FACTORS ASSOCIATED WITH ADOLESCENT PREGNANCY IN A RURAL DISTRICT OF KALASIN PROVINCE, THAILAND

PRAPASRI POOPAYANG

A THESIS SUBMITTED IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR
THE DEGREE OF MASTER OF SCIENCE
(HUMAN REPRODUCTION AND POPOULATION PLANNING)
FACULTY OF GRADUATE STUDIES
MAHIDOL UNIVERSITY
2014

Thesis
entitled

FACTORS ASSOCIATED WITH ADOLESCENT PREGNANCY IN A RURAL DISTRICT OF KALASIN PROVINCE, THAILAND

Miss Prapasri Poopayang
Candidate

Assoc.Prof. Somsak Suthutvuravut,
M.D., Dip. Thai Board of Ob. & Gyn.,
Dip., Field Epidemiology (C. D.C.)
Major advisor

Asst. Prof. Sanya Patrachai,
M.D., Dip. Thai Board of Ob. & Gyn.,
M.P.H.
Co- advisor

Assoc. Prof. Pratana Satitvipawee
M.P.H.
Ph.D. (Public Health)
Co- advisor

Prof. Banchong Mahaisavariya,
M.D., Dip Thai Board of Orthopedics
Dean
Faculty of Graduate Studies
Mahidol University

Asst. Prof. Sanya Patrachai,
M.D., Dip. Thai Board of Ob. & Gyn.,
M.P.H.
Program Director
Master of Science Program in
Human Reproduction and Population
Planning
Faculty of Medicine
Ramathibodi Hospital
Mahidol University

Thesis
entitled

FACTORS ASSOCIATED WITH ADOLESCENT PREGNANCY IN A RURAL DISTRICT OF KALASIN PROVINCE, THAILAND

was submitted to the Faculty of Graduate Studies, Mahidol University for the degree of Master of Science (Human Reproduction and Population Planning)
on
July 30, 2014

Miss Prapasri Poopayang
Candidate

Lect. Sonkiat Sitavarin,
M.D., Dip. Thai Board of Ob. & Gyn.,
Chair

Assoc. Prof. Pratana Satitvipawee,
M.P.H.
Ph.D. (Public Health)
Member

Assoc.Prof. Somsak Suthutvuravut,
M.D., Dip. Thai Board of Ob. & Gyn.,
Dip., Field Epidemiology (C. D.C.)
Member

Lect. Jirat Tangtitawang,
M.D., Dip. Thai Board of Ob. & Gyn.,
Member

Asst. Prof. Sanya Patrachai,
M.D., Dip. Thai Board of Ob. & Gyn.,
M.P.H.
Member

Prof. Banchong Mahaisavariya,
M.D., Dip Thai Board of Orthopedics
Dean
Faculty of Graduate Studies
Mahidol University

Prof. Winit Phuapradit,
M.D., M.P.H.
Dean
Faculty of Medicine
Ramathibodi Hospital
Mahidol University

ACKNOWLEDGEMENTS

I would like to express my deepest gratitude to Professor Somsak Suthutvoravut for his valuable assistance in reviewing manuscript and giving several important suggestions which shaped my idea and enhanced this project. I would also like to thank Asst. Prof. Sanya Patrachai and Dr. Sonkiat Sitavarin for their help and encouragement.

I would also like to thank Assoc. Prof. Dr. Pratana Satitvipawee his useful advices of the research methodology and statistics.

I would like to sincerely thank the Ford foundation to support the expense through the Master education. I would particularly like to express my gratitude and respect to Professor Johannes Bitzer who gave me an opportunity to take short course training in Women hospital at Basel University that arranged valuable documentations, experiences, and guidelines to contribute knowledge and attitude for the reproductive research.

In addition, I would like to take this opportunity to record my sincere thanks to my family especially my first baby who inspired me to hard study and help me a lot for finishing this research.

Finally, I thank my dear friends and colleagues for supporting me throughout this study.

Prapasri Poopayang

FACTORS ASSOCIATED WITH ADOLESCENT PREGNANCY IN A RURAL DISTRICT OF KALASIN

PRAPASRI POOPAYANG 5436402 RAHP/M

M.Sc. (HUMAN REPRODUCTION AND POPULATION PLANNING)

THESIS ADVISORY COMMITTEE: SOMSAK SUTHUTVORAVUT, M.D. DIP IN FIELD EPIDEMIOLOGY, SANYA PATRACHAI, M.D., M.P.H., PRATANA SATITVIPAWEE, M.P.H.,Ph.D. (PUBLIC HEALTH)

ABSTRACT

Adolescent pregnancy is a major health problem, which affects not only health of the girl and her baby, but also hinders social and economic development, both in the short and long term aspects. This research was a case-control study, aiming to study factors associated with pregnancy among adolescents who lived in a rural area in Thakhantho district, Kalasin province. Cases were 85 girls aged 10-19 years old who were pregnant and delivered their baby less than 1 year ago or aborted within 6 months. Controls were adolescents, of the same number, who had never been pregnant and lived nearby. Data was collected by self- administered questionnaires during the period of 1st June to 30th November 2013. Data analysis included descriptive statistics, bivariate analysis (Pearson chi-square test, Fischer's exact test, and Mann Whitney U test), and multiple logistic regression. The statistical significance was set at p-value < 0.05.

The results of bivariate analysis showed that significant factors associated with adolescent pregnancy were age, education, occupation, parental marital status, having pregnant, married friends, and high sexual risk behavior. On the other hand, knowledge about sex, attitudes toward sex, and levels of friend's acceptance had no statistically significant association with pregnancy. When multiple logistic regression analysis was applied, occupation (OR= 3.0, (95%CI 1.4- 6.6)), parental marital status (OR= 3.5, (95%CI 1.3- 9.1)), and having pregnant friends (OR= 2.9, (95%CI 1.1- 7.9)) had a statistically significant association with adolescent pregnancy.

In conclusion, adolescent pregnancy is associated with interrelated multidisciplinary factors. Delaying adolescent marriage, by maintaining adolescents who are studying in school, and increasing family attachment can reduce the rate of adolescent pregnancy.

KEY WORDS: ADOLESCENT PREGNANCY/ PERSONALCHARACTERISTICS/ FAMILY CHARACTERISTICS/ PEER CHARACTERISTICS

70 pages

ปัจจัยที่มีความสัมพันธ์ต่อการตั้งครรภ์วัยรุ่น ในชนบทของจังหวัดกาฬสินธุ์

FACTORS ASSOCIATED WITH ADOLESCENT PREGNANCY IN RURAL DISTRICT OF KALASIN

ประภาศรี ภูผายาง 5436402 RAHP/M

วท.ม. (การเจริญพันธุ์และวางแผนประชากร)

คณะกรรมการที่ปรึกษาวิทยานิพนธ์: สมศักดิ์ สุทัศน์วรวุฒิ, Dip in Field Epidemiology(CDC)
สัญญา ภัทราชัย พ.บ. ว.ว. (สูตินรีเวช), ปรารถนา สถิตย์วิภาวี, ปร.ด. (สาธารณสุขศาสตร์)

บทคัดย่อ

การตั้งครรภ์ในวัยรุ่นเป็นปัญหาสำคัญที่ส่งผลกระทบอย่างมากต่อสุขภาพของมารดาและทารก รวมไปถึงปัญหาด้านเศรษฐกิจและสังคมซึ่งเป็นอุปสรรคในการพัฒนาประเทศทั้งในระยะสั้นและระยะยาว การศึกษาวิจัยครั้งนี้เป็นแบบ case control เพื่อศึกษาปัจจัยที่เกี่ยวข้องกับการตั้งครรภ์ในวัยรุ่นที่อาศัยอยู่ในชนบท ได้แก่อำเภอท่าคันโท จังหวัดกาฬสินธุ์ กลุ่มศึกษาเป็นวัยรุ่นหญิงอายุ 10-19 ปี ตั้งครรภ์ครั้งแรก คลอดบุตรคนแรกภายใน 1 ปี หรือเพิ่งแท้งบุตรภายใน 6 เดือน จำนวน 85 ราย กลุ่มควบคุมได้แก่วัยรุ่นหญิงจำนวนเท่ากันอายุใกล้เคียงกันที่ไม่เคยตั้งครรภ์ และมีที่อยู่อาศัยใกล้กับกลุ่มศึกษา เก็บข้อมูลจากแบบสอบถามที่ตอบเอง ระหว่างวันที่ 1 มิถุนายน ถึง วันที่ 30 พฤศจิกายน 2556 วิเคราะห์ข้อมูลโดยใช้สถิติพรรณนา การวิเคราะห์แบบทวิตัวแปร (Pearson chi-square test Fisher's exact test และ Mann Whitney U test) และ การวิเคราะห์ด้วยสถิติถดถอยลอจิสติก โดยกำหนดนัยสำคัญทางสถิติที่ระดับ 0.05

ผลการวิเคราะห์แบบทวิตัวแปรพบปัจจัยที่มีความสัมพันธ์อย่างมีนัยสำคัญทางสถิติกับการตั้งครรภ์ในวัยรุ่นได้แก่ อายุ การศึกษา อาชีพ สภาพสมรสของบิดามารดา การมีเพื่อนที่ตั้งครรภ์หรือแต่งงานและพฤติกรรมเสี่ยงทางเพศ แต่ความรู้ ทัศนคติเรื่องเพศและการยอมรับของเพื่อนไม่มีความสัมพันธ์อย่างมีนัยสำคัญทางสถิติ เมื่อทดสอบทางสถิติถดถอยลอจิสติก พบว่าปัจจัยที่ยังคงมีความสัมพันธ์อย่างมีนัยสำคัญทางสถิติกับการตั้งครรภ์ของวัยรุ่นคือ อาชีพ (OR= 3.0, (95%CI 1.4- 6.6)) สภาพสมรสของบิดามารดา (OR= 3.5, (95%CI 1.3- 9.1)), และการมีเพื่อนที่ตั้งครรภ์ (OR= 2.9, (95%CI 1.1- 7.9))

สรุป การตั้งครรภ์ในวัยรุ่นมีความสำพันธ์หลายปัจจัยที่มีความเกี่ยวข้องกัน จากการศึกษานี้อาจจะนำไปสู่การแก้ไขปัญหาการตั้งครรภ์ในวัยรุ่น ได้แก่ ควรมีการส่งเสริมให้วัยรุ่นแต่งงานช้าลงได้มีการเรียนหนังสือในโรงเรียนให้นานที่สุด ส่งเสริมให้คนในครอบครัวมีปฏิสัมพันธ์ที่ดีต่อกัน เพื่อลดอุบัติการณ์การการตั้งครรภ์ในวัยรุ่นในประเทศไทยได้

70 หน้า

CONTENTS

CONTENTS (Cont.)

LIST OF TABLES

CHAPTER I
INTRODUCTION

1.1 Background and Significance of the problem

Globally, there are 1.2 billion adolescents aged 15-19 years. Around 11 percent of all births worldwide, or an estimated 14 million, were from adolescent mothers aged 15–19 years old. The younger the mothers are, the more likely to experience complications and die from pregnancy related causes. Adolescent pregnancy is uncommon, having babies during adolescence has serious consequences for the health of the girl and her infant(1, 2). Complications related to pregnancy and childbirth account for the deaths of some 50,000 adolescent girls each year (3, 4). On the other hand**,** stillbirths and newborn deaths are 50% higher among infants of adolescent mothers than among infants of women aged 20-29 years(1, 5). Infants of adolescent mothers are more likely to be low birth weight, malnourished (6-8), abandoned or neglected (9). The social consequences of pregnancy in adolescence include school drop-out and subsequent both low education and low earning through her lifetime thus their contribution to economic growth, and to the vicious cycle of ill-health and poverty(10).

The onset of puberty makes adolescents to be sexually active and subsequent pregnancy. Personally, lack of skills, family planning, and knowledge about sex make adolescents at risk for unplanned pregnancy. Some adolescents do not know how to avoid becoming pregnant, or are unable to obtain contraceptive**.** In some situations, adolescent girls may be unable to refuse sex. More than one third of girls in some countries reported that their first sexual encounter was coerced. Furthermore, good family structure is essential as Marie- Aude Boislard et al. reported that the high levels of disclosure are also likely to indicate the high quality of parent–child relationship, which has been linked to the delay of intercourse(11, 12) and reducing risk behaviors in adolescent age 13- 20 years (13, 14). Involvement in crime, violence, and use of drugs and alcohol were lowest among those living with both parents, higher

among those living with one parent, and highest among those living with neither parent (15). Socialization both peers and mass media may force young people to rely on, and to be very affected by, such as, social consumption motivations, materialism, which can influence individuals' attitudes and decision making processes influencing adolescent is unavoidable to engage the sex exchange for purchasing power. In adolescence, peer groups give a central context and tend to shape and reinforce similarities over time positive peers provide the protection of sexual risk taking(13, 16). In contrast, negative peers can induce to do the negative activities(17). There were studies that early adolescent drinking was associated with age at first intercourse, which was, in turn, associated having initiation of coitus and several sexual partners (16, 18, 19).

In Thailand, Prasartkul et al. found that in most modernizing society, norm and social sanctions toward premarital sex are shifting in the direction of permissiveness, especially in urban areas. Premarital sexual intercourse is more acceptable in Thai society which reported 40 % of male adolescent and 36 % of female adolescent endorsed premarital sex for engaged couples(20, 21).Report showed the proportion of adolescent mothers aged 15-19 years per 1000 teenagers of the same age has increased from 49.2 to 54.9 between 2005 and 2012. Surprisingly, the mean age of first sexual intercourse was 12.8 years for boys and 13 years for girls. Even though the UNAIDS reported that in Thailand the incidence of HIV declined from 143,000 in 1991 to 19,000 in 2003(22). The HIV epidemic in Thailand seemingly increased during a past decade, but Thato et al. depicted that adolescent s report condom use every time only 13-31 % when having sex(23), and sexually transmitted infections treat 7% for damned adolescents(24, 25), while the budget for condom use promotion, policy, and strategies has been cut linked with the reported by the Bureau of Reproductive Health in 2011 was the statistics of Thai people aged 15-24 years suffering with AIDS 89.5 per 100,000 people in the same age that increased from 76.5 in 2009 (25). These data has been shown that behavior had been jeopardizing sexual trends in the nation.

Literatures on adolescent pregnancy has focused on adolescent s' interpersonal relationships. However, no study has been done, and less is known regarding adolescent pregnancy's factors in rural area. The statistics of rate delivery of

adolescent aged 10-19 years in Thakhantho district was 26%, 28%, and 28%in 2010, 2011, and 2012 compared to 16.5% in 2012 of Thai teens, respectively. These data showed the trend of adolescent pregnancy problems in the community. The purpose of the research was to find associated factors that influenced adolescent pregnancy in the community.

1.2 Research Objective

To study factors associated with adolescent pregnancy included:

1. Personal characteristics: age, education occupation, income, and residence.
2. Family characteristics: family income, parental marital status, father's occupation, mother occupation, family type, number of sibling, and order of sibling.
3. Peer characteristics: number of close friends, close friends' location, having pregnant friends, having married friends, and friends' acceptance.
4. Knowledge about sex, attitude towards sex, and risk sexual behaviors.

1.3 Research Hypotheses

There were significant association between adolescent pregnancy and

1. Personal characteristics: age, education occupation, income, and residence.
2. Family characteristics: family income, parental marital status, father's occupation, mother occupation, family type, number of sibling, and order of sibling.
3. Peer characteristics: number of close friends, close friends' location, having pregnant friends, having married friends, and friends' acceptance.
4. Knowledge about sex, attitude towards sex, and risk sexual behaviors.

1.4 Scope and limitation of the study

Data were collected between primigravida adolescent pregnancy, and non-pregnant adolescents aged 10-19 years who lived in a rural district of Thakhantho district, Kalasin province during the 1st of June to the 31th of November 2013.

1.5 Expected outcome

As a result of this study factors associated with adolescent pregnancy who lived in Thakhantho district will be examined and this results can be used to help protect and decrease the rate of adolescent pregnancy in Thai's rural areas.

1.6 Variables of the study

Independent Variables

1. The independent variables were both pregnancy and non- pregnancy in adolescents aged 10-19 years old.

2. The independent variables were divided into 3 themes as follow:

2.1) Personal characteristics

- 2.1.1) Age
- 2.1.2) Education
- 2.1.3) Occupation
- 2.1.4) Income
- 2.1.5) Residence

2.2) Family characteristics

- 2.2.1) Family income
- 2.2.2) Parental marital status
- 2.2.3) Father's occupation
- 2.2.4) Mother's occupation
- 2.2.5) Family type
- 2.2.6) Number of sibling
- 2.2.7) Order if sibling

2.3) Peer characteristics

2.3.1) Number of close friends

2.3.2) Close friends' location

2.3.3) Having married friends

2.2.4) Having pregnant friends

2.2.5) Friends' acceptance

2.4) Knowledge about sex, attitude towards pregnancy, and risk sexual behaviors.

Dependent Variables

Adolescent pregnancy

1.7 The limitations of this study

This study was limited to samples of female adolescents aged 10- 19 years old living in a rural area of Thakhantho district, Kalasin province. One caveat was that the self administered questionnaires of friends' acceptance rating which were considered to be reliable and valid measures, but it was not perfect indicators that the questionnaires were unclear either subjects how they accurate know themselves or how they would like to be viewed. Therefore, the topic of friends' acceptance should be view only as estimates.

1.8 Definition of term

1. Personal characteristics

1.1) Age refers to female adolescent aged between 10-19 years who was born after May 1993.

1.2) Education refers to on one hand, the level or grade while adolescent is studying in school, on the other hand, for adolescents who out of school answer the highest level before leaved school.

1.3) Occupation means a kind of work that can earn income and show the participant's status at the time of the study such as student, farmer, or labor.

1.4) Income refers to money that adolescent received per month both earning herself and receiving from the others in Thai Baht currency.

1.5) Residence refers to participant adolescent staying for at least 6 months before study such as staying with parents or not.

2. Family characteristics

2.1) Family income refers to how much money that father and mother earned per month.

2.2) Parental marital status refers to the nuptial of adolescents' parent is divided into 2 types couple and separated.

2.3) Father's and mother's occupation refers to the main job that father did to earn money to sustain the family in Thai Baht currency.

2.4) Sibling means amount and order of children in the same parents.

3. Peer characteristics

3.1) Close friends refers to friends who provide, care, and share happiness, sadness, rewards, respond needs, information, self esteem, and identity to adolescents.

3.2) Friend's location refers to the residence which adolescent lived during study period.

3.3) Friends' acceptance refer to the acceptance from friends that can be served pleasure, happiness, and anxiety to adolescents.

4. Adolescent pregnancy refers to adolescent aged 10-19 years had the first pregnancy delivered her baby within 1 year ago or had an abortion within 6 months ago including both spontaneous and induced abortion.

5. Controls refer to adolescents who had never been pregnant.

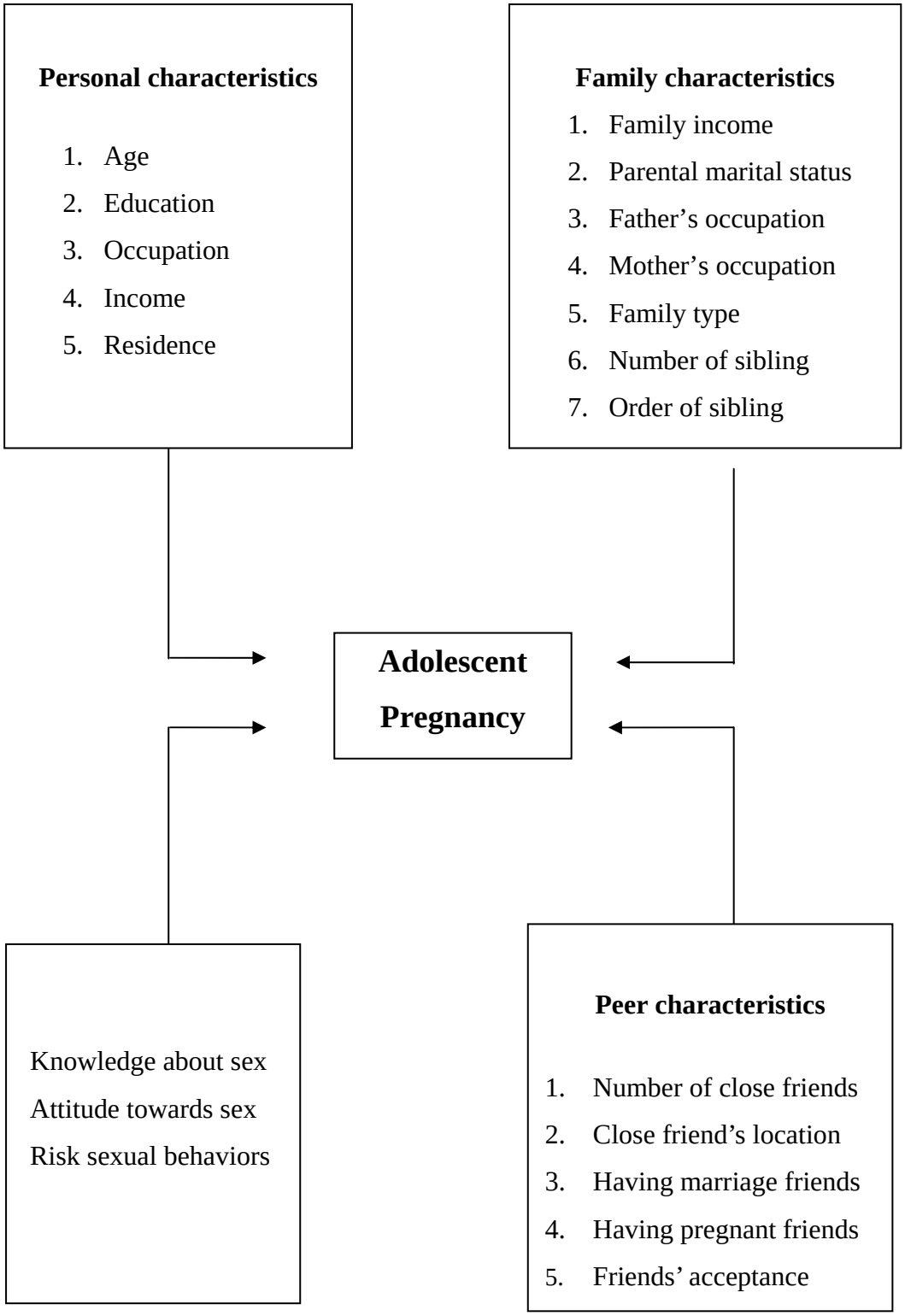
6. Knowledge about sex refers to adolescent understands the facts about sex such as sexually functional organs, family planning, sex education.

7. Attitude towards sex refers to adolescent female thoughts, beliefs, and intends to act on risk sexual behaviors, contraceptive use, sexual transmitted disease, and adolescent pregnancy status.

8. Risk sexual behaviors refer to;

Behaviors which adolescents act and tend to be harm for they sexual health both direct and indirect such as; going out dressing style, substance use.

1.9 Conceptual Framework



CHAPTER II
LITERATURE REVIEW

Literature review and related research

In this chapter, the literature reviewed covering topics as following;

1 Adolescents and Development
   - 1.1 Definition of adolescent
   - 1.2 Adolescent development
     - Biogenetic domain
     - Psychological domain
     - Cognitive domain
     - Spiritual domain

2 Adolescents' Health and Behavior
   - 2.1 Sexuality

3 Knowledge about sex

4 Adolescent pregnancy

5 Attitude towards sex

6 Risk sexual behaviors

7 Factors influence sexual behavior in adolescents and related theory
   - 7.1 Personal factors
   - 7.2 Family factors
   - 7.3 Peer factors

2.1 Adolescents and Development

2.1.1 Definition of adolescents

The word adolescence (a derivative of the Latin verb meaning "to grow up" or "to go into maturity" first appeared in the 15th century. At that time, the short

transition from childhood to adulthood received little recognition. Following puberty, which occurred three to four years later than it does today, the young people became an adult(26).

According to World Health Organization (26, 27) defines “adolescents” as individuals in the 10-19 years. Today, adolescence begins earlier and lasts longer than ever before. This stage covers the second decade of life. Therefore, the social meaning of adolescence has shifted. From bring a short, closely insignificant transition during which the young provided variable negative issues, adolescence has now become an extended period of preparation for life, a time for training, and education that provide options for one’s future. For understanding, the actual concepts of adolescence are useful to understand the causal factors in developmental changes in influence during adolescence, to create the knowledge that can maintain adolescent through the danger period, and to provide ingenious strategies for solving adolescents’ problems.

2.1.2 Adolescent development

Understanding health and health risk behavior in adolescents begins with basic human development. Human development is a process of interaction between the developing person and the environments in developmental changes that occur across multiple domains, that variety of categories, here, including biogenetic, psychological, cognitive and spiritual domains(28).

Biogenetic Domain

A strictly physical view of adolescents would emphasize this period as one of physical and sexual maturation during which important growth changes take place in child’s body. Any biological would outline in detail these physical, sexual, and physiological changes; this biological view would also emphasize biogenetic factors as the primary cause of any behavioral and psychological change in the adolescent. The physical changes of adolescence are referred to as puberty. During puberty, dramatic changes occur in several areas(29) such as brain and endocrine system, Primary sexual characteristic including the ovaries, Secondary sexual characteristic including growth of pubic, body, and facial hair, the breasts and genitalia, body composition changes including distribution of muscle and fat, the

circulation and respiratory change, resulting in increased strength and physical tolerance.

Growth and behavior are under the control of internal maturation forces, leaving little room for environmental influences. Development occurs in an almost inevitable, universal pattern, regardless of the socio-cultural environment(30). Physical development and sexual maturation depend on physical changes that occur among the various systems of the human body(28).

Psychological Domain

From the physiological development emanates the social development of the individual that is categorized as psychological domain. This dimension of human development is huge and incorporates tremendous aspects, including change in cognition, which results in an extensive development of thinking ability, memory, and concentration, and in personality construction(31), are the differentiation of one's self as unique and separate from others. In many ways, this domain of development is closely related to the social domain, as most of the cognitive and personality changes emerge within the surround of social relationships and institutions such as family, school, and community organizations(32). In some paper this domain can be separately divided to psychological and social development.

Cognitive domain

Adolescent is the period of rapid growth of the brain, which results in an extensive development of thinking ability, memory, and concentration. They are more able understand the relationship of things, and develop interest in their surroundings. Moreover, they are more inquisitive. They are able to solve problems approached from various aspects. However, they tend to be impulsive and lack of careful consideration about advantage and in advantage when doing things despite of their intelligence. Hence, they may speak or act without cautiously think about the possible outcomes.

Spiritual Domain

This spiritual domain also springs from the biogenic center and unfold along with the social and psychological domains. In adolescence, the awakening of person's sexuality may also coincide with an increased awareness of one's spiritual nature. The genetic blueprint is in which dictates how and when the

human body reaches sexual maturity, with its accompanying ability to reproduce, coincides to some extent with society's expectations about spiritual and religious maturity and commitment(33). During puberty, many adolescents seek intimacy with peers in ways that are prompted by new physical awareness and sanctioned by social mores. This time of increased awareness of self and others raises remarkable questions about the aim and meaning of life. As well as following the development of broader and deeper understanding of what it means to love and to be loved.

To sum up, adolescence is a social constructed phenomenon that contains several domains of transition that emerge in adolescence period(26). Also, adolescence is conceptualized as a specific phase in the life span development of the human being. The contextual transition of changing in biological, psychological cognitive and spiritual dimensions in response to their environment, leads to adolescence health risk behavior causing from the multiple domains of changes in a complexity of growth and development.

2.2 Adolescents Health and Behavior

2.2.1 Sexuality

The lives of adolescent wrapped in sexuality. Adolescence is a period of sexual exploration and incorporating sexuality into one's identity. Several study found that most female adolescents become sexually active at some point during adolescence, but many adolescents are at risk for sexual problems and other problems when they have sexual intercourse(34), which puts them at risk for adolescent pregnancy and STIs some study found that use of alcohol and other drugs(35), as well as low academic achievement(36), were linked with the initiation of sexual intercourse in early adolescence (37) (38).

2.3 Knowledge about sex

Knowledge about sex means the understanding of anatomy, technique, and positions about sexual issues. Even sexual information is abundant, but much of it is misinformation. Most adolescents do not know the female menstrual cycle most likely to get pregnant. Some adolescents do not know how to avoid becoming pregnant, or are unable to obtain contraceptives(39). However, even where contraceptives are widely available, sexually active adolescents are less likely to use contraceptives than adults(26, 40). In Thailand, many resources provide the sexual information such as parents, school, and media, in contrast, the data of sexual illiteracy in female adolescent has been shown through the high rate of unplanned pregnancy. There are many reasons that had been presented the obstacles about sexual issues communication in Thai culture as the study of Vuttanont U.(41) showed that discussing about sex between family members is still taboo because Thai women are prohibited to talk about sexual matters. Furthermore, several studies showed a statistically positive relationship between knowledge about sex and adolescent pregnancy(42) (43) (77).

2.4 Attitudes toward sex

Psychologists view attitude as a basis in determining human behavior to endure. They may change over time, but are assumed to be rather stable unless something happens to influence the attitudes. Also, attitudes may vary in how strongly they are held and how complex or interrelated they are with other attitudes. Sexual beliefs, values, and attitudes are most likely multi-determined. Several influences shape what we believe and how we evaluate and respond to certain topics. Researchers have performed numerous experiments to learn what factors may affect beliefs and attitudes such as traditional attitudes to gender roles(44) racial differences(45), and social- norms whereas adolescent pregnancy is seemed to be a negative sight in the community. Due to social impact on adolescent's attitudes, researchers have found that social force may change in life style a poorly developed or ambiguous attitude may direct people to rely on, and to be very affected by, external

sources such as, social consumption motivations, and other values such as materialism, which can influence individuals' attitudes and decision making processes influencing adolescent is unavoidable to engage the risk sexual behaviors for the purchasing power. The former studies found that there are not only personal attitude had an association with adolescent pregnancies. Like several researchers found a statistically significant associated between adolescent's attitude towards sex and pregnancy (36, 46) (47) .

2.5 Risk sexual behaviors

Adolescent is the age of people enthusiastic to know the different experiences in life especially sexual matters. Because the secondary characteristics were developed, adolescence faces increasing feeling of sexual arousal. As parts of their identity exploration, adolescent experience a psychosocial moratorium, the gap between childhood security and adult autonomy. In the cause of exploring and searching their culture's identity files, they often confusing roles. Thus, by the reasons, many female adolescent engage in risk sexual behaviors that can result in unintended health outcomes such as STIs, AIDS, unplanned pregnancy.

According to sexual behavior can be divided into 2 types:

1. Overt behavior is the external conduct that other people can be easily Observed.

2. Covert behavior is the internal conduct that occurs in people minds and cannot be observed. No one else except the person who acts knows when the internal conduct dose exists such as sense, perception, memory, and decision.

Therefore, "sexual behavior" encompasses both overt and covert behavior which reactions when a person is sexually aroused.

Based on sexual behavior, there are five factors that are the external stimuli including vision, taste, smell, sound, and touch. They can be perceives by eyes, tongue, nose, ears, and senses. The sensory will be processed in the brain then the autonervous system will translate the stimuli signal into sexual sensation. Level of feeling depends on emotional development, and physical fitness.

There are two types of sexual outlet in the human;

1. Solitary activity: masturbation and nocturnal sex dreams
2. Socio- sexual activities:

- Heterosexual relationship: petting and coitus
- Homosexual relationship: exclusive homosexual and bisexual

The sexual system

Abrahamson described the sexual theory, his assumption, that sexual expression is directly controlled by cognitive structure. Then, Abramson hypothesizes that the development of cognitive structure is determined by four classes of input:

1. Masturbation is one way to release sexual stress for adolescent. It is the process of growing up physically and intellectually in personality.

2. Social norm can shape adolescent understanding behavior about sex in life. Adolescent learn to accept social standards from other people in the society.

3. Internalized parental standards: adolescent learn and value sexuality from the way their parents socialize them. For example, pre- marital sex should be avoid socialized by the parents it is more likely to perceive that.

4. Previous sexual experience has feedback effect on experience which may be perceived as guilt, may result strengthened if previous sexual experience is satisfactory.

Moreover, risk sexual behaviors, several researchers stated that there are a lot of risks which treated adolescence life. For example, the report of Alan (48) said that contraceptive use, a sexual active adolescent who does not use contraception has a 90 percent chance of pregnancy within one year. Furthermore, forcible sexual behavior some individuals force others to have sex with them. Rape is forcible sexual intercourse with a person who does not consent. About 95 percent of rapes are committed by males. An increasing concern is date or acquaintance, rape. Sexual harassment of adolescents is widespread. Two forms are quid pro quo and hostile environment sexual harassment. Leitenberg (49) found that the masturbation practices of female and male college students were said they had masturbated (female: 45% versus male: 81%). In Thailand, Ruangkanchanasetr S. (39) surveyed youth risks among 2311 adolescents who studied in secondary school student grade7- 12 in Bangkok. The study showed that 10% of adolescents who have had sexual intercourse,

1% were homosexual, 7.1% have never used a condom, and 2.1% resulted in pregnancy.

2.6 Adolescent Pregnancy

According to The World Health Organization defined means pregnancy in a woman aged 10–19 years old. The pregnancy rate includes pregnancies ending in births and also pregnancies ending in abortion.

Consequences of adolescent pregnancy

Adolescent pregnancy creates health risk for both the baby and the mother. Adolescent mother often drop out of school. Although many adolescent mothers resume their education later in life, they generally do not catch up economically with women who postpone childbearing until their twenties (32).

According to Naomi (50) demonstrated the outcomes in adolescent mothers into 2 parts including as below;

1. Interrelated multidisciplinary outcomes for adolescent mothers; the correlation over time between parenting behavior, the quality of parent-child relationship, and a range of social, physical, emotional, and cognitive developmental outcomes.

2. The negative outcomes for children of adolescent mothers compared with children of adolescent mothers are at a disproportionate risk for as following:

- High rate of infant mortality and morbidity
- Cognitive deficits and school failure
- Child abuse, neglect, and entry into the child welfare system
- A range of social and emotional problems
- Economic dependence
- Becoming adolescent parents themselves

As the primer studies, Suebnukarn C. (51) and Watcharaseranee N.(52) studied the outcomes of adolescent pregnancy found that the incidence of adolescent pregnancy was 13.82%. Adolescent pregnancy had inadequate antenatal care than control group. Moreover, the study found the association of adolescent pregnancy with

preterm labor, anemia, the Apgar score of the baby at 1 minute ≤7, and the Apgar score of the baby at 5 minute ≤7.

2.7 Factors influence sexual behavior in adolescents

2.7.1 Personal factors

The illustration of four parts of personally relative factors including self, identity, emotional development and personality changes that adolescent seek to know who they are, what they are all about and where they are going in life. Also, involved factors of personal data can be found out to provide more information that is both direct and indirect reinforcement adolescence influencing life and threatening behaviors in adolescents(39). In this part explores the concepts of age, education, income, residence, the self, identity, emotional development and personality.

2.7.1.1 Ages

Human development is commonly described in term of period. In term of age, age ranges are given for the period of provide a general idea of when they begin and end. In this study, adolescent age is the fundamental factor indicating the different physical, psychological, and socio-emotional changes that range from the development of sexual function. Especially, puberty and biological are occurred that mean female adolescents noticeable sings of sexual maturation and be able to get pregnancy like the studied of Theresa(38) found that in adolescence period the physical growth are maturely occurred that showed adolescents able to be pregnant. In addition, the study of Maureen(40) found that while adolescence, Sexual behavior, health habits and contraceptive use in pregnant adolescents differed by age group. At the early age, the study of Chandra (79) and Cappa (80) found that the contextual risk-factors stimuli such as undesirable society's values, changing familial structure, pornography, pressure from peers versus, arouse them overtime when they neither unknown nor lack of skills to avoid and protect engaged sexual intercourse, consequently pregnancy is inevitable. However, the contradicted result of Promwong

U.(53) and Boonyathan W. (36) studies showed that the age and adolescent pregnancy had no a statistical association.

2.7.1.2 Education

Education is to prepare students for all of life: citizenship, home and family living, a vocation, physical health and effective personal growth. According to adolescents who lacked inappropriate education such as school leaving at early age, they might be lost good opportunities though her life including sexual learning issues.

Onell C.(54) stated that adolescent who disliked school is associated with subsequent increased risk of teenage pregnancy similar to the previous studies found a significant association between low academic achieved students and adolescent pregnancy(36, 53).

2.7.1.3 Occupation

Adolescent acknowledged that this is the point when adolescent first consider the choice between continuing their studies or entering the workforce(47). Family financial statuses largely impact whether adolescent combine schooling with work or leave their studies and join the labor force. Some adolescent choose to leave school and get jobs, other are forced to start earning money because of unplanned pregnancies or other unforeseen problems. Peer groups may determine whether adolescent stay in school and parent sometimes ask their children to get jobs to support the family economy. Then, adolescent who leaves school early age might have higher chance of exposed to sex experiences than those who engaged in school. In addition, Bonell(54) found that girl adolescents who dislike school had an association with a teenage pregnancy.

2.7.1.4 Income

Income is the important factor of socioeconomic status. Low economic status adolescent refers to those who are low income. They are four limitations in their lives: limited experience and opportunities; little autonomy and influence, which gives a sense of helplessness and powerlessness; they feel a sense of

failure because of their status amid those who are more affluent; and they are insecure, at the mercy of life's unpredictable events. The net effect of these limitations is to perpetuate a cycle of poverty(30).

2.7.1.5 Residence

Residence is the one of the surrounding factors that influences adolescent's behavior. Living in a rented house or dormitory implies the freedom of adolescent to socialize with their peer. The more adolescent lived far away from home, the more adolescent is exposed to peer to have the opportunity for sexual interaction. Primer studies found that residence is one of important factors that had appositive relationship with adolescent pregnancy. for example, Rasamimari(21) studied found that the residence is significant factor which can predict adolescent sexual risk-taking. Shuaythong P.(34) et al found that students who used to stay in a dormitory had more relationship than those who stay with parents. Moreover, Tonsakul S.(35) studied risk sexual behaviors of 377 students in Chonburi province found that most of those students who lived alone in a rented house and a dormitory had more chance to sexually risk-taking.

2.8 Family factors

Family relation and family resources are considered important mediating forces in adolescents' lives. For adolescents, the family can be seen as both a place for nurturing and one of conflict. Older family members may be important positive role model, but they can also be negative exemplars. Family influence is frequently measured by family structure, family size, or family resources (socioeconomic status)(55). In this ways, single parent families appear to put adolescents at risk of less schooling, unhealthy risk behaviors, and early initiation of sex or early marriage. Moreover, older family members tend to reduce negative life outcomes and enhance opportunities for adolescent. Divergent outcomes are sometimes explained by a lack of communication with parents or generational gaps in social relationships. Most important for schooling and the initiation of work or employment are family financial resources and family networks. In both cases, family finances are generally the foremost reason for adolescent transitions out of school and into work. Family

network are also essential influences on adolescent transitions to employment opportunities(56). The study of Sidze (57) found that adolescents who stayed with mother, had high relationship with the family, was associated with lower risks of premarital sexual initiation during adolescence among females.

2.8.1 Marital parental status

The number of adolescents growing up in single parent families is staging. More adolescents are growing up in a greater variety of family structures including divorced families; adolescents from divorced families show poorer adjustment than their counterparts in non-divorced families. Those who have experienced multiple divorces are at greater risk such as academic problems, to have lower self-esteem, less socially responsible and less-competent intimate relationships, to drop out of school, and to become sexually active at an early age(58).

Jantaraviruj O.(59)studied students who lived in a broken family as a divorced parent found that students with fragile family lack warmth, love or someone to provide appropriate sexual information to them. Those students tend to have more risk sexual behaviorss which showed 74%. They are also to have mental problems or want to be loved and cared. Then, they engaged to the risk behavior from seeking love and warmth from peers or people who can bring high risk which relates to sexual matters.

2.8.2 Parental occupation

On one hand, financial status of the family and different occupation of the parents refers to educational level and level of income. On the other hand, Working parents refer to time to pay attention to their adolescent. Coley et al. studied of 819 adolescent aged 10 to 14 year-olds found that out of home care, whether supervised or unsupervised, was liked to delinquency, drug and alcohol use, and school problems(60). In one study that focused on after school hours, unsupervised peer contact, lack of neighborhood safety, and low monitoring were liked with externalized problems in young adolescents.

2.8.3 Sibling

One particular role siblings are most likely to play depending on their relative ages in the family older sibling are models for the younger ones. Though their interactions with parents and others, they illustrate expected form of behavior and family standards. Their achievements influence younger siblings' aspiration and interests. Oder siblings are also likely to serve as care takers for younger children in the family. Siblings provide friendship and company for each other. Because they are closer in age to each other than to a parent, they are often more in touch with the problem each faces and can frequently offer better advice than a parent(61). Conflict is the one of the many dimensions of sibling relationships. A long study of Bank et al. found that a combination of ineffective parenting and sibling conflict age 10- 12 years of age was linked to antisocial behavior and poor peer relations from 12- 16 years of age(62).

2.8.4 Order of sibling

- Only child is of a "spoiled brat" with such undesirable characteristics as dependency, lack of self- control, and self- centered behavior. Contrary research of Thomas (1993) presented that a more positive portrayal of the only child, who often is achievement oriented and displays a desirable personality.
- Firstborns have been described as more adult oriented, helpful, conforming, anxious, and self- controlled, and less aggressive than their siblings. Parent demands and high standard established for firstborn may result in firstborn realizing higher academic and professional achievement than their siblings.
- Later- borns the profile of the later- born child is related to the sex of his or her siblings. Overall, later- born usually enjoy better relations with peer than firstborn.
- Middle- borns tend to be more diplomatic, often performing the role of negotiator in time of dispute.
- Lastborns run the risk of becoming overly dependent.

Consideration of birth order effects suggests that birth order might be a strong predictor of adolescent behavior. Nevertheless, an increasing number of family researchers believe that birth order has been overemphasized. When all of the factors

that influence adolescent behavior are considered, birth order presents limited ability to predict adolescent behavior not only in birth order, but also in number of siblings, age of siblings, age spacing of siblings, and sex of siblings.

To sum, there are many types of the families in nowadays. Nonetheless, other types are adoption, and culture and ethnicity that the size of effects is debated. However, adolescents are better adjusted in all the kinds of the families when their parents have a harmonious relationship with each other and use good bonding parental relationship.

2.9 Peer characteristics

Peer is children or adolescents who are about the same age or maturity level. Peers play very important roles in the lives of adolescent. Adolescents typically have a larger number of acquaintances than children do. The friendship network and some friendship networks are more effective in controlling the behavior of their members due to structural characteristics of the network**.** Researchers suggests that peer manifests itself in at least four ways: direct peer pressure, indirect peer modeling or association, normative regulation, and the structuring of opportunities(63).

2.9.1 Peer relations

Adolescents have strong need to be liked and accepted by larger peer groups and friends, which can result in pleasurable feelings when accepted or extreme stress and anxiety when excluded and disparaged. Hartup's study found that peer experiences have important influences on children's development, those influences vary according to the ways peer experience is measured, the outcome specified, and the developmental trajectories traversed. Cillessen et al. found that the quality of friendship varies. Some friendships are deeply intimate and long-lasting, other more shallow and short- lived. Some friendships run smoothly, others can be conflicted(64).

2.9.2 Numbers of friends

In study, adolescents join in group because group satisfy adolescent personal needs, reward them, provide information, raise their self- esteem, an give

them identity. They make it clear that peer groups:

1. Foster a break from dependence on and normative control by the adolescents' parents and family.

2. Develop new social learning not available in the family (these applies particularly in the area of heterosexual role behavior).

3. Restructure of individual belief and value system.

Considering, the word "group" has a somewhat vague referent. Muuss E. Rolf and Smith(65) distinguish three distinctively different kinds of adolescents groups including the clique, the crowd, and the gang depending on the size and amounts of members in each group. Firstly, the clique is smaller contained about six members who spend a good deal of their spare time together. There is general agreement that membership of these unisexual cliques is based on three main factors: (1) same sex; (2) similarity in age; and (3) residential proximity. Secondly, the crowds are larger and members are both sexes considering an essential middle adolescents phenomenon. It arises out of the growing need for maturing adolescents to make heterosexual contact and to do so within the context of support from the members. The crowds are ranking in size about twelve to thirty members. The major function of the crowd is clearly to provide an extended sex of social contacts with members of the opposite sex and to arrange a situation in which heterosexual behavior and skill can be learned. Lastly, the gangs, they are, generally unisexual although sometimes they have female groups associated with them. They are often larger in size than the clique and are generally more highly organized. They emerge on the geography basis, but have a much clearly delineated "territory". This territory is often strongly defended against incursion by other gangs and one of the major functions of the gang is to provide protection to members in a threatening environment and conduct predatory activities in other areas.

2.9.3 Sexual behavior of close friends

Adolescent needs an acceptance from friends by thinking that they will be encouraged to success. Hence, they try to copy actions, such as social attitude and value to be accepted by friends and then they will be unique to their friends. Friends' influences can be divided into 2 types. Firstly, information influence refers to

information sources for their conducted, attitude, value and action. Secondly, normative influence means the group of friends had social pressure to force them to comply with. Similarly, Stefanie Mollborn et al. (66) conducted that peer network had heavily weighted toward close friends, so close friends predict girls' perceptions of pregnancy norms with statistical significance on adolescent pregnancy.

2.9.4 Friends' acceptance

Peers and friends play a crucial role to shape adolescents' lives. Level of friends's acceptance can predict adolescent emotional well-being, prosocial and antisocial behaviors, and academic achievement. The several studies on friends' acceptance stated that adolescents who were accepted and had positive relationship by their friends seem to be emotionally, socially well adjusted, also reached academic success than those who were rejected by their friends (67-69). This study expands in peer networks are defined more rigorously as adolescents' egocentric friendship networks and are measured with network data on friendship nominations. An adolescent's friendship network consists of all adolescents who the respondent directly nominates as friends, as well as those adolescents who directly nominate there respond as a friend. Relatedly, with the prior study of Padilla (63) revealed that peers' context had an influence to adolescent pregnancy and many risk-taking behavior such as engaging causal sex and greater number of sex partners. Mechanism is because of a limited geographic mobility during adolescent stage of development (16) but the micro-level relationship had been reacted to adolescents over time. Adolescent who engage in certain behavior may act as role model whereas they are exposed and the prier research conducting by Decoster portrayed that perspectives from social learning are linking between peer influence and adolescent problematic behaviors which pregnancy was included. Given the importance of peers in adolescence, these networks are contexts particularly likely to generate social capital in terms of pressure, norms, and expectations for behavior; however, these networks do not always foster advantaged behaviors, but rather can lead to negative behaviors if there is consensus among network members regarding the appropriateness of such behavior.

A review of literature, related theories and existing research literature has led to conclusion that factors which affect adolescent pregnancy are individual

adolescents internal world or to sexual behaviors, personal characteristics, family factors, and peer factors affected to adolescent pregnancy. This research can create more understanding and is important to know on examining how antecedent risk factors contribute to level of adolescent pregnancy in the area for improving and better awareness of both short-term and long-term impacts as showed in the research.

CHAPTER III
MATERIALS AND METHODS

This chapter includes the research design, research instruments, population and samples, sample size and sampling procedure, validity and reliability of the instruments, data collection and statistical analysis**.**

3.1 Research Design

This research was a case-control study.

3.2 Population and Samples

Female adolescent aged 10-19 years old who lived in Thakhantho district, Kalasin province.

Inclusion criteria

Cases

1. Female adolescents aged 10- 19 years who had the first pregnancy and
    - 1.1 were pregnant at the time of study.
    - 1.2 delivered her baby within 1 year before the study or
    - 1.3 had an abortion within 6 months before the study.
2. She can write or read, and understood Thai language.
3. Agreed to participate in the study

Controls

1. Female adolescents who had never been pregnant or had an abortion before.
2. Adolescents lived nearby the cases.

3.3 The sample size

Determination of sample size

The sample size in this study was calculated by following formula (Schlesselman, 1982)(70). The proportion of sample group (case: control) was 1:1. The proportion of adolescent pregnancy was used by the prevalence of adolescent pregnancy of Thailand that was 54.9 per 1,000 population (= 0.05)(39). In the study calculated the odds ratio by using the pre-study of adolescent pregnancy in Thailand. Choosing the odds ratio of poor school performance of adolescents who engage into sexual intercourse (odds= 5.26) was used to calculate the sample size in this study(53).

$$n = \frac{[\, Z_{\alpha/2}\sqrt{2\hat{p}\hat{q}} + Z_{\beta}\sqrt{p_1q_1 + p_0q_0}\,]^2}{(p_1 - p_0)^2}$$

when

n = Sample size

$Z_{\alpha/2}$ = Standard value under normal curve of significant level at 0.05

$Z_{\alpha/2}$ = 1.96

Z_{β} = Standard estimate Type II error at $\beta = 0.20$, Z_{β} = 0.84

OR = Odds ratio = 5.26 (53)

P_0 = The estimate expose rate (proportion exposed) among controls

P_1 = Anticipated probability of expose for adolescent pregnancy

$P_1 = p_o \, OR / [\, 1 + p_0(OR - 1)]$

$\hat{p}$ = Anticipated probability of exposure for adolescent who did not pregnancy

$\hat{p} = \frac{1}{2}(p_1 + p_0)$, $\hat{q} = 1 - \hat{p}$

$q_1 = 1 - p_1 \cdot q_0 = 1 - p_0$

$$n = \frac{[1.96\sqrt{2(0.13*0.87)} + 0.84\sqrt{(0.21*0.79)+(0.05*0.95)}\,]^2}{(0.21-0.05)^2}$$

n = 70

Sample size needs to be used were 70 cases for each group. Adding 20% of case for incomplete data, so we needed at least 85 cases included of each group.

3.4 Research Instruments

The instrument for data collection was constructed by revised from literature review, and the three experts recommended. The questionnaire consisted of 8 parts as following:

Part 1: Personal information included 14 questions such as age, education, occupation, income, and residence.

Part 2: Questions of knowledge about sex were consisted of 10 questions. There were derived from literature review and modified from the (36). There were focused on:

- Physical changes; sexual maturation, female fertilization.
- Psychological changes; self- stimulation, sexual need.
- Contraception; knowledge of contraceptive use.
- Risk sexual behaviors; sexual transmitted infections, safer sex of dating. Two choices of answer were yes or no. The correct answer was given 1 score, so the total score was 10 and evaluated the knowledge about sex level into 3 categories by using mean ± SD to cut point of the knowledge about sex's level as below:

- High level: if score was ≥ 8 scores
- Moderate level: if score was during 5-7 scores
- Low level: if score was ≤ 4 scores

Part 3: Questions of attitudes toward sex. The questions were contained both positive and negative meaning of statement. There comprised 10 questions and revised from the literature review (36, 71, 72). The giving score of the statements were calculated the meaning in each item as following:

The items of positive meaning were: 1 2 3 4 5 8 10

The items of negative meaning: 6 7 9

	Statement	Positive item Score	Negative item Score
1	Strong agreement	4	1
2	Agreement	3	2
3	Disagreement	2	3
4	Strong disagreement	1	4

The total statements were 10 questions ranged from10 to 40 scores and divided into 3 levels by using mean± SD to cut point of the attitude towards sex as below:

- High level: if score was ≥ 30 scores
- Moderate level: if score was during 26-29 scores
- Low level: if score was ≤ 25 scores

Part 4: Questions of risk sexual behaviors of female adolescents. There were derived from literature review and modified from the thesis(36, 53) . The total statements were 10 questions of risk sexual behaviors and divided 5 scales of the frequency. Scores were ranged from 10 to 50 and divided into 3 levels by using mean± SD to cut point of the risk sexual behaviors' levels as following:

- High level: if score was ≥ 26 scores
- Moderate level: if score was during 18- 25 scores
- Low level: if score was ≤ 17 scores

Part 5: Peer relationship including 11 questions divided into two parts. The first part was consisted 4 general questions of friends. Secondly, the friend's acceptant level compounded 7 questions and divided into 3 scales of agreement. The questions derived from literature review and modified from the thesis (73). The scores were ranged from 7 to 21 and divided into 3 levels of friends' acceptance by using mean± SD to cut point of the scores as following:

- High level: if score was ≥ 16 scores
- Moderate level: if score was during 11- 15 scores
- Low level: of score was ≤ 10 scores

3.5 Validity and Reliability of the Instruments

3.5.1 Content Validity

Correlation and revision of the questionnaire were made according to suggestion and recommendation by three experts (name list in appendix) who participated to be examined to ensure their content validity and appropriated language in the self-administered questionnaire.

3.5.2 Reliability

A pilot study contains 30 adolescents who were tested by the questionnaires. Those adolescents had the similar characteristics of the population whose lives in Thakhantho district. Then, Cronbach's Alpha Coefficient was used to calculate the reliability of the instrument as follow:

1) The reliability of knowledge about sex was 0.68

2) The reliability of attitude towards sex was 0.74

3) The reliability of friends' acceptance was 0.74

3.6 Research Implementation and Data Collection

3.6.1 Data collection

Data were collected from the 1st of June to the 30th of November 2013 by self-administered questionnaire in Thai language. Accessing information concerning sexual issues in a setting such as a sensitive issue in Thai society is quite difficult (74). The use of self-administered questionnaire enhances privacy and allows respondents to feel free to answer personal questions that may not be admissible if asked by using face-to-face interview technique. The steps of data collection were as follow:

1) Submitting the letter of the request from the Dean of Faculty of graduate studies for approving data collection and describe the purpose of this study.

2) The research contacted the head of the community in the selected sub-districts to explain research objectives and ask for cooperation in surveying the name

directory of participants whose has included criteria to conduct simple random sampling.

3) Collecting data from the adolescents by mean self-administered questionnaire. Firstly process, the researcher introduced herself, explained the research objectives, and asked for cooperation in filling out the questionnaire about 30-50 minutes.

3.6.2 Method of analysis

1) Descriptive statistics were computed to summarize the participants' general characteristics. The descriptive data were presented by frequency, percentage, mean, range, standard deviation, minimum value, and maximum value.

2) To determine the related factors between case and control groups, the qualitative data were tested for normal distribution by the Komogorov- Sminov test if the variables are normally distributed, comparing the mean differences between cases and controls were examined by using the Student's t test. If the variables are not normally distributed, the Mann- Whitney U test was used instead. Comparison of categorical variables was performed by using Pearson chi- square test or Fisher's exact test when was appropriate.

3) Multiple logistic regression analysis was employed for analyzing the associated factors by included the statistically significant level was set at 0.05 and measures the relationship between a categorical dependent variable and usually continuous independent variables.

When comparing the ability to explain that factors associated with adolescent pregnancy. If there was statistical significance, it meant that when adding the study factors into the existing analysis, the new analysis cloud explain the factors which associated with adolescent pregnancy. In this study, the adjusted odds Ratio was used, and 95% confidence interval for OR.

3.7 Ethical Issues

The study took place with full consideration for the rights of human subjects. All data produced for this study was anonymous. By their very nature

anonymity is not achievable in focus groups, but ground rules for these groups were agree in term of respecting each other lives and asking respondents not to discuss or critique outside. A code number was given in each study participants for identification purposes in the report of the finding. The note-taker identified participants by number only. The ethic committee of the faculty of medicine, Ramathibodi Hospital, Mahidol University had approved the research protocol which the approval protocol number was 07-56-79. All participants had been given inform consent, had chances to ask any questions, and were free to withdraw from the study any time.

CHAPTER IV
RESULTS

The objectives of this study were to determine factors associated with adolescent pregnancy. Cases were 85 adolescents who lived in Thakhantho district, Kalasin. Controls were 85 adolescents who lived nearby house with the cases had the same criteria at the same period of time when data was collected. The study is presented 2 parts of finding as below;

1. Analysis of adolescents' general characteristics associated with adolescent pregnancy including:
    - 1.1 personal characteristics
    - 1.2 family factors
    - 1.3 peer relationship
    - 1.4 knowledge about sex
    - 1.5 attitude towards sex
    - 1.6 risk sexual behaviors
    - 1.7 friends' acceptance
2. Multiple logistic regression analysis

Part 1 Analysis of adolescents' general characteristics

Personal characteristics

The mean age of cases was 17.85± 1.24 years compared to 17.34± 1.65 years of controls. The rate of adolescent pregnancy was lowest in the 13- 16 years old group (31.4%) which served as a referent group. Adolescent aged 17- 19 years old had 2.6 times higher risk of pregnancy which was statistically significant. About half of cases graduated from secondary school (48.2%), while 45.9% of controls finished high school. The rate of pregnancy was lowest in adolescent who finished primary school.

Adolescent who finished secondary school had 3.5 times higher chance of pregnancy which was statistically significant. Most of the cases were not students and worked (78.8%), but most of controls (50.6%) were students. The result showed adolescents who were farmers or laborers had 3.3 times (95%CI: 1.2- 7.4) higher chance of pregnancy (95%CI: 2.7- 14.6). Most of cases lived with parents (67.9%) compared to 81.7% of controls who had the lowest rate of adolescent pregnancy. However, there was no significant difference on income and residence between cases and controls. (Table 4.1)

Table 4.1 Personal characteristics among cases and controls

Personal characteristics	Case (n= 85)	Control (n= 85)	OR	95%CI	P
	No. (%)	No. (%)			
Age (Years)					
13-16	11 (13.0)	24 (28.2)	Ref.		
17-19	74 (87.0)	61 (71.8)	2.6	1.2- 5.5	.014[a]
Mean± SD	17.85±1.24	17.34± 1.65			
Range	14- 19	13- 19			
Education					
Primary	5 (5.9)	14 (16.5)	Ref.		
Secondary	41 (48.2)	32 (37.6)	3.5	1.1- 11.0	.038[b]
≥High school	39 (45.9)	39 (45.9)	2.8	0.9- 8.5	.076[b]
Occupation					
Student	17 (20.0)	43 (50.6)	Ref.		
Farmer/ labor	28 (32.9)	21 (24.7)	3.3	1.5- 7.4	.002[a]
Others	40 (47.0)	21 (24.7)	6.3	2.7- 14.6	<.001[a]
Income (Baths per month)					
≤6,000	51 (60.0)	54 (63.5)	Ref.		
>6,000	34 (40.0)	31 (36.5)	1.2	0.6- 2.1	.636[a]
Residence (Living with)					
Parents	58 (68.2)	67 (78.8)	Ref.		
Others	27 (32.8)	18 (21.2)	0.9	1.1- 4.3	.114

n= number, SD = standard deviation, [a] Pearson chi-square test, [b] Fisher's Exact test,

Ref.= reference group

Family characteristics

The family characteristics showed that parental marital status had a statistically significant association with adolescent pregnancy. Adolescent who lived with a separated parent had 3.7 times higher chance of pregnancy (95%CI: 1.6- 8.1) when compared to those who lived with parents who still lived together. However family income, father's occupation, mother's occupation, family type, number of sibling, and order of sibling did not show statistically significant difference between case and control group. (Table 4.2)

Table 4.2 Family characteristics among cases and controls

Family characteristics	Case (n= 85)	Control (n= 85)	OR	95%CI	P
	n (%)	n (%)			
Family income (Baht/ month)					
≤6,000	34 (40.0)	31 (36.5)	Ref.		
>6,000	51 (60.0)	54 (63.5)	1.1	0.6- 2.1	.636[a]
Parental marital status					
Living together	57 (67.1)	72 (84.7)	Ref.		
Separated (divorce, death)	28 (32.9)	13 (15.3)	2.7	1.3- 5.7	.007[a]
Father's occupation					
Farmer/ labor	63 (88.7)	68 (91.9)	Ref.		
Others	8 (21.3)	6 (8.1)	0.7	0.3- 2.1	.582[b]
Mother's occupation					
Farmer/ labor	70 (82.4)	61 (71.8)	1.8	0.9- 3.8	.101[a]
Others	15 (17.6)	24 (28.2)	Ref.		
Family type					
Nuclear family	52 (61.2)	49 (57.6)	1.1	0.5- 1.6	.639[a]
Extended family	33 (38.8)	36 (42.4)	Ref.		
Number of sibling					
1	9 (10.8)	10 (12.0)	Ref.		
2	41 (49.4)	37 (44.6)	1.3	0.3- 2.2	.684[a]
>3	33 (39.8)	36 (43.4)	1.0	0.4- 2.7	.972[a]
Mean± SD	2.5± 1.3	2.5± 2.5			
Range	0 - 8	0 - 7			
Order of sibling					
Eldest/ one child	38 (44.7)	42 (49.4)	Ref.		
Others	47 (55.3)	43 (50.6)	1.2	0.7- 2.2	.539[a]

n= number, SD = standard deviation, [a] Pearson chi-square test, [b] Fisher's Exact test,

Ref.= reference group

Peer characteristics

Most of the cases had pregnant friends (59.8%), compared to 40.2% of controls. Adolescents who had pregnant friends had 2.5 times higher chance of pregnancy (95%CI: 1.4- 4.7) compared to those who did not have pregnant friends. Most of cases also had married friends (60.0%) compared 47.1% of controls. The finding showed that adolescent who had married friends had 2.8 times higher chance of pregnancy (95%CI: 1.5- 5.5) which was statistically significant. However, numbers of close friends and close friends' location did not have a statistically significant difference. (Table 4.3)

Table 4.3 Peer characteristics among cases and controls

Peer characteristics	Case (n= 85)	Control (n= 85)	OR	95%CI	P
	n (%)	n (%)			
Number of close friend					
0-2	26 (30.6)	24 (28.2)	1.1	0.6- 2.2	.736[a]
≥3	59 (69.4)	61 (71.8)	Ref.		
Mean± SD	1.69± 0.89	1.72± 0.88			
Range	1 - 4	1 - 4			
Close friends' location					
Nearby	45 (52.9)	47 (55.3)	Ref.		
Far away	40 (47.1)	38 (44.7)	1.1	0.5- 1.7	.758[a]
Having pregnant friends					
Yes	58 (68.2)	39 (45.9)	2.5	1.4- 4.7	.003[a]
No	27 (31.8)	46 (54.1)	Ref.		
Having married friends					
Yes	60 (71.4)	40 (47.1)	2.8	1.5- 5.3	.001[a]
No	24 (28.6)	45 (52.9)	Ref.		

n= number, SD = standard deviation, [a] Pearson chi-square test, Ref= reference group

Knowledge about sex

Adolescent who had high level of knowledge about sex had lowest rate of adolescent pregnancy (40.4%), but there was no statistically significant difference of the rate of adolescent pregnancy when compared between different levels of knowledge about sex. (Table 4.4)

According to the items of knowledge about sex, there were two items which each group of adolescent had different levels of knowledge. They were that "Adolescents can avoid sexual intercourse by not staying together in out of sight place" and "Masturbation is natural for both male and female" in which case group had a fair knowledge, while a control group had a good knowledge in both items. (Table 4.5)

Table 4.4 Level of knowledge about sex among cases and controls

Level of knowledge (scores)	Case (n= 85)	Control (n= 85)	OR	95%CI	p
	n (%)	n (%)			
Low (0- 5)	21 (24.7)	17 (20.0)	1.8	0.8- 4.2	.162[a]
Moderate (5-7)	43 (50.6)	37 (43.5)	1.7	0.8- 3.5	.133[a]
High (8-10)	21 (24.7)	31 (36.5)	Ref.		
Mean± SD	6.49± 1.45	6.83± 1.52			
Range	2 - 9	3 - 10			

n= number, SD = standard deviation, [a] Pearson chi-square test, Ref= reference group

Table 4.5 Number and percentage of correct answer to knowledge about sex among cases and controls

Items	Case (n= 85)	Control (n= 85)
	n (%)	n (%)
1. Adolescents can avoid sexual intercourse by not staying together in out of sight place.	61 (71.8) **(F)**	71 (83.5) (**G**)
2. Masturbation is natural for both male and female	62 (72.9) **(F)**	71 (83.5) **(G)**
3. The first sexual desire occurs only in adult.	42 (49.4) **(P)**	43 (50.6) **(P)**
4. Pregnancy is eminent if menstrual period is delayed for 5 days after having unprotected sexual intercourse.	44 (51.7) **(P)**	46 (54.1) **(P)**
5. Oral contraceptive pill may be harmful for health these teenagers should not use it.	58 (68.2) **(F)**	52 (61.1) **(F)**
6. Having sexual intercourse only once has a very small risk of pregnancy.	64 (75.3) **(F)**	67 (78.8) **(F)**
7. Use of condom can protect both STIs and pregnancy.	78 (91.8) **(G)**	79 (92.9) **(G)**
8. Emergency pill should be used within 72 hours after sexual intercourse.	44 (51.8) **(P)**	50 (58.8) **(P)**
9. Appropriate ways to release sexual desire are exercise, playing sports and hobbies.	70 (82.4) **(G)**	75 (88.2) **(G)**
10. All STIs can be treated and cured.	29 (34.1) **(P)**	34 (40.0) **(P)**

p= p- value of Pearson chi- square, STIs= Sexual transmitted infections,

G= Good knowledge (> 80%)

F= Fair knowledge (60- 80%)

P= Poor knowledge (<60%)

Attitude towards sex

Adolescent who had high level of attitude towards sex had lowest rate of adolescent pregnancy (46.2%), but there was no statistically significant difference of pregnancy when compared between different levels of attitude towards sex. (Table 4.6)

According to the items of attitude towards sex, both cases and controls gave the answer in the same direction. There was presented percentage of agreement of attitude towards sex among cases and controls. (Table 4.7)

Table 4.6 Level of attitude towards sex among cases and controls

Level of attitude toward sex (scores)	Case (n= 85)	Control (n= 84)	OR	95%CI	p
	n (%)	n (%)			
Low (≤25)	15 (17.6)	16 (19.1)	1.1	0.4- 2.8	.853[a]
Moderate (26- 29)	52 (61.2)	47 (55.9)	1.3	0.6- 2.8	.465[a]
High (≥30)	18 (21.2)	21 (25.0)	Ref.		
Mean± SD	26.34± 2.12	26.86± 2.39			
Range	18- 34	18- 31			

n= number, SD = standard deviation, [a] Pearson chi-square test, Ref.= reference group

Table 4.7 Percentage of agreement of attitude towards sex among cases and controls

Items	Case (n= 85)	Control (n= 85)
	Agree (%)	Agree (%)
1. Female teenagers should discuss each other about how to avoid sexual risks.	89.4	91.8
2. Female teenagers should keep virginity until marriage.	96.5	97.6
3. A noble man should not ask to have sexual intercourse with woman before marriage	87.1	90.6
4. Petting, kissing will lead to sexual intercourse.	80.0	80.0
5. That teenagers living together is not wrong because they can learn each other.	24.7	21.2
6. Pre-marriage sexual intercourse shows sincere love.	16.5	29.4
7. Sexual transmitted diseases can be protected by having only one partner.	65.9	72.9
8. Using contraception is good and can protect unplanned pregnancy.	92.9	90.6
9. Pre-marriage sexual intercourse is not wrong if pregnancy is protected,	58.8	43.5
10. Condom decreases sensation.	40.0	49.4

Risk sexual behaviors

The rate of adolescent pregnancy was lowest in the group of low level of risk sexual behaviors (20.0%). Adolescent who had high risk sexual behavior had 1.3 times higher risk with pregnancy when compared to adolescent who had low level of risk sexual behaviors the different was statistically significant. There was no statistical difference when compared adolescents who had low and moderate level of risk sexual behaviors. (Table 4.8).

According to the items of risk sexual behaviors, there were showed percentage of frequency of risk sexual behaviors among cases and controls. (Table 4.9)

Table 4.8 Level of risk sexual behaviors among cases and controls

Level of risk sexual behaviors (scores)	Case (n= 85)	Control (n= 85)	OR	95%CI	p
	No. (%)	No. (%)			
Low (≤17)	17 (20.0)	20 (23.5)	Ref.		
Moderate (18-25)	45 (52.9)	55 (64.7)	0.9	0.5- 2.2	.921[a]
High (≥26)	23 (27.1)	10 (11.8)	1.3	1.2- 6.5	.045[a]
Mean± SD	20.68± 6.70	18.70± 5.71			
Range	10- 47	10- 40			

[a] Pearson chi-square test, Ref.= reference group

Table 4.9 Percentage of frequency of risk sexual behaviors among cases and controls

Items	Case (n= 85)			Control (n= 85)		
	U (%)	S (%)	O (%)	U(%)	S (%)	O (%)
1. I used to stay overnight with friend.	2.4	8.2	89.4	2.4	5.9	91.8
2. I drank alcohol	3.5	3.5	92.9	1.2	7.1	91.8
3. I smoked tobacco and/or used substances.	1.2	0.0	98.8	0.0	1.2	98.8
4. I went out to enjoy night life.	1.2	2.4	96.5	1.2	2.4	96.5
5. I talked about sex with friends.	4.7	14.1	81.2	2.4	4.7	92.9
6. I watched TV/ VDO/ clip VDO/ CD/ internet that had sexual content.	2.4	11.8	85.9	0.0	8.2	91.8
7. I read books, comic books, novel, magazine that had sexual content.	4.7	12.9	82.4	4.7	5.9	89.4
8. I stayed individually with boyfriend.	4.7	18.8	76.5	4.7	5.9	89.4
9. My boyfriend kisses and hugged me.	3.5	20.0	76.5	3.5	7.1	89.4
10. I changed lover or sex partner	0.0	1.2	98.8	1.2	1.2	97.6

U= usually (5-7 times/ month)

S= sometimes (3-4 times/ month)

O= occasionally + rarely + never (≤ 2 times/ month)

Friend's acceptance

Adolescent who had high level of friends' acceptance had lowest rate of adolescent pregnancy (40.7%) which served as a referent group. The findings showed that adolescent who had low and moderate level of friends' acceptance had 1.8 and 1.5 times higher risk of adolescent pregnancy when compared to adolescents who had high friends' acceptance. But the difference was not statistically significant. (Table 4.10)

According to each item, there were presented percentage of agreement of friends' acceptance among cases and controls. (Table 4.11)

Table 4.10 Level of friends' acceptance among cases and controls

Level of friend's acceptance	Case (n= 85)	Control (n= 85)	OR	95%CI	p
	No. (%)	No. (%)			
Friends' acceptance (scores)					
Low (≤10)	9 (63.3)	7 (43.8)	1.8	0.5- 6.5	.361[c]
Moderate (11- 15)	65 (51.2)	62 (48.8)	1.5	0.6-3.5	.398[c]
High (≥16)	11 (40.7)	16 (59.3)	Ref.		
Mean± SD	13.04± 2.14	13.73± 2.64			
Range	7- 19	8- 21			

n= number, SD = standard deviation, [c] Fisher's Exact test, Ref.= reference group

Table 4.11 Percentage of agreement of friends' acceptance among cases and controls

Friends' acceptance	Case (n= 85)	Control (n= 85)
	Agree (%)	Agree (%)
1. Friends accept you	43.5	50.6
2. Usually you take care of friends	11.8	10.6
3. You are happy with friend	69.4	81.2
4. Friends support you	57.6	75.3
5. You can refuse sex if a friend asks you	10.6	5.9
6. You are happier with friends than with family's members	17.6	20.0
7. Friends believe and follow you	22.4	21.2

Part 2 Multivariate Analysis

The seven factors which had significant from the bivariate analysis were put into the multiple logistic regression analysis. The result of the final model when potential confounders were adjusted showed that three factors which still had statically significant were occupation (not students), and parental marital status (separated), and having pregnant friends. Table 4.12

Table 4.12 Factors associated with adolescent pregnancy

Variables	B	S.E	P	OR*adj**	95%CI
Age	0.4	.47	.367	1.5	0.6- 3.8
Education	0.9	.49	.051	2.6	0.9- 6.9
Occupation (Not student)	1.1	.40	.006	3.0	1.4- 6.6
Parental marital status (Separated)	1.2	.49	.011	3.5	1.3- 9.1
Having pregnant friends	1.1	.50	.029	2.9	1.1- 7.9
Having married friends	.60	.38	.115	1.8	0.8- 3.8
High risk behavior	0.1	.43	.868	1.1	0.5- 2.5

ORadj* = Adjusted odds ratio

CHAPTER V
DISCUSSION

The current study contributes the discussion of the research into two parts:

1. The discussion of research methodology
2. The discussion of the research results

Part 1: The discussion of research methodology

Research design

The results of this study provide additional evidence for the significance of three domain factors associated with adolescent pregnancy (personal, family, and peers). This research is a case control study which used the participative method during the implementation process. All of the activities were based on brainstorming with the advisors before implementation. It indicated that the adolescents' right was respected by the researcher. Regarding the method of the study, the advantages of the case control method are: 1. It is a good way to study rare diseases and diseases with long latency, 2. A relatively quick answer cab be obtained, 3. It is inexpensive method, 4. It usually requires a few cases, 5. It can often make use of existing records, and 6. It can study variably possible causes or exposures to risk in the same time. On the other hand, the in-advantages of the method are that it relies on participants' recall and/ or completeness records. The validate information may be incorrectness, and it incomplete allowance for extraneous factors, 4. The suitability of a control group may be difficult in selection. In addition, rates of disease, causation, and disease mechanism cannot be calculated, examined, and verified(1). From the limitation of the methodology even though the data it generated were assessed the reliability and found adequate, the strategies may led to miss specific results, for instance, friends' acceptance topic which may not strong enough to report because of unspecific

questionnaires deeply. However, the research design was appropriate to answer the objectives in this research. The data was collected from the primary source which portrayed the accuracy of data.

Sample size

Cases recruited 85 girls aged 10-19 years old who were pregnant, delivered her baby within 1 year ago, and aborted within 6 months ago living in Thakhantho district,

Kalasin province. Controls were 85 adolescents who were never pregnant and lived near cases. The sample size was added 20% for loss data in which this sample size was adequate to analyze and verify the research objectives.

Data collection

Data collected by self- administered questionnaires during 1st June to 30th November 2013.

Research instrument

The instrument of this research was self- administered questionnaires which constructed from review literature and revised from related researches. The questionnaires were validated by three experts, and were tried out with 30 cases. The test reliability of knowledge about sex was 0.675, attitude towards sex was 0.74, and friends' acceptance was 0.74.

In this process, recall bias may occur. However, as the confidentiality of research was assured, recall bias may be minimized. Before the interview, participants were received information about the objectives of the study and were assured about confidentiality.

Part 2: Discussion of research results

The discussion of results will be presented according to the objectives which three significant factors associated with adolescent pregnancy as following.

Occupation

The results of this study presented adolescents who were not student, positively associated with adolescent pregnancy. Adolescents who are out of school had significantly higher chance to get pregnant than adolescent who still study in school with statically significant (p=.001). These argued to support the former research demonstrated that adolescent who had low level education found positively relationship with a pregnancy more than those who had high educational level (36, 53, 54). Others said dressing and keeping girls in school can be reduced the rate of adolescent pregnancy (53). Furthermore, The world health organization had suggested that preventing early marriage is one of alternative choices to delayed adolescent pregnancy and exhibited that maintaining youths in educational system can delay engaging sexual activity and adolescent pregnancy (76, 77). Both formal and informal education is the most crucial factor in guiding the sexual development of adolescence. The more liberal sex education, the more adolescent's birth rates, reflecting adolescent's capacity to cope sexual problems from the impact of educational sexuality (35).

Parental marital status

The study found that parental status had a statistically significant association with adolescent pregnancy (p= .001). The finding confirmed the previous study which found that a significant association between adolescents who grown up from a single parent when compared with those who grown up from family which have both the father and mother (11, 78). On the contrary, the study of Patricia et al (93) found that parent death, had an association with adolescent pregnancy, but parents divorced, and separation had no significant with adolescent parenthood among female adolescent. In Thailand, Pimonpan (48) studied attitude towards sex and sexual experiences of rural Thai youth reported that female adolescents discussed and believed that whether parents were married or divorced, does not affect children's

sexual behavior. The decision to engage in sexual activity is up to oneself. No one would be able to lead her to engage in sexual activity. It was the willingness of that girl to do so if her did. Family structure and parental control are took parts of a previously important factor to shape adolescent's sexual behaviors. Those adolescents who had high probabilities of early sexual debut exerted less behavioral control are liked with the less exerted behavioral control from their parents. For instance, low parenting control is likely to show low parental involvement, more adolescents had free time to spend with friends (11).

Having pregnant friends

Mir et al. (16) along with Wilson (1996) have stated that rate of adolescent behavior and adolescent premarital pregnancy can be linked to characteristic of friends and neighborhoods. Disadvantaged friends and neighborhoods do influence adolescent's values conductive to risky sexual behavior may develop and flourish (78). Adolescents in these contexts are at risk for exposure to close friends and less intimate other who show and encourage such behaviors. Regarding to the importance of peers in adolescence, these networks are context particularly likely to generate social capital in term of social norms values and expectations for behaviors, that do not only always provides prosocial behavior, but also foster the problematic behavior in the same time. However, adolescents are influenced by both close friends and wider circle friends (65). Because adolescents have limited geographic mobility, in their world are parts of families, friends, peer networks which are exposed them over time, so adolescents tend to learn and follow the role model which is played an important factor to influence during adolescence.

CHAPTER VI
CONCLUSION AND RECOMMENDATION

This research was a case-control study aiming to study factors associated with pregnancy among adolescents who lived in a rural area in Thakhantho district, Kalasin province. Cases were 85 girls aged 10-19 years old who were pregnant and delivered her baby within 1 year ago or aborted within 6 months ago. Controls were the same number of adolescents who were never pregnant and lived nearby the case. Data was collected by self- administered questionnaires during 1st June to 30th November 2013. Data analysis included descriptive statistics, Pearson chi-square test, Fischer's exact test, and Mann Whitney U test. The statistical significance was set at p-value < 0.05.

According personal characteristics among cases and controls, the mean age of cases was 17.85± 1.24 years old compared to 17.34± 1.65 years of controls. Most of cases graduated secondary school and were not students, while controls finished high school and were studying. Both case and control groups lived with parents which the majority of the father's and the mother's occupation was a farmer/ labor in a nuclear family. Considering peer characteristics, most of cases and controls had average 3 persons of close friends who lived at house nearby. Most of cases had married friends and pregnant friends, which the control group presented the opposite direction which most of them had single friends and did not pregnancy. Cases and controls had moderate level of knowledge about sex, attitude towards sex, risk sexual behaviors, and the acceptance from their friends.

The results showed that seven significant factors associated with adolescent pregnancy were age, education, occupation, parental marital status, having pregnant, married friends, and high risk sexual behaviors. When multiple logistic regression analysis was applied, occupation, parental marital status, and having marriage friends had statistically significant association with adolescent pregnancy.

On the other hand, knowledge about sex, attitude towards sex, and levels of friend's acceptance had no statistically significant association with pregnancy.

Recommendations

1. Recommendation for application

1.1 Educational systems, female life skills should be established in the primary school as the following topics:

- Contraceptive use
- Enhance life skills to avoid sexual risks such as negotiate, safer sex
- To maintain student status for female adolescent as long as possible because studying in school system can delay early married and early pregnancy.

1.2 Family support is a crucial factor to protect adolescent engaging at risk sexual behaviors among adolescent, so family should have warmed and understand each other, also parent should be a good model which will perform and enhance the self and spiritual well- being to their children.

1.3 Community, creating sufficient organizations and creating specialists service sexual information and counseling either adolescent stayed on well-being situation or encountered with sexual problems.

2. Recommendation for further study

2.1 Further research should study how to increase the effective of contraceptive use in school's program to obtain a better understanding of the related factors, whether similar or different, to be used to give interventions or establish plans to care and support adolescents.

2.2 Future studies should examine how to increase properly family attachment in rural areas which varies by the demographic of the samples.

REFERENCES

1. World Health Organisation. Adolescent pregnancy- unmet needs and undone deeds. A review of the literature and programes. Department of child and Adolescent Health and Development. Geneva: WHO press; 2007.
2. Shah IH, Say L. Maternal Mortality and Maternity Care from 1990 to 2005: Uneven but Important Gains. J Reprod Health Matter. 2007;15(30):17-27.
3. World Health Organization. 10 facts on adolescent Health. World Health Organization: Geneva: WHO press; 2008.
4. World Health Oranization. Mortality Estimates by Course, Age and Sex for the Year 2008.Geneva: WHO press; 2011.
5. Kershaw TS, Niccolai LM, Ickovics JR, Lewis JB, Meade CS, Ethier KA. Short and long-term impact of adolescent pregnancy on postpartum contraceptive use: implications for prevention of repeat pregnancy. J Adolesc Health. 2003;33(5):359-68.
6. Chantrapanichkul P, Chawanpaiboon S. Adverse pregnancy outcomes in cases involving extremely young maternal age. Int J Obstet Gynecol.2013;120(2):160-4.
7. Omar K, Hasim S, Muhammad NA, Jaffar A, Hashim SM, Siraj HH. Adolescent pregnancy outcomes and risk factors in Malaysia. Int J Obstet Gynecol. 2010;111(3):220-3.
8. Molina RC, Roca CG, Zamorano JS, Araya EG. Family planning and adolescent pregnancy. Best Practice & Research Clin Obstet Gynecol. 2010;24(2):209-22.
9. Svoboda DV, Shaw TV, Barth RP, Bright CL. Pregnancy and parenting among youth in foster care: A review. Child Youth Serv Rev. 2012;34(5):867-75.
10. Haamid F, Holland-Hall C. Overview of sexually transmitted infections in adolescents. Adolesc Med State Art Rev. 2012 Apr;23(1):73-94.
11. Boislard P M-A, Poulin F. Individual, familial, friends-related and contextual predictors of early sexual intercourse. J Adolesc. 2011;34(2):289-300.

12. O'Donnell L, Stueve A, Duran R, Myint-U A, Agronick G, San Doval A, et al. Parenting Practices, Parents' Underestimation of Daughters' Risks, and Alcohol and Sexual Behaviors of Urban Girls. J Adolesc Health. 2008;42(5):496-502.
13. Markham CM, Lormand D, Gloppen KM, Peskin MF, Flores B, Low B, et al. Connectedness as a Predictor of Sexual and Reproductive Health Outcomes for Youth. J Adolesc Health. 2010;46(3, Supplement):S23-S41.
14. Barber BK, Schluterman JM. Connectedness in the Lives of Children and Adolescents: A Call for Greater Conceptual Clarity. J Adolesc Health. 2008;43(3):209-16.
15. Peres CA, Rutherford G, Borges G, Galano E, Hudes ES, Hearst N. Family Structure and Adolescent Sexual Behavior in a Poor Area of São Paulo, Brazil. J Adolesc Health. 2008;42(2):177-83.
16. Ali MM, Dwyer DS. Estimating peer effects in sexual behavior among adolescents. J Adolesc. 2011;34(1):183-90.
17. Cavazos-Rehg PA, Spitznagel EL, Krauss MJ, Schootman M, Bucholz KK, Cottler LB, et al. Understanding Adolescent Parenthood From a Multisystemic Perspective. J Adolesc Health. 2010;46(6):525-31.
18. Strachman A, Impett EA, Henson JM, Pentz MA. Early Adolescent Alcohol Use and Sexual Experience by Emerging Adulthood: A 10-Year Longitudinal Investigation. J Adolesc Health. 2009;45(5):478-82.
19. Wargo Aikins J, Simon VA, Prinstein MJ. Romantic partner selection and socialization of young adolescents' substance use and behavior problems. J Adolesc. 2010;33(6):813-26.
20. Prasartkul P, A. Chamratrithirong, A. Bennett, L. Chitwatanapaet, P. Isarabhakdi,. Rural adolescent sexuality and the determinants of the provincial urban premarital adlescent sex. Institute for population and social research, Mahidol university: Nakornpathom; 1987.
21. Rasamimari A, Dancy B, Talashek M, Park CG. Predictors of Sexual Behaviors Among Thai Young Adults. J Assoc Nurses AIDS Care. 2007;18(6):13-21.

22. Aphichat Chamratrithirong. National Sexual Behavior Survey of Thailand 2006: Institute for Population and Social Research. Mahidol University. Nakornpathom; 2007.

23. Thato R, Penrose J. A Brief, Peer-Led HIV Prevention Program for College Students in Bangkok, Thailand. J Pediatr Adolesc Gynecol. 2013;26(1):58-65.

24. Thato S., Charron-Prochownik D., Dorn LD., Albrecth SA., Stone CA. Predictors of condom use among adolescent Thai vocational stuents. Nurs Scholarsh. 2003;35(2):157-63.

25. Khumsaen N, Gary FA. Determinants of Actual Condom Use Among Adolescents in Thailand. J Assoc Nurses AIDS Care. 2009;20(3):218-29.

26. World Health Organization. Adolescent pregnancy. Fact sheet, Geneva: WHO press; 2012.

27. Paxman JM ZR. Laws and policies affecting adolescent health. Geneva: Would Health Organization; 1987.

28. Lynn Rew. Adolescent Health; a multidisciplinary Approch to Theory, Research, and Intervention. California: SAGE; 2005.

29. Neinstein, L.S., Kaufman, F.R., editors. Normal physical growth and development. 3 ed. Baltimore: Williams and Wilkins; 2002.

30. Rice F. Philip. The adolescent; development, relationships, and culture. 7 ed. Boston: Allyn and Bacon; 1993.

31. Frued S. A generral introduction to psycho-analysis. New York: Washington Square Press; 1917.

32. Santrock, John W. Adolescence. 7ed. New York: Mcgraw-Hill; 2007.

33. Laurence Steinberg. Adolescence. 3ed. New York: Mcgraw-Hill; 1993.

34. Shuaythong P. TJ, Laimsombat A.,. Sexual experience, sexual stimuli and leisure time behavior of male and female youths in a vocational colledge. J Chula Med. 1998;42(3):183- 95

35. Tongsakul S. The factors related to sexual risk behavior of students in university at Chonburi province. J Health Educ. 2003;26(95):1-13.

36. Boonyathan W. Factors associated with adolescent pregnancy among adolescent primigavida attending antenatal care clinic at Samutsakhon Hospital. Nakornpathom: Mahidol University; 2007.

37. Santelli JS, Kaiser J, Hirsch L, Radosh A, Simkin L, Middlestadt S. Initiation of sexual intercourse among middle school adolescents: the influence of psychosocial factors. J Adolesc Health. 2004;34(3):200-8.

38. Theresa O. S, Xinhua Chen,. Puberty and adolescent pregnancy. New Jersy. Mcgraw-Hill; 2007

39. Ruangkanchanasetr S, Plitponkarnpim A, Hetrakul P, Kongsakon R. Youth risk behavior survey: Bangkok, Thailand. J Adolesc Health. 2005;36(3):227-35.

40. Phipps MG, Rosengard C, Weitzen S, Meers A, Billinkoff Z. Age Group Differences among Pregnant Adolescents: Sexual Behavior, Health Habits and Contraceptive Use. J Pediatr Adolesc Gynecol. 2008;21(1):9-15.

41. Vuttanont U., griffin M., Boynton P.,. "Smart boys" and "Sweet girls" sex education need in Thai teenagers: a mixed method study. Lancet. 2006;9(368):2068-80.

42. Ahern R, Frattarelli LA, Delto J, Kaneshiro B. Knowledge and Awareness of Emergency Contraception in Adolescents. J Pediatr Adolesc Gynecol. 2010;23(5):273-8.

43. Lou C, Cheng Y, Gao E, Zuo X, Emerson MR, Zabin LS. Media's Contribution to Sexual Knowledge, Attitudes, and Behaviors for Adolescents and Young Adults in Three Asian Cities. J Adolesc Health. 2012;50(3, Supplement):S26-S36.

44. Zuo X, Lou C, Gao E, Cheng Y, Niu H, Zabin LS. Gender Differences in Adolescent Premarital Sexual Permissiveness in Three Asian Cities: Effects of Gender-Role Attitudes. J Adolesc Health. 2012;50(3, Supplement):S18-S25.

45. Cuffee JJ, Hallfors DD, Waller MW. Racial and Gender Differences in Adolescent Sexual Attitudes and Longitudinal Associations with Coital Debut. J Adolesc Health. 2007;41(1):19-26.

46. Silapasuwan P. Factors affecting sexual behavior among yong female factory workers in Bangkok and vicinities (Dissertation). Bangkok: Mahidol university; 1993.

47. Pimonpan s., Sexual attitudes and experience of rural Thai youth. Institute for Poppulation and Social Research: Mahidol University: Nakornpathom; 2000.

48. Alan Guttmacher Institute. Teen sex and pregnancy. New York: Mcgraw-Hill;1998

49. Leitenberg H, Detzer, M.J., & Srebnik, D.,. Gender differences in masturbation and the relation of masturbation experience in preadolescence and/ or early adolescence to sexual behavior and adjustment in young adulthood. Archiv Sexual behav. 1993;22:87-98.

50. Naomi B. Farber. Adolescent pregnancy. 2ed. New York: Springer Publising; 2009.

51. Suebnukarn c. Pregnancy outcomes in adolescent women at Surin Hospital. Medical journal of Srisaket Surin Buriram hospitals. 2011;26(1):124- 38.

52. Watcharaseranee N, Pinchantra P, Piyaman S. The incidence and complications of teenage pregnancy at Chonburi Hospital. J Med Assoc Thai. 2006 Oct;89 Suppl 4:S118-23.

53. Promwong U. Factors associated with pregnancy among primigravida adolescents at King Chulalongkorn Memorial Hospital. Bangkok: Mahidol University; 2009.

54. Bonell C, Allen E, Strange V, Copas A, Oakley A, Stephenson J, et al. The effect of dislike of school on risk of teenage pregnancy: testing of hypotheses using longitudinal data from a randomised trial of sex education. J Epidemiol Community Health. 2005 Mar;59(3):223-30.

55. Hindin MJ. Family dynamics, gender differences and educational attainment in Filipino adolescents. J Adolesc. 2005;28(3):299-316.

56. Soonthorndhada A., Kittisuksathit S., Punpuing S., Varangrat A., Malhotra A., Sara R. Curran, et al. Youth at Odds: Thai Youth's Precarious Future in a Globalized World. Nakhon Pathom: Institute for Population and Social Research: Mahidol University; 2005.

57. Sidze EM, Defo BK. Influences of family structure experiences on the risk of premarital sexual initiation during adolescence in Cameroon. Advances in Life Course Research. 2013;18(4):270-87.

58. Harvey JH, Fine, M.A.,. Children of divorce. Mahwah: NJ:Erlbaum; 2004.

59. Juntaraviruj O. The factors influencing on sexual risk behavior of secondary school students in Smutprakarn province (Dissertation). Bangkok: Mahidol University; 2001.

60. Coley RL, Morris, J.E., & Herhandes, D.,. Out-of-school care an problem behavior trajectories among low-income aolescents: indiviual, family, an neighborhood characteristics as added risks. J Child Develop. 2004;75:948-65.

61. Teti D. Retrospect and postspect in the psychological study of sibling relationships. New Jersy: Erlbaum; 2001.

62. Bank L, Burraston, B., Synder, J.,. Sibling conflick and ineffective parenting as predictors of adolescent boys' antisocial behavior and peer difficulties: additive and interactive effects. J Research Adolesc. 2004;14(99- 125).

63. Padilla-Walker LM, Bean RA. Negative and positive peer influence: Relations to positive and negative behaviors for African American, European American, and Hispanic adolescents. J Adolesc. 2009;32(2):323-37.

64. Cillessen, A.H.N., Lu Jang, X., West., T.V., et al. Predictors of dynamic friendship of adolescences. Int J Behav Develop. 2005;29:165-72.

65. Rolf E. Muuss. Adolescent Behavior and Society. 4 ed. Muuss RE, editor. Singapore: McGraw-Hill 1990.

66. Mollborn S, Domingue BW, Boardman JD. Understanding multiple levels of norms about teen pregnancy and their relationships to teens' sexual behaviors. J Advances in Life Course Research. 2014;20(0):1-15.

67. Ladd GW, Burgess, K. B. Do relational risks and protective factors moderate the linkages between childhood aggression and early psychological and school adjustment?. J child develop. 2001;72:1579– 601.

68. Hughes JN, Kwok O-m. Classroom engagement mediates the effect of teacher–student support on elementary students' peer acceptance: A prospective analysis. J School Psychol . 2006;43(6):465-80.

69. Doll B, Murphy P, Song SY. The relationship between children's self-reported recess problems, and peer acceptance and friendships. J School Psychol. 2003;41(2):113-30.

70. Schesselman JJ. Case-control studies: Design, Conduct, Analysis. New York : Oxford University Press, 1982

71. Akers AY, Gold MA, Bost JE, Adimora AA, Orr DP, Fortenberry JD. Variation in Sexual Behaviors in a Cohort of Adolescent Females: The Role of Personal, Perceived Peer, and Perceived Family Attitudes. J Adolesc Health. 2011;48(1):87-93.

72. Chomkhan Aramkonchakon. Effectiveness of life skills on self-efficacy for prevention of premarital sex of female vocational students, Chiangmai province. Bangkok: Mahidol University; 2001.

73. L'Engle KL, Brown JD, Kenneavy K. The mass media are an important context for adolescents' sexual behavior. J Adolesc Health. 2006;38(3):186-92.

74. Chompootaweep S., K. Yamarate, P. Poomsuwan, N. Dusitsin. A sudy of reproductive health in adolescence of secondary school students and teachers in Bangkok. Bangkok: institute of Health Research1988.

75. Sridawruang C, Crozier K, Pfeil M. Attitudes of adolescents and parents towards premarital sex in rural Thailand: A qualitative exploration. Sexual & Reproductive Healthcare. 2010;1(4):181-7.

76. Aubrey S M, Tilda Farhat, Carolyn T., Halpern,Emmanuelle Godeau, Saoirse N. Gabhainn,. Eary adolescent sexual initiation as a problem behavior: A comparative study of five nations. J Adolesc Health. 2010;47:389-98.

77. Devine S, Bull S, Dreisbach S, Shlay J. Enhancing a Teen Pregnancy Prevention Program With Text Messaging: Engaging Minority Youth to Develop TOP® Plus Text. J Adolesc Health. 2014;54(3, Supplement):S78-S83.

78. Manlove J, Wildsmith E, Ikramullah E, Terry-Humen E, Schelar E. Family environments and the relationship context of first adolescent sex: Correlates of first sex in a casual versus steady relationship. Social Science Research. 2012;41(4):861-75.

APPENDIX

ข้อมูลสำหรับผู้เข้าร่วมโครงการวิจัย

ชื่อโครงการวิจัย (ภาษาไทย)

ปัจจัยที่มีความสัมพันธ์ต่อการตั้งครรภ์ในวัยรุ่น ในชนบทของประเทศไทย

ชื่อโครงการวิจัย (ภาษาอังกฤษ)

FACTORS ASSOCIATED ADOLESCENT PREGNANCY IN RURAL DISTRICT OF THAILAND

ผู้ทำวิจัย
ชื่อ นางสาวประภาศรี ภูผายาง
ที่อยู่ ที่บ้าน: บ้านเลขที่ 63 หมู่ 3 ตำบล ดงสมบูรณ์ อำเภอท่าคันโท จังหวัด กาฬสินธุ์ 46190
ที่ทำงาน: 181 หมู่1 ตำบล นาตาล อำเภอท่าคันโท จังหวัด กาฬสินธุ์ 46190
หมายเลขโทรศัพท์ มือถือ 086-8554405 ที่ทำงาน 043- 877110 อีเมลล์ papalasii@gmail.com

เรียน ผู้เข้าร่วมโครงการวิจัยทุกท่าน

เอกสารนี้เป็นเอกสารที่แสดงข้อมูลเพื่อทำวิทยานิพนธ์ของนักศึกษาปริญญาโท สาขาการเจริญพันธุ์และวางแผนประชากรคณะแพทยศาสตร์โรงพยาบาลรามาธิบดี มหาวิทยาลัยมหิดล ใช้ประกอบการตัดสินใจของท่านในการเข้าร่วมโครงการศึกษาวิจัย อย่างไรก็ตามในการตอบคำถามของท่านจะไม่มีผลกระทบต่อตัวผู้ตอบแบบสอบถาม โดยไม่ต้องเขียนชื่อตัวท่านลงในแบบสอบถาม คำตอบที่ได้ถือเป็นความลับ และผลการศึกษาที่ได้จะเป็นประโยชน์ในการจัดโครงการต่อไป จึงขอให้ท่านอ่านคำชี้แจงของแบบสอบถามในแต่ละส่วนก่อนลงมือทำ และกรุณาตอบแบบสอบถามตามความเป็นจริงและตรงกับความคิดเห็นของท่านให้มากที่สุด
ถ้าท่านตัดสินใจเข้าร่วมโรงการวิจัยนี้ ขอให้ท่านเซ็นยินยอมในเอกสารแสดงความยินยอมของโครงการวิจัยนี้

ผู้วิจัยขอขอบคุณผู้ให้ข้อมูลทุกท่านที่ตอบแบบสอบถามและให้ความช่วยเหลือในการวิจัยครั้งนี้เป็นอย่างดียิ่งมา ณ โอกาสนี้ด้วย

นางสาวประภาศรี ภูผายาง
นักศึกษาหลักสูตรปริญญาโท ภาควิชาสูติศาสตร์-นรีเวชวิทยา
คณะแพทยศาสตร์ โรงพยาบาลรามาธิบดี มหาวิทยาลัยมหิดล

แบบสอบถามชุดที่.....

แบบสอบถาม

เรื่อง ปัจจัยที่มีผลกระทบต่อการตั้งครรภ์ในวัยรุ่นในอำเภอท่าคันโท จังหวัดกาฬสินธุ์

……

<u>ส่วนที่ 1</u> ข้อมูลทั่วไป

คำชี้แจง โปรดอ่านข้อความต่อไปนี้ โดยการเขียนเครื่องหมาย √ ในช่อง ( ) หรือเติมข้อความในช่องว่างที่เป็นจริงเกี่ยวกับตัวท่าน

1. ปัจจุบันท่านมีอายุ..... ปี
2. ระดับการศึกษาชั้นสูงสุดของท่าน

( ) 1. ไม่ได้เรียนหนังสือ ( ) 2. ประถมศึกษา

( )3.มัธยมศึกษาตอนต้น ( ) 4. มัธยมศึกษาตอนปลาย/ ปวช.

( ) 5. อนุปริญญา/ เทียบเท่า ( ) 6. ปริญญาตรี/ เทียบเท่า

3. ปัจจุบันท่านกำลังศึกษาอยู่หรือไม่

( ) 1. ใช่ ( ) 2. ไม่ใช่

4. สถานภาพสมรสปัจจุบันของท่าน

( ) 1. โสด ( ) 2. แต่งงานและจดทะเบียน

( ) 3. แต่งงานแต่ไม่ได้จดทะเบียน ( ) 4. ใช้ชีวิตร่วมกันโดยไม่ได้แต่งงาน

( ) 5. แยกกันอยู่/หย่าร้าง/หม้าย

5. อาชีพของท่านคือ.....

6. รายได้ของท่าน ประมาณ.....บาท/ เดือน

7. ปัจจุบันท่านพักอาศัยอยู่กับใคร (ระบุ) .....

8. ท่านมีพี่น้องทั้งหมด (รวมตัวท่าน) จำนวน..... คน เป็นชาย..... คน เป็นหญิง..... คน ท่านเป็นบุตรคนที่.....

9. รายได้ของครอบครัวท่าน ประมาณ.....บาท/ เดือน

10. สถานภาพสมรสของบิดา-มารดา

( ) 1. อยู่ด้วยกัน ( ) 2. แยกกันอยู่/หย่าร้าง

11. อาชีพของบิดา ระบุ.....

12. อาชีพของมารดา ระบุ.....

13. ลักษณะครอบครัวของท่าน

( ) 1. เป็นครอบครัวเดี่ยว (มี พ่อ แม่ ลูก)

( ) 2. เป็นครอบครัวขยาย (มีบุคคลอื่นร่วมอาศัยอยู่ด้วย เช่น ปู่ ย่า ตา ยาย น้า อา และอื่นๆ)

14. ท่านกำลังตั้งครรภ์/ เคยตั้งครรภ์/ เคยแท้งบุตรหรือไม่

( ) 1. ใช่ ( ) 2. ไม่ใช่

<u>ส่วนที่ 2</u>. ความรู้เรื่องเพศศึกษา

<u>คำชี้แจง</u>โปรดทำเครื่องหมาย √ ในช่องคำตอบที่ท่านคิดว่า ถูกหรือผิดตามความคิดเห็นของท่าน เพียงข้อละ 1 คำตอบ

ข้อความ	ถูก	ผิด
1. การที่วัยรุ่นชายและหญิงที่เป็นแฟนกันไม่อยู่สองต่อสองในที่ลับตา คนสามารถป้องกันการมีเพศสัมพันธ์ได้		
2. การสำเร็จความใคร่ด้วยตนเองสามารถทำได้ทั้งในผู้ชายและผู้หญิง		
3. ความต้องการทางเพศเริ่มมีครั้งแรกเมื่อเข้าสู่วัยผู้ใหญ่		
4. หากมีการร่วมเพศแล้วประจำเดือนไม่มาตามกำหนด (เกินมา 5 วัน) แสดงว่าท่านได้ตั้งครรภ์แล้ว		
5. ยาเม็ดคุมกำเนิดมีส่วนผสมของฮอร์โมนอาจเป็นอันตรายต่อสุขภาพ จึงไม่ควรใช้ในวัยรุ่น		
6. การมีเพศสัมพันธ์แค่ครั้งเดียวมีโอกาสในการตั้งครรภ์น้อยมาก ดังนั้น จึงไม่จำเป็นต้องป้องกัน		
7. ถุงยางอนามัยสามารถป้องกันโรคติดต่อทางเพศสัมพันธ์ได้แต่ บางครั้งก็ไม่สามารถป้องกันการตั้งครรภ์ได้ เช่น กรณีถุงยางอนามัย แตกระหว่างการมีเพศสัมพันธ์		
8. การใช้ยาคุมกำเนิดชนิดฉุกเฉินต้องรับประทานภายใน 72 ชั่วโมงหลัง การมีเพศสัมพันธ์		
9. วิธีการผ่อนคลายอารมณ์ทางเพศที่เหมาะสม ได้แก่ การออกกำลังกาย ตามสวนสาธารณะ การเล่นกีฬา หรือการทำงานอดิเรกต่างๆ		
10. ในปัจจุบันเนื่องจากการแพทย์พัฒนาเป็นอย่างมากจึงมียารักษา โรคติดต่อทางเพศสัมพันธ์ได้ทุกโรค		

<u>ส่วนที่ 3.</u> เจตคติทางเพศ

<u>คำชี้แจง</u>โปรดทำเครื่องหมาย √ ในช่องคำตอบที่ท่านคิดว่า ตรงตามความคิดเห็นของท่านมากที่สุด เพียงข้อละ 1 คำตอบ

ข้อความ	ความคิดเห็น			
	เห็นด้วยอย่างยิ่ง	เห็นด้วย	ไม่เห็นด้วย	ไม่เห็นด้วยอย่างยิ่ง
1. วัยรุ่นหญิงควรจะพูดคุยกันในเรื่องการป้องกันการถูกลวนลาม เช่น การไม่เที่ยวกลางคืน การแต่งการแต่งกายที่เหมาะสม				
2. วัยรุ่นหญิงควรรักษาความบริสุทธิ์ไว้ให้กับผู้ชายที่จะแต่งงานด้วย				
3. ท่านเชื่อว่าคนรักที่ดีจะต้องไม่ขอมีเพศสัมพันธ์กับท่านก่อนแต่งงาน				
4. การยอมให้คนรักกอด หอมแก้ม แล้วลูบไล้ตามร่างกายลำดับต่อไปมีความเสี่ยงต่อการมีเพศสัมพันธ์ได้				
5. วัยรุ่นชายหญิงอยู่ด้วยกันและมีเพศสัมพันธ์กันไม่ถือว่าเป็นเรื่องเสียหาย เพราะเป็นการเรียนรู้กันและกัน				
6. การมีเพศสัมพันธ์ก่อนการแต่งงานเป็นการแสดงความรักและความจริงใจต่อคนรัก				
7. โรคติดต่อทางเพศสัมพันธ์สามารถป้องกันได้โดยการมีคู่นอนเพียงคนเดียว				
8. การใช้ยาคุมกำเนิดเป็นสิ่งที่ดีที่สามารถป้องกันการตั้งครรภ์ที่ไม่พึงประสงค์ได้				
9. ตราบใดที่สามารถป้องกันการตั้งครรภ์ได้ การมีเพศสัมพันธ์ก่อนการแต่งงานก็ถือว่าไม่ใช่เรื่องที่ผิด				
10. การใช้ถุงยางอนามัยระหว่างการมีเพศสัมพันธ์ทำให้ความรู้สึกทางเพศลดลง				

<u>ส่วนที่ 5.</u> พฤติกรรมทางเพศ

<u>คำชี้แจง</u> โปรดทำเครื่องหมาย √ ในช่องคำตอบ ( ) ที่ท่านคิดว่า ตรงตามความเป็นจริงมากที่สุด

ข้อความ	ความถี่				
	เป็นประจำ (5-7 ครั้ง/ สัปดาห์)	**บ่อยครั้ง** (3-4 ครั้ง/ สัปดาห์)	**นานๆครั้ง** (1-2 ครั้ง/ เดือน)	**แทบจะไม่เคย** < 1 ครั้ง / เดือน	**ไม่เคย**
1. ฉันไปนอนค้างบ้านเพื่อนหรือหอพักเพื่อน					
2. ฉันดื่มเครื่องดื่มแอลกอฮอล์ เช่น เหล้า แชมเปญ เบียร์ ไวน์ ฯลฯ					
3. ฉันใช้สารเสพติด เช่น บุหรี่ กัญชา ยาบ้า ยาเลิฟ ยาไอซ์ ฯลฯ					
4. ฉันเที่ยวตามลำพังกับเพื่อนในเวลากลางคืนตามสถานบันเทิง เช่น คาราโอเกะ งานเลี้ยง ผับ ดิสโก้เธค ร้านเกมส์					
5. ฉันพูดคุยเรื่องความรักหรือการมีเพศสัมพันธ์กับเพื่อน					
6. ฉันดูสื่อที่มีเนื้อหาเกี่ยวกับความรักและการมีเพศสัมพันธ์ เช่น ภาพยนตร์ ซีรี่ส์ วีดีโอ คลิปวีดีโอ ซีดี อินเตอร์เนต					
7. ฉันอ่านสื่อที่มีเนื้อหาเกี่ยวกับความรักและการมีเพศสัมพันธ์ เช่น หนังสือนิยาย หนังสือโป๊ หนังสือการ์ตูน นิตยสาร					
8. ฉันอยู่ลำพังสองต่อสองกับคนรักในที่ลับตาคน					
9. ฉันยอมให้คนรักจับมือ โอบกอด หอมแก้ม หรือลูบไล้ตามตัว					
10. ฉันเปลี่ยนคู่ควงหรือคนรัก					

<u>ส่วนที่8</u>. แบบสอบถามสัมพันธภาพกับเพื่อน

<u>คำชี้แจง</u>โปรดทำเครื่องหมาย √ ในช่องคำตอบที่ท่านคิดว่า ตรงตามความเป็นจริงมากที่สุด

1. ท่านมีเพื่อนสนิทหรือเพื่อนร่วมกลุ่ม.....คน
2. เพื่อนสนิทหรือเพื่อนในกลุ่มท่านอยู่ที่ไหนบ้าง

( )1. อยู่ละแวกบ้าน ( )2. อยู่โรงเรียน

( )3. อยู่ที่ทำงาน ( )4. อยู่ในสังคมออนไลน์

3. ท่านมีเพื่อนในวัยเดียวกันที่แต่งงานแล้วหรือไม่

( )1. มี ( )2. ไม่มี

4. ท่านมีเพื่อนวัยเดียวกันที่แต่งงานแล้วและกำลังตั้งครรภ์หรือมีบุตรแล้วหรือไม่

( )1. มี ( )2. ไม่มี

5. ท่านมีเพื่อนวัยเดียวกันที่อยู่กินฉันท์สามี-ภรรยาโดยไม่ได้แต่งงานหรือไม่

( )1. มี ( )2. ไม่มี

6. ท่านมีเพื่อนวัยเดียวกันที่กำลังตั้งครรภ์หรือมีบุตรแล้วโดยไม่ได้แต่งงานอย่างถูกต้องหรือไม่

( )1. มี ( )2. ไม่มี

7. ท่านมีความคิดเห็นต่อข้อความต่อไปนี้อย่างไร

ข้อความ	เห็นด้วย	ไม่แน่ใจ	ไม่เห็นด้วย
1. เพื่อนๆชอบและยอมรับในตัวคุณ			
2.คุณต้องเป็นฝ่ายเอาใจเพื่อน			
3.คุณมีความสุขกับกลุ่มเพื่อนของคุณ			
4.เวลาคุณมีปัญหาต่างๆเพื่อนคอยช่วยเหลือ			
5.คุณไม่กล้าปฏิเสธเพื่อนแม้แต่ถูกขอร้องให้มีเพศสัมพันธ์			
6.คุณเข้ากับเพื่อนได้ดีกว่าคนในครอบครัว			
7.เพื่อนเชื่อถือและทำตามคุณ			

<u>ขอขอบคุณที่ตอบแบบสอบถาม</u>

คณะแพทยศาสตร์โรงพยาบาลรามาธิบดี มหาวิทยาลัยมหิดล
๒๗๐ ถนนพระราม ๖ แขวงทุ่งพญาไท เขตราชเทวี กทม. ๑๐๔๐๐
โทร. ๐-๒๓๕๔-๗๒๗๕, ๐-๒๒๐๑-๑๒๙๖ โทรสาร ๐-๒๓๕๔-๗๒๓๓
Faculty of Medicine Ramathibodi Hospital, Mahidol University
270 Rama VI Road, Ratchathewi, Bangkok 10400, Thailand
Tel. (+66) 2354-7275, (+66) 2201-1296 Fax (+66) 2354-7233

Documentary Proof of Ethical Clearance
Committee on Human Rights Related to Research Involving Human Subjects
Faculty of Medicine Ramathibodi Hospital, Mahidol University

MURA2013/433

Title of Project	Factors Influencing Adolescent Pregnancy Aged 10-19 Years in Kalasin Province
Protocol Number	ID 07-56-79
Principal Investigator	Miss. Prapasri Poopayang
Official Address	Department of Obstetrics and Gynecology Faculty of Medicine Ramathibodi Hospital Mahidol University

The aforementioned project has been reviewed and approved by the Committee on Human Rights Related to Research Involving Human Subjects, based on the Declaration of Helsinki.

Signature of Secretary Committee on Human Rights Related to Research Involving Human Subjects	..... Prof. Duangrurdee Wattanasirichaigoon, M.D.
Signature of Chairman Committee on Human Rights Related to Research Involving Human Subjects	..... Prof. Boonsong Ongphiphadhanakul, M.D.
Date of Approval	August 1, 2013
Duration of Study	35 Months

BIOGRAPHY

NAME	Miss. Prapasri Poopayang
DATE OF BIRTH	August 2, 1980
PLACE OF BIRTH	Kalasin, Thailand
INSTITUTIONS ATTENDED	Borromarajchonni Konkaen Nursing Colledge, 1998- 2002 Bachelor of Nursing Science. Mahidol University, 2014 Master of Science: Human Reproduction and Population Planning
SCHOLARSHIP RECEIVED	Ford Foundation
HOME ADDRESS	63 Moo.3, Dongsomboon sub-district Thakantho district, Kalasin province 46190
EMPLOYMENT ADDRESS	Emergency department, Thakhantho hospital Position: registered nurse Tel. 086- 855 4405 E- mail : papalasii@ gmail.com