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

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ABSTRACT:

Background: In Thailand, teenage pregnancy rates continue to increase every year which leads to serious problems of unwanted pregnancy and induced abortion. The aim of this study was to assess knowledge, attitude and intention of preventing unwanted pregnancy among female undergraduate students in Bangkok, Thailand.

Methods: A cross-sectional study design with multistage sampling technique was used to select female undergraduate students in Bangkok, Thailand and self-administered questionnaire was used to collect data from 440 students. Mann-Whitney U test, Kruskal-Wallis test, Spearman's correlation and multiple linear regression statistic methods were used for data analysis in the study.

Results: The study indicated that 42.5% of students had poor level of knowledge. 63.9% of them had moderate attitude towards the unwanted pregnancy, and 64.8% of them had moderate level of intention to prevent unwanted pregnancy. Many socio-demographic characteristics were associated with knowledge, attitude, to prevent unwanted pregnancy. The statistically significant correlation between knowledge and intention ($p < 0.001$, $r = 0.199$); and attitude and intention ($p = 0.033$, $r = 0.491$) were found in this study. In and intention multiple linear regression models, the types of living arrangement ($p = 0.043$), the method used to prevent pregnancy ($p < 0.001$) and knowledge ($\beta = 0.48$, $p < 0.001$) were positively and significantly associated with intention score. Frequency of alcohol consumption ($\beta = -0.66$, $p < 0.001$) was negatively and significantly associated with intention score.

Conclusions: The findings indicated that the selected group of female undergraduate students had relatively low level of knowledge regardless of moderate attitude and intention to prevent unwanted pregnancy. This demonstrates the need to provide more education on unwanted pregnancy of students in order to improve young people's long-term potential by preventing early and unwanted pregnancies.

Keywords: Unwanted pregnancy, Female undergraduate students, Thailand

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INTRODUCTION

Nowadays, teenage pregnancy is a major public health problem issue in both developing and developed countries. It is one of the major contributor to the cause of unwanted pregnancy in most parts of the world including Thailand. With this concern, it was found that the incidence of teenage pregnancy and childbirth increased [1]. Among high income countries, USA has the highest rate of teenage pregnancy in the world. The rate of teenage pregnancy is 67.8 per 1000 teenagers aged 15-19 year and nearly 750,000 teenagers become pregnant every year [2].

According to Health Statistics in Thailand, there were a total of 801,737 of births in 2012 and 129,451 of them were childbearing among adolescent female aged 15-19 years. Every day,

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there are 355 cases of pregnant mothers aged less than 20 years in which 1 in 3 came from unintended pregnancy [3]. Due to the lack of knowledge and awareness on reproduction and contraceptive techniques and the idea of modern life style and open relationship contributed to a high prevalence of teenage pregnancies [4]. Moreover, unwanted teenage pregnancies had the impact not only on health of adolescents and children but also had an impact on the socioeconomic [5] and most of female adolescents do not have the awareness about consequence of unprotected sex [6]. Therefore, the determination of the level of knowledge, attitude and intention to prevent unwanted pregnancy in female undergraduate students in Bangkok, Thailand was carried out and the factors associated with the intention to prevent the unwanted pregnancy was examined. Therefore, the findings may be used to develop prevention of unwanted pregnancy guidelines and intervention program to reduce the incidence of unwanted pregnancy in adolescent.

MATERIALS AND METHODS

Participants

A cross-sectional study design was used in this study. The study was conducted at public and private university in Bangkok, Thailand. The participants of study included Thai female undergraduate students who enrolled in the year 2011 to 2014, age between 18 to 24 years old and studying in Thai curriculum. According to the data from Ministry of Education, there were 376,947 female undergraduate students. By using Taro Yamane's formula, it yielded 400 samples from whole population. An estimate 10% of missing data was added, thus, 440 female students were recruited. Multistage sampling technique was used to select 2 universities (1 public and 1 private university) from 30 universities in Bangkok.

Materials

Self-administered questionnaire was used to collect data. It was divided into four parts i.e., Socio-demographic characteristics, knowledge, attitude and intention of preventing the unwanted pregnancy. The questionnaire composed of 49 questions where 15 questions asking about general information. The 10 yes/no questions in the knowledge part were scored and the total score was classified into high (9-10 points), moderate (7-8 points) and poor (0-6 points) according to bloom's cut point. The 12 questions in the attitude part were scored using the 5-Likert score and total score was classified as good (≥ 44points), moderate (37-43 points) and poor (≤ 36 points). The 12 questions on the intention to prevent unwanted pregnancy also used 5-Likert score by classifying the intention score as high (≥ 48 points), moderate (38-47 points) and low (≤ 37 points).This is in accordance with categorical scaleby using mean ± standard deviation.The content of the questionnaire was validated by consulting experts. The revised questionnaire was used on a pilot test and got KR-20 score as 0.722 on the knowledge part, Cronbach's alpha scores 0746 on the attitude part, and 0.722 on the intention part.

Data analysis

Data analysis was done by using SPSS program version 22 (University licensed). Descriptive statistics were used to describe the socio-demographic characteristics, knowledge, attitude and intention to prevent unwanted pregnancy and the data were quantified in frequency, percentage, mean, maximum, minimum and standard deviation. Analytical statistics were used to describe associations between dependent variables and independent variables. Non-parametric statistics were used because knowledge score, attitude score and intention score were not normally distributed by using Kolmogorov-Smirnov Test of Normality. The categorical independent variables using Mann-Whitney U test and Kruskal-Wallis test. Spearman's correlation was used to analyze the magnitude and direction of the association between knowledge and intention score. After bivariate analysis, variables that had the *p*-value less than 0.2 were entered as fixed factors or covariates in multiple linear regression analysis [7]. Multiple linear regression analysis was employed to evaluate the relative importance of independent variables that were associated with the intention to prevent unwanted pregnancy. Statistical significance was considered at p-value ≤ 0.05.

Ethical consideration

Ethical approval was obtained from Ethic Review Committee for the research Involving Human Research Subject, Health Sciences Group, Chulalongkorn University before data collection process was commended (certified code: 066.1/ 2558).

RUSULTS

Four hundred forty female undergraduate students were enrolled in the study.Almost 45% of students had poor level of knowledge and 20.9% had high knowledge level about unwanted pregnancy (Table 1). The mean knowledge scores were 6.77 out of 10 points. Only 27 students were able to answer all the questions correctly. In regard to having knowledge about the risks of unwanted

Table 1 Distribution of knowledge, attitude, and intention (n = 440)

Level of score	Frequency	%
Knowledge		
Poor	187	42.5
Moderate	161	36.6
High	92	20.9
Attitude		
Poor	79	17.9
Moderate	281	63.9
Good	80	18.2
Intention		
Low	76	17.2
Moderate	285	64.8
High	79	18.0

pregnancy, only 49.5% of the respondent answered that erotic movies may lead to sex and 55.7% of them believed that drugs and alcohol can increase the risk of having sex. However, 94.5% of students were aware that unsafe abortion is the stigma of unwanted pregnancy. Regarding the knowledge of modern contraceptive, only 38.2% of students knew the proper use of emergency pills. Around 80% of students were aware that the abstinence is the best way to avoid the pregnancy, but more than half (56.8%) of the respondents believed that condoms can provide complete protection from pregnancy. From the aspects of negotiation and risk management, nearly 80% of female students agreed that denial is one way to reduce the risk of having sex.

Regarding teenagers' attitude towards unwanted pregnancy, the majority (63.9%) of students had moderate attitude towards unwanted pregnancy as shown in Table 1. The mean knowledge scores were 39.95 out of 60 points. More than 85% of students had a positive attitude with the statement "having contraceptive knowledge in the teenage life is the protective factors from unwanted pregnancy" (88.7%) and 86.8% students agreed with the statement "the unwanted pregnancy will end up eventually in unsafe abortion". This may imply that students may be willing to have the contraceptive knowledge to protect them from unwanted pregnancy. From the aspect of family and social life, 82% of the students believed that teenage pregnancy can be disgraceful to both themselves and their family in the social life. Interestingly, based on the teenagers' attitudes towards sexual relationship with the boyfriend, 60.0% of students had neutral to positive attitude with the statement "I believe that having sexual relationship with my boyfriend at the school age is normal for teenagers" and 48.0% of students had neutral to positive attitude with the statement "I think that having sexual relationship with my boyfriend is the proof of love".

Regarding the teenagers' intention to prevent unwanted pregnancy, the majority of students (64.8%) had moderate intention while fewer of them (18.0%) had high intention level as shown in Table 1. The mean knowledge scores were 42.63 out of 60 points. Most students (90.5%) intended to use condom when they have sexual intercourse. Besides, most of students intended to use condom when having sexual intercourse. Furthermore, most of them intended to not have sexual intercourse on a first date (90.4%) which is good for them in preventing the unwanted pregnancy. However, only 29.6% of students intended not to spend time in night clubs and want to enjoy the new thrilling experience with friends. This situation would lead them to encounter a higher change in having unsafe sex and unwanted pregnancy.

Mann-Whitney U test and Kruskal-Wallis test were used to evaluate the relationship between knowledge score mean rank, attitude score mean rank, intention score mean rank and socio-demographics characteristics. Among the seven characteristics, one of them were statistically significant with knowledge score at $p \leq 0.05$ levels that was types of living arrangement ($p= 0.009$). It was notable that students who live with same sex friend had knowledge score superior than other types of living arrangement. Two of the characteristics which are boyfriend and sexual relationship ($p < 0.001$), and the method use to prevent pregnancy ($p < 0.001$) were statistically significant associated with attitude score. It was notable that students who have a boyfriend, have sexual intercourse with their boyfriend and used birth control pills to prevent pregnancy had the highest attitude score. Three of them were statistically significant associated with intention score at $p \leq 0.05$ levels, the factors included boyfriend and sexual relationship ($p < 0.001$), the

Table 2 Summary of association between socio-demographic characteristics, knowledge, attitude and intention using Mann-Whitney U test and Kruskal-Wallis test

Variables	Knowledge		Attitude		Intention	
	Mean rank	*p*-value	Mean rank	*p*-value	Mean rank	*p*-value
Types of living arrangement[b]						
Living alone	181.46	0.009*	225.75	0.404	209.09	0.083
Living with family/relatives	226.02		215.83		227.29	
Living with boyfriend	205.50		267.40		109.50	
Sharing the room with same sex friend	262.80		250.30		194.07	
Boyfriend and sexual relationship[a]						
Having boyfriend and sexual relationship	211.87	0.556	280.10	<0.001*	142.48	<0.001*
Not having boyfriend/ having boyfriend but no sexual relationship	221.94		210.10		233.54	
The method use to prevent pregnancy[b]						
Condoms	210.36	0.935	277.87	<0.001*	161.89	<0.001*
Birth control pills	220.46		314.12		113.83	
Withdrawal	205.20		218.90		32.70	
Abstinence	221.94		210.54		233.54	
Alcohol consumption (within last 6 months)[a]						
Yes	215.60	0.433	230.68	0.106	203.53	0.007*
No	225.01		211.12		236.13	

[a]Mann-Whitney U test; [b]Kruskal-Wallis test; *Statistically significant at *p*-value ≤ 0.05

Table 3 Summary of association between socio-demographic characteristics, knowledge, attitude and intention using Spearman's correlation

Variables	Knowledge		Attitude		Intention	
	Correlation Coefficient	*p*-value	Correlation Coefficient	*p*-value	Correlation Coefficient	*p*-value
Age	0.095	0.048	-0.018	0.707	-0.003	0.945
GPA	0.246	<0.001*	-0.044	0.357	0.212	<0.001*
Monthly income	-0.056	0.238	0.003	0.942	-0.129	0.007*
Frequency of alcohol consumption	-0.064	0.183	0.078	0.104	-0.193	<0.001*
Knowledge	-	-	-	-	0.199	<0.001*

*Statistically significant at *p*-value ≤ 0.05

method to use to prevent pregnancy ($p < 0.001$) and alcohol consumption ($p = 0.007$) as shown in Table 2. It was notable that students who did not have boyfriend, students who abstained themselves from sexual intercourse with their boyfriend and students who did not drink alcohol had the highest intention score. Spearman's correlation was used to analyze the strength and direction of the relationship between knowledge score, attitude score, intention score and socio-demographics characteristics. The statistically significant positive correlations between socio-demographics and knowledge score were found in age and GPA at $p \leq 0.05$ levels (Spearman's coefficient = 0.095, $p = 0.048$ and Spearman's coefficient = 0.246, $p < 0.001$, respectively). It meant that if age and GPA increased, knowledge score increased. Two of socio-demographics characteristics had statistically significant negative to little correlation with intention score at $p \leq 0.05$ levels, the factors included monthly income (Spearman's coefficient = -0.219, $p = 0.007$) and frequency of alcohol consumption (Spearman's coefficient = -0.193, $p < 0.001$). It meant that if monthly income increased, intention score decreased and if frequency of alcohol consumption decreased, intention score increased. GPA (Spearman's coefficient = 0.212, $p < 0.001$) had statistically significant positive and little correlation with intention score at $p \leq 0.05$ levels. It meant that if GPA increased, intention score increased. And knowledge score was regarded as highly significant correlation with intention score (Spearman's coefficient = 0.199, $p < 0.001$) as shown in Table 3.

Variables that had *p*-value less than 0.2 in bivariate analysis that associated with intention of preventing the unwanted pregnancy were entered as fixed factors or covariates in multiple linear regression analysis. Regarding the types of living arrangement, a student living alone ($\beta = 2.38$, $p = 0.025$) had positive statistically significant association with intention score compared to sharing the room with same sex friend, meaning that this

Table 4 Multiple linear regression analysis of factors associated with intention score

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

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

type of living arrangements had more the intention score compared to sharing the room with same sex friend. The method of preventing pregnancy including condoms (β = -2.14, p = 0.007), birth control pills (β = -5.80, p < 0.001) and withdrawal method (β = -7.44, p = 0.001) were statistically significant and a negative association with intention score compared to abstinence. This shows that students who use condoms, birth control pills and withdrawal method had less intention to prevent pregnancy respectively when compared to that of the student who abstained themselves from sexual intercourse. Frequency of alcohol consumption (β = -0.66, p < 0.001) was statistically significant and negatively associated with intention score which meant that drinking frequency decreased, intention increased. Furthermore, knowledge score (β = 0.48, p < 0.001) was statistically significant and positively associated with intention score which meant that knowledge increased, intention score increased as well as shown in Table 4.

DISCUSSION

The majority of students had poor knowledge on unwanted pregnancy [8-10]. A previous study conducted by College of Population Studies, Chulalongkorn University found that the lack of knowledge about sex education in most teenagers was a cause of teenage pregnancy [11]. Regarding the attitude and intention of teenagers, most students had moderate level [8, 12]. More than three-fourth of students (90.5%) intended to use condom when they have sexual intercourse, which is consistent with previous study indicating that women scored higher in intentions to use condoms [13]. Regarding socio-demographic characteristics and knowledge, the results of this study presented that the variables; types of living arrangement, age and GPA were significant association with knowledge score. For the attitude, the finding shows that boyfriend, sexual relationship and methods used to prevent pregnancy were significant associated with attitude score. This was consistent with findings of other studies [14-16], which explained that boyfriend's desires influenced whether or not the girl became pregnant. Furthermore, boyfriend had a great impact on female teens' attitudes about pregnancy and abortion. There factors, including boyfriend and sexual relationship, the method use to prevent pregnancy, alcohol consumption and GPA were statistically significant associated with intention. The studied of Smith indicated that drug or alcohol use often precedes the initiation of sexual activity by teenagers [17].

Furthermore, multiple linear regression analysis indicated that a students who live alone had more intention to prevent pregnancy compared with students who shared a room with same sex friend. The frequency of alcohol consumption was statistically significant associated with intention score, it seemed the less frequent students consumed alcohol, the more intention they said. This was inconsistent with the study of Diane M. Morrison and others found that the odds of condom use were not associated either with whether a teenager had been drinking before sex or with the quantity of alcohol consumed [18]. The result found that students who use condoms, birth control pills and withdrawal method had less intention to prevent pregnancy respectively when compared to that of the students who abstained themselves from sexual intercourse. Moreover, students who had more

knowledge lead to increase intention to prevent pregnancy.

CONCLUSION

The finding of this study showed that 42.5% of students had poor knowledge level about unwanted pregnancy. This shows that female undergraduate students in selected universities in Bangkok have insufficient knowledge concerning unwanted pregnancy.Many students were knowledgeable about the use of condom as a contraceptive and revealed the positive attitude towards the usage of condom as contraceptives. On the other hand, most of them lacked proper knowledge of emergency pills and other contraceptive, revealing that proper education is needed. Moreover, 82% of them believed that having unwanted pregnancy will be disgraceful to their family, which is a unique feature of the traditional Thai culture that should be promoted as part of the intervention. In multiple linear regression models indicated types of living arrangement ($p = 0.043$), the method use to prevent pregnancy ($p < 0.001$), frequency of alcohol consumption ($\beta = -0.66$, $p < 0.001$) and knowledge score ($\beta = 0.48$, $p < 0.001$) were statistical significantly associate with intention score.

Based on the results of this study, students should more educated on topics such as adolescent reproductive health, stigma of unwanted pregnancy, proper use of contraceptive, and problems solving and negotiation skills. Along with educational health campaigns, students require help and moral support from their family and/or guardians. In the modern era of communication, mass media on health education is as important as other intervention techniques in easily reaching out to young adolescents within a shorter amount of time.

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