborn child and not even agreement regarding stress, frustrated, depressed or lonely, sad to even more uncertainty in the economic and social cause's difficulty in maintaining pregnancy. Severe discomfort of changes the physiology the body during pregnancy. That results in changes in family and social relationships. Psychological and emotional effects are caused by uncertainty. The idea is to maintain a pregnancy or abortion, anxiety in all matters related.

2.3.3 Family Problems

When unwanted adolescent pregnancy may be occurs many problems such as the problem between young mothers and their partner that is controversial, disclaimer of husband, problems between the parents of young mothers may have been cut off from their families which do not get help from the family when the baby is born, young mothers may decide to leave the baby that contributes to the problem of children being abandoned as a burden to society. So, if young mothers pregnant they often out of the school which lead to the problem of finding a job, low income and secede from the same social group was not accepted by society or it may be a marriage valid and stable.

2.4 Consequence of early pregnancies

Adolescent pregnancies are a threatening problem and result for a long time of life in the future. The adolescent pregnancy will be a question demand a lot of skills needed to manage a pregnancy and motherhood. The outcome of adolescent pregnancy is a follows:

2.4.1 Low birth weight

The teen mothers are at greater risk having low birth weight newborns, while infants born to mothers under 15 years being most at risk. Low birth weight ranges from 3.5 pounds to 5.5 pounds. As a consequence of improper eating behaviors among the teens may cause pregnancy low weight gain and malnutrition. Some teen pregnancy smoking, drug abused and other complexity of pregnancy, such as high blood pressure, can cause low birth weight infant.

2.4.2 Premature labor

Adolescent pregnancies have to risk to delivery before full-term. The physical of adolescent mothers is not suitable for pregnant and labor. Some factors have to result in premature labor such as sexual transmitted diseases or smoking.

2.4.3 High Blood Pressure

During adolescents' pregnancies, the cardiovascular system of adolescent is undeveloped. High blood pressure is a complication that occurs frequently and is one

of the reasons deaths. High blood pressure during pregnancy may be a symptom of pre-eclampsia. Pre-eclampsia is a condition with high blood pressure and protein in urine. The transition waste between the uterus and placenta is bad and the growth of fetus abnormal and may be hypoxia, premature or death.

2.4.4 Anemia

Low iron is significant major problem found in pregnant teenager. Mostly caused result by malnutrition, especially iron deficiency. The teenage pregnant has eating behavior association with a poor diet and lack of knowledge about food with iron.

2.4.5 Delayed education

The adolescent pregnancies may make decision to drop out of school. Some pregnant teens want to keep the baby and planned to return to school after birth. But some person after birth they raise the baby, does not graduate.

2.4.6 Depression

Depression often occurs in pregnant adolescent. Teenage pregnant is high risk to depress because adolescence is a stage that has changed is the emotional susceptibilities easily confuse with the pregnant hormone such as estrogen and progesterone and affects to the mother and baby such as decrease self-care behavior, low quality of life. Depress may increase during pregnant or birth. When teenage have symptom of depress should to see the doctor for treatment. If pregnant or postpartum is not treated result to suicide in the end.

2.4.7 Trouble with finances

During pregnancy or after delivery, teenage mothers tend to have problem with the economic. Adolescent mother did not work in full-time because they must to take care the baby by yourselves. Teenage mothers must to tell their parents to support the costs of raising children.

2.4.8 Lack of prenatal care

Teenage mothers, lack of knowledge about prenatal care and they care for their baby without the parents. It is difficult for teenage mothers especially the first 1-3 months. Health of babies and mothers has been screened before discharge from the hospital. Teenage mother have noticed symptom abnormal of the babies when they take care at the home.

2.4.9 Sexually Transmitted Diseases (STDs)

Adolescent who have sex during pregnancy, may be infected with STDs such as Chlamydia and HIV. Using a condom during intercourse is appropriate to prevention, which can infect the uterus and growing fetus.

2.4.10 Postpartum depression

Pregnant teens may be at higher risk of postpartum depression (depression that starts after delivering a baby), according to the CDC. Girls who feel down and sad, either while pregnant or after the birth, should talk openly with their doctors or someone else they trust. Depression can interfere with taking good care of a newborn, and with healthy teenage development, but it can be treated.

2.4.11 Feeling Alone and Isolated

Mostly adolescent pregnancy can't tell their parents. They are feeling terrify, isolate, and lonely can be a real problem. Without the support of family or other adults, pregnant teens are less likely to eat well, exercise, or get plenty of rest. And they are less likely to get to their regular prenatal visits. Thus, they are necessary to tell their parents or other adult at least one trusted for supportive them.

2.5. Prevention of early pregnancy and poor reproductive outcomes among adolescents

World Health Organization plan a strategy based on the finding and recommendation of many research to prevent the premature pregnancy and highly burden out come from the adolescent from the less developed countries (WHO, 2011).

The highlighted facts from many literature reviews are (a) declining age of marriage before 18 (b) declining the age of first pregnancy before 18-20 years of age (c) promoting the contraceptive use in adolescent to avoid unintended pregnancy (d) lowering the chance of threatened sex between adolescent (e) preventing the unsafe induce abortion (f) promoting use of health facility service such as ANC, safe delivery and neonatal care.

To fulfill the above target the political player, organizer and community based organizers need to formulate the policy and plan an agenda to protect the girl from marriage before 18 years, extend the access to health care delivery services and contraceptive knowledge including emergency prevention for those who are unintended to get pregnant or underage. Other way is expanding the coverage of sexuality education or allowing the legal abortion to increase the safe abortion care. Enhance the access to basic and emergency obstetric care to skilled antenatal care.

Not only at national level, actions are desired to affect the community and family norms relating to delay marriage, encourage the girls to school, the sex education courage with the existing norms and extend the access to contraceptive.

The targets of the sexuality education are to strengthen the teenagers and child's knowledge, intention and to have the responsibility to make the decision of their social or sexual life and relation. Moreover, the legal abortion should be available for those who needed whereas the dangers of unsafe abortion are well announced. Similarly, adolescent should be equated with the life skill to improve the social skilled in daily life and supports them in the skill to deny unwanted sex or resist the forced one which they feel powerless to do.

Extending access to health care delivery services is crucial part of the health sectors to adolescent in a ways of smoothing their access to and contraceptive service and information for the skilled health care and safe delivery. Not only the adolescent but their family should be aware of the information of the reproductive health package for the teenage. Much consideration should be made from health care providers to handle the young girls. Young pregnant mother must need physical and social support from the family to plan safe motherhood and emergencies during or after delivery. Such preparations are the crucial part of family planning and should be considered in other households and family facilities.

2.5.1 Contraceptive methods

Different contraception methods suit different people for the best choice is what feels right for them and their partner, and what will be most effective in preventing an unwanted pregnancy and sexually transmitted infections. For the contraceptive methods including (1) modern methods and (2) traditional methods (WHO, 2015) as followed:

1) Modern methods

Modern methods	Description	How it works	Effectiveness to prevent pregnancy	Comments
Combined oral contraceptives (COCs) or "the pill"	Contains two hormones (estrogen and progestogen)	Prevents the release of eggs from the ovaries (ovulation)	>99% with correct and consistent use 92% as commonly used	Reduces risk of endometrial and ovarian cancer
Progestogen-only pills (POPs) or "the minipill"	Contains only progestogen hormone, not estrogen	Thickens cervical mucous to block sperm and egg from meeting and prevents ovulation	99% with correct and consistent use 90–97% as commonly used	Can be used while breastfeeding; must be taken at the same time each day
Implants	Small, flexible rods or capsules placed under the skin of the upper arm; contains progestogen hormone only	Thickens cervical mucous to block sperm and egg from meeting and prevents ovulation	>99%	Health-care provider must insert and remove; can be used for 3–5 years depending on implant; irregular vaginal bleeding common but not harmful

Modern methods	Description	How it works	Effectiveness to prevent pregnancy	Comments
Progestogen only injectables	Injected into the muscle every 2 or 3 months, depending on product	Thickens cervical mucous to block sperm and egg from meeting and prevents ovulation	>99% with correct and consistent use 97% as commonly used	Delayed return to fertility (about 1–4 months on the average) after use; irregular vaginal bleeding common, but not harmful
Monthly injectables or combined injectable contraceptives (CIC)	Injected monthly into the muscle, contains estrogen and progestogen	Prevents the release of eggs from the ovaries (ovulation)	>99% with correct and consistent use 97% as commonly used	Irregular vaginal bleeding common, but not harmful
Combined contraceptive patch and combined contraceptive vaginal ring (CVR)	Continuously releases 2 hormones – a progestin and an estrogen-directly through the skin (patch) or from the ring.	Prevents the release of eggs from the ovaries (ovulation)	The patch and the CVR are new and research on effectiveness is limited. Effectiveness studies report that it may be more effective than the COCs, both as commonly and consistent or correct use.	The Patch and the CVR provide a comparable safety and pharmacokinetic profile to COCs with similar hormone formulations.
Intrauterine device (IUD): copper containing	Small flexible plastic device containing copper sleeves or wire that is inserted into the uterus	Copper component damages sperm and prevents it from meeting the egg	>99%	Longer and heavier periods during first months of use are common but not harmful; can also be used as

Modern methods	Description	How it works	Effectiveness to prevent pregnancy	Comments
				emergency contraception
Intrauterine device (IUD) levonorgestrel	A T-shaped plastic device inserted into the uterus that steadily releases small amounts of levonorgestrel each day	Suppresses the growth of the lining of uterus (endometrium)	>99%	Decreases amount of blood lost with menstruation over time; Reduces menstrual cramps and symptoms of endometriosis; amenorrhea (no menstrual bleeding) in a group of users
Male condoms	Sheaths or coverings that fit over a man's erect penis	Forms a barrier to prevent sperm and egg from meeting	98% with correct and consistent use 85% as commonly used	Also protects against sexually transmitted infections, including HIV
Female condoms	Sheaths, or linings, that fit loosely inside a woman's vagina, made of thin, transparent, soft plastic film	Forms a barrier to prevent sperm and egg from meeting	90% with correct and consistent use	Also protects against sexually transmitted infections, including HIV
Male sterilization (vasectomy)	Permanent contraception to block or cut the vas deferens tubes that carry sperm from the testicles	Keeps sperm out of ejaculated semen	>99% after 3 months semen evaluation 97–98% with no semen evaluation	3 months delay in taking effect while stored sperm is still present; does not affect male sexual performance;

Modern methods	Description	How it works	Effectiveness to prevent pregnancy	Comments
				voluntary and informed choice is essential
Female sterilization (tubal ligation)	Permanent contraception to block or cut the fallopian tubes	Eggs are blocked from meeting sperm	>99%	Voluntary and informed choice is essential
Lactational amenorrhea method (LAM)	Temporary contraception for new mothers whose monthly bleeding has not returned; requires exclusive or full breastfeeding day and night of an infant less than 6 months old	Prevents the release of eggs from the ovaries (ovulation)	99% with correct and consistent use 98% as commonly used	A temporary family planning method based on the natural effect of breastfeeding on fertility
Emergency contraception (levonorgestrel 1.5 mg)	Progestogen-only pills taken to prevent pregnancy up to 5 days after unprotected sex	Prevents ovulation	If all 100 women used progestin-only emergency contraception, one would likely become pregnant.	Does not disrupt an already existing pregnancy
Standard Days Method or SDM	Women track their fertile periods (usually days 8 to 19 of each 26 to 32 day cycle) using cycle	Prevents pregnancy by avoiding unprotected vaginal sex during most fertile days.	95% with consistent and correct use. 88% with common use	Can be used to identify fertile days by both women who want to become pregnant and women who want to avoid

Modern methods	Description	How it works	Effectiveness to prevent pregnancy	Comments
	beads or other aids			pregnancy. Correct, consistent use requires partner cooperation.
Basal Body Temperature (BBT) Method	Woman takes her body temperature at the same time each morning before getting out of bed observing for an increase of 0.2 to 0.5 degrees C.	Prevents pregnancy by avoiding unprotected vaginal sex during fertile days	99% effective with correct and consistent use.	If the BBT has risen and has stayed higher for 3 full days, ovulation has occurred and the fertile period has passed. Sex can resume on the 4th day until her next monthly bleeding.
TwoDay Method	Women track their fertile periods by observing presence of cervical mucus (if any type color or consistency)	Prevents pregnancy by avoiding unprotected vaginal sex during most fertile days,	96% with correct and consistent use. 86% with typical or common use.	Difficult to use if a woman has a vaginal infection or another condition that changes cervical mucus. Unprotected coitus may be resumed after 2 consecutive dry days (or without secretions)
Sympto-thermal Method	Women track their fertile periods by observing changes in the cervical mucus (clear texture) , body temperature	Prevents pregnancy by avoiding unprotected vaginal sex during most fertile	98% with correct and consistent use.	May have to be used with caution after an abortion, around menarche or menopause, and in conditions

Modern methods	Description	How it works	Effectiveness to prevent pregnancy	Comments
	(slight increase) and consistency of the cervix (softening).			which may increase body temperature.

2) Traditional methods

Traditional Methods	Description	How it works	Effectiveness to prevent pregnancy	Comments
Calendar method or rhythm method	Women monitor their pattern of menstrual cycle over 6 months, subtracts 18 from shortest cycle length (estimated 1st fertile day) and subtracts 11 from longest cycle length (estimated last fertile day)	The couple prevents pregnancy by avoiding unprotected vaginal sex during the 1st and last estimated fertile days, by abstaining or using a condom.	91% with correct and consistent use. 75% with common use	May need to delay or use with caution when using drugs (such as anxiolytics, antidepressants, NSAIDS, or certain antibiotics) which may affect timing of ovulation.
Withdrawal (coitus interruptus)	Man withdraws his penis from his partner's vagina, and ejaculates outside the vagina, keeping semen away from her external genitalia	Tries to keep sperm out of the woman's body, preventing fertilization	96% with correct and consistent use 73% as commonly used	One of the least effective methods, because proper timing of withdrawal is often difficult to determine, leading to the risk of ejaculating while inside the vagina.

2.6 Research relate to this study

Christofides and others conducted a study about risk factors for unplanned and unwanted teenage pregnancies over two years of follow up among a cohort of young South African women note that using condoms as the method to prevent pregnancy was not associated with unplanned pregnancies (Christofides et al, 2014).

Haldre and others conducted a study about individual and familial factors associated with teenage pregnancy: an interview study indicated that risk factors associated with teenage pregnancy were low score of sexual health knowledge (Haldre et al, 2009).

Izugbara study about socio-demographic risk factors for unintended pregnancy among unmarried adolescent Nigerian girls found that the type of place of residence were significantly associated with adolescent pregnancy (Izugbara, 2015).

Fernandez and others conducted a study about beliefs, attitudes and knowledge about sex education found that adolescents coming from private schools have a better sexual knowledge level than public schools (Fernández et al, 2000).

Jemmott LS and Jemmott JB conducted a study about increasing condom-use intentions among sexually active black adolescent women found that the women scored higher in intentions to use condoms (Jemmott, 1992).

Krinara study about the effects of nursing student-lead unplanned pregnancy prevention program on knowledge, attitude and intention to prevent unplanned pregnancy among early adolescents which found that the students had scores in high level of unplanned pregnancy prevention intention, had scores in moderate level of attitude and had scores in low level of knowledge before training program (Krinara et al, 2013).

Yu Fengxue conducted a study attitude toward adolescent pregnancy, induced abortion and supporting health services among high school students in phuttamonthon district, Nakhon Pathom province indicated that most of the respondents had negative attitudes toward adolescent pregnancy (Fengxue, 2002).

Frost and others conducted a study about young adults' contraceptive knowledge, norms and attitudes: associations with risk of unintended pregnancy found that a quarter of young women received low scores on contraceptive knowledge (Frost et al, 2012).

Pangpond and others survey of 1,000 teenagers across Thailand run by College of Population Studies, Chulalongkorn University found that most of teenagers lack of knowledge about sex education which was a cause of teenage pregnancy (Rakamnuaykij et al, 2013).

United Nations Population Fund found that teenagers who use drugs or alcohol have a higher chance of getting pregnant than their abstemious peers, probably because their judgment of what is safe is impaired (UNFPA, 2013).

Pinto e Silva, study about pregnancy during adolescence and found that main point of immediate consequences of unwanted pregnancy are induced abortion which this is important problem, personal and family interruption, lace of prenatal health care, abandonment and adoption (Silva, 1998).

Felix, C. A., el al, they study the perception severity of university students at the University of Venda and found that an unwanted pregnancy lead to problem about mental health, embarrass and withdrawal from society and could be to higher risk of unwanted pregnancy such as problem of child birth and abuse. Few students in this study as perceived that unwanted pregnancy was becoming severe problem and relationship with education, deficiency of the young mother and raise the risk factors relate to behaviors (Anyanwu et al, 2013).

Olaitan found that university student have perception on the unwanted pregnancy about causes, effect and prevention. The researcher of this study agree with parent should have participant with their children by teaching or suggest about sex education and add in every curriculum in school and university. And Mitchel found that mostly of adolescent have learned from friend, mass media, television, novels etc. about sexual because their parent not have time to suggest and teach what is correct or wrong thing (Olaitan, 2010).

Olayinka, most of teenagers not have the knowledge about reproduction and natural of sexual and found that teenagers may not know how to uses contraceptive method and side effect as occur when they used it or some of them may misunderstood how to take it (Olayinka, 1997).

CHAPTER III
RESEARCH METHODOLOGY

3.1 Research Design

This research used a cross-sectional study design which aimed to measure the knowledge, attitude and intention of preventing the unwanted pregnancy among female undergraduate students in Bangkok, Thailand.

3.2 Study Area

The study was conducted at public and private university in Bangkok, Thailand.

3.3 Study Population

Study populations were female undergraduate students from first year to fourth year who are studying in second semester of academic year 2014.

3.2.1 Inclusion criteria

- The respondents who were studying undergraduate and enrolled in the year 2011-2014.
- The respondents who were 18-24 years of age.
- The respondents who were currently studying at the time of survey.
- The respondents must be Thai people.
- The respondents who were studying Thai Curriculum.
- The respondents who were willing to participate.

3.2.2 Exclusion criteria

- The respondents who dropped during data collection period.

3.4 Sample size

According to the data from Ministry of Education there were 376,947 female undergraduate students (Ministry of Education, 2010).

The sample size of students was calculated based on Taro Yamane's formula (Yamane, 1970) which has simplified formula for calculate sample size.

$$n = \frac{N}{1+N(e)^2}$$

Where;

n = the sample size

N = the size of population

e = the acceptable sampling error

* 95% confidence level and p = 0.5 are assumed

Calculate;

$$n = \frac{376{,}947}{1+376{,}947\ (.05)\ (.05)}$$

$$= 400 \text{ students}$$

By using Taro Yamane's formula, it yielded 400 samples from whole population of 376,947. An estimate 10% of missing data was added, thus, 440 female students were recruited.

3.5 Sampling Technique

In sampling technique the researcher used multistage sampling method (figure 2) to select female undergraduate students by 3 steps as followed:

Step 1: The researcher purposely selected 2 universities (one public and another one private university) from 30 universities in Bangkok (16 public and 14 private universities) (Office of the higher education commission, 2014) which the open universities and university which had female undergraduate students less than 5,000 were excluded. The number of female students from each university was calculated by proportional to size as shown in Table 1.

Table 1 Sample size of students from each university

No	Universities	Total Number of female students	n = sample size from each university (students)	Proportional to size (%)
1	Public University	11,887	11,887*440/21,418= 244 students	244*100/11,887= 2%
2	Private University	9,531	9,531*440/21,418 = 196 students	196*100/9,531 = 2%
		21,418	Total sample size = 440	

Therefore, the sample sizes of each university were 244 public university students and 196 private university students.

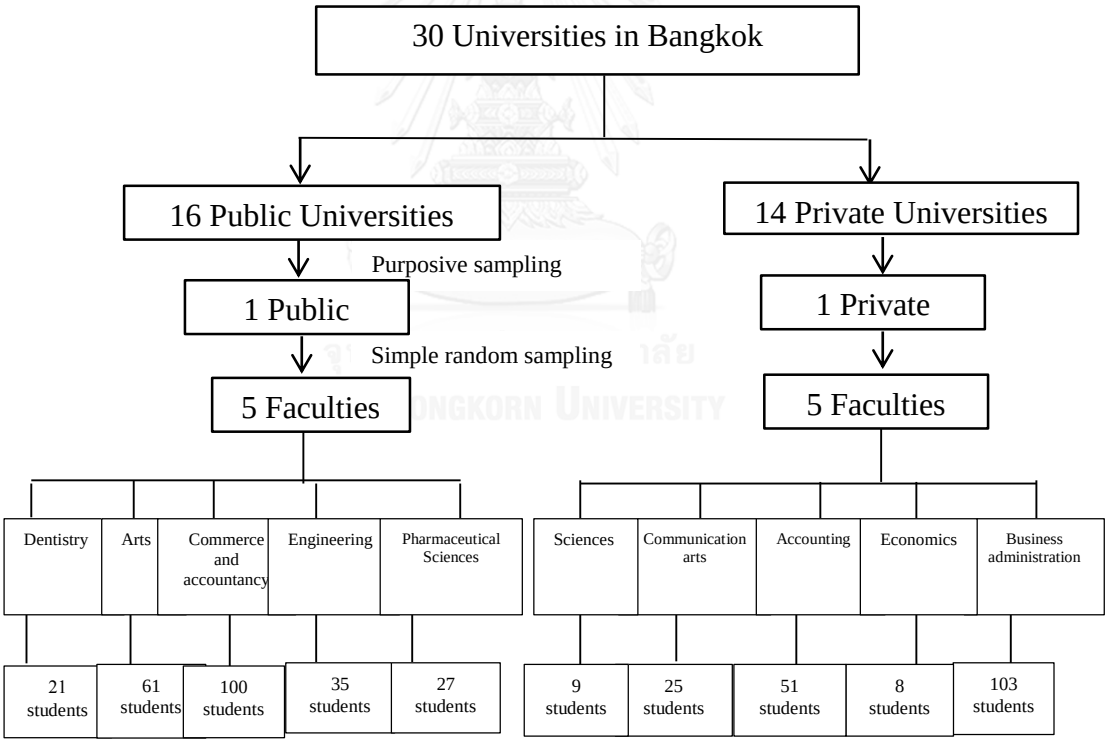

Figure 2 Sampling technique

Step 2: Selecting 5 represent faculties from each university by simple random sampling. The number of female students from each faculty was calculated from the proportional to size.

For the public universities, there are 18 faculties in undergraduate level, the name of faculty and number of female students of 5 selected faculties was shown in table 2.

Table 2 Sample size of students from each faculty in public universities

No.	Faculties	Total Number of female students	n = sample size from each faculty (students)	Proportional to size (%)
1	Dentistry	350	350*244/4,060 = 21 students	21*100/350 = 6%
2	Arts	1,025	1,025*244/4,060 = 61 students	61*100/1,025 = 6%
3	Commerce and accountancy	1,657	1,657*244/4,060 = 100 students	100*100/1,657=6%
4	Engineering	579	579*244/4,060 = 35 students	35*100/579 = 6%
5	Pharmaceutical Sciences	449	449*244/4,060 = 27 students	27*100/449 = 6%
		4,060	Total sample size = 244 students	

Therefore, 21 students from faculty of Dentistry, 61 students from faculty of Arts, 100 students from faculty of Commerce and accountancy, 35 students from faculty of Engineering and 27 students from faculty of Pharmaceutical Sciences were recruited in the study.

The private universities, there are 8 faculties in undergraduate level, the name of faculty and number of female students of 5 selected faculties was shown in Table 3.

Table 3 Sample size of students from each faculty in private university

No.	Faculties	Total Number of female students	n = sample size from each faculty (students)	Proportional to size (%)
1	Sciences	328	328*196/7,419 = 9 students	9*100/328 = 2%
2	Communication arts	930	930*196/7,419 = 25 students	25*100/930 = 2%
3	Accounting	1,916	1,916*196/7,419 = 51 students	51*100/1,916= 2%
4	Economics	328	328*196/7,419 = 8 students	8*100/328 = 2%
5	Business administration	3,917	3,917*196/7,419 = 103 students	103*100/3,917=2%
		7,419	Total sample size = 196 students	

Therefore, 9 students from faculty of Sciences, 25 students from faculty of Communication arts, 51 students from faculty of Accounting, 8 students from faculty of Economics and 103 students from faculty of Business administration were recruited in the study.

Step 3: Access to the respondent by convenience sampling according the number of sample size calculated.

3.6 Measurement Tools

The self-administrative structured questionnaire was developed according to previous research questionnaires in order to measure the female undergraduate students' knowledge, attitude and intention of preventing unwanted pregnancy. The questionnaire was divided into four parts as followed:

Part I: Socio demographic characteristics

There were 12 questions asking about general information which consisted of age, university, faculty, class year, GPA, monthly income, family status, types of family, types of living arrangement, having a boyfriend, sexual relationship with

current boyfriend, the method for use to prevent pregnancy, alcohol consumption, frequency of alcohol consumption and using substance abuse.

Part II: Knowledge on the unwanted pregnancy

There were 10 true/false questions asking about unwanted pregnancy which was adapted question from international researches and studies, there were 2 items that were adapted the question to make them relevant to the context of, Thai culture and Thai tradition (CDC, 2013; NC Department of Health and Human Services, 2015). Total score of knowledge was 11 points that meant if respondent chose the correct answer; their score was 1 point, on the other hand, if they chose the incorrect answer or not sure; their score was 0 point. The score range was 0-10 points. After that, the total score of students' knowledge was classified into 3 levels according to bloom's cut off point (Bloom, 1968).

Poor knowledge	0-6	points	(<60%)
Moderate knowledge	7-8	points	(60-80%)
High knowledge	9-10	points	(>80%)

Part III: Attitude towards the unwanted pregnancy

There were 12 questions that used to access attitude towards the unwanted pregnancy. The questions was modified from previous research's questionnaire (Banchasak, 2009) which the statement of questions comprised of both positive and negative statements. The scale for rating participants' attitude was used five categories Likert's scale which consisted of strongly agree, agree, neutral, disagree and strongly disagree.

Table 4 Attitude scores for positive and negative statements

Positive Statement		**Negative Statement**	
choice	**score**	**choice**	**score**
strongly agree	5	strongly agree	1
agree	4	agree	2
neutral	3	neutral	3
disagree	2	disagree	4
strongly disagree	1	strongly disagree	5

The score from each item was summed up to classify the level of attitude. The range of score was 12-60 points. After that, the total score of students' attitude was classified into 3 levels by using mean ± standard deviation (39.952 ± 4.127). The score less than and equal to mean - standard deviation refers to poor attitude. The score within mean - standard deviation and mean + standard deviation refers to moderate attitude. The score more than and equal to mean + standard deviation refers to good attitude.

Poor attitude	≤ 36	points (≤ Mean - SD)
Moderate attitude	37-43	points (Mean - SD to Mean + SD)
Good attitude	≥ 44	points (≥ Mean + SD)

Part IV: Intention of preventing the unwanted pregnancy

There were 12 questions that used to access the intention of preventing the unwanted pregnancy. In these 12 questions, there were 6 items that was adapted from other globalized studies in order to make them suitable for Thai context, culture, and tradition (Banchasak, 2009; DiIorio et al, 1992). The statement of questions comprised of both positive and negative statements. The scale of variable used four categories Likert's scale as followed;

Table 5 Intention scores for positive and negative statements

Positive Statement		**Negative Statement**	
choice	**score**	**choice**	**score**
Highest	5	Highest	1
High	4	High	2
Moderate	3	Moderate	3
low	2	low	4
lowest	1	lowest	5

The score from each item was summed up. The range of score was 12-60 points. After that, the students' Intention score was classified into 3 levels by using mean ± standard deviation (42.625 ± 5.29). The score less than and equal to mean - standard deviation refers to low intention. The score within mean - standard deviation and mean + standard deviation refers to moderate intention. The score more than and equal to mean + standard deviation refers to high intention.

Low intention	≤ 37	points (≤ Mean - SD)
Moderate intention	38-47	points (Mean - SD to Mean + SD)
High intention	≥ 48	points (≥ Mean + SD)

3.7 Validity and Reliability

3.7.1 Validity test of the instrument

The validity of questionnaire was checked by three experts, it must have value of coefficient above 0.5 which meant that the instrument is valid. After that the content of the questionnaire was adjusted according to their comments and it was translated into Thai language.

3.7.2 Reliability test of the instrument

After the questionnaire was revised, the pilot test was done in 45 female undergraduate students from Thammasat University for reliability testing of questionnaire. Kuder-Richardson formula 20 (KR-20) was used to measure the internal consistency reliability of knowledge part. Cronbach's alpha coefficient was used to measure the reliability of attitude and intention parts, it must have value of coefficient above 0.7 (DeVellis, 2003) that mean the questionnaire was considered satisfactory.

The reliability test results of the questionnaires for 3 parts consisted of knowledge, attitude and intention parts were shown as followed:

(1) Kuder-Richardson-20 coefficient of knowledge part 0.722
(2) Cronbach's alpha coefficient of attitude part 0.746
(3) Cronbach's alpha coefficient of intention part 0.722

3.8 Data collection

After getting the approval from the Ethic Review Committee for the research Involving Human Research Subject, Health Sciences Group, Chulalongkorn University, following steps was done.

2.8.1 The researcher requested the College of Public Health Sciences Chulalongkorn University to send a letter informing the objectives and

benefits of this study to the both public and private university to ask for the allowance on data collection.

2.8.2 The researcher went to the place of selected faculty and approached the students by creating good relationship with them to increase their confidence to answer the sensitive part of the questionnaire and told them that their answers were kept confidentially. Before the students answer the structured questionnaire, the researcher notified the objectives and benefits of this study and let them make clear for all step that they involved after letting them read the information sheet for the participant and asked them to sign in the consent form and assure them of voluntary participation and if one was not comfortable with this study they can withdraw from the study. The place of data collection was their faculty area during the break or after school hours. The students answered questionnaire on their own in uncrowded places and there were seats that make the students feel relax and boost their privacy to answer questionnaire. The data is collected from May – June 2015.

2.8.3 After that, the researcher distributed the questionnaires to the potential students who gave their consent and let them complete the questionnaires around 15 minutes. The students did not need to identify themselves so they can give true answers without hesitation. After finishing the questionnaires, the students put it in the envelopes and sealed before the questionnaires return to the researcher that the respondents feel safe about their answer.

2.8.4 The researcher checked on the completeness and correctness of the questionnaires later.

3.9 Data Analysis

After collecting data through questionnaire created by the researcher and checking for completeness, the data were analyzed by using SPSS (Statistic Package of Social Science) program version 22:

Descriptive statistics were used to describe the social demographic, knowledge, attitude and intention to prevent unwanted pregnancy and data were presented in

frequency, proportion, percentage, mean, maximum, minimum and standard deviation. Analytical statistics were used to describe association between dependents variables. The categorical independent variables were analyzed by using Mann-Whitney U test and Kruskal-Wallis test. Spearman's correlation was used to analyze the magnitude and direction of the relationship between knowledge, attitude and intention scores. Non-parametric statistics were used because knowledge score, attitude score and intention score were not normally distributed by using the Kolmogorov-Smirnov Test of Normality. After bivariate analysis, variables that had the p-value less than 0.2 (Jirapaiboonsuk, 2009) were entered as fixed factors or covariates in multiple linear regression analysis that described those variables independently related to intention of preventing the unwanted pregnancy. Statistical significance was considered at p-value ≤ 0.05.

3.10 Ethical Consideration

This study was submitted and approved (certified code 066.1/2558) by the Ethical Review Committee for Research Involving Human Research Subjects, Health Science Group Chulalongkorn University.

Before the respondents endorsed for consent form, the researcher explained the objective of the study to the respondent. The information would be identified the respondents was kept to secret. Furthermore, an identified name of students was not presented in the questionnaire. The students could deny participating at any time with no need to give reason and all information was not be used in other purposes.

3.11 Limitation

The results of this study did not represent all female undergraduate students in Bangkok Thailand.

The descriptive and quantitative data obtained from the cross sectional study design can only describe the outcome at one specific point of time, so cannot explain outcome in long period.

The self-administrative questionnaire was used to collect information, so recall bias and bias self-report should be also recognized.

3.12 Expected Benefit and Application

The findings from this research will address the level of knowledge, attitude and the intention to prevent the unwanted pregnancy of female undergraduate student in selected universities in Bangkok. The findings will provide insight educational intervention that is necessary for institute of education such as comprehensive sexuality and reproductive health education to reduce the rate of unwanted pregnancy and reduce induce abortion in adolescent.

CHAPTER IV
RESULTS

The study was a cross sectional study, aimed to determine knowledge, attitude and intention of preventing the unwanted pregnancy among female undergraduate students in Bangkok, Thailand. There were a total of 440 female undergraduate students, 244 students from public university and 196 students from private university. The study selected at five faculties of each university. The students have been distributed in proportion to total students of each faculty. The data was collected by using structured questionnaires during 15th – 29th May 2015 at one public university and one private university.

This chapter presents the findings from data analysis and the data analysis was divided into two main sections: (1) The descriptive information and (2) The analytic information.

Therefore, data collected were evaluated in terms of statistics which could be divided into eleven parts, in the following orders:

4.1 The descriptive information

4.1.1 Socio-demographic characteristics of female undergraduate students in Bangkok.

4.1.2 Knowledge on the unwanted pregnancy of female undergraduate students in Bangkok

4.1.3 Attitude towards the unwanted pregnancy of female undergraduate students in Bangkok.

4.1.4 Intention of preventing the unwanted pregnancy of female undergraduate students in Bangkok.

4.2 The analytic information (testing association)

4.2.1 Association between socio-demographic characteristics and knowledge on unwanted pregnancy among female undergraduate students in Bangkok.

4.2.2 Association between socio-demographic characteristics and attitude towards unwanted pregnancy among female undergraduate students in Bangkok.

4.2.3 Association between socio-demographic characteristics and intention of preventing the unwanted pregnancy among female undergraduate students in Bangkok.

4.2.4 Association between knowledge and intention of preventing the unwanted pregnancy among female undergraduate students in Bangkok.

4.2.5 Association between attitude and intention of preventing the unwanted pregnancy among female undergraduate students in Bangkok.

4.2.6 Multiple linear regression analysis of factors associated with intention of preventing the unwanted pregnancy.

4.1 The descriptive information

4.1.1 Socio-demographic characteristics of female undergraduate students in Bangkok

The frequency distribution of socio-demographic characteristics of the respondents was shown in Table 6. It included age, class year, GPA, monthly income, family status, types of family, types of living arrangement, having a boyfriend, sexual relationship with current boyfriend, the method for use to prevent pregnancy, alcohol consumption, frequency of alcohol consumption and using substance abuse.

The students' age ranged from 18 to 24 years. The mean age was 20.93 years old (SD = 1.44). The students' age mainly distributed around 19-22 years old (16.4%, 19.5%, 20.7% and 26.8%, respectively. Small numbers of the students were in the aged of 23 years (10.7%), 18 years (3.4%) and 24 years old (2.5%).

The class year, majority of the students (41.6%) were forth year, while third year, first year and second year constituted 20.2%, 19.8% and 18.4% respectively. Regarding the students' GPA, majority of students (37.0%) got GPA ranged from 3.01 to 3.50.

The students' monthly income ranged from 1500 to 70000 baht, more than half of them (55.2%) had monthly income between 5000 to 10000 baht per month while a

quarter of them have monthly income less than 5000 baht. Around 79% of student had their parents living together in the family, 15.9% of them, their father and mother divorced or separated and few percentages of the students had family which their father or mother or both passed away. More than half of the students had single family (67.0%) while the students with expanded family were 33.0%. Majority of the students were living with family or relatives (74.5%), living alone 17.5%. There were only 5 students living with boyfriend.

Regarding having a boyfriend, more than half of all the students (66.4%) denied having a boyfriend while one-third of them (33.6%) accepted having a boyfriend. Out of all students who having boyfriend, 42.6% of them had sexual relationship with current boyfriend. Condoms were widely used to prevent pregnancy, 73 percent of students used it when they have sexual intercourse. Using birth control pills was inferior to condoms; around 19.0% of students used this method to prevent pregnancy. Only 8% of all the students who had sexual relationship with current boyfriend used withdrawal method to prevent pregnancy.

Almost half of all the students (48.0%) drank alcoholic beverage. Majority of the students (34.1%) drank alcoholic beverage once a month within last 6 months. Nearly same percentage of the students drank occasionally such as after finished final examination or special events. Only few students drank alcoholic beverage every day. Most of the students (97.7%) were not use substance abuse.

Table 6 Number and percentage distribution of socio-demographic characteristics

Characteristics	Number (n = 440)	Percentage (%)
Age (years)		
18	15	3.4
19	72	16.4
20	86	19.5
21	91	20.7
22	118	26.8
23	47	10.7
24	11	2.5
Mean = 20.93 SD = 1.44 Max = 24 Min = 18		

Table 6 (continued) Number and percentage distribution of socio-demographic characteristics.

Characteristics	Number (n = 440)	Percentage (%)
Class year		
1st year	87	19.8
2nd year	81	18.4
3rd year	89	20.2
4th year	183	41.6
GPA		
1.50 – 2.00	10	2.3
2.01 – 2.50	57	13.0
2.51 – 3.00	128	29.1
3.01 – 3.50	163	37.0
3.51 – 4.00	82	18.6
Monthly income (baht)		
< 5000	111	25.2
5000-10000	243	55.2
10001- 20000	73	16.6
> 20000	13	3.0
Range = 1500-70000		
Mean = 9164.32 SD = 6303.49		
Family status		
Father and Mother live together	347	78.9
Father and Mother divorce/separated	70	15.9
Father pass away	20	4.5
Mother pass away	2	0.5
Both pass away	1	0.2
Types of family		
Single family	295	67.0
Extended family	145	33.0
Types of living arrangement		
Living alone	77	17.5
Living with family/relatives	328	74.5
Living with boyfriend	5	1.1
Sharing the room with same sex friend	30	6.8
Having a boyfriend		
Yes	148	33.6
No	292	66.4

Table 6 (continued) Number and percentage distribution of socio-demographic characteristics.

Characteristics	Number (n = 440)	Percentage (%)
Sexual relationship with current boyfriend		
Yes	63	42.6
No	85	57.4
The method to use to prevent pregnancy		
Condoms	46	73.0
Birth control pills	12	19.0
Withdrawal	5	7.9
Alcohol consumption (within last 6 months)		
Yes	211	48.0
No	229	52.0
Frequency of alcohol consumption		
Less than once a month	64	30.3
1 time/month	72	34.1
2-3 times/month	50	23.7
1 time/week	14	6.6
3-4 times/week	8	3.8
Everyday	3	1.4
Using substance abuse		
Yes	10	2.3
No	430	97.7

4.1.2 Knowledge on unwanted pregnancy of female undergraduate students in Bangkok

The questions were asked to explore the students' knowledge about unwanted pregnancy including 10 questions which consisted of 6 correct statements and 4 incorrect statements. The full score of knowledge was 10 points. Number and percentage of students that had correct understanding to each question about knowledge on unwanted pregnancy was shown below in table 7.

There were five statements that more than three-quarters of the students answered correctly which were 1) unwanted teenage pregnancy can lead to unsafe abortion (94.5%), 2) a teen can get pregnant with the first times she has sex (83.0%), 3) the only 100% sure way to prevent pregnancy is to not have sex (82.5%), 4) express feelings and reasoning to deny, can reduce chance to have sex (79.3%) and 5) denial or bargain friends in risk situations can reduce the need to have sex (78.2%).

The half of students answered correctly that skin contact with opposite sex can lead to sexual intercourse (59.3%), condoms did not work 100% of the time in preventing pregnancy (56.8%) and the use of drugs and alcohol were increase the risk to having sex (55.7%).

However, only 49.5% of them knew that avoid watching erotic movies is one of method to prevent having sex and only 38.2% of them knew that taking emergency pills immediately after having sex can prevent pregnancy.

Table 7 Number and percentage of correct answer to each item of knowledge

	Statement	Correct	
		Number (n = 440)	**Percentage (%)**
1	The use of drugs and alcohol not increase the risk to having sex*	245	55.7
2	A teen can get pregnant with the first times she has sex	365	83.0
3	Unwanted teenage pregnancy can lead to unsafe abortion	416	94.5
4	The only 100% sure way to prevent pregnancy is to not have sex	363	82.5
5	Taking emergency pills before sex can prevent pregnancy*	168	38.2
6	Condoms work 100% of the time in preventing pregnancy*	250	56.8
7	Skin contact with opposite sex cannot lead to sexual intercourse*	261	59.3
8	Avoid watching erotic movies is one of method to prevent having sex	218	49.5
9	Denial or bargain friends in risk situations can reduce the need to have sex	344	78.2
10	Express feelings and reasoning to deny, can reduce chance to have sex	349	79.3

**represents false statement*

The level of knowledge was summarized in table 8 as shown below; the range of knowledge scores was from 0-10 and cut off point based on Benjamin Bloom scale that classified into 3 groups (>80%, 60%-80%, <60%).

According to the table 8, 42.5% of the students had poor knowledge about unwanted pregnancy while less than 40% of the students had moderate knowledge.

There were 92 (20.9%) students had high knowledge level about unwanted pregnancy. The mean knowledge scores were 6.77 out of possible 10 points. Only 27 students were able to answer all the questions correctly. This shows that female undergraduate students in Bangkok have insufficient knowledge concerning unwanted pregnancy.

Table 8 Distribution of knowledge level about unwanted pregnancy

Level of knowledge	Number (n = 440)	Percentage (%)
Poor (0 – 6 scores)	187	42.5
Moderate (7 – 8 scores)	161	36.6
High (9 – 10 scores)	92	20.9
Total	440	100.0
Mean = 6.77 SD = 1.96 Max = 10 Min = 1		

4.1.3 Attitude towards unwanted pregnancy of female undergraduate students in Bangkok

In order to know the attitude towards unwanted pregnancy, all of the students were asked about their opinions through 12 questions which consisted of 7 positive attitudes and 5 negative attitudes. The full score of attitude was 60 points, the 5 score was given for strongly agree, 4 for agree, 3 for neutral, 2 for disagree and 1 for strongly disagree answer for positive statements and vice versa for negative statements.

The number and percentage of students' opinion on each statement about attitude towards unwanted pregnancy was shown in table 9 as below.

More than third-fourth of the students agreed that having contraceptive knowledge in the teenage life is the protective factors from unwanted pregnancy (88.7%: 38.0% strongly agree, 50.7% agree), the unwanted pregnancy will end up eventually in unsafe abortion (86.8%: 37.5 strongly agree, 37.5 agree), teenage pregnancy can be disgraceful to both myself and my family in social life (82.0%: 38.6% strongly agree, 43.4% agree) and drinking alcohol risk to sexual intercourse unintentionally (76.3%: 24.5 strongly agree, 51.8% agree).

Less than 70% of the students agreed that condom use can prevent pregnancy (69.5%: 12.7% strongly agree, 56.8% agree), thought that denial to go out with the friend to the private place at night is appropriate manners for teenager (69.4%: 30.5%

strongly agree, 38.9% agree) and family is one of the causes of the adolescent unwanted pregnancy (69.1%: 23.9% strongly agree, 45.2% agree).

Majority of the students disagreed that contraception is not necessary for sexual intercourse in adolescent (83.6%: 36.1 disagree, 47.5% strongly disagree) and teenage pregnancy is normal social practice (76.3%: 48.6% disagree, 27.7% strongly disagree). The half of the students disagree that having sexual relationship with my boyfriend is the proof of love (52.0%: 31.1 disagree, 20.9% strongly disagree) while 34.8% of them had neutral attitude towards unwanted pregnancy.

Less than half of the students disagreed that having sexual relationship with boyfriend at the school age is normal for teenagers (40.0%: 24.8% disagree, 15.2% strongly disagree) while 22.1% of them agreed that it is normal for teenagers. Small number of the students disagreed that watching erotic movies and reading pornographic books are normal (11.25%: 18.4% disagree, 6.6% strongly disagree), while 34.1% of them agreed that it is normal issue. Around 40% of them were not sure whether watching erotic movies and reading pornographic books are normal.

Table 9 Number and percentage of attitude towards the unwanted pregnancy

	Statement	Attitude				
		Strongly agree	**Agree**	**Neutral**	**Disagree**	**Strongly disagree**
		n (%)	**n (%)**	**n (%)**	**n (%)**	**n (%)**
1	I think that teenage pregnancy is normal social practice*	3 (0.7)	21 (4.8)	80 (18.2)	214 (48.6)	122 (27.7)
2	I think that contraception is not necessary for sexual intercourse in adolescent*	19 (4.3)	16 (3.6)	37 (8.4)	159 (36.1)	209 (47.5)
3	I believe that condom use can prevent pregnancy	56 (12.7)	250 (56.8)	91 (20.7)	34 (7.7)	9 (2.0)
4	I believe that having contraceptive knowledge in the teenage life is the protective factors from unwanted pregnancy	167 (38.0)	223 (50.7)	37 (8.4)	12 (2.7)	1 (0.2)
5	I think that family is one of the causes of the adolescent unwanted pregnancy	105 (23.9)	199 (45.2)	90 (20.5)	33 (7.5)	13 (3.0)
6	I think that teenage pregnancy can be disgraceful to both myself and my family in social life	170 (38.6)	191 (43.4)	57 (13.0)	19 (4.3)	3 (0.7)
7	I believe that unwanted pregnancy will end up eventually in unsafe abortion	165 (37.5)	217 (49.3)	42 (9.5)	15 (3.4)	1 (0.2)
8	I think that having sexual relationship with my boyfriend is the proof of love*	10 (2.3)	48 (10.9)	153 (34.8)	137 (31.1)	92 (20.9)
9	I believe that having sexual relationship with my boyfriend at the school age is normal for teenagers*	10 (2.3)	87 (19.8)	167 (38.0)	109 (24.8)	67 (15.2)

**represents negative statements*

Table 9 (continued) Number and percentage of attitude towards the unwanted pregnancy

	Statement	Attitude				
		Strongly agree	Agree	Neutral	Disagree	Strongly disagree
		n (%)	n (%)	n (%)	n (%)	n (%)
10	I think that drinking alcohol risk to sexual intercourse unintentionally	108 (24.5)	228 (51.8)	80 (18.2)	17 (3.9)	7 (1.6)
11	I think that watching erotic movies and read pornographic books are normal*	23 (5.2)	127 (28.9)	180 (40.9)	81 (18.4)	29 (6.6)
12	I think that denial to go out with the friend to the private place at night is appropriate manners for teenager	134 (30.5)	171 (38.9)	102 (23.2)	23 (5.2)	10 (2.3)

**represents negative statements*

The level of attitude was summarized in table 10 as below; the range of knowledge scores was from 12-60 and using mean ± standard deviation classified into 3 groups (≤ Mean - SD, Mean - SD to Mean + SD, ≥ Mean + SD).

According to the table 10, the mean attitude score was 39.95 points and the standard deviation as 4.13. Majority of the students (63.9%) had moderate attitude towards the unwanted pregnancy while small number of them (18.2%) had good attitude and 18.0% of students had poor attitude.

Table 10 Distribution of attitude level towards unwanted pregnancy

Level of attitude	Number (n = 440)	Percentage (%)
Poor (≤ 36 points)	79	18.0
Moderate (37 – 43 points)	281	63.9
Good (≥ 44 points)	80	18.2
Total	440	100.0
Mean = 39.95 SD = 4.13 Max = 56 Min = 22		

4.1.4 Intention of preventing the unwanted pregnancy of female undergraduate students in Bangkok

In order to know the intention of preventing the unwanted pregnancy, all of the students were asked about their intention of preventing the unwanted pregnancy using 12 questions which consisted of 9 positive statements and 3 negative statements. The full score of intention was 60 points; the score was given 5 for highest, 4 for high, 3 for moderate, 2 for low and 1 for lowest intention answer for positive statements and vice versa for negative statements.

The number and percentage of students who answered to each statement about intention of preventing the unwanted pregnancy was shown in table 11 as below.

Majority of students intended to use condom when they have sexual intercourse (90.5%: 58.2% highest, 32.3% high), they intended to deny if a friend ask them to use narcotics and confront him/her to avoid it by adoption alternative activity (88.4%: 73.6% highest, 14.8% high), they intended to refuse to have sexual intercourse, if their partner insists on sexual intercourse without a condom (78.9%: 55.7% highest, 23.2% high) and having a mental plan to practice safer sex, if they know an encounter may lead to sexual intercourse (76.4%: 36.6% highest, 39.8% high).

Around seventy percent of students intended not to have sexual intercourse in school age (73.2%: 56.8% highest, 16.4% high), they intended not to have pre-marriage sex (65.7%: 43.9% highest, 21.8% high), they will refuse if they are invited to watch the adult entertainment including movies, books and pictures (65.2%: 38.4% highest, 26.8% high) and nearly 60% of them will carry a condom with them, if they know an encounter may lead to sexual intercourse (58.4%: 23.6% highest, 34.8% high). Only 38.2% (19.1% highest, 19.1% high) of students had high intention while 38.4% and 23.4% of them had moderate intention and low intention to avoid the social event that involves drinking alcohol and beverage respectively.

The majority of students intended not to have sexual intercourse on a first date (90.4%: 22.0% low, 68.4% lowest in the negative statement) and they intended not to have sexual intercourse without using a condom, if swept away in the passion of the moment (72.0%, 28.4% low, 43.6% lowest in the negative statement). Only 29.6% (14.8% low, 14.8% lowest in the negative statement) of students intended not to spend

time in night club and want to enjoy the new thrilling experience with friends while 41.6% of them had moderate intention.

Table 11 Number and percentage of intention of preventing the unwanted pregnancy (n = 440)

	Statement	Intention				
		Highest	**High**	**Moderate**	**Low**	**Lowest**
		n (%)	**n (%)**	**n (%)**	**n (%)**	**n (%)**
1	I insist on condom use when I have sexual intercourse	256 (58.2)	142 (32.3)	36 (8.2)	5 (1.1)	1 (0.2)
2	I engage in sexual intercourse on a first date*	2 (0.5)	12 (2.7)	28 (6.4)	97 (22.0)	301 (68.4)
3	If I know an encounter may lead to sexual intercourse, I carry a condom with me	104 (23.6)	153 (34.8)	121 (27.5)	38 (8.6)	24 (5.5)
4	If swept away in the passion of the moment, I have sexual intercourse without using a condom*	13 (3.0)	30 (6.8)	80 (18.2)	125 (28.4)	192 (43.6)
5	If I know an encounter may lead to sexual intercourse, I have a mental plan to practice safer sex	161 (36.6)	175 (39.8)	81 (18.4)	14 (3.2)	9 (2.0)
6	If my partner insists on sexual intercourse without a condom, I refuse to have sexual intercourse	245 (55.7)	102 (23.2)	57 (13.0)	18 (4.1)	18 (4.1)
7	I intend not to have sexual intercourse in school age	250 (56.8)	72 (16.4)	79 (18.0)	25 (5.7)	14 (3.2)

**represents negative statements*

Table 11 (continued) Number and percentage of intention of preventing the unwanted pregnancy (n = 440)

	Statement	Intention				
		Highest	**High**	**Moderate**	**Low**	**Lowest**
		n (%)	**n (%)**	**n (%)**	**n (%)**	**n (%)**
8	I intend not to have pre-marriage sex	193 (43.9)	96 (21.8)	104 (23.6)	32 (7.3)	15 (3.4)
9	I intend to avoid the social event that involves drinking alcohol and beverage	84 (19.1)	84 (19.1)	169 (38.4)	72 (16.4)	31 (7.0)
10	I intend to deny if a friend ask me to use narcotics and confront him/her to avoid it by adoption alternative activity	324 (73.6)	65 (14.8)	35 (8.0)	9 (2.0)	7 (1.6)
11	I will refuse if I am invited to watch the adult entertainment including movies, books and pictures	169 (38.4)	118 (26.8)	111 (25.2)	31 (7.0)	11 (2.5)
12	I intend to spend time in night club and want to enjoy the new thrilling experience with friends*	44 (10.0)	83 (18.9)	183 (41.6)	65 (14.8)	65 (14.8)

**represents negative statements*

The level of intention of preventing the unwanted pregnancy was summarized in table 12 as below; the range of intention scores was from 12-60 and using mean ± standard deviation classified into 3 groups (≤ Mean - SD, Mean - SD to Mean + SD, ≥ Mean + SD).

According to the table 12, the mean intention score was 42.63 points. Majority of the students (64.8%) had moderate intention of preventing the unwanted pregnancy while small numbers of them (18.0%) had high intention level. And only 17.3% of students had low intention level of preventing the unwanted pregnancy.

Table 12 Distribution of intention level of preventing the unwanted pregnancy

Level of intention	Number (n = 440)	Percentage (%)
Low (≤ 37 points)	76	17.3
Moderate (38 – 47 points)	285	64.8
High (≥ 48 points)	79	18.0
Total	440	100.0
Mean = 42.63 S.D = 5.29 Max = 60 Min = 25		

4.2 The analytic information

4.2.1 Association between socio-demographic characteristics and knowledge on unwanted pregnancy among female undergraduate students in Bangkok

Mann-Whitney U test, Kruskal-Wallis test and Spearman's correlation were considered appropriate for measures the association between socio-demographic characteristics and knowledge score because the socio-demographic characteristics and knowledge score distributions were not normally distributed.

Associations between knowledge score and types of family, boyfriend and sexual relationship, alcohol consumption and using substance abuse were analyzed by Mann-Whitney U test while associations between knowledge score and family status, types of types of living arrangement and the method use to prevent pregnancy were analyzed by Kruskal-Wallis test. Association between knowledge score and age, class year, GPA, monthly income and frequency of alcohol consumption were analyzed by Spearman's correlation.

Table 13 shows the result of Mann-Whitney U test and Kruskal-Wallis test of relationship between socio-demographic characteristics and knowledge score. Among 7 characteristics, one of them were statistically significant with knowledge score at $p \leq 0.05$ levels that was types of living arrangement ($p= 0.009$). It was notable that students who live with same sex friend had knowledge score superior than other types of living arrangement. Other factors i.e. family status, types of family, having a boyfriend, sexual relationship with current boyfriend, the method use to prevent pregnancy, alcohol consumption and using substance abuse was no statistically significant associated with knowledge score.

Table 14 shows the result of Spearman's correlation test of relationship between socio-demographic characteristics and knowledge score. Among 5 characteristics, the statistically significant positive correlations were found in age and GPA at $p \leq 0.05$ levels (Spearman's coefficient = 0.095, p = 0.048 and Spearman's coefficient = 0.246, $p < 0.001$, respectively). It meant that if age and GPA increased, knowledge score increased. Class year, monthly income and frequency of alcohol consumption were no statistically significant correlation with knowledge score.

Table 13 Association between socio-demographic characteristics and knowledge score by using Mann-Whitney U test and Kruskal-Wallis test (n = 440)

Socio-demographic Characteristic	Knowledge score Mean Rank	p-value
Family status		
Father and Mother live together	216.92	0.504
Father and Mother divorce/separated	232.47	
One or both parents pass away	238.13	
Types of family		
Single family	215.28	0.214
Extended family	231.11	
Types of living arrangement		
Living alone	181.46	0.009*
Living with family/relatives	226.02	
Living with boyfriend	205.50	
Sharing the room with same sex friend	262.80	
Boyfriend and sexual relationship		
Having boyfriend and sexual relationship	211.87	0.556
Not having boyfriend/ having boyfriend but no sexual relationship	221.94	

**Statistically significant at p-value ≤ 0.05*

Table 13 (continued) Association between socio-demographic characteristics and knowledge score by using Mann-Whitney U test and Kruskal-Wallis test (n = 440)

Socio-demographic Characteristic	Knowledge score Mean Rank	p-value
The method use to prevent pregnancy		
Condoms	210.36	0.935
Birth control pills	220.46	
Withdrawal	205.20	
Abstinence	221.94	
Alcohol consumption (within last 6 months)		
Yes	215.60	0.433
No	225.01	
Using substance abuse		
Yes	149.85	0.072
No	222.14	

**Statistically significant at p-value ≤ 0.05*

Table 14 Association between socio-demographic characteristics and knowledge score by using Spearman's correlation (n = 440)

Variable	Knowledge score	
	Correlation Coefficient	P-value
Age	0.095	0.048*
Class year	0.093	0.051
GPA	0.246	<0.001*
Monthly income	-0.056	0.238
Frequency of alcohol consumption	-0.064	0.183

**Statistically significant at p-value ≤ 0.05*

4.2.2 Association between socio-demographic characteristics and attitude towards unwanted pregnancy among female undergraduate students in Bangkok

Mann-Whitney U test, Kruskal-Wallis test and Spearman's correlation were considered appropriate for measures the association between socio-demographic characteristics and attitude score because the socio-demographic characteristics and attitude score distributions were not normally distributed.

Table 15 shows the result of Mann-Whitney U test and Kruskal-Wallis test of relationship between socio-demographic characteristics and attitude score. Among 7 characteristics, two of them which are boyfriend and sexual relationship ($p < 0.001$),

and the method use to prevent pregnancy ($p < 0.001$) were statistically significant associated with attitude score at $p \leq 0.05$ levels. It was notable that students who have a boyfriend, have sexual intercourse with their boyfriend and used birth control pills to prevent pregnancy had the highest attitude score. On the other hands, family status, types of family, types of living arrangement, alcohol consumption and using substance abuse were not statistically significant associated with attitude score.

Table 16 shows the result of Spearman's correlation test of relationship between socio-demographic characteristics and attitude score. Age, class year, GPA, monthly income and frequency of alcohol consumption were no statistically significant correlation with attitude score.

Table 15 Association between socio-demographic characteristics and attitude score by using Mann-Whitney U test and Kruskal-Wallis test (n = 440)

Socio-demographic Characteristic	Attitude score Mean Rank	p-value
Family status		
Father and Mother live together	216.19	0.387
Father and Mother divorce/separated	236.36	
One or both parents pass away	237.24	
Types of family		
Single family	224.86	0.304
Extended family	211.64	
Types of living arrangement		
Living alone	225.75	0.404
Living with family/relatives	215.83	
Living with boyfriend	267.40	
Sharing the room with same sex friend	250.30	
Boyfriend and sexual relationship		
Having boyfriend and sexual relationship	280.10	<0.001*
Not having boyfriend/ having boyfriend but no sexual relationship	210.10	

**Statistically significant at p-value ≤ 0.05*

Table 15 (continued) Association between socio-demographic characteristics and attitude score by using Mann-Whitney U test and Kruskal-Wallis test (n = 440)

Socio-demographic Characteristic	Attitude score Mean Rank	p-value
The method use to prevent pregnancy		
Condoms	277.87	<0.001*
Birth control pills	314.12	
Withdrawal	218.90	
Abstinence	210.54	
Alcohol consumption (within last 6 months)		
Yes	230.68	0.106
No	211.12	
Using substance abuse		
Yes	218.05	0.951
No	220.56	

**Statistically significant at p-value ≤ 0.05*

Table 16 Association between socio-demographic characteristics and attitude score by using Spearman's correlation (n = 440)

Variable	Attitude score	
	Correlation Coefficient	P-value
Age	-0.018	0.707
Class year	-0.036	0.456
GPA	-0.044	0.357
Monthly income	0.003	0.942
Frequency of alcohol consumption	0.078	0.104

4.2.3 Association between socio-demographic characteristics and intention of preventing the unwanted pregnancy among female undergraduate students in Bangkok

Mann-Whitney U test, Kruskal-Wallis test and Spearman's correlation were considered appropriate for measures the association between socio-demographic characteristics and intention score because the socio-demographic characteristics and intention score distributions were not normally distributed.

Table 17 shows the result of Mann-Whitney U test and Kruskal-Wallis test of association between socio-demographic characteristics and intention score. Among 7 characteristics, three of them were statistically significant associated with intention score at $p \leq 0.05$ levels, the factors included boyfriend and sexual relationship ($p < 0.001$), the method to use to prevent pregnancy ($p < 0.001$) and alcohol consumption ($p = 0.007$). It was notable that students who did not have boyfriend or have boyfriend but no sexual relationship with current boyfriend, students who abstained themselves from sexual intercourse and students who did not drink alcohol had the highest intention score. Family status, types of family, types of living arrangement and using substance abuse were no statistically significant association with intention score. Interestingly, even there was no statistically significant association between intention score and types of living arrangement, the students who live with boyfriend had the lowest intention score compared with others.

Table 18 shows the result of Spearman's correlation test of relationship between socio-demographic characteristics and intention score. Among 5 characteristics, two of them had statistically significant positive and little correlation at $p \leq 0.05$ levels, the factors included GPA (Spearman's coefficient = 0.212, $p < 0.001$) and frequency of alcohol consumption (Spearman's coefficient = -0.193, $p < 0.001$). It meant that if GPA increased, intention score increased and if frequency of alcohol consumption decreased, intention increased. Monthly income (Spearman's coefficient = -0.219, $p = 0.007$) had statistically significant negative and little correlation at $p \leq 0.05$ levels. It meant that if monthly income increased, intention score decreased.

Table 17 Association between socio-demographic characteristics and intention score by using Mann-Whitney U test and Kruskal-Wallis test (n = 440)

Socio-demographic Characteristic	Intention score Mean Rank	p-value
Family status		
Father and Mother live together	223.60	0.600
Father and Mother divorce/separated	210.54	
One or both parents pass away	204.09	
Types of family		
Single family	221.82	0.756
Extended family	217.82	
Types of living arrangement		
Living alone	209.09	0.083
Living with family/relatives	227.29	
Living with boyfriend	109.50	
Sharing the room with same sex friend	194.07	
Boyfriend and sexual relationship		
Having boyfriend and sexual relationship	142.48	<0.001*
Not having boyfriend/ having boyfriend but no sexual relationship	233.54	
The method use to prevent pregnancy		
Condoms	161.89	<0.001*
Birth control pills	113.83	
Withdrawal	32.70	
Abstinence	233.54	
Alcohol consumption (within last 6 months)		
Yes	203.53	0.007*
No	236.13	
Using substance abuse		
Yes	160.75	0.132
No	221.89	

**Statistically significant at p-value ≤ 0.05*

Table 18 Association between socio-demographic characteristics and intention score by using Spearman's correlation (n = 440)

Variable	Attitude score	
	Correlation Coefficient	p-value
Age	-0.003	0.945
Class year	-0.024	0.620
GPA	0.212	<0.001*
Monthly income	-0.129	0.007*
Frequency of alcohol consumption	-0.193	<0.001*

**Statistically significant at p-value ≤ 0.05*

4.2.4 Association between knowledge and intention of preventing the unwanted pregnancy among female undergraduate students in Bangkok

The knowledge and intention score distribution were not normal (asymmetrically distributed). Therefore, spearman's correlation was considered appropriate for measures the association between knowledge and intention score. According to the table 19 as below, he result of spearman's correlation analysis of association between knowledge score and intention score of the students was presented. Knowledge and intention score were also continuous variable, and correlation coefficients were computed. There was a positive and little correlation between knowledge score and intention score, which was highly statistically significant (Spearman's coefficient = 0.199, p <0.001). It meant that if knowledge scores increased, intention score increased.

Table 19 Association between knowledge and intention of preventing the unwanted pregnancy (n = 440, p-value by Spearman's correlation)

Variable	Intention score	
	Correlation Coefficient	p-value
Knowledge score	0.199	<0.001*

**Statistically significant at p-value ≤ 0.05 level (2-tailed)*

4.2.5 Association between attitude and intention of preventing the unwanted pregnancy among female undergraduate students in Bangkok

The attitude and intention score distribution were not normal (asymmetrically distributed). Therefore, spearman's correlation was considered appropriate for measures the association between attitude and intention score. According to the table 20 as below, the result of spearman's correlation analysis of association between attitude score and intention score of the students was presented. Attitude and intention score were also continuous variable, and correlation coefficients were computed. There was no statistically significant correlation between attitude score and intention score (spearman's coefficient = 0.033, p= 0.491).

Table 20 Association between attitude and intention score by using Spearman's correlation (n = 440)

Variable	Intention score	
	Correlation Coefficient	p-value
Attitude score	0.033	0.491

The summary of association between socio-demographic characteristics and knowledge, attitude and intention was shown in table 21. The finding showed that types of living arrangement, age and GPA were statistically significant associated with knowledge. Boyfriend and sexual relationship and the method use to prevent pregnancy were statistically significant associated with attitude. Moreover, this study found 7 factors were statistically significant associated with intention include boyfriend and sexual relationship, the method use to prevent pregnancy, GPA, monthly income, frequency of alcohol consumption and knowledge using bivariate analysis.

Table 21 Summary association between socio-demographic characteristics, knowledge, attitude and intention of preventing the unwanted pregnancy

Variable	Knowledge	Attitude	Intention
	p-value	p-value	p-value
Types of living arrangement	0.009	NS	NS
Boyfriend and sexual relationship	NS	<0.001	<0.001
The method use to prevent pregnancy	NS	<0.001	<0.001
Alcohol consumption (within last 6 months)	NS	NS	0.007
Age	0.048	NS	NS
GPA	<0.001	NS	<0.001
Monthly income	NS	NS	0.007
Frequency of alcohol consumption	NS	NS	<0.001
Knowledge	NS	NS	<0.001

**NS = Not significant*

4.2.6 Multiple linear regression analysis of factors associated with intention of preventing the unwanted pregnancy

Table 22 shows the result of factors affecting to intention of preventing the unwanted pregnancy. Multiple linear regression analysis was employed to demonstrate the effects of the multiple independent variables on one dependent variable because intention score was continuous data. Variables that had p-value less than 0.2 in bivariate analysis that associated with intention of preventing the unwanted pregnancy were entered as fixed factors or covariates in multiple linear regression analysis. Types of living arrangement and the method to use to prevent pregnancy were the fixed factors while GPA group, monthly income, frequency of alcohol assumption and knowledge score were the covariates. A p-value of 0.2 was chosen to allow variables that were not significant in bivariate analysis to become significant in multiple linear regression models.

Among all of these factors types of living arrangement, the method to use to prevent pregnancy, frequency of alcohol consumption and knowledge score were statistically significant and associated with intention score. Regarding the types of living arrangement, a student living alone ($\beta = 2.38$, $p = 0.025$) had positive statistically significant association with intention score compared to sharing the room with same sex friend, meaning that this type of living arrangements had more the intention score compared to sharing the room with same sex friend. The method of preventing

pregnancy including condoms (β = -2.14, p = 0.007), birth control pills (β = -5.80, p <0.001) and withdrawal method (β = -7.44, p = 0.001) were statistical significant and negative association with intention score compared to abstinence which meant that students who use condoms, birth control pills and withdrawal method had less intention to prevent pregnancy respectively when compared to that of the student who abstained themselves from sexual intercourse. Frequency of alcohol consumption (β = -0.66, p < 0.001) was statistical significant and negatively associated with intention score which means that drinking frequency decreased, intention increased. Furthermore, knowledge score (β = 0.48, p < 0.001) was statistical significant and positively associated with intention score which means that knowledge increased, intention score increased as well.

Table 22 Multiple linear regression analysis: association of variables with intention score as dependent variable

Variables	β	95% CI Lower, Upper	p-value
Types of living arrangement (Reference group = sharing the room with same sex friend)			0.043*
Living alone	2.38	0.30, 4.46	0.025
Living with family/relatives	1.32	-0.51, 3.15	0.156
Living with boyfriend	-2.16	-6.75, 2.43	0.356
The method to use to prevent pregnancy (Reference group = abstinence)			<0.001*
Condoms	-2.14	-3.70, -0.59	0.007
Birth control pills	-5.80	-8.63, -2.97	<0.001
Withdrawal	-7.44	-11.75, -3.13	0.001
GPA	0.42	-0.07, 0.91	0.093
Monthly income	-0.45	-1.11, 0.21	0.180
Frequency of alcohol consumption	-0.66	-1.01, -0.31	<0.001
Knowledge score	0.48	0.23, 0.72	<0.001
Intercept	33.970	30.315, 37.626	<0.001

** P-value for fixed factor as a whole*

CHAPTER V
DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.1 Discussion

This study was a cross-sectional describing the socio-demographic characteristics and aimed to determine the levels of knowledge, attitude and intention of preventing the unwanted pregnancy among female undergraduate students in Bangkok Thailand. As well as looked for association between the socio-demographic characteristics, knowledge, attitude and intention.

5.1.1 Socio-demographic characteristics

The socio-demographic characteristics in this study includes age, class year, GPA, monthly income, family status, types of family, types of living arrangement, having a boyfriend, sexual relationship with current boyfriend, the method use to prevent pregnancy, alcohol consumption, frequency of alcohol consumption and using substance abuse of 440 students. In this study, the mean age was 20.93 years old. Majority of the students (26.8%) were aged 22 years. Most of them (41.6%) were forth year students. Majority of students (37.0%) got GPA ranged from 3.01 to 3.50.

Over half of students (55.2%) had monthly income between 5000 to 10000 baht per month. Nearly 80% of them had father and mother live together in the family, followed by father and mother divorce or separated (15.9%). Regarding types of family and living arrangement, 67.0% of them had single family and 74.5% live with family or relatives. The findings were consistent with Kumphangphan's study (Kumphangphan, 2009) which found that teens who are pregnant often be raised without the use of reason in families and by divorced parents. Thus, the status of the parents and relationship in family found to be effect on teenage pregnancy. In contrary, results of Manopaiboon's study (Manopaiboon et al., 2003) found that family structure whether the relationship of adolescents with a family member, Separation of father and mother, isolated to live alone, all of these had no effect on adolescent pregnancy.

One third of them (33.6%) accepted having boyfriend that lowers than previous study conducted in Thai adolescent about attitude and behavior regarding sexual

intercourse found that nearly half of them reported currently having a boyfriend/girlfriend (Tangmunkongvorakul et al, 2014). The students who had sexual relationship with current boyfriend were 42.6% from all students who answered the questionnaire which is higher than previous study conducted in Adama University, almost one-third of female students had sexually active (Dejene et al, 2010).

The method used to prevent pregnancy, interestingly; all students who had sexual relationship prevented themselves from pregnancy. The most preference method was using condoms (73.0%) and followed by birth control pills (19.0%) and few percentages (7.9%) of students used withdrawal method. This was consistent with study of Adams (Adams and Souza, 2009) which reported that young women often considered about contraception use either as oral tablets or condoms and also consistent with comparative study on attitude of contraceptive methods users towards common contraceptive methods (Ehsanpour et al, 2010) which found that the participants used common contraceptive methods as low-dose estrogen (LD) pills, condom, as well as withdrawal method. In our study, there were few students used withdrawal methods that had chance of pregnancy this also found in a previous study it indicated that 27% of the users of the withdrawal method had unintended pregnancy; nonetheless, 70.6% of them continued to use this method (Ehsanpour et al, 2010).

Almost half of all students (48.0%) drank alcohol while 2.3% of all students used substance abuse. Report of United Nations Population Fund revealed that teenagers who use drugs or alcohol have a higher chance of getting pregnant than their abstemious peers, probably because their judgment of what is safe is impaired. People who are not fully sober or aware are more likely to forget to take contraceptive (UNFPA, 2013).

5.1.2 Knowledge on unwanted pregnancy

The result of this study showed that there was 42.5% students had poor knowledge about unwanted pregnancy. This result may be suggestive of insufficient concerning unwanted pregnancy. The consistent result found in the study about the effects of nursing student-lead unplanned pregnancy prevention program on knowledge, attitude and intention to prevent unplanned pregnancy among early adolescents which found that before training program students had low level of

knowledge (Krinara et al, 2013) . The survey study in 1,000 teenagers across Thailand also found most of teenagers lack of knowledge about sex education which was a cause of teenage pregnancy, only 20.9% students have high level (Rakamnuaykij et al, 2013). In addition, the study conducted among Adama University female students, only 6.1% of students were able to answer all questions correctly (Dejene et al, 2010). This enlighten that the insufficient of knowledge on unwanted pregnancy was worldwide problem.

Most of students know about unsafe sex and the consequence of unwanted pregnancy as the results showed that 83% of them knew that they can get pregnant at the first time they had sex and 94.5% knew that the unwanted teenage pregnancy can lead to unsafe abortion. While there was a low rate about the knowledge of modern method of contraception, only 38.2% of students knew the proper use of emergency pills. It notes that this issue properly led to unwanted teenage pregnancy because of incorrect contraceptive use. This result was consistent with study was conducted by Frost and teams which found that a quarter of young women received low scores on contraceptive knowledge(Frost et al, 2012). The study of Kaufman and teams also indicated that there was a slightly lower level of knowledge about modern methods of contraception amongst teenagers (Kaufman et al, 2001).

5.1.3 Attitude towards unwanted pregnancy

Majority of the students (63.9%) had moderate attitude towards the unwanted pregnancy. This finding was consistent with the study on effects of nursing student-lead unplanned pregnancy intervention program conducted in nurse student, before training, the most students had moderate level of attitude while small number of them (18.2%) had high attitude (Krinara et al, 2013). Other study conducted on high school students in Phuttamonthon district, Nakhon Pathom province about attitudes toward adolescent pregnancy, induced abortion and supporting health services also indicated that most of the respondents had negative attitudes toward adolescent pregnancy (52.6%) (Fengxue, 2002).

More than 85% of students have positive attitude with the statement “having contraceptive knowledge in the teenage life is the protective factors from unwanted pregnancy” (88.7%) and 86.8% students agree with the statement of “the unwanted

pregnancy will end up eventually in unsafe abortion". This may imply that students may be willing to have the contraceptive knowledge to protect them from unwanted pregnancy.

Interestingly, there were 60.0% of students had neutral to positive attitude with the statement "I believe that having sexual relationship with my boyfriend at the school age is normal for teenagers" and 48.0% of students had neutral to positive attitude with the statement "I think that having sexual relationship with my boyfriend is the proof of love", it is very important to change their attitude from the neutral or positive to negative attitude that should be done by communication between family, teacher or friend.

5.1.4 Intention of preventing the unwanted pregnancy

Majority of the students (64.8%) had moderate intention of preventing the unwanted pregnancy while few numbers of them (18.0%) had high intention level. This finding was consistent with study conducted by Krinara in nurse student (Krinara et al, 2013) , the study found that the few numbers of students (18.0%) had high level scores of unplanned pregnancy prevention intention.

Most of students (90.5%) intended to use condom when they have sexual intercourse. This was consistent with the finding of previous study (Jemmott, 1992) which conducted in active black adolescent women found that the women scored higher in intentions to use condoms. Besides, most of students intended to use condom when having sexual intercourse, most of them also intended not to have sexual intercourse on a first date (90.4%) which is good for them in preventing the unwanted pregnancy. However, only 29.6% of students intended not to spend time in night club and want to enjoy the new thrilling experience with friends, this situation let them more chance to have unsafe sex and lead to unwanted pregnancy.

5.1.5 Association between socio-demographic characteristics, knowledge, attitude and intention

5.1.5.1 Association between socio-demographic characteristics and knowledge score

Types of living arrangement ($p = 0.009$) was statistically significant associated with knowledge score. This result indicated that students living with same sex friend had the highest knowledge score. Furthermore, age (Spearman's coefficient = 0.095, $p = 0.048$) and GPA (Spearman's coefficient = 0.246, $p < 0.001$) were a positive, little correlation statistical significant with knowledge score. This finding was consistent with Izugbara (Izugbara, 2015) who studied about socio-demographic risk factors for unintended pregnancy among unmarried adolescent Nigerian girls. They found that the type of place of residence were significantly associated with adolescent pregnancy.

5.1.5.2 Association between socio-demographic characteristics and attitude score

The finding shows that boyfriend and sexual relationship ($p < 0.001$), and the method use to prevent pregnancy ($p < 0.001$) were significant associated with attitude score. This result indicated those students who have a boyfriend and sexual intercourse with their boyfriend and used birth control pills to prevent pregnancy had the highest attitude score. This was consistent with findings of other studies (Farley, 2001; Stevens et al, 2005) which found that boyfriend's desires influenced whether or not the girl became pregnant. Furthermore, boyfriend also had a great impact on female teens' attitudes about pregnancy and abortion (Jayakody et al, 1993). Similar finding also found in a study about boyfriends, girlfriends and teenagers' risk of sexual involvement, it indicated that youth who become involved with a boyfriend or girlfriend may have more risky attitudes and behaviors than those who do not have one (Marín et al, 2006).

5.1.5.3 Association between socio-demographic characteristics and intention score

There were boyfriend and sexual relationship ($p < 0.001$), the method use to prevent pregnancy ($p < 0.001$) and alcohol consumption ($p = 0.007$) statistical significant associated with intention of preventing the unwanted pregnancy score. In spearman's correlation test, GPA (Spearman's coefficient = 0.212, $p < 0.001$) was

positive, little correlation with intention score while frequency of alcohol consumption (Spearman's coefficient = -0.193, $p < 0.001$) was negative, little correlation with intention score, which were highly statistically significant. Besides, having boyfriend and having sexual relationship with boyfriend affected on the attitude of female students, they also affected on the intention to prevent unwanted pregnancy of female student. The girls who had no boyfriend or had boyfriend but had no sexual relationship with their boyfriend possessed high intention to prevent pregnancy. These revealed the impact of their partner. Moreover, among students who had sexual relationship with boyfriend, girls who used condom had the intention score higher than those who used contraception pill or withdrawal method. This may imply that students who had more intended to prevent pregnancy, the more safety method used. Regarding alcohol consumption and its frequency, students who did not consume alcohol or less frequently consumed had high intended to prevent pregnancy. The studied of Smith indicated that drug or alcohol use often precedes the initiation of sexual activity by teenagers (Smith, 1996). Monthly income (Spearman's coefficient = -0.219, $p = 0.007$) was a negative, little correlation with intention score. This was consistent with the result of the previous study which conducted about abstinence-only education and teen pregnancy rates in the U.S and found that income was negatively correlated with teen pregnancy (rho= -0383, $p = 0.007$) (Kathrin and David, 2011).

5.1.6 Factors affecting to the intention of preventing the unwanted pregnancy

Multiple linear regression analysis showed that types of living arrangement, the method use to prevent pregnancy, frequency of alcohol consumption and knowledge score were statistical significantly associated with intention score. Regarding types of living arrangement, a student living alone had more intention to prevent pregnancy compared with student who share the room with same sex friend ($\beta = 2.38$, $p = 0.025$). Frequency of alcohol consumption was statistical significant associated with intention score ($\beta = 0.66$, $p < 0.001$), this seemed likely that the less frequent consumed, the more intention student had. This was inconsistent with the study of Diane M. Morrison and others indicated that the odds of condom use were not associated either with whether a teenager had been drinking before sex or with the quantity of alcohol consumed

(Morrison et al, 2003). Knowledge score ($\beta = 0.48$, $p < 0.001$) was positive statistical significant associated with intention score. The low score of sexual health knowledge was associated with teenage pregnancy (Haldre et al, 2009). The method used to prevent pregnancy, a student used condoms ($\beta = -2.14$, $p = 0.007$), birth control pills ($\beta = -5.80$, $p < 0.001$) and others method ($\beta = -7.44$, $p = 0.001$) were negative statistical significant with intention score compared with no sexual intercourse (abstinence). Students who used condom, birth control pills and withdrawal method were more likely to had low intention score compared to no sexual intercourse. The result of the study conducted in Uganda about correlation of delayed sexual intercourse and condom use among adolescents and it indicated that self-efficacy to use condoms ($\beta = 0.33$, $p < 0.001$) was positively associated with the intention of preventing unwanted pregnancy (Rijsdijk et al, 2012). Inconsistent with Christofides' study about risk factors for unplanned and unwanted teenage pregnancies over two years of follow up among a cohort of young South African women, the result noted that using condoms as the method to prevent pregnancy was not associated with unplanned pregnancies (Christofides et al, 2014).

5.2 Conclusions

There were 440 students selected to join this study by simple random sampling and self-administrative questionnaire with 49 questions was used to collect data. The finding of this study showed that 42.5% of student had poor knowledge level about unwanted pregnancy while 20.9% of them had high knowledge level. Only 27 students were able to answer all the questions correctly. This shows that female undergraduate students in selected universities in Bangkok have insufficient knowledge concerning unwanted pregnancy. The finding also showed that types of living arrangement ($p = 0.009$) was statistically significant with knowledge score. Age (Spearman's coefficient = 0.095, $p = 0.048$) and GPA (Spearman's coefficient = 0.246, $p < 0.001$) were positively and statistically significantly little correlated with knowledge score while boyfriend and sexual relationship ($p < 0.001$), and the method to use to prevent pregnancy ($p < 0.001$) were statistically significant associated with attitude score. Regarding to intention, boyfriend and sexual relationship ($p < 0.001$), the method to use to prevent pregnancy ($p< 0.001$) and alcohol consumption ($p = 0.007$) were statistically significant associated with intention score. Frequency of alcohol consumption

(Spearman's coefficient= -0.193, $p < 0.001$) and monthly income (Spearman's coefficient = -0.219, $p = 0.007$) were negatively and statistically significant little correlated with intention score while GPA (Spearman's coefficient = 0.212, $p < 0.001$) was positively and statistically significant little correlated with intention score. The results showed that the statistically significant correlation between knowledge and intention (Spearman's coefficient = 0.199, $p< 0.001$). In multiple linear regression models indicated types of living arrangement ($p=0.043$), the method use to prevent pregnancy ($p<0.001$), frequency of alcohol consumption ($\beta= -0.66$, $p < 0.001$) and knowledge score ($\beta = 0.48$, $p <0.001$) were statistical significantly associate with intention score.

5.3 Recommendations

5.3.1 This research indicated if the knowledge was increased the intention to prevent the unwanted pregnancy will be also increased. This show that the best intervention would be the increasing or correction the reproductive knowledge of the young adolescents. The finding indicated that the better knowledge will be acquired as they grew older but from the aspect of the public health intervention, series of health education at the early age of adolescent such as middle school age should be worth consideration. The knowledge concerning the adolescent reproductive health, stigma of unwanted pregnancy, proper use of contraceptive, problems solving and negotiation skills are recommended as part of the education programs.

The one important part of the oriental culture barriers between the parents and young children may bring forward the hindrance in reproductive health education as family and parents are the first institution for these children. The finding revealed that nearly 70% of the students agreed that the family is one of the causes of the adolescent unwanted pregnancy and 82% of them agreed that it will be disgraceful to their family. This result simply indicated that improving the knowledge of the other family members to change their attitude towards reproductive education is important not only to break down the barrier between the parents and children but also to prevent the unwanted pregnancy.

5.3.2 Concerning about the attitude toward the unwanted pregnancy in part of the sexual relationship with boyfriend is 34.8% of students are natural to have sexual

relationship with their boyfriend to proof of love and 38% of the them are natural to the have sexual relationship at the school age. This is the alarming point that those students can swing their attitude toward to either direction depending on their knowledge, experiences and environment such as peer factors, mass media. These changes of the attitude can be guided to the correct direction by the parents, teachers or role model of the adolescent. The ideal suggestion should be promoting health campaign for the students whereas it alone may not be enough to prevent without the help of the guardian or the closest person of the adolescents. In the post model era of communication, the mass media on the health education is as important as the other intervention where it could be easily reach to the young adolescents in short amount of time.

5.3.3 Regardless of the countless numbers of the studies and profound knowledge on adolescent unwanted pregnancy, relaying theses knowledge to community is still a challenge for the any health professional. Breaking the chain of knowledge to the grass root level renders the health intervention less effective. Knowledge and result from this study together with the other health information are recommended to share through the community participation while formulation the intervention program.

5.4 Future study

As this study is the descriptive study, the quantitative study for more detail information and knowledge on Thai adolescent should be conducted. On this study only the knowledge concerning the contraceptive and risk situation was accessed, further study with more coverage of other aspect of the knowledge such as stigma of the unwanted adolescent pregnancy, involvement of the male student and their attitude towards the adolescent pregnancy should be proceed.

Future research should be concerned about effectiveness of the education program and guideline the interventions in the education, health, social aspect to expand the access of young man and female adolescents to essential skill such as avoiding a risk situation, technical denied, using contraceptives and providing basic information about the sexual and reproductive health of younger adolescents and about other aspects of teenage pregnancy. Moreover, properly applying a theory that relates to a research and some main factors would be influenced beside socio-demographic, knowledge,

attitude and intention. It was also recommended that a compulsory course on sexual promiscuity should be included in the syllabus in institutions of higher learning.

REFERENCES

Adams and Souza. (2009). Teenage contraception. *6*, 36–39.

Amin et al. (2009). Risk Factors of Unplanned Pregnancies in a Group of Iranian and New Zealander Women. *European Journal of Scientific Research, 26*(1), 108–121.

Anyanwu et al. (2013). Perception on the severity of unwanted pregnancy among university students. *Pak J Med Sci*, *29*(4), 923-928.

Banchasak. (2009). *The Application of a Participatory Learning Program to Encourage Appropriate Sexual Behavior Intention of Mathayomsueksa 3 Students in Nong Khai Municipality, Nong Khai Province.* (Master of Public Health), Mahasarakham University

Bloom. (1968). Learning for mastery. *Evaluation Comment, 1*(2).

Carrie. (1998). UNINTENDED PREGNANCY: Consequences and Solutions for a Worldwide Problem. *Journal of Nurse-Midwifery*, *43*(6), 483–491.

CDC. (2013). Teen Pregnancy Prevention Quiz Retrieved March 5, 2015, from http://www.cdc.gov/TeenPregnancy/Parents.htm

Cheng et al. (2009). Unintended pregnancy and associated maternal preconception, prenatal and postpartum behaviors. *Contraception, 79*(3), 194-198. doi: 10.1016/j.contraception.2008.09.009

Christofides et al. (2014). Risk factors for unplanned and unwanted teenage pregnancies over two years of follow up among a cohort of young South African women. *Global Health Action, 7*, 23719.

Dejene et al. (2010). Knowledge, Attitude and Practice of Emergency Contraceptives among Adama University female students *Ethiop J Health Sci, 20*(3), 195-202.

DeVellis. (2003). *Scale development: Theory and applications (2nd ed.),*

DiIorio et al. (1992). Measurement of safe sex behavior in adolescents and young adults. *Nurs Res, 41*(4), 203-208.

Ehsanpour et al. (2010). A comparative study on attitude of contraceptive methods users towards common contraceptive methods. *Iran J Nurs Midwifery Res, 15*(Suppl 1), 363-370.

Farley, C. a. (2001). Adolescent girls' attitudes toward pregnancy: The importance of asking what the boyfriend wants. *Journal of Family Practice, 50*, 603-607.

Fengxue. (2002). *Attitudes toward adolescent pregnancy, induced abortion and supporting health services among high school students in phuttamonthon district, Nakhon Pathom province* (Degree of Master of Public Health), Mahidol Univerisity, Bangkok. Retrieved from http://www.thaithesis.org/detail.php?id=46332

Fernández et al. (2000). Beliefs, attitudes and knowledge about sex education. *Rev Med Chil., 128*(6), 574-583.

Finer and Zolar. (2011). Unintended pregnancy in the United States: incidence and disparities, 2006. *Contraception, 84*(5), 478-485.

Frost et al. (2012). Young Adults' Contraceptive Knowledge, Norms and Attitudes: Associations with Risk Of Unintended Pregnancy. *Perspectives on Sexual and Reproductive Health, 44*(2).

Georges. (2012). *Causes of unintended pregnancy among adolescents in Addis abeba.* (Master's degree program in Public Health), Norwegian University of Life Sciences

Gilda et al. (2014). Intended and Unintended Pregnancies Worldwide in 2012 and Recent Trends. *Stud Fam Plann, 45*(3), 301–314.

Haldre et al. (2009). Individual and familial factors associated with teenage pregnancy: an interview study. *Eur J Public Health, 19*(3), 266-270. doi: 10.1093/eurpub/ckn143

Hawanon. (1995). *Unwanted Pregnancy : The challenges issue of providing health services of the state.* Bangkok Prince Palac.

Izugbara. (2015). Socio-demographic risk factors for unintended pregnancy among unmarried adolescent Nigerian girls. *South African Family Practice, 1*(1), 1-5.

Jahan. (2008). Teenage Marriage and Educational Continuation in Thailand. *Journal of Population and Social Studies, 17*, 135-156.

Jayakody et al. (1993). Family support to single and married African American mothers: The provision of financial, emotional, and child care assistance. *Journal of Marriage and the Family, 55*, 261-276.

Jemmott. (1992). Increasing condom-use intentions among sexually active black adolescent women. *Nursing Research, 41*(6), 380.

Jirapaiboonsuk. (2009). *Knowledge, atitude, and practice towards childhood tuberculosis in guardians of patients visiting the pediatric out-patient department, Sirindhorn hospital, Bangkok.* (Degree of Master of Public Health), Chulalongkorn University.

Kabir. (1989). Causes and Consequences of Unwanted Pregnancy from Asian Woman's Perspectives. *International Journal of Gynaccology and Obstetric*(Supplement 3), 9-12.

Kaiser Family Foundation. (2002). U.S. Teen Sexual Activity Indicator: Births per 1000 women (aged 15–19) Retrieved 23 January 2015, from State of World January 2005.

Kathrin and David. (2011). Abstinence-Only Education and Teen Pregnancy Rates: Why We Need Comprehensive Sex Education in the U.S. *PLoS One, 6*(10), e24658.

Kaufman et al. (2001). Factors associated with Teenage Pregnancy in Limpopo Province. *Adolescent pregnancy and parenthood in Limpopo Department of Health 2011.*

Kost and Henshaaw. (2012). U.S. Teenage Pregnancies, Births and Abortions, 2008: National Trends by Age, Race and Ethnicity. Retrieved January 29 2015, from http://www.guttmacher.org/pubs/USTPtrends08.pdf

Krinara et al. (2013). The Effects of Nursing Student-lead Unplanned Pregnancy Prevention Program on Knowledge, Attitude and Intention to Prevent Unplanned Pregnancy Among Early Adolescents. *The journal of Boromarajanani College of Nursing, Nakhonratchasima, 19*(2).

Kumphangphan. (2009). *Psychosocial Factors Associated with Pregnancy of Teenage Women who received Prenatal Care in Siriraj Hospital.* (Master's Degree), Mahidol University, Bangkok.

Langham. (2015). What Are the Causes of Teenage Pregnancy. Retrieved January 24 2015, from http://www.livestrong.com/article/146681.

Londono, E. (1989). Abortion counselling : Attention to the Whole Woman. *International Journal of Gynaccology and Obstetric*(Supplement 3), 169-170.

Manopaiboon et al. (2003). High rates of pregnancy among vocational school students: results of audio computer-assisted self-interview survey in Chiang Rai, Thailand. *Journal of Adolescent, 26*, 517-530.

Marín et al. (2006). Boyfriends, Girlfriends and Teenagers' Risk of Sexual Involvement. *Perspectives on Sexual and Reproductive Health, 38*(2), 76-83.

Mashalaba, N. N. (1989). Commentary on the Causes and Consequences of Unwanted Pregnancy from and African Perspective. *International Journal of Gynaccology and Obstetric*(Supplement 3), 1519.

Ministry of Education. (2010). Information and Statistices of Education part Retrieved November 19 2014, from http://www.moe.go.th/data_stat/

Ministry of Social Development and Human Security. (2012). *Conditions of teenage motherhood Thailand, 2011*. Bangkok: Office of the Permanent Secretary for Ministry of Social Development and Human Security.

Mmari and Blum. (2004). Risk and protective factors affecting adolescent reproductive health in developing countries : an analysis of adolescent sexual and reproductive health. from World Health Organization.

Morrison et al. (2003). Adolescent Drinking and Sex: Findings from a Daily Diary Study. *Perspectives on Sexual and Reproductive Health, 35*(4), 162-168.

Naidoo and Wills. (2000). *Health Promotion Foundations for practice*. Edinburgh. UK: Bailliere Tindall.

NC Department of Health and Human Services. (2015). Teen Pregnancy Prevention Initiatives. Retrieved January 25 2015, from http://www.teenpregnancy.ncdhhs.gov/.

Office of the higher education commission. (2014). Universities in Bangkok. Retrieved January 10, 2015, from http://www.inter.mua.go.th/main2/index.php

Olaitan. (2010). Perception of university students on unwanted pregnancy in south west Nigeria. *Am. J. Soc. Mgmt. Sci., 1*(2), 196-200.

Olayinka. (1997). *Sex education and marital guidance*. Lagos: Lantern Books Liferamed Ltd.

Peterson. (2014). Public University vs. Private College. Retrieved February 15, 2015, from http://www.petersons.com/college-search/public-university-vs-private.aspx

Pinotti, J. A., and Faundes, A. (1989). Unwanted Pregnancy: Challenges for Health Policy. *International Journal of Gynaccology and Obstetric*(Supplement 3), 97-101.

Podhisita et al. (2004). The risk of premarital sex among Thai youth: individual and family influences. *Journal of Population and Social Studies, 12*, 1-31.

Rakamnuaykij et al. (2013). Motherhood in Motherhood: Situation and content in Thai society. Survey and study for social monitoring and alarming round 1 (June-August 2013). from College of Population Studies Chulalongkorn University.

Rijsdijk et al. (2012). Correlates of delayed sexual intercourse and condom use among adolescents in Uganda: a cross-sectional study. *BMC Public Health, 12*, 817.

Sedthapongkul and Teerawanviwat. (1998). *Unwanted Pregnancy.* (B.Sc Term Paper), NIDA, Bangkok.

Silva. (1998). Pregnancy during adolescence: wanted vs. unwanted. *Int J Gynaecol Obstet, 63 Suppl 1*, S151-156.

Slater. (2000, July). Britain: Sex Education Under Fire.

Smith. (1996). The link between childhood maltreatment and teenage pregnancy. *Social Work Research, 20*, 131-141.

Stevens et al. (2005). Adolescent pregnancy: Do expectations affect intentions? *Journal of Adolescent Health, 37*, 243e215-243.e222.

Taneepanichskul. (2012). Unwanted Pregnancy. In e. Witaya Titapan (Ed.), *The crisis in perinatal medicine* (pp. 143-149). Bangkok: P.A.Living Company.

Tangmunkongvorakul et al. (2014). Attitudes and Behavior among Rural Thai Adolescents regarding Sexual intercourse. *Southeast Asian J Trop Med Public Health, 45*(6), 1437-1447.

The National Statistical Office. (2009). Reproductive Health Survey 2009. Retrieved 20 January 2015 http://web.nso.go.th/en/survey/reprod/data/rhs09_100810.pdf

UNFPA. (2007). State of world population 2007: Unleashing the Potential of Urban Growth. Retrieved June 8, 2015

UNFPA. (2013). Motherhood in Childhood, facing the challenge of adolescent pregnancy. Retrieved June 8, 2015

UNFPA Thailand. (2013). Minutes of the Selected Stakeholder Consultation on the Issue of Adolescent Pregnancy in Thailand. Retrieved June 8, 2015

WHO. (2003). estimates of the incidence of unsafe abortion and associated mortality (5th edition ed.).

WHO. (2004). Adolescent pregnancy: issues in adolescent health and development. from World Health Organization

WHO. (2011). Early marriages, adolescent and young pregnancies. Retrieved January 20 2015, from http://apps.who.int/iris/handle/10665/23744

WHO. (2015). Family planning and contraception. Retrieved 13 July 2015, from http://www.who.int/mediacentre/factsheets/fs351/en/

Yamane. (1970). *Statistics, An introductory Analysis* (2nd Ed.). New York: Harter & Row.

APPENDICES

APPENDIX A

QUESTIONNAIRE (English version)

Knowledge, attitude and intention of preventing the unwanted pregnancy among female undergraduate students in Bangkok Thailand

Explanation: Please mark / in the **( )** and fill your information in the banks.
**Your details will all be kept anonymous at all times and will not be connected to the questionnaire.

Part 1: Socio demographic factors

1. Age _____ years old

2. University **( )** Public **( )** Private

3. Faculty _____

4. Year of study at university _____

5. GPAX _____

6. Monthly income _____THB/month

7. What is your family status at the present?
   - **( )** Father and Mother live together
   - **( )** Father and Mother divorce/separated
   - **( )** Father pass away
   - **( )** Mother pass away
   - **( )** Both pass away

8. What type of family do you have?
   - ( ) Single family (father, mother and myself)
   - ( ) Extended family (grandparent, father, mother and relatives)

9. What kind of living arrangement do you have?
   - ( ) Living alone
   - ( ) Living with family/relatives
   - ( ) Living with boyfriend
   - ( ) Sharing the room with same sex friend
   - ( ) Others (identify)_____

10. Do you have boyfriend? ( ) Yes ( ) No (skip to 13)

11. Do you have sexual relationship with current boyfriend?
    ( ) Yes ( ) No (skip to 13)

12. From 11, what method (s) did you or your partner use to prevent pregnancy?
    ( ) None (because)_____
    ( ) Condoms
    ( ) Birth control pills
    ( ) "The shot" (Depo), "The ring" or "the patch"
    ( ) Other (Please name)_____

13. Within last 6 months, have you drink alcohol?
    ( ) Yes ( ) No (Skip to 15)
14. From 13, how often did you drink?
    ( ) Everyday ( ) 2-3 times/month
    ( ) 3-4 times/week ( ) 1 time/month
    ( ) 1 time/week ( ) Other (identify)_____
15. Do you use substance abuse? Ex. Cigarette, Amphetamine, Opium, Marijuana, etc.
    ( ) Yes ( ) No

Part 2: Knowledge on the unwanted pregnancy

Explanation: Please select whether the following statements are true.

	Statements	**True**	**False**	**Not sure**
1	The use of drugs and alcohol not increase the risk to having sex.			
2	A teen can get pregnant with the first times she has sex.			
3	Unwanted teenage pregnancy can lead to unsafe abortion.			
4	The only 100% sure way to prevent pregnancy is to not have sex			
5	Taking emergency pills before sex can prevent pregnancy.			
6	Condoms work 100% of the time in preventing pregnancy.			
7	Skin contact with opposite sex cannot lead to sexual intercourse.			
8	Avoid watching erotic movies is one of method to prevent having sex			
9	Denial or bargain friends in risk situations can reduce the need to have sex.			
10	Express feelings and reasoning to deny, can reduce chance to have sex.			

Part 3: Attitude toward the unwanted pregnancy

Explanation: Please rate your level of agreement on the following statement.

Statement		Strongly agree	Agree	Natural	Disagree	Strongly disagree
1	I think that teenage pregnancy is normal social practice.					
2	I think that contraception is not necessary for sexual intercourse in adolescent.					
3	I believe that condom use can prevent pregnancy					
4	I believe that having contraceptive knowledge in the teenage life is the protective factors from unwanted pregnancy.					
5	I think that family is one of the causes of the adolescent unwanted pregnancy					
6	I think that teenage pregnancy can be disgraceful to both yourself and your family in social life.					
7	I believe that unwanted pregnancy will end up eventually in unsafe abortion.					
8	I think that having sexual relationship with my boyfriend is the proof of love.					
9	I believe that having sexual relationship with my boyfriend at the school age is normal for teenagers.					
10	I think that drinking alcohol risk to sexual intercourse unintentionally.					
11	I think that watching erotic movies and read pornographic books are normal.					
12	I think that denial to go out with the friend to the private place at night is appropriate manners for teenager					

Part 4: Intention of preventing the unwanted pregnancy

Explanation: Please rate your level of intention on the following statement.

	Statement	Highest	High	Moderate	Low	Lowest
1	I insist on condom use when I have sexual intercourse.					
2	I engage in sexual intercourse on a first date.					
3	If I know an encounter may lead to sexual intercourse, I carry a condom with me.					
4	If swept away in the passion of the moment, I have sexual intercourse without using a condom.					
5	If I know an encounter may lead to sexual intercourse, I have a mental plan to practice safer sex.					
6	If my partner insists on sexual intercourse without a condom, I refuse to have sexual intercourse.					
7	I intend not to have sexual intercourse in school age.					
8	I intend not to have pre-marriage sex.					
9	I intend to avoid the social event that involves drinking alcohol and beverage.					
10	I intend to deny if a friend ask me to use narcotics and confront him/her to avoid it by adoption alternative activity.					
11	I will refuse if I am invited to watch the adult entertainment including movies, books and pictures.					
12	I intend to spend time in night club and want to enjoy the new thrilling experience with friends.					

APPENDIX B

QUESTIONNAIRE (Thai version)

ความรู้ ทัศนคติ และความตั้งใจในการป้องกันการตั้งครรภ์ไม่พึงประสงค์ของนิสิตนักศึกษาหญิง ระดับปริญญาตรี กรุงเทพมหานคร ประเทศไทย

คำชี้แจง: โปรดทำเครื่องหมาย ✓ ในช่อง **( )** และเติมข้อมูลของท่านลงในช่องว่าง
** ทุกข้อมูลของท่านผู้วิจัยจะเก็บเป็นความลับและจะไม่ใช้แบบสอบถามนี้ในงานอื่นต่อไป

<u>ส่วนที่ 1 ข้อมูลทางสังคมและประชากรศาสตร์</u>(เลือกตอบเพียงข้อใดข้อหนึ่ง)

1. อายุ _____ ปี
2. มหาวิทยาลัย ( ) รัฐบาล เอกชน ( )
3. คณะ _____
4. ชั้นปี _____
5. เกรดเฉลี่ย _____
6. รายได้เฉลี่ยต่อเดือน _____บาท/เดือน
7. สถานะครอบครัวในปัจจุบัน
   - ( ) บิดามารดาอยู่ด้วยกัน
   - ( ) บิดามารดาหย่าร้างแยกกันอยู่/
   - ( ) บิดาเสียชีวิต
   - ( ) มารดาเสียชีวิต
   - ( ) บิดามารดาเสียชีวิตทั้งคู่
8. ลักษณะครอบครัว
   - ( ) ครอบครัวเดี่ยว (ประกอบด้วย พ่อ แม่ และตนเอง)
   - ( ) ครอบครัวขยาย)ประกอบด้วย ปู่(ยาย พ่อแม่ ญาติพี่น้อง/ย่า ตา/
9. ปัจจุบันท่านพักอาศัยอยู่กับใคร
   - ( ) อยู่คนเดียว ผู้ปกครอง/อยู่กับครอบครัว ( )
   - ( ) อยู่กับเพื่อนต่างเพศ ( ) อยู่กับเพื่อนเพศเดียวกันอื่นๆ ( ) (ระบุ)_____
10. ปัจจุบันท่านมีแฟน หรือไม่
    - มี ( ) ไม่มี ( )(ข้ามไปตอบข้อ 13)

11. ท่านเคยมีเพศสัมพันธ์กับแฟนคนปัจจุบัน หรือไม่

มี ( ) ไม่มี ( )(ข้ามไปตอบข้อ 13)

12. จากข้อ 11 ท่านหรือคู่ของท่านมีวิธีการป้องกันการตั้งครรภ์อย่างไร

( )ไม่มี เพราะ_____

( )ถุงยางอนามัย

( )ยาคุมกำเนิดชนิดเม็ด

( )ยาคุมกำเนิดชนิดฉีดวงแหวนคุมกำเนิด ,, แผ่นแปะคุมกำเนิด

( )อื่นๆ (ระบุ)_____

13. ใน 6 เดือนที่ผ่านมา ท่านดื่มเครื่องดื่มแอลกอฮอล์หรือไม่

ดื่ม ( ) ไม่ดื่ม ( ) (ข้ามไปตอบข้อ 15)

14. จากข้อ 13 ท่านดื่มบ่อยแค่ไหน

( )ทุกวัน ( )2-3 ครั้งต่อเดือน

( ) 3-4 วันต่อสัปดาห์ ( )เดือนละครั้ง

( )สัปดาห์ละครั้ง ( ) อื่นๆ (ระบุ)_____

15ท่านใช้สารเสพติดหรือไม่ เช่น บุหรี่ ยาบ้า . ฝิ่น กัญชา เป็นต้น

( )ใช้ ไม่ ( )ใช้

ส่วนที่ 2 ความรู้เกี่ยวกับการตั้งครรภ์ไม่พึงประสงค์

คำชี้แจง: ข้อความเกี่ยวกับการตั้งครรภ์ไม่พึงประสงค์ต่อไปนี้ถูกต้องหรือไม่

	ข้อความ	ถูกต้อง	ผิด	ไม่แน่ใจ
1	การใช้สารเสพติดและแอลกอฮอล์ ไม่ได้เพิ่มโอกาสเสี่ยงต่อการตั้งครรภ์ไม่พึงประสงค์			
2	การมีเพศสัมพันธ์ในครั้งแรก สามารถตั้งครรภ์ได้			
3	การตั้งครรภ์ที่ไม่พร้อมในวัยรุ่น สามารถนำไปสู่การทำแท้งที่ไม่ปลอดภัย			
4	การไม่มีเพศสัมพันธ์ เป็นการป้องกันการตั้งครรภ์ได้ 100%			
5	การกินยาคุมกำเนิดฉุกเฉินก่อนการมีเพศสัมพันธ์สามารถป้องกันการตั้งครรภ์ได้			
6	ถุงยางอนามัยสามารถป้องกันการตั้งครรภ์ได้ 100%			
7	การสัมผัส ลูบคลำ จากเพศตรงข้าม ไม่สามารถนำไปสู่การมีเพศสัมพันธ์			
8	หลีกเลี่ยงการดูสื่อลามก เป็นวิธีการหนึ่งที่ป้องกันการมีเพศสัมพันธ์			
9	การรู้จักปฏิเสธหรือต่อรองเพื่อนในสถานการณ์เสี่ยง จะช่วยลดความต้องการทางเพศลงได้			
10	การแสดงความรู้สึกและใช้เหตุผลในการปฏิเสธ เพื่อช่วยลดโอกาสการมีเพศสัมพันธ์			

<u>ส่วนที่ 3 ทัศนคติต่อการตั้งครรภ์ที่ไม่พึงประสงค์</u>

คำชี้แจง: โปรดพิจารณาว่าท่านเห็นด้วยกับข้อความที่ปรากฏดังต่อไปนี้มากน้อยเพียงใด

ข้อความ		เห็นด้วยอย่างยิ่ง	เห็นด้วย	เฉยๆ	ไม่เห็นด้วย	ไม่เห็นด้วยอย่างยิ่ง
1	ฉันคิดว่าการตั้งครรภ์ในวัยรุ่นเป็นเรื่องปกติ					
2	ฉันคิดว่าการคุมกำเนิดเป็นสิ่งที่ไม่จำเป็นสำหรับการมีเพศสัมพันธ์กันในวัยวุ่น					
3	ฉันเชื่อว่าการใช้ถุงยางอนามัยสามารถป้องกันการตั้งครรภ์ในวัยรุ่นได้					
4	ฉันเชื่อว่าการมีความรู้เรื่องการคุมกำเนิด จะช่วยลดปัญหาการท้องไม่พร้อมในวัยรุ่นได้					
5	ฉันคิดว่าครอบครัวมีส่วนทำให้เกิดการตั้งครรภ์ที่ไม่พึงประสงค์ในวัยรุ่น					
6	ฉันคิดว่าถ้าฉันตั้งครรภ์ในช่วงวัยรุ่น ทำให้ทั้งฉันและครอบครัวเกิดความอับอาย					
7	ฉันเชื่อว่าการตั้งครรภ์โดยไม่พึงประสงค์จะนำไปสู่การทำแท้งที่ไม่ปลอดภัยในที่สุด					
8	ฉันคิดว่าการมีเพศสัมพันธ์กับแฟนเป็นการแสดงความรัก					
9	ฉันเชื่อว่าการมีความสัมพันธ์ทางเพศกับแฟน เป็นเรื่องปกติสำหรับวัยรุ่น					
10	ฉันคิดว่าการดื่มเครื่องดื่มแอลกอฮอล์ เสี่ยงต่อการมีเพศสัมพันธ์โดยไม่ตั้งใจ					
11	ฉันคิดว่าการอ่านหรือดูสื่อ ลามก อนาจาร เป็นเรื่องปกติธรรมดา					
12	ฉันคิดว่าการปฏิเสธเมื่อเพื่อนต่างเพศชวนไปเที่ยวตอนกลางคืนสองต่อสองเป็นเรื่องที่ถูกต้อง					

<u>ส่วนที่ 4 ความตั้งใจที่จะป้องกันการตั้งครรภ์ที่ไม่พึงประสงค์</u>

คำชี้แจง: โปรดพิจารณาว่าท่านมีความตั้งใจที่จะป้องกันการตั้งครรภ์ที่ไม่พึงประสงค์มากน้อยเพียงใด

ข้อความ		มากที่สุด	มาก	ปานกลาง	น้อย	น้อยที่สุด
1	ฉันยืนยันว่าจะใช้ถุงยางอนามัยเมื่อมีเพศสัมพันธ์					
2	ฉันตั้งใจที่จะมีเพศสัมพันธ์ในเดทแรก					
3	ถ้าฉันรู้ว่าต้องเผชิญหน้ากับเหตุการณ์ที่อาจนำไปสู่การมีเพศสัมพันธ์ ฉันจะพกถุงยางอนามัยติดตัวไปด้วย					
4	เมื่อฉันอยู่กับแฟนสองต่อสอง และฉันไม่สามารถควบคุมอารมณ์ได้ ฉันอาจมีเพศสัมพันธ์โดยไม่ใช้ถุงยางอนามัย					
5	ถ้าฉันรู้ว่าต้องเผชิญหน้ากับเหตุการณ์ที่อาจนำไปสู่การมีเพศสัมพันธ์ ฉันจะวางแผนที่จะมีเพศสัมพันธ์อย่างปลอดภัย					
6	ถ้าแฟนขอมีเพศสัมพันธ์โดยไม่ใช้ถุงยางอนามัย ฉันจะปฏิเสธการมีเพศสัมพันธ์					
7	ฉันตั้งใจว่าจะไม่มีเพศสัมพันธ์ในวัยเรียน					
8	ฉันตั้งใจที่จะไม่มีเพศสัมพันธ์ก่อนแต่งงาน					
9	ฉันตั้งใจที่จะหลีกเลี่ยงงานสังคมที่มีการดื่มสุราหรือเครื่องดื่มแอลกอฮอล์					
10	หากเพื่อนชวนให้ใช้สารเสพติด ฉันตั้งใจที่จะปฏิเสธโดยไปทำกิจกรรมอย่างอื่นแทน					
11	ฉันตั้งใจที่จะปฏิเสธ เมื่อฉันถูกชักชวนจากเพื่อนให้ดูสื่อลามก เช่น ภาพยนตร์โป๊ หนังสือโป๊ และภาพโป๊					
12	ฉันตั้งใจจะไปเที่ยวสถานเริงรมย์ยามราตรี และต้องการที่จะเพลิดเพลินไปกับประสบการณ์ใหม่ๆที่น่าตื่นเต้นกับเพื่อน					

APPENDIX C

APPROVAL PAGE (Thai version)

AF 01-12

คณะกรรมการพิจารณาจริยธรรมการวิจัยในคน กลุ่มสหสถาบัน ชุดที่ 1 จุฬาลงกรณ์มหาวิทยาลัย
254 อาคารจามจุรี 1 ชั้น 2 ถนนพญาไท เขตปทุมวัน กรุงเทพฯ 10330
โทรศัพท์/โทรสาร: 0-2218-3202 E-mail: eccu@chula.ac.th

COA No. 105/2558

ใบรับรองโครงการวิจัย

โครงการวิจัยที่ 066.1/58 : ความรู้ ทัศนคติ และความตั้งใจในการป้องกันการตั้งครรภ์ไม่พึงประสงค์ของนิสิตนักศึกษาหญิงระดับปริญญาตรี กรุงเทพมหานคร ประเทศไทย

ผู้วิจัยหลัก : นางสาวฉัตรประภา ศิริรัตน์

หน่วยงาน : วิทยาลัยวิทยาศาสตร์สาธารณสุข จุฬาลงกรณ์มหาวิทยาลัย

คณะกรรมการพิจารณาจริยธรรมการวิจัยในคน กลุ่มสหสถาบัน ชุดที่ 1 จุฬาลงกรณ์มหาวิทยาลัย ได้พิจารณา โดยใช้หลัก ของ The International Conference on Harmonization – Good Clinical Practice (ICH-GCP) อนุมัติให้ดำเนินการศึกษาวิจัยเรื่องดังกล่าวได้

ลงนาม.....
(รองศาสตราจารย์ นายแพทย์ปรีดา ทัศนประดิษฐ)
ประธาน

ลงนาม.....
(ผู้ช่วยศาสตราจารย์ ดร.นันทรี ชัยชนะวงศาโรจน์)
กรรมการและเลขานุการ

วันที่รับรอง : 15 พฤษภาคม 2558 **วันหมดอายุ** : 14 พฤษภาคม 2559

เอกสารที่คณะกรรมการรับรอง

1) โครงการวิจัย
2) ข้อมูลสำหรับกลุ่มประชากรหรือผู้มีส่วนร่วมในการวิจัยและใบยินยอมของกลุ่มประชากรหรือผู้มีส่วนร่วมในการวิจัย
3) ผู้วิจัย
4) แบบสอบถาม

เลขที่โครงการวิจัย 066.1/58
วันที่รับรอง 15 พ.ค. 2558
วันหมดอายุ 14 พ.ค. 2559

เงื่อนไข

1. ข้าพเจ้ารับทราบว่าเป็นการผิดจริยธรรม หากดำเนินการเก็บข้อมูลการวิจัยก่อนได้รับการอนุมัติจากคณะกรรมการพิจารณาจริยธรรมการวิจัยฯ
2. หากใบรับรองโครงการวิจัยหมดอายุ การศึกษาวิจัยต้องยุติ เมื่อต้องการต่ออายุต้องขออนุมัติใหม่ล่วงหน้าไม่ต่ำกว่า 1 เดือน พร้อมส่งรายงานความก้าวหน้าการวิจัย
3. ต้องดำเนินการวิจัยตามที่ระบุไว้ในโครงการวิจัยอย่างเคร่งครัด
*4. ใช้เอกสารข้อมูลสำหรับกลุ่มประชากรหรือผู้มีส่วนร่วมในการวิจัย ใบยินยอมของกลุ่มประชากรหรือผู้มีส่วนร่วมในการวิจัย และเอกสารเชิญเข้าร่วมวิจัย (ถ้ามี) **เฉพาะที่ประทับตราคณะกรรมการเท่านั้น***
5. หากเกิดเหตุการณ์ไม่พึงประสงค์ร้ายแรงในสถานที่เก็บข้อมูลที่ขออนุมัติจากคณะกรรมการ ต้องรายงานคณะกรรมการภายใน 5 วันทำการ
6. หากมีการเปลี่ยนแปลงการดำเนินการวิจัย ให้ส่งคณะกรรมการพิจารณารับรองก่อนดำเนินการ
7. โครงการวิจัยไม่เกิน 1 ปี ส่งแบบรายงานสิ้นสุดโครงการวิจัย (AF 03-12) และบทคัดย่อผลการวิจัยภายใน 30 วัน เมื่อโครงการวิจัยเสร็จสิ้น สำหรับโครงการวิจัยที่เป็นวิทยานิพนธ์ให้ส่งบทคัดย่อผลการวิจัย ภายใน 30 วัน เมื่อโครงการวิจัยเสร็จสิ้น

APPENDIX D

TIME SCHEDULE

Work plan	Time period (month, year)								
	Nov 2014	**Dec 2014**	**Jan 2015**	**Feb 2015**	**Mar 2015**	**Apr 2015**	**May 2015**	**Jun 2015**	**July 2015**
1. Determine the topic of study, Literature review and data investigation									
2. Write the proposal and tools									
3. Submission of proposal									
4. Proposal examination									
5. Submission to ethical committee									
6. Tools validity and reliability test									
7. Pretest the questionnaires									
8. Data collection, data analysis/ data interpret									
9. Thesis and report writing									
10. Thesis final examination									
11. Thesis/article submission									

APPENDIX E
BUDGET

No	Activities	Cost (Bath)	Total (Bath)
1	Pre-test (trial out 45 questionnaires)		
	- Tools development	500	500
	- Transportation cost	300	800
2	Data Collection		
	- Copying Questionnaire	5,000	5,800
	- Interviewers per day	3,000	8,800
3	Document Printing	5,000	13,800
4	Report Writing Print	3,500	17,300
5	Miscellaneous	3,500	20,800
Total			20,800

VITA

Name	Miss Chatprapa Sirirat
Date of birth	October 27, 1991
Place of birth	Kanchanaburi, Thailand
Education	Bachelors of Sciences (Public Health)

Burapha University, Thailand 2013 (second class honor)

Email chatprapa_89@hotmail.com