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Research Report

Increasing Access to Knowledge and Services on Sexual and Reproductive Health and HIV Prevention in Educational Institutes in Northern Thailand

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The Research Team

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The Planned Parenthood Association of Thailand (PPAT)

under the Patronage of Her Royal Highness the Princess Mother

January 2023

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Increasing Access to Knowledge and Services on Sexual and Reproductive Health and HIV Prevention in Educational Institutes in Northern Thailand

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In addition, the report authors received great cooperation from teachers, parents, and students from 12 educational institutions in four northern provinces. There was a total of 384 quantitative research participants, and 16 qualitative research participants. The 50 participants in distilling the lessons learned workshop were representatives of teachers, parents, students, personnel in the public and private sectors, and civil society organizations. The Research Team is greatly appreciative to all these individuals for sharing their valuable time to provide such useful information and helping make this project and report as success.

The Research Team

January 2023

Executive Summary

This research project on *"Increasing Access to Knowledge and Services on Sexual and Reproductive Health and HIV Prevention in Educational Institutes in Northern Thailand"* is a study of students' knowledge, understanding, attitudes, and behaviors on sexual and reproductive health and rights (SRHR), including prevention of HIV and sexually transmitted infections (STI). This study was conducted by the Planned Parenthood Association of Thailand (PPAT) using both quantitative and qualitative methods (Mixed Methods Research). A structured questionnaire was administered to a sample of 384 students age 13-17 years who were studying in 12 target schools in four provinces of the upper north region of Thailand, namely, Chiang Mai, Chiang Rai, Lampang, and Lamphun. Data were collected before and after implementing the Project interventions. The quantitative data were supplemented by in-depth interviews (IDI) with three groups of key informants: 8 students (males and females) in the target educational institutions, 4 teachers in the target educational institutions, and parents of students age 13-17 in the target educational institutions, totaling 16 persons.

The mean age of the sample is 15.7 years (range of 13 – 17 years). The sample includes 210 males, 173 females and 1 LGBTQ+ person. Fully 281 students were in vocational school, followed by 56 in grades 10 to 12, and 47 students in grades 7 to 9. Fully 108 students in the sample had a grade point average (GPA) of over 3.5, while 95 had a GPA of 3.0 to 3.5. Also, 217 of these youth were from intact families, followed by 85 whose parents were divorced. Fully 209, lived with both parents, while 91 lived with either their father or mother. Most lived in the family home while 79 lived in a rented house/apartment.

Students were asked about their peer relationships, love life, sex behavior, and prevention of infectious disease. Of the sample of 384 students, 132 had a lover, and 85 had ever had sexual intercourse. Of those who had sexual intercourse before, most had sex 1-2 times a month (n=39), followed by sex 3-5 times a week (n=18). The study found that most of the sexually active respondents used condoms for every episode of sex (64.6%), followed by using emergency contraception (9.2%). Most (80.3%) accessed contraception from a convenience store, supermarkets, or drug store/pharmacy. A minority obtained these prevention supplies from adolescent clinics, health centers, or a hospital (13.1%).

Students were asked about their knowledge and understanding of their SRHR, before and after the Project intervention. In the post-training assessment, the students demonstrated more knowledge and understanding of SRHR and related laws at the moderate level (Mean = 3.36), more knowledge and understanding about contraceptive methods at the moderate level (Mean = 3.39), and more knowledge and understanding about SRHR at a high level (Mean = 3.26).

Attitudes about the SRHR of students improved after the Project training. For example, attitudes about SRHR at a high level (mean = 3.76); family planning at high level (mean = 3.75); and STI and HIV at a moderate level (Mean = 3.26).

After the training, SRHR-related behaviors of students improved to a high level (mean = 3.77) and, among the sexually active, SRHR-related behavior was also scored at a high level (mean = 4.03)

The teachers and parents of teenagers in school described SRHR as similar to the response of students in terms of bodily autonomy, the right to choose one's own lifestyle, the right to have sex when ready, and the right to marry and decide how many children to have, if any. This knowledge includes awareness of legal rights, politics, and welfare. There were different perspectives in terms of attitudes about love relationships attitudes, and these can be divided into three groups: Attitude toward love, attitude toward sex while still a full-time student, and attitude toward teen pregnancy. Regarding attitudes toward sex behavior and STI prevention, students tend to have sex risk behavior and associated sexual problems. By contrast, they felt that their generation were responsible about STI prevention. The factors influencing sex behavior consist of online media that led to imitating sexual expression, family upbringing (which influences gender attitude and expression), and socio-cultural changes that leads to solitary lives of adolescents and less peer group activity.

Important research issues that should be further studied include a comparative study of differences in knowledge levels and knowledge needs between educational institutions and local contexts. There should be more research on factors influencing the prevention of HIV/STI risk behaviors. Research is needed to study the participation process of educational institutions, families, and related agencies in preventing and solving problems of teen pregnancy and adolescent STI. Finally, there should be more research on the process of changing attitudes of

families, communities, and society at large to shift the paradigm to greater acceptance of adolescent (pre-marital) sex as a bridge toward SRH education and promoting safe sex.

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Chapter 1

Introduction

Background and Importance

The Planned Parenthood Association of Thailand (PPAT) under the Patronage of Her Royal Highness the Princess Mother is the first non-profit organization and a pioneer in family planning in Thailand. PPAT was officially registered in 1970 and is the only agency in Thailand that is a member of the International Planned Parenthood Federation (IPPF). Starting in 1977, the goal of PPAT broadened to include advocacy for Sexual and Reproductive Health and Rights (SRHR), disseminate SRHR knowledge, and increase access to SRHR of the population throughout Thailand.

Public Health Ministry's statistics in 2019 for the north region of Thailand show that, in Chiang Mai, the birth rate for adolescent girls age 10-14 years was 1.7 per 1,000 population and 31.5 per 1,000 for young women age 15-19 years. For Chiang Rai, the comparable rates were 1.2 and 29.4, respectively. In Lamphun, the comparable rates were 0.7 and 21.7, respectively. In Lampang, the comparable rates were 0.6 and 14.8, respectively.

In addition, of the total Thai population of nearly 70 million, approximately 400,000 were people living with HIV (PLHIV) in 2019 and there were 14,000 HIV-related deaths. Also in 2019, approximately 40% of PLHIV residing in the six provinces comprising the upper north region of Thailand. Most were ethnic groups, and the highest risk group for HIV/STI was those age 15-24 years.

Ever since the beginning of the HIV epidemic in Thailand in the late 1980s, PPAT has been collaborating with schools in the north region of Thailand to increase awareness and understanding of SRHR, HIV/AIDS and STI among high school and vocational students. In recent decades, it is clear that northern Thai youth have risk behavior related to narcotic drug use, drinking alcohol to excess, smoking cigarettes, and hanging out around entertainment establishments. Inevitably, this led to many teenage girls becoming accidentally pregnant, even while still enrolled as a full-time student in school. Many of those students had to drop out of school, suffered from depression, and led generally stressful lives.

Accordingly, PPAT launched programs for schools in Thailand's north region, with an emphasis on SRHR, and effective prevention of HIV. PPAT also implemented training on life skills for groups of youth who are vulnerable to risk and most needed the HIV/STI prevention information and skills to put that knowledge to practice. In the current Project, these learning modules and interventions were implemented in 12 target schools in four of the 17 provinces in the north region of Thailand. The Research assessed student knowledge before and after the training in order to assess the amount of learning that could be attributed to the Project intervention. The focus was on knowledge, attitudes and practices related to SRHR, and prevent of STI and HIV.

Objectives of the Research

1. To study the level of knowledge, understanding, attitude, and behavior of students on SRHR and prevention of HIV and STI.
2. To apply the research results or use them to benefit the development and expansion of the Project.
3. To create a body of knowledge to promote SRHR.

Expected Benefits

1. Increased coverage of the target population, especially the more vulnerable groups, by providing comprehensive SRHR information so that they are able to take care of their own SRH and be able to make informed decisions to receive SRH services.

2. Promoted and encouraged the target population to be aware of the rights of SRH, which they are entitled to without discrimination, as well as family planning to promote the quality of life of family members which has a broader meaning than 'family planning' as used in the past.

3. Prevented and solved problems of unplanned pregnancy and unsafe termination of pregnancy; promoted the status and empowerment of women and young people in the field of SRHR.

4. Improved collaboration with the public and private sectors to increase access to SRH services and contraceptives; promoted sexual health that is consistent with the needs, lifestyles,

and traditions of the target group; and promoted the prevention and reduction of the impacts of STI and HIV.

5. Enhanced cooperation and linkages with networks of local and international organizations, especially in the sub-region, to conduct and promote lifelong learning about SRHR, including comprehensive sexuality education (CSE), family planning, maternal and child health (MCH), STI, and HIV.

6. Strengthened relationships among women and youth organizations to encourage them to be strong advocates for SRHR without discrimination.

7. Developed and improved PPAT services to attain maximum efficiency.

Scope of the Research

Scope of the Content: This study is survey research using a structured questionnaire and semi-structured in-depth interviews (IDI). The core content includes knowledge, understanding, attitudes, and behavior of students on SRHR, and prevention of HIV and STI.

Areal Scope: The study area of this research was 12 schools in four provinces of the north region of Thailand, namely Chiang Mai, Chiang Rai, Lampang, and Lamphun. The participating schools include the following: Chiangdao Wittayakhom School (Chiang Mai) Sueksa Songkhro Chiang Dao School (Chiang Mai), Mae Ai Wittayakom School (Chiang Mai), Chiang Mai Technical College (Chiang Mai), Chiang Rai Technical College (Chiang Rai), Chiang Rai Commercial Vocational College (Chiang Rai), Lampang Technical College (Lampang), Lampang Vocational College (Lampang), Northern Mubankru Technical College (Lamphun), Lumphun Technical College (Lamphun), Office of the Non-Formal and Informal Education, Chiang Dao (Chiang Mai), and Office of the Non-Formal and Informal Education, Mae Ai (Chiang Mai).

Scope of the Population: The population universe for this research was 9,847 students age 13-17 years studying at 12 schools/colleges in the four provinces of upper north Thailand. The sample population for the questionnaire survey was 384 students age 13-17 years in the 12 participating schools/colleges. The sample for the IDI comprised: (1) Eight students age 13-17 years who were enrolled full-time in the target educational institutions; (2) Four teachers, age 25-50

years old who held a full-time position in the target educational institution; and (3) Four parents, age 35 years or over, whose child(ren) was enrolled in one of the educational institutions.

Time Framework: The duration of the study extended from March 2022 to January 2023.

PPAT submitted a research ethics application to Ethics Committee, Institute for the Development of Human Research Protections (IHRP) before conducting this study and received the Certificate of Approval, reference COA No. IHRP2022023, IHRP No. 019-2565 dated on March 24, 2022.

PPAT also explained about this study to relevant parties, especially directors and teachers of all target 12 educational institutions during stakeholder meetings at the beginning of the project.

Chapter 2

Review of Related Literature

This research is a study of the level of knowledge, understanding, attitudes, and behavior of students in terms of SRHR, including prevention of HIV and STI in Educational Institutes in Northern Thailand. The research team has reviewed related research and other documents, and reviewed concepts, theories, and relevant guidelines to create a framework for the following issues:

1. The concept of SRHR
2. The concept of sexuality and sexual behavior
3. Reproductive health status
4. Related research
5. Conceptual framework used in research

Concept of Sexual and Reproductive Health and Rights (SRHR)

United Nations Population Fund Thailand (UNFPA Thailand, 2014) defined “Sexual rights” that everyone has the right to decide their own sexuality, a right that must be respected and accepted by others, and “Reproductive rights” refer to the fundamental right of everyone to make their own, responsible decisions about sex and having children or not, how many, and when by receiving accurate and complete information including access to appropriate and quality services. In this regard, a person shall have the right to sexual and reproductive health and rights to access and receive information, counseling, and sexual and reproductive health services from appropriate and quality health facilities.

“Sexual and reproductive health” are usually linked because the two overlap so much. “Sexual health” means the overall state of sexuality in terms of intellectual, emotional, social, and physical in the manner of enhancing the quality of personality, communication, and love (World Health Organization: WHO, 1975, cited in Jarae Srimeechai, 2016). This also includes a positive attitude towards sex, understanding, and receiving the protection of rights to enjoy and maintain sexual health.

"Reproductive health" (RH) was coined in 1994 at the International Conference on Population and Development (ICPD) in Cairo, Egypt. In RH, the emphasis is placed on the development of health in all dimensions related to the sexual health of men and women, including the right to good, safe, and effective contraception, safe and voluntary pregnancy, and safe childbirth (United Nations, 1995). RH encompasses sexual rights, including people-centered development (Earmporn Thongkrajai, 1999, cited in Suthiporn Boonmark, 2006).

The World Health Organization (WHO, 1994) cited in Kanittha Chamroonsawasdi et al., 2014) defines the meaning of RH as a state of complete physical, mental, and social well-being, without diseases or defects of the organs performing reproductive functions throughout life, and complete in terms of gender dimensions, sexual behavior roles between women and men, and the rights to gender health equality.

The Thai Ministry of Public Health (MOPH, 2016) defines reproductive health as a condition in which the body and mind are healthy as a result of the processes and functions of reproductive function of both women and men so that they can live happily in society through all stages of reproductive life with universal access to services, information, and education about RH. People of reproductive age have a responsibility to live a safe life, and they must be able to determine whether or not to have children and determine the number of children according to their ability to raise a child to grow into a quality citizen. Couples should have a good chance of having a healthy child, and all pregnant women should be able to have a safe gestation and delivery.

Both sexual health and reproductive health are incorporated into various indicators of the Sustainable Development Goals, such as SDG #3: *Health, well-being and health promotion for people of all ages;* and, specifically, SDG #3.7: *Ensuring universal access to reproductive health education, information and services, including family planning, and incorporating reproductive health into national strategies and programs by 2030*;" and SDG #5, *Gender equality and social empowerment for women and girls*; and, specifically, SDG #5.6: *Ensuring universal access to SRH and reproductive rights as agreed in the ICPD Action Plan and the Beijing Action Plan*.

In sum, the term sexual health encompasses having good sexual health physically, mentally, and socially; being positive about sexual relationships and respecting diversity of sexuality; having a safe sexual experience and satisfaction without coercion, discrimination or violence. Reproductive health is a state of physical and mental strength as a result of the

functioning of the SRH system throughout life so that people have a good quality of life and live happily in society.

Everyone has sexual and reproductive rights which include the right to make decisions about one's own sexuality, the right that others must respect and accept, the right to access information and services that promote good sexual and reproductive health. These are fundamental rights and are the foundation of human rights.

Family Planning

"Family planning" means a service to enable couples to have children when they want and prevent the birth of unwanted children. This includes spacing births over a reasonable period of time and having an appropriate number of children that is suitable for physical, mental, and social, and economic conditions of the family.

"Family planning" refers to a process whereby couples discuss with each other to plan in advance whether to have children or not. If the couple agrees not have children, then the next question is how to have sex without resulting in a pregnancy (i.e., birth control). If the couple agrees to have children, then the next step is to decide how many they want and when to have them. They need to plan a pregnancy so that the baby born is healthy and strong, with parents who can raise and educate their child(ren) to grow up to be productive and responsible members of society, with a stable career so that they are self-sufficient and a good citizen of the nation (PPAT, 2019).

"Family planning" refers to the decision-making process of couples or individuals to have the desired number of children, at the appropriate time and spacing. The goal is to have a pregnancy while the couple is being physically, mentally, and socially ready, which means that the parents have the ability to raise and provide love and warmth. When the time comes, the couple should be able to stop childbearing, either through using effective natural contraception, permanent contraception, drugs, or devices to help make that goal cost-effectively achieved (Reproductive Health Division, MOPH, 2012).

The aims of family planning are as follows:

1. To avoid unwanted pregnancy.
2. To plan a time for pregnancy when the couple is ready.

3. To space the time between pregnancies.
4. To have a child when the parents are the right age.
5. To determine the final family size.

After a couple has decided to settle down to form a family, they need to plan whether and when to have children. If they are not ready but are still having sex, then the couple must use birth control, and that applies to younger couples who are co-habiting but not married to prevent unplanned pregnancy. Also, the only reliable method of birth control today (besides abstinence) is modern contraception.

Contraception

Usanee Saenmee (2017) explained contraceptives as means of preventing fertilization of eggs and sperm. Which birth control can be divided into 2 types as follows:

1. Permanent contraception

This is for couples who do not want any/any more children.

1.1 Female Sterilization: This is a permanent method of contraception suitable for women who have had enough children and do not want to have more. It is a highly effective, safe, and economical method of contraception. It involves blocking the fallopian tubes by either ligation or resection so that the ovum does not meet the male sperm and, therefore, averts pregnancy. The procedure takes only about 15 – 20 minutes to do, with little blood loss. Female sterilization can be further classified as to when it is done in relation to the last delivery.

1.2 Postpartum Tubal Resection: This is a cauterization and/or cutting of the fallopian tubes within six weeks after delivery. The postpartum period is the (medically) most suitable period for sterilization because the level of the top of the uterus is still high and easy to access by the surgeon. In addition, most Thai women deliver in a hospital setting and, thus, do not need to travel or be admitted to perform the procedure. This method is usually scheduled at 48-72 hours or not more than 7 days post-partum. A woman who delivers by caesarean section may elect to have the sterilization during the same procedure.

1.3 Interval Tubal Resection: This involves cauterizing and/or cutting the fallopian tubes while the uterus is in the pelvis, i.e., in the non-postpartum and non-pregnant stages. The woman

does not need to spend much time in the hospital after the procedure, and the method is immediately effective without disruption natural menstruation.

1.4 Vasectomy: This method involves cauterizing and/or cutting the vas deferens to prevent the transport of sperm from the testicles through the penis and into the vagina. As a result, the sperm never leaves than man's body and pregnancy does not occur. This method of contraception will be effective after about 2-3 months post-procedure, or after about 12 ejaculations due to residual sperm deposits. Male sterilization by vasectomy is easy, fast, and can be done on an out-patient basis (Faculty of Medicine Chiang Mai University, 2021).

2. Temporary contraception

2.1 Coitus interruptus or withdrawal: This method of preventing pregnancy refers to the act of entirely withdrawing the penis from the vagina just before ejaculation. The main advantage of this method is that is always available at no cost to the couple and does not involve inserting hormones or devices into the body. However, the disadvantages outweigh the advantages, as follows:

1. The male partner needs to be able to control (i.e., time) his ejaculation.
2. Pregnancy is still possible since there is sperm in the pre-ejaculate discharge, or if there is spillage because the male partner did not withdraw fully in time.
3. The female partner must be supportive and facilitate the withdrawal action.
4. The female may not have an orgasm before the withdrawal of the penis.
5. Prostate enlargement may occur in males using this method for a long time.

2.2 Periodic abstinence: This is also referred to as the "safe period" and relies on an accurate estimate of the days of the menstrual cycle when pregnancy is most likely to occur if a woman has sex with a fecund man. The Theoretical Fertile Period is between the 10^{th} and the 17^{th} day after the end of the last menstrual period. The other days of the cycle are considered "safer" to avoid an unwanted pregnancy.

Determining the fertile period in a menstrual cycle that is less or more than 28 days:

First Fertile Day = Shortest Cycle - 18

Last Fertile Day = Longest Cycle - 11

The advantage of periodic abstinence as a method of birth control is that it is free, always available and does not involve introducing hormones or devices into the body. However, as with

withdrawal, the disadvantages of the "safe" period method outweigh the advantages. For example, a woman's menstrual cycle can be irregular, meaning that the day of ovulation may vary from month to month and, in fact, can occur any time before or during menses. Also, when this method is described as "safe" period, it may give couples a false sense of security, and the belief that they do not need modern forms of contraception.

2.3 Condoms: Condoms provide contraception by blocking the movement of sperm into the vagina. There are both male and female condoms available for couples in Thailand, over-the-counter, or online. However, the couple must know how to apply and remove the condom correctly in order for this method to be effective.

Advantages of using condoms

1. The couple can obtain condoms from the local pharmacy and apply the condoms themselves, without the need to consult a clinician.
2. They are easy to carry.
3. Condoms are safe to use in that they do not introduce hormones into the body.
4. Fertility immediately returns to the state it was in before use.
5. Condoms provide dual protection for both pregnancy and STI (including HIV).
6. Disadvantages of using condoms.
7. Reported decreased sensation of sex in men.
8. Inconvenient interruption of foreplay by having to stop and put on a condom before continuing.
9. Risk of spillage or condom breakage which would introduce risk of accidental pregnancy.
10. Some people may be allergic to condoms or lubricants.
11. In the case of the female condom, cost is a barrier, and some women may have difficult inserting a female condom.

2.4 Oral contraceptives (the pill): The standard pill consists of one or both of two synthetic hormones: Progestogen and Estrogen

There are three main types of birth control pills:

1. Combined pills: The combined hormonal contraceptive pill contains both estrogen and progestogen. One pack contains 21 pills or 28 pills. Of the 28-pill pack, the latter

7 pills are iron/vitamins. The combined pill can vary by the amount of hormone in each pill.

2. Mini-pill or progestogen-only pill: This is a birth control pill that contains progestogen hormones in a smaller amount. This pill is prescribed when estrogen is contraindicated and for post-partum breastfeeding mothers. Some women experience intermittent bleeding while taking the drug.
3. Emergency contraception (postcoital pill; morning-after pill): These are contraceptive pills that contain only high doses of estrogen or progestogen or both, and are to be taken immediately after intercourse or within 72 hours in case of rape, condom tear, etc. The regimen of emergency contraception may vary depending on how long after the last sex episode of unsafe sex occurred.

The mechanism of action for oral contraception is as follows:

1. Inhibition of Ovulation: The contraceptive pill inhibits FSH (Follicle stimulating hormone) and LH (Luteinizing hormone) resulting in no follicle growth and, hence, no ovulation.
2. Effects on the ovaries: By inhibiting follicle growth, there is no corpus luteum production, thus affecting the ovary production of estrogen and progesterone.
3. Endometrial change: The pill causes the endometrium to become thin and unsuitable for implantation of the fertilized egg
4. Changes in cervical mucus (Impaired Cervical Hostility): The pill causes the cervical mucus to thicken and be less abundant, and that inhibits movement of sperm through the cervix to the uterus.

When to starting a generic birth control pill:

The oral contraceptive is usually given within the 1st to the 5th day of menstruation. Today's birth control pills have a reduced dose of synthetic hormones and, thus, should be taken a bit sooner, i.e., between the 1st and 3rd day of menstruation. Post-partum women tend to return to fecundity by six weeks. Thus, these women should initiate the pill at four weeks after birth (or equal to about 1-2 weeks before the resumption of sex). Women who have terminated a pregnancy and intend to resume sexual activity should initiate the pill about 2-3 weeks post-abortion.

Important recommendations for taking the contraceptive pill:

1. The most appropriate time to take the drug is time after dinner. The absorption is slow and can reduce complications such as nausea
2. The daily pill should be taken at the same time every day to keep hormone levels stable and reduce the chances of spotting and bleeding while taking the medication
3. However, if a woman forgets to take her daily pill, then she should take that pill as soon as she remembers, and then resume the regimen as usual
4. If a woman forgets two pills in a row in the first two weeks, then she should take one pill as soon as she remembers, and one more pill in the evening when she normally takes it
5. If the woman forgets to take two pills in a row during the third week, or more than 2 pills, the she should stop taking pills and use another method of contraception, such as a condom until her next menstrual period is over, and start a new pack of pills.

Short-term complications while taking oral contraceptives include spotting, nausea, vomiting, blemishes on the face (Chloasma), weight gain, breast tenderness, migraine headache, changes in mood and libido, possibly changes in blood pressure.

Contraindications for oral contraceptives include liver disease, diabetes, heart disease, kidney disease, some allergies such as asthma, vascular disease, inflammation or blocked veins, cancer of the breast or reproductive organs, history of a liver tumor or liver cancer, thyroid disease, abnormal bleeding from the uterus with unknown cause, or high blood pressure greater than or equal to 160/100 mmHg.

2.5 Injectable contraceptive: This formulation injects a contraceptive based on synthetic hormones (Progestogen), usually in the amount of 150 mg, injected intra-muscularly. The drug inhibits the secretion of hormones from the pituitary gland (Pituitary Gonadotropin), which suppresses ovulation, and thickens the cervical mucus. The hormone causes the endometrium to atrophy and becomes unsuitable for the implantation of a fertilized egg. The 150 mg formulation provides prevention from pregnancy for three months. The injection should take place within the 5^{th} day of the menstrual cycle. For post-partum mothers after a live birth,

abortion, or miscarriage, the hormone should be injected immediately or at least 10 days before next sex. The contraceptive action is effective for 84 days (12 weeks).

2.6 Sub-dermal contraceptive implant: Capsules containing hormone is surgically implanted under the skin of the upper arm, about 6-8 cm above the crook. Typically, the implant contains Levonorgestrel which is a synthetic progesterone. At the time of this report, there were two types of implants on the market:

1. Nonbiodegradable
   - 6-capule (Norplant) which has effective contraceptive action for five to six years, after which the capsules need to be removed/replaced.
   - 1-capsule (Implanon) which has effective contraceptive action for three years
2. Biodegradable
   - 1-capsule (Capronor) which has effective contraceptive action for 18 months.
   - Norethindrone pellets which has effective contraceptive action for 12 months to five years depending on the number of capsules and amount of hormone

The mechanism of action is the same as oral and injectable contraceptives, i.e., by inhibiting ovulation, changing the lining of the uterus, and thickening the cervical mucus. Those who choose to use this method Should have had at least one child and need long-term contraception but who intend to stop at some point and perhaps have a child again. This method is appropriate for women with contraindications to estrogen and those who are not ready for permanent contraception.

Advantages: The implant has nearly 100% contraceptive efficacy, and provides immediate contraceptive protection, which can last for years.

Disadvantages: Some users may experience spotting, weight gain, headache, acne, nausea, vomiting, or breast tenderness. These symptoms usually occur only within the first 2-3 months, if at all.

Contraindications: suspected pregnancy, liver disease, jaundice, cancer, diabetes, bleeding disorders including circulatory system disease, heart disease.

2.7 Intra-uterine device (IUD): The IUD is a contraceptive method based which inserts a device into the uterus which inhibits fertilization or implantation of a zygote. Originally, the IUD was made entirely of plastic or a metal ring. Later devices added copper to the stem and

hormones that significantly improved contraceptive efficacy. The times for inserting the IUD are as follows:

1. It is recommended to insert the IUD on the 1st to 7th day of the menstrual period (for easier insertion since the cervix is already dilated)
2. The IUD may also be inserted post-partum at the first post-natal visit or after the amniotic fluid is freshly drained to reduce inflammation within the uterine cavity and facilitate insertion
3. For other intervals, the IUD may be inserted if there are no indications of pregnancy; the cervix needs to be dilated at these intervals

Side effects of the IUD

1. Bleeding

1.1 After insertion, there may be some bleeding for about 2-3 days, and this is considered normal.

1.2 Within the first 2-3 months, there may be spotting, which should disappear on its own; however, if bleeding continues after three months, the IUD may need to be removed

1.3 Heavy bleeding may occur during the first three months, after which it resolves naturally.

2. Pain

2.1 The user may experience some pain during the first two to three months after insertion, but this should resolve naturally after that

2.2 Some users experience pelvic inflammation, and this will cause some pain

Checking to make sure the IUD is in place.

1. The user should check for the string attached to the bottom of the IUD every month after their menstrual period ends.
2. The user should wash their hands thoroughly before checking.
3. Insert the longest finger into the vagina to feel for the thread extended out from the cervix.
4. During menstruation, when the cervix is slightly dilated, the user should check their sanitary napkin/tampon to see if the IUD has been naturally expelled.

5. The user should go for screening of cervical cancer once a year, and to check if the IUD is still in place or not.

Situation of RH in Thailand

The MOPH has announced a 10-point RH policy, seven of which are relevant to the target audience in this project: 1) Family Planning; 2) MCH; 3) HIV/AIDS; 4) Reproductive Tract Infections; 5) Abortion and Complications; 6) Sex Education 7) Adolescent Reproductive Health (RH Bureau, Department of Health, 2013). Details are as follows:

1. **Family planning:** At present, the family in Thai society has changed from a large, extended family to a nuclear family (only parents with children), due to economic and socio-demographic evolution. It is increasingly important that family planning involves the participation of both members of a couple in decision-making about family size goals, contraception, and parenting. That way, couples can tailor their family size to suit the changing socio-economic conditions and meet each family's basic needs.

2. **MCH:** Safe health care for women before, during, and after pregnancy, to produce healthy children is in line with the SDG #3 (*Ensure healthy lives and promote well-being for people at all ages*). SDG #3 covers health and well-being ranging from: (3.1) Reducing maternal mortality rates; (3.2) Ending preventable neonatal mortality; (3.3) Ending the spread of HIV, tuberculosis, malaria, and tropical diseases, and (3.7) RH and family planning.

3. **HIV/AIDS:** The Thai HIV epidemic is nearly 40 years old at the time of this report. In 2020, there were approximately 501,105 PLHIV and 12,115 HIV-related, reflecting an upward trend. During 2017 to 2020, it was found that there has been an increase in new HIV infections among young pregnant women (age 15-24 years) attributed to high-risk behavior (of either themselves or their partner) and difficult access to prevention services. The persistent negative social stigma toward HIV and AIDS deters people with risk to seek HIV testing and treatment. Unless that problem is solved, HIV incidence is not likely to decline much further (Division of AIDS and STI, 2020).

4. **Reproductive tract infections (RTI):** At present, incidence of RTI, including sexually transmitted infections (STI) among youth entering the reproductive ages.

5. Abortion and complications: A pregnancy can be terminated in different ways. From the report of the Thai People's Health Survey 2019 - 2020 (Wichai Aekplakorn, 2021), it was found that 91.2% cases of pregnancy termination were due to spontaneous abortion (miscarriage), and 8.8% were medical abortions. At present, Thai law now permits elective abortion up to 12 weeks. Over half of the induced abortions (55.8%) were among women under the age of 25 years, and one-third (33.6%) were full-time students. The most common complication was hemorrhage, and over half those cases needed blood transfusion (Piyarat Eaimkhong et al., 2020). Data from the abortion surveillance 2011-20 found that the main reasons for seeking a therapeutic abortion were socio-economic in nature. On the positive side, there has been a decrease during that period in severe complications of abortion, from 21.4% in 2011 to 3.2% in 2020.

6. Sex education: Today in Thailand, young women are maturing at a younger age. For example, the average age at first menstruation has been steadily declining over time. In the 15-29 age group, the onset of menarche was at an average age of 12.8 years, while those in the 30-44 and 45-59 age groups reported onset at an average age of 13.6 and 14.7 years, respectively (Wichai Aekplakorn, 2021). Thus, today's youth need Comprehensive Sexuality Education (CSE) starting even before middle school so that adolescents have the knowledge and skills to know their risk and prevent unwanted pregnancy. This is a life skill of paramount importance in these days of the Internet, social media, and entering into relationships with people one meets online.

7. Adolescent health: It has never been more important to promote knowledge, understanding, and advice on adolescent RH through CSE, so that the next generation of young adults make responsible decisions about intimate relationships and sex. All youth today need to know what contraceptives are, where they can obtain them, and how to use them effectively when the need arises, regardless of marital status. If parents and educators wait until their child or student is already sexually active to provide CSE, it will, in most cases, be too late.

Sexual and reproductive health and rights of adolescents

Adolescent sexual rights means that all youth have the right to decide their own sexuality, and that choice must be respected and accepted by others. Similarly, reproductive rights are subject to human rights protection. These rights are based on the basic principle that adolescents should be able to make informed decisions by and for themselves. This includes the right to a

certain lifestyle, right to liberty and personal safety, right to health, right to decide on the number and spacing of children, right to consent to marriage, right to privacy, right to equality, right to live free from violent acts against women and girls, right to live free from abuse or other cruel, inhuman, or degrading acts or punishments, right to live free from sexual and intersex violence, right to study and obtain information, and the right to benefit from the latest scientific developments (UNFPA, 2013).

Adolescents have RH, and the right have access to RH information, counseling, and other youth-friendly services from appropriate and quality service establishments. To this end, UNFPA's Survey of Adolescents on SRHR has some interesting SRH health policy recommendations on health rights that affect adolescents, namely depression, accidents, drug abuse, and unplanned pregnancy, access to RH, and sexuality education. However, the survey also pointed to the need to improve the content of the right to a lifestyle of one's choosing, and the right to have children. Voices from the sample of youth on the problems and demands for RH rights can be grouped into the following five domains:

1. Today's youth are concerned about the four main areas that affect adolescents the most - depression, accidents, drugs, and unwanted teen pregnancy.
2. Overall, youth were satisfied with the teaching and learning of sexuality education in school. However, the curriculum still needs to improve content in all aspects, taking into account the RH rights of teenagers. This includes not only presenting the negative effects of sex (i.e., fear-based instruction) and the need to increase the capacity of teachers in counseling and keeping personal information of youth confidential.
3. Attitudes of parents, adults and the surrounding community are not conducive to learning and changing attitudes on sexuality education for youth. In addition, youth need to develop necessary sexual health skills ***before*** they become sexually active.
4. The survey asked who the youth would consult if they or their partner became accidentally pregnant: Half the sample said they would first confide in their mother and seek advice from her. That said, fully two-thirds of the sample were confident that they had enough accurate knowledge to advise friends on what to do in the event of an unplanned pregnancy.

5. Half of the sample youth were satisfied with RH services in their locality. However, they suggested the need for improvements to be more in line with the needs of today's youth, especially in increasing communication channels, giving advice and information on social media suitable for teenagers, and providing youth-friendly access to condoms and other RH needs.

Key aspects of the 2016 Act on Prevention and Response to Unplanned Teen Pregnancy

The 2016 Act on Prevention and Response to Unplanned Teen Pregnancy was announced in the Royal Gazette on March 30, 2016, and became effective starting on July 29 of that year. This law is timely and necessary for Thailand in that it affirms the rights of adolescents to make their own decisions about reproduction, including the right to receive RH information, knowledge, and services which respect their confidentiality without discrimination and in a client-friendly way.

Educational institutions (i.e., schools) play a role in helping to prepare students for adolescence and prevent accidental pregnancy by including comprehensive sexuality education (CSE) as part of the required curriculum. That also requires the schools to recruit and build the capacity of instructors to provide accurate learning and be able to answer sensitive questions which students might have. Formal education needs to be linked with the care system outside the school so that students can get the professional and clinical help they need, including social welfare. Importantly, Thai law now protects the right of female students to remain enrolled in school despite being pregnant and to be allowed to return to classes post-partum. Similarly, services and business establishments must also join the effort to prevent unplanned teen pregnancy by providing information and referral about prevention and youth-friendly RH services and appropriate social welfare. The relevant agencies should promote and support the network of Youth Councils at the provincial and district levels as a mechanism to create a cadre of youth peer leaders to mobilize education and prevention services for youth before they become sexually active. That said, when young couples do have an unplanned pregnancy, they should have access to counseling to review their options for pregnancy termination, carrying the pregnancy to term, and whether to give the child up for adoption.

Article 17 (1) of the 2016 Act calls for the appointment of provincial Committees on the Prevention and Response to Teen Pregnancy, and the MOPH has the authority to propose policies

and strategies for the prevention and response to teen pregnancy to the Cabinet for consideration. Accordingly, the Department of Health of the MOPH has collaborated with relevant networks to formulate a national strategy to prevent and respond to teen pregnancy for the period 2017-26, which has the following objectives:

1. To ensure that Thai adolescents receive sexuality education and related life skills to prevent unplanned pregnancy and STI, including care, assistance, and protections in a systematic way.
2. To enable and encourage all Thai families to have a positive attitude toward their child's healthy sexual development, and plays an active role in communicating about sex with children to prevent and resolve teen pregnancy problems.
3. To ensure that pregnant adolescents receive counseling, and have the right to make decisions about the pregnancy, and receive accurate and appropriate services including care during the pre-/post-natal period, childbirth, or safe termination of pregnancy, and prevention of recurrent pregnancy.
4. To ensure that adolescent parents receive advice and support on childcare, or referral to adoption services if they are not able to raise the child themselves. The young parents should also receive vocational training if they are not able to return to mainstream education.
5. To establish a mechanism for the integration of research database management and collaborating in knowledge management.

In conclusion, the 2016 Teen Pregnancy Act aims to promote the rights of adolescents to have CSE and life skills so they can avoid STI and unplanned pregnancy. The Act promotes access to youth-friendly care and assistance and encourages families to create a positive attitude toward adolescent sexual development and open communication about sex and responsible decision-making.

Important points about the Criminal Code Amendment Act (No. 28) 2021 or "Law on Pregnancy Termination"

On February 6, 2022, the Royal Gazette announced the Criminal Code Amendment Act, No. 28, 2021, to amend the definition of the offense of abortion that has been in use since 1956

by allowing women to have an abortion within 12 weeks of pregnancy and adding other exceptions to enable women to have an abortion safely and without fear of prosecution. The law also allows a woman who is more than twelve weeks but not more than twenty weeks to have a termination of pregnancy after receiving counseling with a medical practitioner and/or other professionals in accordance with the rules and procedures prescribed by the Minister of Public Health, and announced by the recommendation of the Thai Medical Council. The amended Act came into force on February 7, 2023.

On September 26, 2022, the Royal Gazette also published the MOPH announcement on the screening and consultation for elective termination of pregnancy, stating that pregnant women who are more than 12 but up to 20 weeks' pregnant, could qualify for therapeutic abortion. After the abortion law was amended in 2021, women with a pregnancy of less than 12 weeks were now able to terminate their pregnancy without concern about breaking the law. This announcement was not new abortion legislation, but rather a guideline detailing options for women who are more than 12 weeks pregnant but not more than 20 weeks pregnant who want to terminate their pregnancy. The announcement was an extension of the Criminal Code Amendment Act No. 28 and became effective after 30 days from the date of the announcement.

RH challenges for Thai adolescents

The issue of RH services for adolescents is a very important challenge because Thai youth are becoming physically mature at a younger age than previous generations. In addition, modern communication technology, the ubiquitous use of smart phones, and universal Internet access in Thailand means that Thai youth and adolescents are exposed to all sorts of images, information, and contacts with an ever-widening range of individuals. Inevitably, some of these contacts, especially through social media channels, will lead to short-term sexual relationships that could lead to RH problems if the youth are unprepared. The following summarizes some of the emerging challenges for RH and Thai youth:

Unplanned/unwanted teen pregnancy: In most cases of unplanned pregnancy in adolescence, the pregnancy is also unwanted. A survey of sexual behavior among single Thai youth age 15 - 19 years who were not in a steady relationship found that 18.9% had ever had sex (males 22.8%, females 14.2%) (Wichai Aekplakorn, 2021). Data are lacking on what proportion of

these casual sexual encounters include prevention of STI and pregnancy, but it can be assumed to be less than 100%. Time series data in Thailand on the situation of teen pregnancy from 2010-20 show that the birth rate among adolescents has decreased significantly since 2013: births per 1,000 Thai females age 15-19 years decreased from 53.4 in 2012 to 28.7 in 2020. The birth rate among females age 10-14 years decreased from 1.8 per 1,000 population in 2012 to 0.9 in 2020. The proportion of ***repeat*** births in delivering Thai females age 15-19 years decreased from 12.8% in 2014 to 8.1% in 2020. More recently, during 2018-20, there were no repeat births among Thai females age 10-14 years who were delivering their first child (Bureau of Reproductive Health, Department of Health, 2010). Despite the trends in increased pre-marital sexual activity among Thai youth, the declining trends in teen delivery imply that today's generation to being more cautious about preventing pregnancy, or at least in accessing pregnancy termination. During a similar time period, the Abortion Surveillance Report for 2011-20 shows a decline in the abortion rater for the age group of 15-19 years. The most common reasons given for seeking pregnancy termination was socio-economic constraints (55.8%), followed by the desire not to interrupt their formal education (Piyarat Eaimkhong et al., 2020).

These data suggest that teen pregnancy remains an important issue despite the declining birth rate. It is harder to know the level and trends in the teen abortion rate since most youth probably go to a private practitioner or NGO to terminate the pregnancy, and those providers do not necessarily report their data to the national abortion surveillance system. Thus, Thailand needs to have a more comprehensive system for tracking the number of pregnancy terminations – especially for younger women. Now that induced abortion is more liberalized, that should encourage more abortion providers to report their service statistics to a central database in order to track levels and trends. That data will also help program target education and birth control services to the areas and age groups in most need. The 2016 Teen Pregnancy Act called for the establishment of an online counseling system and Hotline phone number. In that way, modern IT may help reach vulnerable teens through channels and platforms which they are most comfortable with (Teenage Pregnancy Surveillance Report, 2021).

HIV/AIDS

The Department of Disease Control (DDC) of the MOPH defines AIDS as a disease caused by infection with the Human Immunodeficiency Virus (HIV) which, if not treated promptly,

gradually destroys the body's immune system or white blood cells. The weakened body then becomes vulnerable to a number of opportunistic infections (OI) which would be normally eradicated by a sound immune system. Instead, these OI, e.g., tuberculosis, pneumonia, meningitis, etc., become lethal to the person living with HIV (PLHIV). Today, Thailand is exceptional among countries in the world as it provides very affordable treatment for HIV infection, which is called anti-retroviral therapy (ART) which includes three ARV drugs produced by the Thai Government Pharmaceutical Organization (GPO). While ART is not a cure for HIV, it enables the PLHIV to live a normal life like anyone else in society, and HIV can now be viewed as any other manageable chronic condition, such as diabetes or hypertension. However, with ART, the health of the PLHIV will invariably worsen until they develop AIDS.

AIDS can be divided into two phases**:**

1. Asymptomatic phase: During the first period of infection (mean of 10 years) the average PLHIV will still appear to be healthy, with no overt signs of infection. In addition, the PLHIV himself or herself may not even realize that they are infected and, thus, do not practice prevention as they should, even though they can still spread the virus through exchange of body fluids.
2. Symptomatic phase: Without treatment, the PLHIV will eventually being to show symptoms due to the gradual erosion of the body's immune system. The initial effects include fundal infections in the mouth (thrush) enlarged lymph nodes, shingles, fever, diarrhea, weight loss, itchy nodules on the skin, etc. The next, more life-threatening OIs become common, such as TB, pneumonia, meningitis, and some cancers, etc.

There are three main routes of transmission of HIV:

1. Through blood-to-blood contact, including receiving HIV-contaminated blood, sharing needles with an infected IV drug user, needle prick injury, or exposed contact with an open wound of a PLHIV.
2. Unsafe vaginal or anal sex with an HIV+ partner.
3. From mother to fetus, e.g., through the placenta while the fetus is in the womb, during childbirth when the infant is exposed to the mother's blood and vaginal fluids, and/or through breastmilk when breastfeeding by the HIV+ mother.

In Thai society today, HIV and AIDS are still quite heavily stigmatized. The image of HIV infection being fatal, and the association of infection with illegal or scorned behavior (e.g., IV drug use, low-fee prostitution, etc.) has been thoroughly ingrained in Thais ever since the first outbreaks in the late 1980s. However, now with highly effective ART, HIV infection is a manageable chronic disease, and PLHIV who adhere to the treatment regimen can suppress their viral load to undetectable levels, meaning that they are virtually non-infectious through regular, everyday contact. Thus, as the newer generations of Thais understand this, then the negative stigma of HIV/AIDS should gradually decline and, then, PLHIV should be able to interact with and be treated like anyone else in society.

Sexually transmitted infections (STIs)

The MOPH monitors the age-specific incidence and prevalence of the five most common STI in Thailand: syphilis, gonorrhea, chlamydia, chancroid, and LGV. Over the past five years, the rate of STI has decreased and is equal to 38.1 per 100,000 population in the age group of 10-14 years, and 8.3 in the age group of 14-24 years. Still, the proportion of all STI cases which are in the younger age groups increasing relative to the older cohorts.

Concepts of sexuality and sexual behavior

Sexuality

The WHO (Word Health Organization, 2022) defines sexuality as a lifelong view of the human condition in terms of the masculine/feminine continuum, gender roles, sexual orientation, eroticism, pleasure, intimacy, and reproduction. Sexuality is an experience that is received and expressed. in terms of thoughts, fantasies, desires, beliefs, attitudes, values, behaviors, practices, roles, and relationships. Sexuality is influenced by physical, mental, social, economic, political, cultural, ethical, legal, and historical forces, including religion and elements of spirituality.

Rawiwan Sangchai (1995: 4) defines sexuality as all behavior that relates to the natural state of mind and body related to sex, including psychobiological phenomena of sex, libido, and innate desire to propagate one's genome. Sexuality is an important driving force that propels humans to adapt and mold all their behaviors to suit the social conditions in which they live. The spread of such impetus will have an influence on religion, the arts, culture, and the socio-economics sphere. However, all this will be governed by laws, regulations, morals, and ethics

which will regulate the expression of sexual behavior to suit the needs of the society in which the person lives. This requirement is different in each society, and is reflected by such dimensions as women's rights, family planning, and sex education.

Kritaya Archavanitkul (2011: 44) has written that sexuality is a system of thoughts and beliefs about sex. Sexuality is a socio-cultural process that governs, regulates, and expresses sexual orientation, desires, sexual preferences, sexual gestures, dress, goals of sexual interest, and sexual fantasies. The issuance of regulations and various legal statues are an attempt to control or corral the sexuality of people in a society at large. These are also reflected in a set of norms that only accept or justify established sexuality.

Pitsanu Aphisamachanyothin (2016: 149) defined sexuality as a pattern of behavior to accommodate sexual desires and deep longings, including the expression of that person's identity. Sexuality is a set of values, norms, and systems of thinking and practices related to sexual desire and expression. It also includes the idea of an ideal lover or life partner that creates social meaning. Sexuality is the economic, political, social, and cultural relationship that defines sexuality, including heterosexuality and homosexuality, and any place else along that continuum. A good woman is a woman who is inexperienced in sex in different ways who either has sex exclusively with one partner at a time or with multiple people concurrently, and whether the sex is safe or unsafe, interracial love, extramarital love, etc.

Sex behavior

Sexual behavior refers to actions or behavior related to sex, and can be classified into: family, friends, society, and culture (Siriwan Tumchuea, 2015) as follows:

1. Family Influence: The family is the first institution that trains the mind and instills healthy (or unhealthy) behaviors in children. Family, therefore, directly influences behavior, including the sexual behavior of teenagers.
2. Peer Influence: Making friends is important and essential to adolescent life. Friends will influence thoughts and beliefs, and serve as a source of advice on various matters, including sex, which may also lead to good or bad. Thus, choosing quality friends will help guide sexual behavior in a responsible way.
3. Social Influence: This dimension influences sexual behavior as follows:

3.1 Social Status: The present iteration of Thai social status has more inequality and gaps in economic condition. Ever since the economic crisis in Thailand in 1991, there has been a persistent a state of un-/under-employment. The gap between the rich and the poor is widening, and certain occupations lead to risky sexual behaviour.

3.2 Mass Media: This dimension influences the trend of ideas and movements in society by presenting news about sexual behavior, but usually in a derogatory way, such as rape, which focuses on sensationalism and the plight of the victim.

4. Cultural influence: This dimension refers to the way of life that people create and practice from generation to generation, and which is passed on through cultural memes.

Sex Education

Sex education has been defined from many sources. The meanings are generally in the same direction and focus on the importance of teaching and learning that is appropriate for the age of the learners, especially youth and adolescents.

Sex education means a process of learning about sex that covers the development of each stage of life and relationships with others, inter- personal skills development, sex behavior, sexual well-being, and socio-cultural dimensions that affect sexuality. Including the right to receive information and knowledge about RH that values diversity and gender equality (Konkit Chumkran et al., 2017).

Sex education means "the provision of teaching and learning about sex and relationships that is suitable for the age of the learners and the socio-cultural context covering various topics, including physical development, mental health, physiological functioning, hygiene, attitudes, values, relationships, sex behavior, HIV/STI, pregnancy prevention, and socio-cultural dimensions that affect sexual lifestyles" (Pimpawan Boonmongkol et al., 2016).

Comprehensive sexuality education (CSE) is "*the teaching and learning of a sexuality education curriculum which covers cognitive, emotional, physical, and social dimensions in order to prepare young people to acquire knowledge, skills, attitudes, and values that promote complete health, well-being and dignity, and develop respectful social and sexual relationships with each other. CSE considers the impact of decisions made on people's well-being and that of*

others, as well as understanding and being able to protect their rights sustainably throughout their lives" (Text on international academic practice of sex education).

Developing youth behaviors to achieve good health is an important aspect of health promotion in order to prevent family, societal, and environmental problems. Addressing issues related adolescent SRH requires cooperation from various sectors in implementation as follows:

1. Policy support
2. Developing the potential of personnel and public health services
   - Training service providers from public health facilities at all levels to have knowledge and ability to provide counseling.
   - Training of service providers to deliver youth-friendly health services, e.g., by organizing a "teen clinic."
3. Teaching teenagers to be socially "immune" to threats and risks to SRH
   - Comprehensive sexuality education (CSE): Sex information should be delivered and received openly and honestly. Schools should be encouraged to teach comprehensive life skills to encourage young people to understand safe sex. This covers physiological development according to the stages of human life, relationships with others, development of inter-personal skills, sex behavior, sexual health, and the culture/society
   - Teaching young people to be proud of themselves and be able to accurately assess their own risks. Youth need to know their own assets and deficiencies, and be able to perceive the advantages of others, and be able to accept and be satisfied with their own advantages or shortcomings.
4. Development of people who influence decision-making.
   - The development of parents: Parents are the first group to influence adolescent decision-making. The home is the first place to mold ways of thinking and ways of living to help youth transition successfully through adolescence and into young adulthood.
   - Development of adolescent leaders As children grow into adolescents, they need privacy and close peer groups. The development of SRH behavior therefore

requires adolescent peer leaders who can communicate to reach, understand, use language, and recognize the problems of their peers. In addition, adolescent peer leaders can persuade their classmates to give good advice to others in their network.

- Reduce the risk of STI and narcotic abuse.
- Guidelines for teaching and learning in schools.
- HIV situation/unintended pregnancy/reproductive health

Academic Sexuality Education Studies

The concept of CSE was initiated in the program called "*The World Starts With Me*" which was pioneered in Uganda in 2003 with junior high school students. In 2007, the program was adapted to each local context and pilot-tested in Indonesia. Indonesian-Papua, Thailand, Vietnam, Pakistan, and Ethiopia. Thereafter, the CSE curriculum was adapted and used in other countries. In 2010, UNESCO recognized and designated the program as a model CSE program that should be used as a guideline for international sex education programs (Nittaya Pensirinapa, 2021).

In Thailand, the Bureau of Mental Health Promotion and Development of the Department of Mental Health, of the MOPH has embraced the concept of CSE, and makes the case that the curriculum should include the physiological and emotional development of adolescents. Further, the training should promote understanding of physical development, sex-gender differences, sex decision-making and negotiation skills to prevent or avoid unwanted sex and avoidance of risky situations, sexual hygiene, birth control for adolescents and gender diversity.

The principles of the CSE Curriculum are as follows:

1. Use a continuous learning process that can start from a young age, and add new information by continuing to connect from what was previously learned.
2. The curriculum is tailored to the age and development of the learners, including the culture and context of the area; the content must be consistent with the problems, needs, and learning potential of youth in each age group.
3. The CSE curriculum comes complete with guidelines for teachers and teaching AIDS. There are objectives, concepts, and learning objectives, with a clear curriculum structure.

4. The student enjoys comprehensive learning and is able to develop necessary skills for good SRH. Learning covers SRH issues, including the anatomy and physiology of the reproductive system, adolescent development, contraception, pregnancy, STI, and the relevant socio-cultural context. The curriculum builds skills in analytical thinking, communication, and other skills that contribute to their SRHR.
5. There is an emphasis on human rights The curriculum aims to build and promote understanding of human rights, including the right of youth to receive sex education, and equal access to information encourage children to realize their rights.
6. The curriculum emphasizes gender equality, building respect, recognition of the gender continuum, STI, teen pregnancy, and the problem of gender-based or sexual violence.
7. There is a focus on creating changes in society; the curriculum aims to drive social justice and empower people; learners are equipped with critical thinking skills to build strong citizenship to lobby for positive values, attitudes, and behaviors that lead to community members who responsible to themselves and others.
8. There is an emphasis on learner-centeredness by allowing students to participate in the learning process and encourage learners to practice reflection from what they have learned to what they will apply in their real lives.

In addition, the Thai Ministry of Education (MOE) has a policy to teach sex education in schools under its jurisdiction. Sex education is now included in the compulsory education system under the core subjects of Health Education and Physical Education. There are modules for classes in the primary through the secondary grades. The Ministry of Public Health (MOPH) and the Ministry of Social Development and Human Security (MSDHS) both endorse the importance of sex education. They have both pointed to the role of schools in teaching sex education as a strategy to prevent the spread of HIV/STI and teen pregnancy.

According to a research study which reviewed the teaching of sex education in Thai schools (UNICEF, 2016), it was found that almost all secondary and vocational education institutions provided sex education in some form or another. However, the sex education is not a course in itself, and is integrated into a core course. Also, the content often emphasizes the negative consequences of pre-marital sex rather than the positive aspects of safe sex and healthy attitudes about sex and sexuality. There is an emphasis on the prevention of unplanned

pregnancy, STI and HIV, physiology and sexual development. However, most of the courses do not adequately address concepts of gender, sexual rights, gender diversity, and sexual inequality. In terms of cognition, it was found that students had incorrect understanding of some elements of sex education, such as an inadequate understanding of contraception, and sex negotiations.

Related Research

Knowledge, understanding, attitudes and behavior related to SRHR

Research on knowledge, understanding, attitudes, and behavior on SRHR in Thailand include a study among adolescents to young adults. There were sample groups in the study ranging from secondary school, vocational college, and university students. There are also studies with adolescents outside the formal education system. The focus of those studies may reflect the concern about the situation of teen pregnancy, STI and HIV which are national issues.

Parichat Chantrathip (2005) has studied knowledge, attitudes, and practices in reproductive health of high school and vocational students in Phrae Municipality. The objectives of that research were: 1) To compare knowledge, attitudes, and behavior in RH between high school and vocational students in Muang District, Phrae Province; 2) To compare knowledge, attitudes, and behavior in RH between male and female students, and between educational levels of students studying in Muang District, Phrae Province.

The study of high school and vocational school students found that the scores of knowledges, attitudes, and RH practices were higher for the former group. This shows that, at the time of the study, high school students seemed more interested about RH, and had access to more knowledge than before. Further, the knowledge, attitude, and practice of RH did not differ for male and female students, indicating that males and females had equal opportunity for information about RH, and perhaps more favorable attitudes due to the opportunity to receive news equally. That said, some of the content may not have been appropriate for the learner's age, and that could have adverse consequences later on.

Jarae Srimeechai (2018) studied health care behavior related to SRH of students who live as a couple. That study focused on SRH care behaviors of university students who live as couple (i.e., pre-marital). Topics included hygiene, sexual health, prevention of STI and unwanted pregnancy, relationship maintenance, and management of relationship problems (in terms of

preserving sexual rights and access to sexual education resources between male and female students). The study found that the cohabiting couples had skillful SRH care behavior, e.g., good prevention of STI and relationship maintenance and management of sexual rights. Perhaps, this sample is not very representative of non-university youth because these students had already received CSE at the secondary to tertiary level. The study showed that, overall, there was no difference in SRH health care behaviors of male and female students. There was, however, a significant difference when comparing the aspects of health care behavior and SRH.

Wassanee Narongsakputi (2016) studied SRH health care behaviors and SRH self-management among homeless adolescents in Bangkok. The objectives of this work were 1) To study SRH health care behaviors of homeless adolescents in Bangkok; and 2) To study SRH problems among homeless adolescents and methods of self-management when experiencing SRH problems. That study found that homeless adolescents in Bangkok had several inappropriate behaviors regarding SRH. Those problem behaviors resulted in obstacles to SRH, such as embarrassment to visit a hospital to treat SRH problems, having reckless sex encounters, and history of repeat STI and unplanned pregnancy. When they had a problem, the sample said they would first consult friends or the Internet. They preferred to self-treat by using medicines from a drug store. However, there are some of those who self-treated did not get well and are suffering complications from inadequate or incomplete self-medication.

Udomporn Yingpaiboonsuk (2019) studied the development of SRH service models in universities. That study aimed to 1) Study the knowledge and sexual behavior on SRH of late adolescent university students; 2) Study the need for SRH services of late adolescent university students; and 3) Create a model of SRH services of late adolescent university students. That study took a sample of university students, including both males and females, enrolled in Suan Sunandha Rajabhat University. The study found that the sample had moderate knowledge of SRH. At the time of the study, there had been copious amounts of sex education content or varying quality published on social media, some of which are not screened for accuracy by the responsible agencies. Therefore, the content is not completely accurate and may not be suitable for teenagers. It was found that those students who were sexually active, mostly had sex with a lover or steady partner. They practiced birth control by using condoms, withdrawal, or emergency contraception. It was found that the sample needed SRH services, but they want the service to

be combined with other health services in the university infirmary. They would like a service model that makes them feel safe, and separated between women and men. The services should be youth-friendly, and with medical counselors on staff, The university should provide SRH care to suit student needs. This information can also be used as a guideline for the provision of SRH services generally to better meet the needs of young adults.

Donruedee Petchkwang et al. (2019) studied the knowledge of RH rights and the need for services according to the RH rights of adolescents in Phayao Province. The objectives of that study were as follows: 1) To study the knowledge of RH rights among adolescents in Phayao Province; 2) To study the need for services for unplanned pregnancy among adolescents in Phayao Province. That study found that adolescents had little knowledge of RH rights, the right to live in equality and without discrimination, the right to privacy, and the right to choose marriage and family planning. The results of the study show that there should be campaigns for adolescents to improve understanding of RH rights in order to meet their needs according to their rights, including the provision of SRH services to meet the needs of teenagers.

According to the study, adolescents have little understanding of SRHR. The right to live on equality and not be discriminated against. Studies have shown that adolescents should have the right to access accurate knowledge of SRHR and exercise their rights, including receiving health services to meet adolescents' needs.

Sex behavior, STI, and HIV

Research on sex behavior, HIV and STI in Thailand: There are a number of studies of adolescents, both in and outside the formal school system.

Issaree Padpai et al. (2022) studied the relationship between sexual health literacy and HIV/STI prevention behaviors in adolescents in the northeast region. The objectives of that study were as follows: 1) To study sex behaviors for the prevention of HIV and STI in adolescents. 2) To study the level of sexual health knowledge to prevent HIV and STI in adolescents; and 3) To study factors related to HIV and STI prevention behavior in adolescents in northeast Thailand.

The study found that the sample of 18-year-olds had a moderate level of HIV/STI preventive behaviors, but their knowledge of sexual health was low. This may be due to inadequate sex education. It was found that those who abstained from alcohol were more likely

to practice sound HIV/STI prevention compared to drinkers. The authors suggested that sexual health literacy should be promoted for the prevention of HIV and STI in adolescents.

Khainapha Kaewchantra et al. (2013) studied the relationship between knowledge, attitudes, and risky sex behaviors among adolescents in a secondary school in Bangkok. That study found that the sample had good knowledge of birth control and STI prevention. A minority of students were already sexually active, and usually the sex partner was a classmate or peer. Only half of those who had sex used a condom. The findings are in line with the survey on opinions and sex risk behaviors of adolescents in Thailand.

Veerachai Sittipiyasakul et al. (2013) found that adolescents had a relatively low level of knowledge of STI prevention and pregnancy prevention. They had incorrect knowledge of how to properly use a condom and taking a monthly cycle of birth control pills. Students in urban areas had more birth control knowledge than students outside of municipal areas.

Unplanned pregnancy and abortion

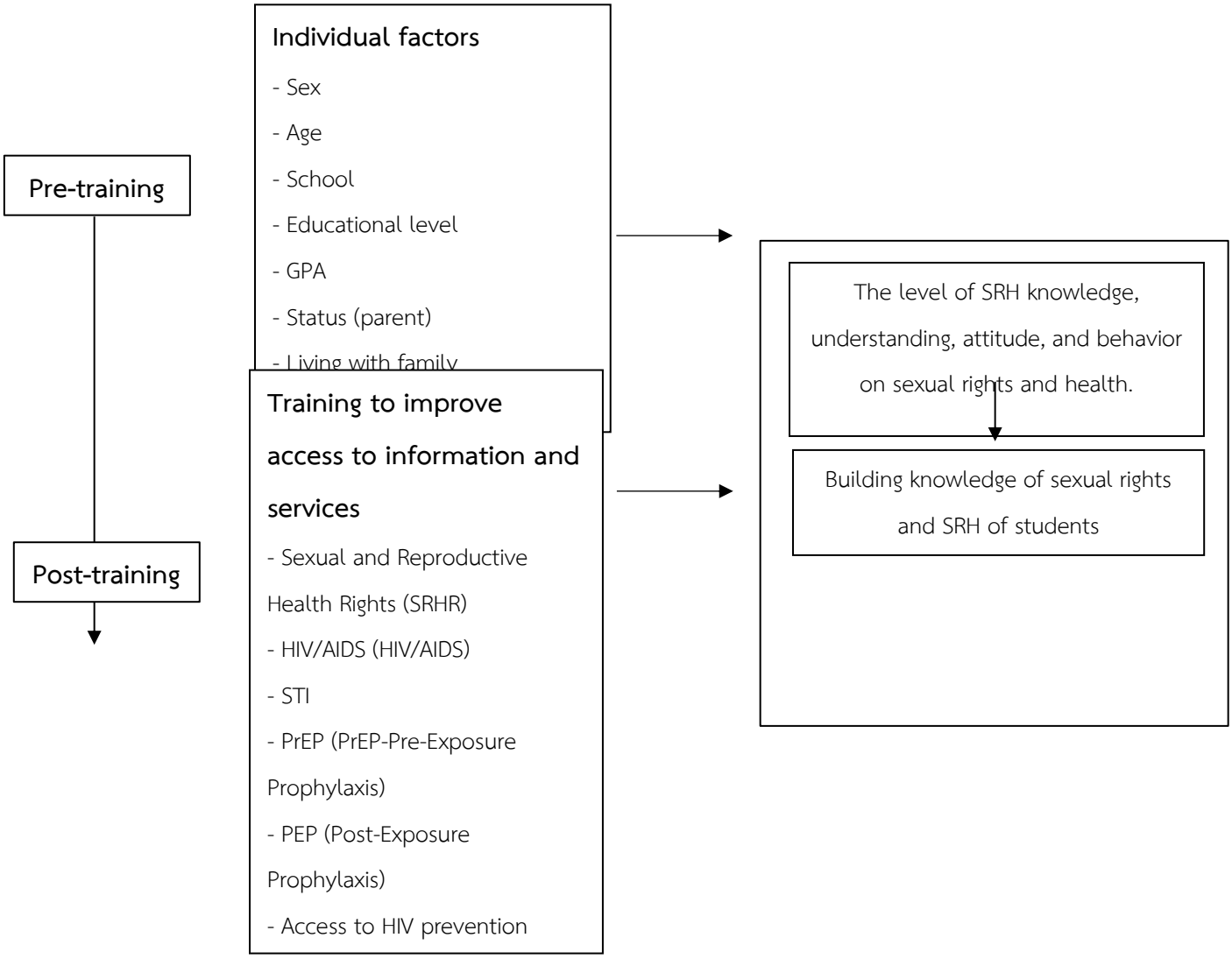
A review of relevant research on knowledge, understanding, attitudes, and behaviors related to RH among youth in educational and non-school settings found only a few studies that deal directly with abortion.

Napaporn Havanon (1996) estimated that there were 200,000 - 300,000 elective abortions per year in Thailand, but most used methods that were not medically correct, or were expensive, and carried risk of complications or even death. That study conducted interviews with women who experienced complications from abortion that required hospitalization. The women clearly felt this was a traumatic experience both physically and mentally. The study questioned the need for more appropriate policies when it comes to unwanted pregnancy.

Warangkana Chatchawet et al. (2012) study the issue of male partner participation in the woman's pregnancy termination, from the point of view of health professionals. That study looked at the observations of health workers regarding the involvement of men in termination of pregnancy, and the care that men can provide to their partner, both mentally and physically. The study looked at male participation in birth control, and the different perspective on abortion, including understanding the reasons couples have for abortion, and prejudice of health providers by not listening to women's voices.

Sarutaya Rongwan (2012) found that 46.5% of adolescent pregnant women were not ready for the current pregnancy, and 94.1% did not want to be pregnant, and 64.7% became pregnant while enrolled in school. The main source of social support for adolescent pregnant women was the male partner and parents. Health risk behaviors found in adolescent pregnant women were smoking and drinking alcoholic beverages. These youth had a lack of knowledge about behavior during pregnancy, and the pregnant teen experienced feelings of sadness, depression, having sinned, and feeling worthless. That said, this sample of young pregnant women wanted to receive more knowledge/advice on how make the most of their pregnancy and improve their life.

Conceptual framework of the research



Chapter 3

Research Methodology

This research examined knowledge, attitudes, and behaviors regarding SRHR and HIV prevention in schools in the north region of Thailand. The data collection included quantitative method that focuses on data collected in the form of Survey Research using Questionnaire as well as qualitative method that provided supportive data from In-depth Interview to probe on certain topics. The data were processed using standard social science research methods. The following are details.

Study population

The population in this study comprised 9,847 students age 13-17 years who were studying in 12 target schools in four provinces of the upper northern region of Thailand (Table 1).

Table 1: Number of Students Age 13-17 Years in the 12 Participating Schools

School	Middle School, High School, and Vocational School (Voc-Ed)							Total
	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Voc-Ed 1	Voc-Ed 2	
1. Chiang Dao Wittayakom School	125	75	102	273	251	-	-	826
2. Sueksa Songkhro Chiang Dao School	83	85	51	41	31	-	-	291
3. Mae-ai Wittayakhom School	195	144	140	220	165	-	-	864
4. Chiang Mai Technical College	-	-	-	-	-	737	721	1,458
5. Chiang Rai Technical College	-	-	-	-	-	667	523	1,190
6. Chiang Rai Commercial Vocational College	-	-	-	-	-	125	102	227
7. Lampang Technical College	-	-	-	-	-	1,073	884	1,957
8. Lampang Vocational College	-	-	-	-	-	398	401	799
9. Northern Mubankru Technological College	-	-	-	-	-	176	157	333
10. Lumphun Technical College	-	-	-	-	-	629	631	1,260
11. NFE* Chiang Dao District	81			32		-	-	113

School	Middle School, High School, and Vocational School (Voc-Ed)							Total
	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Voc-Ed 1	Voc-Ed 2	
12. NFE* Mae Ai District	67			13		-	-	80
Total								**9,847**

*NFE denotes non-formal education school

Sample population

Quantitative research

The sample in this study was 384 students/students age 13-17 years studying in 12 target schools. The prescribed sample size was calculated by applying Taro Yamane's formula (1973: 125), stratified by sex, with a tolerance level of 5% and a confidence level of 95%.

as the following formula

$$n = \frac{N}{1+Ne^2}$$

where n sample size

N size of the population universe

e the tolerance error, which is set equal to 0.05

yielding $n = \frac{9,847}{1+9,847\ (0.05)^2}$

= 384.39

= 384 (prescribed sample size)

Sampling

The next steps to select the actual sample can be summarized in the following steps:

Step 1: Sampling method: After obtaining the sample size, the research team uses a stratified random sampling method as follows:

$$sample\ in\ each\ group = \frac{Total\ sample\ x\ population\ in\ each\ group}{population\ universe}$$

Table 2: Sample Size by Participating School

School	N students	Proportion	Sample	Sample size
1. Chiang Dao Wittayakhom School	826	0.084	32.211	32

School	N students	Proportion	Sample	Sample size
2. Sueksa Songkhro Chiang Dao School	291	0.030	11.348	11
3. Mae-ai Wittayakhom School	864	0.088	33.693	34
4. Chiang Mai Technical College	1,458	0.148	56.857	57
5. Chiang Rai Technical College	1,190	0.121	46.406	46
6. Chiang Rai Commercial Vocational College	227	0.023	8.852	9
7. Lampang Technical College	1,957	0.199	76.316	76
8. Lampang Vocational College	799	0.081	31.158	31
9. Northern Mubankru Technological College	333	0.034	12.986	13
10. Lumphun Technical College	1,260	0.128	49.136	49
11. NFE Chiang Dao District	321	0.033	12.518	13
12. NFE Mae Ai District	321	0.033	12.518	13
Total	**9,847**	**1**	**384.39**	**384**

Step 2: Systematic Random Sampling and Simple Random Sampling: Select students from 12 schools to meet the required sample size of 384.

Table 3: Resulting Sample Size by School and Grade Level

School	Middle School, High School, and Vocational School (Voc-Ed) Grade							Total
	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Voc-Ed 1	Voc-Ed 2	
1. Chiang Dao Wittayakom School	5	3	4	11	10	-	-	32
2. Sueksa Songkhro Chiang Dao School	3	3	2	2	1	-	-	11
3. Mae-ai Wittayakhom School	8	6	6	9	6	-	-	34
4. Chiang Mai Technical College	-	-	-	-	-	29	28	57
5. Chiang Rai Technical College	-	-	-	-	-	26	20	46
6. Chiang Rai Commercial Vocational College	-	-	-	-	-	5	4	9
7. Lampang Technical College	-	-	-	-	-	42	34	76
8. Lampang Vocational College	-	-	-	-	-	15	16	31
9. Northern Mubankru Technological College	-	-	-	-	-	7	6	13
10. Lumphun Technical College	-	-	-	-	-	24	25	49

School	Middle School, High School, and Vocational School (Voc-Ed) Grade							Total
	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Voc-Ed 1	Voc-Ed 2	
11. NFE Chiang Dao District	9			4		-	-	13
12. NFE Mae Ai District	11			2		-	-	13
Total								**384**

Qualitative Research

To select individuals that are representative, the research team purposively selected 16 individuals in the four provinces based on the adolescent birth rate in the different localities, among other indicators. The criteria for selecting key informants involved accessibility and convenience of providing information. The key informants include student leaders, at-risk students, teacher peer leaders, and representatives of parents of students age 13-17 in the targeted schools. The selection criteria and the number of key informants who participated in the research are as follows:

Key informant	Criteria of selection	Total number of key informants
Student peer leaders	Age 13 - 17 years old 4 females and 4 males Studying in the target educational institutions Can be contacted and ready to provide information	8
Teachers	Age 25 - 50 years old 2 females and 2 males Holds a position in the target educational institutions Can be contacted and is ready to provide information	4
Parents	Age 35 years old or over 2 females and 2 males Is the parent of a student studying in a participating educational institution Can be contacted and is ready to provide information	4

Data collection and analysis

Quantitative research

The quantitative data collection used a structured questionnaire. Data were collected twice: 1) Prior to implementation of the Project intervention (i.e., training of the peer leaders); and 2) After the intervention. The baseline was conducted in April of the Project year, and the endline was conducted in December. The sample must answer questionnaires provided by the research team.

Qualitative research

The qualitative research was conducted by IDI using a semi-structured discussion guide. In addition, the research team collected information from secondary sources and from first-hand observation. The IDI with student peer leaders, teachers, and parents took about 45 – 60 minutes for each IDI. Before every IDI, the interviewer explained the purpose of the data collection, and assured participants that the information would be kept confidential. The key informants were also invited to join the lessons learned summary workshop after the formal end of the Project.

Data collection instruments

The structured questionnaire was developed according to the conceptual framework and covered all the variables of interest in the study. The questionnaire consists of the following three sections:

Section 1: This includes questions about general information of the respondent, e.g., sex, age, name of school/province, current educational level, GPA, marital status of parents, primary provider for the respondent, primary place of residence, etc. The questionnaire includes both closed- and open-ended questions.

Section 2: This part included questions about relationships, love, sex behavior, and prevention of infectious disease. The questionnaire includes both closed- and open-ended questions.

Section 3: The 3rd section asked respondents about knowledge and understanding of students' SRHR, e.g., knowledge of the acts/laws related to SRHR, knowledge of birth control methods, and knowledge and understanding of SRH. The questions were arranged to allow respondent to rank order response, e.g., Likert Scale, which has five response options, i.e., most,

a lot, medium, a little, least, with scoring as per the following table by specifying Scoring criteria for each level are as follows:

Knowledge level	Score
Most	5
A lot	4
Moderate	3
A little	2
Least	1

Section 4: This section includes questions about student attitudes toward SRHR, including RH rights and sexual health, family planning, and STI/HIV. The response options go from highest, high, moderate, low, to least. The scoring criteria are as follows:

Attitude level	Positive statements	Negative statements
Highest (most favorable attitude)	5	1
High	4	2
Moderate	3	3
Low	2	4
Lowest (least favorable attitude)	1	5

Section 5: This section asks students about behaviors related to SRHR, and the response is rank ordered (i.e., Likert scale). The scoring criteria for each level are as follows:

Level of behavior	Positive statements	Negative statements
Highest (most supportive behavior)	5	1
High	4	2
Moderate	3	3
Low	2	4
Lowest (least supportive behavior)	1	5

From the above criteria, the score can be interpreted as follows:

4.51 – 5.00 means students have the most behaviors related to SRHR

3.51 – 4.50 means students have a lot of behaviors related to SRHR

2.51 – 3.50 means students have a moderate level of behaviors related to SRHR

1.51 – 2.50 means students have less behaviors related to SRHR

1.00 – 1.50 means students have the least behaviors related to SRHR

Discussion guidelines for the IDI

The IDIs were conducted with the following: 4 male and 4 female students, 4 teachers in the participating school, and 4 parents of a student enrolled in the participating school. The research team created additional questionnaires about increasing access to SRHR to knowledge and services, including HIV prevention in educational institutions. The time per interview (per person) was about 45-60 minutes, with the guidelines divided into two parts as follows:

Section 1: Access to SRHR to knowledge and services

1. Access to SRHR to knowledge and services
2. Basic knowledge of SRHR

Section 2: Relationship attitudes, love, sex behavior, prevention of HIV and other STIs

1. Relationships attitude, love
2. Sex behavior
3. Prevention of HIV and other STI

Testing of the quantitative data collection instrument for validity and reliability

1. Validity: The draft questionnaire was presented to the thesis advisory committee to verify content validity. Generally, content validity can be calculated from the consistency between the question and the objective to be measured. The researchers used the Index of Item-Objective Congruence (IOC), which was performed by experts to assess each item individually as to whether it corresponded to the objective and intention of the designer. The assessment results are divided into three levels as follows:

Consistent	+1
Unsure	0
Not consistent	-1

$$IOC = \frac{\sum R}{N}$$

The terms in the IOC formula are:

IOC	Item-Objective Congruence
R	Expert scores
$\sum R$	Sum of expert scores
N	Number of experts

2. Reliability: Since parts of the questionnaire ask subjective questions (i.e., opinions/attitudes), there needs to be a test of internal consistency. A common diagnostic for this is Cronbach's Alpha Coefficient. The value of Cronbach's Alpha Coefficient is usually between 0 and 1. If the coefficient is close to 1, it indicates that the questionnaire has a high level of precision and can be used for the study. To assess the draft questionnaire, the research team submitted the questionnaire to 30 students who are not the actual sample but have similar attributes (e.g., same age, attending a school/college in the north region, etc.). The resulting values of Cronbach's Alpha Coefficient are as follows:

2.1 Knowledge and understanding of students' SRHR has a confidence value of 0.889

2.2 Attitudes about SRHR of students has a confidence value of 0.722

2.3 SRH health behaviors of students has a confidence value of 0.948

Data analysis

After the field data collection, coding, data entry, and editing, the cleaned dataset was analyzed to assess knowledge and services on SRHR, including HIV prevention among students in the upper north of Thailand. The analysis used descriptive statistics minimum-maximum, Mean, Median, Standard Deviation, Frequency, and Percentages. Higher-level statistics were used to test the relationship between the variables, and Pearson’s Product Moment Correlation was used for bi-variate analysis.

Chapter 4

Findings of the Research

Quantitative research results

The quantitative findings of the research are presented in the following five sections:

Section 1: General information of students who responded to the questionnaire consisting of school, sex, age, current education level, grade point average, parent's marital status, primary provider, and place of residence.

Section 2: Relationship information, e.g., love, sex behavior and prevention of communicable diseases include having a partner or boy/girlfriend, sexual history, frequency of intercourse, contraceptive method used, and sources of access to contraceptive methods.

Section 3: Knowledge and understanding of students' rights in SRH consists of knowledge of related legal acts/laws, knowledge about contraceptive methods, and knowledge and understanding of SRH.

Section 4: Attitudes about SRHR of students, including attitudes about RH rights and sexual health, attitude towards family planning, and attitude about STI/HIV

Section 5: Behaviors related to SRHR of students, including behaviors related to SRHR, and behavior regarding SRHR.

1. Baseline characteristics of the sample

Section 1 Background characteristics of the sample of students

This study used a stratified sampling method to select the subjects according to the proportion of students in each of 12 participating schools as follows: Chiang Mai Province: Chiang Dao Wittayakhom School, amounting to 32 people (8.33%), Sueksa Songkhro Chiang Dao School, amounting to 11 people (2.86%), Mae-ai Wittayakom School, 34 students (8.85%), and Chiang Mai Technical College, 57 people (14.84%); Chiang Rai Province: Chiang Rai Technical College, 46 people (11.98%), Chiang Rai Commercial Vocational College, 9 people (2.34%); Lampang Province: Lampang Technical College, 76 people (19.79%), Lampang Vocational College, 31 people (8.07%), Northern Mubankru Technical College, 13 people (3.39 each), Lamphun Technical

College, 49 people (12.76%); and Chiang Mai Province: NFE Chiang Dao District, 13 people (3.39%), NFE Mae Ai District, 13 people (3.39%) (Table 4.1).

The sample comprises 384 students, including 210 males (54.69%), 173 females (45.05%) and 1 LGBTQ+ person (0.26%). Students were age 13-17 years old, most age 16 years (38.54%), followed by 17 years (20.83%), (33.85%), (3.91%) and 13 years old (2.86%). The largest number of the sample were studying at the Voc-Ed level (73.18%), followed by GRADE 10 - GRADE 11 (14.58%) and GRADE 7 - GRADE 9 (12.24%). Most had a GPA > 3.50 (28.13%), followed by GPA 3.00–3.49 (24.74%), GPA 2.50–2.99 (22.14), GPA 2.00–2.49 (16.93%), GPA <2.00 (5.21%). As for the marital status of the parents of the sample of students, most were still married (56.51%), divorced (22.14%), separated (16.93%), or other status. (e.g., traveling, etc.) (2.86%), and widowed (1.56%). Most of the residents lived with their parents/guardian (54.43%), followed by living with either one of the parents or guardians (23.70%), living with a grandparent (15.10%) or others (6.77%). Most students lived in the family home (75.52%), followed by a rented house/dormitory (20.57%), or lodged at the school (3.13%) (Table 1).

Table 1: Number of Sampled Students by Participating School

School	Student sample	%
Chiang Dao Wittayakhom School	32	8.33
Sueksa Songkhro Chiang Dao School	11	2.86
Mae Ai Wittayakhom School	34	8.85
Chiang Mai Technical College	57	14.84
Chiang Rai Technical College	46	11.98
Chiang Rai Commercial Vocational College	9	2.34
Lampang Technical College	76	19.79
Lampang Vocational College	31	8.07
Northern Mubankru Technical College	13	3.39
Lamphun Technical College	49	12.76
NFE Chiang Dao District	13	3.39
NFE Mae Ai District	13	3.39
Total	**384**	**100.00**

Table 2: General Characteristics of the Students

Characteristics (n = 384)	Baseline	
	N	%
Sex		
Male	**210**	**54.69**
Female	173	45.05
LGBTQ+	1	0.26
Age (years)		
13	11	2.86
14	15	3.91
15	130	33.85
16	**148**	**38.54**
17	80	20.83
Grade		
7-9	47	12.24
10-12	56	14.58
Voc - Ed	**281**	**73.18**
GPA		
< 2.00	20	5.21
2.00 – 2.49	65	16.93
2.50 – 2.99	85	22.14
3.00 – 3.49	95	24.74
> 3.50	**108**	**28.13**
unspecified	11	2.86
Marital status of parents/guardians		
Married	**217**	**56.51**
Separated	65	16.93
Widowed	6	1.56
Divorced	85	22.14
Other	11	2.86
Primary provider		
Both Parents	**209**	**54.43**
One parent	91	23.70

Characteristics (n = 384)	Baseline	
	N	%
Grandparent	58	15.10
Other relative/guardian	26	6.77
Primary residence		
Family home	**290**	**75.52**
Apartment	79	20.57
At school	12	3.13
Other	3	0.78

2. Sex and Relationships

Section 2 Love relationships, sex, and contraception

Of the 384 students in the baseline survey round, 110 (28.65%) said they had a lover/boy/girlfriend. In the baseline, 322 (83.85%) had never had sex. Of the sexually experienced, two out of five had sex 1-2 times a month (40.32%), while one in four had sex once a week (24.19%), one in eight had sex 3-5 times a week (12.90%), and four students had sex every day (6.45%) (Table 3).

Regarding use of contraception among the sexually active students, most said they used condoms (48.51%), followed by the pill (18.81%), emergency contraceptives (15.84%), subdermal contraceptive implant (4.95%), an IUD (1.98%), or the injectable contraceptive (0.99%). It is notable that only 5.94% used a non-modern method of contraception (e.g., withdrawal, or safe period). It is noteworthy that about only 4% did not use any form of birth control. Of those who had used contraception, most obtained it at a convenience store, supermarket, or pharmacy (59.34%), followed by an adolescent clinic, health service unit, hospital (19.78%), from a friend or their lover (13.19%), or bought from online sources (7.69 per cent) (Table 4).

In the endline survey round (after the Project intervention), 34.38% reported having a lover/boy/girlfriend. Over one in five (22.14%) had had sex. Among those who had sex before, about half had sex. 1-2 times a month (47.56%), followed by sex 3-5 times a week (21.95%), once a week (13.41%) (Table 4.3). Use of contraception in the endline round showed an increase in reported use of condoms (64.62%), followed by using contraceptive pills (7.69%), emergency contraceptives (9.23%), implants (7.69%), an IUD (1.98%), or injectable contraceptive (0.99%).

Fully 6.15% used natural methods (withdrawal, safe period). It is noteworthy that about only 3% did not use any form of birth control. Most accessed birth control from a convenience store, supermarket, or pharmacy (80.33%), followed by an adolescent clinic, health service unit, hospital (13.11%), from a friend/lover (3.28 per cent), from a dispenser in the bathroom (3.23%), or from an online source (1.64%) (Table 4).

Table 3 Love Relationships, Sex, and Contraception

	Baseline		Endline	
	N	%	N	%
Currently have a lover/boy/girlfriend				
Yes	110	28.65	132	34.38
No	**274**	**71.35**	**252**	**65.63**
Ever had sex				
Yes	62	16.15	85	22.14
No	**322**	**83.85**	**299**	**77.86**
Frequency of sex				
Daily	4	6.45	3	3.66
3-5 times per week	8	12.90	18	21.95
Once a week	15	24.19	11	13.41
1-2 times per month	**25**	**40.32**	**39**	**47.56**
Other	10	16.13	11	13.41

Table 4 Use and Sources of Contraception

	Baseline (%)	Endline (%)
Method of Contraption Used		
None	3.97	3.08
Natural (withdrawal, safe period)	5.94	6.15
Condom	**48.51**	**64.62**
Oral contraceptive	18.81	7.69
Emergency contraception	15.84	9.23
Injectable contraceptive	0.99	-
Sub-dermal implant	4.95	7.69
IUD	1.98	1.98

	Baseline (%)	Endline (%)
Total	**100**	**100**
Source of Contraception		
Convenience store, supermarket, drug store	**59.34**	**80.33**
Youth clinic, health center, hospital	19.78	13.11
Online	7.69	1.64
Friend/lover	13.19	3.28
Other	-	1.64
Total	**100**	**100**

3. Knowledge and Understanding of SRHR

Section 3 Knowledge and Understanding of SRHR

1. Knowledge Acts/Laws It was found that before participating in the training, students/students had a moderate level of knowledge in the Prevention and Solution of the Teen Pregnancy Act, 2016 (Mean = 3.26). Act Amending the Criminal Code (No. 28) B.E. 2564 or "Law on Terminating Pregnancy" at a medium level (Mean = 3.16). After participating in the training, the students/students had a moderate level of knowledge in the Prevention and Solution of Teen Pregnancy Problem Act, 2016 (Mean = 3.43) and the students/students group Criminal Code Amendment Act (No. 28) B.E. 2564 or "Law on Terminating Pregnancy" at a moderate level (Mean = 3.29)
2. In terms of knowledge about contraceptive methods, it was found that before participating in the training, students/students had knowledge about male/female condom use at a high level (Mean = 3.76) and students/students had knowledge about contraceptive use at a high level (Mean = 3.76). about natural control (counting the days/ejaculation) the use of birth control pills Use of emergency contraceptive pills birth control injection contraceptive implant use inserting an IUD male/female sterilization at the moderate level (Mean = 3.06, 3.33, 3.33, 3.10, 3.20, 3.10, and 3.16). After participating in the training, student groups/students have knowledge about the use of male/female condoms. and the use of contraceptive pills at a high level (Mean = 4.10, 3.58). (counting the days/ejaculation) the use of emergency contraceptive pills birth control injection

contraceptive implant use inserting an IUD male/female sterilization at the moderate level (Mean = 3.15, 3.45, 3.17, 3.28, 3.04 and 3.35)

3. In terms of knowledge and understanding about SRH of students/students, it was found that before participating in the training, Student groups/students have knowledge and understanding about taking care of their bodies. Especially the genitals are kept clean at a high level (Mean = 3.69) and have knowledge about the side effects that occur from contraceptives. Knowledge of each type of STI/HIV knowledge of STIs prevention (STIs), HIV/AIDS knowledge of PrEP and PEP antiretrovirals and knowledge of Not found = not spread (U=U). Infected patients receive antiretroviral therapy. Until the amount of virus in the blood is low, it will not transmit the infection to others. at the moderate level (Mean = 3.28, 3.41, 3.45, 3.10 and 3.18). After participating in the training, the student groups/students have knowledge and understanding about taking care of their bodies. Especially the genitals are always clean. They had a high level of knowledge about the prevention of STIs, HIV/AIDS, and knowledge of each form of STIs, HIV/AIDS (Mean = 4.08, 3.73 and 3.66). Side effects of birth control have knowledge about Did not find = did not spread (U=U). Infected patients received antiretroviral therapy. Until the amount of virus in the blood is low, it will not transmit the infection to others. and knowledge about antiretroviral drugs PrEP and PEP at a moderate level (Mean = 3.44, 3.21 and 3.16) as Table 5.

Table 5: Mean Scores of Knowledges of SRHR among the Sample of Students

	Baseline			Endline		
	Mean	**SD**	**Interpretation**	**Mean**	**SD**	**Interpretation**
Knowledge of related law						
1. 2016 Teen Pregnancy Act	3.26	0.94	Moderate	3.43	0.86	Moderate
2. 2021 Abortion Law	3.16	0.89	Moderate	3.29	0.87	Moderate
Knowledge of contraceptive methods						
3. Natural method (safe period, withdrawal)	3.06	1.03	Moderate	3.15	1.17	Moderate
4. Male/female condoms	3.76	0.99	High	4.10	0.82	High
5. Birth control pills	3.33	1.00	Moderate	3.58	1.02	High
6. Emergency contraceptive pill	3.33	1.03	Moderate	3.45	1.17	Moderate

	Baseline			Endline		
	Mean	SD	Interpretation	Mean	SD	Interpretation
7. Contraceptive injections	3.10	1.10	Moderate	3.17	1.22	Moderate
8. Contraceptive Implant	3.20	1.10	Moderate	3.28	1.26	Moderate
9. IUD	3.10	1.09	Moderate	3.04	1.25	Moderate
10. Male/female sterilization	3.16	1.10	Moderate	3.35	1.26	Moderate
Knowledge/understanding of SRH						
11. To what extent do you have knowledge about the side effects of contraceptives?	3.28	0.94	Moderate	3.44	0.93	Moderate
12. What is your level of knowledge about each type of STI, HIV?	3.41	0.94	Moderate	3.66	0.84	High
13. What is your level of knowledge about prevention of STI, HIV in each form?	3.45	0.90	Moderate	3.73	0.82	High
14. What is your level of knowledge about taking care of the body especially hygiene of the genitals?	3.69	0.93	High	4.08	0.79	High
15. What is your level of knowledge of PrEP and PEP antiretroviral drugs?	3.10	0.93	Moderate	3.16	0.93	Moderate
16. What is your level of undetectable = untransmissible (U=U) for PLHIV on ART?	3.18	0.94	Moderate	3.21	0.96	Moderate

4. Attitude toward SRHR

Section 4 Attitude toward SRHR of the sample of students

1. Attitudes about rights related to SRH and sexual health: In the baseline round (before training) the students already had rather high levels of appropriate attitudes a range of issues: Right to have contraceptive options (Mean = 3.83); It is not wrong for adolescents to have premarital sex if both parties love each other and use protection against

pregnancy and STI (mean = 3.56); Youth must be able to refuse an adult relative or elder who tries to touch them in private areas of the body or where they don't want to be touched or caressed (Mean = 3.92), Attitudes were at a moderate level for the following: Adolescents have the right to have premarital sex and should not be criticized or stigmatized by society (Mean = 3.63); A woman cannot refuse to have sex with her husband – it is her duty (Mean = 3.37).

After attending the training, this sample of students had even higher attitude levels, for example, about the right of youth to refuse to be touched inappropriately by an adult, elder or anyone else (Mean = 4.38); Adolescents should have the right to a choice of contraceptives (Mean = 4.18); Premarital teen sex is not wrong if they love each other and use protection (Mean = 3.94); Adolescents have the right to have sex and should not be criticized or stigmatized by society (Mean = 3.83); A woman cannot refuse sex with her husband (Mean = 3.53).

2. Regarding attitudes about family planning, the baseline found that students had a rather high level of attitudes, for example: Practicing family planning before having children promotes good health for the mother and child (Mean = 3.94); Contraception is something that both members of the couple should discuss together (Mean = 3.89). The students had a moderate level of attitudes in the following: It is embarrassing to go for counseling about family planning (Mean = 3.07); Family planning is only for couples who want to have children (Mean = 2.62). After the training, the students showed improved attitude scores: They agreed at a high level that family planning before starting to have children promotes good health for mother and child (Mean = 4.31); Contraception should be a joint decision (Mean = 4.18). Attitudes at the moderate level also improved: It is embarrassing to go for family planning counseling (Mean = 3.14); Family planning is only for families who wish to have children (Mean = 2.64).
3. Attitudes about STI/HIV found that, before participating in the training, the sample of students agreed at a high level with the following: STI/HIV is preventable. There was a moderate level of agreement that STI/HIV is not an immediate threat to adolescents or, specifically, students had almost no chance of getting infected (Mean = 3.07). The score for the belief that not changing sex partners frequently prevents against STI/HIV (Mean =

3.18); the belief that cleaning the genitals after sex would prevent STI (Mean = 3.31); the belief that STI could be cured if treated correctly (Mean = 3.27); the belief that HIV could be cured if treated correctly (Mean = 3.16); and the belief that one can interact normally with PLHIV without risk of infection (Mean = 3.00). After the training, student attitudes improved further: The belief that STI/HIV can be prevented (Mean = 3.76); the belief that STI/HIV can be prevented by not changing sex partners frequently (Mean = 3.38); the belief that STI can be cured if treated correctly (Mean = 3.38); the belief that cleaning the genitals after sex can prevent STI (Mean = 3.35); the belief that HIV can be cured if treated correctly (Mean = 3.17); the belief that one can interact normally with a PLHIV without risk of HIV infection (Mean = 2.99); and the belief that STI/HIV is not an immediate threat to adolescents, in particular, that students had almost no chance of infection (Mean = 2.80) (Table 6).

Table 6: Mean Attitude Scores about SRHR

	Baseline			Endline		
	Mean	**SD**	**Interpretation**	**Mean**	**SD**	**Interpretation**
Statement						
We all have the right to have alternative birth control options.	3.83	0.91	High	4.18	0.77	High
It is not wrong for teenagers to have sex without being married -- if both parties love each other and prevent pregnancy and STI	3.56	0.95	High	3.94	0.91	High
* A wife cannot refuse to have sex with her husband -- it is her duty	3.37	1.12	Moderate	3.53	1.19	High
Youth can refuse inappropriate touching by an adult, elder, or anyone	3.92	1.12	High	4.38	0.85	High

	Baseline			Endline		
	Mean	SD	Interpretation	Mean	SD	Interpretation
Adolescents have a right to have sex and should not be criticized or stigmatized by society.	3.63	1.03	Moderate	3.83	0.97	High
Attitudes toward family planning						
Family planning before childbirth will help ensure good health for mother and child	3.94	0.98	High	4.31	0.80	High
*Family planning is only for families who wish to have children.	2.62	1.06	Moderate	2.64	1.11	Moderate
Contraception is something that must be discussed jointly by the couple	3.89	0.94	High	4.18	0.83	High
It is embarrassing to go for family planning counseling	3.07	1.07	Moderate	3.14	1.04	Moderate
Attitudes toward STI/HIV						
STI/HIV is not an immediate threat to adolescents; students have almost no chance of infection	3.01	0.99	Moderate	2.80	1.18	Moderate
STI/HIV can be prevented	3.51	0.93	High	3.76	0.93	High
Not changing sex partner often can prevent STI/HIV	3.18	1.00	Moderate	3.38	1.04	Moderate
Cleaning the genitals after sex can prevent an STI	3.31	0.96	Moderate	3.35	1.00	Moderate
STI can be cured if treated properly	3.27	0.90	Moderate	3.38	0.97	Moderate
HIV can be cured if treated properly.	3.16	2.00	Moderate	3.17	1.07	Moderate

	Baseline			Endline		
	Mean	**SD**	**Interpretation**	**Mean**	**SD**	**Interpretation**
One can interact normally with a PLHIV without risk of HIV infection	3.00	1.16	Moderate	2.99	1.27	Moderate

** Denotes statement which is negative*

Section 5 Student behavior related to SRHR

1. In the baseline round (before the training) the sample of students already scored rather high for SRH behavior, for example: Cleaning and changing underwear daily (Mean = 3.88); Rejection of buying or selling sex (Mean = 3.84); Cleaning the genitals properly (woman cleaning from front to back with soap and water and then wipe dry - men swipe the foreskin, wash with soap and water until clean, and then dry (mean = 3.79); Refusing to be view pornographic images/videos alone with persons of the opposite sex or one's lover (mean = 3.71); Refuse to go partying at night or go on dates with a person of the opposite sex (mean = 3.65); Refuse to hug, with a member of the opposite sex (Mean = 3.64); Refuse to be alone in a secluded place with a person of the opposite sex or lover (Mean = 3.61); Avoided an intimate relationship with a person of the opposite sex that might lead to sex (Mean = 3.58); Observed abnormal characteristics/symptoms around the genitals (Mean = 3.58); Searched for knowledge from the Internet when having sex-related problems (mean = 3.55); Will refuse to have sex when having abnormal symptoms around the genitals or may have an STI (Mean = 3.55); When feeling sexually aroused, try to do other activities to reduce sexual arousal and lust (Mean = 3.54); When there are abnormal symptoms or suspected to have an STI, immediately seek medical attention (Mean = 3.53); Avoid looking at pictures/movies/books or other media that stimulate sexual arousal (Mean = 3.51). After the training, the behavior scores improved: Cleaning and changing underwear daily (Mean = 4.32); Refusing to buy/sell sex (Mean = 4.11); Cleaning the genitals properly; (Mean = 4.07); Will refuse to have sex when there are abnormal symptoms or suspected of having an STI (Mean = 3.92); Will tell sex partner when having abnormal symptoms or suspect an STI (Mean = 3.87); Observe abnormal appearance and symptoms in the genital area (Mean = 3.86); When there are abnormal symptoms or STI is suspected, immediately see a doctor for treatment (Mean = 3.86); Refuse to pornographic videos/images when

alone with persons of the opposite sex or lover (Mean = 3.82); Will search for knowledge from the Internet when having sex problems (mean = 3.80); When feeling sexually aroused, will do other activities to reduce arousal or lust (Mean = 3.76); Avoid intimacy with members of the opposite sex to reduce risk of sex (Mean = 3.76); Avoid being alone in a secluded place with a member of the opposite sex or lover (Mean = 3.73); Refuse to go out partying at night or on a date with a member of the opposite sex (Mean = 3.70); Will seek advice from a teacher when having sexual problems (Mean = 3.68); Will ask advice from parents, guardians, or a trusted adult when having sex problems (Mean = 3.68); Refuse to hug or kiss members of the opposite sex, lover (Mean = 3.66); Avoid looking at pictures/movies/books or other media that stimulate sexual arousal (Mean = 3.51); Will ask for advice from friends when having sexual problems (Mean = 3.54).

Before the training, the students had some behavioral scores at the moderate level: Seeking advice from parents, guardians, or trusted adults when having sexual problems (Mean = 3.49); When having abnormal symptoms or suspected STI, they would tell the person who would like to have sex (Mean = 3.49); Will ask for advice from a teacher when having sex problems (Mean = 3.48); Would masturbate when having sexual arousal (Mean = 3.24); Will seek advice from friends when having problems with sex (Mean = 3.38); When having abnormal symptoms around the genitals, would try to self-treat by buying drugs themselves (Mean = 3.16). After the training, students still had some behavioral scores at the moderate level: When having abnormal symptoms around the genitals, would always try to self-treat first (Mean = 3.36); Would masturbate when having sexual desire (Mean = 3.30).

2. This section focuses on behavior related to SRHR among those students who are already sexually active. Before the training, the students reported a rather high level of SRHR behavior: Used condoms correctly for every sex (Mean = 4.00); Both partners clean the genitals every time before and after sex (Mean = 3.87). There were moderate levels of behavior for the following: If there is no condom would continue to have sex using other methods of contraception (mean = 3.46); If no condoms were available would refuse to have sex (Mean = 3.43); Would have sex while drunk (Mean = 3.23); Would have sex while using drugs (Mean = 2.48). After training, student SRH behavior was high and increased for

the following: Used a condom correctly for every sex (Mean = 4.55); Did not have sex while using drugs (Mean = 4.55); Partner used a condom when having sex (Mean = 4.40); Both cleaned genitals before and after sex (Mean = 4.33); Would refuse sex if no condom available (Mean = 3.76); Would not have sex while drunk (Mean = 3.42); If there is no condom, will continue to have sex by using other methods of contraception (Mean = 3.22) (Table 7).

Table 7: Means Scores for SRHR Behavior of Students

Behavior	Baseline Score			Endline Score		
	Mean	SD	Interpretation	Mean	SD	Interpretation
Say no to late night outs or dates with member of the opposite sex	3.65	1.05	High	3.70	1.06	High
Refuse to be alone, one-on-one with a friend of the opposite sex or a partner in a secluded place	3.61	1.04	High	3.73	1.02	High
Refusing to view pornographic images/videos when alone with a member of the opposite sex or lover	3.71	1.09	High	3.82	1.05	High
Refusing to ask for a hug, kiss from a member of the opposite sex, lover	3.64	1.06	High	3.66	1.08	High
Refuse to buy or sell sex	3.84	1.13	High	4.11	1.08	High
When feeling sexually aroused, try other activities to reduce sexual arousal and lust	3.54	1.12	High	3.76	1.03	High
Avoid looking at pictures/movies/books or other media that stimulates sexual arousal	3.51	1.10	High	3.64	1.01	High
Avoid intimacy that might lead to sex	3.58	1.07	High	3.76	0.98	High

Behavior	Baseline Score			Endline Score		
	Mean	SD	Interpretation	Mean	SD	Interpretation
Seek advice from a teacher when having sex problems	3.48	1.13	Moderate	3.68	1.08	High
Seek advice from parents, guardians, or trusted adult when having sex problems	3.49	1.12	Moderate	3.68	1.08	High
Seek advice from friends when having sex problems	3.38	1.05	Moderate	3.54	1.06	High
Searching for knowledge from the Internet when having sex problems	3.55	1.05	High	3.80	0.92	High
Notice the appearance and symptoms of abnormalities around the genitals	3.58	1.00	High	3.86	0.85	High
Clean the genitals properly	3.79	0.99	High	4.07	0.87	High
Clean and change underwear daily	3.88	1.04	High	4.32	0.83	High
Masturbate when in the mood for sex	3.24	1.11	Moderate	3.30	1.12	Moderate
* When there is something wrong with the genitals, always self-treat first	3.16	1.16	Moderate	3.36	1.19	Moderate
When there are abnormal symptoms or suspected STI, immediately see a doctor for treatment.	3.53	1.12	High	3.86	1.06	High
When there are abnormal symptoms or suspected STI, will refuse to have sex	3.55	1.12	High	3.92	1.07	High
When there are abnormal symptoms or suspected STI, will tell partner before having sex	3.49	1.12	Moderate	3.87	1.07	High

Behavior	Baseline Score			Endline Score		
	Mean	SD	Interpretation	Mean	SD	Interpretation
*** If ever had sex						
You or your sex partner use a condom when having sex	3.90	0.99	High	4.40	0.96	High
You or your sex partner use a condom correctly every time you have sex	4.00	0.88	High	4.55	0.71	Highest
If there is no condom, will refuse to have sex	3.46	1.07	Moderate	3.76	1.20	High
If there is no condom, will continue to have sex using another method of contraception	3.43	0.96	Moderate	3.22	1.31	Moderate
* Have sex while drunk	2.92	1.26	Moderate	3.42	1.36	Moderate
* Have sex while using drugs	3.76	1.20	High	4.55	0.99	Highest
Before/after sex, you and your sex partner clean the genitals every time	3.87	1.00	High	4.33	0.89	High

** Negative statement*

Factors affecting knowledge and understanding about SRHR

Analysis of the factors that correlated with knowledge of SRHR and attitudes about SRHR of students: The study found that, before the training, the sample of students had knowledge of related laws that were statistically significant (p=0.03) and in the same direction, with a Pearson coefficient (r) of 0.11. For contraceptive method, there was a relationship in the same direction which was statistically significant at the 0.04 level, with Pearson's coefficient (r) equal to 0.10. For knowledge and understanding about the SRH, the analysis found that there was a relationship in the same direction, with statistical significance at 0.00 with Pearson's coefficient (r) equal to 0.18.

Students have attitudes about SRHR with a relationship in the same direction which is statistically significant at the level of 0.00 with Pearson's coefficient (r) equal to 0.21. They have attitudes about family planning which has a relationship in the same direction with statistical

significance of 0.00 with the Pearson coefficient (r) equal to 0.14. The attitudes about STI/HIV were found to be related in the same direction with statistical significance of 0.00 with Pearson's coefficient (r) equal to 0.14.

After the training, students had knowledge about the related acts/laws with a relationship in the same direction, and with statistical significance at the 0.00 level with a Pearson coefficient (r) of 0.18. For contraception, there was a relationship in the same direction, with statistical significance at the 0.03 level with Pearson's coefficient (r) equal to 0.11. For knowledge and understanding about the SRH, the analysis found that there was a relationship in the same direction, but that was not statistically significant, with a level of 0.76 with a Pearson coefficient (r) of 0.02.

The students have attitudes about SRHR with a relationship in the same direction with statistical significance of 0.19 with the Pearson coefficient (r) equal to 0.07. Attitudes of family planning were a relationship in the same direction, but there was no statistical significance at a level of 0.80 with a Pearson coefficient (r) of 0.01. Attitudes about STI/HIV were found to have a relationship in the same direction, but there was no statistical significance at the level of 0.36 with the Pearson coefficient (r) equal to 0.05 (Table 8)

Table 8: Relationship Between Age, Knowledge, and Understanding of SRHR and Attitudes about SRHR of the Students

Variable	Baseline		Endline	
	Pearson's Correlations	p-value	Pearson's Correlations	p-value
Knowledge of acts/law	0.11	0.03	0.18**	0.00
Knowledge about contraceptive methods	0.10	0.04	0.11*	0.03
Knowledge and understanding of SRH	0.18	0.00	0.08	0.14
Attitudes on RH rights and sexual health	0.21	0.00	0.07	0.19
Attitude about family planning	0.14	0.00	0.01	0.80
Attitudes about STI/HIV	0.14	0.00	0.05	0.36

** p< 0.01 * p< 0.05

Factors correlated with students' understanding of SRHR and their attitudes about SRHR: The study found that, before the training, students had knowledge about related acts/laws with a relationship in the same direction and statistically significant at 0.03 with a Pearson coefficient

(r) of 0.11. The knowledge of contraception showed a relationship in the same direction with statistical significance at the 0.04 level with Pearson's coefficient (r) equal to 0.10. Analysis of knowledge and understanding about the SRHR of the indicate that there was a relationship in the same direction with statistical significance of 0.00 with Pearson's coefficient (r) equal to 0.18.

Analysis of attitudes about rights, RH, and sexual health from the study found that there is a relationship in the same direction with statistical significance at the level of 0.00 with Pearson's coefficient (r) equal to 0.21. Analysis of attitudes about family planning found that there was a relationship in the same direction with statistical significance of 0.05 with the Pearson coefficient (r) equal to 0.10. Analysis of attitudes about STI/HIV was found to be related in the same direction, but was not statistically significant, with a level of 0.92 and with a Pearson coefficient (r) of 0.01.

After the training, students had knowledge of acts/laws with a relationship in the opposite direction and no statistical significance at 0.20 with a Pearson coefficient (r) of -0.07. Analysis of knowledge of contraception found a relationship in the opposite direction, and with no statistical significance with a level of 0.39 with a Pearson coefficient (r) of -0.04. Analysis of knowledge and understanding about SRH found that there was a relationship in the opposite direction that was not statistically significant, with a level of 0.45 and a Pearson coefficient (r) of -0.04.

Analysis of attitudes about rights, RH and sexual health found that there is a relationship in the opposite direction with statistical significance at -0.03 with the Pearson coefficient (r) equal to 0.50. Analysis of attitude toward family planning found that there was a relationship in the opposite direction with statistical significance at 0.81 with the Pearson coefficient (r) of -0.01. Analysis of attitudes about STI/HIV was found to be in the opposite direction with statistical significance of 0.43 and Pearson coefficient (r) equal to -0.04 (Table 9).

Table 9: Relationship between GPA, Knowledge and Understanding of SRHR and Attitudes about SRHR

Variable	Baseline		Endline	
	Pearson's Correlations	p-value	Pearson's Correlations	p-value
Knowledge of acts/law	-0.05	0.34	-0.07	0.20
Knowledge about contraceptive methods	0.02	0.68	-0.04	0.39
Knowledge and understanding of SRH	0.05	0.38	-0.04	0.45
Attitudes on RH rights and sexual health	0.14	0.00	-0.03	0.50

Attitudes toward family planning	0.10	0.05	-0.01	0.81
Attitudes about STI/HIV	0.01	0.92	-0.04	0.43

* p< 0.05

Qualitative Research Results

1. Knowledge and Understanding of SRHR

1.1 Rights

1.1.1 Knowledge of Teachers and Parents/Guardians

This section focuses on the opinions of the key informants in the IDI. Respondents were asked to explain SRHR in terms of the individual's right to determine one's own gender, decision making in marriage and having children, including the right to receive SRH knowledge and services. This includes how to protect oneself from sexual harassment, or STI and SRH problems. It also covers gender equality in terms of legal protection, political rights, and various welfare measures. However, individual rights have to be limited within the framework of social norms that have been inherited. The rights must not cause trouble to family, people around them, community, and society as follows:

SRHR means the right of all genders, men, women, and LGBT people to enjoy social equality. They have the right to live with legal rights, political rights, be eligible for welfare and have the right to choose to be or determine their own gender. This includes the right to learn about sex and access knowledge about reproductive health (LPH 03 teacher)

SRHR means having the right to choose your own gender without hiding it from your parents and society; having the right to make decisions about having sex and having children, including having the right to receive accurate information and services. (CM 03 teacher)

SRHR means taking good care of one's own body, not allowing anyone to threaten you. If you are a woman, you must be gentle and reserved as your parents have taught you. (LP03 teacher)

SRHR means the rights of sexual diversity of each person, including reproductive health safety covering self-protection, contraception and STI prevention. (CR03 teacher).

SRHR means the right of individuals to choose their own gender, choose to be friends or lovers, including discriminating about having sex and protecting yourself properly, and knowing that no other person has the right to force you. (CM 04 guardian)

SRHR means not forcing a youth, and giving freedom to youth to study, make friends, or whatever, with parents teaching and giving advice. (LP04 guardian)

SRHR means not blocking people to do anything but allowing them to be themselves within the limits. Youth need to know how to protect themselves and not cause problems. (CR04 guardian)

1.1.2 Knowledge and understanding of the students

The group of student key informants focuses on explaining SRHR in a way that reflects the full focus of adolescents' freedom to choose their gender, dating friends of the opposite sex, having sex, and making any related decisions according to their own needs without coercion and without gender discrimination. The issues also extend to the need for families and society to accept these rights unconditionally, and the need to be protected by law, especially for women who are underage and who have been subjected to sexual harassment.

SRHR means the right of one's own choice to act, but after age 18 years old. (LPH 01 male student)

SRHR means the right to decide on having sex and having children or not having children. (CM 01 male student)

SRHR means the right to be the gender you like, express yourself, have sex with anyone, and social acceptance. (LP01 male student)

SRHR refers to the right that people have access to freedom of choice. You can do anything with whoever you want. Society needs to accept the needs of youth. Some parents do not allow their children to have a boyfriend or girlfriend, or forbid them from talking to one's love interest. Too much caring by a parent can stifle youth. (CR01 male student).

SRHR mean rights that others do not have the right to take offense from or blame other people's actions, such as not being completely dressed, unintentional pregnancy, etc., and giving women equal rights with men in law to protect women's rights, prevent harassment, and rape. (CM 02 female student)

SRHR means the right to use one's own body as you choose; including the right to choose to be female, male, or transgender. (LP02 female student)

SRHR means the right to choose to live with anyone, having sex in different contexts and are protected by the law on gender equality, marriage certification, and sexual harassment. (CR02 female student).

1.2 Knowledge and understanding about related law

This concerns the laws about SRHR, and the information which the provider knows and receives. The issue is the need for more knowledge and understanding to protect human rights for teachers, guardians, students, and the general public who have little or no knowledge of the law, such as the following:

1. Child Protection Act 2003: There is content about proper child care; caring for and protecting children with problems, such as children being abandoned because their parents are separated; children have been abused, abducted, or sexually assaulted by family members or others; and children who misbehave to the point of risking wrongdoing and sexual harm, etc.
2. Personal Data Protection Act 2019: There is content about protecting the privacy rights of dissemination and use of information, such as filming clips for blackmail, etc.
3. The Prevention and Response to Teen Pregnancy Act 2016: This law encourages schools to take action in preventing and solving the problem of unplanned pregnancy, such as teaching about sex and contraception, providing consultation assistance and consent to allow pregnant students to continue studying, etc.
4. Criminal law, such as sex with a minor or rape, and other forms of sexual harassment; there are laws with allow abortion at less than 12 weeks of gestation if the mother is a minor or the pregnancy occurs at an inappropriate time.
5. Other relevant laws, such as granting the right to register marriage only for opposite-sex couples but does not for same-sex couples.

1.3 Knowledge and understanding about prevention of pregnancy and STI

The key informants provided basic knowledge and understanding about birth control, HIV and STI, and prevention:

1. Methods for preventing unplanned pregnancy include abstinence, condoms, birth control pills, implants, IUD, safe period, withdrawal, emergency contraceptive pill, and male and female sterilization.
2. Methods for termination of pregnancy include visiting a doctor in a health facility, curettage, purchasing abortifacients which often result in hemorrhage, insertion of the abortion suppository into the vagina, or illegal abortion which is often unsafe.
3. Sources of counseling on pregnancy prevention and safe termination of pregnancy include hospitals near home or educational institutions, adolescent clinics in hospitals, Tambon Health Promotion Hospitals, district hospitals, social or private health facilities (CareMat, Lamphun Clinic, PPAT Chiang Mai, PPAT Lampang Polyclinic, anonymous clinics) and hotline services.
4. STI includes HIV. Common STI is gonorrhea, inflammation of the genitals of men and women, syphilis, vaginal thrush caused by dampness and poor hygiene, genital warts, etc.
5. Treatment for STI requires complete compliance with the regimen which can be pills, capsules, or injections.
6. Methods for preventing HIV and other STI, including refusal to have sex, not being promiscuous, using condoms, taking PEP within 72 hours after exposure to the risk of HIV infection.

Nonetheless, all informants reflected the need to create deeper and more extensive knowledge and understanding for teachers, guardians, and students about pregnancy and STI prevention, such as the correct use of different condom sizes, correct birth control use, symptoms of HIV and STI. There needs to be a source of advice, such as adolescent counseling services about SRH and safe abortion services. This is so that teachers can transfer knowledge to students correctly. The parents/guardians of adolescents need to monitor the child and build life skills so that students can protect themselves properly and safely. This will reduce the risk of unintended pregnancy and the incidence of HIV and STI among adolescents.

2. Accessing SRHR knowledge and services

2.1 SRHR knowledge

1. Knowledge in the school

   - The provision of compulsory teaching according to the curriculum of the Ministry of Education, such as sexuality education and health education at the primary, secondary, and vocational levels which contains content about development and the human body, family relationships heterosexual relationships, knowledge of the reproductive system, sex behavior, contraception, pregnancy, STI, sexual health, life skills, human rights, sexual rights, including advice on adolescent services, etc.

   - SRH is taught subjects such as physical education, exercise dancing and recreation, etc.

   - SRH is integrated in the teaching curriculum to suit the age of students in each grade, such as providing basic knowledge about sex in young children from elementary school level, providing knowledge about reproductive health and sex among adolescents studying at the secondary or vocational level, etc.

   - SRH is integrated with relevant research by involving students to stimulate interest and enthusiasm for further study and development of knowledge about SRHR, such as research on contraception and assigning students to conduct research with teachers.

2. Knowledge gained at the school but provided by an outside agency

   - Organizing training activities in schools about contraception and condoms, HIV and STI prevention by the Rainbow Sky Association of Thailand, CareMat, the municipal health center, etc., with public health personnel as speakers.

   - Organizing World AIDS Day activities in schools every December 1st by organizing lectures to educate people about HIV from public health personnel. There is a network of civil society organizations to participate, including organizing a play about HIV by the student leaders, having students participate in educational games and answer questions to win prizes.

   - Mobile community education activities found in highland community learning centers with speakers from public health agencies to provide basic knowledge of sex,

reproductive health, birth control, HIV and STI prevention for Thai students and people in the community. This includes activities to develop student leaders to be peer educators.

3. Knowledge from various ad hoc activities

- Organizing provincial-level campaign activities related to STI in conjunction with forest fire prevention and smoking cessation
- Intervene during student orientation in schools to warn about the impact of sex in school age.

4. Knowledge from other media channels

- People who are knowledgeable and experienced, such as teachers, friends, students, leaders, parents
- Document media such as textbooks, picture books, brochures, posters, boards
- Mass media such as drama, film, television, newspaper news
- Online media such as video clips, and Google, which is easy to access and is the most popular
- Social networking media such as LINE, Facebook, TikTok, where clips or messages are used for the exchange of information, knowledge and related experiences

2.2 SRHR services

1. School-based counseling and related services

- Asking for advice from a counselor or guidance teacher, such as unplanned pregnancy, fear of making a girlfriend pregnant, fear of contracting gonorrhea and syphilis, etc.
- Providing specific services in educational institutions of public health agencies, such as blood tests to diagnose HIV, and distributing condoms to target students.
- Health service centers of formal education institutions such as:

Ob-un Clinic in Lampang Technical College which was established by cooperation between educational institutions, hospitals, and the provincial health officer (PHO). This clinic is open for counseling on all teenage problems, drugs, quarrels, affairs, and sex problems, etc., with a local teacher as the main administrator. Normally, the teacher will talk to the students who come to ask for advice to help solve the initial problem first. If

it is important and cannot be dealt with alone, such as pregnancy, the teacher will make an appointment with the parent/guardian to join the conversation to find a solution together. In some cases, it is necessary to refer the youth to a drug rehabilitation facility or a hospital that handles pregnancy, etc.

The Youth Health Center in Chiang Rai Technical College is open for counseling on teenage problems every Thursday afternoon, including treatment for drug addiction and smoking cessation. If pregnancy or STI is suspected, if necessary, the youth is referred to see a doctor at the hospital.

- Community service center

There are special highland community education centers which is a consulting service on all matters. There are teachers available to talk, educate and advise on sex and RH issues, especially pregnancy and STI prevention, as well as handing out condoms to students in need.

2. Services outside the school setting

- Distribution of pharmaceutical services, such as pharmacies for condoms, contraceptives, and abortifacients; convenience store (e.g., 7-11) to buy condoms; condom vending machine service in department stores; public health facilities, such as adolescent clinics at hospitals which offer counseling services on adolescent issues, contraception, pregnancy and abortion; specialized clinics in hospitals with doctors providing treatment for HIV and STI, obstetrics and gynecology clinics that provide pelvic exam, antenatal care, and termination of pregnancy, etc.
- Private health service sources such as general medical clinics, polyclinics that provides pregnancy termination services.
- Family planning and pregnancy termination service units, such as PPAT medical clinics in each province
- Use of the hotline #1663, which focuses on counseling on HIV/STI and unplanned pregnancy. There is an advantage of the hotline in terms of not having to talking face-to-face. Adolescents can ask and seek advice on all matters that are confidential and matters which they do not want their parents, guardians, or others to know about,

especially about love and sex problems. However, the disadvantage of the Hotline is busy lines and long waiting times, and not getting the same counselor.

- Use of anonymous clinic services which provides anonymous services for HIV testing and treatment and STI screening and counseling on sexual harassment, unwanted pregnancy, and abortion.
- The use of electronic media to inquire and seek advice from web pages on the Internet.
- Outside service sources (e.g., illegal abortion services) because the couple does not dare go to a public hospital or general clinic. Yet, these illegal abortion services are usually unsafe.

3. Other personal services

- Seeking advice from close friends is the most popular first option. Peer groups are intimate, trusting, and understanding of each other. For example, a condom breaks during sex, what to do? What if there was unsafe sex? Where to buy emergency contraceptive pills how to take birth control pills, etc., Friends are a first point of contact who may give accurate or inaccurate advice. The friend can act as an intermediary and ask the guidance counselor at school what to do.
- A sympathetic parent or guardian can be consulted. But this is only viable if there is a close relationship. Youth need to know they can trust their parents with personal information without fear of being scolded or blamed. Often, parents are brought into the discussion if the school or teacher learns about a student's SRH problem.
- Posting threads on social networking media to ask people for advice. This is an anonymous way to get advice, which may or may not be accurate or useful. Popular forums are LINE, Facebook, TikTok, and various other social media sites on the Internet.

2.3 Obstacles to accessing SRHR information and services

1. Individual obstacles

Adolescents' awareness affects their knowledge or access to services, or gaining knowledge but not remembering, or not putting it into practice. Some gain the required knowledge but do not change behavior until there is a problem. In general, adolescents tend to pay attention or focus on SRHR and related services only when they are experiencing problems

on their own, or when they have a friend come to ask for advice. In addition, the shyness of adolescents experiencing SRH problems is also a reason why adolescents are reluctant to use counseling services or seek treatment for existing SRH health problems, such as unplanned pregnancy, suspicion of an STI, etc.

2. Socio-cultural obstacles

These obstacles are related to adolescents' shyness in seeking counseling or accessing safe health services in case of SRH-related health problems, especially unintended pregnancy. Thai society's prejudice and norms about sexuality and premarital sex and pregnancy have led teenagers to keep secrets about their SRH problems, especially from their families, due to fear of being scorned. They are afraid that parents/guardians do not understand and will just scold them. They may be afraid of being teased by peers, etc. The result is that teenagers try to solve those problems by searching for information themselves or relying on friends. This may lead to problems that escalate from receiving inaccurate advice, such as recommending illegal abortions, or taking abortifacients by themselves, etc.

3. Content obstacles

Despite the fact that sex education is taught in educational institutions, there remain problems with the content and expertise of the teachers. That is, the content in the curriculum is not deep or up-to-date with the modern context. The curriculum usually does not cover SRHR law, so it needs to be updated. In addition, some teachers may have insufficient knowledge and expertise, and students cannot get a thorough understanding. In addition, training to provide additional knowledge from external agencies does not cover all target groups in educational institutions, out-of-school teenagers, and the general public. For example, programs offer training only for 50 students in a school where there are 3,500 students. The training is often too short and lacks continuity in reinforcing knowledge or teaching until proficiency is attained. There needs to be more time for skills building, such as putting on condoms starting by tearing the envelope through to disposal. Students need more advice on knowledge and service about family planning, medical examination, pregnancy, and termination of pregnancy, etc.

4. Other obstacles

- Service locations do not cover all areas, especially in remote and difficult-to-reach areas.

- The parent/guardian's inability to use online media to gain access to knowledge for advising children.
- The potential of adolescents to consider the many resources available on the Internet which is a popular channel for teenagers to search, but choosing to follow unreliable or inaccurate advice on the Internet, and that can lead to unexpected problems.
- Lack of serious work by relevant agencies to provide knowledge and services on SRHR, especially knowledge of relevant laws.

3. Attitudes to relationships and love

The attitudes found in this study can be divided into three groups: Attitudes towards love; attitudes towards sex in the school years; and attitude towards pregnancy while still a student in school. The attitudes and examples of supporting statements from the interviewees are summarized in the table below:

Object	Core Attitude	Example of support
Love	Love is just a changeable feeling.	"*Love is just a feeling between two people. In school age, dating is passive, but good. Talking to your girlfriend makes you feel comfortable and sincere. But when you get married, and you have children, there is another feeling called life partner; you must be together to help each other to make a living.*" (CR01 male student)
	Whether or not a love relationship lasts depends on two people.	"*We cannot decide for them. Some couples really love each other, and they feel it's destiny. Some pairs have swapped pairs."* (CR03 teacher)
	Teenage love uses emotions to lead reason	"*Youth love nowadays is intense, very emotional. I don't know if the era has changed or not. In the past, I was just secretly having a crush, but then was disappointed. But now there are many ways of expressing love or affection. However, when trying to separate them, it can become a big problem. And*

Object	Core Attitude	Example of support
		then there's the pressure all around. Some people can't reveal their true feelings. There was the tragic case of two students in primary grades 5 or 6 who thought they were in love. But when their parents found out, they ordered the pair to break up. Two days later, they committed a double suicide. There are many more stories like this." (CM03 teacher)
	Teenage love is fickle and easily variable	-"*I've seen people flirting with others. There may be 2 or 3 young men arguing over a single woman. Or a woman snatches a single man from another woman. Some men enter a love relationship for a month and then get bored and start looking for another. Nowadays it seems like the norm for love. I don't know what kind of love they think that is; is it lust or love?"* (LPH04 guardian) -"*We are still young, still studying, and maybe we will meet a new persons tomorrow. Now, everything is uncertain. So, people just have relationships that are not too committed*." (CR01 male student) -"*Love in youth does not last forever. There may be a chance to meet many new people. Sometimes true love fades with distance. People who have lived together for 3 years and seemed to be harmoniously in love. But then, they split up and go in different directions. Paranoia arises. If you agree to separate, it's good to end it before it gets too far. But if not, you might do something unexpected due to the mood of your age. It's superficial. True love is hard to find in youth these days*. "(LP04 guardian)

Object	Core Attitude	Example of support
		-*"Teenagers are like Puppy Love, just like hanging out together, sometimes co-habiting. It's a love that does not involve thinking about the future. They live in the present. They have little patience. Breaking up is easy; and finding a new partner is too."* (LP03 teacher)
	Easy communication makes teenage romance more imitative and revealing.	-*"A student may think they've found a match. Their emotions can become like an obsession. In the past, there were no smart phones or Chat apps. Phones were hardly used. Now every student is online all the time. They can reach new people this way. It's an imitated behavior, like a fad. Love is much more open than before*." (CM04 guardian) -"*Youth grew up with the media, and likes and love can happen very quickly. In the past, when I was a young, I started to fall in love at the age of 15-16. Now, the students think they are in love starting in elementary school, like primary grades 3 or 4. This will not end well*." (CM03 teacher)
	Love is mutual understanding and giving.	-"*Look at love as something that two people give to each other and show concern for each other. They may buy presents such as flowers, teddy bears, talking every day."* (CM01 male student) -"*Love is giving each other respect, acceptance, sacrifice. If they understand each other, they can go together, have a chat, talk, say love words, hug, and hold hands*." (LPH01 male student)

Object	Core Attitude	Example of support
		-"*Love is caring for another person and knowing both advantages and disadvantages, and accepting each other*." (CR02 female student)
	Love is great, but having a girlfriend is something to think about. A persons must study the other persons thoroughly.	-"*Having a boyfriend is like having a burden, that is, we are worried about something. If we love someone, we will tell other guys that we already have a boyfriend. But most guys are not like that. If they already have a girlfriend they will deny it if another girl asks. Thus, I think it is better to be free and independent. I can be self-reliant. Sometimes men hit women. I don't want to see this in my life – so it is better to stay solo*." (CM 02 female student) -"*I don't have a boyfriend yet. There are only people who I talk to; I'm not in a hurry to meet, talk continuously for a long time; but it's good to have close friends and go for snacks together. Before, I had a boyfriend, and we dated for only 4 months; so it was difficult to open up*." (LPH02 female student)
Sex in the school years	Female adolescents value intimate relationships more than male adolescents.	-"*When a girl has a boyfriend, she wants to be with her boyfriend and give love to her boyfriend. She wants to share meals with him, and to meet and talk. For guys, dating is just a game or a sport. This person is beautiful. This person meets the specification. So, they become bored easily once they feel they have won a girl's heart; then they move on to the next challenge*." (LPH03 teacher) - "*Girls are afraid of going too far; if they become too involved, then there will be love. But there is fear of*

Object	Core Attitude	Example of support
		regret and being jilted. The girl is afraid she will not be able to accept it. (CR02 female student)
	Having sex during school age is inappropriate. While being a personal right, sex cannot be prohibited. So, you have to be prepared to prevent or deal with problems that may arise	-"*Having sex while still a full-time student is not appropriate. But it also depends on the family*." (LPH 04 guardian) -"*I want to have a job first -- have a job and have money, and then can have a sex relationship. Having sex first is inappropriate. Still, it is their right. We shouldn't interfere with others' affairs."* (CM01 male student) -"*If you have a girl/boyfriend, you can have one. But bring her/him to meet the parents; let's get to know each other. But you have to teach adolescents about waiting, protection, and not having a sex relationship prematurely. We can't watch them 24 hours a day. Thus, they are going to do what they want. We just have to try to make them ready and not to cause problems*." (CM04 guardian) -*"Normally, teenagers nowadays enter into love relationships. They arrange to meet, they may hug each other, but they can't go too far. The school and government does not let male and female students stay in the same dorm. Still, they find a way. So we have to teach them about birth control and how to avoid mistakes. We have to be practical and try to give them life skills instead of forbidding love relationships*." (CR03 teacher)

Object	Core Attitude	Example of support
	Having sex that is based on lust rather than love often creates problems.	-"*Having sex is possible. without doing anything wrong. It's human nature. It's a basic human need. However, if they are a full-time student, then being in a relationship can cause problems. One problem of course is unplanned pregnancy. That could mean the need for abortion. "* (LPH03 teacher) -*"If the youth decide to live together too abruptly, then it probably won't work out. They must be patient and wait for the right time. They should try a steady relationship first for a length of time in order to get to know each other well enough. If habits can't go together, they have to separate. But if there is an accidental pregnancy, then it's difficult to break up."* (LP01 male student)
	Adolescent sex is a personal right. It's about two people more than a matter of morality	-"*It's not wrong. Should I have sex before marriage or not? It's up to the two people. But they should get married first. Then you must ask your parents for permission. Must know both sides*" (LPH02 female student) -"*In adolescent life, sex can be inevitable. But that doesn't mean it's 100% OK. They may not yet be married or legal. But I think it is still normal. It's not right to scorn the couple as sinful. Someone who says that may not have been in the same position."* (LPH01 male student) -"*As far as I can see, changing sex partners often is not a good thing. It is just a short-time love. People should try to find a life partner. But youth these days don't care. I think it's their right and freedom, they*

Object	Core Attitude	Example of support
		can choose who they want to be with, they can do whatever they want, there's no limit, they don't have to feel guilty anymore." (CR04 guardian)
	Having sex must be within the scope of responsibility.	-"*It's not wrong that they have sex -- if they really love each other and are committed to finishing school to help build the future. It's not wrong to live together, but they must know the boundaries. They need to complete their studies in order to obtain a degree to impress their parents, then have a good job, do good deeds, and do not cause trouble for the parents." (LP04 guardian).* -"*If they have a relationships but help each other to complete their education, then that is OK. But if done in the wrong way, getting involved in drugs, etc., then that is not good*." (CR04 guardian)
	Modern teenagers don't value the virginity of men and women and marriage	-"*Now the world has changed, and women and men can cohabit before marriage. The adolescent society has accepted this norm. It doesn't seem to matter how many sex partners a person has had before. They really don't care about these things anymore."* (CR01 male student) -"*Grandparents like to think that if a young man and woman live together, they must marry. But nowadays there is no such thing. It's not necessary. Let it be a matter of the future; you can think about getting married later and try to do your best today*." (LP02 female student)
	Society does not accept a male and	-" *If someone takes their lover back to their house when the parents/guardians aren't there, the*

Object	Core Attitude	Example of support
	female student sleeping together, even if the family can accept it.	*neighbors will gossip about that. Especially if the couple are students. Looking at the other side, the parents raised the children to be like this and they tacitly approve. Thus, maybe the gossip isn't important*." (CM 01 male student)
Pregnancy while still a full-time student	Being pregnant during school age is inappropriate because it can create a big problem. Teens should wait to get pregnant when they're ready and able to take responsibility for the child and family	-"*Today, young people don't seem to have much responsibility. Some youth age 17-18 years want to have a cute child as a pet. But that is not appropriate. Finally, the burden falls on the grandparents. Youth should wait to reach legal age, then have children. The youth need to develop into a responsible adult first, with the mind and resources to support a family*." (LPH0 guardian) -"*Not being ready to get pregnant is already a serious matter. There are many problems. These are young people having babies, and it would be even harder for them to bring up a child when one is still a student and does not have a good job and income. It takes money*." (CM01 male student)
	Highlanders welcome pregnancy regardless of age.	- "*In highland communities, the parents and elders are pleased with a pregnancy no matter how old the parents are. That is because their culture requires a lot of children in order to have enough survival. Therefore, there is usually no problem of abortion or termination of pregnancy. After getting pregnant, highland youth always get married*." (CM03 teacher)
	Women are at a disadvantage since the men are not the ones	-"*Women are the most disadvantaged. Men don't have to be pregnant for 9 months; thus, men won't understand women's feelings. If you make just one*

Object	Core Attitude	Example of support
	who carry the pregnancy and responsibilities.	*mistake, you will have to bear the consequences. If it were me, I wouldn't let approve of my partner having an abortion*." (LP01 male student) -"*If there is an accidental pregnancy while studying, the woman is almost always at a disadvantage. Parents know immediately that if their daughter carries the pregnancy, she will lose at least one semester, in addition to the other negative consequences*." (LP04 guardian)
	Pregnancy can be intentional or accidental. And the decision to have an abortion is a personal right. Society, therefore, should not dictate right or wrong about this matter.	-"*There are cases of students getting pregnant while still enrolled full-time. Some go for an abortion. Others who have wealthy families may choose to keep the child. If the couple has resources but aborts the pregnancy, society may condemn them, as sinful. If it were me, and I was not ready, then I would terminate the pregnancy*." (LPH02 female student) -"*It's not wrong; if the couple isn't ready, then they should not be forced to have a child. , I'm not right with having an unprepared pregnancy. When a mistake happens, it's better to find a solution than to blame anyone or tell them what is right and what is wrong*." (CR02 female student)
	Families should accept their mistakes and help resolve them.	-"*If someone's daughter becomes pregnant while still in school, the parents have to accept the truth. The more you complain or blame, it will just compound the guilt and regret for everyone. The relatives should offer to raise the child until the mother can finish school and support herself. If the young woman is*

Object	Core Attitude	Example of support
		forced to have an abortion against her will, then she might be scarred for life." (CR04 guardian)
	The decision to resolve the problem of pregnancy during school age is the right of the families of the male and female youth.	-"*Pregnancy during school-age is a big problem. Thus, it's a decision for the whole family. There needs to be a joint decision to determine if an abortion is necessary. If so, it is the couple's right. Some people are ready, but some people are not ready to have a child. It may be wiser to abort this pregnancy to enable the couple to finish school, get good jobs, and then have a family.* "(CP03 teacher) -"*The families of the male and female youth need to confer. It affects both families. Unfortunately, too many youths are afraid to tell the parents since they fear blame and scorn. They are afraid of disappointing the parents and not being able to finish school."* (LP04 guardian)

4. Sex behavior and prevention of STI

4.1 Sex risk behavior

The problem of sex that is most worrying for adolescents is the unintended pregnancy. This is because the couple is still in school and usually do not have the means to raise a child. There will be social pressure to marry, and the students will have to drop out of school or fall far behind their classmates. This can be a source of deep shame. Other than unplanned pregnancy, sexually active youth have to face the risk of STI, including HIV. The following are factors which may exacerbate risk for teens and undermine SRH:

1. Some women today dress in ways that may invite sexual harassment, such as a strapless top, strapless dress, etc. These cannot be prohibited because it is personal taste.

2. Working after school hours in entertainment venues, especially for young women who are waitresses. There is a constant risk of sexual harassment and attempted seduction by older men with money.
3. Traveling and drinking in entertainment places. This may lead to unintended necking and intimate contact, which can lead to casual sex with an acquaintance or even a stranger. The risk is for both men and women. When one is too drunk, they can no longer control their emotions or make sound judgment. It is also highly unlikely that contraception and disease prevention will be practiced when one or both partners are drunk.
4. Dating friends of the opposite sex in the same educational institution or different educational institutions can progress to the point of deciding to live together in a dormitory, apartment, or at home. Without good prevention, there are bound to be problems, especially unplanned pregnancy. In those situations, it becomes difficult to have a parent/guardian take part in making decisions about continuing child support or having an abortion. Some students with a pregnancy have to drop out of school for a period of time for either abortion or childbirth. Some drop out altogether and decide to marry and raise children. When the couple is too young to start a family, that can result in depression and lack of social adjustment. Some cases have to decide to have an abortion because the families of the couple are not ready to raise a child on their behalf. There are also family problems that follow from the separation of parents who are too young.
5. There is increased exchange of sex partners and one-night stands to meet the mood and needs of both men and women. These casual relationships greatly increase the risk of STI/HIV and unintended pregnancy.
6. Sale of nudity and sexual services via online social media is increasingly putting adolescents at risk of entering into casual sex relationships and commercial sex.
7. Adolescents are prone to concealing an accidental pregnancy or STI from teachers, parents, and guardians. This can increase risk of exacerbating the problem if the youth try to manage the situation themselves. Teenagers tend to talk about problems with their friends or through anonymous resources on the Internet. Those sources may give

inaccurate advice about resolving sexual problems. Often, the problem may escalate, for example, when a couple is referred to an illegal abortion clinic, or receives poor advice on how to take emergency contraception, etc.

4.2 Behavior which supports STI prevention

The respondents agreed that the HIV/STI problem was not as worrying as accidental pregnancy during school. That is because most teenagers know how to prevent HIV and, besides, HIV can now be treated and PLHIV can live a normal life, although it cannot be completely cured. Also, most of the common STI in Thailand can be cured. Behaviors that help prevent STI include:

1. Use a condom every time you have sex
2. Having sex with only one, faithful partner; not dating and having sex with many people, especially strangers who may have had sex with countless men and women before
3. Maintaining sexual health and keeping the body clean on a daily basis
4. Using self-help methods to deal with one's own emotions without involving others that will cause problems later
5. Controlling emotions when having sexual desire by doing distracting activities such as playing sports, playing music, singing, doing homework, planning holidays, and traveling with friends, etc.
6. Refusing to have sex when the opportunity permits, such as talking to each other reasonably and honestly, and explaining that you are not ready. If your lover says they want to have sex now, then say that it's better to wait until both are ready, because people who really love each other don't need sex; stay focused and prevail over the emotional provocation of the other persons
7. Not being associated with or joining a group of friends who have risky sex behaviors which will lead to HIV and STI, or inviting each other to drink alcohol and inviting others to go to a sex establishment, etc.
8. Choosing not to have friends of the opposite sex while still a full-time student, and not get involved in vices that risk provoking sex

9. Protect yourself from being harassed, such as avoiding one-on-one time with friends of the opposite sex, dressing in a way that is not provocative, learning to self-defense skills, choosing to stay at home at night or stay in a safe dormitory, etc.

4.3 Factors influencing sex behavior

1. Online media

In today's world, teenagers can easily access online media through the Internet. It's not difficult for teenagers to watch nude clips or porn movies. They can easily watch a movie with hugging and kissing on most platforms. When a feeling of curiosity arises, it leads to behavior that imitates the media. The teens may start by visiting pubs and bars, drinking alcohol, and accidentally having sex. This can start at age under 15 years old, and adolescence is a time of flirt with the opposite sex, and finding a lover. Increasingly, in Thai society it is more acceptable for a young couple to go out together just the two of them, holding hands, linking arms, hugging, kissing each other on the cheek, and other public displays of affection. In the past, this would have been taboo in Thai polite society. In addition, youth can now contact each other via online social media around the clock, and it is convenient and fast. Facebook and LINE, in particular, are also an opportunity for teens to build better relationships or to be more easily tempted to sexual harassment.

2. Support from family members

Parental upbringing influences adolescents' sexual thinking and expression. Adolescents need to be in a household with a parent or guardian who is close, understanding, nurturing, gently admonishing, and being a good role model. They are more likely to avoid risky sexual behavior in that setting compared to adolescents who live far away from home or in households where the parents are overbearing and harsh disciplinarians who believe that scolding with keep a teen in line. Teens who can talk to their parent(s) about everything will probably make more responsible decisions regarding getting involved with the opposite sex. In particular, a mother needs to keep reminding her son to honor and respect women. If he has a girlfriend, he must protect her well. He should not put more burden on the mother by, for example, having an accidental pregnancy. Often, adolescent boys take their parents as role models, i.e., their parents

waited to have sex until they were married, and then could plan to have children after having a stable job and proper status.

3. Socio-cultural change

Lifestyle changes from the traditional way of life is forcing many of the today's teens to have to leave the family home and travel to a different province or region to continue their studies at a higher grade. This allows the teens to live a more independent life, and not under the close supervision of a parent of adult relative. Therefore, this freedom is tempting for youth to enter into a sexual relationship with a classmate or other peer, and the families may not know this is happening.

5. Recommendations

5.1 Recommendations for improving access to knowledge

1. There is a need to increase public relations and provide knowledge on relevant laws, especially privacy rights and termination of pregnancy.

2. Public health agencies, especially hospitals, should play a role in organizing continuous knowledge training in collaboration with Tambon health promotion hospitals by focusing on educating young people in dormitories, educational institutions, and communities.

3. Sex education should be organized for teachers to have expertise in disseminating it; teachers need to be able to explain lessons more clearly and deeply to students; in particular, providing advice on resources and services for sexual health problems counseling and related support.

4. There should be additional activities or extra training outside the classroom for all students continuously so that they have more profound knowledge; there should be medical personnel or experts who are invited to be speakers, and demonstrations on how to apply a condom; choosing the right condom size, hygiene, and having sex and its effects; knowing how to prevent pregnancy and communicable diseases, life planning with a lover, and recommending relevant services.

5. There should be more dissemination of knowledge and experience through TV programs, especially on proper love, sex problems and pregnancy in the school years, etc., by arranging programs at time which is easily accessible for youth.

6. There should be concise and easy-to-understand educational materials, such as short video clips of no more than 3 minutes, to attract teenagers' attention, or published on the Internet, especially YouTube.

7. There should be a focus on the development of online media which is popular among teenagers, including the school website as well as general websites to provide information, knowledge, news, public relations, and relevant knowledge for teenagers.

8. Forums should be organized in educational institutions and communities across the north region using the form of educational games, Q&A contests with prizes, etc. to stimulate the interest and learning of teenagers.

5.2 Recommendations for improving access to SRH services

1. SRH health services, especially counseling clinics in educational institutions and communities, should be expanded to cover all areas and be easily accessible.
2. There should be an increase public relation through online social media about SRH service establishments such as ads on Facebook by specifying the contact person, location and phone number or the web page of each service place.
3. A system of non-confrontational counseling services should be developed so that adolescents feel they can open up and reveal their real problems. This will lead to solving problems on the spot rather than requiring face-to-face consultation, such as a 24-hour hotline service, making a specific counseling app, creation of Q&A topics on website pages that are easily accessible, setting up call center services in educational institutions, etc.
4. Adolescents should be reassured about confidentiality through all forms of service. If youth privacy is not respected, then they will not return to the service. In one case, a doctor informed the mother of a teen client about the problem. That teen was then reprimanded by his mother. Accordingly, the teen advised friends not to visit that clinic.

5.3 Recommendations for prevention of HIV and STI

1. More in-depth education should be provided to adolescents about the symptoms of HIV and STI, including the use of emergency prophylaxis, especially PrEP and PEP.

2. Special online chat rooms should be developed to provide information and counseling on HIV and STI.

3. There should be units to advise and help students in educational institutions, such as counseling units with a trained counselor on hand throughout the semester.

4. STI testing services should be provided in educational institutions, so that the disease can be diagnosed and treated promptly.

5. Student clubs should be established in educational institutions to continually focus on specific HIV and STI prevention activities.

6. There should be more service points to buy condoms that are easily accessible and open, such as condom vending machines.

7. There should be an awareness campaigns for the general public in society and the community to build partnerships to prevent HIV and STI among adolescents.

8. The parents/guardian should help monitor risky behaviors of the adolescent in their care; they should give advice, and train them to know how to make friends of the opposite sex and prevent disease.

5.4 Recommendations for prevention of unplanned pregnancy

1. Training should be organized in educational institutions to raise awareness of adolescents about the impact of unintended pregnancy while still a student, such as delays in completing one's education and economic problems, etc. The schools should educate students on contraception thoroughly, including planning married life, such as postponing childbearing until financially ready with a steady job, etc.

2. There should be an ongoing campaign to prevent the problem of unplanned pregnancy, especially for women at risk of sexual harassment.

3. There should be a counseling clinic within the educational institution about contraception for both male and female partners.

4. The parents/guardian should help be alert for when an adolescent in their care is nearing the age of initiating sex; they should help advise about safe sex even before the youth is sexually active, otherwise it might be too late; the parent/guardian must be open-minded, be a sympathetic listener, and work together to find solutions rather than pressuring, scolding or coercing the youth, who may rebel or do something rash.

5.5 Role-playing recommendations for the prevention of unplanned pregnancy, HIV and STI

1. Roles of related agencies: Proactive public relations directives should be established to create a public understanding of acceptance of openly-gendered solutions and services. There should be discussion of adolescent sex, premature pregnancy, and STIs, including focusing on being a center for counseling and solving adolescent problems seriously and openly; including SRH issues such as legal abortion clinics, STI treatment clinics, hospitals services for patients with depression or psychological problems related to sex, pregnancy during school age, abandonment, being threatened, etc.
2. Role of society: Society should be open to accepting changes in lifestyles and ideas of modern adolescents who are different from the norm of the previous generation rather than blocking and oppressing the lives of teenagers. The truth and mistakes of teenagers should be looked at with understanding rather than criticizing, condemning, or showing disdain for their choices or mistakes. The denunciation will lead to feelings of fear and humiliation among youth who are afraid to openly seek advice or use SRH health services, especially related to pregnancy problems while still in school. Today's new society should take into account the rights of adolescents to decide to choose a partner, whether to have sex, and to choose their own lifestyle. Problems with SRH should be viewed as a general condition, and people should be allowed to talk about these things normally. There should be advice or cooperation in preventing and resolving problems that arise. These efforts will act as a shield against SRH problems as well as helping adolescents who have problems to live in society constructively and harmoniously.
3. Parent/Guardian role: The parent/guardian should understand the child or youth in their care. They should adjust their perspective according to the changing era. They should be close to their children and give teenagers the opportunity to make friends of the opposite sex, while keeping them in sight and supporting them to complete their studies together. When a mistake occurs, the parent/guardian

should talk to the child to understand the problem, give advice, and find a solution together. If the youth is prohibited or pressured to be within the cultural framework, they might stop sharing their personal issues, or rebel and stray in the wrong direction, leading to worse social problems.

4. Teacher's role: Teachers should accept the rights of the students and be a good mentor. The teacher should be a good listener to help suggest decision-making options and give proper advice to students. For example, teachers should be able to have a sympathetic conversation with pregnant students to find a solution. The teacher should be able to recommend pregnancy prevention and prevention of HIV/STI, etc. In addition, teachers should focus on warning about sex in adolescence to prevent unintended pregnancy problems and SRH problems that could result.
5. Role of teens: Adolescents should be aware of their important role in education and future security. They should think carefully before deciding to enter into an intimate relationship with anyone, or which social groups to join. They need to consider the appropriateness and impact of having friends of the opposite sex, and know one's roles and responsibilities while still in school. They should also pay attention to their own SRH care. They must have the knowledge and skills to prevent unintended pregnancy and STI. Emphasis is placed on use of condoms and contraceptive pill. Youth need to access accurate sources of information and seek good advice from a parent/guardian, teacher, friend or service provider related to SRH issues.

Chapter 5

Summary, Discussion, and Recommendations

This study was quantitative research and a qualitative research (Mixed Methods) study that explored knowledge and understanding, attitudes and behaviors of students in 12 educational institutions in four provinces in the north region of Thailand, namely Chiang Mai, Chiang Rai, Lampang, and Lamphun. Quantitative data were obtained by collecting data from questionnaires. Qualitative data were collected by IDI with key informants, and observation. All data to be analyzed for completeness and supplemented by distilling lessons learned after the Project ended. The research results can be summarized as follows:

Summary of the quantitative research findings

1. **The sample**

The sample had an average age of 15.7 years (minimum age 13 years, maximum age 17 years), and there were 210 males, 173 females, and 1 alternative gender. Most students were at the vocational education level, followed by Level GRADE 10 – GRADE 11, and Level GRADE 7 – GRADE 9. The average GPA of most respondents is > 3.50, followed by between 3.00 - 3.49. Most students lived with both parents, followed by a broken family (divorced parents). Most students lived in the family home; others lived in a dorm or rented room.

2. **Relationships, love, sex behavior and HIV/STI**

Of the sample, 132 students had lovers or steady boyfriends/girlfriends. Fully 85 had ever had sex and, of these, they had sex 1-2 times a month, followed by 3-5 times a week. Most of the sexually active students used condoms as contraception when having sex (64.6%), followed by using emergency contraception (9.2%). Most accessed prevention supplies at a convenience store, supermarket, or pharmacy (80.3%), followed by an adolescent clinic, health service unit, or hospital (13.1%).

3. **Knowledge and understanding and attitudes and behavior related to SRHR of the students**

Knowledge and understanding about SRHR of the students: After participating in the training program, students gained more knowledge and understanding about SRHR. They have

more knowledge in the acts/law up to a moderate level (Mean = 3.36). Knowledge and understanding about contraceptive methods reached a moderate level (Mean = 3.39). Knowledge and understanding about SRH was at a high level (Mean = 3.55). Attitudes about SRHR after the training was at a high level (Mean = 3.76). Attitude toward family planning was at a high level (Mean = 3.75) and attitude about STI/HIV was at a moderate level (Mean = 3.26). Behaviors about SRHR after the training reached a high level (Mean = 3.77). Among the sexually active students, the behavior score was at an even higher level (Mean = 4.03).

4. Recommendations

The Project was implemented over a period of one year with the goal of developing knowledgeable youth peer leaders, and disseminating knowledge on SRHR, STI/HIV infection and prevention among the entire student body. The active exchange of experiences among student peer leaders and teachers was a success. However, due to the relatively short period of time of the Project, the student leaders need to be empowered and continued to develop their knowledge and skills in the future in order to pass on knowledge to friends and leaders of the next generation of students.

5. Discussion of the findings

By this Project, PPAT aimed to develop a cadre of student peer leaders to educate their classmates in school. They were supported by teachers, using content that is consistent with statements prepared by the International Medical Advisory Committee. The youth peers are helping to SRH information, and can continue to function as lay community health educators, who are trained in the context of SRH service delivery (IPPF, 2016). The peer leaders are helping their fellow students to gain a better understanding of SRHR, which is in line with the findings of a review of sex education in Thai schools, stating that the reason sex education often occurs in schools is due to the expectation that sex education will lead to prevention of problems arising from unsafe sex. Therefore, an appropriate target audience is students, and teachers are expected to be responsible for teaching sex education (UNICEF, 2016).

Based on the data analysis, most attitudes, and behaviors about SRHR of the students reached a moderate level. The sample of students was trained with a knowledge package designed by PPAT to suit the context of students in schools located in the upper north region, which has a diversity of nationalities and cultures, with some living in remote highland areas. The

learning content covers SRHR STI protection, HIV/AIDS, PrEP, PEP, undetectable = untransmissible (U=U), access to prevention supplies, etc. The training helped boost the level of knowledge and understanding of the students to a high level in some areas, and improved attitudes toward SRH and toward SRH behavior. That said, some areas achieved only moderate level of knowledge and attitudes. Thus, there are still opportunities for student peer leaders to increase their knowledge and develop their potential in the future in order to pass on knowledge to their classmates and develop the next generation of peer leaders. Teachers and stakeholders can help by strengthening student peer leaders and networks to support sustainable leadership work.

Summary of the qualitative research findings

1. Knowledge and understanding of SRHR

Knowledge and understanding about SRHR. Teachers and parents/guardians describe SRHR as similar to students in terms of freedom of one's own body. In the view of students, SRHR include the right to live a certain lifestyle, choice to have sex, enter into a committed relationship, and deciding to have children. SRHR include legal, political and welfare rights. Students value the freedom that must be protected by law. The teachers and parents/guardians emphasized that rights and freedoms must be within certain limits and aligned with social norms; actions should not cause trouble to others. In addition, most key informants had basic knowledge and understanding about how to prevent unplanned pregnancy and how to access safe pregnancy termination. However, there is little or no knowledge and understanding of the relevant SRH laws. Therefore, more knowledge and understanding of the law is needed along with rights and prevention of unintended pregnancy and STIs.

Access to knowledge about SRHR was found both inside and outside the educational institutions. The channels for accessing knowledge in the classroom include the provision of compulsory instruction in sexuality education and health education from primary to vocational levels. There is integration of SRH content into other subjects in the standard curriculum. Outside the classroom, the content is integrated with student orientation and organization of special educational activities and campaigns inside and outside the school with the support of government agencies and the private sector. In particular, there are mobile education activities to serve the remote highland communities. There is also access to knowledge sources from

personal media, document media, online media, and online social networking media. Access to SRHR services was also found both inside and outside the school. There are health centers and ad hoc services of public health agencies. As for the use of services outside of educational institutions, there are drug and medical supplies outlets, public and private health service providers, family planning and pregnancy termination service units, hotlines, anonymous clinics, electronic media with links to the Internet, etc., That said, there is often inaccurate information, and some unsuspecting youth can be steered toward illegal and unsafe abortion services. Youth will first seek advice from close friends or the Internet before approaching a parent/guardian if they have SRH issues. However, there are obstacles in accessing such knowledge and services, including personal factors, sociocultural factors, content factors, and other factors which can become an obstacle to SRH knowledge and care. Today, parents/guardians need to be more competent in using online media, and adolescents need to be skilled in knowing which websites provide reliable information and referral.

2. Attitudes toward love and relationships

Attitudes towards love were: 1) Love is just a feeling that can change, 2) Whether or not a love relationship lasts depends on two people, 3) Teenage love is led more by the heart than the head, 4) Teenage love is superficial and fickle, 5) Easy communication makes teenage love more imitative and revealing; 6) Love is mutual understanding and giving; and 7) Love is good, but need to have self-confidence and think carefully, and must study your partner carefully.

Attitudes toward sex in school age were: 1) Female adolescents give more importance to intimate relationship than male adolescents; 2) Sex during school age is inappropriate, while it is a personal right that cannot be prohibited -- better to prevent problems that may occur; 3) Having sex that is based on lust more than love often creates problems; 4) Having sex among adolescents is a personal right -- It's between the two people; 5) Having sex must be within the scope of responsibility; 6) Modern teenagers don't value the virginity of men and women or marriage; and 7) Society does not accept students who live together during school age, even though the family might accept it.

Attitudes towards pregnancy in school age were as follows: 1) Pregnancy in school age is inappropriate because it is a big problem; teens should wait to have a pregnancy only when they're ready; 2) Highland people are happy when a community member has a pregnancy,

regardless of age; 3) Women are at a disadvantage to men regarding the consequences and burden of an unplanned pregnancy; 4) Pregnancy can be intentional or accidental, and the decision to have an abortion is a personal right; 5) Society should not dictate what is right or wrong on this matter, families should accept the mistakes that have occurred and help solve the problems; and 6) The decision to solve the problem of pregnancy during school age is the right and obligation of both families of the couple.

3. Sex behavior and STI prevention

Increasingly, today's adolescents are at risk for sexual problems starting at a younger age. This includes how they dress, working in entertainment venues, traveling without family members, drinking alcohol, and even co-habiting with the lover. There is increased risk of unsafe sex. Youth today may accept the idea of changing sex partners or viewing and buying nude images and online sex services. On the other hand, today's adolescents had behaviors that supported STI prevention, including using condoms every time they had sex or having sex with only one faithful partner. They are aware of the importance of genital hygiene, and not associating with social groups who engage in risk behavior. That said, the youth today are inundated with online media and messages which encourage them to expand their experience and push boundaries. Parents/guardians need to be aware and skillful in knowing what the adolescents are doing and what information they are exposed to.

4. Recommendations

Increase access to knowledge: For example, there should be increased public relations and dissemination of relevant legal knowledge. Public health agencies should provide training to provide continuous knowledge, and teachers should be skilled in sex education. There should be additional activities outside the classroom continuously. Knowledge should be disseminated through TV programs, and concise knowledge materials should be prepared. There should be a focus on developing online media. There should be educational forums which are held throughout the region.

Increase access to SRH services: For example, there should be more service units, and there should be increased the publicity of the service units on online social media; there should be a non-confrontational service system, and the confidentiality of the use of the service by adolescents must be protected.

Prevention of HIV and STI: There should be an increased dissemination of in-depth knowledge about the symptoms of HIV/STI. There should be online chat rooms developed specifically for this. There should be advice and support units in educational institutions. STI testing services should be provided in educational institutions. Specific student clubs should be established in educational institutions to educate and prepare students. There should be more condom service points that are easily accessible and open. There should be serious education campaigns for the general public, and parents/guardians should help with prevention advice.

Prevention and problem solving of unintended pregnancy: For example, there should be more training on the effects of unintended pregnancy. There should be continuous campaigns on preventing unplanned pregnancy; there should be contraceptive counseling clinics within educational institutions; parents/guardians should help guide prevention and listen to problems of the youth in their care.

Roles and responsibilities to prevent unintended pregnancy and STI: For example, there should be an agency that plays a proactive public relations role and openly provides services. Society should be open-minded, accepting changes and seeing problems with SRH as normal. Parents/guardians should understand the youth and be open to listening to problems to find a solution together. Teachers should accept the rights of the students and be a good mentor. Adolescents should be aware of their important role in studying and building stability in the future rather than living as a couple prematurely.

Discussion of the findings

The findings of this study about understanding of youth sexual rights is consistent with the principle of equality, privacy, independence, and recognition of free thinking and expression, and the right to good health, the right to know and learn about gender, the right to decide to marry and have children, and the right to be protected by the state (Ratchada Taraphak, 2016). However, awareness should be raised about the right to participate in all relevant areas such as politics, governance, etc., and knowledge and understanding should be extended to the scope of civil rights. There should be prevention of images or actions which encroach on the SRHR of others, such as visual harassment, sexual harassment, etc., as stipulated in the Universal Declaration and the Constitution of the Kingdom of Thailand in sections relating to the exercise of rights and

liberties without violating the rights of others or laws on good morals and social regulations (Palida Jirathip, 2022). This should be carried out in conjunction with educating the public about the laws related to SRHR for the protection of human rights, especially the Prevention and Response to Teen Pregnancy Act of 2016 and the criminal law on sexual abuse and termination of pregnancy

It is also important to provide additional knowledge and understanding about preventing unwanted pregnancy and STI. Despite the compulsory instruction on sex education and a wide range of knowledge resources and service centers on pregnancy and STI, teenagers today still have risky behaviors, and increasingly have contacts with strangers through social networking and Internet platforms. There is unsafe sex, and misuse of birth control pills which contribute to the problem of school-age pregnancies for many teens. These findings are in line with the findings of Siriporn Jirawatkul et al. (2019) who found that students in the Thailand's north region had low knowledge of contraceptives, HIV and STI (70%), with urban adolescents being more knowledgeable than students in rural areas. In addition, Natthaya Wisaraphan et al (2019) also found that male adolescents had knowledge of emergency contraception at a moderate level and intended to use emergency contraceptives at a high level. Therefore, there should be a comparative study of the differences in knowledge levels and needs between males and females, in the context of educational institutions and the local setting. This is needed to increase the efficiency of providing knowledge that can respond to specific target groups and lead to the most practical outcomes. However, the design or educational method needs to focus on stimulating the interest of the individual. This requires the expertise of the educator, and broad distribution to cover all target groups.

This research also found that societal culture is a hindrance to northern youth to openly access SRH services. The cultural refusal to accept the reality of STI and unintended pregnancy among school students drives adolescents to cover up their problems due to fear of parent/guardian knowledge and social gossip. The use of safe services is avoided, and youth turn to close or trusted friends or anonymous sources for help. Research has found that obstacles to the mentorship of student leaders at private higher education institutions consist of lack of trust and being stigmatized by society about the problem of unplanned pregnancy (Niphada Tharipian and Kosum Setthawong, 2021). Some in society are obsessed with thinking the teen pregnancy is a deviant behavior, and that is also an important reason why adolescent girls seek abortion

(Sunaree Lertprathongtham, 2003). At the same time, socio-cultural changes are facilitating adolescent risk behavior for STI and unplanned pregnancy due to the popularity of marriage during school. Today, teenagers live in dorms more independently and away from their families. This is different from the past where youth had to live with parent/guardian or adult relative, and receive upbringing under close supervision. Therefore, society should understand these changes, and change their perspectives rather than stigmatizing adolescents who experience sexual problems and pregnancy during school. This will reduce family pressure and enable adolescents to openly and safely access SRH services. Society should cooperate with families and agencies involved in preventing and solving these problems. However, it is difficult and time-consuming to adjust the social perspectives that are deeply rooted in Thai society. Focusing on non-confrontational access to services is another option to consider to allow teenagers to dare to reveal real problems and come up with solutions on the spot. These include faster and more comprehensive hotline service, especially in educational institutions and communities, expansion of anonymous clinic services and online consultation system. There is a need for more research to develop a concrete telemedicine system for SRH.

It was also found that family upbringing and online media also influence sex. Adolescents who received good parent/guardian training tended to have less risky sexual behaviors. Youth who are raised with intimacy and mutual understanding helps prevent problems related to exploring sex during the school-age years. Online media has an influence on imitative sex behavior and stimulates curiosity to try. Adolescents have access to lewd drama and pornography easily, and this is impossible to control. Weerachai Sittipiyasakul et al. (2013) found that watching pornography is a motivating factor for having sex by up to 64.9%. Therefore, parents/guardians need to play a more active role in controlling adolescent sex risk behaviors, especially in the prevention of unintended pregnancy and STI. Online media should be more useful in preventing and solving problems from sex, such as producing short clips to educate youth, creating a chat room to exchange knowledge and ask for advice, etc. However, other factors should also be considered in controlling risk behaviors. For example, northeastern Thai youth who drink alcohol are less likely to practice STI prevention behavior than teens who do not drink by as much as six-fold (Isari Padpai et al., 2022). Being emotionally abused by a lover and awareness of sexual rights (Kasana Sripichayakarn et al., 2014), including intimate contact between men and women, and

lack of self-control are predictive of high-risk behaviors for unintended pregnancy (Nareerat Maliwan et al, 2019).

Finally, a change in attitudes about SRHR among all parties is one important aspect that should be taken into consideration. This study clearly shows that there are differences in ideas between adolescents and adults, especially about sex and pregnancy during school age. Teenagers prefer to be together, while adults still emphasize self-discipline. Teens value their right to have sex with whoever they want, while adults consider the morality and responsibility of having sex. Teens view pregnancy as a mistake, while adults try to point the finger at the problem of school pregnancy. Changing attitudes will affect appropriate behavioral expressions of adolescents and reduce the gap of understanding of each party, and that should lead to cooperation in preventing and solving problems. There should be more use of communication methods to create awareness and accept the concept of sex in adolescence (Gross, 2020). That is, sex should be focused on safer sex than prohibiting sex among adolescents. Educational institutions, families, communities and relevant agencies should collaborate to provide protection against the risks of adolescent sex. This involves training to provide in-depth sex education and teaching methods of contraception and prevention of STI among adolescents.

Recommendations

Recommendations for improvement

1. Knowledge and understanding should be provided to adolescents and their caregivers about their SRHR within the scope of the law, including creating knowledge and understanding of relevant laws to protect human rights, such as the Prevention and Response to Teen Pregnancy Act, 2016, the Criminal Law on Sexual Harassment and Pregnancy Termination, etc.
2. Training should be provided to develop teachers in educational institutions to be able to more effectively convey knowledge about sex education and SRH, especially on STI and contraception, including recommending relevant service units and contact information.

3. Additional training activities should be provided for all target groups of adolescents in and outside educational institutions on STI and contraception by expert speakers and a participatory learning process.

4. Non-confrontational services for SRH health should be developed, including hotlines and online counseling that are easily accessible in educational institutions and communities; there should be anonymous clinic services inside and outside the health facility and the development of an SRH telemedicine system.

5. There should be short video clips to provide knowledge that attracts the attention of teenagers and which can be widely distributed online.

6. There should be an online social media room for communication and exchange of knowledge and experiences among teenage friends, including advice on health problems in SRH.

7. Cooperation should be established with parents/guardians to control the risky behaviors of adolescents and the problem of pregnancy and STI during the school years.

8. There should be a focus on communication and understanding in society, family and community to create acceptance of sex among adolescents rather than prohibiting sex. Safer sex among adolescents should be promoted to prevent teen pregnancy and to prevent STI, with participation between educational institutions, families, communities, and relevant agencies

Recommendations for future research

1. There should be a comparative study of the differences in knowledge levels and knowledge needs between males and females and between the age groups between educational institutions and local contexts to increase the efficiency of knowledge delivery that can respond to specific target groups and achieve the greatest possible implementation.

2. There should be research on the development of a telemedicine system that provides concrete services for adolescent SRH, especially for abortion services.

3. There should be research on factors influencing the control of HIV and STI risk behaviors.

4. There should be research on the process of creating participation of educational institutions, families and relevant agencies in preventing and solving problems of pregnancy and STI in adolescents.

5. There should be research on the process of changing family, community and social attitudes in order to create acceptance of sex among adolescents in order to generate more cooperation in promoting safe sex.

Chapter 6

Summary of Lessons Learned

PPAT provides transcripts in the form of online conference proceedings after the completion of the Project to increase access to knowledge and services on SRHR, including HIV prevention in northern Thai schools. The lessons learned conference was held between December 28-29, 2022, through Zoom. The participants consisted of youth peer leaders and mentors from formal and non-formal schools who played an important role in implementing the Project, staff of PPAT and the Foundation who played an important role in supporting the project. The following is a summary of the lessons learned, with a focus on how to disseminate knowledge of youth leaders about SRHR, supporting youth leaders, lessons on operations, and troubleshooting of obstacles that arose, concluding with proposals for improvement.

1. Disseminating information about SRHR

Youth peer leaders played a major role in disseminating knowledge about SRHR to classmates in school and people in the home community. 'Youth peer leader' refers to those who have completed PPAT capacity development and education training (PPAT). They have acquired comprehensive knowledge of gender rights and equality, RH, unwanted pregnancy, pregnancy testing, contraception, condom use, HIV and STI prevention, and related laws. The ways to disseminate knowledge of youth leaders which are consistent with the target groups, can be summarized as the table below:

Method	Target Audience	Implementation	Example
Training	-Secondary school students/students in class (Voc-Ed Diploma)	- Training by class / dormitory -Training in activity hours every Wednesday which is a guidance period	-Training students of Voc-Ed Diploma in Electronics Department at Lampang Technical College, 380 people in guidance hours every Wednesday from 8:00 a.m. to 10:00 a.m.,

Method	Target Audience	Implementation	Example
	-Community members, especially ethnic minority people	-Training included in school activities -Training for people who are interested in the community	organized once a year from Voc-Ed 1-3 and Diploma 1-2. - Training for friends, seniors and juniors (Voc-Ed 1-3 and Diploma 1-2) on SRH in Chiang Mai Technical College -Training boarding students in the dormitories of Chiang Dao Welfare School at 7:00 p.m. every day for 5-10 minutes. Most of the students are ethnic minority group people. -Training for students of every class during the flag pole ceremony every week. About 15 minutes each time before attending Lampang Vocational College, Village Teacher Technology College, Lamphun, Chiang Rai Technical College, Mae Ai Wittayakhom School, and Chiang Dao Wittayakhom School

Method	Target Audience	Implementation	Example
			-Included in student development activities / Scouts/Guardians of Mae Ai Wittayakhom School About 5-10 minutes each time -NFE Chiang Dao provides leaders to organize HIV/AIDS training for teachers and students in 18 hill tribe community learning centers. - Leadership team "R Share Station" Lampang Vocational College organizes training and blood tests for students.
Meeting in groups of youth	- NFE students	-small group learning	- Chiang Dao NFE leaders educate over 20 friends about STI prevention
Individual and group advice or counseling	- Students, in educational institutions -family members and communities -Friends of youth peer leaders both inside and	- Talk and give advice through private LINE, group LINE and friend-help-friend phone calls. - face-to-face talk	-Chatting with friends in different places such as classrooms, pavilions - Talking with family members and friends in the home village when returning home during the school holidays

Method	Target Audience	Implementation	Example
	outside the school		-Assigning youth leaders to be responsible for receiving mentorship, divided by class
Teaching aids in class	-students in class	- Help teachers to insert in the relevant subjects	-Help explain and demonstrate in physical education, health education, biology and sexuality education subjects
Using the voice over or radio communication	-students in school	-Provide information and tips by announcing the public address systems available at the school at the specified time by having the leaders rotate together to speak each week	-Public address system of the Teacher Village Techno College, Lamphun, every Tuesday at 12:00 noon, taking about 10 minutes. - Giving knowledge tips every day during noon time of Lampang Vocational College, rotating one topic each week, RH, contraception, prevention of HIV and STI, respectively, including publicizing the distribution of condoms.
Social media page creation	-youth	- Create a Facebook page to disseminate information / knowledge / news, and as a channel for discussion/consultation	-Facebook page "Story below the navel" of youth peer leaders Chiang Rai Technical College -Facebook page "R Care R Share Station" of the

Method	Target Audience	Implementation	Example
			leaders of Lampang Vocational College -Facebook page "Open Chat" of Mae Ai Wittayakhom School
Preparation of animated media for dissemination	-students in school -youth in general	-Create clips and short films for dissemination in organizing training and online social media such as TikTok, Facebook	- Leader of Chiang Rai Technical College made a short film titled "The Dangerous Tiger Under the Navel", which contains content about unplanned pregnancy by allowing at-risk teenagers to participate in the play -Making clips about HIV and STI by Chiang Mai Technical College; it won the provincial award and national runner-up
Dissemination through other activities	-students in school -youth in general	- Organize campaign activities - Education booth - Organizing forums and exhibitions - Distribute brochures and condoms on event day	- Campaign for sexual rights/use of condoms/having sex; in conjunction with Sports Day of Mae Eye Wittayakhom School and Lampang Vocational College; organizing games and

Method	Target Audience	Implementation	Example
			dramas about pregnancy and HIV as well. - Set up a booth to educate about HIV on the day of the Loy Krathong festival in Mae Ai District and the tea tasting event of Mae Na Municipality.

2. Support from related individuals/entities

The implementation of youth peer leaders to support learning and resources from various stakeholders, especially schoolteachers, PPAT, health centers, and related agencies as the following details

2.1 Teachers in school

Teachers at schools, colleges and NFE sites are mentors who closely educate and advise youth peer leaders on SRHR by the following:

- Serves as a mentor for the work of the youth peer leaders team, assists in planning activities, division of labor and resolve problems that arise
- Coordinates request for leave of absence to youth peer leaders, including requesting location and time for educational training activities
- Supports the preparation of media and equipment such as distribution of different sizes of condoms, production of short films and clips to disseminate knowledge, etc.
- Supports special projects related to student development to organize training activities on SRHR, which go beyond educating students in the classroom through sexuality education and other subjects
- Coordinates budget from agencies to request support for organizing ongoing educational activities in the community, especially NFE teachers
- Develops a unique curriculum for educating youth peer leaders and other students

2.2 PPAT

PPAT sponsors youth education and outreach activities through programs to increase access to knowledge and services on SRHR, including HIV prevention in schools in the north region of Thailand. PPAT provides support for training resources to help increase knowledge, including media and equipment such as brochures, condoms, pregnancy test kits, birth control pills, etc., as well as helping coordinate relevant agencies to support the operations of youth peer leaders under the roles and responsibilities of each agency.

2.3 Public health staff

Staff in the Tambon health promotion hospital (THPH), district health office (DHO), etc., focus on providing additional knowledge to youth peer leaders, supporting media and related equipment such as condoms, etc., being a guest speaker to provide knowledge in organizing training activities of youth peer leaders, and participate in other relevant activities of youth peer leaders such as campaigns, etc., as well as providing guidance on access to public health services. The staff take over from youth peer leaders in cases where adolescents are found to have problems that need referral into the public health service system, such as unplanned pregnancy.

2.4 Other agencies/entities

- Local administrative organizations support the booth to educate about SRHR.
- The Royal Project Development Center helps promote careers for youth in general, including those who have children. The aim is to increase income and promote a better quality of life as well as assisting in disseminating knowledge about RH to youth and Christian ethnic minorities in the community every Sunday while they assemble to attend church. Staff work with the network of PPAT youth peer leaders and related agencies.

3. Results of implementation

3.1 Benefit for the trainees

- During the acquisition of knowledge, participants became more accepting about talking about sex, and they focused on improving self-care skills to prevent HIV and STI infection and prevent unwanted pregnancy, such as using condoms, taking birth control pills, etc.

- After receiving knowledge about SRHR, youth became more active and bold to talk about RH issues with teachers and youth peer leaders. They developed the confidence to buy condoms or a pregnancy test kit, or an HIV testing kit. Also, knowledge has been applied to birth control, HIV and STI prevention, such as condom use when having sex. Youth peer leaders noticed positive changes in peer behavior, such as reducing turnover of sex partners, and knowledge transfer from peer-to-peer in schools, vocational colleges, families, and communities.

3.2 Benefits for prevention and problem resolution

- More and more young people have the confidence to speak to youth peer leaders for personal consultation and seek advice on various issues, especially menstruation and contraception. This helps relieve the burden of teachers in giving counseling on sexual problems to adolescents in schools, especially the problem of unplanned pregnancy. And it helps to reduce the number of teenagers with minor problems who go to hospitals and public health providers.

- Youth peer leaders have in-depth discussions with their peers to help teens who cannot fix the problem on their own. They refer those youth to the public health service system or hospital adolescent clinics to solve problems in a more timely manner.

- Dissemination of knowledge and counseling by youth peer leaders has resulted in a decrease in HIV and STI incidence in some health facilities such as Mae Ai Hospital. It also reduces the number of students who become pregnant during their time in school, especially students in technical colleges.

3.3 Benefit for youth peer leaders

- The potential of youth peer leaders has been increased. They are more confident to speak more assertively and be a speaker to educate, communicate and coordinate, work as a team, know how to plan, and share roles and responsibilities according to their expertise.

- The peer leaders have the opportunity to be part of the SRHR operating network with various agencies in the area, including health authorities, local government organizations NGOs, etc.

3.4 Benefits of participation

- There are youth who follow and share Facebook pages of youth peer leaders. For example, the page of Chiang Mai Technical College has more than 100,000 followers, and the Lamphun Technical College's page has more than 600 shares.
- More and more young people are interested in joining the youth peer leader team. Most of them are friends with the leaders or know the leaders personally.
- Teachers pay more attention to RH problems. There are more opportunities for students to exchange and express their opinions, including paying attention and giving advice to students more closely.
- There are more activities to disseminate knowledge of youth peer leaders, resulting in continuous support. For example, Mae Ai District Office invites youth to participate in a booth in a mobile district event to educate the ethnic minority people in the village.
- Local government organizations allow youth peer leaders to participate in projects. For example, Ban Thi Tambon Municipality allowed youth peer leaders of Lampang Vocational College to be speakers in the STI training program.
- There is the emergence of a clear cooperation network on SRHR from youth peer leader development, media support and mentorship of PPAT, such as the Chiang Dao DHO-sponsored Youth Clinic Network, and local youth networks that help proactively work for institutions public health service.

4. Lessons learned from implementation

4.1 It is difficult to make appointments for youth peer leaders to meet in unison due to differences in study time and free time. Therefore, in order to work more fully, Project staff had to arrange a meeting and plan by aligning the working days and hours to match student availability. This is usually during lunch break or after school. The Project arranged for rotation to work on convenient days and times. The Project adjusted the duration of the activities to be in line with free time of peer leaders, for example, by setting up a knowledge booth during the Loy Krathong Festival, during which classes were suspended.

4.2 Youth peer leaders must balance their time between activities and studies, such as completing homework before going to work.

4.3 Participants tend to be inattentive or uninterested when youth peer leaders educate. During the training it is necessary to use techniques to stimulate the interest of the audience, such as making an emphasis, questioning, demonstrations, giveaways, making learning fun, etc.

4.4 The credibility of knowledge transfer and mentoring is very important. Often, youth peer leaders do not have enough knowledge in certain areas to feel confident in imparting knowledge and giving advice to their peers. Therefore, each person needs to keep seeking more knowledge from teachers, websites or other sources of knowledge to provide knowledge with confidence and credibility. In addition, the teacher also had to give advice to the peer leaders and encourage the peers to receive training to increase their knowledge with various agencies in the area such as hospitals, municipalities, and non-governmental organizations.

4.5 Working in hard-to-reach areas requires a public health officer or PPAT to help coordinate and bring youth peer leaders into the area, especially ethnic minority areas.

4.6 Social culture, especially among ethnic groups, is a barrier to understanding and advising on SRHR. Discussions of sex in public are not yet acceptable to some of these communities. Moreover, many are in the fields all day and do not have time to participate in training activities with youth. Some parents/guardians are still stuck to the traditional beliefs and are reluctant to accept youth peer leaders discussing sex and contraception with community youth. However, after multiple visits and explanations, the elders usually relent, and allow the peer education to proceed.

4.7 Some educational institutions do not allow boarding youth peer leaders to leave the school or educational establishment independently, such as the Chiang Dao Welfare School. Students who wish to leave the facility must be authorized and escorted by a teacher. This prevents students from going out for community training events. Youth peer leaders can return to educate their families and communities only during school holidays. Therefore, youth peer leaders should be included in the team who can access the school on a day-to-day basis to streamline work and expand knowledge.

4.8 Teachers must create new youth peer leaders to take over the work of the former peer leaders nearing graduation. They select the most promising students or students who are assertive, have human relations, and a volunteer spirit. Then, they let the new leaders persuade friends to join the team. They build capacity of the new cadre of peer leaders to be able to

disseminate knowledge by giving advice. They are sent to train about SRHR and to do activities with the original group of peer leaders.

4.9 Selection of youth peer leaders affects ongoing work. Leaders who are students or students who are about to graduate can only work for a short time because they have to prepare to transfer to continue their studies or leave for a career. As for the leaders who have just entered, they will be able to work longer hours. Some upper high school students have to drop out of the Project to study in higher education.

4.10 Finding students who voluntarily lead each year class to distribute operational responsibilities is also difficult. Because volunteers are often the same group of friends in the same year.

4.11 Sex counseling is usually highly sensitive. Teens are often afraid to reveal their thoughts to their teachers or parents/guardians. Counselors must have a friendly way of talking to youth. However, youth peer leaders can reach young people well and can act as a source of good advice to friends due to familiarity with friends of the same age. There is trust in each other that helps youth open up to reveal in-depth stories and problems.

4.12 Youth peer leaders' use of abusive language and mannerisms when discussing sexual matters may make them feel more intrusive of their privacy than it does to prevent or resolve the issue. Therefore, the teacher must guide the youth peer leaders, help them be careful with the use of language and gestures during discussion, and train them how to ask and answer questions about SRH.

4.13 It is very important to remind young peer leaders to maintain the confidentiality of their peers. If confidential information is leaked, it may later become a conflict with a friend or counselor.

4.14 Some educational target groups require youth peer leaders to use their native language in their training. Therefore, it is necessary to select a team that can speak the local dialect in order to understand the target group more deeply.

4.15 There are other factors that enhance the efficiency of youth operations, namely:

- Training to provide knowledge of external agencies inside and outside educational institutions such as Ban Thi Tambon Municipality and V-Cap Lamphun

organizations that focus on gender diversity work. They can visit to provide education about HIV and STI and give away contraceptives.

- Educational institutions attach importance to SRHR by making sexuality education a core subject in technical colleges at the Voc-Ed 1 level and incorporating it into other subjects starting from the upper elementary school levels such as physical education, health education, biology, as well as having teachers, counselors, and guidance teachers provide advice to troubled adolescents in school.

5. Recommendations

5.1 Recommendations to schools

5.1.1 Training should be provided to develop youth peer leaders from academic year class to class to be able to educate and prevent unwanted pregnancy, HIV and STI across all target groups in educational institutions and target groups in the community, especially peer networks.

5.1.2 Training should be provided to develop the potential of teachers and teacher advisors to be able to comprehensively disseminate knowledge on SRHR to students. as well as being able to lobby for activities and provide advice on related matters.

5.1.3 Training should be provided to educate students on SRHR in all levels, including support for the integration of youth in the form of clubs for continuous work and as a space for discussion among peer groups.

5.1.4 Programs should encourage more open discussions on SRHR among youth.

5.1.5 There should be a psychologist in educational institutions to give advice to young people because SRH problems are sensitive issues. It is important to take care when talking with youth so as not to hurt their feelings, especially for those who come to seek counseling, or those who are falling into depression.

5.2 Recommendations to teachers

5.2.1 Teaching and learning about sex education should be in line with social changes according to the times and cover all groups of learners. This is to enable young people to understand and realize the importance of SRHR and to be aware of the potential problems of pregnancy and STI during the school years.

5.2.2 Teachers should help monitor youth behavior and give advice closely, especially to those who are interested and are experiencing problems such as taking birth control pills, using condoms, etc., to prevent depression and resignation of the students.

5.3 Recommendations for parents/guardians with adolescents in their care

5.3.1 Always warn and give advice to youth in their jurisdiction about making friends of the opposite sex, including risk behaviors associated with RH and STI problems

5.3.2 Pay attention to and understand the youth in their care. Create intimacy like friends to be able to talk about everything and often. Do not pressure or coerce, and do not discourage curiosity and making friends of the opposite sex -- always let them learn and watch.

5.3.3 Be involved in the activities of youth peer leaders and health facilities.

5.4 Recommendations to related agencies

5.4.1 Recommendations to PPAT

o Increase the support of media and equipment used for teaching and training about sex education, such as publications, simulated genitals, condoms, pregnancy tests, brochures, demonstration kits, contraceptive implants, videos, etc.

o Develop more knowledge dissemination materials that help create widespread understanding and learning, focusing on modern media formats which young people have easy access to through both educational institutions and online social media.

o Continue to support training for the development of new peer leaders' potential to take over from those who are aging out of school.

5.4.2 Recommendations to public health agencies, especially hospitals and THPH

o Provide advice and organize training activities to educate youth in educational institutions and communities thoroughly.

o Assist youth peer leaders as key speakers in educating SRHR to increase credibility and confidence among trainees.

o Add service points and publicizing channels for youth access to counseling services related to RH, unwanted pregnancy, and STI problems, including the allocation of welfare to young women who receive the service.

o The primary role of the Network Coordinator for Adolescent Clinics in the district health office and THPH should be clearly defined to expand the network with SRHR stakeholders, including the NHSO, schools, community groups, youth councils, local government agencies, the private sector, and various civil society organizations.

5.5 Recommendations for future implementations

5.5.1 Youth peer leadership exchange activities should be supported between educational institutions and communities.

5.5.2 Youth peer leaders should be developed continuously and cover all areas. This includes expanding opportunities to access knowledge and services of various communities, especially ethnic minority communities that are often remote and difficult to access (e.g., in Muang Khon Tambon, Chiang Dao District, Chiang Mai Province.) In this regard, the activity date should be set during the school term opening period. There is a variety of content that can be integrated to various subjects. The duration should be consistent with the content, and increase the frequency of training as needed.

5.5.3 The recruitment of youth peer leaders who can serve the longest in educational institutions and communities should be considered, especially ethnic youth peer leaders. The current generation of leaders should be able to pass on knowledge and work to the next cohort of students.

5.5.4 The potential of youth peer leaders should be developed to have the ability to produce media to disseminate knowledge.

5.5.5 Parents/guardians should be involved in understanding youth problems and jointly formulating solutions.

5.5.6 The knowledge dissemination of youth peer leaders should be monitored, such as pre- and post-training knowledge measurements, and pregnancy and STI prevention behavioral changes of adolescents in educational institutions and communities after receiving knowledge.

5.5.7 Emphasis should be placed on the implementation of activities to address the problems that arise along with the prevention of problems of depression and anxiety related to STI and unplanned pregnancy.

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Appendix A

Structured Questionnaire

Questionnaire:

Research Project on Increasing Access to Knowledge and Services in Sexual and Reproductive Health Rights, and Prevention of HIV in Educational Institutions in the North Region of Thailand

Instructions: There are 5 parts in this questionnaire. The objective is to study preliminary information about access to knowledge and health services related to SRH for HIV prevention in educational institutions in the north region of Thailand. ***Responding to this questionnaire will not affect the respondents' school education or daily life. All information will be kept confidential.

Section 1 General information of the respondent: Instructions: Mark an ✓ in the box that best corresponds to your response

1. Sex ☐ male ☐ female ☐ Other .....
2. Age.....
3. School
   - ☐ Chiang Dao Wittayakhom School, Chiang Mai Province
   - ☐ Sueksa Songkhro Chiang Dao School, Chiang Mai Province
   - ☐ Mae-ai Wittayakhom School, Chiang Mai Province
   - ☐ Chiang Mai Technical College, Chiang Mai Province
   - ☐ Chiang Rai Technical College, Chiang Rai Province
   - ☐ Chiang Rai Commercial Vocational College, Chiang Rai Province
   - ☐ Lampang Technical College, Lampang Province
   - ☐ Lampang Vocational College, Lampang Province
   - ☐ Northern Mubankru Technological College, Lamphun Province
   - ☐ Lumphun Technical College, Lamphun Province
   - ☐ Non-formal education school (NFE) Chiang Dao District, Chiang Mai Province
   - ☐ Non-formal education school (NFE) Mae Ai District, Chiang Mai Province
4. Current grade
   - ☐ GRADE 7-9 ☐ GRADE 10-11 ☐ Voc-Ed 1-2
5. GPA ..... (Last term)

6. Parents' marital status

☐ married ☐ separated ☐ widowed ☐ divorced ☐ Other specify.....

7. Primary provider

☐ Both parents ☐ One parent

☐ Grandparent ☐ Other specify.....

8. Primary resident

☐ Family home ☐ Rented room ☐ Dormitory

Section 2 Relationships, love, sex behavior, and disease prevention

9. Have a lover

☐ Yes *If so how many..... ☐ No

10. Ever had sex (If do, skip to Section 3)

☐ Yes ☐ No

11. Sex frequency

☐ Daily ☐ 3-5 times/week ☐ Once a week

☐ 1-2 times/month ☐ Other specify.....

12. Contraception ever used (multiple response allowed)

☐ None ☐ Natural method

☐ Condoms ☐ Pill ☐ Emergency pill ☐ Injectable

☐ Implant ☐ IUD ☐ Other specify.....

13. Source of contraception (multiple response allowed)

☐ Convenience store, supermarket, pharmacy

☐ Adolescent clinic at the hospital

☐ Online ☐ Friend/lover ☐ Other specify.....

Section 3 Knowledge and understanding of SRHR of the students

Instructions: Put an ✓ in the space with best corresponds with your response

Knowledge and understanding SRHR of the students	Level of Knowledge and understanding				
	Highest	High	Moderate	Low	Lowest
Acts/Laws					
1. Prevention and Response to Teen Pregnancy 2016					
2. Act Amending the Criminal Code (No. 28) 2021 or "Law on Terminating Pregnancy"					

Knowledge and understanding SRHR of the students	Level of Knowledge and understanding				
	Highest	High	Moderate	Low	Lowest
Knowledge of contraception					
3. Natural method (safe period, withdrawal)					
4. Male/female condom					
5. Injectable					
6. Pill					
7. Injectable					
8. Implant					
9. IUD					
10. Male/female sterilization					
Knowledge and understanding SRH					
11. Level of knowledge about side effects of contraception					
12. Level of knowledge about each form of STI/HIV					
13. Level of knowledge about prevention of STI/HIV					
14. Level of knowledge about taking care of the body, genitals					
15. Level of knowledge of PrEP and PEP					
16. Level of knowledge about “undetectable = untransmissible” (U=U).					

Section 4 Attitudes about SRHR

Instructions: Put an ✓ in the space with best corresponds with your response

Attitudes about SRHR	Level of agreement with statement				
	Highest	High	Moderate	Low	Least
Statement					
1. We all have the right to contraceptive options					
2. It is not wrong for teenagers to have sex before marriage if both parties love each other and have protection against pregnancy or STI					
3. A wife cannot refuse to have sex with her husband because it is her duty					

Attitudes about SRHR	Level of agreement with statement				
	Highest	High	Moderate	Low	Least
4. Have confidence to refuse if relatives, elders, or others if they touch my body inappropriately or if it makes me uncomfortable					
5. Teens have the right to sex and should not be criticized or stigmatized by society for doing so					
Attitudes about family planning					
6. Family planning before childbirth will help mothers and child have good health					
7. Family planning is only for families who wish to have children					
8. Contraception is something that must be discussed together by both partners					
9. It is embarrassing to go for family planning counseling					
Attitudes about STI/HIV					
10. STI/HIV is not an immediate threat to adolescents. Students have almost no chance of infection					
11. STI/HIV is preventable					
12. Not changing sex partners often prevents STI/HIV					
13. Cleaning the genitals after sex will prevent STI					
14. STI can be cured if treated properly					
15. HIV infection can be cured if treated properly					
16. One can interact with a PLHIV normally without risk of infection					

Section 5 Behavior related to SRHR

Instructions: Put an ✓ in the space with best corresponds with your response

Statement	Level of Agreement with the Statement				
	Highest	High	Moderate	Low	Least
1. Say no to late night outs or private trips with person of opposite sex					
2. Refuse to be alone, one-on-one with opposite-sex friends or intimate partners.					
3. Refuse to view images or lewd videos when alone with a person of the opposite sex or a lover					
4. Refuse a request for hugs, kisses from friends of the opposite sex, or love					
5. Refuse and avoiding the purchase and sale of sex					
6. When feeling sexually aroused, I conduct other activities to reduce sexual arousal					
7. Avoid watching pictures/movies/books or media that stimulate sexual arousal					
8. Do not have a close relationship with the opposite sex that might lead to risk of having sex.					
9. Seek advice from a teacher when having sex problems					
10. Seek advice from a guardian, parent, or trusted adult when having sex problems					
11. Seek advice from friends when having sex problems					
12. Search for knowledge from the Internet when having sex problems					
13. Observe the appearance and symptoms of abnormalities around the genitals					
14. Clean the genitals properly					
15. Clean and change underwear daily					
16. I masturbate when in the mood for sex					
17. When there is something wrong with the genitals, I self-treat					

Statement	Level of Agreement with the Statement				
	Highest	High	Moderate	Low	Least
18. When there are abnormal symptoms or suspected STI, I seek medical attention immediately					
19. When there are abnormal symptoms or suspected STI, I will refuse to have sex					
20. When there are abnormal symptoms or suspected STI, I will tell my intended sex partner					
*** **If ever had sex**					
21. You or your sex partner use a condom when having sex					
22. You or your sex partner use a condom correctly every time					
23. If no condoms, I will refuse to have sex					
24. If no condoms, I will continue to have sex using another method of contraception					
25. I have sex when drunk					
26. I have sex when using drugs					
27. You and your sex partner clean the genitals before/after each sex					

Case Code.....

Semi-structured questions guidelines: IDI with students

This questionnaire is used for in-depth interviews (IDI) for those who volunteer to participate in the Project. The research team will interview you on the issue of "Increasing access to SRHR knowledge and services, including HIV prevention, in schools in the north region of Thailand." The IDI takes about 45-60 minutes for the interview with questions divided into 2 main parts as follows:

Sexual rights means that we all have the right to decide our own sexuality, a right that must be respected and accepted by others.

RH rights refer to the fundamental right of everyone to make their own, responsible decisions about sex and having children by receiving accurate and complete information including access to appropriate and quality services

A person has the right to sex. RH rights include right to access and receive information, obtain RH counseling and services from appropriate and quality service establishments.

Section 1 Knowledge of SRHR

1. Access to SRHR knowledge and services

1.1 How do you know about SRHR?

- Please share your knowledge and understanding of SRHR.
- Do you know the relevant statutes/laws?
- What do you think about birth control? What are the ways to terminate a pregnancy? Where are RH services available?
- How do you understand HIV/STI?

1.2 How does your school/college provide education about SRHR such as learning in class; organizing activities conducted by the school network in the area?

1.3 Do you have sufficient knowledge in SRHR? How so?

1.4 If you have a problem with SRH, whom do you consult?

1.5 What are your barriers to accessing SRHR knowledge and services?

2. What recommendations do you have to improve knowledge about SRHR services?

Section 2 Relationships, Love, Sex Behavior and Prevention

1. Attitude toward relationships, love

1.1. What is your view on love?

1.2. What is your/student/adolescent expression of love like?

1.3. What is your opinion that students/teenagers have unmarried sex or unplanned pregnancy among teenagers?

1.4. Do you think everyone has the right to decide on their own sexuality, having sex and whether or not to have children? How so?

2. Sex behavior

2.1. How is the sex behavior like of the students/teenagers today? Such as deciding to have sex, refusing to have sex, STI protection, sexual health care

2.2. What methods of contraception do students/teenagers use, such as using condoms or birth control pills?

2.3. Are there any students/teenagers who had an unplanned pregnancy while still in school/in this area? How to fix the problem?

3. Prevention of HIV and STI

3.1. How do you understand HIV prevention and treatment? “Undetectable = Untransmissible” (U=U), PEP, PrEP?

3.2. How do you know about STI, transmission, prevention, and treatment?

4. What do you think about the HIV and STI situation among students/teenagers in the area?

5. What recommendations do you have for HIV and STI prevention?

Planned Parenthood Association of Thailand

Semi-structured questions guidelines: IDI with teachers

This questionnaire is used for in-depth interviews (IDI) for those who volunteer to participate in the Project. The research team will interview you on the issue of "Increasing access to SRHR knowledge and services, including HIV prevention, in schools in the north region of Thailand." The IDI takes about 45-60 minutes for the interview with questions divided into 2 main parts as follows:

Sexual rights means that we all have the right to decide our own sexuality, a right that must be respected and accepted by others.

RH rights refer to the fundamental right of everyone to make their own, responsible decisions about sex and having children by receiving accurate and complete information including access to appropriate and quality services

A person has the right to sex. RH rights include right to access and receive information, obtain RH counseling and services from appropriate and quality service establishments.

Section 1 Knowledge of SRHR

1. Access to SRHR knowledge and services

1.1 How do you know about SRHR?

- Please share your knowledge and understanding of SRHR.
- Do you know the relevant statutes/laws?
- What do you think about birth control What are the ways to terminate a pregnancy? Where are RH services available?
- How do you understand HIV STI?

1.2 Guidelines for teaching and learning about SRHR of the educational institution you belong to, such as classroom learning, organizing activities conducted by the school network in the area

1.3 Do students/teenagers have sufficient knowledge on SRHR? How?

1.4 If students/teenagers have problems with SRH, who will they consult?

1.5 Problems and obstacles in accessing knowledge and services on SRHR of the students/teenagers.

2. What are your recommendations to increase access to SRHR knowledge and services for students/adolescents?

Section 2 Relationships, Le, Sex and Prevention

1. Attitudes toward relationships, love

1.1. What do you think is the view of love of the students/teenagers?

1.2. What is your opinion about the expression of love of the students/teenagers?

1.3. What is your view that students/teenagers have sex before marriage? What about unplanned pregnancy of the students/teenagers?

1.4. Do you think everyone has the right to decide on their own sexuality, having sex, and whether or not to have children? How so?

2. Sex behavior

2.1. How is the sex behavior of the students/teenagers, such as having sex, refusing to have sex, STI protection, sexual health care?

2.2. What methods of contraception do students/teenagers use, such as condoms or birth control pills?

2.3. Are there students/teenagers who have an accidental pregnancy? How to fix the problem?

3. Prevention of HIV and STI

3.1. How do students/teenagers understand, prevent and treat HIV? Undetectable = Untransmissible (U=U), PEP, PrEP?

3.2. How do students/teenagers know about STI, such as the common diseases, transmission, prevention and treatment?

4. What do you think about the HIV and STI situation among students/teenagers in the area?

5. What recommendations do you have for HIV and STI prevention for students/teenagers?

Planned Parenthood Association of Thailand

Semi-structured questions guidelines: IDI with parents/guardians

This questionnaire is used for in-depth interviews (IDI) for those who volunteer to participate in the Project. The research team will interview you on the issue of "Increasing access to SRHR knowledge and services, including HIV prevention, in schools in the north region of Thailand." The IDI takes about 45-60 minutes for the interview with questions divided into 2 main parts as follows:

Sexual rights means that we all have the right to decide our own sexuality, a right that must be respected and accepted by others.

RH rights refer to the fundamental right of everyone to make their own, responsible decisions about sex and having children by receiving accurate and complete information including access to appropriate and quality services.

A person has the right to sex. RH rights include right to access and receive information, obtain RH counseling and services from appropriate and quality service establishments.

Section 1: Knowledge of SRHR

1. Access to SRHR knowledge and services

1.1 How do you know about SRHR?

- Please share your knowledge and understanding of SRHR.
- Do you know the relevant statutes/laws?
- What do you think about birth control? What are the ways to terminate a pregnancy? Where are RH services available?
- How do you understand HIV STI?

1.2 How is sex education delivered to your children/teenagers today? Have you participated in activities that educate about SRHR or not?

1.3 Does your child/adolescent know enough about SRHR?

1.4 If your child/teenager has a problem with SRH, whom do you consult?

1.5 What are the barriers to your child/adolescent's access to SRHR knowledge and services?

2. What recommendations do you have to increase access to SRHR knowledge and services for your children/teenagers?

Section 2: Relationships, Love, Sex, and Prevention

1. Attitude about relationships, love

1.1 What do you think your child/adolescent's view of love is?

1.2 What do you think about your child's/teenager's expression of love?

1.3 What is your view that teenagers have sex before marriage? What about unintended teenage pregnancy?

1.4 Do you think everyone has the right to decide whether to have sex, and whether to have children or not? How so?

2. Sex behavior

2.1 What is your child/adolescent's sex behavior like, such as the decision to have sex, refusing to have sex, STI protection, sexual health care?

2.2 What methods of contraception do your children/teenagers use, such as condoms, birth control pills?

2.3 Are there adolescents who had an unplanned pregnancy in the area? How to fix the problem?

3. Prevention of HIV and STI

3.1 What does your child/teenager understand about preventing and treating HIV? Undetectable – untransmissible? (U=U), PEP, PrEP?

3.2 How does your child/teenager know about STIs such as the different diseases, transmission, prevention, and treatment?

4. What do you think about the HIV and STI situation among young people in the area?

5. What recommendations do you have for HIV and STI prevention for your children/teenagers?

Appendix B

Quality Assessment of the Questionnaire

Quality Assessment of the Questionnaire

The tool used for the quantitative research is a questionnaire. The assessment of the questionnaire used as a tool for collecting data must be checked to obtain a standardized tool. The research team chose to assess the quality of the tool in two forms: 1. Evaluating the validity of the questionnaire (Validity); and 2. Evaluating the validity of the questionnaire (Reliability).

1. We evaluated the validity of the questionnaire by checking the content validity. Generally, the validity of the content can be calculated from the consistency between the

questionnaire and the objective to measure. An Item Objective-Concordance (IOC) Index was calculated, in which experts assessed question items individually for whether they were consistent with the objectives or not. The potential evaluation results are 3 items: 1 is consistent, 0 is not sure whether they are consistent or not, and -1 is inconsistent. Then, scores are calculated and the IOC is calculated. The IOC value can range between -1 and 1. If any item has an IOC value of less than 0.5, a new question should be substituted in accordance with the objectives to be measured. For this assessment, there are 3 experts. All 3 are currently holding the position of PPAT's nurses with expertise in RH and health care. The results are shown in the following table.

Item	Variable	Value of IOC					
		Expert 1	Expert 2	Expert 3	Total	IOC	Interpretation
Section 1 General characteristics of the respondent							
1.1	Sex	1	1	1	3	1.0	OK
1.2	Age	1	1	1	3	1.0	OK
1.3	Name of school/province	1	1	1	3	1.0	OK
1.4	Current education level	1	1	1	3	1.0	OK
1.5	GPA	1	0	1	2	0.7	OK
1.6	Parents' marital status	1	0	1	2	0.7	OK
1.7	Primary provider	1	0	1	2	0.7	OK
1.8	Primary place of residence	1	0	1	2	0.7	OK
Section 2 Relationships, Love, Sex Behavior and Prevention							
2.1	Has a lover or boyfriend/girlfriend	1	1	1	3	1.0	OK
2.1.1	Number of lovers	0	0	1	1	0.3	Needs improvement
2.2	Sex history	1	1	1	3	1.0	OK
2.3	Frequency of having sex	0	0	1	1	0.3	Needs improvement
2.4	Method of birth control used	1	1	1	3	1.0	OK
2.5	Sources to access birth control methods	1	1	1	3	1.0	OK
Section 3 Knowledge and understanding of SRH of students							
Acts and Laws							

Item	Variable	Value of IOC					
		Expert 1	Expert 2	Expert 3	Total	IOC	Interpretation
3.1	Prevention and Response to Teen Pregnancy 2016	1	1	1	3	1.0	OK
3.2	Act Amending the Criminal Code (No. 28) 2021 or “Law on Terminating Pregnancy”	1	1	1	3	1.0	OK
Knowledge of birth control							
3.3	Male/female sterilization	1	1	1	3	1.0	OK
3.4	Male/female condoms	1	1	1	3	1.0	OK
3.5	Contraceptive pills	1	1	1	3	1.0	OK
3.6	Emergency contraceptive pill	1	1	1	3	1.0	OK
3.7	Contraceptive injection	1	1	1	3	1.0	OK
3.8	Contraceptive implant	1	1	1	3	1.0	OK
3.9	IUD	1	1	1	3	1.0	OK
3.10	Natural method (safe period, withdrawal)	1	1	1	3	1.0	OK
3.11	Level of knowledge about the side effects of birth control	0	1	1	2	0.7	OK
3.12	Level of knowledge STI/HIV	1	1	1	3	1.0	OK
3.13	Knowledge about taking care body hygiene, cleaning genitals, prevention of STI	0	1	1	2	0.7	OK
3.14	Knowledge of PrEP and PEP	1	1	1	3	1.0	OK
3.15	Knowledge of U=U	1	1	1	3	1.0	OK
Section 4 Attitude toward SRH of the students							
Level of agreement with the statement							
4.1	We all have the right to have birth control options	1	1	1	3	1.0	OK
4.2	It's not wrong for teenagers to have sex before marriage if both parties love each other	1	1	1	3	1.0	OK

Item	Variable	Value of IOC					
		Expert 1	Expert 2	Expert 3	Total	IOC	Interpretation
	and have protection against pregnancy or STI						
4.3	A wife cannot refuse to have sex with her husband. because it her duty	1	1	1	3	1.0	OK
4.4	Can refuse if relatives, elders, or other people touch you inappropriately or makes you feel uncomfortable	1	1	1	3	1.0	OK
4.5	Young people have a right to sex and should not be criticized or stigmatized by society for doing so	1	1	1	3	1.0	OK
Attitude toward family planning							
4.6	Family planning before childbirth helps mothers and child to be healthy	1	1	1	3	1.0	OK
4.7	Family planning is only for families who wish to have children	1	1	1	3	1.0	OK
4.8	Contraception is something that must be discussed together by the couple	1	1	1	3	1.0	OK
4.9	It is embarrassing to go for family planning counseling	1	1	1	3	1.0	OK
Attitude toward STI/HIV							
4.10	STI/HIV is not an immediate threat to adolescents. Students have almost no chance of infection	1	1	1	3	1.0	OK

Item	Variable	Value of IOC					
		Expert 1	Expert 2	Expert 3	Total	IOC	Interpretation
4.11	STI/HIV is preventable	1	1	1	3	1.0	OK
4.12	Not changing sex partners often prevents STI/HIV	1	1	1	3	1.0	OK
4.13	Cleaning the genitals after sex will prevent STI	1	1	1	3	1.0	OK
4.14	STI can be cured if treated properly	1	1	1	3	1.0	OK
4.15	HIV infection can be cured if treated properly	1	1	1	3	1.0	OK
4.16	One can interact with a PLHIV normally without risk of infection	1	1	1	3	1.0	OK
Section 5 SRH behavior of the students							
5.1	Say no to late night outs or private trips with members of opposite sex	1	1	1	3	1.0	OK
5.2	Refuse to be alone, one-on-one with a friend of the opposite sex or a lover	1	1	1	3	1.0	OK
5.3	Refuse to view images or lewd videos when alone with members of opposite sex or lover	1	1	1	3	1.0	OK
5.4	Refusing to ask for a hug kisses from friends of the opposite sex, lover	1	1	1	3	1.0	OK
5.5	Refuse and avoid the purchase and sale of sexual services	1	1	1	3	1.0	OK
5.6	When feeling sexually aroused, I do other activities to reduce	1	1	1	3	1.0	OK

Item	Variable	Value of IOC					
		Expert 1	Expert 2	Expert 3	Total	IOC	Interpretation
	sexual arousal and masturbation.						
5.7	I avoid looking at pictures/movies/books media that stimulate sexual arousal	1	1	1	3	1.0	OK
5.8	I do not have close relationships with the opposite sex if there is a risk of having sex	1	1	1	3	1.0	OK
5.9	I seek advice from a teacher, parent, or trusted adult when dealing with sexual issues.	1	1	1	3	1.0	OK
5.10	I notice abnormalities around the genitals	1	1	1	3	1.0	OK
5.11	Clean genitals properly, both males and females	1	1	1	3	1.0	OK
5.12	Clean and change underwear daily	1	1	1	3	1.0	OK
5.13	Masturbate when in the mood for sex	1	1	1	3	1.0	OK
5.14	When there is something wrong with the genitals, then self-treat	1	1	1	3	1.0	OK
5.15	When there are abnormal symptoms or suspected STI, seek medical attention immediately	1	1	1	3	1.0	OK
5.16	When there are abnormal symptoms or suspected STI, refuse to have sex	1	1	1	3	1.0	OK

Item	Variable	Value of IOC					
		Expert 1	Expert 2	Expert 3	Total	IOC	Interpretation
5.17	When there are abnormal symptoms or suspected STI, tell the intended sex partner	1	1	1	3	1.0	OK
*** If ever had sex							
5.18	Use condoms when having sex	1	1	1	3	1.0	OK
5.19	Use condoms correctly every time	0	1	1	2	0.7	OK
5.2	If there is no condom will refuse to have sex	1	1	1	3	1.0	OK
5.21	If there is no condom will continue to have sex using another method of contraception	1	1	1	3	1.0	OK
5.22	Have sex while drunk or using drugs	1	1	1	3	1.0	OK
5.23	Before/after sex, clean genitals every time	1	1	1	3	1.0	OK

2. Assessing Reliability: Since the questionnaire is subjective (i.e., it asks for opinions/attitudes), it must be tested for internal stability (Measure of Internal Consistency). For this, the research teams used Cronbach's Alpha (Cronbach's Coefficient) to verify that the question in the instrument is consistent within the same subject. To be accepted, there should be a high measurement stability. Cronbach's alpha coefficient is usually between 0 - 1. If the coefficient is close to 1, then this questionnaire has a high precision, and it can be used. This assessment used

the draft online questionnaire (Google Forms) with a sample of 30 students who were not the actual sample but with similar characteristics. The following are the results:

1. Knowledge and understanding

Reliability Statistics

Cronbach's Alpha	N of Items
.889	16

Item-Total Statistics				
Item	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Level of knowledge of Acts/Laws				
1. Prevention and Response to Teen Pregnancy Act of 2016	48.63	82.102	.592	.881
2. Act Amending the Criminal Code (No. 28) 2021 or "Law on Terminating Pregnancy"	48.63	82.585	.511	.884
Knowledge of birth control				
1. Natural method (safe period, withdrawal)	48.43	81.357	.561	.882
2. Male/female condoms	47.27	87.030	.312	.890
3. Birth control pills	47.90	82.507	.602	.881
4. Emergency contraceptive pill	47.97	82.447	.505	.884
5. Contraceptive injection	48.37	77.344	.674	.877
6. Contraceptive Implant	48.27	80.340	.635	.879
7. IUD	48.27	78.892	.625	.879
8. Male/female sterilization	48.37	83.137	.393	.890
Knowledge and understanding of SRH of the students				
1. Level of knowledge about the side effects of birth control methods	48.00	81.655	.605	.880
2. Level of knowledge about STI/HIV	47.83	84.351	.540	.883

Item-Total Statistics				
Item	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
3. Knowledge about prevention of STI/HIV	47.83	85.730	.440	.886
4. Knowledge about body and genital hygiene	47.80	86.786	.342	.889
5. Knowledge of PrEP and PEP	48.47	78.257	.660	.878
6. Knowledge about U=U	48.47	78.051	.694	.876

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
51.37	92.654	9.626	16

2. Attitudes

Reliability Statistics

Cronbach's Alpha	N of Items
.722	16

Item-Total Statistics				
Item	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Attitudes toward RH and sexual health				
1. We all have the right to have birth control options	49.23	50.047	.560	.689
2. It's not wrong for teenagers to have sex before marriage if both parties love each other and have protection against pregnancy or STI	49.33	49.540	.521	.689
3. A wife cannot refuse to have sex with her husband. because it her duty	51.03	59.137	-.162	.756
4. Can refuse if relatives, elders, or other people touch you inappropriately or makes you feel uncomfortable	49.10	51.955	.253	.716
5. Young people have a right to sex and should not be criticized or stigmatized by society for doing so	49.43	52.047	.254	.715
Attitudes toward birth control				
1. Family planning before childbirth helps mothers and child to be healthy	49.13	49.154	.471	.692
2. Family planning is only for families who wish to have children	49.77	50.392	.441	.696
3. Contraception is something that must be discussed together by the couple	49.27	46.892	.579	.677

Item-Total Statistics				
Item	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
4. It is embarrassing to go for family planning counseling	50.30	51.459	.240	.719
Attitude toward STI/HIV				
1.STI/HIV is not an immediate threat to adolescents. Students have almost no chance of infection	50.53	51.706	.295	.711
2.STI/HIV is preventable	49.53	49.154	.506	.689
3.Not changing sex partners often prevents STI/HIV	50.13	50.947	.363	.704
4. Cleaning the genitals after sex will prevent STI	49.73	49.099	.561	.685
5. STI can be cured if treated properly	49.83	49.799	.495	.691
6. HIV infection can be cured if treated properly	49.80	56.166	.038	.733
7. One can interact with a PLHIV normally without risk of infection	50.33	57.678	-.084	.753

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
53.10	57.610	7.590	16

3. SRH Behavior

Reliability Statistics

Cronbach's Alpha	N of Items
.948	17

Item-Total Statistics				
Item	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Behavior related to SRH of the students				
1. Say no to late night outs or private trips with members of opposite sex	55.53	175.499	.739	.944
2. Refuse to be alone, one-on-one with a friend of the opposite sex or a lover	55.70	171.597	.876	.942
3. Refuse to view images or lewd videos when alone with members of opposite sex or lover	55.73	170.754	.837	.942
4. Refusing to ask for a hug kisses from friends of the opposite sex, lover	55.63	172.033	.859	.942
5. Refuse and avoid the purchase and sale of sexual services	55.47	169.982	.893	.941
6. When feeling sexually aroused, I do other activities to reduce sexual arousal and masturbation.	55.77	180.875	.661	.946
7. I avoid looking at pictures/movies/books media that stimulate sexual arousal	55.97	176.447	.765	.944
8. I do not have close relationships with the opposite sex if there is a risk of having sex	55.83	177.316	.706	.945
9. I seek advice from a teacher, parent, or trusted adult when dealing with sexual issues.	55.87	177.085	.622	.947
10. I notice abnormalities around the genitals	55.40	175.421	.808	.943
11. Clean genitals properly, both males and females	55.50	176.052	.826	.943
12. Clean and change underwear daily	55.20	173.821	.869	.942

Item-Total Statistics				
Item	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
13. Masturbate when in the mood for sex	55.60	187.283	.357	.951
14. When there is something wrong with the genitals, then self-treat	56.77	198.737	-.036	.959
15. When there are abnormal symptoms or suspected STI, seek medical attention immediately	55.33	175.333	.688	.945
16. When there are abnormal symptoms or suspected STI, refuse to have sex	55.47	174.809	.747	.944
17. When there are abnormal symptoms or suspected STI, tell the intended sex partner	55.37	172.585	.817	.943

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
59.13	198.947	14.105	17








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