

**COMPARISON OF KNOWLEDGE, ATTITUDE AND SKILL IN
CONDOM APPLICATION IN MALE VOCATIONAL STUDENTS**

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CONDOM APPLICATION IN MALE VOCATIONAL STUDENTS**

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This experimental design field research was conducted using male vocational students, who were studying in Primary Vocational Education in the third year in Ratchaburi Technical College, Ratchaburi Province. The experimental and comparison groups were both composed of 39 students. Data about knowledge and attitude in condom use was collected by a specially designed self-administered questionnaire. Evaluation of condom application was conducted by two assistant researchers using a skill evaluation form. Data were collected between February to March 2000. The research has the specific objective of the comparison of knowledge, attitude and skill in condom application onto the penile model between the experimental group, and the comparison group. The experimental group was interviewed about their knowledge and observed during a demonstration of condom application and skill in hands-on condom application. The comparison group, was interviewed for knowledge and observed assistant researchers who demonstrated applying a condom onto the penile model. Some participants answered that they experienced problems with condoms and felt feelings of shame.

It was found that after intervention, the experimental group had scores of knowledge and attitude about condoms not significantly different from the comparison group. But their skill scores of condom application were significantly different (p -value <0.001) from the comparison group. The experimental group had a highly significant scores for their knowledge, attitude and skill in condom application before and after intervention ($p = 0.005, <0.001$ and <0.001 respectively). Comparison group score did not significantly change before and after intervention for knowledge. On the other hand, they had significant changes in attitude and skill in condom application ($p <0.001$ and <0.001). Problems of condom use and a feelings of shame decreased after intervention. This research can be used to promote condom knowledge and attitude modification in male adolescents. Condom application skill increased more using the manual, hands-on instructional method, than the observational method. Intervention using this manual method will decrease condom users failure rate.

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การวิจัยนี้เป็นแบบทดลองภาคสนาม โดยมีกลุ่มตัวอย่างคือ กลุ่มทดลองและกลุ่มเปรียบเทียบ ประชากรที่ศึกษาเป็นนักเรียนอาชีวศึกษาชาย ปวช. ปี 3 กำลังศึกษาอยู่ในวิทยาลัยเทคนิคราชบุรี จังหวัดราชบุรี กลุ่มละ 39 คน เก็บข้อมูลในเรื่องความรู้และทัศนคติเกี่ยวกับถุงยางอนามัยโดยให้นักเรียนตอบแบบสอบถามด้วยตนเอง ประเมินทักษะการสวมถุงยางอนามัยกับหุ่่นโดยใช้แบบประเมินทักษะการสวมถุงยางอนามัย โดยมีผู้ช่วยผู้วิจัยเป็นผู้ประเมิน เก็บข้อมูลในระหว่างเดือนกุมภาพันธ์ถึงเดือนมีนาคม พ.ศ. 2543 วัตถุประสงค์ของการวิจัยเพื่อ เปรียบเทียบความรู้ ทักษะคติ และทักษะการสวมถุงยางอนามัยกับหุ่่น ระหว่างกลุ่มทดลองที่ได้รับความรู้และสังเกตการสาธิตการสวมถุงยางอนามัยกับหุ่่น หลังจากนั้นฝึกการสวมถุงยางอนามัยกับหุ่่น และกลุ่มเปรียบเทียบที่ได้รับความรู้และสังเกตการสาธิตการสวมถุงยางอนามัยกับหุ่่น และศึกษาปัญหาของถุงยางอนามัยในเรื่องการใช้และความอาย

ผลการเปรียบเทียบคะแนนความรู้และทัศนคติเกี่ยวกับถุงยางอนามัยของนักเรียนอาชีวศึกษาชายกลุ่มทดลองและกลุ่มเปรียบเทียบหลังการให้ความรู้และสังเกตการสาธิตแล้วฝึกปฏิบัติหรือสังเกตสังเกตการสาธิตการสวมถุงยางอนามัย พบว่าไม่แตกต่างกัน แต่มีคะแนนทักษะการสวมถุงยางอนามัยกับหุ่่นแตกต่างกันอย่างมีนัยสำคัญทางสถิติที่ระดับความเชื่อมั่นน้อยกว่า 0.001 กลุ่มทดลองมีคะแนนความรู้ ทักษะคติ และทักษะการสวมถุงยางอนามัยกับหุ่่น ก่อนและหลังการให้ความรู้และสังเกตการสาธิตแล้วฝึกปฏิบัติ แตกต่างกันอย่างมีนัยสำคัญทางสถิติที่ระดับความเชื่อมั่นน้อยกว่า 0.005 น้อยกว่า 0.001 และน้อยกว่า 0.001 ตามลำดับ กลุ่มเปรียบเทียบมีคะแนนความรู้ก่อนและหลังการให้ความรู้และสังเกตการสาธิตการสวมถุงยางอนามัย ไม่แตกต่างกันอย่างมีนัยสำคัญทางสถิติ แต่คะแนนทัศนคติและทักษะการสวมถุงยางอนามัยกับหุ่่น แตกต่างกันอย่างมีนัยสำคัญทางสถิติเท่ากันคือที่ระดับความเชื่อมั่นน้อยกว่า 0.001 ปัญหาการใช้และความอาย ลดลงภายหลังการให้ความรู้ ผลการศึกษานี้สามารถนำไปใช้เป็นแนวทางในการส่งเสริม การให้ความรู้และการปรับเปลี่ยนทัศนคติเกี่ยวกับถุงยางอนามัยในกลุ่มวัยรุ่นชาย การสอนวิธีสวมถุงยางอนามัย สอนโดยให้ฝึกปฏิบัติดีกว่าวิธีสอนโดยให้สังเกตการสาธิตการสวมถุงยางอนามัยกับหุ่่น วิธีนี้จะช่วยลดความล้มเหลวของการใช้ถุงยางอนามัยได้

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CHAPTER I

INTRODUCTION

Background

Adolescence was a phase of the most development of body, emotional and intelligence. Body develop about size and shape. Emotional develop in feelings of sexuality, feeling of self-confident and independent, feeling in relationships of partners. Intelligence develop in reasonable thought, conceptualize and ideal (1).

Sexual behaviors in adolescence, 30.5 percents Thai male vocational students had sexual intercourse (2), and only 5.8-11.3 percents used condoms (2,3).

Failures in condom use, failures occurred in two ways.

Method failure: Researches about condom method failure showed breakage rates of between 0.5-7 percent in a variety of settings, countries, time periods, and sexual behaviors (4).

User failure: Although popular belief often blames condoms themselves for breaks and tears (method failure), researches demonstrates clearly that most condom breaks and tears were the result of user failure (4). The most common users error were inconsistent use-failure to use a condom for every act of intercourse (3). Total condom breakage was defined as the number of condoms that broke at any time between the time the package was opened and the time the condom was removed from the penis, divided by the total number of condom packaged opened (5). Condoms breakage or slipped off in approximately 4 percent of coital acts and a range of breakage during

vaginal intercourse was from 0-6.7 percent and a range of complete slip away from 0.6-5.4 percent (6-10). If intercourse lasted for more than 20 minutes and having especially act intercourse were associated with slip off (5). As a result, for most condom users, breakage and slip away are more infrequent event than the above figures would suggest. Moreover, many condom breaks and slips do not place the user at risk of transmission because they occur before intercourse or during removal (nonclinical breakage and slip). Most importantly, condom users who report more frequent condom breakage and slip can be counseled to develop skill to avoid behaviors that may be placing them at an increased risk (5-11).

Myths about condoms: Misinformation and misunderstanding about condom effectiveness continues. The Center for Disease Control and Prevention (CDC) in the U.S.A. provides the following updated information to address some common myths about condoms such as condoms do not work, HIV can pass through condoms, condoms frequently break. This myths were corrected by information or findings from recent epidemiologic, laboratory, and clinical studies (12).

The failures in condom use will results in sexually transmitted diseases (STDs), the human immunodeficiency virus (HIV) infection and unplanned pregnancies.

Sexually transmitted diseases (STDs), In 1996 Thai people infected with a predominantly sexual mode of transmission number 13 per 100,000 population (13), 33.21 percent of STDs were between 15-19 years (highest rate) (14) [Thai adolescence in 1996 numbered 5,357,656 (15)]. Overall, 2.42 percent were students and 68.24 percent employee (highest rate)(14).

The human immunodeficiency virus (HIV) infection, From 1984 to 1998 overall, 134,097 Thai people were infected with HIV, and 36,928 persons die(16).

Unplanned pregnancies, Thailand has the current high rates of unplanned pregnancies. Each year in Thailand, nearly 200,000-300,000 females were estimated to have abortion (17). The almost all females of unplanned pregnancies were not marriage (single female) or stayed with partners. They were not using any contraceptives. In this way, if adolescence use condoms, they will prevent unplanned pregnancies (1,18).

The costs, In care, HIV patients spent for medicine care cost (laboratory test, procedures and medication cost) overage 4,236.50 Bahts for one person per day. They spent for routine service cost (labor and operating cost) 341.19 Bahts for one person per day. Adding the two together patients spent on overage 4,577.66 Bahts per person per day. In total cost, overall HIV patients must spent more than 577 million Bahts per day. These spend money did not combine expensed for cost of board and lodgings of patients and relatives which in 1992 were approximate 210,605 million Bahts per year (19).

Latex condoms, They have been available for about 100 years, the proper and consistent use of them when engaging in sexual intercourse-vaginal, anal, or oral-can greatly reduce a person's risk of sexually transmitted diseases (STDs) and HIV infection. Latex condoms effectively prevented pregnancies and most STDs including HIV infection (20,21), with method-failure rates between 0.5-2.0 percent (4), but with user-failure rates between 12-70 percent (4). In fact, recent studies provide compelling evidence that latex condoms are highly effective in protecting against HIV infection when used properly for every act of intercourse. In a study of discordant couples in

Europe, among 123 couples who reported consistent condom use, none of the uninfected partners became infected. In contrast, among the 123 couples who used condoms inconsistently, 12 of the uninfected partners became infected (22).

Many researches indicate, condoms must be used consistently and correctly to provide maximum protection. Consistent use means using a condom from start to finish with each act of intercourse (4,12).

Correctors of failure in condom use, were using with Information, Education and Communication, (I.E.& C.) for family planning (23) and Knowledge, Attitude and Practice Theory (KAP) (24). The theories have concepts toward as follow:

Knowledge (awareness): It was information about condom.

Attitude (interest, assessment): It was positive attitude toward condom.

Practice (trial, adoption): It was skill in condom use.

Adolescence, who had not knowledge, attitude and practice or only one of concept will fail in condom use.

The cause of adolescence non use of condom: Researches indicated that having negative attitudes, direct experience with condom failed to influence the attitude towards condom use and intended condom use, while positive attitudes had a positive effect on the expectation to use condom in the future (25-28).

Condom use adoption and continuous use: Data support results from previous research suggesting that men who have experienced condom breakage or slip were at higher risk than men who have skill in condom application. They will have future condom failure. They note, however, that bivariant analyses cannot address confounding factors or interaction between different behaviors, by pointing out that condom slip and breakage increased significantly with the number of risk behaviors

men reported. They conclude, therefore, that “engaging in multiple adverse behaviors is more strongly associated with failure than is any one adverse behavior in particular.” (5-10).

Condom effectiveness therefore depends on the skill level, experience, and motivation of the user, even for adolescents who use condoms consistently (2-4, 6-12, 25-29).

Methods for intervention in information about condom, The method was used by students were interviewed for knowledge and observed teachers who demonstrated applying a condom onto the penile model. Which was indirect experience. In this way, the researcher was interested in the new methods for intervention by direct experience for male vocational students.

Research Question

Are there a difference about condom application by skill in hands-on method (experimental group) and observation method (comparison group)? And are there any difference in knowledge, attitude and skill in condom application onto the penile model in male vocation students?

Objectives

General objective

Comparison of knowledge, attitude and skill in condom application onto the penile model in male vocational students between the two groups that of the experimental group (i.e. subjects are interviewed about their knowledge and observed during a demonstration of condom application and skill in hands-on condom application) and the comparison group (i.e. subjects are interviewed for their knowledge and observed assistant researchers who demonstrated applying a condom onto the penile model).

Specific objectives

1. Knowledge, attitude and skill in condom application in the experimental and comparison group.
2. Comparison of the scores between the experimental and comparison group for their knowledge, attitude and skill in condom application onto the penile model.
3. Comparison of pretest and post-test scores in each group for their knowledge, attitude and skill in condom application onto the penile model.
4. Problems with condom use and felt feelings of shame.

Research Hypotheses

1. After different intervention, the experimental group have higher scores of knowledge, attitude and skill in condom application than the comparison group.
2. After intervention, the experimental group have higher scores of knowledge, attitude and skill in condom application.
3. After intervention, the comparison group have different scores of knowledge, attitude and skill in condom application.

Scope of Research

The researcher compared knowledge, attitude and skill in condom application in male vocation students between the two groups. The first group, the experimental was interviewed for their knowledge and observed during a demonstration of condom application and skill in hands-on condom application. While the comparison group was interviewed for their knowledge and observed assistant researchers who demonstrated applying a condom onto the wooden penile model. The subjects were male students in Primary Vocational Education. They were studying in the third year in Ratchaburi Technical College at Ratchaburi Province in the academic year 2000. They are age between 15-20 years old. Data were collected between 1st February to 30th March, 2000. Pretest and post-test was separated by a period of two weeks.

Limitation of the Study

1. This research is limited to the study in male vocational students in Ratchaburi Technical College at Ratchaburi Province.
2. This research measured the skill in condom application onto the artificial penile model therefore results can not extrapolated to skill in condom application in real life situation.

Benefit of Research

1. Information obtained from this research can be useful for persons, who are related to adolescents such as parents, teacher and authorities of public health in order to encourage, adoption and maintain using of condom especially in adolescents, who are known to have never used condom or using it inconsistently in sexual intercourse.
2. Intervention method, which can be used appropriate for intervention about information about condom.
3. Information obtained from this research can be use as a basis for further research on condom use or non use in Thailand and perhaps elsewhere.

Definition of Terms

Knowledge about condom, is defined as the information, meaning, characteristic, benefit, describe steps of use, advantage and disadvantage, side effect, buy and care of condom.

Attitude towards condom use, means a combination of concepts, information and emotions that result in a predisposition to respond favorably or unfavorably towards condom. The affective component of attitude consists of the evaluation, liking or emotional respond towards condom.

Skill in condom application, mean correct practice of condom application onto the artificial penile model step-by-step.

Demonstration steps of application of condom, mean the demonstration of use of condom application onto the penile model by the two assistant researchers. Application has 11 steps, subjects ought to start sequentially from the first step towards last steps (showed in appendix).

Before use condom:

1. Look for expired date.
2. Look over the package for obvious tear or hole.

Hold package:

3. Push condom to profile of package.
4. Tear along condom's package. Pull condom from package.

5. Hold the rolled condom outside.
6. Unfold the condom about 2.5 centimeter.
7. Squeeze at the tip of condom length to eliminate air.
8. Put on condom while hand squeezing condom's tip.
9. Use the other hand to unfold the condom along whole length of penile model.
10. Leaving space at the tip of the condom to accommodate semen.
11. Withdraw condom from penile model:
 - Use tissue paper to wrap round at the top of condom and pull down to withdraw condom from penile model.
 - Or
 - Use the little finger of the two hands and hooking the inside at the top (ring) of condom and withdraw condom from penile model.

Skill in hand-on condom application, mean the method, that subjects must practice by applying condom onto the penile model by themselves.

Observe condom application, mean the method, that subjects only observe assistant researchers demonstrate condom application onto the penile model.

CHAPTER II

LITERATURE REVIEW

This research objectives were to compare knowledge, attitude and skill in condom application onto the artificial penile model in male vocational students between the two groups of students. In the experimental group, subjects were interviewed for their knowledge and observed during a demonstration of condom application and skill in hands-on condoms application while the comparison group was interviewed for their knowledge and observed the assistant researchers who demonstrated applying a condom onto the artificial penile model. This study used idea, theory and research's results from research objectives. The review of literature will cover the following topics:

1. Condom
2. Adolescence
3. Information, Education and Communication, (I.E.& C.) for family planning and Knowledge, Attitude and Practice Theory (KAP).
4. Research review

Altogether 46 articles in International Journal and 24 articles in National Journal were reviewed.

1. Condom

Modern developments have provided wider and more efficient distribution and technical improvements in the materials used. It was only about 50 years ago, thanks to the latex rubber manufacturing process, that it was possible to produce condoms in large quantities. The last three decades have seen mass manufacture of high-quality condom to serve a worldwide market. Thus, the extremely reliable and widely available condom is a relatively recent achievement (29).

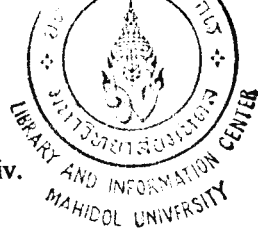
Description

Condoms are cylindrical sheaths designed to envelop the penis completely. They are fabricated from latex and available in various styles. The basic types are those with a plain, rounded end and those with a reservoir tip to collect the semen at the time of ejaculation. Some condoms are also lubricated for ease of application. They are available with walls of various thicknesses, in various colors and with smooth or textured surfaces. Some condoms contain a spermicide intended to deactivate spermatozoa, so the chance of pregnancy is decreased except where the sheath leak or rupture (29).

The quality of condoms, which is so essential to the effectiveness, may vary. Therefore, before they are released for sale, they are usually vigorously examined for leaks and tested for tensile strength, but manufacturing specifications differ according to government regulations of various countries (29).

Proper use

Instructions for condom use are fairly simple, but none the less important. Therefore, easy-to-follow directions are provided with all condoms. These include:



1. Keep a supply condom at hand, ideally in a cool, dry place, so that one is easily available for use at every time of sexual intercourse (29).

In high temperatures and humid warehouse and, upon testing, it was found that a large percentage of the condoms had lost their ability to expand, as shown in the lower volumes of air required to burst the condoms (30). Fluorescence light had an effect on condom (31). Prolonged exposure to ultraviolet rays had a major effect on the breakage of condoms. After 6-8 hours of intense ultraviolet radiation, failure rates, determined by actual breakage during use, was nearly 30 percent (30). Although under normal circumstance this exposure does not occur. Since latex in the form of the finished product is technically still covered in the package. The condom actually reaches maximum strength in 3 to 6 months after manufacture. The shelf life is generally accepted to be at least 5 years by the industry (30).

2. Do not test a condom by inflating or stretching it. Handle it gently and keep it away from sharp fingernails (29).

3. For maximum effectiveness, put the condom on before genital contact (21,29-32).

4. Place the rolled condom over the tip of the erect penis and unroll it along the shaft so that the length of the organ is covered by the device. Air should be expelled from the space or from the nipple of a receptacle-ended condom. If a receptacle-ended condom is not used, space should be left at the tip (21,29-32).

5. If desired, lubricate the outside of the condom with contraceptive jelly or another water-soluble lubricant (21,29-32), such as K-Y jelly.

The use of various lubricants with condoms has created a new set of problems. Latex condoms are at risk of weakening by use of products made from petroleum products, such as vaseline (30,32).

6. After ejaculation, withdraw the penis while the condom still in place and before erection subsides, making sure that the condom does not become dislodged from the penis. The rim of the condom should be held firmly against the base of the penis during withdrawal to prevent any seepage of semen, which is more likely to occur if the erection is lost prior to withdrawal (21,29-32).

7. Look for rips or tears in the condom before throwing it away (29,32).

Advantages, disadvantages and side-effects

Condoms are a safe, effective and reversible method of birth control. In addition to preventing pregnancy, condoms protect both men and women from sexually transmitted diseases and can reduce the risk of contracting HIV. They have no systemic side-effect and can be used correctly without medical supervision. They are also relatively cheap and can be carried about unobtrusively (21,29,31,32).

The principal objection to the condom stems from a perceived dulling of sensation, which may be a major problem for some men, and little or no problem for others person. Some individuals dislike the condom because its application requires interruption of the sexual act, or because it is an annoying distraction during the precludes to sexual intercourse. If non-lubricated condom are used, either partner or both may experience discomfort because of friction between the condom and penis or between the condom and the labia and/or vagina. Other objections are related to the longtime role of condom as a prophylactic in sexually transmitted diseases, and its

association with prostitution. Rarely, a few men and women may be sensitive to latex or the lubricants used in the condoms (21,29,31,32).

Special indications

There is a definite medical indication for use of the condom when there is a risk of sexually transmitted diseases (including AIDS) (21,29,31,32). Person who need protection from STDs must obviously place the condom before genital contact and avoid genital contact after its removal. However, the user should know that syphilis and herpes infections can be transmitted to and from other areas of the body (21).

In male, condom helped prolonging intercourse and preventing premature ejaculation (21,32).

In female, condom helped increasing orgasm because of decrease sensibility of touch in male (31,32).

The condom is the barrier method which can be used wherever female pelvic anomalies such as a short anterior vaginal wall, a cystocele, pelvic floor relaxation acute ante flexion of the uterus make it difficult or impossible to use any other mechanical vaginal barriers such as a diaphragm (29). Temporary use of the condom may be recommended in certain situations, until other methods of contraception are instituted (29,32).

Effectiveness

A condom can be a highly effective method of contraception if used correctly and regularly at every coitus. The effectiveness is increased by using a spermicide along with it (29). Theoretical effectiveness rates have been estimated to range from 0.5 to 2 pregnancies per 100 couple-years of use (29).

Attitudes

Some of the reasons for rejecting the condom voiced by worldwide couples are (1) cultural conditioning based on the association of the condom with STDs, (2) the thickness of condoms, which serve to dull penile sensitivity and sensation, and (3) the shape of the condom, which restricted the movement of the glans within the sheath. The modern condom, fortunately, is less tactile than the older forms-being thinner, more compliant, better lubricated, and in some cases so shaped that it permits more movement of the glans (21).

As for condom interrupting the sexual intercourse, the user can introduce the condom during foreplay or late in extended intercourse without fear of interrupting intercourse if the sexual partner learn to make these procedures a natural, even playful, part of the sexual exchange (21,32).

Extent of use

An estimated 40 million couples throughout the world rely on condoms. Use is heavily concentrated in a few areas, however. Two-thirds of condom users are in developed countries. Japan alone accounts for about 25 percent of condom use in the world, while China accounts for another 20 percent. Compared with the use of other methods, condom use is low in Latin America, the Caribbean, Africa, the Middle East and most of Asia (29).

2. Adolescence

Adolescence is bounded by the advent of puberty at the lower end and the capacity to take on adult responsibilities at the upper end. Adults see adolescents as

impulsive, and they must be restricted for “their own good”. Given these restrictions, a sex drive heightened by surges of sex hormones, and media inundation with sexual themes, it is not surprising that many adolescents are in conflict with their families about “going around” with certain friends and sex (32).

This adolescent contents proposes to stages of adolescent development and sexual development. First, however, it is necessary to identify the “adolescence”.

The World Health Organization (WHO) (33) has defined the adolescent period by the following characteristic:

1. Biological development from the onset of puberty to full sexual and reproductive maturity;
2. Psychological development from the cognitive and emotional patterns of childhood to those of adulthood;
3. Emergence from the childhood state of total socioeconomic dependence to one of relative independence.

2.1 Adolescent development in males

Adolescent development in males are bounded by puberty. Therefore puberty will be reviewed so that reader will understand puberty and adolescent development.

Males puberty

Anatomically males puberty begins with the appearance of secondary sex characteristics and ends when the long bones make no further gains in length. The appearance of strands of pubic hair are often the first visible signs of puberty. Pubic hair tends to be light colored, sparse, and straight at first. Then it spreads and grows darker, thicker and coarser. Puberty also involves changes in primary sex characteristics. Once puberty begins, most major changes occur within four years in

boys (32). Toward the end of puberty, reproduction becomes possible. The two principal markers of reproductive potential are the first ejaculation. But these events do not generally herald immediate fertility (32).

Table 1. Stages of males pubertal development (32)

In Males	Development
Beginning sometime Between ages 9 and 15	Testicles begin to grow. Skin of the scrotum becomes darker and coarser. A few straight pubic hairs appear at the base of the penis. Muscle mass develops and boy begins to grow taller. The areola grows larger and darker.
Beginning sometime Between ages 11 and 16	The penis begins to grow longer. The testicles and scrotum continue to grow. Pubic hair becomes coarser, more curled, and spreads to cover the area between the legs. The boy gains in height. The shoulders broaden. The hips narrow. The larynx enlarges, resulting in a deepening of the voice. Sparse facial and underarm hair appears.
Beginning sometime Between ages 11 and 17	The penis begins to increase in circumference as well as in length (though more slowly). The testicles continue to increase in size. The texture of the pubic hair is more like an adult's. Growth of facial and underarm hair increase. Shaving may begin. First ejaculation occurs.

Table 1. Stages of males pubertal development (32) (continued)

In Males	Development
	<p>In nearly half of all boys, gynecomastia (breast enlargement) occurs, which then decreases in year or two.</p> <p>Increased skin oils may produce acne.</p>
<p>Beginning sometime Between ages 14 and 18</p>	<p>The boy nears final adult height and the genitals achieve adult shape and size, with pubic hair spreading to the thighs and slightly upward toward the belly.</p> <p>Chest hair appears.</p> <p>Facial hair reaches full growth.</p> <p>Shaving becomes more frequent.</p> <p>For some young men, further increases in height, body hair, and muscle growth and strength continue into their early twenties.</p>

Development of males adolescence, began from puberty between ages 9 and 15 in males. The development of reproduction system, breast, body shape and voice is completed between ages 14 and 18 in males (32).

2.2 Adolescent sexuality

For the adolescent, sexual adjustment inevitably presents worries and stress. It almost always produces a lot of pleasure as well. In this society repression and negative attitudes toward sex fuel some of the worries and problems. Inadequate knowledge about the bodily changes-such as breast enlargement, menstruation, and nocturnal emissions-generally creates worries. Taboos about masturbation cause guilt. Prevailing cultural attitudes that sex is dirty produce anxiety and detract from the pleasure of sex. Societal moral against premarital intercourse produce conflict. Difficulties in obtaining contraceptives present teenagers with frustration, decrease their use, and contribute to

unwanted and unwed pregnancy and sexual transmitted diseases, which leads to more problems (33).

In this part, adolescent sexuality is divided in early, mid and late adolescence as follow:

2.2.1 Early adolescence

Early adolescence, this stage has many facet but in our case will concur aspects there were importance that precipitated worries and stress. The main concern is about body changes at puberty, masturbation and sexually active young adolescents.

Bodily changes of puberty

Puberty comes on with a series of bodily changes that take several years. The major changes and the nature of the process are covered to some degree in good sex education courses taught in elementary school. Even today, however, boys are frequently puzzled and worried about the events of puberty. Those older boys who, unlike their peers, are not yet in puberty often have a harder time feeling adequate. They may also worry desperately about acne and height, especially when they are short. In addition, they are concerned about spontaneous erection and nocturnal emissions. Pubertal adolescents carry around a load of worries about little things that they feel are wrong or unacceptable about their anatomy and physiological functioning. Often, not until adulthood are such dissatisfaction and concerns overcome (34).

Once the adolescent is through puberty, he must come to grips with the image of his body as it has finally turned out. Most growth is complete by 2 years after the voice has finally changed in the boy. The adolescent then begins to realize they will be like forever: short or tall, stocky or slender. They may be disappointed or feel inadequate about his lack of height. Because of this society's stereotypes, a short boy

has a harder time feeling masculine. It takes years to fully accept one's own body image. Some people never do (34).

Masturbation

In early adolescence the spontaneous erections in boys seem puzzling, sometimes a bit embarrassing or even frightening. Boys may experience sexual arousal and even orgasm from nonsexual activity; such as riding bicycles, riding horses, and climbing trees. These genital sensations often invite further self-stimulation or masturbation. Masturbation is not wrong and that it is normal, but they often put in a statement cautioning against too much, which opens the door for guilt. Because of the deep-seated taboos about masturbation, most males and females feel some guilt. However, this guilt does not generally create psychopathology. Neurosis or psychosis with a preoccupation about masturbation or overwhelming guilt is not caused by masturbation. Rather, it is only one of the symptoms of the illness, which has other causes. Yet the myth persists. Masturbation is common in males. (34).

Sexually active young adolescents

Some adolescents begin dating and become sexually active early, as young as 12 or 13 years of age, is often a symptom of maladjustment, particularly in the parent-child relationship, and unwanted pregnancy compounds the problems. It is possible for some to enjoy sexual intercourse at this age and to avoid getting into trouble, physically and psychologically. In accordance with the double standard of society, adults show little concern about the psychologically harmful effects of sexual intercourse on young adolescent boys (34).

2.2.2 Mid adolescence

Sexual experimentation with heterosexuality are characteristic of the 15-18 year olds. Males are still primarily interested in sex without love. Love and intimacy for both sexes comes later, during the stage of late adolescence or youth. Heterosexual crushes, one-sided infatuations, often with an unattainable person of the same age or older, such as a teacher or movie star-are common but usually transient (34).

For mid adolescence, sexual behavior, homosexuality and sexual problems take many forms. as follow

Sexual behavior

There is controversy over the degree to which patterns of sexual behavior have changed in recent years. Most authors believe there has been a relatively small increase in sexual activity. Sorenson's report, based on a nationwide sample (although small and perhaps not fully representative) of adolescents aged 13 to 19, showed that 52 percent had had sexual intercourse (59 percent of the boys). In the 13 to 15 age group, 37 percent had had intercourse, and in the 16 to 19 age group, the proportion was 64 percent. Among those who had experienced intercourse, the age of first coitus was as follows: 13 percent (17 percent of the boys) were 12 years of age or under; 71 percent of the boys had had first coitus by age 15; only 5 percent of the boy waited until age 19 for their first experience (34).

Homosexuality

The homosexual experiences are common in adolescent boys. In this discussion, homosexuality refers to sexual behavior rather than a deep emotional attachment, which is also common in adolescence and is sometimes called a homosexual crush. This crush is mostly a friendly alliance or an intense nonsexual

companionship, primarily for the satisfaction of dependency need. The homosexual crush or homosexual experiences in adolescence rarely presage the kind of behavior patterns and psychological relationships seen in homosexuals. In other words, it is common for persons who eventually establish a clear homosexual identity to have had at least one homosexual experience in adolescence (34).

In boys the experience is usually between peers and generally involves genital manipulation or masturbation. Fellatio may occasionally occur. Homosexual experiences are more likely to occur when youth of the same sex congregate, such as on boy scout outings, and in sexually segregated institutions, such as boarding schools. Although such experiences are generally erotic, heterosexually oriented adolescents do not persistently seek them out. Persons who repeatedly and eagerly seek out homosexual experiences are more likely to establish a homosexual identity later in life. The majority of homosexuals establish their homosexual identity between the ages of 15 and 25 years. The gay subculture refers to this as "coming out" (34).

Sexual problems

In spite of the fact that youths and their parents commonly have concerns about sexuality, few bring them to the attention of the medical profession. Parents are more often worried about the sexual activity of their daughters than they are about their sons. An occasional mother expresses concern about her son's masturbation. The problems associated with unwanted pregnancy are generally brought to the physician or psychiatrist. Promiscuity, prostitution, homosexuality, and other sexual variations are present in adolescents, but they seldom come to medical professionals as presenting concerns. Rather, they generally come to light in the process of legal, medical, or psychological involvement for other reasons (34).

Most of the sexual variations and/ or deviations seen in adults have their onset in the teen years or before. These include transvestism, exhibitionism, prostitution, and child-molesting. However, relatively few persons with these variations come for therapy during this period of their lives (34).

2.2.3 Late adolescence

Late adolescence, most of the information researchers have gathered about sex in this age period stems from studies of American college youth, and, although they account for about 50 percent of the population in this age group, they doubtlessly differ to some extent from their noncollege age-mates. In addition to displaying patterns general to the largest portions of the population, special subgroups have their own variations (34). This stage presents special sexual behavior and attitudes.

Sexual behavior and attitudes

American college men are more likely to have had their first intercourse experience with someone with whom they are not emotionally involved. Both men and women desire a close relationship and in fact may prefer it but men are willing to have sex without affection. Women are less willing; they are desirous of sex in the context of a committed relationship, often in line with the goal of marriage. Young men today are less likely to visit prostitutes and are aware of the possibilities of sex with affection. Virginity is less prized among men and women; young men are more accepting of a nonvirgin marital partner, and women are more accepting of themselves as nonvirgin brides (34). Virgin men may feel that their masculinity is threatened. These youths need sources of support for themselves and for their beliefs that sexual intimacy should be reserved for marriage (34).

Worries and mental stress in adolescents results from Physical and emotion change. This change is divided to three stage; early, mid and late adolescence. Having knowledge, positive attitude about adolescent sexuality should help those who care for adolescent health.

3. Information, education and communication, (I.E.&C.) for family planning and Knowledge, Attitude and Practice Theory (KAP).

3.1 Information, education and communication, (I.E.&C.) for family planning (23) were methods for promotion of family planing so that correct can be made to use contraception. Human adoption process can be modified. The process of adoption often followed in steps: awareness, interest, assessment, trial and adoption.

3.1.1 Awareness

Awareness is the first step of knowledge for people 5 senses such as visual, olfactory, taste, auditory and tactile senses are used. In this way, people who use condoms must know condom.

3.1.2 Interest

Interest is the second step. Interest create curiosity about knowledge. They search for details such as when people know the condom, they would want to know more details about condom.

3.1.3 Assessment

Assessment is the third step. This step is to compare the benefits and burdens such as when people have condom's details they would compare condom method with the other contraceptive method or method in use.

3.1.4 Trial

Trial is the fourth step. This step is decision to use on a basis of trial period to use condom and compare with the other contraceptive method. During this trial period other methods of contraception may be used concurrently.

3.1.5 Adoption

Adoption is the last step. This step is a decisive. The decision use or to use condom regularly is made benefit is appearance and advantages more than the disadvantages.

Figure one illustrates the pathway of adoption process the reverse process could occur when the new method is found to be less satisfactory.

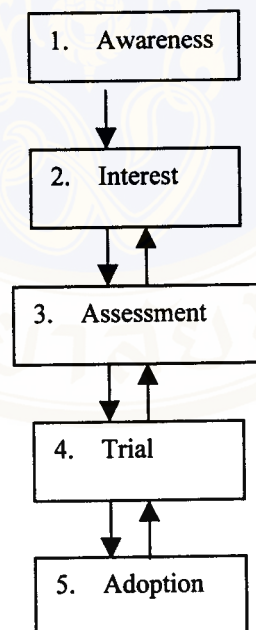


Figure 1. Adoption Process.

3.2 Knowledge, Attitude and Practice Theory (KAP)

Knowledge, Attitude and Practice Theory (KAP) (24) has three concepts. The process of theory followed in steps: Knowledge, Attitude and Practice.

Knowledge

Merriam-Webster's Collegiate Dictionary (35) defined knowledge as:

1. Cognizance
2. The fact or condition of knowing something with familiarity gained through experience or association, acquaintance with or understanding of a science, art, or technique.

Bloom (36) defined, knowledge as cognizance specially or general in process or situation stressing use of memory.

Suwon (37) defined, knowledge as the first step of memory by cognizance, see or hear. This step of knowledge such as knows about definition, mean, true, rule, theory, structure and method's correct. This memory is not a complicated process.

In conclusion, knowledge means what is known from studying, learning, experience, rule, place, thing, person, circumstance. Knowledge takes time and is not a complicated process.

Level of knowledge

Bloom (36) and Suwon (37), divided cognitive domain in to 6 levels as followed:

1. Knowledge or recall, which means the first step of memory about method, process, structure that can be used to describe definition, detail and truth.
2. Comprehension or understanding, which mean practice or skill of translation, interpretations and extrapolation.

3. Application defined practice or skill to understand and to correct problem by adaptation. Correct and demonstrate can be demonstrated in daily situation.

4. Analysis defined procedure to break down components of problem, situation, according to conversation, rules and structure.

5. Synthesis mean ability to rebuild conclusion for new process.

6. Evaluation mean ability to decide using given rule and standard.

Attitude

Attitudes are a combination of concepts, information, and emotions that result in predisposition to respond favorably or unfavorably toward particular people, groups, ideas, events, or objects. Many persons present mean such as:

Green et al. (38), defined in as and attitude is a relatively constant feeling, predisposition, or set of beliefs directed toward an object, person, or situations.

Ajzen et al. (39), on the other hand defined in as a person's location on a bipolar evaluation or affective dimension with respect to some object, action, or event. An attitude represents a person's general feeling of favorableness or unfavorableness toward some stimulus object. Conceptual framework, as a person from beliefs about an object, he automatically and simultaneously acquires an attitude toward that object. Each belief links the object to some attitude; the person's attitude toward the object is a function of his evaluation of these attributes.

Suwon (37) defined in as on attitude is beliefs of person about things, persons, behavior, situation or other in addition to position that present from idea.

Conclusion; attitude is the idea that contains ingredients of feeling, belief toward stimulus object.

Attitude has 3 ingredients these are:

1. Cognitive component, that mean ingredients of idea and understanding towards stimulus object by themselves.
2. Affective component, that mean ingredients of emotion or feeling that can be positive or negative.
3. Behavioral component, that mean ingredients of behavior or stimulus to practice.

Practice

Green et al. (38); defined in as practice is action on rhythmic or time and has objective.

Roger (40) ; The latest step of adoption process such as awareness, interest, assessment, trial and adoption.

Suwon (37) ; Practice is doing by observe. It is ingredients as cognitive component and intention that use time and many step of decision.

Conclusion that practice mean doing by observe.

Practice is results from: 1. Attitude; 2. Norms; 3. Habit and; 4. Hope from results (37).

Becker et al. (41), belief that a person practice when they receive perceive susceptibility, seriousness, benefit and barriers, even to action and modifying factors.

In that way, when person have habit from hop for a successful result, must are received knowledge that the first step so that they alter attitude, which alter practice but attitude do not single ingredients of practice. Attitude is one case of practice. Knowledge, attitude and practice have among relative. Do not separation. This relative showed at figure 2.

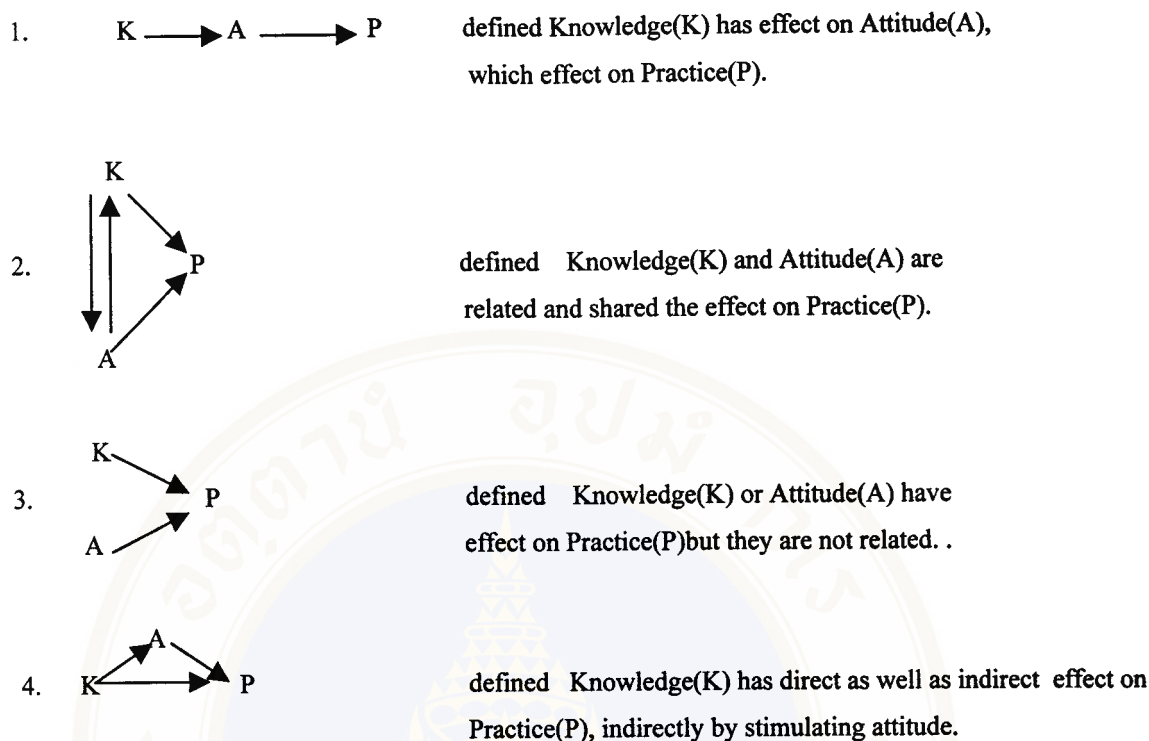


Figure 2. Relations between knowledge, attitude and practice

Information, education and communication, (I.E.&C.) for family planning and Knowledge, Attitude and Practice Theory (KAP) are models for variations in health practices The postulation is that I.E.&C. have five explanatory factors: awareness, interest, assessment, trial and adoption. KAP has three important factors: knowledge, attitude and practice. Both models have much in common. They predict that salient attitudes about practice influence behavioral practices. These anticipated consequence correspond to the I.E. & C. concepts of interest, trial and adoption, and to the KAP concept of behavioral attitude. Both theory beliefs about the consequences of behavioral outcomes provides much guidance. Which components will be the most important predictors of behavior.

Application of the Theoretical Models to condom use in male adolescence, who must understand benefit of condom, use's method and trial. The trial is important step in producing positive attitude for condom use. In this way, male adolescence will use condom in their daily practice.

4. Research review

Year / Researchers	Location	Research design / Sample size	Summary of results
<p>1990 Richter DL et al. (42)</p> <p>Marcia L et al. (43)</p>	<p>South Carolina U.S.A.</p> <p>The St. Paul Metropolitan Area The United States</p>	<p>① Survey ② Male and female students of public high school in grades 9 to 12, 3,893 persons.</p> <p>① Cohort study ② Male and female adolescents 13-21 years, 540 persons.</p>	<p>Age is a significant predictor of sexual activity for every race-gender group except Black male ($p < 0.01$). And predictor of failure to use condoms for White male and Black females ($p < 0.001$ and $p < 0.01$). 52 percent of sexually active adolescents reported not using condoms the last time they had intercourse.</p> <p>Fifty-two of females 5 male had laboratory evidence of 63 infection. Although three individuals who had STDs reported to be consistent users of condoms, a significant association ($p < 0.05$) was found between those who reported more frequent condom use with the last two partners and the absence of STDs.</p>
<p>1991 Kovsupapr S (44)</p>	<p>Somewhere Vocational Education North East Region Thailand</p>	<p>① Survey ② Male of Low and High Vocation Education 3,200 persons</p>	<p>Subjects in High Vocational Education had sexual intercourse with prostitute 29 percent and 13 percent in Low Vocation Education. They had sexual intercourse with women, who were not prostitute 21 percent in High Vocational Education and 11 percent in Low Vocational Education. They use condoms</p>

Year / Researchers	Location	Research design / Sample size	Summary of results
Vanlandingham MJ et al. (45)	Chiang Mai Thailand	① Survey ② 524 male students that have mean age 20 years old.	with prostitute 50 percent and used with women, who were not prostitute lower than 11 percent. Students, who sexual experience was much lower than 34 percent, while less of the respondents reported that they never use condoms, only about half report using condom consistently. Approximately a third or more of each group report advice from closed friends supporting condom use.
Kvalem IL et al. (46)	The county of Vestfoid in Southern Norway	① Experimental design ② Male students in High school and colleges 2,411 persons	Time since first intercourse was found to have a significant effect on use of condom, odd ratio (OR)=0.89, $p<0.02$. Long sexual intercourse experience gives a lower odds ratio for use of condoms. Number of sexual partners affected condom use, OR=0.78, $p<0.0001$.
<u>1993</u> Brown NL et al. (47)	The Seattle Washington Public Schools U.S.A.	① Survey ② Male and Female students in survey group 7,830 persons	The survey revealed that 48 percent of students who had engaged in sexual intercourse. Some sexually active students may not have decided to use condoms with their sexual partner (s). Most students believed that the school was helping students protect themselves and believed that being sexually active was the norm in their school 75-80 percent.
<u>1994</u> Norris AE et al.(27)	Midwestern city U.S.A.	① Survey ② Male and female, age 15-20 years, 726 of African American and 709 of Hispanic.	Gender, ethnicity, acculturation, and age effects will only be examined for the set of beliefs that appears significantly related to frequency of condom use for vaginal intercourse in the past year at a significance level of $p<0.05$. Sixteen of the 23 condom beliefs surveyed were



Year / Researchers	Location	Research design / Sample size	Summary of results
<p>Warner L et al. (28)</p> <p>1988-1995 Sonenstein FL et al.(48)</p>	<p>Georgia university U.S.A.</p> <p>The conterminous United States</p>	<p>① Survey ② 305 male students, age 18-29 years.</p> <p>① Survey ② Male, age 15-19 years who were never married 1,710 persons</p>	<p>significantly related to frequency of condom use.</p> <p>Subjects reported their first act of vaginal intercourse at 15.5 ± 2.4 years (range,10-21). Twenty men (42.6 percent) reported using a condom at first vaginal intercourse. Altogether, 35 of 270 total condom uses (13.0 percent, 95 percent confidence interval, 7.4-18.5) resulted in potential exposure to sexually transmitted disease and/or HIV infection or pregnancy. Both consistent and inconsistent users were similarly likely to report potential exposures during condom use.</p> <p>The proportion of never- married 15-19 years male who had had sex with a female declined from 60 percent to 55 percent (p=0.06). The share of those sexually active using a condom at last intercourse rose from 57 percent to 67 percent (p<0.01). Overall, the proportion of males who had sex without condoms last year declined from 37 percent to 27 percent (p<0.001).</p>
<p>1996 Mahuttano K (3)</p>	<p>Bangkok Thailand</p>	<p>① Survey ② Male students in Vocational Education who have experience of sexual intercourse 310 persons.</p>	<p>Most of sample,64.5 percent occasionally used the condoms while 24.2 percent never used and only 11.3 percent always used. Factors that associated with the condom use among the students are attitude to condom use, perception of susceptibility to STDs and AIDS, perception of seriousness of STDs and AIDS, availability of condoms ,cost of condoms, occupational of partners, the condom use among closed friends, support from partners and advice from parent or teacher.</p>

Year / Researchers	Location	Research design / Sample size	Summary of results
1997 De Wit R et al. (25)	Leuven Belgium	① Survey ② Two hundred and seventy first year college students (168 females, 102 males) 87 percent of the subjects under 20 years, with an average of 18.6 years	<p>Seventy-five percent of the subjects reported having had experience of sexual intercourse, but 77 percent were consistent condom users. Male believe condoms to be more effective in preventing STDs [$t(267)=-3.97$, $p < 0.001$], but they express a more negative effect [$t(262)=2$, $p < 0.05$] and are more inclined to believe that using condoms is promiscuous [$t(267)=2$, $p < 0.05$]. Females have a more positive global attitude [$t(267)=2.59$, $p=0.01$] and perceive the attitude of their peers as more positive than males do [$t(267)=2.63$, $p=0.009$]. Affect is the sole factor correlating with experience with condom use [$F(2,263)=4.01$, $p < 0.02$].</p>
De Wit R et al. (26)	Leuven Belgium	① Experimental design ② A total of 101 first-year university students, 72 females and 29 males, 95 percent of subjects were less than 20 years.	<p>Direct experience with condoms failed to influence the attitude toward condom use and intended condom use. Subjects who had results in positive attitudinal will have positive effect on the expectation to use condoms in the future.</p>
Godin G et al. (49)	Juvenile rehabilitation centers of the Quebec Metropolitan urban area Canada	① Experimental design ② Adolescents; 108 male and 44 female	<p>The mean age at first sexual intercourse was 13.25 years, but only 20.8 percent of the boys and 7.3 percent of the girls reported always using condoms. Frequency of condom use in the past ($\beta=0.21$, $p < 0.01$). The variability in intention ($R^2 = 0.76$; $p < 0.001$) was explained by personal principles guiding adoption of behavior ($\beta=0.44$, $p < 0.001$), perceived control in adopting the behavior ($\beta=0.36$, $p < 0.001$) a habit of using condoms in the</p>

Year / Researchers	Location	Research design / Sample size	Summary of results
			previous 3 months ($\beta=0.15$, $p < 0.01$).

Results from research review concluded that male adolescent sexuality who were vocational students, about age in sexual intercourse, sexual behavioral, condom used, problems and attitudes towards condom use, and adoption in condom as follows:

Age at sexual intercourse: most of male vocational students have their first act at 15.5 ± 2.4 years old (range, 10-21). Proportion who had had sex increasingly from the age-increasingly. Age is a significant predictor of sexual activity.

Sexual behavioral toward attitude: two-third of subjects have two or three sexual partners. Majority of them had first sexual intercourse with prostitute and closed friends. Half of sexual intercourse were unplanned.

Condom used: approximate 50 percents of subjects used condom with prostitutes but they rarely use condom with closed friends. Condom used declined while number of sexual partner increased. Factors that associated with the condom use among the students are attitude to condom use, perception of susceptibility to STDs and AIDS, perception of seriousness of STDs and AIDS, availability of condoms, cost of condoms, occupational of partners, partners's support.

Problems and attitudes towards condom use: most problems had loss of erection. Male believe condom to be more effective in preventing STDs.

Adoption of condom: direct experience with condom failed to influence the attitude toward condom use and intended to use condom. Positive attitude

toward condom use and intended to use condom will have positive effect on the expectation to use condom in the future.

Conclusion from literature reviews, the following diagram are the conclusion.

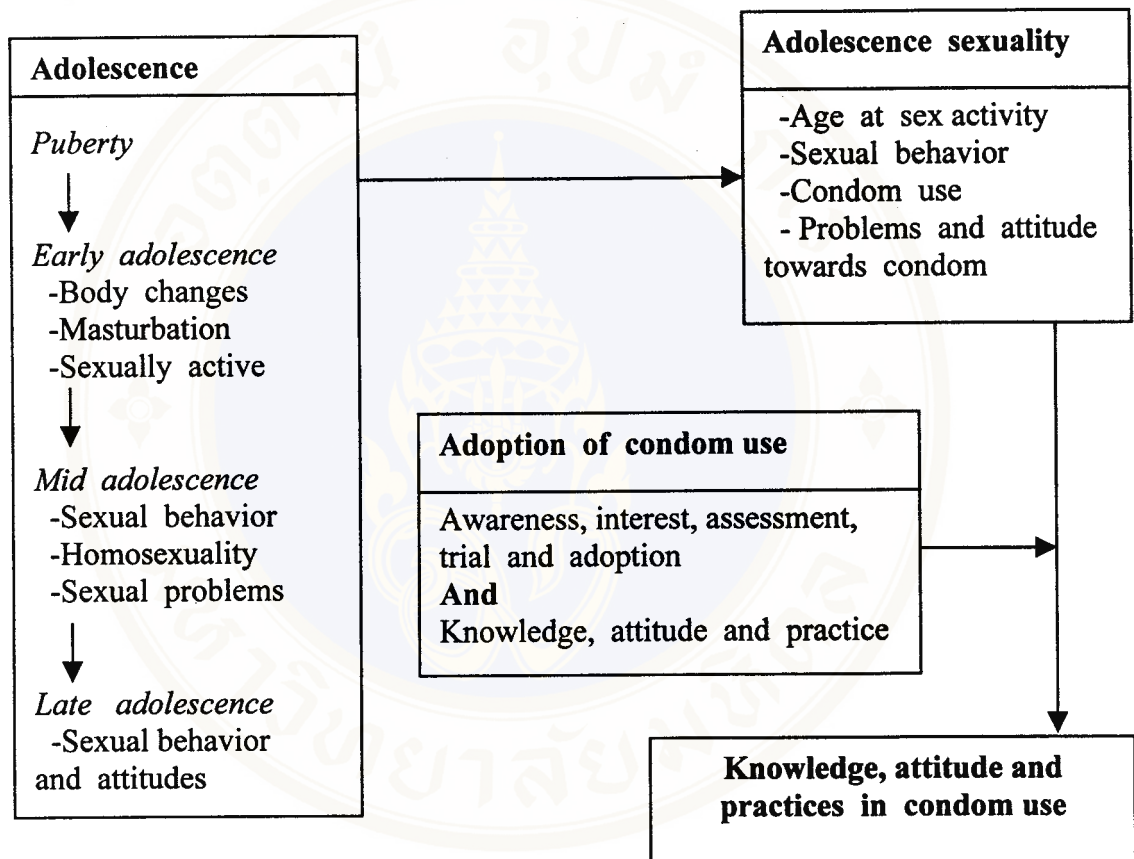
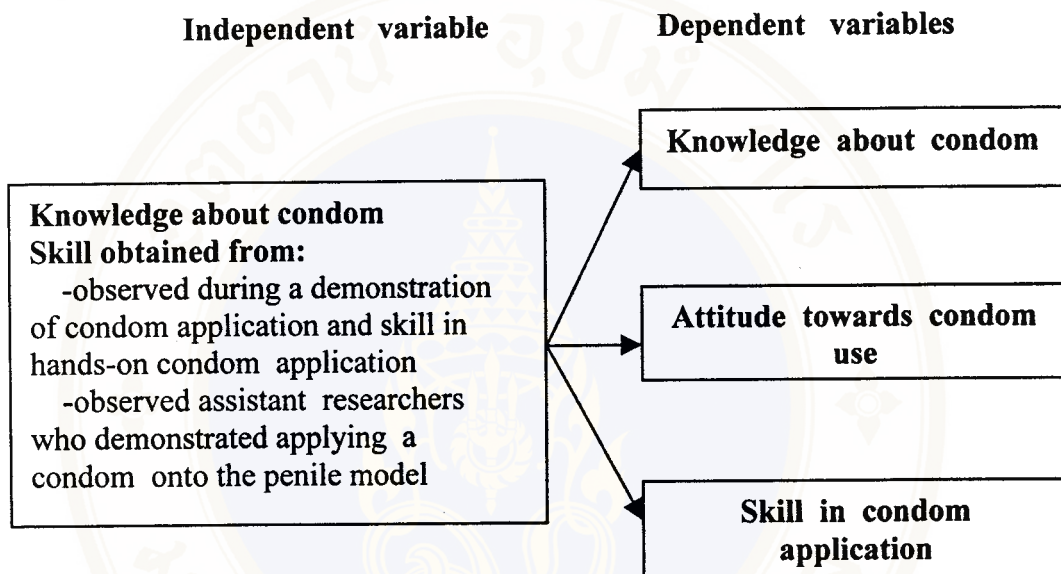


Figure 3. Concept in this research.

From the above diagram, the conceptual framework of this research are as follows:

Conceptual Framework



CHAPTER III

MATERIALS AND METHOD

This research was experimental design by intervention for the two groups of male vocational students. In the experimental group, subjects were interviewed for their knowledge and observed during a demonstration of condom application and skill in hands-on condom application. The comparison group was interviewed for their knowledge and observed assistant researchers who demonstrated applying a condom onto the penile model only. Pretest and post-test of knowledge about condom, attitude towards condom use and skill in condom application were conducted in male third year students of Primary Vocational Education Group at Ratchaburi Technical College, Ratchaburi Province in the year 2000. This section of thesis will be divided in to five parts as follows:

1. Research design
2. Population and sample size
3. Instrument
4. Data collection
5. Data analysis

1. Research design

By experimental design field research, divided subjects in to the experimental and comparison group. The experimental group was interviewed of their knowledge and observed during a demonstration of condom application and skill in hands-on condom application onto the penile model. The comparison group was interviewed of their knowledge and observed assistant researchers who demonstrated applying a condom onto the similar penile model only.

Variables

This research has one independent variable and three dependent variables as follows:

Independent variable

Knowledge about condom and observed during a demonstration of condom application and skill in hands-on condom application (the experimental group)

And

Knowledge about condom and observed assistant researchers who demonstrated applying a condom onto the penile model (the comparison group)

Dependent variables

1. Knowledge about condom
2. Attitude towards condom use
3. Skill in condom application

2. Population and sample size

Population

The population of this study came from total male vocation students who were studying in Ratchaburi Technical College at Ratchaburi Province during the academic year 2000. They were age between 15 to 20 years, studying in Primary Vocational Education in the third year in 15 professions sections, willing to participate in the study and able to come for pretest and post-test at fixed period of appointment.

Sample size

Researcher calculated sample size by results of pilot study from 30 male vocational students age between 15 to 20 years, studying in Primary Vocational Education in the third year of Photharam Technical College at Ratchaburi Province. The students were tested before and after intervention. In addition, researcher calculated sample size by results of knowledge as follows:

Sample size for *compare mean of two groups independent sample of two-sided tests* (50) was calculated by the following formula.

$$n = \frac{(Z_{\alpha/2} + Z_{\beta})^2 2\sigma_d^2}{(\mu_1 - \mu_0)^2}$$

Where n was a sample size of each group.

$-Z_{\alpha/2}$ was missing of dependent type I error. Using Z at α level 0.05 = 1.960.

$-Z_{\beta}$ was missing of dependent type II error. Using Z at β level 0.10 = 1.282.

$-\sigma_d^2$ was the variance's different of pretest and post-test = 1.9264.

$-\mu_1 - \mu_0$ or (μ_d) was the difference between pretest and post-test scores.

$$= 11.5667 - 10.5000 = 1.0667$$

Replacing figures for the formula

$$\begin{aligned} n &= \frac{(3.242)^2 2(1.9264)}{(1.0667)^2} \\ &= 35.49 \end{aligned}$$

allowing for missing of 10 percent = 3.549

$$n = 39$$

Thus, sample size of each group should consist of at least 39 persons.

358 male vocational students from 15 professions sections of the third year, were selected for this studies by using proportion of students number from each classes. For example, mechanic class has 44 students. It has 5 students for experimental and comparison group. This subjects in each classes were selected by simple random sampling method with sampling selected for without replacement and simple random sampling method again for the experimental and comparison group (39 students in each group). Every subjects were willing to take part in these study.

3. Instrument

The instrument of this research was divided in to three parts as follows: questionnaire, information about condom, materials.

3.1 Questionnaire

This questionnaire was specially designed forms for data collection with coding.

The forms consisted of;

Part 1. provided information for indentification of the subjects.

Part 1.2 consisted of questions or statements on knowledge related to property and the use of condom. To be answered in true or false.

Part 1.3 consisted of questions towards attitude related to emotions that result in a predisposition to respond favorably or unfavorably towards condom. These questions were evaluated to the subjects were ling on emotional respond towards condom. To be answered in agreement, uncertainty and disagreement as well as answered in open-ended questions.

Part 2. was the evaluation form for the assistant researchers.

The questionnaires were tested in a pilot study with 30 male vocational students at another technical school (Photharam Technical College) in the same province. The results of a pilot study, condom knowledge has scores in pretest was 10.50 (μ_0) and post-test scores was 11.5667 (μ_1). Therefore, the difference between pretest and post-test scores was 1.0667. The variance's different of pretest and post-test scores was 1.9264 (σ^2_d).

Reliability of the instrument was tested with:

Kuder-Richardson formula (KR-20) (51) was used for test reliability of the knowledge about condom as follow:

$$KR-20 = \frac{k}{k-1} \left(1 - \frac{\sum pq}{\sigma^2_t} \right)$$

When k were total items = 12

p were proportion of subjects correctly in each items.

q were proportion of subjects who answered incorrectly in each items.

$\sum pq$ were 0.543

σ^2_t were variance of total scores = 1.569

Replacing figures for the formula

$$\begin{aligned} \text{KR-20} &= \frac{12}{12-1} \left(1 - \frac{0.543}{1.569} \right) \\ &= 0.7134 \end{aligned}$$

Reliability of knowledge about condom by used KR 20 was calculated to be 0.713.

Cronbach's Alpha Method (α) (51) was used for test reliability of the attitude towards condom use as follow:

$$\alpha = \frac{k}{k-1} \left(1 - \frac{\sum \sigma^2_i}{\sigma^2_t} \right)$$

Replacing figures for the formula

$$\begin{aligned} \alpha &= \frac{17}{17-1} \left(1 - \frac{22.8552}{69.2631} \right) \\ &= 0.7119 \end{aligned}$$

Reliability of attitude towards condom use by used Cronbach's Alpha Method was calculated to be 0.712.

After a pilot study, the questionnaire of this study (showed in appendix) consisted of two parts.

Part 1. This part is consisted of general data, knowledge data and attitude data towards condom. It has close-ended as well as open-ended questions. Subjects answer questionnaires on their own. The following are the details.

1.1 General data; age, was open-ended question.

1.2 Knowledge data of condom has 12 items (close-ended questions) answer true(10 items) and false (2 items). Correct answer scores 1 and incorrect answer scores 0. The total score ran between 0 to 12.

1.3 Attitude data towards condom, have close-ended as well as open-ended questions. There were 17 items (close-ended questions) answer with agreement (5 items), uncertainty and disagreement (12 items). Agreement in positive question scores 3 but negative question score 1. Uncertainty scores 2. In this way, attitude data have total possible scores will be between 17 to 51. There are 2 items, with open-ended questions concerning problems with condom use and felt feelings.

Part 2. This part is skill data in condom application onto the artificial penile model. This is a checklist used by the two assistant researchers to evaluate the subject's skill in condom application. Subjects ought to start to apply condom from first step sequentially step-by-step until finish at 11th step. Each step scores 1. Thus total possible scores will be between 0 to 11.

There are two methods of withdrawal condom from the model. If the subjects demonstrated either method, they will get score 1. The total time used to apply and withdrawal condom are also evaluated. The time taken were divided in to 30 seconds or less and more than 30 seconds.

Information about condom

The information about condom were collected from 7 published articles (29-32, 52-54). Knowledge about condom included information, meaning, characteristic, benefic, describe steps of use, advantage and disadvantage, side effect, buy and care condom (showed in appendix). The total time used to describe this information was about 20 minutes.

3.3 Materials

The condoms used in this study were obtained from the Control for AIDS and STDs Division, Ratchaburi Provincial Health Office. They were reservoir or pocket end (showed in appendix).

The artificial penile models were made from wood similar to the model used at the Control for AIDS and STDs Division (showed in appendix).

4. Data collection

Setting

These research was performed in male vocational students at Ratchaburi Technical College. The duration of study was between 1st February to 30th March 2000. So research setting was divided in two parts as follows:

1. *Subjects of the two groups:* They were met after permission to study was granted from the director of Ratchaburi Technical College. They were asked if they were willing and will come for an appointment. Permission for use the assembly hall was requested.

2. *The two male assistant researchers:* They were requested to assist in this study from the Control for AIDS and STDs Division, Ratchaburi Provincial Health Office. They were age 26 and 28 years, and similar position in Public Health Technical Officer Researcher described the objectives of research, information about condom, methods and gave condom preparation guideline and evaluation form (showed in appendix) to the two assistant researchers. Before studied (at Ratchaburi Technical College), researcher met two assistant researchers for revision of information about condom especially steps of condom application methods. And to

planned for collection of data and for period of appointment at Ratchaburi Technical College. After intervention, the researcher met with assistant researchers again to discuss problems from pretest, intervention, and post-test.

Methods

Researcher divided methods of data collection in to two parts:

1. Pretest: The subjects (the experimental and comparison group) met in the assembly hall. Each group sat separately. Evaluation of skill in condom use, assistant researchers of the experimental and comparison group called subjects in the scenery so that they applied condoms onto the penile model by used skill evaluation form one-by-one. After that, evaluation knowledge and attitude in condom by evaluation form (questionnaire) at one corner of the hall. When the subjects were evaluated for knowledge, attitude and skill already, two assistant researchers interviewed about their knowledge and observed during a demonstration of condom application onto the penile model and assistant researchers called the two subjects in the experimental group return demonstrated to condom application onto the penile model, responding to any further question from the subjects. Finally, permitting the comparison group to return to their seats. The experimental group must still in the assembly hall, then application of condoms onto the penile model one-by-one until they correctly applied the condoms.

2. Post-test: two weeks later period, the subjects met at the assembly hall by division group. The assistant researchers of the experimental and comparison group were the same person as pretest. Evaluated knowledge, attitude and skill in condom application the same steps at pretest.

All questionnaires and check lists were rechecked for completeness.

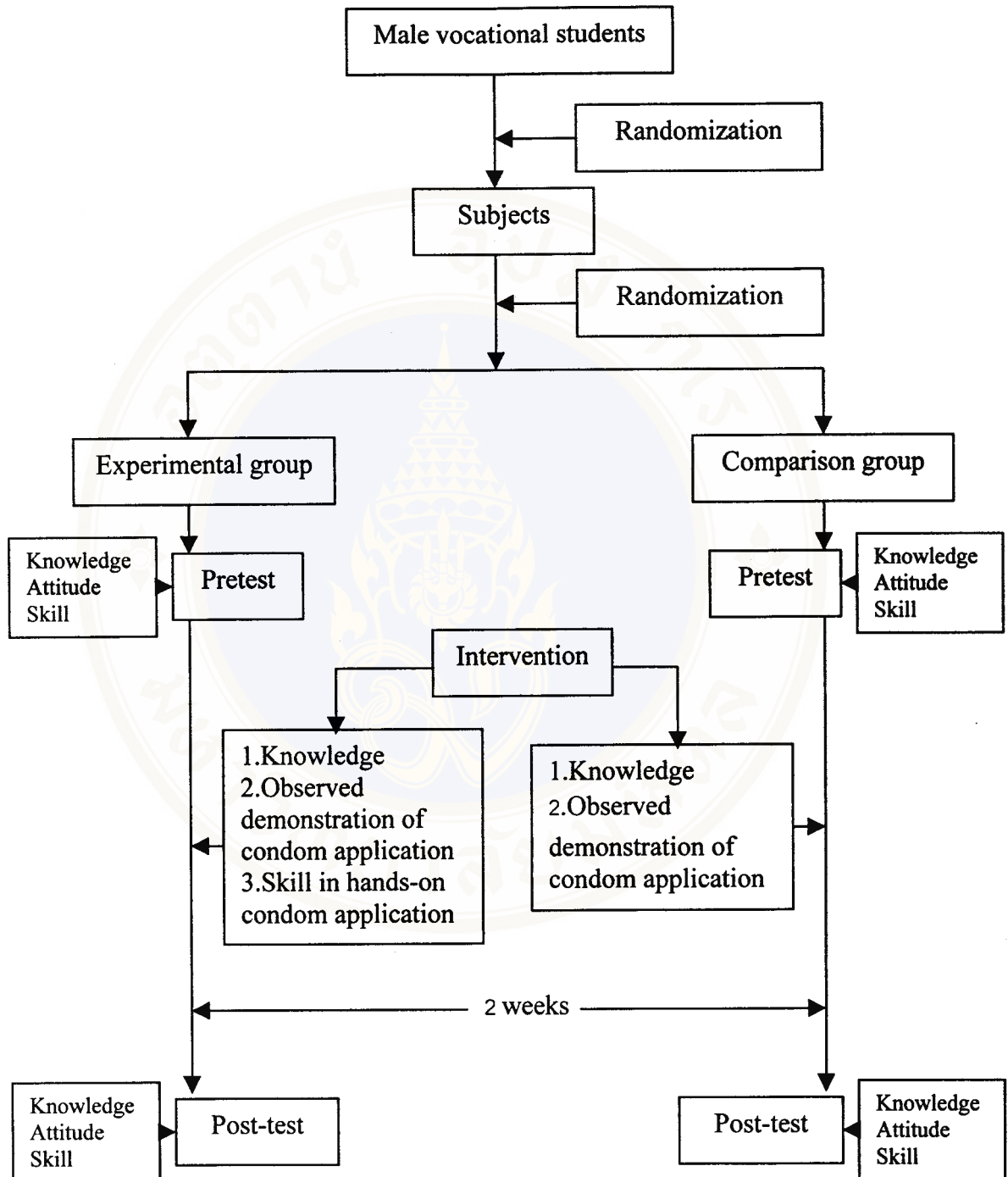


Figure 5. Methods of Data Collection.

Remarks: -Pretest and post-test evaluated in knowledge, attitude and skill in condom application onto the penile model.

5. Data Analysis

Data analysis was divided in to two parts.

5.1 Data preparation

Questionnaire and skill evaluation form were checked and preliminary editing, coding, coded data transferring and final editing were carried out.

5.2 Data analysis

Data analysis, using SPSS (Statistical Package for Social Sciences) by descriptive statistic and analytic statistics in details that:

5.2.1 *Descriptive statistic*

For population characteristics the result was presented in number, percentage, mean and S.D.

5.2.2 *Analytic statistics*

The following analytic statistics was used to t-test for compare scores between two groups and paired t-test was used for comparison pretest and post-test scores in the group (55).

CHAPTER IV

RESULTS

This research compared the knowledge, attitude and skill in condom application onto the penile model in male vocational students between the two groups. In the experimental group, subjects were interviewed for their knowledge and observed demonstration of condom application and skill in hands-on condom application. While the comparison group was interviewed for their knowledge and observed assistant researchers who demonstrate applying a condom onto the penile model only. The data was collected between 1st February to 30th March 2000. The total number of male vocational students were 78 participated in this study. The results will be presented in five parts as follow:

1. Population characteristics
2. Knowledge, attitude and skill in condom application in the experimental and comparison group.
3. Comparison of the scores between the experimental and comparison group for their knowledge, attitude and skill in condom application onto the penile model.
4. Comparison of pretest and post-test scores in each group for their knowledge, attitude and skill in condom application onto the penile model.
5. Problems with condom use and felt feelings of shame.

1. Population characteristics

Each of the experimental and comparison group have 39 students age between 17-20 years old (Table 2.).

Table 2. Age of the experimental and comparison group.

Age (years)	Experimental group Number (%)	Comparison group Number (%)
17	5 (12.8)	3 (7.7)
18	27 (69.3)	31 (79.5)
19	5 (12.8)	4 (10.2)
20	2 (5.1)	1 (2.6)
Total	39 (100.0)	39 (100.0)

2. Knowledge, attitude and skill in condom application in the experimental and comparison group

2.1 Knowledge about condom, the questions on the knowledge totaled 12 items.

In experimental group, pretest male vocational students answered correctly 100 percents in item number 1,3,5-7,10 with the statement “Condoms are made from latex rubber, they are put onto the penile to prevent pregnancies, the AIDS virus and other STDs.” “Look for expired date on the package.” “User must inspect the

lubricant of condoms.” “Apply condom onto the penis while penis is erected.” “Hold the rolled condom on the out side.” and “Condom use only once.” Most answered incorrectly (correct 5.1 percents) in item 2 with the statement: “Every condom has nipple or reservoir.” In post-test all answered correctly in 100 percents in item number 3,4,6-8,12 with the statement: “Condoms with expired date but look well, can be used.”, “Apply condom unfold the rolled along penis.”, and “Keep condom in dry place.” (item number 4,8,12). Most answered incorrectly (correct 48.7 percents) in item 2

(Table 3.).

In comparison group, pretest male vocational students answered correctly 100 percents in item number 3,4,6,8,10 and most answered incorrectly (correct 10.3 percents) in item 2. Post-test they answered correctly 100 percents in item number 3,6,10,12 and most answered incorrectly (correct 48.2 percents) in item 2 (Table 3.).

Table 3. Percentage of condom knowledge answered correctly in the experimental and comparison group.

Knowledge about condom	Experimental (n=39)		Comparison (n=39)	
	Pre %	Post %	Pre %	Post %
1. Condoms are made from latex rubber, they are put onto the penis to prevent pregnancies, the AIDS virus and other STDs.	100.0	94.9	94.9	87.2
2. Every condom has nipple or reservoir.	5.1	48.7	10.3	48.7
3. Look for expired date on the package.	100.0	100.0	100.0	100.0
4. Condoms with expired date but look well, can be used.	97.4	100.0	100.0	97.4
5. User must inspect the lubricant of condoms.	100.0	94.9	97.4	94.9
6. Apply condom onto the penis while penis is erected.	100.0	100.0	100.0	100.0
7. Hold the rolled condom on the out side.	100.0	100.0	97.4	97.4
8. Apply condom unfold the rolled along penis.	97.4	100.0	100.0	97.4
9. During sexual intercourse if condom is torn, condom must be changed.	97.4	94.9	94.9	89.7
10. Condom use only once.	100.0	97.4	100.0	100.0
11. After used condom, pack before throw away.	97.4	97.4	94.9	97.4
12. Keep condom in dry place.	94.9	100.0	92.3	100.0

2.2 Attitude towards condom use, the questions of attitude have 17 items which can be answered in Agreement, Uncertain and Disagreement. The following were the results:

Pretest, experimental group, students answered in 'Agreement' in over 60 percents in item number 10,13 with the statement: "Sex does not feel natural when

using condom.” and “Women who carry condoms are prepared for sex.” This group get the lowest score (2.6 percents) in item number 6,14,16 with the statement: “Condoms often break.” “Withdraw or coitus interruptus instead of using condom prevents AIDS.” and “You intend to use condom.” They answered ‘Uncertainty’ in over 60 percents in item number 1,5,6 with the statement: “Condom make sex last longer.” and “Condoms often come off easily when used in rectal intercourse.” (item number 1,5). They answered ‘Disagreement’ in over 80 percents in item number 3 (87.2 percents) with the statement: “Use of condoms is for sex with prostitute only.” Items which have 10.3 percents (lowest) in item number 7,10 with the statement: “Condoms are restrictive and uncomfortable.” (item number 7) (Table 4.).

Pretest, comparison group, students answered in ‘Agreement’ in over 60 percents in item number 13 (64.1 percents). Items which have 2.6 percents (lowest) in 6,16. They answered in ‘Uncertainty’ in over 60 percents in item number 5 (74.4 percents). They answered in ‘Disagreement’ in over 80 percents in item number 3,17 with the statement: “ If condom is expensive, you will not use condom with prostitute.” (item number 17). Item which have lowest answer in ‘Disagreement’ in item number 5 (10.3 percents) (Table 4.).

Table 4. Pretest percentage of attitude towards condom use in the experimental and comparison group.

Attitude towards condom use	Experimental (n=39)			Comparison (n=39)		
	+	±	-	+	±	-
1. Condom make sex last longer.	5.1	66.7	28.2	25.6	51.3	23.1
2. Condom interrupt mood for sex.	23.1	43.6	33.3	12.8	53.9	33.3
3. Use of condoms is for sex with prostitute only.	7.7	5.1	87.2	5.1	7.7	87.2
4. You are not embarrassed buying condoms.	15.4	43.6	41.0	20.5	41.0	38.5
5. Condoms often come off easily when used in rectal intercourse.	17.9	69.3	12.8	15.4	74.3	10.3
6. Condoms often break.	2.6	66.6	30.8	2.6	53.8	43.6
7. Putting on a condom is restrictive and uncomfortable.	53.8	35.9	10.3	23.1	56.4	20.5
8. You do not use condoms with your lover.	25.6	30.8	43.6	17.9	15.4	66.7
9. You are embarrassed putting on a condom.	30.8	25.6	43.6	15.4	30.8	53.8
10. Sex does not feel natural when using condom.	64.1	25.6	10.3	46.2	41.0	12.8
11. Condoms are not messy.	7.7	25.6	66.7	5.1	28.2	66.7
12. If you tell your partner you will use condom, your partner will think you give her respect.	12.8	33.3	53.9	10.3	51.2	38.5
12. Women who carry condoms are prepared for sex.	61.5	23.1	15.4	64.1	23.1	12.8

Table 4. Pretest percentage of attitude towards condom use in the experimental and comparison group (continued).

Attitude towards condom use	Experimental (n=39)			Comparison (n=39)		
	+	±	-	+	±	-
14. Withdraw or coitus interruptus instead of using condom prevents AIDS.	2.6	28.2	69.2	7.7	17.9	74.4
15. Using condom with your partner means that you don't trust your partner.	23.1	28.2	48.7	20.5	25.6	53.9
16. You intend to use condom.	2.6	35.9	61.5	2.6	28.2	69.2
17. If condom is expensive, you will not use condom with prostitute.	10.3	10.3	79.4	10.3	5.1	84.6

Remark + (Agreement): mean you agree with all of the sentence.

± (Uncertainty): mean you agree with some sentence.

- (Disagreement): mean you do not agree with all the sentence.

Post-test, experimental group, students answered in 'Agreement' 60 percents or higher in item number 10 (71.8 percents). They lowest answered in 'Agreement' were item number 3,6. As for 'Uncertainty', they answered higher 50 percents than pretest in item number 5 (53.9 percent). 'Disagreement', they answered 80 percents higher than pretest in item number 1,3,6,11,16,17 and lowest answered in 'Disagreement' 7.7 percents, was item number 10 (Table 5.).

Post-test, comparison group, students answered in 'Agreement' 60 percents higher than pretest in item number 10 (61.6 percents) and lowest was item number 3. For answer 'Uncertainty', they answered 50 percents higher than pretest in item number 5 (61.6 percents). For 'Disagreement, they answered 80 percents higher than pretest in item number 1,3,11,14,16,17 and lower than pretest score in 20.5 percents in items number 5,10 (Table 5.).

Table 5. Post-test percentage of attitude towards condom use in the experimental and comparison group.

Attitude towards condom use	Experimental (n=39)			Comparison (n=39)		
	+	±	-	+	±	-
1. Condom make sex last longer.	2.6	7.7	89.7	5.1	5.1	89.8
2. Condom interrupt mood for sex.	28.2	48.7	23.1	38.5	35.9	25.6
3. Use of condoms is for sex with prostitute only.	0.0	2.6	97.4	0.0	7.7	92.3
4. You are not embarrassed buying condoms.	10.3	17.9	71.8	15.4	20.5	64.1
5. Condoms often come off easily when used in rectal intercourse.	17.9	53.9	28.2	17.9	61.6	20.5
6. Condoms often break.	0.0	7.7	92.3	2.6	20.5	76.9
7. Putting on a condoms is restrictive and uncomfortable.	46.2	23.0	30.8	25.6	33.3	41.1
8. You do not use condoms with your lover.	12.8	23.1	64.1	5.1	17.9	77.0
9. You are embarrassed putting on a condom.	5.1	15.4	79.5	5.1	17.9	77.0
10. Sex does not feel natural when using condom.	71.8	20.5	7.7	61.6	17.9	20.5
11. Condom is not messy.	5.1	0.0	94.9	2.6	7.7	89.7
12. If you tell your partner you will use condom, your partner will think you give her respect.	12.8	28.2	59.0	17.9	33.3	48.8
12. Women who carry condoms are prepared for sex.	56.5	25.6	17.9	56.5	17.9	25.6

Table 5. Post-test percentage of attitude towards condom use in the experimental and comparison group (continued).

Attitude towards condom use	Experimental (n=39)			Comparison (n=39)		
	+	±	-	+	±	-
14. Withdraw or coitus interruptus instead of using condom prevents AIDS.	10.3	12.8	76.9	7.7	7.7	84.6
15. Using condom with your partner means that you don't trust your partner.	25.6	23.1	51.3	17.9	15.4	66.7
16. You intend to use condom.	2.6	15.3	82.1	2.6	12.8	84.6
17. If condom is expensive, you will not use condom with prostitute.	12.8	2.6	84.6	7.7	5.1	87.2

2.3 Skill in condom application, researcher evaluated students applying condoms onto the penile model using skill evaluation form which have 11 items. The result of evaluation is presented in percent:

In experimental group, pretest subjects most practiced correctly in item number 5 (76.9 percents) with the statement: "Hold the rolled condom outside." They most practiced incorrectly in item number 1 (0 percent) with the statement: "Look for expired date." Post-test they most practiced true in item number 10 (100 percents) with the statement: "Leaving space at the tip of the condom to accommodate semen." They most practiced incorrectly in item 1 (59.0 percents) (Table 6.).

In comparison group, pretest subjects most practiced correctly in item number 5 (89.7 percents) and most practiced incorrectly in item number 2,8 (23.1 percents) with the statement: "Look over the package for obvious tear or hole." and "Put on condom while hand squeezed condom's tip." Post-test they most practiced

correctly in item number 9 (97.4 percents) with the statement: “Use the other hand unfold the condom along length whole of penile model.” and most practiced incorrectly in item number 3 (48.7 percents) with the statement: “Push condom to profile of package.” (Table 6.).



Table 6. Correct percents of skill in condom application in the experimental and comparison group.

Skill in condom application	Experimental (n=39)		Comparison (n=39)	
	Pre %	Post %	Pre %	Post %
Before use condom:				
1. Look for expired date.	0.0	59.0	25.6	76.9
2. Look over the package for obvious tear or hole.	12.8	69.2	23.1	56.4
Hold package:				
3. Push condom to profile of package.	12.8	97.4	25.6	48.7
4. Tear along of condom's package. Pull condom from package.	5.1	97.4	74.4	84.6
5. Hold the rolled condom outside.	76.9	92.3	89.7	87.2
6. Unfold the condom about 2.5 centimeter.	23.1	94.9	46.2	69.2
7. Squeeze at the tip of condom length to eliminate air.	12.8	94.9	56.4	79.5
8. Put on condom while hand squeezed condom's tip.	15.4	94.9	23.1	51.3
9. Use the other hand to unfold the condom along whole length of penile model.	25.6	94.9	84.6	97.4
10. Leaving space at the tip of the condom to accommodate semen.	17.9	100.0	84.6	92.3
11. Withdraw condom from penile model:	5.1	94.9	43.6	82.1
-Use tissue paper to wrap round at top of condom and pull down to withdraw condom from penile model.				
Or				
-Use the little finger of the two hands and hooking inside at the top (ring) of condom and withdraw condom from penile model.				

Withdrawal method of condom

There are two methods of withdrawal condom from the penile model. The first method use tissue paper, wrapping tissue round at the ring top of condom and withdraw. The second method use the little finger of the two hands, hooking inside the ring top of condom and withdraw. Seventy-eight subjects practiced pretest incorrectly in 75.6 percents. Correctly in 24.4 percents, using first method 2.6 percents, using second method 20.5 percents and using both methods 1.3 percents. The post-test results were incorrect in 11.5 percents. 88.5 percents practiced correctly (Table 7.).

Table 7. Methods of withdrawal condom from the penile model in pretest and post-test.

Method	Pretest Number (%)	Post-test Number (%)
Incorrect	59 (75.6)	9 (11.5)
Correct	19 (24.4)	69 (88.5)
Total	78 (100.0)	78 (100.0)
Correct Use tissue paper	2 (2.6)	10 (12.8)
Use the little finger	16 (20.5)	11 (14.1)
Use tissue and finger	1 (1.3)	48 (61.6)
Total	19 (24.4)	69 (88.5)

Application time of condom

Seventy-eight subjects, 87.2 percents spent 30 seconds or less in putting on condom during the pretest. This had increased to 96.2 percents in the post-test evaluation (Table 8.).

Table 8. Time taken of condom in pretest and post-test.

Time taken	Pretest Number (%)	Post-test Number (%)
30 seconds or less	68 (87.2)	75 (96.2)
More than 30 seconds	10 (12.8)	3 (3.8)
Total	78 (100.0)	78 (100.0)

3. Comparison of the score between the experimental and comparison group for their knowledge, attitude and skill in condom application onto the penile model

Results of comparison score of knowledge, attitude and skill between the experimental and comparison group:

Knowledge about condom, has 12 items. The score with answered correctly was 1 and 0 with answered incorrectly. The scores ran between 0-12. In experimental group, pretest the minimum score was 9, maximum score was 12, with mean was 10.90 ± 0.50 . Post-test the minimum and maximum score were the same as pretest but the mean was 11.28 ± 0.69 . In comparison group , pretest the minimum score was 9,

maximum score was 12, with mean was 10.82 ± 0.64 . Post-test the minimum score was 8, maximum score was 12, and mean was 11.10 ± 0.85 (Table 9.).

Table 9. Pretest and post-test scores of the two groups for their knowledge about condom.

Group	Time	Mean (\bar{X})	S.D.
Experimental	Pretest	10.90	0.50
	Post-test	11.28	0.69
Comparison	Pretest	10.82	0.64
	Post-test	11.10	0.85

Knowledge about condom between group, When used t-test analysis pretest with pretest scores and post-test with post-test scores between the two groups for their knowledge. The statistic results of pretest of both groups were not significantly different at the level of 0.05 (p-value=0.558). The statistic results of post-test of both groups were also not significantly different at the level of 0.05 (p-value=0.309) (Table 10.).

Table 10. Using t-test to analyze pretest and post-test scores between the two groups for their knowledge about condom.

Group	Time	\bar{X}	S.D.	t	df	p-value
Experimental	Pretest	10.90	0.50	0.588	76	0.588
Comparison		10.82	0.64			
Experimental	Post-test	11.28	0.69	1.025	76	0.309
Comparison		11.10	0.85			

When used t-test analysis the different mean (\bar{d}) (\bar{d} was different scores of pretest with post-test of the each groups) for their knowledge, the statistic results was not significantly different at the level of 0.05 (p-value=0.636) (Table 11.).

Table 11. Using t-test to analyze the different mean (\bar{d}) between the two groups for their knowledge about condom.

Group	\bar{d}	S.D.	t	df	p-value
Experimental	0.38	0.81	0.475	76	0.636
Comparison	0.28	1.07			

Attitude towards condom use, has 17 items. These answered with agreement in positive item it was score 3 but answered agreement in negative item it was score 1. Answered uncertainty all items it was score 2. Score run between 17-51. In experimental group, pretest the minimum score was 27.00, maximum score was 49.00, with mean 37.69 ± 4.56 . In post-test the minimum score was 32.00, maximum score

was 50.00, with mean 41.31 ± 4.10 . In comparison group, post-test the minimum score was 30.00, maximum score was 45.00, with mean 38.85 ± 4.08 . Post-test the minimum score was 36.00, maximum score was 49.00, with mean 41.82 ± 3.29 (Table 12.).

Table 12. Pretest and post-test scores between the two groups for their attitude towards condom use.

Group	Time	Mean (\bar{X})	S.D.
Experimental	Pretest	37.69	4.56
	Post-test	41.31	4.10
Comparison	Pretest	38.85	4.08
	Post-test	41.82	3.29

Attitude towards condom use between group, When used t-test analysis pretest with pretest scores and post-test with post-test scores between the two groups, pretest, the statistic results was not significantly different at the level of 0.05 (p-value=0.242). Post-test, the statistic results was not significantly different at the level of 0.05 (p-value=0.544) (Table 13.).

Table 13. Using t-test to analyze pretest and post-test scores between the two groups for their attitude towards condom use.

Group	Time	\bar{X}	S.D.	t	df	p-value
Experimental	Pretest	37.69	4.56	-1.178	76	0.242
Comparison		38.85	4.08			
Experimental	Post-test	41.31	4.10	-0.609	76	0.544
Comparison		41.82	3.29			

When used t-test analysis the different mean (\bar{d}) between the two groups for their attitude, the statistic results was not significantly different at the level of 0.05 (p-value=0.483) (Table 14.).

Table 14. Using t-test to analyze the different mean (\bar{d}) between the two groups for their attitude towards condom use.

Group	\bar{d}	S.D.	t	df	p-value
Experimental	3.62	4.57	0.705	76	0.483
Comparison	2.97	3.38			

Skill in condom application, has 11 items. These practice correctly was score 1 and practice incorrectly was score 0. Score ran between 0-12. In experimental group, in pretest the minimum score was 0, maximum score was 8.00, with mean was 2.08 ± 2.13 . In post-test the minimum score was 3.00, maximum score was 11.00, with mean was 9.90 ± 1.55 . In comparison group, pretest the minimum score was 0,

maximum score was 10.00, with mean was 5.77 ± 2.70 . Post-test the minimum score was 1.00, maximum score was 11.00, with mean was 8.29 ± 2.40 (Table 15.).

Table 15. Pretest and post-test scores of the two groups for their skill in condom application.

Group	Time	Mean (\bar{X})	S.D.
Experimental	Pretest	2.08	2.13
	Post-test	9.90	1.55
Comparison	Pretest	5.77	2.70
	Post-test	8.29	2.40

Skill in condom application between group, When used t-test analysis pretest with pretest scores and post-test with post-test scores between the two groups for their skill. Pretest, the statistic results was significantly different at the level of 0.05 (p-value<0.001). Post-test, the statistic results was significantly different at the level of 0.05 (p-value=0.001) (Table 16.).

Table 16. Using t-test to analyze pretest and post-test scores between the two groups for their skill in condom application.

Group	Time	\bar{X}	S.D.	t	df	p-value
Experimental	Pretest	2.08	2.13	-6.703	76	<0.001
Comparison		5.77	2.70			
Experimental	Post-test	9.90	1.55	3.582	76	0.001
Comparison		8.26	2.40			

When used t-test analysis the different mean (\bar{d}) between the two groups for their skill, the statistic results was significantly different at the level of 0.05 (p-value<0.001) (Table 17.).

Table 17. Using t-test to analyze the different mean (\bar{d}) between the two groups for their skill in condom application.

Group	d	S.D.	t	df	p-value
Experimental	7.82	2.64	8.044	76	<0.001
Comparison	2.49	3.19			

4. Comparison of pretest and post-test scores in each group for their knowledge, attitude and skill in condom application onto the penile model

For knowledge about condom, using paired t-test to analyze pretest with post-test scores of their knowledge in each group. In experimental group, the statistic results was significantly different at the level of 0.05 (p-value=0.005) but in comparison group, the statistic results was not significantly different at the level of 0.05 (p-value=0.110) (Table 18.).

Table 18. Using paired t-test to analyze pretest and post-test scores in the two groups for their knowledge about condom.

Group	Time	\bar{X}	S.D.	t	df	p-value
Experimental	Pretest	10.90	0.50	-2.95	38	0.005
	Post-test	11.28	0.69			
Comparison	Pretest	10.82	0.64	-1.64	38	0.110
	Post-test	11.10	0.85			

For attitude towards condom use, using paired t-test to analyze pretest with post-test scores of their attitude in each group. In experimental group, the statistic results was significantly different at the level of 0.05 (p-value<0.001). In comparison group, the statistic results was significantly different at the level of 0.05 (p-value<0.001) (Table 19.).

Table 19. Using paired t-test to analyze pretest and post-test scores in the two groups for their attitude towards condom use.

Group	Time	\bar{X}	S.D.	t	df	p-value
Experimental	Pretest	37.69	4.56	-4.94	38	<0.001
	Post-test	41.31	4.10			
Comparison	Pretest	38.85	4.08	-5.50	38	<0.001
	Post-test	41.82	3.29			

For skill in condom application, using paired t-test to analyze pretest with post-test scores of their skill in each group. In experimental group, the statistic results was significantly different at the level of 0.05 (p-value<0.001). In comparison group, the statistic results was also significantly different at the level of 0.05 (p-value<0.001) (Table 20.).

Table 20. Using paired t-test to analyze pretest and post-test scores in the two groups for their skill in condom application.

Group	Time	\bar{X}	S.D.	t	df	p-value
Experimental	Pretest	2.08	2.13	-18.47	38	<0.001
	Post-test	9.90	1.55			
Comparison	Pretest	5.77	2.70	-4.88	38	<0.001
	Post-test	8.26	2.40			

5. Problems with condom use and felt feelings of shame

Problems of condom have been divided into; problems of use and problems of felt feelings of shame when using condom.

Problems of condom use

Problems of condom use, during pretest 78 male vocational students answered that they had problems in 25.6 percents and no problem in 74.4 percents. Post-test, they had problems 12.8 percents and 87.2 percents had no problem (Table 21.).

Table 21. Problems of condom use at pretest and post-test.

Problems of condom	Pretest Number (%)	Post-test Number (%)
Yes	20 (25.6)	10 (12.8)
No	58 (74.4)	68 (87.2)
Total	78 (100.0)	78 (100.0)

Researcher divided subjects with reported problems or no problems in 3 parts by use Information, Education and Communication, (I.E.& C.) for family planning and Knowledge, Attitude and Practice Theory (KAP). These were presented as follows:

Subjects with reported problems

Knowledge about condom such as condom make sex last longer, interrupt sexual intercourse, some brand of condom were not standard which tear easily, when using condom for sexual intercourse it can be used once only not repeatedly. Most of

the subjects have never used or do not know how to use method, do not correct use, have not use, male vocational students do not know where to obtain condoms.

Attitude towards condom use such as does not feel natural when using condom, interrupt the mood for sex, it is uncomfortable, it is expensive, subjects think that when they use condom their partners will think that they are not a virgin or can not be trusted, Also their partners will think that sex is premeditated. They believed that using condom bring sexual dissatisfaction.

Practice or skill in condom application such as taking a long time to put on condom. Lubrication will make hand slippery and slimy making it difficult to put off condom.

Subjects with no reported problems

Knowledge about condom, these subjects had adequate knowledge about condom prevent STDs, HIV, and pregnancies and know how to use and where to obtain condoms. They feel that condom help to delay ejaculation. They will use condom for special partner who are not close friends, know how to use lubrication. They know that they must prepare condom for sex. And no need for condom if they are using coitus interruptus (withdrawal).

Attitude towards condom use such as subjects are confident in using condom for sex, they trust the quality of condom, the partner consent to use of condom.

Practice or skill in condom application such as subjects have skill to use condom to use with ease. Confirm the skill by application onto the penile model.

Problems of felt feelings of shame when use condom

Problems of felt feelings of shame when used condom, 78 subjects felt a shame when used condom at pretest (10.3 percents). Did not feel a shame 89.7 percents. At post-test, 6.4 percents still felt a shame and 93.6 percents felt no shame (Table 22.).

Table 22. Problems felt feelings of shame to use condom at pretest and post-test.

Feelings of shame	Pretest Number (%)	Post-test Number (%)
Yes	8 (10.3)	5 (6.4)
No	70 (89.7)	73 (93.6)
Total	78 (100.0)	78 (100.0)

Shamefulness were about never had sexual intercourse, never use. Subjects felt shy partner. They think that close friends will think they look down on her. They worry that partner will think they may use condom incorrectly.

No shamefulness, subjects, who did not feel a shame when using condom because they know that condom will prevents STDs, HIV and pregnancies, it is normal, it is safe, they and their partners preferred to use condom, they used condom correctly, they used condom often, they though that no body see when they use condom, using condom was necessary and most people used it, condom use for sex, using condom made surprise, using condom was give fame for his partner, they bought condoms easily.

CHAPTER V

DISCUSSION

The discussion will be divided in to two sections as follow:

1. Methodology
2. Results

1. Methodology

This thesis was the experimental design field research by interviewed, about their knowledge and observed during a demonstration of condom application and skill in hands-on condom application. Or they were interviewed for their knowledge and observed assistant researchers who demonstrated applying a condom on to the penile model. The study samples were divided in to two groups (the experimental and comparison group). The discussion about methodology will be divided in to seven headings:

- 1.1 Research design
- 1.2 Theory
- 1.3 Time
- 1.4 Population and sample size
- 1.5 Instrument
- 1.6 Method

1.7 Data analysis.

1.1 Research design

This research was experimental design field research by intervention. It has two groups of subjects i.e. the experimental and comparison group. Subjects were randomized from the total population of third year students (14 classrooms). The comparison group had no opportunity to practice in putting on condom onto the penile model. However there may be cross contamination of the results when both groups of students get together and talked to each other after pretest. The results may be not showed the difference in the scores of knowledge and skill when the scores were analyzed. But the differences scores between two groups were significant statistically. In conclusion, this research design can be used and appropriate, similar to the Solomon Four-Group-Design (44). Since the results were not effected by interaction between groups.

1.2 Theory

This research studied the knowledge, attitude and skill in condom application. Researcher used Information, Education and Communication, (I.E.&C.) technique for family planning (23) and Knowledge, Attitude and Practice Theory (KAP) (24). The two theories are appropriateness with this research because they improved the knowledge about condom, change to positive attitude in condom use and have skill in condom application. Two theories are similarly concepts for example, knowledge same awareness, attitude same interest and assessment, practice same trial and adoption. If researcher choose only one theory, research will used some of theories

which use predict about health behavior and intend to use condom. Some of theories are:- The Health Belief Model (HBM) (27,39,43,44,47), The Theory of Reasoned Action (TRA) (27,51), The AIDS Risk Reduction Model (ARRM) (27,57),etc.

The Health Belief Model (27,41,43,46,49) accounts for variations in health practices by postulating five explanatory factors: the perceived susceptibility of the individual to the health risk, the perceive severity of the illness if it is contracted, the perceived benefits of strategies for preventing the illness, the perceived barrier to effective action, and the person's perceived ability to perform the task (self-efficacy).

The Theory of Reasoned Action (46,56) have developed a general theory of behavior that can incorporate some of these social influences and for examining how reference-group norms might influence behavior that puts a person at risk for contracting HIV.

HBM and TRA predict that salient beliefs about behavioral consequences should be predictive of behavioral practices. These anticipated consequences correspond to the HBM concepts of perceived severity, perceived barriers and perceived benefits, and to the TRA concept of behavioral attitude (27,41,45,46,49,56).

The AIDS Risk Reduction Model (27,57) identify beliefs about the disadvantages or negative consequences of using condoms as barriers to condoms use.

1.3 Timing of research

Time mean rhythm measurement that researcher would sign to behavior changes. Interventions are viewed often impossible or impractical to measure a person's intention immediately prior to his performance of behavior, the measure of intention obtained may not be representative of the person's intention at the time of the

behavioral observation. Intervening events that may lead to changes intentions will therefore also have to be taken into consideration (58).

While researcher collected data, all of the subjects were nearly at the end of their study. The two weeks interval since intervention to post-test is minimum possible for this research work (50). This time use for observation in attitude change. If the time is long than this time, it will observed in attitude change more than this. Kvaem et al. (46) who reported the interval of 2-3 weeks between pre and post-test. For post-test, researcher would follow these intervention more than one time because comparison can be made over time of the alteration of knowledge, attitude and skill in condom application. Ideally, following the interventions, it is suggested that after six, twelve months and every years for five years measurements should be made (46). A follow-up measurement should be done, using the same questionnaire (26).

1.4 Population and sample size

For the sample of population, researcher calculated proportion to size in every classes. They have been selected by simple random sampling. The first of simple random sampling were total subjects and second were the experimental and comparison group. Thus, subjects of both groups were the same of characteristics.

Sample size were calculated appropriately from result of the pilot study from the students which had the same characteristics as the population studies. Researcher used sample size of knowledge (39 persons) because the sample size appropriated for intervention. The sample size for knowledge about condom is more than the sample size for skill in condom application measurements (5 persons).

1.5 Instrument

The instrument of this research were questionnaire, information about condom and materials.

Questionnaire, which have been tested for validity and reliability previously. It was appropriate and can use for evaluation about knowledge, attitude and skill in condom application.

Information about condom, it collected from 7 books and it has a detail appropriate for students.

Materials: Reservoir condoms are appropriate because the most condoms were sold in general shop and dispensary to be reservoir condom.

The penile models are appropriate.

1.6 Method

Researcher combined the experimental and comparison group together when assistant researchers intervened by giving knowledge and demonstrated condom application onto the penile model because research protected bias from intervention and subjects have not time, since students must train for their professions skill at college and other place. In this way, there were 78 students in one class. These was a large class. Being in a large class, the interest, concentration and communication of subjects may be reduced. Kvaem et al. (46) had 30 students for one class. DeWit et al. (25) had approximate 20 persons in one group. In conclusion, the number of the students in the class of this research may be too large and may not appropriate.

The intervention period, the assistant researchers use 40 minutes for giving the information about condom, it was enough time to explain about this subjects.

Subjects wanted to know about sexual behavior, AIDS, pregnancies and prevention (safe sex and condom) as well. Therefore, intervention period must be concluded in one day. Intervention period is related to knowledge, attitude and skill toward behavior. Attempts to bring about change invariably involve exposure to new information about some objects, behavior, issue or event. Changes in beliefs resulting from such exposure to new information provide the foundation on which rest the ultimate effectiveness of any influence attempt that change in a given belief. Attitude, intention or behavior must take into account the relation between together. That is to be changed and the beliefs that are affected most immediately by the influence attempt (58).

In this research, researcher use action consequence to stimulate learning of students. Remembrance or forgetfulness come from intention and interesting for learning (59). From our interview, most subjects were interested in condom knowledge less than sexuality education, AIDS and prostitute. Because of these reasons, they forgot some steps in condom application.

1.7 Data analysis

Statistics analysis were t-test and paired t-test, they were appropriately.

In conclusion, methodology of this research were appropriately and the results of this studies were believable.

2. Results

Discussion of the results were divided in to five parts as follow:

2.1 Population characteristics

2.2 Knowledge, attitude and skill in condom application in the experimental and comparison group.

2.3 Comparison of the scores between the experimental and comparison group for their knowledge, attitude and skill in condom application onto the penile model.

2.4 Comparison of pretest and post-test scores in each group for their knowledge, attitude and skill in condom application onto the penile model.

2.5 Problems with condom use and felt feelings of shame.

2.1 Population characteristics

The mean age of the comparison group was 18 years of age. These was no significantly different between the two groups. They were demographically representative sample of students in the college and they have been selected in both groups by simple random sampling. Therefore they have the same characteristics of young men in mid adolescence. Characteristics of mid adolescence, male are interests in sex without love (34). Approximately half of the students already have had sexual intercourse. This confirmed results of DeWit et al. (25), Godin et al. (49) and Richter et al. (42). In this research, the director of Ratchaburi Technical College did not permit question about sexual intercourse of students. To get around these subjects, the questionnaire was framed to use and none use of condom assuming using condom is synonymous with sexual intercourse.

2.2 Knowledge, attitude and skill in condom in the experimental and comparison group

This study did not show any significantly different between pretest and post-test scores of knowledge about condom. The questionnaire of knowledge were easy questions for male vocational students, so the pretest scores were very high.

Knowledge about condom, since there was a college campaign on AIDS previous to our research subjects have good basic knowledge of condom before our interview. In addition, many subjects may have used condom; they were well versed with practice. Interestingly, few subjects have knowledge about various kinds of condom (for example with and with out nipple). Condoms which were sold in the market were with nipple. Having condoms available is not an effective intervention if students do not know that they are available. Efforts should be made to promote awareness among subjects, such as giving necessary information in college handbooks and posters which should include information leading to condom use, information about prevention HIV, STDs and pregnancy. Interviewed subjects wanted more information and education, not only about how to use condoms correctly, but also about the emotional aspects of sexual relationships (47).

Remark point, after intervention percentage of condom knowledge in the two groups decreased in item number 1,5 and 9 because while assistant researchers taught subjects by two ways communication, some subjects did not think about condom knowledge the same as teachers and teachers did not conclude in some items when they answered the questions of subjects. The subjects who answered incorrectly in post-test (answered correctly in pretest), they were same subjects in incorrectly answer in the other items.

Comparison of the knowledge about condom in this research with many other reports showed that knowledge of this research (before intervention) had higher than other researches.

This research, the subjects answered correctly about knowledge more than 90 percents. But Oin (60), reported that the subjects (fishermen) answered correctly approximate 60 percents because the majority of them had primary school level education.

About expired date, withdrawal method, proper time for condom application. This research answered correctly more than 90 percents But Mahuttano (3) reported that the subjects (male vocational students) have knowledge in condom about expired date, the best of condom, application method and proper time for condom application, they answered correctly approximate 87 percents. But method of withdrawal of condom, they answered correctly approximate 60 percents. Mahuttano's results were lower than this research.

The results of Oddme (61) reported that the subjects (out patient mates) have knowledge in condom at good level approximate 45 percents. Oddme's results were low because the subjects had primary and secondary school and they have low level of knowledge in STDs and AIDS.

In conclusion the subjects in this research had knowledge about condom more than other reports.

Attitude towards condom use, before intervention these subjects were uncertain about special facts as relate to knowledge, for example, condom make sex last longer, condom often come off easily when used in rectal intercourse and condoms often break. Discovering that they do not know about this facts is importance

for condom education and use. Overall data from this research suggest that these youths were fairly positive or at least neutral in their views about condoms. Those who used condoms more frequently were generally more positive in their views than those who did not (27). Consistency of condom use, intent to use specially with prostitute were appearance. Still some erratum attitude leading to none use of condom such as using condom is uncomfortable and does not feel natural will help in further education to change their behaviors. Emphasis on benefit of condom use showed be accentuated.

Comparison of the attitude towards condom use in this research with many reports showed that pretest attitude in this research higher than other research such as,

Norris et al. (27), the results in positive belief that condoms make sex last longer. But in this research, subjects were uncertainty because the most of them had no experience with condom use. Norris's results reported to get rid of condoms after sex, condoms are embarrassing to buy or put on. And condoms are messy many have more of a role to play in getting people to initiate condom use. Note that for this beliefs, respondents who never used condoms but in this research, the most subjects had no sexual experience, they answered contrast with Norris's report because they received advantage of condom. The report by Elkins et al.(62) that results were highest mean in "Will you feel shy to use a condom? Do you feel shy to suggest to your partner that you use condoms?" But in this research, the subjects agreed in this items approximate 50 percents because the most subjects had no sexual experience. The report of Mahottano (3) in the same items, it was the same this research because the subjects were male vocational students and the same ethnicity, culture.

Skill in condom application, the difference in the pretest in both groups many come from the two assistant researchers and skill in comparison group was

better than experimental group accidentally. Since the subjects have the same characteristics. Correct percent in pretest have ought to few different. But these results they have most different such as items number 1, 4, 7, 9, 10, 11. On the one hand, in post-test, both groups have few differences. It was suggested that researcher must evaluates skill by use one assistant researcher evaluate to the both groups. In order to reduce the variations of score from the assistant researchers, it was suggested to use two researchers to evaluate skill of both groups and give the average score for each subjects.

Before intervention, skill in condom application were low in the experimental group and moderately low in the comparison group. Some students were too excited when applying condom onto the penile model so that they were holding the condom inside out. Many items were not carried out such as eliminating the air from the tip of the condom by squeezing about 2.5 c.m. from the tip of condom. Steps of withdrawal of condom were wrongly carried out, for instance: instead of using the tissue paper to wrap around the condom top to remove the condom, the subjects often removed the condom digitally and use the tissue paper to wipe out the dirty finger.

After intervention, most students knew how to apply condom and they applied condom onto the model correctly. Although they still forgot some steps to inspect the condom before using. But important steps were correctly practiced (such as squeezing the tip of condom, leaving space at the tip of condom and withdraw condom from penis). This results suggest that, the effects of direct experience with a condom on a single attitudinal measure found that most students were correct in applying condom after they have experience in hands-on condom application.

Compared the skill in condom application in this research with many reports showed that the results were difference. Many reports were survey and experimental design research. This research had more steps than the other researches. But the important steps in the other researches were the same of this research. Most of the other researches, subjects were male attendant at STDs clinic and male or female of commercial sex workers. May be conclusion, before and after intervention, the skill of this research had skills lower than the other researches. Such as,

This research, before intervention, subjects of experimental and comparison group had not skill in condom application correctly almost every steps of evaluation form. After intervention, the experimental group had correctly skill at 44.9 percents. While the comparison group had correctly skill at 12.82 percents. The report by Guaykietikul et al. (63), showed that: before intervention, the subjects (male attendants of STDs clinic) applied the condom correctly 82.9 percents and hold the rolled condom outside 70.7 percents. They withdraw condom correctly only 17.1 percents and squeeze at the tip of condom to eliminate air correctly 33.6 percents. They applied condom correctly every steps only 10.0 percents. After intervention, the could apply condom correctly in every steps more than 90.0 percents and withdrawal correctly 68.6 percents. They were correct every steps 61.4 percents. This research differed in Guaykietikul's report. The correct percents in before and after intervention were less than Guaykietikul's report because male attendants of STDs clinic who had sexual experience and ever use condom.

Palapunya et al. (64) conducted a cross-sectional survey. They reported that, male students had skill in condom application correctly every steps (5 steps) 28.1 percents. Report of Palapunya had skill higher than this research because the subjects

were male attendants of STDs clinic who had sexual experience and ever use condom.

Withdrawal methods of condom

Withdrawal methods of condom are latest step that prevent men from STDs and AIDS. But male are not interested in this. In our research, three-fourths of subject withdraw condom from penile model incorrectly in pretest. After intervention, the percentage of subjects who applied condom incorrectly decreased. Evaluation of skill in pretest, involving assistant researchers told the subjects to withdraw condom by every methods that they thought to be correct. Subjects who used tissue paper correctly may use it by common sense because the tissue paper was put purposely near the penile model. But it is interesting that many subjects used the little finger to withdraw condom. Few subjects used two methods. Researcher was impressed by subjects who use the little finger method because most male students many not have tissue paper every time during intercourse. However they did not like this method because they did not like their hand stained by the semen.

For the penile model researcher, teacher or the health educator may use fruit such as banana, vegetable, deodorant stick or toothpaste tube replace for the penile model.

Application time of condom

Application time of condom, is important because male adolescence who have never or a few experience of sexual intercourse may have premature ejaculation (65). Male people active for sexual intercourse by intravaginal penile insertion to satisfy his female partner must take time at least 5 or 10 minutes or more. Penile trusting movement will take 60 seconds. Ejaculations will take 30 or 60 seconds (66,67). For these reasons, male adolescence who have first sexual intercourse, may

have highest user failure in condom use. In this research, subjects, who spend more than 30 seconds for condom application, were asked to and practice applying condom by themselves again and again.

2.3 Comparison of the scores between the experimental and comparison group for their knowledge, attitude and skill in condom application onto the penile model

Knowledge about condom at pretest and post-test, in both groups were high the mean of scores in knowledge; similar to reported by Mahuttano (3). This is probably due to the previous educational efforts of Ministry of Public Health in order to lower the incidence of STDs and AIDS in high risk groups such as male adolescents (14,68). For this, subjects knew basic condom knowledge. When comparing pretest and post-test score between groups the statistic results were not significantly different.

Attitude towards condom use at pretest and post-test, both groups have the same mean scores. This is because subjects have the same characteristics and received intervention by the same assistant researchers. Intervention were too short (40 minute) to make any statistical differences. This is similar to DeWit et al. (26) who compared the subjects in the four groups, subjects in the experimental group did not report significantly different attitudinal changes although subjects in every other groups have interaction but intervention again and again the attitudes generally became more positive over time (global attitude, perceived attitude of peers). So, results in this research when comparing scores between groups were not significantly different.

Skill in condom application at pretest score between groups there were different scores which probably came from individual assistant researchers and skill

in comparison group better than experimental group accidentally. Results at post-test scores between groups, the experimental group get higher scores than the comparison group because experimental group practiced repeatedly individually with assistant researchers. For this reason, the comparison group had increase scores after observe a demonstration but the increase scores were lower than the increase scores of the experimental group. When comparing pretest with pretest scores and post-test with post-test scores of experimental and comparison group, both results have statistic significantly different.

Compared the skill in condom application between groups with the other reports, there was no such research reported previously. Most of researches were on male patients, who came to STDs clinic and research on commercial sex workers (CSWs). Such as paper by Palapunya et al. (64) reported that CSWs used condoms more properly than their clients (57.8 versus 28.1 percents, $p < 0.0001$). Two common incorrect means of condom use were (1) failure to squeeze the tip of condom and (2) exposure to contamination during removal. Some reports (61,63,69) compared between male and female attendants of STDs clinic. Only 10.0 percents of subjects in pretest and 61.4 percents in post-test carried out every steps of instruction. This is probably because the male subjects did not know or not concerned with STDs and AIDS. Most of the subjects were too drunk and had miss information about effectiveness of condom the messiness of the lubricants. They did not have the correct knowledge and skill to use the condom (61,63,69).

2.4 Comparison of pretest and post-test scores in each group for their knowledge, attitude and skill in condom application onto the penile model

Knowledge about condom, when comparing pretest and post-test scores in the experimental group, It is significantly different because they had received information as well as from hands-on condom application. However in the comparison group, they ought to be significantly different also because of the same instruction interviewed. This reason due to the comparison group, they did not practice about skill in hand-on condom application.

Attitude towards condom use, in conclusion for both groups, they are significantly different because all subjects received intervention. The two methods of intervention could change attitude in the both groups. Although some of subjects had no experience in sexual intercourse. Fishbein et al. (58) and Steiner et al. (70) reported that subjects who had no experience in sexual intercourse, can be changed attitude easily (57,67). Or subjects, who have poor experience with condom, they rarely changed their attitude (57,67). Researcher suggest that attitude change should be repeatedly tested over the time (58).

Skill in condom application, the both groups, are significantly difference because they could practice correctly, in either methods of teaching by observe demonstration or by observe and hand-on practice. Both methods could increase scores on skill. Hands-on method was better than observation method. But hands-on method was time and budget consuming. So researcher suggest that, teachers must divide students in to small groups (3-5 students). Teachers demonstrate applying a condom onto the penile model and let some students be able to skill in hand-on

condom application. In this way, the students will get more skill and less budget consuming.

The results of this study were the same at Guaykietikul et al. (63).

2.5 Problems with condom use and felt feelings of shame

Problems of condom use

Most of the subjects had some problem of condom use and these were decreased at post-test.

Problems of knowledge about condom, the subjects who reported that they had some problems about knowledge about condom because they did not know about sexuality education and no experience in sexual intercourse. Cohen et al. (67) reported that men exposed to the social influences program had the highest mean scores on the ability to erotic aspects of condom use. Many subjects expressed their misconceptions about condom use. Several subjects answered that they will wash and reuse condom, others will put the condom on only halfway or put inside out, or unrolled them before application. Incorrect usage of condoms led to decreased confidence in subject's ability to use them and in their perception of the effectiveness of condoms.

Problems of attitude towards condom use, will be the predictor of condom use in future. For example, students who had negative attitude towards condom use, explained that they dislike condom with respect to sexual arousal and feeling, does not feel natural, interrupt the mood for sex or uncomfortable. These problems came from their experience, listened to another person. Many factors have direct and indirect effect on condom use. Norris et al. (27) reported that gender, ethnicity, culture and age differences were found among beliefs related to frequency of condom use. Gender,

ethnicity and culture were related to important differences in the condom beliefs. Another attitude are related to the nature of the sexual relationship. For example, students think that when they use condom her partner will think that she is not a virgin or can not be trusted. This issue is interesting that we have the methods which make to insight of students define about prevention of STDs, AIDS and pregnancies. Researcher suggests that these methods for intervention. Students ought to be sensitive to how partner characterize their relationships, and that students may consider to safe themselves from popular partners even if students and their partners had monogamous (one's sexual partner) (69).

Problem of skill in condom application, has important implication for making decision in consistency of condom use. Elkins et al.(62) reported that participation in the condom races had the greatest impact on subjects (women) who had the least familiarity with condoms before the sexual activity and, therefore, had the most to gain from the experience. Subjects showed marked increases in their self-confidence in using and talking about condoms after participation in the condom races. The races provided an opportunity for subjects (men and women) to interact around a 'hands-on' discussion of condom use in a less emotionally charged setting. Sparrow et al.(9) reported that breakage was more common in younger and inexperienced clients and in those who had previously experienced breakage. Poor fitting condoms were associated with more breaks. 66.0 percents, clients were aware of the break before ejaculation occurred. Slippage was more common in the inexperienced and those who had previously experienced slippage. The same reported in Steiner et al. (70) which presented that couples who had not used a condom in the past year were almost twice as likely to experience condom failure as were couple who

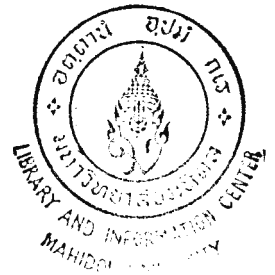
had used at least one during that period ($p < 0.001$). Couple who did not live with their partner and who had a high school education or less were at increased risk of condom failure (adjusted odds ratios of 3.2 and 2.7, respectively).

Important points from interview; most subjects asked each other when they will use condom. Most close friend (female) did not like condom use. Or how they worked. This informal opportunities for productive interaction were one of the positive unanticipated benefits of this activity. This intervention stimulated subjects and another students (male and female) in Ratchaburi Technical College, who talked together. The students suggested that information about condom ought to interviews starting in the first year because they will have their close friends and they will talk with junior students. In addition, class is small. Subjects requested condoms and suggested that condoms should available in private stalls in nursing rooms and that condoms should be free of charge. After intervention, subjects interested in experience of sexual intercourse increase from group of those who never had sexual intercourse because they were sure of sex act and condom use. Subjects in group of never used condoms, will try to use condom. By contrast, Brown et al.(47) reported that students do not believe that having condoms available will increase sexual activity or condom use among students. Approximately 50 percents or more of subjects in this research, have positive attitude about to the one who had more sexual partners (10 partners or more per year).

Problems felt feelings of shame

Problems felt feelings of shame when adolescence have the first sexual intercourse, must happen to every one. At this time condom should be used (especially

with partners who have most experience of sexual intercourse) (57,67,69,70). From our research, subjects who felt a shamed to condom use were low percentage at pretest and still lower at post-test because most subjects were interested in sexual intercourse. They decided that it is normal to have sex act. Shamefulness was related to attitude about sexual intercourse experience. From our observation and two assistant researchers thought that two-thirds or more of subject felt shamed when they fist touched condom and felt increasingly shameful when they applied condoms onto the penile model. This is because of cultural expectations that men in rural Thailand. Rural men are less likely to live and work together in large social groups, and there are probably fewer opportunities for sexual contact outside of marriage (45). Thai culture do not tolerate sexual outlet in children.



CHAPTER VI

CONCLUSION

This experimental design field research was aimed to compare knowledge, attitude and skill in condom application onto the penile model between the experimental and comparison group, which have special objective as follows:

1. Knowledge, attitude and skill in condom application in the experimental and comparison group.
2. Comparison of the scores between the experimental and comparison group for their knowledge, attitude and skill in condom application onto the penile model.
3. Comparison of pretest and post-test scores in each group for their knowledge, attitude and skill in condom application onto the penile model.
4. Problems with condom use and felt feelings of shame.

Each group of 39 male vocational students, were studying in the third year in Ratchaburi Technical College at Ratchaburi Province. The age were between 15-20 years old, with the mean age of 18. The subjects were willing to participate in the study. Experimental group, subjects were interviewed of their knowledge and observed during a demonstration of condom application and skill in hands-on condom application while the comparison group was interviewed of their knowledge and observed the assistant researchers who demonstrated applying a condom onto the penile model.

Methodology: The instruments of these study (questionnaire) were in two parts, the first part were the general data, knowledge about condom and attitude

toward condom use. The second part was skill data of condom application onto the penile model. The questionnaire was designed by researcher and examined by three experts. The pilot study was done with 30 male vocational students at Photharam Technical College. The reliability test for knowledge about condom using Kuder-Richardson in KR20 was 0.7134, and the attitude towards condom use using Cronbach's Alpha Method was 0.7119. Data collection was divided in to pretest and post-test. In pretest, the subjects (experimental and comparison group) were evaluated for skill in condom application. After that, evaluation of their knowledge about condom and attitude toward condom use was carried out. Two assistant researchers presented the information about condom and demonstrated applying a condom onto the penile model. The experimental group were given training in condom application onto the penile model one-by-one. Time between pretest and post-test was two weeks. Pretest and post-test questionnaires knowledge, attitude and check list for skill in condom application were the same. Data analysis using SPSS /PC for descriptive statistic reporting in number, percentage, mean and S.D.. Analytic statistics using t-test (between groups) and paired t-test (pretest and post-test).

The results of research was presented as follows:

1. Knowledge about condom and attitude toward condom use, subjects have scores after intervention higher than before intervention. Skill in condom application, before intervention the experimental and comparison group have lower scores than after intervention. But after intervention experimental group have higher scores than comparison group.

2. Comparison of the scores between groups, after intervention, the experimental group have higher scores of knowledge about condom and attitude

toward condom use, however these scores were not significantly different from the comparison group. But scores of skill in condom application were differed significantly ($p\text{-value}<0.001$) to the comparison group.

3. Comparison of pretest and post-test scores in each group:

Experimental group have significantly different scores of knowledge about condom, attitude towards condom use and skill in condom application between before and after intervention ($p\text{-value}=0.005$, $p\text{-value}<0.001$ and $p\text{-value}<0.001$ respectively).

Comparison group have no significantly different in the scores of knowledge about condom between before and after intervention. On the other hand, they have significantly different in scores of attitude towards condom use and skill in condom application ($p\text{-value}<0.001$ and $p\text{-value}<0.001$ respectively).

Withdrawal method of condom, before intervention most subjects withdraw condom from the penile model incorrectly. After intervention, most subjects withdraw condom correctly.

Application time of condom, subjects, who spent more than 30 seconds in condom application reduced the application time after intervention.

4. Problems with condom use and felt feelings of shame. Subjects have less problems after intervention.

In conclusion, intervention by hands-on instructional method and observation method of condom application. Results in increasing scores of the attitude and skill in condom application in all groups. Moreover, hands-on instruction method produce better result than observation method.

Recommendation for Practical Application

1. Hand-on instruction method produce better result than observation method. If teachers divide students in to small group (3-5 students), demonstrate applying a condom onto the penile model and let some students be able to skill in hand-on condom application, the students will get more skill and less budget consuming.

2. Male vocational students at this level had a good knowledge about condom. In teaching this subjects, the teachers may skip basic part of knowledge about condom and spend more time in changing attitude and practicing skill.

3. Male vocational students had a good attitude towards condom use. Anyway, teachers should consider attitude towards condom use in different group of students because many factors may effect attitude towards condom use.

Recommendation for Further Research

1. This research evaluated skill in condom application in pretest and post-test by one assistant researcher, for each group of experimental or comparison group. The researcher recommends to evaluate skill in condom application by the two teachers. The result of mean scores from both teachers may be more accurate.

2. Time period between pretest and post-test, was two weeks, which was said to be minimal time. One who will use model of this research may increase more time interval in order to see the difference of knowledge about condom, attitude towards condom use and skill in condom application between groups.

3. Research on the third year of Primary Vocational Education compare with the sixth year of secondary education.

4. Research by using more sophisticated the other questionnaires of knowledge about condom which can divide level of student's knowledge.



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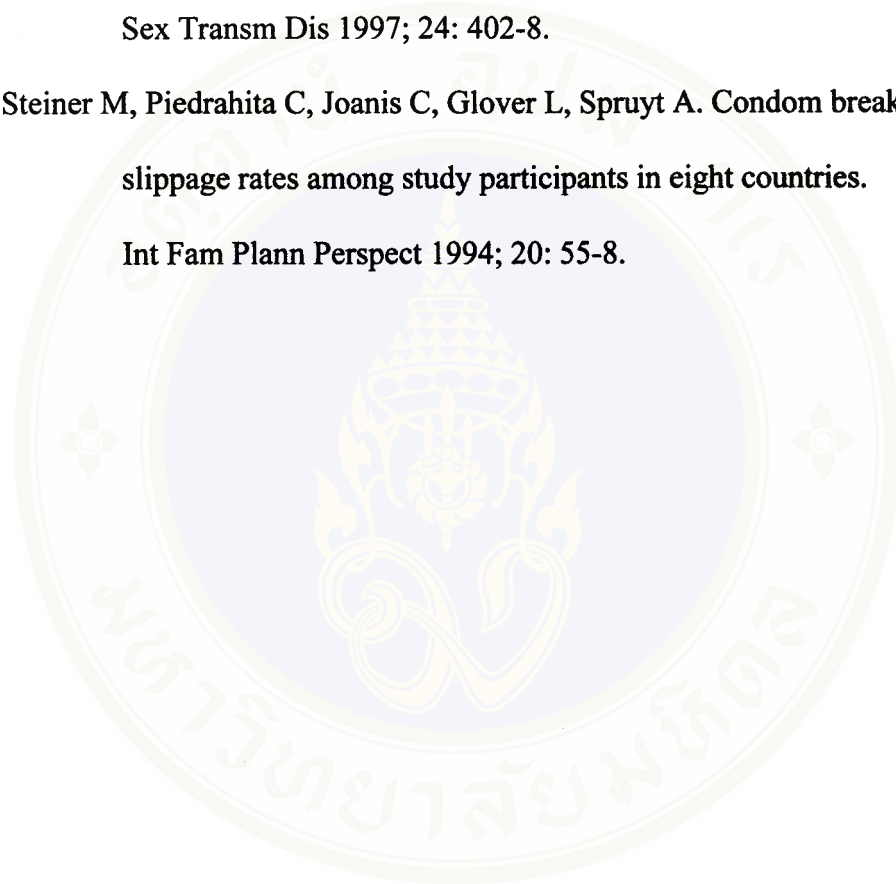
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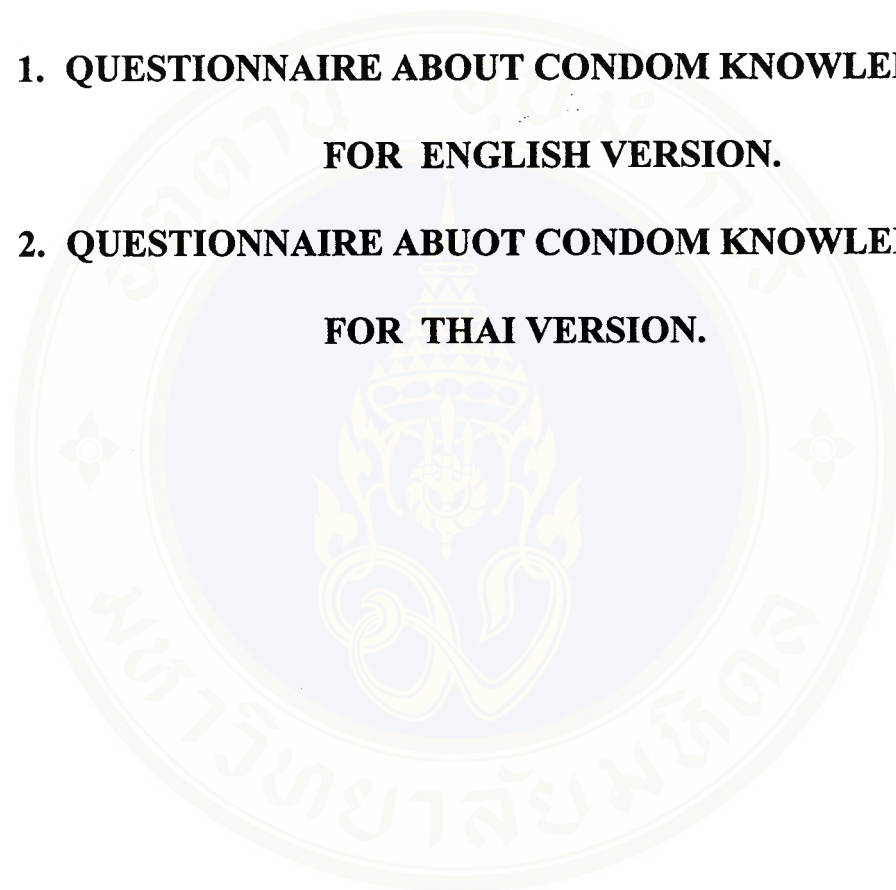
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APPENDIX I

- 1. QUESTIONNAIRE ABOUT CONDOM KNOWLEDGE
FOR ENGLISH VERSION.**
- 2. QUESTIONNAIRE ABUOT CONDOM KNOWLEDGE
FOR THAI VERSION.**



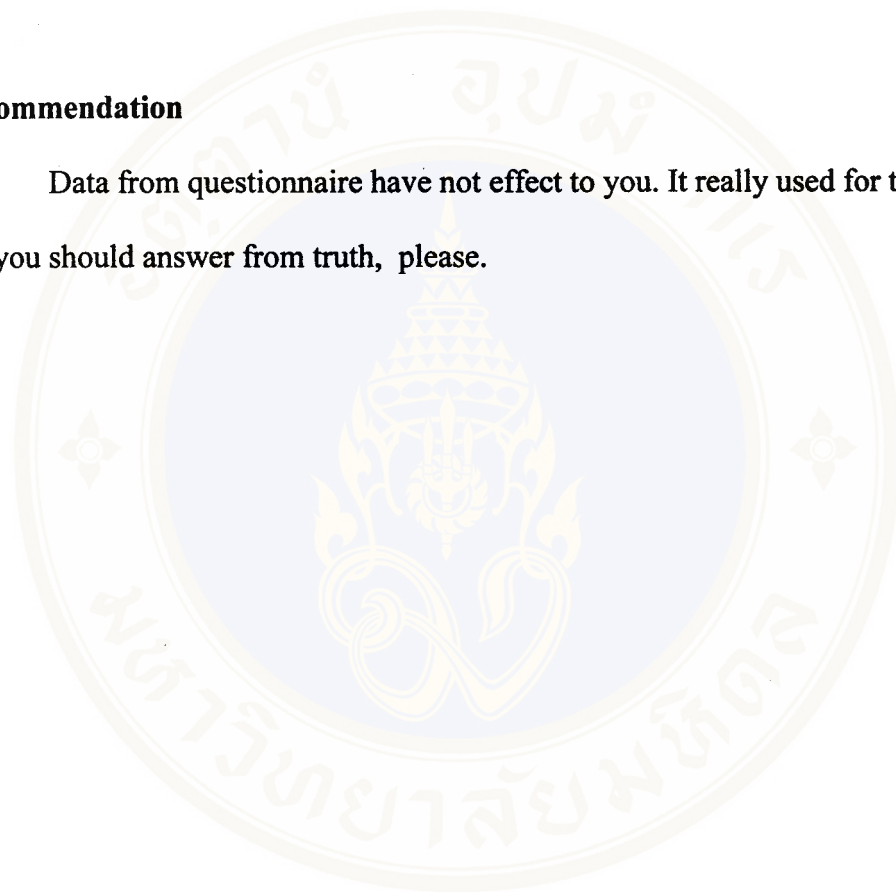
QUESTIONNAIRE

CONDOM KNOWLEDGE

Recommendation

Data from questionnaire have not effect to you. It really used for this research.

So, you should answer from truth, please.



For Researcher

Number

1 2 3

Part 1.1

1. Student's number

2. Time of answer

First.

Second.

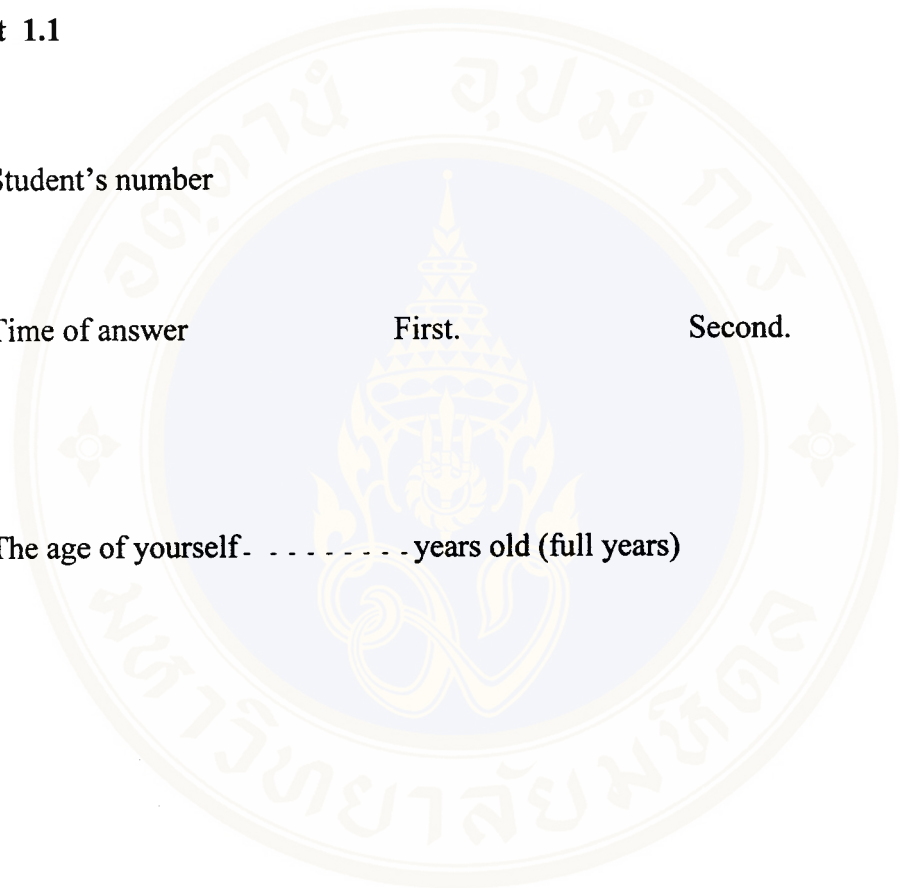
TIME

4

3. The age of yourself - years old (full years)

AGE

5 6



Part 1.2

Recommendation: Please mark ✓ at the space for one question.

Question	True	False	
1. Condoms are made from latex rubber, they are put onto the penis to prevent pregnancies, the AIDS virus and other STDs.			7
2. Every condom has nipple or reservoir.			8
3. Look for expired date on the package.			9
4. Condoms with expired date but look well, can be used.			10
5. User must inspect the lubricant of condoms.			11
6. Apply condom onto the penis while penis is erected.			12
7. Hold the rolled condom on the out side.			13
8. Apply condom unfold the rolled along penis.			14
9. During sexual intercourse, if condom is torn, condom must be changed condom.			15
10. Condom use only once.			16
11. After used condom, pack before throw away.			17
12. Keep condom in dry place.			18

Part 1.3

Recommendation: Please mark ✓ at the space for one question that you most agree with. Do not worry that you have or have not had sexual intercourse.

Choose as follow:

Agreement: mean you agree with all of the sentence.

Uncertainty: mean you agree with some sentence.

Disagreement: mean you do not agree with all the sentence.

Question	Agree	Uncertainty	Disagree	
1. Condom make sex last longer.				19
2. Condom interrupt mood for sex.				20
3. Use of condom is for sex with prostitute only.				21
4. You are not embarrassed buying condoms.				22
5. Condoms often come off easily when used in rectal intercourse.				23
6. Condoms often break.				24
7. Putting on a condoms is restrictive and uncomfortable.				25
8. You do not use condoms with your lover.				26
9. You are embarrassed putting on a condom.				27

Question	Agree	Uncer- tainty	Dis agree	
10. Sex does not feel natural when using condom.				28
11. Condoms is not messy.				29
12. If you tell your partner you will use condom, your partner will think you give her respect.				30
13. Women who carry condoms are prepared for sex.				31
14. Withdraw or coitus interruptus instead of using condom prevents AIDS.				32
15. Using condom with your partner means that you don't trust your partner.				33
16. You intend to use condom.				34
17. If condom is expensive, you will not use condom with prostitute.				35

You think that, you have problem when you use condom. 36

Yes. Because

No. Because

You are embarrassed to put on a condom. 37

Yes. Because

No. Because

Part 2 For Researcher

1. Student's number

2. Time of answer First. Second.

Part 2.1 Skill Evaluation Form.

Steps of condom application	True	False	
Before use condom:			
1. Look for expired date.			38
2. Look over the package for obvious tear or hole.			39
Hold package:			
3. Push condom to profile of package.			40
4. Tear a long of condom's package. Pull condom from package.			41
5. Hold the rolled condom outside.			42
6. Unfold the condom about 2.5 centimeter.			43
7. Squeeze at the tip of condom length to eliminate air.			44
8. Put on condom while hand squeezed condom's tip.			45
9. Use other hand to unfold the condom along whole length of penile model.			46
10. Leaving space at the tip of the condom to accommodate semen.			47

Steps of condom application	True	False
<p>11. Withdraw condom from penile model:</p> <p>-Use tissue paper to wrap round at top of condom and pull down to withdraw condom from penile model.</p> <p>Or</p> <p>-Use the little finger of the two hands and hooking inside at the top (ring) of condom and withdraw condom from penile model.</p>		
<p>12. Time taken.</p> <p>- 30 seconds or less.</p> <p>- More than 30 seconds.</p>		

48

49

แบบสอบถาม

ความรู้เรื่องอุ้งยางอนามัย

คำชี้แจง

ข้อมูลที่ได้จากการศึกษานี้ จะไม่มีผลใดๆทั้งสิ้นต่อผู้ตอบแบบสอบถาม และข้อมูลที่ได้จะนำไปใช้เพื่อการศึกษาเท่านั้น ดังนั้นจึงขอความกรุณา ให้ท่านตอบตามความเป็นจริง และเป็นความรู้สึกที่แท้จริงของท่าน

สำหรับผู้วิจัย
เลขที่
1 2 3

ส่วนที่ 1

1. เลขประจำตัวนักศึกษา

2. ตอบแบบถามครั้งที่

1.

2.

TIME

4

3. อายุปัจจุบันของท่าน ปีเต็ม (ไม่นับเศษ)

AGE

5 6

ส่วนที่ 1.2

คำชี้แจง โปรดทำเครื่องหมาย ✓ ลงในช่องที่ท่านเลือกเพียงข้อละ 1 คำตอบ

ข้อคำถาม	ถูก	ผิด	
1. ถุงยางอนามัยหมายถึง อุปกรณ์ที่ทำจากน้ำยางธรรมชาติ ใช้สวมองคชาติ เพื่อป้องกันการตั้งครรภ์และป้องกันโรคติดต่อทางเพศสัมพันธ์และโรคเอดส์			7
2. ถุงยางอนามัยทุกชนิดมีปลายเป็นกระเปาะยื่นออกมา			8
3. คู่มือหาคออายุของถุงยางอนามัยได้ที่ซองบรรจุถุงยางอนามัย			9
4. ถุงยางอนามัยที่ผลิตนานแล้วและหมดอายุแต่สภาพก็ยังสามารถนำมาใช้ได้			10
5. ผู้ใช้ถุงยางอนามัยจำเป็นต้องตรวจดูว่าถุงยางอนามัยมีน้ำยาหล่อลื่นอยู่หรือไม่			11
6. ควรสวมถุงยางอนามัยขณะองคชาติแข็งตัว			12
7. เมื่อจะสวมถุงยางอนามัยควรจับที่ขอบของถุงยางอนามัยให้ขอบที่ม้วนอยู่ด้านนอก			13
8. การสวมถุงยางอนามัยควรสอดเข้าหาตัวจนสุดองคชาติ			14
9. ในขณะที่ร่วมเพศถ้าถุงยางอนามัยฉีกขาด ต้องรีบเปลี่ยนถุงยางอนามัยใหม่ทันที			15
10. ถุงยางอนามัยใช้ได้เพียงครั้งเดียวห้ามนำมาใช้อีก			16
11. ถุงยางอนามัยที่ใช้แล้วควรห่อกระดาษให้เรียบร้อยก่อนทิ้งลงถังขยะ			17
12. ควรเก็บถุงยางอนามัยไว้ในที่แห้ง			18

ส่วนที่ 1.3

คำชี้แจง โปรดทำเครื่องหมาย ✓ ลงในช่องที่ตรงกับความรู้สึกของท่านมากที่สุด กรุณาเลือก
เพียงข้อละ 1 คำตอบ โดยไม่คำนึงถึงว่าท่านจะมีประสบการณ์ในการร่วมเพศหรือไม่
โดยเลือกตามเกณฑ์ ดังนี้

เห็นด้วย คือ เมื่อท่านเห็นด้วยกับข้อความนั้นทั้งหมด

ไม่เห็นด้วย คือ เมื่อท่านเห็นด้วยกับข้อความนั้นบางส่วน

ไม่เห็นด้วย คือ เมื่อท่านไม่เห็นด้วยกับข้อความนั้นทั้งหมด

ข้อคำถาม	เห็น ด้วย	ไม่ เห็น ด้วย	ไม่เห็น ด้วย	
1. ถุงยางอนามัยทำให้ระยะเวลาในการหลั่งน้ำอสุจิลดลง				19
2. ท่านคิดว่าการแตกของถุงยางอนามัยขณะร่วมเพศทำให้อารมณ์เพศหมดไป				20
3. ท่านคิดว่าถุงยางอนามัยมีไว้สำหรับใช้กับโสเภณีเท่านั้น				21
4. ท่านรู้สึกเฉยๆ เมื่อต้องซื้อถุงยางอนามัย				22
5. ท่านคิดว่าถุงยางอนามัยหลุดและแตกง่ายเมื่อใช้ทางทวารหนัก				23
6. ท่านคิดว่าถุงยางอนามัยแตกง่าย				24
7. ท่านคิดว่าถุงยางอนามัยทำให้ผู้สวมใส่รู้สึกไม่สบาย รัคแน่น				25
8. ท่านคิดว่าไม่ควรใช้ถุงยางอนามัยกับคู่อรักหรือแฟน				26
9. ท่านรู้สึกกระดากอายเมื่อต้องสวมถุงยางอนามัย				27
10. ท่านคิดว่าถุงยางอนามัยทำให้มีความรู้สึกไม่เป็นธรรมชาติ				28
11. ท่านคิดว่าการใช้ถุงยางอนามัยเป็นเรื่องง่าย				29
12. ท่านคิดว่า ผู้ที่บอกกับผู้อื่นว่า เขาต้องการใช้ถุงยางอนามัย ในการร่วมเพศ คู่สนทนาของเขาจะคิดว่าเขาให้เกียรติเธอ				30
13.ท่านคิดว่า ผู้หญิงที่มีถุงยางอนามัยติดตัวอยู่เสมอจะถูกมองว่าเตรียมพร้อมในการร่วมเพศ				31

ข้อคำถาม	เห็น ด้วย	ไม่ แน่ใจ	ไม่เห็น ด้วย	
14. ท่านคิดว่า การหลังน้ำอสุจิ ภายนอกช่องคลอดแทนการใช้ ถุงยางอนามัยจะทำให้ไม่ติดโรคเอดส์				32
15. ท่านคิดว่า ผู้ที่ใช้ถุงยางอนามัยกับคู่อีกหมายความว่าเขาไม่ มีความไว้วางใจคู่อีกของเขา				33
16. ท่านมีความตั้งใจที่จะใช้ถุงยางอนามัย				34
17. ถ้าถุงยางอนามัยมีราคาแพง ท่านจะไม่ใช้ถุงยางอนามัยเมื่อ ร่วมเพศกับโสเภณี				35

ท่านคิดว่า ท่านมีปัญหาเมื่อต้องใช้ถุงยางอนามัยในการร่วมเพศ หรือไม่
มีปัญหา เพราะ

ไม่มีปัญหา เพราะ

ท่านอาย เมื่อต้องใช้ถุงยางอนามัยในการร่วมเพศ หรือไม่
อาย เพราะ

ไม่อาย เพราะ

ขอบคุณที่กรุณาให้ความร่วมมือในการตอบแบบสอบถาม

ส่วนที่ 2 วัดโดยผู้วิจัย

1. เลขประจำตัวนักศึกษา
2. วัดครั้งที่ 1. 2.

ส่วนที่ 2.1 ทักษะการสวมถุงยางอนามัยกับหุ่น

ขั้นตอนการประเมิน	ถูก	ผิด	
การปฏิบัติก่อนใช้ถุงยางอนามัย			38
1. ตรวจสอบวันหมดอายุการใช้งาน			39
2. ตรวจสอบความชำรุดฉีกขาดหรือมีรูรั่วของห่อ			
การจับของถุงยางอนามัย			
3. คั้นถุงยางอนามัยไปด้านใดด้านหนึ่งของห่อ			40
4. ฉีกของถุงยางอนามัยให้ขาดตลอดความยาวของห่อ คึงถุงยางอนามัยออกจากห่อ			41
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APPENDIX II

INFORMATION ABOUT CONDOM



Information about condom

Condom mean latex accessories or other materials that is used to envelop the penis completely. For that users can prevent the human immunodeficiency virus (HIV), most sexually transmitted diseases (STDs) and pregnancies. Condom was many names such as sheath, prophylactics, protective, French letter, rain coat and coat of mail.

Styles of condom

Many styles of condom have aims for promotion for increase of condom use rate. Styles of condom were divided from the tip of condom and skin (surface) as following:

1. *The tip of condom*: divided in to two kinds e.g. plain end and reservoir end (teat or pocket end). Reservoir end is preferred from users more than plain end.
2. *The skin of condom*: divided in to two kinds e.g. plain skin and rough skin. Rough skin of condom suppose to stimulate women's sexual sensation.

In addition, some condom skin have and have no lubrication for users choice. Lubricated kind is preferred from users more than none lubricated. Lubrication has many kinds for example Silicone oil and 8% Nonoxynol -9,11. Nonoxynol -9 can kill HIV virus. Some kinds of condom have plate with anaesthetic agent inner condom skin. So, men can slowly ejaculate semen because anaesthetic agent decrease sensation of touch. But most results effect the mind of users. Moreover, condom were made with many colors for people to choose such as pink, pale brown and yellow which three

colors are popular. Some are even in black, pastel and other have no color. Some condoms even have reflective colors and glow in the dark. Besides, condoms have many smell and many sizes to suit all penile sizes.

Benefit of condom

1. Prevention HIV and STDs, condom envelop the penis completely. For this reason, couple's skin do not snare secretion and semen. Moreover, Nonoxynol can kill HIV. Users can prevent themselves from getting infected with diseases if users use condom correctly.
2. Prevention pregnancies, women, who use condom, have pregnancies rate of 0.5-2.0 per 100 women. In addition, Nonoxynol can kill sperm.
3. Prevention of spermagglutinating antibody in wives. In some infertile women, the cause of infertility is due to sperm antibody.
4. Condom help women's orgasm increase rate because condom made men slower in coming to ejaculation.

Proper use

Before users use condoms, they must look for expiry date. Users ought to look over the package for tear or hole. Do not test condom before use by inflating by blowing in to condom, or stretching. Do not use a mineral or vegetable oil, which many degenerate skin of condom for example body lotion, plant's oil, mineral oil and petroleumbase product. K-Y jelly can be used for lubrication. If condoms break, should intercourse be repeated new condom should be used.

Condom application has 11 steps. Users ought to start in first step toward last steps following step-by-step.

Before use condom:

1. Look for expired date.
2. Look over the package for obvious tear or hole.

Hold package:

3. Push condom to profile of package.
4. Tear a long of condom's package. Pull condom from package. Users must take care not to hold condom by the skin.

5. Hold the rolled condom from outside.

6. Unfold the condom about 2.5 centimeter.

7. Before condom application with penis, users must squeeze at the tip of condom length about 2.5 centimeter to eliminate air.

8. Apply to erect penis and while putting on condom squeezed condom's tip.

9. Use the other hand to unfold the condom along whole length of penis.

10. For plain end kind, users must leave a space approximately 1 centimeter at the tip of the condom, and ensure that no air is trapped in condom's tip so that there is a space to keep semen. By way of contrast, with condom with teat, do not leave space at the tip of condom.

After ejaculation

11. Withdraw condom from penis, users must withdraw penis from vagina canal while penis is still erect by catching the ring top of condom. To prevent condom from falling off in vaginal canal. In addition, users should protect semen from spill all

over vagina. Withdrawal of condom has two method, that user can choose either. For example:

-Use tissue paper to wrap around at the top of condom and pull down to withdraw condom from penis.

Or

-Use the little fingers of the two hands, use the thumbs and fore fingers pull the ring top of condom and use the little fingers hooking the inside at the top (ring) of condom and withdraw condom from penis. Users must take care that semen will not spill all over the floor.

Do not reuse old condom again. Users should wrap up condom before disposal of condom in dust-bin.

Keep and care of condom

A supply of condom should be kept at hand, ideally in a cool, dry place, so that one is easily available for use at every time of sexual intercourse.

In high temperatures and humid surrounding a large percentage of the condoms will loose their ability to expand, as shown in test in the lower volumes of air required to burst the condoms.

Additional problem, is air pollution. When the smog was bad, after a few days the rubber bands would easily break. Thus, warm or hot temperatures compounded with smog like air pollution are well-know factors for weakening latex.

Fluorescent light also effect condom.

Prolonged exposure to ultraviolet rays had a major effect on the breakage of condoms. After 6 to 8 hours of intense ultraviolet radiation, failure rates, as determined by actual breakage during use, was nearly 30 percent.

Since latex in the form of the finished product is technically still curing in the package, the condom actually reaches maximum strength in 3 to 6 months after manufacture. The shelf life is generally accepted to be at least 5 years by the industry.

Advantage of condom

1. Users do not have to consult doctor before use.
2. Condom save users from systemic side-effect and can be used without medical supervision.
3. Condom are easy to keep, light weight.
4. It is disposable.
5. Users can easily buy condom. In addition, condoms are cheap.

Disadvantage of condom

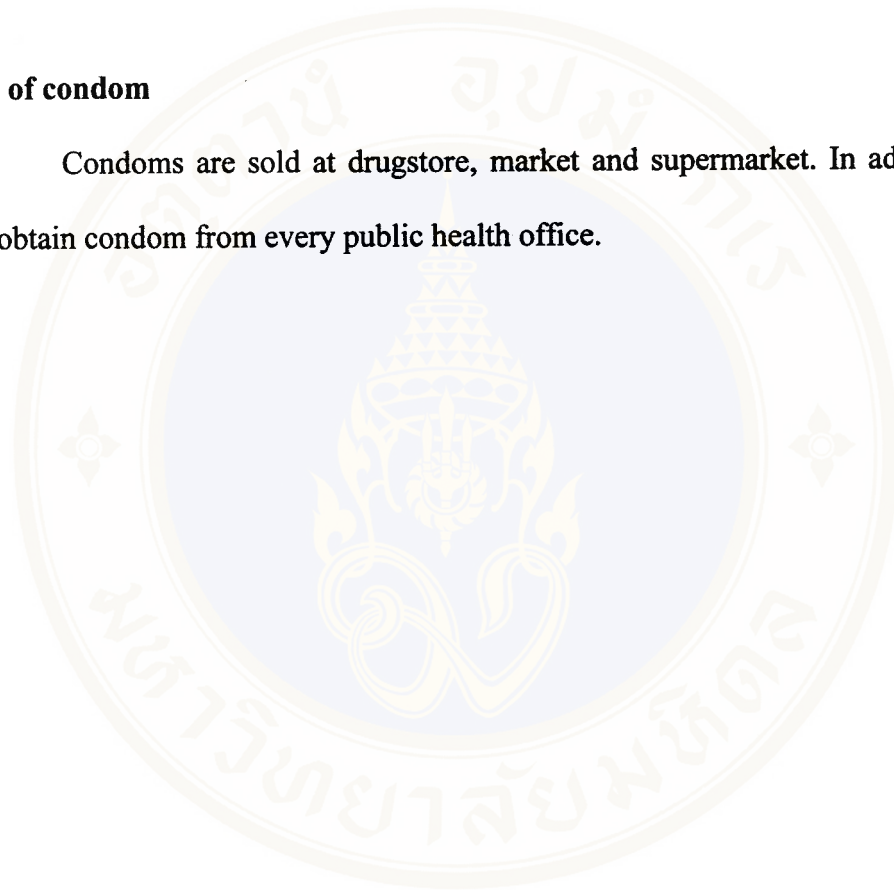
1. High user failure rate if users do not intend, not experience and not use always.
2. Condom application interrupt sexual intercourse because it must be applied on erect of penis. If the ferule partner can put on the condom as part of fore play in sexual intercourse. This problem do not occur.
3. Condom decrease sensation of touch in nature. It does not conduct heat.
4. Condom hinder sensation of semen ejaculation in women.
5. Latex condoms are destroyed by nature after many years.

Side-effects

Side-effects of condom are a few. Problems may occur from lubrication giving rise to vaginal irritation. This can be over come by the use of K-Y jelly. Allergic reaction of latex rubber condom in men and women occur rarely.

Sale of condom

Condoms are sold at drugstore, market and supermarket. In addition, users can obtain condom from every public health office.



Plan: Condom preparation guideline and evaluation form

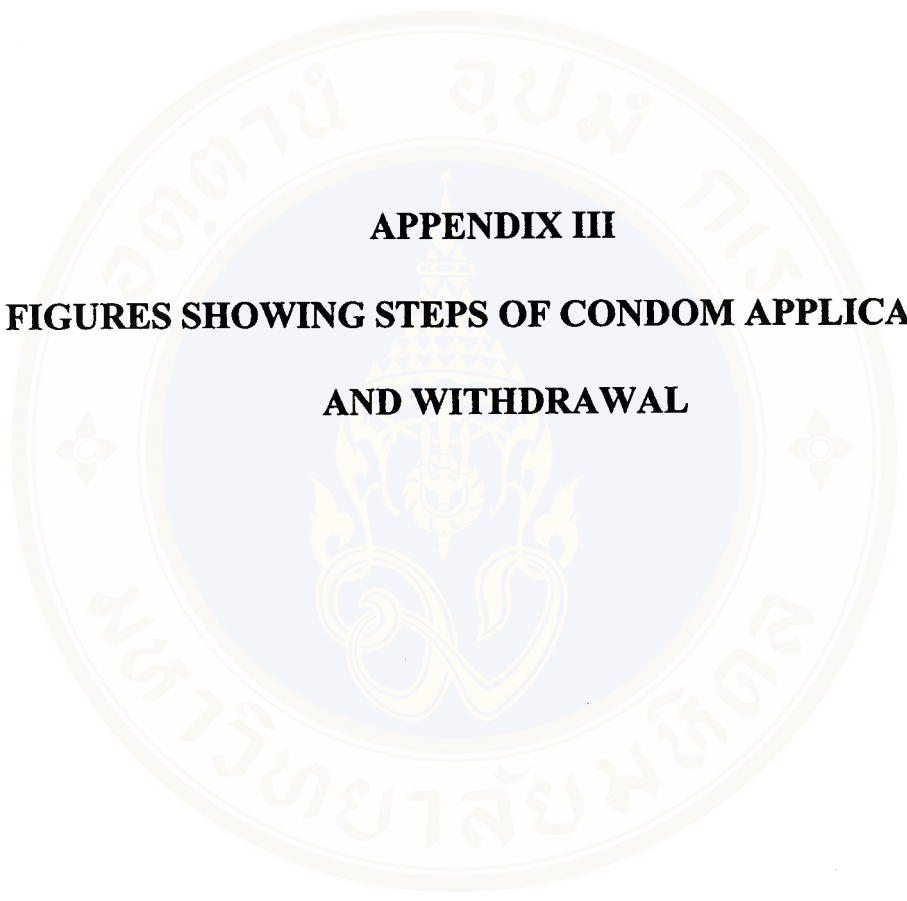
Students: Male vocational students

Objectives: Students can apply condom with the penile model by correctly and students prevent themselves from AID, STDs and pregnancies.

Major step	Key Information	Application	Critical error	Acceptable performance
1. Material	(1) Condom (2) Tissue paper (3) The penile model			
2. Before use condom.	1.Look for expired date. 2.Look over the package for obvious tear or hole.		Do not look.	
3. Condom application (hold package)	1.Push condom to profile of package. 2.Tear along condom's package. Pull condom from package. 3.Hold the rolled condom outside.		Do not practice or Do not correct	Correctly practice

Major step	Key Information	Application	Critical error	Acceptable performance
	<p>4.Unfold the condom about 2.5 centimeter.</p> <p>5.Squeeze at the tip of condom length to eliminate air.</p> <p>6.Put on condom while hand squeezed condom's tip.</p> <p>7.Use the other hand to unfold the condom along whole length of penile model.</p> <p>8.Leaving space at the tip of the condom to accommodate semen.</p>		<p>Do not practice or Do not correct</p>	<p>Correctly practice</p>
<p>4.Withdraw condom from penile model</p>	<p>1.Use tissue paper to wrap around at the top of condom and pull down to withdraw condom</p>	<p>- Students can explain about after ejaculation users must withdraw penis from vagina</p>	<p>Do not practice or Do not correct</p>	<p>Correctly practice</p>

Major step	Key Information	Application	Critical error	Acceptable performance
	from penile model. 2.Use the little fingers of the two hands, use the thumbs and fore fingers pull the ring top of condom and use the little fingers hooking the inside at the top (ring) of condom and withdraw condom from penile model.	canal while penis is still erect to prevent condom from falling off in vaginal canal and protect semen from spill all over the vagina.	Do not practice or Do not correct	Correctly practice

The background of the page features a large, faint watermark of the Mahidol University logo. The logo is circular and contains the university's name in Thai script: "มหาวิทยาลัยมหิดล" (Mahidol University) around the perimeter and "อุบผ กษ" (Uphak) at the top. In the center of the logo is a golden emblem with a crown on top and two lions flanking a central figure.

APPENDIX III
FIGURES SHOWING STEPS OF CONDOM APPLICATION
AND WITHDRAWAL

Materials

Styles of condom :



Figure 6. Condoms: while they are normal enlarge.

-*The tip of condoms:* The second from right figure, it is plain end and the other are reservoir end.

-*The skin of condoms:* The first from right figure, it is rough skin and the other are plain skin.



Figure 7. Condoms: while they are internal emptiness.



Figure 8. The wooden penile model.

Methods

Steps of condom application ;

Before use condom :



Figure 9. -Look for expired date.

-Look over the package for obvious tear or hole.

Hold package :



Figure 10. Push condom to profile of the square package.



Figure 11. Push condom to profile of the long package.



Figure 12. Tear a long of condom's square package. Pull condom from package.



Figure 13. Tear a long of condom's long package. Pull condom from package.



Figure 14. -Hold the rolled condom from outside.
-Unfold the condom about 2.5 centimeter.



Figure 15. Squeeze at the tip of condom length to eliminate air.



Figure 16.

- Put on condom while hand squeezing condom's tip.
- Use the other hand to unfold the condom along whole length of penile model.



Figure 17. Leaving space at the tip of the condom to accommodate semen.

Withdraw condom from penile model:



Figure 18. Use tissue paper to wrap round at the top of condom and pull down to withdraw condom from penile model.

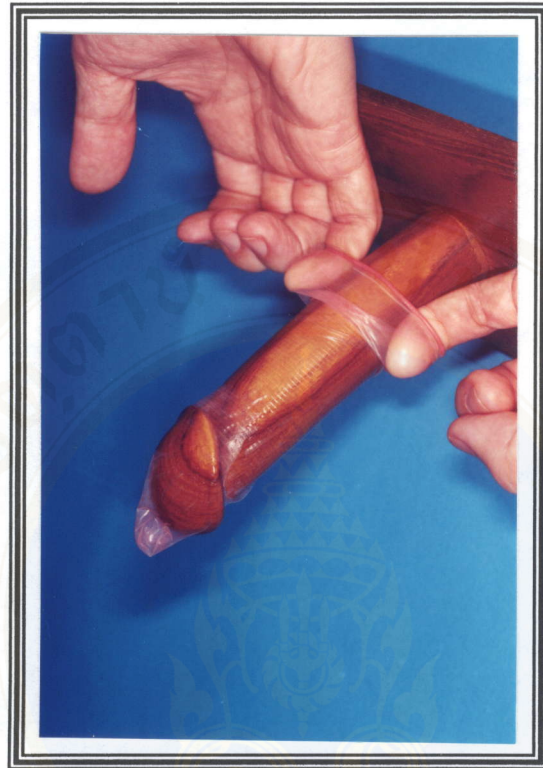


Figure 19. Use the little finger of the two hands and hooking the inside at the top (ring) of condom and withdraw condom from penile model.

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