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ความชุกของการตั้งครรภ์โดยไม่ได้วางแผนในสตรีที่มาฝากครรภ์

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The Prevalence of Unplanned Pregnancy at Antenatal Care Clinic

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หลักการและวัตถุประสงค์: การตั้งครรภ์ที่ไม่ได้วางแผนมักจะให้ผลการรักษาที่ไม่ดีอย่างที่ต้องการ ดังนั้นจุดประสงค์ของการศึกษาครั้งนี้เพื่อค้นหาความชุกของการตั้งครรภ์โดยไม่ได้วางแผน และปัจจัยเสี่ยงที่เกี่ยวข้อง

วิธีการศึกษา: ทำการศึกษาแบบตัดขวางตั้งแต่วันที่ 1 สิงหาคม 2556 จนถึงวันที่ 30 เมษายน 2557 ผู้เข้าร่วมโครงการคือหญิงตั้งครรภ์ที่มาฝากครรภ์ จำนวน 240 ราย โดยจะได้รับการสัมภาษณ์ด้วยแบบสอบถามเกี่ยวกับ 1) ข้อมูลพื้นฐาน เช่น อายุ ระดับการศึกษา สถานภาพสมรส รายได้ อาชีพและอื่นๆ 2) ข้อมูลด้านสุขภาพทั่วไปรวมทั้ง 3) ข้อมูลทางนรีเวช

ผลการศึกษา: พบความชุกของการตั้งครรภ์โดยไม่ได้วางแผนร้อยละ 30 โดยมีค่าเฉลี่ยและค่ากลางแปรปรวนของอายุหญิงตั้งครรภ์ 28.34 ปีและ 5.39 ปี ตามลำดับ การวิเคราะห์ตัวแปรเดียวพบว่ารายได้ที่น้อย (≤ 10,000 บาทต่อเดือน) สถานภาพโสดและประวัติการมีบุตรของผู้ป่วยมีความสัมพันธ์กับการตั้งครรภ์โดยไม่ได้วางแผน ปัจจัยเสี่ยงที่สำคัญที่สุดที่คำนวณได้จากการถดถอยโลจิสติกหลายตัวแปร ได้แก่ รายได้และประวัติการมีบุตร หญิงตั้งครรภ์โดยไม่ได้วางแผนใช้ยาคุมกำเนิดฉุกเฉินก่อนการตั้งครรภ์บ่อยกว่าหญิงตั้งครรภ์โดยวางแผน

สรุป: ความชุกของการตั้งครรภ์โดยไม่ได้วางแผนในหญิงตั้งครรภ์ที่คลินิกฝากครรภ์อยู่ที่ร้อยละ 30 กลุ่มผู้มีรายได้ที่เท่ากับหรือน้อยกว่า 10,000 บาทต่อเดือน และประวัติการมีบุตรเป็นปัจจัยเสี่ยงที่เกี่ยวข้องกับการตั้งครรภ์โดยไม่ได้

Background and Objectives: Unplanned pregnancies are associated with outrageous outcomes. The aims of the present study were to explore the prevalence of unplanned pregnancies and associated factors.

Methods: We performed a cross-sectional study from 1 August 2013 to 30 April 2014. The participants were pregnant women who attended antenatal care clinic. Two hundred forty pregnant women were interviewed with a questionnaire asking about 1) basic information such as age, level of education, marital status, career income, and so on 2) general health information and 3) gynecological data

Results: Prevalence of unplanned pregnancy was 30%. The mean and SD of the age of pregnant women was 28.34 and 5.39 years. The univariate analysis revealed that low income (≤ 10,000 baht/month), single marital status, and childbearing status of patients correlated significantly with the unplanned pregnancy. The most significant risk factors calculated from multivariate logistic regression were low income and childbearing status. Women with unplanned pregnancy used emergency contraceptive pills before pregnancy more often than those with planned pregnancy

Conclusion: Prevalence of unplanned pregnancy in pregnant women was 30%. Low income and nulliparity were the risk factors associated with unplanned pregnancy. Effective and easy access to contraception, and knowledge education should be offered to women

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วางแผน การเข้าถึงการคุมกำเนิดได้อย่างมีประสิทธิภาพและควรให้ความรู้แก่สตรีที่มีความเสี่ยงเพื่อหลีกเลี่ยงผลลัพธ์ที่ไม่พึงประสงค์จากการตั้งครรภ์โดยไม่ตั้งใจและผลเสียที่ตามมา

at risk in order to avoid poor outcome from unplanned pregnancy and its consequence.

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Introduction

The unplanned or so-called unintended pregnancy is a major public health and social problem. The problem causing loss of productivity affects family, community, and whole nation in terms of national economic cost and social burden. The prevalence of unplanned pregnancy worldwide was reported in 2010 approximately 41% in 208 million pregnancies by Singh et al[1]. The prevalence varies in each country such as 58% in Latin America and the Caribbean, 38% in Asia with 48% in Southeast Asia. The previous study done by Sriprasert et al in 2015 demonstrated that the prevalence of unintended pregnancy was 65.2 % among 250 pregnant women aged 15-24[2].

When pregnancy is unplanned, it usually becomes undesired. There are 3 solutions for undesired pregnancy including 1) continuing pregnancy, delivery and raise the baby on their own, 2) continuing pregnancy, deliver and give the baby to others to raise or 3) abortion. All of these solutions cause a problem to pregnant women, their family and even society[3]. Unsafe abortion, abandonment of children in many countries around the world including Thailand, and economical issue are the consequences of undesired pregnancy. The government has lost its budget to cope with unsafe abortion, care for abandoned children and control related crime. Among 40,000,000 abortions worldwide, up to 19,700 abortions were unsafe leading to a major global problem[4]. Moreover, the child delivered from women with unplanned pregnancy had depressive symptom in their 20's[5] and poor child development[6]. Current evidences demonstrated that maternal antenatal depression, late prenatal care and unsuccessful breast feeding were the consequences unplanned pregnancy[7, 8].

The three main causes of unplanned pregnancies include having sexual intercourse without contraception[9], failure to use contraception[2, 10] and unwilling sexual intercourse[11] i.e. rape. Family planning is well-known for solving unplanned pregnancy. Many risk factors are associated with unintended pregnancy, for example, not using prescription contraception[12], short birth interval[13], lower levels of education, substance use, unmarried status and history of several attempt suicides[14]. Contraception in the right way and use the method of contraception properly are the important factors. Therefore, the aims of the present study were to explore the prevalence of unplanned pregnancies and associated factors.

Materials and Methods

This study was analytical and cross-sectional study. We conducted the study at Antenatal care clinic, Srinagarind hospital, Faculty of Medicine, Khon Kaen University, Thailand. The period between 1 August 2013 to 30 April 2014.

The sample size was determined according to Singh et al[1]. They found the proportion of unintended pregnancy in Southeast Asia about 48%. We used single proportion formula by 95% level of confidence (Z = 1.96), precision of 0.07 and 10% of non response rate. The total sample size was 240.

Two hundred twenty pregnant women who attending antenatal clinic were randomly recruited into the study. They answered the questionnaire by trained interviewer. The questionnaire contained 3 parts on sociodemographic and economic status, obstetrics and gynecologic status and contraceptive experiences and attitudes.

The study was performed in accordance with the ethical standards on human experimentation and was

approved by the Khon Kaen University Ethics Committee in human research. All participants was consented to join in the research.

Definition of unplanned pregnancy

An unintended pregnancy is defined as either 'mistimed or unwanted' one. A pregnancy is considered 'mistimed' when a woman has pregnancy but she did not want to have a baby at that time. She wants to become pregnant in the future. If a woman did not want to have a pregnancy at any time, her pregnancy is defined 'unwanted'[15].

Statistical analysis

Socioeconomic and obstetric data are presented as numbers, percentages, and means ± standard deviation. Normal distribution was tested. Continuous variables were compared using the student t-test. Categorical variables were compared using the chi-square test and Fisher's exact test. Univariate analyses were performed and variables with $p < 0.05$ were further analyzed using backward multivariate analysis. The level of statistical significance was set at 0.05. The odds ratios (ORs) and 95% confidence intervals (CIs) were shown.

Results

In total, 240 pregnant women were interviewed during the study period. There were 72 pregnant patients with unplanned pregnancy, resulting in a 1-year prevalence of 30% (Table 1). The average and SD of the age of pregnant women were in the young adult stage, 28.34 and 5.39 years. The average and SD of the age of planned and unplanned pregnant women was 23.98 and 9.39 years, and 25.03 and 9.84 years, respectively. The univariate analysis revealed that low income, single marital status, and childbearing status of patients correlated significantly with the unplanned pregnancy (Table 2). Unplanned pregnancy group had a higher number of single women than the other. Employment did not affect pregnancy in terms of planned or unplanned pregnancy. There were a higher number of planned pregnant patients in women with high income (> 10,000 baht/month approximately 320 US dollars/month) than those with low income (≤ 10,000 baht/month). Women having a child/children have significantly a higher number of planned pregnancy than women who have no children ($p = 0.004$).

Table 1 Socioeconomic characteristics

Socioeconomic characteristics	Planned Pregnancy (n=168) n (%)	Unplanned Pregnancy (n=72) n (%)	p-value
Age (years), (mean ± SD)	28.85 ± 5.09	27.17 ± 5.89	0.027
Marital status			
Single	2 (1.19)	5 (6.94)	0.045
Married	166 (98.81)	67 (93.06)	
Education level			
Primary school	3 (1.79)	1 (1.39)	0.136
Lower secondary school	10 (5.95)	9 (12.50)	
High school	31 (18.45)	20 (27.78)	
Diploma	45 (26.79)	17 (23.61)	
Bachelor degree	68 (40.48)	24 (33.33)	
Higher than bachelor degree	11 (6.55)	1 (1.39)	
Employment			
Yes	144 (85.71)	59 (81.94)	0.459
No	24 (14.29)	13 (18.06)	
Income (baht/month)			
≤ 10,000	32 (19.05)	26 (36.11)	0.005
> 10,000	136 (80.95)	46 (63.89)	

Table 2 Obstetrics characteristics

Obstetrics characteristics	Planned Pregnancy (n=168) n (%)	Unplanned Pregnancy (n=72) n (%)	p-value
Gestational age (years), (mean ± SD)	23.98 ± 9.39	25.03 ± 9.84	0.434
Having child,			
Yes	85 (50.60)	22 (30.56)	0.004
No	83 (49.40)	50 (69.44)	
Previous preterm pregnancy			
Yes	6 (3.57)	4 (5.56)	0.481
No	162 (96.43)	68 (94.44)	
Previous spontaneous abortion			
Yes	51 (30.36)	13 (18.06)	0.176
No	117 (69.64)	59 (81.94)	
Previous induced abortion			
Yes	14 (8.33)	4 (5.55)	0.454
No	154 (91.67)	68 (94.44)	
Reason for induced abortion			
Education	9 (5.36)	4 (5.56)	0.311
Family issue	3 (1.79)	0 (0)	
Other	3 (1.79)	0 (0)	
Contraception			
Yes	61 (36.31)	21 (29.17)	0.285
No	107 (63.69)	51 (70.83)	

Multivariate logistic regression with backward variable selection was performed to predict the most significant risk factors. The results revealed that income, and having a child correlated with women's planning to pregnant. (Table 3) Interestingly, 1 (0.60%) and 4 (5.56%) women with planned and unplanned pregnancies, respectively, desired to induce miscarriage; however, only one woman with planned pregnancy tried performing the procedure. Approximately two-thirds of the participants had not been using contraception at the time of conception. There was a significant difference of contraceptive use between planned and unplanned pregnancy. (Table 4) Among the participants who had been using contraception, the most common method was the oral combined contraceptive pill. Additionally, an increased number of pregnant women with unplanned pregnancy took emergency contraceptive pills comparing with the one with the planned pregnancy, 1 (1.06%) and 8 (18.60), respectively.

Table 3 Risk factors associated with unplanned pregnancy

Risk factors	Univariate			Multivariate		
	OR	95% CI	p-value	AOR	95% CI	p-value
Age	0.942	0.894–0.994	0.028	1.005	0.941-1.073	0.878
Single status	6.194	1.173-32.173	0.032	0.290	0.047-1.810	0.185
Low income (≤ 10,000 baht/month)	2.402	1.297-4.448	0.005	2.258	1.142-4.462	0.019
Having child	2.327	1.296-4.180	0.005	2.197	1.072-4.500	0.032

OR: odds ratio, AOR: adjusted odd ratio, 95% CI: 95% confidence interval

Table 4 Contraception methods before pregnancy

Methods of contraception (n=240)	Total Pregnancy (n=240)	Planned Pregnancy (n=168)	Unplanned Pregnancy (n=72)	p-value
Abstinence	4 (2.92)	2 (2.13)	2 (4.65)	0.004
Coitus interruptus	20 (14.60)	18 (19.15)	8 (18.60)	
Condom	16 (11.68)	13 (13.83)	3 (6.98)	
Pills	71 (51.82)	53 (56.38)	18 (41.86)	
Emergency contraceptive pill	9 (6.57)	1 (1.06)	8 (18.60)	
DMPA	11 (8.03)	8 (8.51)	3 (6.98)	

DMPA: depot medroxyprogesterone acetate

Discussion

Unplanned or unwanted pregnancy is a significant health problem affecting the whole nation. The burden of unplanned pregnancy includes public health impact, for example, adverse maternal and child outcome and so on, social consequences for women and families, enormous healthcare expenditure for the country. The present study demonstrated the 30% of prevalence of unplanned pregnancy in the north-eastern region of Thailand, that is, Isaan. Income and childbearing status were the associated risk factors for unplanned pregnancy.

In this study, the 1-year prevalence of unplanned pregnancy was 30%. This prevalence of unplanned pregnancy was closed to the ones from the United State (36%)[15], Bangladesh (28%), and Nepal (26%) but higher and lower than the ones from India (23%) and Pakistan (43%), respectively[16]. The overall worldwide prevalence of unplanned pregnancy was 41%. The number was rising up to 47% in the developed country but it was diminishing to 40% in the developing country[1]. Comparing our prevalence and the one from the previous study in a developed country [1], our prevalence was lower Brunner Huber et al[13] than their study. The possible reason includes that all our participants, mean age 28.34 years, were working-age young adults, and no one was teenage. Therefore, our participants were older than women in the previous study[1] which they typically engaged in work and more mature.

Risk factors for unplanned pregnancy were heterogeneously reported. Sriprasert et al[2] reported educational status, age and age difference between the couple were significantly associated with unplanned pregnancy. The participants in their study were younger than ours (age 15-24 years) with some adolescent participants, whereas the ones in our study were working-age women. Remarkably, the study of Sriprasert et al was performed in the northern region of Thailand, which culture of the local people was different from the culture of people in North-eastern region of the country. Brunner Huber et al[13] studied in USA with 384 participants and reported the risk factors; non-Hispanic black women, drink alcohol and short interval between birth, associated with unplanned pregnancy[13]. The characteristics of the participants in Brunner Huber's study[13] were marked different from our study, for example, Asian vs Western population and drinking alcohol. The study from Israeli military demonstrated that women who had not graduated and were first generation immigrant were associated with unplanned pregnancy[17]. Level of education, another risk factor, was reported the association with unplanned pregnancy[18]. Contraception was another risk factor associated with unplanned pregnancy reported by Chanda et al[19]. Low income and nulliparity were demonstrated associated with unplanned pregnancy in our study. We assume that since our participants are working-age women, association between income and unplanned pregnancy could be influenced by their work. Our study was in line with Morse et al[20] in terms of association between low socio-economy and unplanned pregnancy. Pill was the popular contraceptive use for both groups. However, previous history of contraceptive use was significantly different between planned and

unplanned pregnancy. Emergency contraceptive pills had been selected more often in women with unplanned pregnancy than those with planned pregnancy. This reflected about the poor contraceptive knowledge as well as the less intention to prevent pregnancy.

Unplanned pregnancy could result in outrageous consequences. Unsafe abortion was the significant poor consequence of induced abortion for unwanted pregnancy[16, 21]. In the present study 5% of women with the unplanned pregnancy would like to terminate their pregnancy; however, fortunately, none of them proceed the procedure. The access to safe and legal abortion services was still lacking in Thailand. High stressful life event and mental depression were present at the time of unplanned conception[22]. Therefore, many solutions had been proposed in order to avoid outrageous outcomes and decrease unplanned pregnancy, for example, provide condom in the workplace[19], improve contraceptive service access[9, 23, 24], enhance education, and so on

Conclusion

The present study showed that prevalence of unplanned pregnancy in the young adult in Khonkaen, a province in the North-eastern region of Thailand was 30 %. Low income and nulliparity were the risk factors associated with unplanned pregnancy. Effective and easy access to contraception, and education should be offered to low income women in order to prevent unplanned pregnancy.

Limitation and Future Directions

The sample size is relatively small and the age of the participants were within the narrow range. Therefore, future studies should include the participants from age 15 to 50 year old.

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Declaration of interest statement

The authors declare that there is no conflict of interest in this research.

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