Factors Predicting Intention to Use Contraceptive Implants Among Pregnant Adolescents in Lower Southern Thailand: A Cross-sectional Study

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Abstract: Repeat pregnancy among adolescents is a major problem which affects maternal health, families, and the country. The repeated pregnant adolescent rate in Thailand is still higher than 10%, the goal of the Ministry of Public Health. It has been found that the occurrence of repeat pregnancies among adolescents is higher in lower southern Thailand than in any other region of the country. This cross-sectional study examined the level of intention to use contraceptive implants and its influencing factors among pregnant adolescents. Participants were 319 pregnant adolescents who received antenatal care at three secondary care hospitals and one tertiary care hospital in lower southern Thailand. The instruments used to collect data included eight questionnaires: (1) Demographic and Obstetric Data Form, (2) Attitude Toward Contraceptive Implants Questionnaire, (3) Subjective Norm Toward Contraceptive Implants Questionnaire, (4) Perceived Behavioral Control Toward Contraceptive Implants Questionnaire, (5) Knowledge about Contraceptive Implants Questionnaire, (6) Life Goal Setting Scale, (7) Fear of Side Effects of Contraceptive Implants Questionnaire, and (8) Intention to Use Contraceptive Implants Questionnaire. Data were analyzed using descriptive statistics, Pearson's correlation test, and simultaneous multiple regression analysis.

The result showed that intention to use contraceptive implants was at a moderate level. Perceived behavioral control toward contraceptive implants was the strongest predictor overall, which together with attitude toward contraceptive implants and subjective norm toward contraceptive implants, significantly explained 34.4% of the variance in intention to use contraceptive implants. The results of this study could serve as a basis for developing nursing programs to promote intention to use contraceptive implants in pregnant adolescents in lower southern Thailand by providing them with positive attitudes and perceived behavioral control regarding intention to use contraceptive implants, along with coordination with family members who support the use of contraceptive implants.

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Introduction

Adolescent pregnancy is a widespread and significant problem that is receiving worldwide attention as it affects each pregnant adolescent, their child, their family, and their country. For many health organizations around the world, teenage pregnancy recurrence is a key public health concern. Survey data indicate that repeat pregnancy among pregnant adolescents was

22.10% worldwide.[1] In Thailand, the rate of repeat pregnancy among adolescents was 13.78% in 2022, exceeding the Ministry of Public Health's criteria of less than 10%. In addition, the 12th public health region in lower southern Thailand had the highest rate of adolescent repeat pregnancy at 17.33%.[2] Furthermore, the rate of reversible contraceptive use in this public health region was only 51.1%,[3] which was below the criteria of more than 80%.[4] This information shows the seriousness of the problem of new pregnancies in adolescents, which must be addressed and solved given the local and personal circumstances.

To date, the Thai Ministry of Public Health and related agencies have implemented prevention plans and activities to reduce the rate of repeat pregnancies among adolescents in accordance with the Act for Prevention and Solution of the Adolescent Pregnancy Problem B.E. 2559 (2016).[4] Subsequently, guidelines for the provision of long-acting reversible contraceptives (LARCs) to adolescents under 20 years of age who have become mothers, had an abortion, or intend to use contraception, were adopted. It was expected that the outcome of this policy would delay the next pregnancy to 3-5 years.[5] A previous study found that intention can predict contraceptive use behavior.[6] Among the LARC methods, the contraceptive implant was the first choice because it had a long duration of effectiveness and could be used in a short time.[5,7] However, this contraceptive policy for adolescents did not achieve its goal, mainly because of the low willingness to use contraceptives among adolescents after giving birth.[8]

There have been few studies of factors influencing pregnant adolescents' intention to use a contraceptive implant. Most previous studies have only explained correlation and marginal factors in predicting contraceptive intention, which may not be true for pregnant adolescents. Therefore, this study investigated factors predicting based on Ajzen's Theory of Planned Behavior[9] and empirical findings on factors associated with the intention to use contraceptive implants.

Conceptual Framework and Literature Review

The criteria for literature selection were that the papers were on factors relevant to the intention to use contraceptive implants and included the following adolescent pregnancy prevention studies: 1) positive attitude toward contraceptive implants;[10,11] 2) subjective norm toward contraceptive implants;[11,12] 3) perceived behavioral control toward contraceptive implants;[7,12] 4) knowledge about contraceptive implants;[10] 5) life goals setting;[12] and 6) fear of the side effects of contraceptive implants.[13]

Ajzen explained the assumption that human behavior is predicted by behavioral intention. In other words, intention was a necessary motivating factor for people to perform or not perform a certain behavior. However, intention can be determined by 1) attitude toward the behavior, which refers to a person's positive or negative beliefs and outcome evaluations, 2) subjective norms, which refer to the perceived social expectation to perform the behavior or not,[7,9] and 3) perceived behavioral control, which refers to the perceived difficulty of controlling oneself to perform the behavior.[9]

In addition, our literature search revealed other factors that are new and relevant to the intention to use contraceptive implants. First, knowledge is a process in which behavioral intentions are acquired through experience and education.[9] Previous studies reported that adolescents who had good knowledge about contraceptives were more likely to use contraceptive implants after receiving information from the health care team.[14,15] Second, goal setting is an action plan that motivates and guides the person to achieve the expected life.[13] The last factor is fear of the side effects of contraceptive implants, which is an uncomfortable feeling about using contraceptives based on previous experiences and information from various sources, such as fear of side effects and pain. In one study, fear of contraceptive implant side effects was found to decrease intention to use contraceptive implants.[15]

This study assessed intention to use contraceptive implants among pregnant adolescents in southern

Thailand who were from different cultures and traditions.[11] More than 50% of the population in this region are Muslims who maintain a strict lifestyle, both in terms of dress, marriage and fertility through religion to support children for inheritance.[16] This is the main goal of the family institution. All forms of contraception are against nature[17] and sin without the husband's consent.[18] This is because the use of contraceptive implants is a long-term contraception that requires more time to conduct studies. Therefore, this is a limitation of the study during pregnancy. Consequently, the intention is a variable that can help predict trends in contraceptive use behavior.[8] Thus, six factors are used to predict contraceptive intention,[7,10,11] including attitude toward behavior when the adolescent positively believes in a contraceptive implant and is convinced that she is willing to use it.[8,15] Subjective norms, which refer to the adolescent's belief that her relatives or friends, both of whom are highly influential, will support and approve of her behavior regarding contraceptive implants.[12,19] Perceived behavioral control refers to the adolescent's perception of how difficult or easy contraceptive implants are to use. This is based on their experiences and expectations of ease/constraints that influence their intention to use contraceptive implants.[6,8,11] Contraceptive implant knowledge refers to knowledge about the effects, benefits, and disadvantages of contraceptive implants that affect adolescents' decision to use them or not.[10] Goal setting refers to the goals stated to prevent re-pregnancy that motivate adolescents to be willing to use contraceptive implants.[12] This is consistent with a previous study that found that pregnant adolescents intend to use LARCs when they decide to achieve their goals.[13] This is because setting life goals is a factor that motivates adolescent mothers to plan their lives and behave accordingly to achieve those goals.[20] Fear of the side effects of contraceptive implants includes factors which reduce pregnant adolescents' intention to use contraceptive implants with a negative perspective.[21] In addition, negative information about birth control from hearsay and experiences in the family and among friends leads to fear and a lower willingness to use contraception.[22]

Therefore, the aim of this study was to examine the factors that influence pregnant adolescents' intention to use a contraceptive implant in southern Thailand, where the rate of repeat pregnancy among adolescents is high, and the percentage of contraceptive implants used is low due to local religion and culture. Thus, analyzing the predictive power of these variables in relation to intention to use a contraceptive implant among pregnant adolescents in southern Thailand, particularly among pregnant Muslim adolescents who have a distinct culture that supports multiple pregnancies and rejects modern contraceptive methods,[11] provides information that may prevent multiple pregnancies. The results of the study could serve as a guide to promote intention to use contraceptive implants among pregnant adolescents and continuously increase their self-efficacy in contraceptive use, thereby improving their quality of life.

Study Aim

This study aimed to examine pregnant adolescents' intention to use contraceptive implants and to determine whether attitude, subjective norm, perceived behavioral control, knowledge, life goal setting, and fear of the side effects of contraceptive implants can predict pregnant adolescents' intention to use contraceptive implants in lower southern Thailand.

Methods

Design: This was a cross-sectional study using a predictive design. This report followed the STROBE Statement-Checklist for cross-sectional studies.[23]

Sample and Setting: The sample consisted of pregnant adolescents attending antenatal outpatient clinics in three secondary care hospitals and one tertiary care hospital in the 12th public health region in lower southern Thailand. Four hospitals were randomly selected from seven provinces with the highest rate of pregnant adolescents. The inclusion criteria were: 1) aged 13-19 years; 2) gestational

age of 13 weeks or more and no pregnancy complications such as morning sickness; 3) able to read and write Thai; 4) able to answer the questionnaire by themselves; 5) having no chronic diseases or pregnancy complications (including hypertension, heart disease, diabetes mellitus, mental illness); and 6) pregnant adolescents living with their husband or lover. The exclusion criteria were: 1) pregnant adolescents with cognitive, visual, or auditory impairments; 2) abnormal foetal health; and 3) a history of sexual abuse.

The sample size was calculated using the mean estimation method (unknown population)[24] following a similar study[25] in which the proportion of the population with the intention to use contraceptive implants was set at .72 with a confidence level of 95% and a margin of error of .05. The minimum number of participants required was 308, and a 5% discount was applied for incomplete or missing questionnaires. On this basis, the total sample size was 323. However, in this study, one participant was missing and three outliers were removed, so the actual number of participants was 319.

Ethical considerations: The study was approved by the Centre for Social and Behavioral Science Institutional Review Board, Prince of Songkla University (SBSIRB-PSU 22021-St-Nur 018). Subsequently, we also obtained approval from the research ethics committees of each studied hospitals, which were one tertiary care hospital (HYH EC 091-64-02) and three secondary care hospitals (SKH IRB 2021-Edu-IN3-1050, Nor.Tor. 0032.2/6802 and No. 007/2564). The primary investigator (PI) and research assistants (RAs) provided participants with a letter distributed with the questionnaires, introducing the research team, the objectives, participants' rights, and the method of data collection. We also advised participants to decide for themselves whether they wanted to participate in the study. For participants under 18 years of age, parents or legal guardians were required to sign an informed consent form to confirm participation in the study, which was signed jointly with them. If the parent or guardian was unable to accompany the participant to sign the consent form, the PI and the RAs obtained the adolescent's consent to participate by telephone, and they had the nurse act as a witness. Participants who volunteered to participate in the study signed the informed consent form and the participant rights protection form. Participants could withdraw from the study at any time without any effect on the antenatal care they received at the hospital.

Instruments: There were eight instruments used for data collection in this research. Two instruments, the Demographic and Obstetric Data Form and the Fear of Contraceptive Implant Side Effects Questionnaire (FSECI), were developed by the PI. Permission was obtained from the original developers to use the instruments in this study. The content validity index (CVI) of the new instrument and all other instruments were reviewed by three experts in obstetrics and gynaecology, including an obstetrician, a nurse educator, and a registered nurse in an antenatal care clinic, and then tested with 20 pregnant adolescents who met the same criteria as the study sample. The remaining five questionnaires were developed in Thai for values adolescents with repeat pregnancies.[8,12] Further details are described below. The results of the CVI, the type and values of reliability, and an example item for each instrument in this study are shown in **Table 1.**

Table 1. Example of item, possible range score, content validity index, and reliability of instruments

Instrument and number of items	Example item	Possible range	CVI	Reliability		
				Type of reliability test	n (20)	n (319)
1. Attitude Toward Contraceptive Implants Questionnaire (9 items)	I believe the contraceptive implant can help me prevent ovulation.	9-36	.93	α	.71	.77

Table 1. Example of item, possible range score, content validity index, and reliability of instruments (Cont.)

Instrument and number of items	Example item	Possible range	CVI	Reliability		
				Type of reliability test	n (20)	n (319)
2. Subjective Norm Toward Contraceptive Implants Questionnaire (4 items)	The person who encourages you to use contraceptive implant is...	3-15	1.00	α	.83	.90
3. Perceived Behavioral Control Toward Contraceptive Implants Questionnaire (10 items)	I can decrease anxiety about getting contraceptive implant.	10-50	1.00	α	.75	.83
4. Knowledge about Contraceptive Implants Questionnaire (8 items)	Contraceptive implants can protect pregnancy for 3-5 years.	0-8	1.00	KR-20	.72	.70
5. Life Goal Setting Scale (14 items)	Having good marriage and family	14-56	1.00	α	.94	.89
6. Fear of Side Effects of Contraceptive Implants Questionnaire (9 items)	Feeling fear of pain from contraceptive implants use	9-36	1.00	α	.87	.84
7. Intention to Use Contraceptive Implants Questionnaire (7 items)	I would learn benefits and disadvantages of contraceptive implants.	7-28	1.00	α	.89	.83

NA = Not applicable, α = Cronbach's alpha coefficient, KR-20 = The Kuder-Richardson 20

Demographic and Obstetric Data Form included two sections: 1) demographic data, consisting of age, religion, marital status, education level, occupation, family income, family type, and age of partner; and 2) obstetric data, consisting of gravidity, current pregnancy planning, desire to have a child, father of the unborn child (whether the father of the current child is a new husband), experience with contraceptives, and experience with social norms related to pregnancy.

Attitude Toward Contraceptive Implants Questionnaire (ATCIQ) was a modified version developed by Wattanathamrong et al., and the CVI was .97, while Cronbach's alpha coefficient was .88.[8] The scale has nine items rated on a Likert scale from 1 (strongly disagree) to 4 (strongly agree) and consists of positive and negative attitude questions. The total scores range from 9 to 36, with the higher scores indicating higher levels of attitude.[8]

Subjective Norm Toward Contraceptive Implants Questionnaire (SNTCIQ) was a modified version of the questionnaire by Kruangkaew et al.[12] The CVI score was 1 and Cronbach's alpha coefficient reliability was .84.[12] It includes four questions, with the first question asking participants to indicate the person who most influenced them in using contraceptive implants. Total scores range from 3 to 15, with the higher scores indicating higher levels of subjective norm perception.[12]

Perceived Behavioral Control Toward Contraceptive Implants Questionnaire (PBCTCIQ) was a modified version by Kruangkaew et al.[12] In a previous study, the CVI of the original questionnaire was 1, and the reliability result was examined using Cronbach's

alpha coefficient, yielding a value of .71.[12] It includes 10 items rated on a Likert scale from 1 (strongly disagree) to 5 (strongly agree), with total scores ranging from 10 to 50. The higher scores indicate higher levels of perceived behavioral control.[12]

Knowledge about Contraceptive Implants Questionnaire (KCIQ) was developed by Kruangkaew et al. based on a literature review. The content validity index was .95. Reliability was tested using Kuder-Richardson 20 (KR -20) and yielded a value of .75.[12] It includes 8 items scored on a dichotomous scale, correct = 1 and incorrect/not sure = 0. The total score ranges from 0 to 8. The higher scores indicate higher levels of knowledge.[12]

Life Goal Setting Scale (LGSS) was developed by Tweng et al.[26] in English and translated and modified by Kuasit and colleagues.[20] The Thai version was examined with Cronbach's alpha coefficient and yielded a value of .90.[20] It contains 14 items rated on a Likert scale from 1 (not important) to 4 (extremely important). The total score ranges from 14 to 56, with higher scores indicating higher levels of life goals.[20]

Fear of Side Effects of Contraceptive Implants Questionnaire (FSECIQ) was developed by the PI based on a literature review and has nine items rated on a Likert scale ranging from 1 (agree only somewhat) to 4 (agree completely). The total scores ranged from 9 to 36, with higher scores indicating higher levels of fear.

Intention to Use Contraceptive Implants Questionnaire (IUCIQ) was developed based on the Theory of Planned Behavior and a literature review by Wattanathamrong and colleagues.[8] In a previous study, the content validity result was .97, and Cronbach's alpha coefficient yielded a value of .97,[8] including 7 items rated on a Likert scale from 1 (strongly disagree) to 4 (strongly agree). The total score ranges from 7 to 28, with higher scores indicating higher levels of contraceptive intention with cut-offs for low (7-13), moderate (14-20), and high (21-28) levels.[8]

Data collection: After obtaining consent from the study sites, the PI contacted the head nurses for the antenatal clinics of four hospitals and requested permission to collect data. The study was conducted from September 2021 to April 2022. Four RAs were trained for sample recruitment, informed consent, and questionnaire administration. Four registered nurses who were not part of the research team approached pregnant adolescents who met the inclusion criteria at four study hospitals. They assessed whether the pregnant adolescents were eligible for the study and asked them if they were interested in participating. The PI or four RAs then met with the potential participants and their parents to inform them of the research objectives, method of data collection, and confidentiality. If pregnant adolescents volunteered to participate in the study, they were asked to sign an informed consent form, as were the parents or guardians of participants if they were younger than 18 years. Participants then completed the eight questionnaires in a private room, which took 13-30 minutes. All questionnaires were reviewed for accuracy and completeness of the information.

Data analysis: The SPSS version 26 was used to analyze the data. The significant alpha level was set at .05.[27] Descriptive statistics with frequencies, percentages, means, and standard deviations were used to analyze participants' demographic data (general and obstetric information) and their level of intention to use contraceptive implants. All assumptions of multivariate analysis (such as normality, linearity, homoscedasticity, and multicollinearity) were met; multiple regression analysis was applied to determine the predictive power of the independent variables for intention to use contraceptive implants in pregnant adolescents.

Results

The total number of participants in this study was 319. Demographic data included age, religion, status, education level, occupation, family income, and family type. Obstetric data, including gravidity, current pregnancy plan, desire to have a child, history

of contraceptive methods, age of partner, history of adolescent pregnancy in intimate persons and current pregnancy planning, are shown in **Table 2.** The score for intention to use a contraceptive implant was at the moderate level (M = 18.19, SD = 4.66), with the lowest value being eight and the highest being 28.

Table 2. Characteristic of pregnant adolescents (n = 319)

Demographic characteristics	**Number**	**%**
Age (years) (*Min* = 13, *Max* = 19, *M* = 17.44, *SD* = 1.48)		
Religion		
Buddhist	193	60.50
Muslim	124	38.87
Christian	2	.63
Marital status		
Single	291	91.22
Married	28	8.78
Education level		
Islamic religious education	18	5.64
Primary	38	11.91
Junior secondary	125	39.18
Senior secondary	77	24.14
Vocational	48	15.05
Higher vocational/certificate	13	4.08
Occupation		
Housewife	133	41.69
Student	78	24.45
Employee	69	21.63
Business owner	39	12.23
Family income (THB/month)		
≤ 5,000 (141.92 USD)	39	12.23
5,001-10,000 (142.89-285.71 USD)	86	26.96
10,001-20,000 (283.86-425.75 USD)	68	21.32
20,001-30,000 (425.78-567.67 USD)	50	15.67
> 30,000 (> 567.67 USD)	76	23.82
Type of family		
Nuclear family	86	26.96
Extended family	233	73.04
Gravidity		
One	249	78.06
Two	62	19.43
Three or more	8	2.51
Current pregnancy planning		
Yes	111	34.80
No	208	65.20

Table 2. Characteristic of pregnant adolescents (n = 319) (Cont.)

Demographic characteristics	Number	%
Desire to have a child		
Undesired	5	1.57
Not sure	138	43.26
Desired	176	55.17
Contraceptive methods history (can answer more than 1)		
Never used	157	49.22
Use	162	50.78
Calendar rhythm	16	9.88
Ejaculation	46	28.39
Condom	48	29.63
Oral pill	72	44.44
Injectables	24	14.81
Morning-after pills	24	14.81
Implants	12	7.41
Breast feeding	2	1.23
Age of partner		
≥ 20 years old	103	32.29
< 20 years old	216	67.71
Current child's father of the second pregnancy of adolescents		
Old partner	47	54.65
New partner	39	45.35
History of adolescent pregnancy in intimate persons		
No	159	49.84
Yes	160	50.16
Mother	29	18.13
Elder or younger sister	28	17.50
Peers	93	58.12
Relative	10	6.25
Current pregnancy planning		
Yes	111	34.80
No	208	65.20

As shown in **Table 3**, six variables were significantly correlated with intention to use a contraceptive implant. These were attitude, subjective norm, perceived behavioral control, knowledge, life goal setting, and fear of the side effects of contraceptive implants. Multiple regression analysis indicated that only three factors (perceived behavioral control, attitude, and subjective norms) were significant predictors that explained 34.4% of the variance in intention to use contraceptive implants. The strongest predictor was perceived behavioral control, as shown in **Table 4**.

Table 3. Correlation matrix of study variables (n = 319)

Variables	1	2	3	4	5	6
1. Attitude toward contraceptive implants	1.00					
2. Subjective norm toward contraceptive implants	.31**	1.00				
3. Perceived behavioral control toward contraceptive implants	.42**	.47**	1.00			
4. Knowledge about contraceptive implants	.33**	.20**	.22**	1.00		
5. Life goal setting	.17*	.00	.15*	.11*	1.00	
6. Fear about side effects of contraceptive implants	-.12**	-.18**	-.16**	-.03	.19**	1.00
7. Intention to use contraceptive implants	.46**	.38**	.49**	.26**	.10**	-.17**

*p < .05, **p < .001

Table 4. Multiple regression analysis to predict the intention to use contraceptive implants

Predictors	b	S.E. (b)	Beta	t	p-value
(Constant)	.612	2.272		.269	.788
Perceived behavioral control toward contraceptive implants	.252	.048	.291	5.229	.000
Attitude toward contraceptive implants	.274	.057	.256	4.797	.000
Subjective norm toward contraceptive implants	.185	.073	.135	2.540	.012
Knowledge about contraceptive implants	.193	.120	.079	1.614	.107
Life goal setting	.009	.037	.012	.258	.796
Fear of side effects of contraceptive implants	-.055	.041	-.064	-1.341	.181

R = .586, R^2 = .344, Adjusted R^2 = .331, Std.Error = 3.815
Overall F(6, 396) = 27.212, p < .001

Discussion

Intention to use contraceptive implants: The results showed that the intention to use contraceptive implants was at a moderate level among the participants who were pregnant adolescents in lower southern Thailand. The reason for this may be the religious and cultural diversity in southern Thailand, where about half of the population is of the Muslim faith.[5] Traditional norms motivate women to support conception and resist contraceptive use, which reduces the likelihood of contraceptive use.[21,28] In addition, this study found that the majority of participants had first and unplanned pregnancies and used short-acting reversible contraceptions (SARCs), such as pills and condoms for contraception, which they also used intermittently. This finding is consistent with previous studies indicating that 61.04% of pregnant adolescents used contraceptives incorrectly, inconsistently, and irregularly. This leads to unintended pregnancy.[8] In addition, foreign studies have found that Muslim religious groups are less likely to use modern contraceptives (e.g., birth control pills, IUDs) than Christian groups. They believe that birth control is against religious principles and that the husband's consent must be obtained.[29] Contraceptive experiences, accurate information, perceived benefits, and coping with the side effects of birth control pills also influence contraceptive intention among Muslim youth.[30] In this study, 39% of the sample was Muslim. For this reason, the results of this study may show a moderate willingness to use the birth control pill.

However, the pregnant adolescents recognized the risk of their problem and intended to use effective contraceptives after pregnancy.[7] In addition, most of them opted for contraceptive implants[12] because they are effective in the long term and are provided free of

charge by the state under the Adolescent Pregnancy Problems Act.[4] Since most of the participants lived in an extended family, the pregnant teens rely on family for financial support and to care for their baby, which are why they choose effective contraceptives such as contraceptive implants, consistent with previous studies.[7,12] This could ultimately lead pregnant teens to be more aware of preventing another unintended pregnancy by using contraceptive implants.

Predicting factors relating to intention to use contraceptive implants: The results of this study are partially consistent with the research hypothesis. Perceived behavioral control was the strongest predictor of pregnant adolescents' intention to use contraceptive implants. According to Ajzen's Theory of Planned Behavior, a person who has supportive and sufficient perceived behavioral control may develop a strong intention to perform a particular behavior.[9] A previous study explained that perceived behavioral control related to contraception enables pregnant adolescents to cope with and control both supportive and limiting factors related to contraception, leading to self-efficacy in contraceptive use and intention to use LARCs.[15] In contrast, other studies reported that perceived behavioral control related to LARCs was not related to intention to use LARCs among adolescents in their first pregnancy. Some adolescents did not perceive a need for LARCs, and some believed they could not handle the side effects, so they did not intend to use LARCs.[12] In contrast with previous studies, perceived behavioral control did not show significance in predicting intention.[31] In addition, although adolescents with new pregnancies had experience with contraceptives, most SARCs were used irregularly. In addition, these pregnant adolescents believed that they would not become pregnant with only a few sexual contacts. Therefore, they could not develop the intention to use effective contraception.[11]

Attitude toward contraceptive implants is another predictor of intention to use contraceptive implants that is consistent with Ajzen's Theory of Planned Behavior.[9] It has been explained that attitude toward a behavior is a belief that results from evaluating past positive or negative actions. Similarly, a previous study found that positive attitudes toward contraception led pregnant adolescents to be more likely to intend to use appropriate contraceptives to prevent another unplanned pregnancy. They assessed their previous experiences with unplanned pregnancies caused by ineffective contraceptives.[11] Similarly, a study found that adolescent mothers with positive attitudes toward contraceptive implants had a 1.4-fold higher prevalence of contraceptive implant use than those with negative attitudes.[21] Similarly, a study found that positive attitudes toward LARCs were highly associated with intention to use LARCs among adolescents who had experienced unintended pregnancies and considered LARCs to be an effective contraceptive method.[32] In contrast, one study reported that attitudes did not affect intention to use LARCs among first-time pregnant women. These had fewer positive attitudes toward LARCs because they had no prior experience in this area.[12] Thus, if they had positive attitudes toward contraceptive implants, they developed a firm intention to use contraceptive implants to effectively prevent the recurrence of pregnancy.

Subjective norm emerged as the final significant predictor of intention to use contraceptive implants. According to Ajzen's Theory of Planned Behavior, subjective norm refers to an individual's normative belief that relevant persons would approve or disapprove of him/her engaging in a particular behavior.[9] In this study, the pregnant adolescents lived in the extended family, and those who had the strongest influence on the pregnant adolescents' subjective norms were the mother, followed by the husband/lover. Previous studies have examined how most pregnant adolescents perceive their subjective norms regarding contraceptive implant use.[7,12] A previous study also found that pregnant adolescents with supportive subjective norms regarding contraceptive implants had 1.11 times higher prevalence rate than those without supportive subjective norms.[15] In contrast, a woman whose husband is hostile to the use of modern contraceptives is 0.81 times less likely

than a woman with a positive attitude to use modern contraceptives.[33] The beliefs and experiences of influential individuals, particularly parents and other family members, regarding contraceptive implants strongly influenced pregnant adolescents' intentions to use contraceptive implants to prevent further pregnancies in the long term.[7,12,13]

Knowledge of contraceptive implants was not a significant factor predicting intention to use contraceptive implants. A likely explanation was that most of the participants in this study were pregnant for the first time and did not have sufficient knowledge and experience with LARCs. In addition, almost half were Muslims who believed that God does not allow insistence on childbirth if the pregnancy endangers the woman's life.[13,34] Therefore, they were unaware of the benefits of contraceptive implants to prevent the recurrence of pregnancy. Although the pregnant adolescents had sound knowledge of contraceptive implants, they were still afraid of the side effects of contraceptive implants.[14,21] Some had already had negative experiences with contraceptive implants. This included pain, swelling, bruising at the implant site, or irregular menstruation, which affected their intention to use contraceptive implants.[12,35] In contrast, a study found that knowledge about contraceptive implants predicted intention to use contraceptives among postpartum adolescents because they had adequate knowledge about contraceptive implants, recognized the benefits, and were able to accept and appropriately manage any side effects.[14] In summary, knowledge about contraceptive implants is a factor related in part to intention to use contraceptive implants in postpartum adolescents, which requires thought and evaluation processes based on information and experience.

Another factor that did not predict pregnant adolescents' intention to use contraceptive implants was life goal setting. This is because in previous studies, most participants lived in an extended family, whose financial and social support pregnant adolescents have relied on. If their parents supported them in having children and saw no need for the use of contraceptive implants, they lacked the motivation to achieve their life goals.[20] However, in Muslim culture, religious norms advocate that women should have many births. In addition, contraception is generally against Islamic commandments, except in some special cases.[17] As a result, when faced with obstacles in life, participants were hesitant and inactive because they were unable to make an informed decision on their own. In contrast, previous studies have found that setting life goals encouraged pregnant adolescents to use contraceptive implants.[13,28] These life goals included a desire to pursue higher education, a desire to avoid childbearing difficulties, and a desire to avoid pain from multiple injections. All of these goals were associated with contraceptive implant use.[13,28] In addition, some life goals, such as starting a large family or the desire to have a child, may conflict with the intention to use contraceptive implants.

The final nonsignificant predictor of intention to use contraceptive implants in this study was fear of contraceptive implant side effects. In a previous study, it was found that mothers who were afraid of the effects of contraceptives were less likely to use contraceptives.[35] This is because mothers have received negative information about contraceptives, both through their own searches and through stories or experiences of family members and friends, leading to a fear of pain if the pill is implanted. They were concerned about the effects of birth control pill implantation and feared that they would be unable to handle it. This leads to a decrease in contraceptive intention.[22] In accordance with another study, it was found that fear of contraceptives is due to inaccurate information about contraception.[21] Experiences and statements about contraception from different sources have a negative impact on the decision to use contraceptive measures.[21]

Limitations

This study has some limitations. Data were collected from tertiary and secondary hospitals in

three provinces. Therefore, it may limit the generalizability of the result to the primary hospital and other provinces in southern Thailand where there no large Muslim community. In addition, more attention needs to be paid to predictors, as only 34.4% of the variance in intention to use contraceptive implants could be explained.

Conclusions and Implications for Nursing Practice

Factors influencing pregnant adolescents' intention to use contraceptive implants in lower southern Thailand include attitudes, subjective norms, and perceived behavioral control toward contraceptive implants. These predictive factors could be used to design an appropriate program that promotes appropriate attitudes and perceived behavioral control toward contraceptive implants. This could involve significant others in their family in the intervention, which may increase contraceptive implant use among pregnant adolescents. Such interventions could promote a high willingness to use contraceptive implants in a context-appropriate manner among pregnant adolescents in southern Thailand. It is anticipated that the research findings will be useful for healthcare professionals and researchers to further develop interventions to encourage intention in pregnant adolescents to use contraceptive implants that include the husband/lover's support and involvement during the prenatal period. Such interventions could create strong intentions in pregnant adolescents to use contraceptive implants.

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References

1. The Annie E. Casey Foundation. Repeat teen pregnancies in Maine [Internet]. 2022 [cited 2022 June 1]. Available from: https://datacenter.kidscount.org/data/bar/9913-repeat-teen-pregnancies?loc=21&loct=2#2/any/false/574/any/19250
2. Ministry of Public Health, Thailand. Statistics of repeat pregnancy rate in women aged under 20 years in area health [Internet]. 2021 [cited 2022 May 30]. Available from: http://dashboard.anamai.moph.go.th/dashboard/repregnancy/index?year=2021 (in Thai).
3. Ministry of Public Health, Thailand. Statistics of postpartum and post-abortion contraceptive use among women aged under 20 years [Internet]. 2021 [cited 2022 May 30]. Available from: https://dashboard.anamai.moph.go.th/dashboard/laborfpnormal 20/index?year=2021 (in Thai)
4. Act For Prevention and Solution of the Adolescent Pregnancy Problem, B.E. 2559. (2016, 30th March). The Government Gazette [Internet]. 2016 [cited 2020 Feb 13]. Available from: http://law.m-society.go.th/law2016/law/view/773 (in Thai)
5. Bureau of Reproductive Health, Department of Health. Teenage pregnancy surveillance report, 2020 [Internet]. 2020. [cited 2022 May 29]. Available from: https://rh.anamai.moph.go.th/th/surveillance-report/2515#wow-book/ (in Thai)
6. Hanson JD, Nothwehr F, Yang JG, Romitti P. Indirect and direct perceived behavioral control and the role of intention the context of birth control behavior. Matern & Child Health J. 2015;19:1535-42. doi: 10.1007/s10995-014-1658-x.
7. Plodpluang U. Experience of repeat pregnancy prevention among adolescents. JOHSS [Internet]. 2021[cited 2022 June 1];8(1):34-50. Available from: https://he01.tci-thaijo.org/index.php/johss/article/view/245402 (in Thai)
8. Wattanathamrong V, Sirisopon N, Kainakha P, Onsiri S, Amitpie C, Achariya A, et al. Factors related intention contraception type implants in repeat pregnancies adolescents. JRTAN [Internet]. 2017 [cited 2022 June 1];18(Suppl): 102-11. Available from: https://he01.tci-thaijo.org/index.php/JRTAN/article/view/90108/70831 (in Thai)

9. Ajzen I. The theory of planned behavior. Elsevier Sci. 1991;50(2):179-211. doi: 10.1016/0749-5978(91)90020-T.
10. Duangchan C, Wattanakorn K, Teanchaithut C, Sriyasak A, Oumpram K. The factors predicting intention to prevent teenage pregnancy among female junior high school students. SCNJ [Internet]. 2019 [cited 2022 June 1];6(Suppl):15-28. Available from: https://he01.tci-thaijo.org/index.php/scnet/article/view/175676/153766 (in Thai)
11. Jantarasiew B, Boonyaporn T. Teenage mothers in postpartum period at Trang hospital: attitudes, subjective norms, perceived behavioral control, and intention to use contraception. SCNJ [Internet]. 2019 [cited 2022 June 1];6(1):143-53. Available from: https://he01.tci-thaijo.org/index.php/scnet/article/view/154340/119834 (in Thai)
12. Kruangkaew P, Phahuwatanakorn W, Pungbangkadee R. Predictability of knowledge, attitude, subjective norm and perceived behavioral control on intention to the use of long-acting reversible contraception among primipara pregnant adolescents. Thai J Nurs Res. 2021;39(1):64-76 (in Thai).
13. Chacko MR, Wiemann CM, Buzi RS, Kozinetz CA, Peskin M, Smith PB. Choice of postpartum contraception: factors predisposing pregnant adolescents to choose less effective methods over long-acting reversible contraception. J Adolesc Health. 2016;58(1):628-35. doi: 10.1016/j.jadohealth.2015.12.002.
14. Gebeyehu NA, Lake EA, Gelaw KA, Azeze GA. The intention on modern contraceptive use and associated factors among postpartum women in public health institutions of Sodo Town, Southern Ethiopia 2019: an institutional-based cross-sectional study. BioMed Res Int. 2020;2020;9815465. doi: 10.1155/2020/9815465.
15. Somroop A, Deoisres W, Suppaseemanont W. Factors influencing the use of postpartum contraceptive implants among primiparous adolescents. JFONUBUU [Internet]. 2019 [cited 2022 June 1]; 27(3):79-87. Available from: http://ojslib3.buu.in.th/index.php/nursing/article/view/6529 (in Thai)
16. Strategy and Information Sub-committee in the 12th Public Health Region. Government action plan in health region 12 for annual budget 2020. [Internet]. 2020 Feb. [cited 2022 Nov 5]. Available from: http://www.rh12.moph.go.th/news/cio_meeting_5_2562/ (in Thai)
17. Hayimaming H, Masamae I. Study the understanding about Islamic contraception of married couples in Charolaeko community, Narathiwat province. M-JICI. 2021;2(2):25-36 (in Thai).
18. Dilawar B. Birth control [Internet]. 2022 [cited 2022 Nov 5]. Available from: https://www.al-islam.org/islamic-edicts-family-planning/birth-control
19. Berhe R, Nigusie A. Intention to use long acting contraceptive method and associated factors among women currently using short acting contraceptive methods in Gondar city, northwest Ethiopia: using the theory of planned behavior. Res Sq. 2020: 1-16. https://doi.org/10.21203/rs.3.rs-23589/v1
20. Kuasit U, Chunuan S, Hatthakit U, Bullock LF. The effects of the resilience-enhancing nursing program on life goals among pregnant teenagers: a randomized controlled trial. Songklanagarind J Nurs. 2018;38(1):35-45.
21. Claringbold L, Sanci L, Temple-Smith M. Factor influencing young women's contraceptive choice. Aust J Gen Pract. 2019; 48(6):389-94. doi: 10.31128/AJGP-09-18-4710.
22. Babalola S, John N, Ajao B, Speizer IS. Ideation and intention to use contraceptives in Kenya and Nigeria. Demogr Res. 2015;33(1): 211-38. doi:10.4054/DemRes.2015.33.8.
23. Enhancing the Quality and Transparency Of health Research. The strengthening the reporting of observational studies in epidemiology (STROBE) statement: guidelines for reporting observational studies [Internet]. 2022 [cited 2022 May 30]. Available from: https://www.equator-network.org/reporting-guidelines/strobe
24. Kieser M. Methods and applications of sample size calculation and recalculation in clinical trials. 1st ed. New York: Springer; 2020. 410 p.
25. Negewo D. Assessment of factors affecting women's intention to use long acting and permanent contraceptive methods among family planning clients of public health facilities in Ambo town, Oromia national regional state, Ethiopia [master's thesis]. [Ethiopia]: Addis Ababa University; 2010. 81 p.

26. Twenge JM, Campbell WK, Freeman EC. Generational differences in young adults' life goals, concern for others, and civic orientation. J Pers Soc.Psychol. 2012;102(5): 1045-62. doi: 10.1037/a0027408.
27. Simmonds P. Linear regression analysis primary agreement's test. JRCD [Internet]. 2017 [cited 2022 May 30];7(2): 20-37. Available from: https://so03.tci-thaijo.org/index.php /jrcd/article/view/115566 (in Thai)
28. Chernthong P, Saibuppha S. Contraception among teenage pregnancy in Health Region 1. Lanna JHEHP [Internet]. 2019 [cited 2022 May 30];10(2):52-66. Available from: https://he01.tci-thaijo.org/index.php/lannaHealth/article/view/250344 (in Thai)
29. Ahinkorah BO, Budu E, Aboagye RG, Agbaglo E, Arthur-Holmes F, Adu C, et al. Factor associated with modern contraceptive use among women with no fertility intention in sub-Saharan Africa: evidence from cross-sectional surveys of 29 countries. Contracept Reprod Med. 2021;6(1):22. doi: 10.1186/ s40834-021-00165-6.
30. Bangoura C, Dioubate N, Manet H, Camara BS, Kouyate M, Douno M, et al. Experiences, preferences, and needs of adolescents and urban youth in contraceptive use in Conakry, 2019, Guainea. Front Glob Women's Health. 2021;2:655920. doi: 10.3389/fgwh.2021.6 55 920.
31. DeMaria AL, Sundstrom B, Faria AA, Saxon GM, Ramos-Ortiz G. Using the theory of planned behavior and self-identity to explore women's decision-making and intention to switch from combined oral contraceptive pill (COC) to long-acting reversible contraceptive (LARC). BMC Women's Health. 2019;19(1):82. doi: 10.1186/s12905 -019-0772-8.
32. Chen H, Song H, Li M, Hu S, Xiong X, Jiang H, et al. The impact of awareness and attitudes towards long-action reversible contraceptives on the intention to use: a survey among youth with unintended pregnancies. Eur J Contracept Reprod Health Care. 2022;27(2):121-6. doi: 10.1080/13625187.2022.2029396.
33. Tukue D, Gebremeskel TG, Gebremariam L, Aregawi B, Hagos MG, Gebremichael T, et al. Prevalence and determinants of modern contraceptive utilization among women in the reproductive age group in Edaga-hamus town, Eastern zone, Tigray region, Ethiopia, June 2017. PLos ONE. 2020;15(3):e0227795. doi: 10.1371/journal.pone.0227795
34. Saengprajongb K, Ratinthon A, Phahuwatanakorn W. Effects of motivational counseling on readiness for long-term contraceptive use in pregnant adolescents: a pilot study. J Nurs Sci. 2016;34(Suppl1):28-39 (in Thai).
35. Intharueang U, Masingboon K, Wacharasin C. A causal model of contraceptive behavior among female adolescents. JNHC [Internet]. 2015 [cited 2022 May 30];33(4):43-53. Available from: https://he01.tci-thaijo.org/index.php/jnat-ned/article/view/49003/40695 (in Thai)

ปัจจัยทำนายความตั้งใจใช้ยาฝังคุมกำเนิดของหญิงตั้งครรภ์วัยรุ่นในภาคใต้ตอนล่าง: การศึกษาภาคตัดขวาง

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บทคัดย่อ: การตั้งครรภ์ซ้ำในวัยรุ่นเป็นปัญหาสำคัญที่ส่งผลกระทบต่อมารดาวัยรุ่นทั้งด้านสุขภาพ ครอบครัว และประเทศชาติ อัตราการตั้งครรภ์ซ้ำในวัยรุ่นของประเทศไทยยังคงสูงกว่าเกณฑ์ 10% ที่กระทรวงสาธารณสุขกำหนด การตั้งครรภ์ซ้ำในวัยรุ่นพบมากที่สุดในภาคใต้มากกว่าภาคอื่น ๆ ของประเทศ การส่งเสริมความตั้งใจใช้ยาฝังคุมกำเนิดแก่มารดาวัยรุ่นตั้งแต่ระยะตั้งครรภ์เป็นวิธีช่วยป้องกันปัญหาดังกล่าว การศึกษาภาคตัดขวางครั้งนี้มีวัตถุประสงค์เพื่อศึกษาระดับความตั้งใจใช้ยาฝังคุมกำเนิด และปัจจัยทำนายความตั้งใจใช้ยาฝังคุมกำเนิดของหญิงตั้งครรภ์วัยรุ่นในภาคใต้ตอนล่าง กลุ่มตัวอย่างเป็นหญิงตั้งครรภ์วัยรุ่นที่มารับบริการแผนกฝากครรภ์ จำนวน 319 ราย ณ โรงพยาบาลระดับทุติยภูมิ 3 แห่ง และระดับตติยภูมิ 1 แห่งในเขตภาคใต้ตอนล่างของประเทศไทย เครื่องมือที่ใช้เก็บรวบรวมข้อมูล ประกอบด้วย แบบสอบถาม 8 ชุด ประกอบด้วย (1) ข้อมูลส่วนบุคคล (2) เจตคติต่อยาฝังคุมกำเนิด (3) การคล้อยตามกลุ่มอ้างอิงต่อยาฝังคุมกำเนิด (4) การรับรู้ความสามารถในการควบคุมพฤติกรรมการฝังยาคุมกำเนิด (5) ความรู้เกี่ยวกับยาฝังคุมกำเนิด (6) การกำหนดเป้าหมายในชีวิต (7) ความกลัวผลกระทบจากการฝังยาคุมกำเนิด และ (8) ความตั้งใจใช้ยาฝังคุมกำเนิด วิเคราะห์ข้อมูลโดยใช้สถิติพรรณนา สัมประสิทธิ์สหสัมพันธ์เพียร์สัน และการวิเคราะห์การถดถอยพหุคูณ

ผลการศึกษา พบว่า ระดับความตั้งใจใช้ยาฝังคุมกำเนิดของหญิงตั้งครรภ์วัยรุ่นในภาคใต้ตอนล่างอยู่ในระดับปานกลาง และพบว่ามี 3 ปัจจัย ได้แก่ การรับรู้ความสามารถในการควบคุมตนเองต่อการฝังยาคุมกำเนิดเป็นตัวทำนายที่ดีที่สุด และยังร่วมกับเจตคติต่อยาฝังคุมกำเนิด และการคล้อยตามกลุ่มอ้างอิงต่อยาฝังคุมกำเนิด ในการอธิบายความแปรปรวนได้ร้อยละ 34.4 ของความตั้งใจใช้ยาฝังคุมกำเนิด ผลการศึกษานี้สามารถใช้เป็นพื้นฐานในการพัฒนาโปรแกรมการพยาบาลเพื่อส่งเสริมทัศนคติในการใช้ยาฝังคุมกำเนิดในหญิงวัยรุ่นภาคใต้ตอนล่างของประเทศไทย ส่งเสริมให้หญิงตั้งครรภ์วัยรุ่นมีเจตคติที่ดี มีการรับรู้การควบคุมพฤติกรรม เพิ่มความตั้งใจที่จะใช้ยาฝังคุมกำเนิด โดยเน้นให้สมาชิกในครอบครัวมีส่วนร่วมในการสนับสนุนการใช้การฝังคุมกำเนิด

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คำสำคัญ: เจตคติ ยาฝังคุมกำเนิด ความกลัว ความตั้งใจ ความรู้ การตั้งเป้าหมายในชีวิต การรับรู้ความสามารถในการควบคุมตนเอง หญิงตั้งครรภ์วัยรุ่น การคล้อยตามกลุ่มอ้างอิง

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