
GYNAECOLOGY

KAP Study on Contraception of First Year Male Students in Khon Kaen University

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ABSTRACT

Objective: To study knowledge, attitude, and practice of the first year male Khon Kaen university students regarding to contraception

Materials and Methods: A cross sectional descriptive study was conducted, using anonymous self-administered questionnaires, standardized by three staffs of reproductive gynaecology, in the first year male students who studied in first-semester undergraduate of academic year 2013.

Results: 670 male students were enrolled. Mean age was 18.6 ± 0.96 years. One-fifth of male students (20.6%) had ever had sexual intercourse and most of them (45.7%) had sexual intercourse more than 4 times per month. Mean age at first sexual intercourse was 16.5 ± 1.93 years.

These groups had overall contraceptive used, excluded natural family planning, of 44.6 percent and 72.6 percent of them had contraceptive used of less than 80% of their sexual act. The most common contraceptive used was condom (32%). The main source of contraceptive information was from their friends (33.8%)

Most of them (94.3%) had poor knowledge in contraception. Half of them (50.3%) accepted premarital sex. Most students had misperception about adverse effect of contraceptives. The poor knowledge score correlated with no contraception ($P=0.027$) and requirement of abortion if pregnancy occurred. ($P=0.022$)

Conclusion: The majority of male students had poor knowledge in contraception, accepted premarital sex and misperception about adverse effect of contraceptives. Moreover, the majority of male students had the underuse, inappropriate use and misunderstandings in use of contraception despite having active sexual behaviors

Keywords: Contraception, Knowledge, Attitudes, Practice, University student

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Introduction

Influence of globalization, information technology, mass media, and western culture has changed the sexual values/attitudes toward behavior, including sexual behavior, among Thai adolescents.

Premarital sex in Thai adolescents is rising. Reproductive Health Survey 2009 (RHS 2009) which was conducted by the National Statistical Office of Thailand reported overall premarital sex was increasing from 10% in 2001 to 37.6% in 2009⁽¹⁻³⁾. Men had higher percent of premarital sex than women (56.1% vs. 23.1%, $p < 0.001$)^(1,2). The highest rate of premarital sex was found in adolescents aged 15-19 years old (47.9%)^(1, 2).

The consequences of premarital sex in adolescents are sexual transmitted infection (STI), unplanned pregnancy, and unsafe abortion. RHS 2009 revealed the trend of pregnancy in aged group 15-19 was continuously increasing. Subgroups which were divided by age revealed the highest pregnancy rate was in aged group 18-19 (82.7%)⁽³⁾, or the same aged group of the first-year university students.

In 1999, the survey of situation in unsafe abortion which was conducted by Department of Health in Thailand revealed the high incidence of maternal mortality from unsafe abortion (300 per 100,000 women)⁽⁴⁾. Thus, premarital sex in adolescents, the primary cause of this problem, is a national problem.

The survey conducted by Ministry of Health in 2011 revealed that unplanned pregnancy was resulted from incorrect knowledge and negative attitude about contraception⁽⁵⁾. Especially in men adolescents, a study survey (2011), conducted by Bureau of Epidemiology, Department of Disease Control Ministry of Public Health showed a high percent of unused or incorrect use of contraceptives because of wrong attitudes⁽³⁾. Previous study in Naresuan University (2006)⁽⁶⁾, reported the male students had higher percent of unused or incorrect use of contraceptives and poor attitude toward contraception than female students.

Early initiation of sexual intercourse, frequency of intercourse, number of sexual partners and the use of condoms and other forms of contraception are key

behavioral determinants of unintended pregnancy and STI. Sexual and contraceptive educations are strongly important factors for prevention of unintended pregnancy and increasing contraceptives use.

This study aims to assess the knowledge, attitude, and actual practice of the 1st year male university students in Khon Kaen University regarding contraception.

Materials and Methods

This was a cross sectional descriptive study. Sample size was calculated after a pilot study found 80% of first year male university students had poor knowledge and 50% of them had sexual intercourse. Thus, at least 468 participants were needed with a 5% estimated error and a confidence interval of 95%. In this study, we recruited 670 first year male students, aged 18 years or older, during the first-semester undergraduate of academic year 2013 in Khon Kaen University. There were 17 faculties in three faculty-groups; Health Science, Science and Technology, and Humanities and Social Sciences. The participants were selected by stratified random sampling method. This study was approved by the Ethics Committee of Khon Kaen University. (HE561171)

The anonymous self-administered questionnaires were delivered to participants personally by trained research team members. The trained research team members would be present to clarify details of the questionnaire throughout the test period if the participants could ask questions while they complete the questionnaire. The questionnaires were collected immediately after they finished. All information was been kept confidential.

Statistical analysis was carried out using SPSS software (IBM, Armonk, NY, USA). We analyzed the knowledge section and the attitude section of all questionnaires. The practice section was analyzed only in the participants who had had sexual intercourse. Quantitative data were expressed as means \pm SD while qualitative data were expressed as numbers and percentages(%). Independent t-test and one-way ANOVA test were used to study significance of

difference between contraceptive knowledge score and quantitative variables in three faculty groups and GPA (less than 3.00 versus greater than 3.00). A $P < 0.05$ was considered statistically significant.

Questionnaire

The questionnaire was developed and standardized by three experts in family planning & reproductive health, Srinagarind Hospital. The questionnaire was validated and adjusted for its ease of comprehension and relevance to its intended topics. After validating, a pilot study was done among 30 first year male students to determine the questionnaire reliability (Knowledge, $r = 0.78$; Practice, $r = 0.75$; Attitude, $r = 0.67$).

The questionnaire had 4 sections including demographic characteristics, sexual behavior and practice of contraception, knowledge about contraception, and attitude toward contraception. The questions in practice section included essential practical aspects of sexual activity, type and frequency of

contraceptives use. The knowledge section included the basic of contraceptives use of condom (10 questions), emergency pills (5 questions), oral pills (5 questions), injectables (5 questions), and natural family planning (5 questions). The total knowledge score was 30 scores and the participants were received one score point for each correct answer. Eight questions in the attitude section were statements with students responding to a rating scale as disagree, not sure, and agree.

In knowledge section, participants were scored as poor-knowledge if the score was less than eighty percent of questions correctly.

Results

670 students from 17 faculties in Khon Kaen University were recruited. Students in faculty groups of Health Science, Science and Technology, and Humanities and Social Sciences were 27.9%, 33.4%, and 38.7% respectively. Baseline characteristics were shown in Table 1.

Table 1. Baseline characteristics

	Number of students (%) N=670	
Age (years)		
Mean +SD	18.6 ± 0.96 years	
< 20	570 (85)	
> 20	100 (15)	
Faculty groups		
1. Health Science	187	(27.9)
2. Science and Technology	224	(33.4)
3. Humanities and Social Sciences	259	(38.7)
GPA*		
≥ 3.00	531	(79.3)
< 3.00	139	(20.7)

* GPA, mean of GPA at Senior High School

Table 2 showed sexual behavior of the subjects. One-fifth of male students (20.6%) had experienced sexual intercourse (SI) and about half of them (45.7%) had sex more than 4 times per month. Average age at first SI was 16.5 ± 1.93 years. Regarding contraceptive use, only 44.6% used contraception other than natural family planning. Moreover, 72.6 percent of them used

contraception less than 80% of SI. The most common contraceptive method used was condom (Table 3). The sources of contraceptive information were friends, sexual partner, family members, media, school or university, and health personnel (33.8%, 17.1%, 16.1%, 11.7%, 11.4%, and 9.8% respectively).

Table 2. Sexual behavior

	Number of students (%)
Sexual intercourse (n=670)	
Yes	138 (20.6)
No	532 (79.4)
Age of first sexual intercourse (years) (n=138)	
Mean \pm SD	16.5 ± 1.93
< 15	13 (9.4)
15-19	120 (87.0)
\geq 20	5 (3.6)
Frequency of sexual intercourse (per month) (n=138)	
1-2 times	52 (37.7)
3-4 times	23 (16.7)
>4 times	63 (45.7)
Mean number of previous sexual partner (n=138); mean \pm SD	3.18 ± 4.9
History of pregnancy occur in sexual partner (n=138)	
Yes	7 (5.1)
No	131 (94.9)
History of recent sexual intercourse within last 3 months (n=138)	
Yes	94 (68.1)
No	44 (31.9)

Abbreviation: SD, standard deviation

Table 3. Contraceptive practice of students who had ever had sexual intercourse

	Number of students (%)
Contraceptive use ¹ (n=138)	
Yes	62 (44.6)
No	76 (55.1)
Contraceptive use*	
Condom	58 (31.9)
Coitus interruptus	47 (25.8)
Periodic abstinence-calendar	30 (16.5)

Table 3. Contraceptive practice of students who had ever had sexual intercourse (Cont.)

	Number of students (%)
Emergency pills	27 (14.8)
Oral pills	14 (7.7)
Injectables	4 (2.2)
Vaginal douche	2 (1.1)
Frequency of contraceptive used (n=62)	
< 80%	45 (72.6)
≥ 80%	17 (27.4)
Contraceptive information resource *	
Friends	275 (33.8)
Partner	139 (17.1)
Family members	131 (16.1)
Media	95 (11.7)
School or university	93 (11.4)
Health personnel	80 (9.8)

¹ Excluded natural family planning; coitus-interruptus, periodic abstinence and vaginal douche

* Multiple answers allowed

632 of 670 male students (94.3%) had poor knowledge in contraception (Table 4). Mean knowledge score was 13.3 ± 5.8 scores. The three poorest areas of knowledge about contraceptive methods were injectables, oral pills, and emergency pills (95.8%,

95.4%, and 93.6%, respectively). In knowledge section, most of male students were not sure whether condom should be pulled off before penis gets soft after orgasm (46.3%) nor whether latex condom cannot be used with all lubricants (43.6%). (Table 5)

Table 4. Knowledge about contraception

Contraceptives	Knowledge score			Poor knowledge ²
	Total	Mean	SD	Number of student (%) N=670
Condom	10	6.7	2.6	432 (64.5)
Oral pills	5	1.5	1.5	639 (95.4)
Emergency pills	5	1.3	1.5	560 (93.6)
Injectables	5	1.0	1.3	642 (95.8)
Natural family planning 1	5	2.9	1.3	464 (69.3)
Overall	30	13.3	5.8	632 (94.3)

¹ Included coitus interruptus, periodic abstinence-calendar, and vaginal douche

² Poor-knowledge means the scores less than 80% of questions correctly

Abbreviation: SD, standard deviation

Table 5. The answer of knowledge about condom

Questions	Number of student (%)		
	Yes	Not sure	No
1. One condom can be use more than one time.	48 (7.2)	42 (6.3)	579 (86.5)
2. If condom has a little tear, it can be used.	43 (6.4)	41 (6.1)	584 (87.4)
3. If use condom after some initial penetration of penis, before ejaculation, there is less chance to get pregnant.	63 (9.4)	153 (22.9)	453 (67.7)
4. In addition to contraception, condoms to prevent sexually transmitted infections as well.	528 (79)	70 (10.5)	70 (10.5)
5. You should squeeze air out of the tip of the condom every time before use.	411 (61.5)	186 (27.8)	71 (10.6)
6. After you do ejaculation of semen into condom, then later you have sex again in the same period, no necessary to use condom again due to less chance of pregnancy	41 (6.1)	123 (18.4)	504 (75.4)
7. Condom should be pulled off before penis gets soft after orgasm	285 (42.7)	309 (46.3)	73 (10.9)
8. Latex condom can be used with all lubricant	255 (38.3)	290 (43.6)	120 (18.0)
9. You should push your foreskin of penis back before you put on a condom.	413 (61.8)	171 (25.6)	84 (12.6)
10. If you know that condom break while having sex, should be use emergency pills immediately after that to prevent pregnancy	456 (68.3)	160 (24.0)	52 (7.8)

The significant factors correlated with the contraceptive knowledge scores were faculty groups ($p < 0.001$) and GPA during senior high school ($p = 0.020$). The Faculty of Health Science group had highest knowledge scores compared with Science Technology group (mean difference 3.29 ± 0.53 ; 95%CI, 2.00 - 4.56) and with Humanities Social Sciences Technology group

(mean difference 3.97 ± 0.56 ; 95% CI, 2.61 - 5.34) with statistical significance. When considering the GPA factor, students with a GPA greater than and equal to 3.00 had higher knowledge scores than others with statistical significance (mean difference 1.30 ± 0.55 ; 95% CI, 0.21-2.39) (Table 6).

Table 6. Significant variables with knowledge score of contraception in 670 students

Variables	Mean \pm SD	P	Mean diff ² \pm SD	95% CI
Faculty groups		< 0.001*		
Health Science	15.9 \pm 6.36		-	-
Science and Technology	12.6 \pm 5.34		3.29 \pm 0.53	2.00 - 4.56
Humanities and Social Sciences	11.9 \pm 5.16		3.97 \pm 0.56	2.61 - 5.34

Table 6. Significant variables with knowledge score of contraception in 670 students (Cont.)

Variables	Mean ± SD	P	Mean diff ² ± SD	95% CI
GPA1		0.020**		
≥ 3.00	13.6 ± 5.88		1.30 ± 0.55	0.21-2.39
< 3.00	12.3 ± 5.49		-	-

* From one-way anova

** From independent T-Test

1 GPA1, Grade Point Average at Senior High School

2 Mean diff, mean difference compared to Faculty of Health Science

Abbreviation: SD, standard deviation; CI, confidence interval

The poor knowledge score correlated with no contraception ($p=0.027$) and requirement of abortion if pregnancy occurred ($p=0.022$). Male students who did not use contraception had statistically significant lower knowledge scores than the group who used contraception (mean difference 2.67 ± 1.64 ; 95% CI, 0.42-6.92) (Table

7). Moreover, male students who planned to have an abortion done if pregnancy occurred also had lower knowledge scores than the group who planned to continue pregnancy (mean difference 2.81 ± 1.21 ; 95% CI, 0.41-5.21) (Table 8).

Table 7. Knowledge scores and contraceptive use in students who had sexual intercourse

Contraceptive use	Number (%)	Mean score ± SD	P*	Mean diff±SD	95% CI
N=138					
Yes	62 (44.6)	13.9 ± 5.24	0.027	2.67±1.64	0.42-6.92
No	76 (55.1)	11.2 ± 5.68		-	-

* From independent T-Test

Abbreviation: SD, standard deviation; CI, confidence interval

Table 8 Knowledge scores and requirement of abortion if pregnancy occurred

Opinion	Number (%)	Mean score ± SD	P*	Mean diff±SD	95% CI
N=112					
Continue pregnancy	85 (75.9)	14.6 ± 5.38	0.022	2.81±1.21	0.41-5.21
Abortion	27 (24.1)	11.8 ± 5.80		-	-

* From independent T-Test

Abbreviation: SD, standard deviation; CI, confidence interval

Half of male students (50.3%) agreed with having premarital sex. To evaluate the attitude, most of them disagreed with contraception was unnecessary in random or very rare SI (72.5%). They wanted to know about contraception despite contraceptives were almost

exclusively used for women (75.5%). They did not feel difficult to carrying condom (57.1%). In addition, they disagreed with coitus interruptus (49.3%) and periodic abstinence (39.3%) were safe, easy, and convenient methods for teenagers with regular sex to prevent

pregnancy possibly they felt that these methods were less effective. Most students were more likely to be concerned about adverse effects of contraception: for example, condom may decrease libido (46.5% not sure,

28.3% agree), while oral pills or injectables were unsuitable for teenagers because of their side effects (51% not sure, 31.7 % agree) (Table 9).

Table 9. Attitude about contraception and premarital sex

Attitude	Number of students (%)		
	N=670		
	Agree	Not sure	Disagree
You accept to have premarital sex	333 (50.3)	126 (19)	204 (30.7)
Contraception was unnecessary in random or very rare SI due to less chance of pregnancy	69 (10.4)	114 (17.1)	482 (72.5)
Men should be known contraception despite contraceptives were almost exclusively used for women	503 (75.5)	99 (14.9)	64 (9.6)
You feel difficult to carrying condom	135 (20.3)	150 (22.6)	380 (57.1)
Condom use decreases a man's libido	188 (28.3)	309 (46.5)	168 (25.2)
Oral or injectables contraceptive methods are not suitable for teenagers because of side effects include nausea, vomiting, or obesity.	211 (31.7)	304 (51)	115 (17.3)
Coitus interruptus is safe, easy, and convenient method for teenagers with regular sex to prevent pregnancy.	116 (17)	224 (33.7)	328 (49.3)
Calendar period is safe, easy, and convenient method for teenagers with regular sex to prevent pregnancy.	116 (24.9)	238 (35.8)	261 (39.3)

Discussion

This study aimed to assess the knowledge about contraception, the prevalence of contraceptive use, and the attitude toward contraception in first year male university students.

In this study, the majority of male students (85%) were teenagers. Their first sexual intercourse (SI) occurred in the late teenage years (age 15-19 years) which were similar to previous survey in Thailand (2009)⁽³⁾. Therefore, the sexual and contraceptive education at high school should be well established to prevent it consequences. Approximately one-fifth (20.6%) of them had experience in SI. This was lower than previous survey in Thailand 2009 (56.1%)⁽³⁾. This difference may be due to the survey in Thailand 2009 included all levels of education, whether occupational or university whereas our study recruited only university student.

Regarding contraceptive use, only 44.6% of them used more reliable methods including condom, emergency pill, oral pills, and injectables and approximately three-fourth (73.2%) of them used it inconsistently. Furthermore, methods which are less effective such as coitus interruptus and periodic abstinence were more frequently used (25.8% and 16.5% respectively) than hormonal contraception. This indicated the underuse, inappropriate use and misunderstandings in use of contraception despite having active sexual behaviors in male university students. The carelessness of contraceptive use could lead to unsafe sex and its subsequent problems such as unintended pregnancy and unsafe abortion. The early sexual intercourse, the frequency of intercourse and lack of contraception use were risks leading to unintended pregnancy. Therefore, the effective reproductive health education for university students is

necessary.

In this study we found the majority of male students had poor knowledge about groups of effective contraceptive methods especially injectables, oral pills, and emergency pills. The mean overall knowledge score was less than fifty percent. This may affect the contraceptive effectiveness in their practical use. For condom use, half of male students were not sure about when to remove the condom and the use of all lubricants with latex condoms. This practical point of contraception use should be taught to them.

Most male students received potentially inaccurate contraceptive information from their friends and sexual partners, while more accurate sources such as university or health personnel played a minor role. This could result in misunderstandings of effective contraceptive use.

Data also showed the majority of male students had misperception about adverse effects of contraception. They believed, for example; condom use decreases a libido and oral pills or injectables with side effects were not suitable for teenagers. However, three-fourth of them (75.5%) wanted to know about contraception. These data indicated the need of contraceptive information in the male university students.

Half of male students (50.3%) accepted with premarital sex. Most of them knew that the coitus interruptus and calendar period were unsuitable for teens with regular sex; however, most of them commonly used these methods despite a high failure rates. This result could be indicated the unawareness of unintended pregnancy in male students. Some previous studies^(2,7-8) reported that one reason leading to inappropriate use of contraception was unawareness of unintended pregnancy. Therefore, a sex education program must teach not only the contraceptive methods or their adverse effects but also correct the contraceptive misperception and emphasize on the awareness of unintended pregnancy.

In this study, we found that the poor contraceptive knowledge group, in contrast to the other groups, had no contraceptive use and requirement of abortion if pregnancy occurred. These associations clearly

demonstrated the effect of knowledge on the practice of contraception and the opinion to do abortion. Some previous studies^(9,10) reported that information, education, and communication could increase the acceptance of family planning methods, and promote effective contraception which can prevent abortion. The faculty groups and GPA during senior high school were statistically significant correlated with the contraceptive knowledge score. The faculty groups of Health Science and the high score GPA group (GPA > 3.00) had higher knowledge scores than others. These results might be due to the health science group receiving contraceptive knowledge in the course syllabus of the school. Therefore, the contraceptive knowledge might be useful and should be given for all students.

This is the first KAP study in contraception among university students in the northeast of Thailand, established by expert in reproductive health gynaecologists. The questionnaire in the study was standardized by three staff in reproductive gynaecology. The response rate was one hundred percent. There are some limitations in this study. First, the use of self-reported information based on memory may be subject to recall bias, which is an inherent weakness of cross-sectional studies. Second, the study focused on first year male university students and the observations may not be generalizable to the overall male university students.

Further prospective studies should include all year class and various universities, and determine the effectiveness of providing contraceptive knowledge which includes a comparative study of pre-test and post-test after the providing of contraceptive knowledge.

Declarations

The authors have no competing interests. The authors participated in the design and prosecution of the study, as well the data collection and analysis. The authors have read and agree to the final submitted version. This manuscript has not been presented or submitted elsewhere for publication.

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ความรู้ ทักษะ และ การปฏิบัติตน ในเรื่องการคุมกำเนิดของนักศึกษาชายชั้นปีที่ 1 มหาวิทยาลัยขอนแก่น

กชวรรณ สุภา, ยุทธพงศ์ วีระวัฒน์ตระกูล, หลิงหลิง สาลัง, โกวิท คำพิทักษ์, กิรติ ลีละพงศ์วัฒนา

วัตถุประสงค์: เพื่อศึกษาความรู้ ทักษะ และ การปฏิบัติเกี่ยวกับการคุมกำเนิดของนักศึกษาชายชั้นปีที่ 1 มหาวิทยาลัยขอนแก่น

วิธีการวิจัย: เป็นการศึกษาวิจัยเชิงพรรณนา ในนักศึกษาชายชั้นปีที่ 1 ระดับปริญญาตรีภาคปกติที่ลงทะเบียนเรียนภาคต้น ประจำปีการศึกษา 2556 มหาวิทยาลัยขอนแก่น โดยใช้แบบสอบถามชนิดตอบเอง พัฒนาโดยคณะผู้วิจัย และผู้เชี่ยวชาญทางด้านการคุมกำเนิด ภาควิชาสูติศาสตร์และนรีเวชวิทยา จำนวน 3 ท่าน

ผลการวิจัย: นักศึกษาชายเข้าร่วมการวิจัย จำนวน 670 คน อายุเฉลี่ยกลุ่มศึกษา 18.6 ± 0.96 ปี นักศึกษาชายร้อยละ 20.1 เคยมีเพศสัมพันธ์มาก่อน และส่วนมาก (ร้อยละ 45.7) มีความถี่ของการมีเพศสัมพันธ์มากกว่า 4 ครั้งต่อเดือน อายุเฉลี่ยของการมีเพศสัมพันธ์ครั้งแรก คือ 16.5 ± 1.93 ปี ในนักศึกษาชายที่เคยมีเพศสัมพันธ์มาก่อน พบว่า มีการคุมกำเนิดเพียงร้อยละ 44.6 ซึ่งไม่นับรวมการคุมกำเนิดโดยวิธีเลียนแบบธรรมชาติ และร้อยละ 72.6 มีการคุมกำเนิดน้อยกว่าร้อยละ 80 ของการมีเพศสัมพันธ์ทั้งหมด วิธีการคุมกำเนิดที่นิยมใช้คือ ถุงยางอนามัย (ร้อยละ 32) แหล่งข้อมูลของวิธีการคุมกำเนิดส่วนมากมาจากเพื่อน (ร้อยละ 33.8) นักศึกษาชายส่วนใหญ่มีความรู้การคุมกำเนิดไม่ดี (ร้อยละ 94.3) และร้อยละ 50.3 ของนักศึกษาชายเห็นด้วยกับการมีเพศสัมพันธ์ก่อนแต่งงาน อีกทั้งส่วนมากยังมีทัศนคติที่ผิดต่อผลข้างเคียงของการคุมกำเนิด จากการศึกษาพบว่า ในนักศึกษาชายที่มีเพศสัมพันธ์แล้วมีความรู้ด้านการคุมกำเนิดที่ไม่ดี และมีความสัมพันธ์อย่างมีนัยสำคัญทางสถิติกับการไม่คุมกำเนิด รวมถึงความคิดที่จะทำแท้งหากคู่ในอนาคต

สรุปการวิจัย: นักศึกษาชายส่วนใหญ่มีความรู้การคุมกำเนิดไม่ดี และทัศนคติที่ผิดเกี่ยวกับผลข้างเคียงของการคุมกำเนิด อีกทั้งนักศึกษาชายที่มีเพศสัมพันธ์ส่วนใหญ่ไม่มีการคุมกำเนิดขณะมีเพศสัมพันธ์และมีความเข้าใจผิดเกี่ยวกับวิธีการคุมกำเนิด