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Factors Associated with Long-Acting Reversible Contraception (LARC) use in Postpartum Women at Srinagarind Hospital

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ABSTRACT

Objectives: To determine the associated factors those predict the use of long-acting reversible contraception (LARC) among postpartum women at Srinagarind Hospital.

Materials and Methods: A cohort study of postpartum women was conducted at Srinagarind Hospital from May to October 2016. LARC methods were defined as progestogen-only injectable contraceptives, intrauterine devices, and contraceptive implants. The participants were interviewed during admission to the postpartum ward in order to ascertain baseline information, as well as information regarding their intention to use or not to use LARC. The participants were interviewed again after their six week postpartum visit about the contraceptive method they actually used. Data of participants who did not appear for their six-week postpartum visit were obtained by telephone interview within 6-12 weeks after delivery. Logistic regression analysis was applied to determine the factors associated with LARC use.

Results: The mean age of the participants was 28.4 ± 5.7 years. One hundred twenty-six out of a total of 312 participants (40.4%) reported using LARC. The methods of LARC used were depot medroxyprogesterone acetate (DMPA) (82.5%) and contraceptive implants (17.5%). Participants who were more likely to use LARC included those who had expressed their intention to use LARC during the first interview, current students, and women whose medical expenses were covered by universal coverage scheme.

Conclusion: Rate of LARC use in this study was approximately 40%. The most common method of LARC used was DMPA. Significant independent factors affecting the use of LARC were participants' intentions, occupation, and type of health care coverage.

Keywords: contraceptive use, long-acting reversible contraception, postpartum women

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ปัจจัยที่มีความสัมพันธ์ต่อการตัดสินใจใช้วิธีการคุมกำเนิดชนิดออกฤทธิ์นานของสตรีหลังคลอดที่โรงพยาบาลศรีนครินทร์

ศรีหมื่นไวย เอกสิทธิไพศาล, ยุทธพงศ์ วีระวัฒนตระกูล, ศักดิ์สิน สิมสินธุ์

บทคัดย่อ

วัตถุประสงค์: *เพื่อศึกษาปัจจัยที่มีความสัมพันธ์กับการเลือกใช้วิธีคุมกำเนิดชนิดออกฤทธิ์นานในสตรีหลังคลอดที่โรงพยาบาลศรีนครินทร์*

วิธีการวิจัย: *การศึกษาแบบไปข้างหน้าของสตรีที่คลอดบุตรที่โรงพยาบาลศรีนครินทร์ ในช่วงเดือนพฤษภาคมถึงเดือนตุลาคม พ.ศ. 2559 โดยการคุมกำเนิดชนิดออกฤทธิ์นานกล่าวรวมถึงยาฉีดคุมกำเนิด ห่วงอนามัย และยาฝังคุมกำเนิด อาสาสมัครที่เข้าร่วมงานวิจัยจะถูกสอบถามข้อมูลขณะที่พักรักษาตัวหลังคลอดอยู่ในโรงพยาบาล เกี่ยวกับปัจจัยพื้นฐานและความตั้งใจในการคุมกำเนิดชนิดออกฤทธิ์นาน และสอบถามข้อมูลเมื่อมาติดตามการรักษาหลังคลอด 6 สัปดาห์ หากสตรีหลังคลอดไม่ได้มาติดตามการรักษาจะใช้วิธีสอบถามทางโทรศัพท์เมื่อ 6-12 สัปดาห์หลังคลอด เพื่อสอบถามวิธีคุมกำเนิดที่เลือกใช้จริง หลังจากนั้นนำข้อมูลมาวิเคราะห์การถดถอยโลจิสติคพหุ*

ผลการวิจัย: *อายุเฉลี่ยของอาสาสมัครอยู่ในช่วง 28.4 ± 5.7 ปี อาสาสมัคร 126 จาก 312 คน (ร้อยละ 40.4) เลือกใช้วิธีการคุมกำเนิดชนิดออกฤทธิ์นาน โดยวิธีที่เลือกใช้ คือ ยาฉีดคุมกำเนิด (ร้อยละ 82.5) และยาฝังคุมกำเนิด (ร้อยละ 17.5) โดยปัจจัยที่ส่งผลต่อการเลือกวิธีการคุมกำเนิดชนิดออกฤทธิ์นาน ได้แก่ ความตั้งใจที่จะเลือกใช้ในการสอบถามครั้งแรก อาสาสมัครที่เป็นนักเรียน และสิทธิการรักษา*

สรุป: *การเลือกใช้วิธีการคุมกำเนิดชนิดออกฤทธิ์นานในการศึกษานี้ยังพบน้อย และชนิดที่มีการเลือกใช้มากที่สุด คือ ยาฉีดคุมกำเนิด โดยปัจจัยที่มีผลต่อการเลือกใช้ คือ ความตั้งใจของอาสาสมัคร อาชีพ และสิทธิ์การรักษา*

คำสำคัญ: *การคุมกำเนิด, วิธีคุมกำเนิดชนิดออกฤทธิ์นาน, สตรีหลังคลอด*

Introduction

Family planning is the most cost-effective intervention that can be employed in order to reduce perinatal morbidity, mortality, and the burden of childbearing[1, 2]. Appropriate pregnancy spacing improves health and survival for children[3-7]. The deleterious effects of multiparity with too close spacing include fetal death, low birth weight, preterm labor, and infants being small for their gestational age[5-7]. The goals of family planning often are not realized in cases of pregnant Thai adolescents and young women, in approximately 65% of which the pregnancies are unintended[8, 9].

According to recent guidelines proposed by the United Kingdom's National Institute for Health and Care Excellence (NICE), long-acting reversible contraception (LARC) is defined as contraceptive methods requiring administration less than once per cycle or month such as progestogen-only injectable contraceptives, intrauterine devices, and contraceptive implants[10]. However, the American College of Obstetricians and Gynecologists (ACOG) defines LARC as consisting only of intrauterine devices and contraceptive implants[11]. Both NICE and ACOG have long recommended LARC as the most effective reversible contraceptive option for most women of reproductive age[10, 11].

However, LARC use remains suboptimal in some settings. For example, a previous study conducted among 1,009 Thai postpartum women observed a notably low prevalence of intrauterine device and contraceptive implant use (0.8%). The most common reversible contraceptive method used in this study was depot medroxyprogesterone acetate (DMPA) (38.4%), a progestogen-only injectable contraceptive that is available in Thailand[12]. According to data collected among women who attended the Family Planning Clinic at Khon Kaen University's Srinagarind Hospital (Thailand) from 2013-2015, the usage rates of intrauterine devices, contraceptive implants, and DMPA were 2.7%, 4.2%, and 20.0%, respectively.

This study was conducted to determine factors associated with LARC use among postpartum women who attended the Srinagarind Hospital Family Planning Clinic. This information may be helpful in planning and implementing interventions aimed at promoting the use of LARC in our setting.

Materials and Methods

After receiving an approval from the Khon Kaen University Ethics Committee in Human Research (HE591022), a cohort of postpartum women at Khon Kaen University's Srinagarind Hospital were recruited from May to October 2016. Women who desired permanent contraception or those whose deliveries were complicated with neonatal death were excluded. Informed consent was obtained from all participants. In this study, LARC was defined according to the NICE guidelines which include progestogen-only injectable contraceptives, intrauterine devices, and contraceptive implants[10].

First, participants were interviewed during admission to the postpartum ward by trained interviewers who used a standardized questionnaire to collect information on baseline characteristics, previous contraception practices, and their intentions with regard to LARC usage. Delivery outcomes were extracted from medical and labor records. Participants were interviewed again at the Family Planning Clinic after their six-week postpartum visit about the contraceptive method that they actually used. Data of participants who did not attend the six-week postpartum visit were obtained by phone interview within 6-12 weeks after delivery following the data required in the standardized questionnaire. Participants who changed their minds about LARC use were interviewed for root cause analysis.

A sample size of 310 participants was required for multiple logistic regression analysis with 80% power of analysis. There was an expected incomplete data rate of 15% which meant that 357 participants were required for this study.

Data were analyzed using the STATA program version 10 (Stata Corp, College Station, TX, USA). Descriptive statistics including mean ± standard

deviation (SD) and number (percentage) were used to describe the baseline characteristics of the participants, rate of LARC use, and root cause analysis of participants who had originally intended to use LARC but ultimately changed their minds. Chi-square test or Fisher's exact test was applied whenever appropriate to compare between the groups. Univariate analysis was carried out to identify variables potentially associated with the LARC use. Variables with a p value of less than 0.20 according to univariate analysis were further included in a backward elimination logistic regression analysis to determine which, if any, were independently associated with LARC use.

Results

During the study period, data obtained from 312 participants were suitable for analysis. The mean age of the participants was 28.4 ± 5.7 years with most being 20-35 years old. Seventeen participants were currently students (5.4%). Of the 312 participants, 126 reported having used LARC (40.4%; 95% confidence interval [CI], 34.9% to 46.1%). The methods used were DMPA (104 participants; 82.5%) and implants (22 participants; 17.5%). Table 1 displays the baseline characteristics of the participants. Participants who used LARC were more likely to declare that the current pregnancy was unintended than those who did not use LARC (21.4% versus 14.5%, respectively). The mean ages of women who used LARC and those who did not use LARC were 27.7 ± 6.3 and 28.9 ± 5.3 years, respectively.

Table 1. Baseline characteristics.

	Non-LARC N = 186	LARC N = 126	p value*
Age			0.164
Under 20 years old	8 (4.37)	12 (9.52)	
Between 20 and 35 years old	156 (85.25)	99 (78.57)	
35 years or older	19 (10.38)	15 (11.90)	
Educational attainment			0.655
In high school	19 (10.50)	16 (13.11)	
High school graduate or equivalent	78 (43.09)	55 (45.08)	
Bachelor degree or higher	84 (46.41)	51 (41.80)	
Occupation			0.001
Housewife/ Unemployed	36 (19.64)	30 (24.00)	
Business owner	34 (18.58)	21 (16.80)	
Government officer	46 (25.41)	23 (18.40)	
Employee	65 (35.52)	36 (28.80)	
Student	2 (1.09)	15 (12.00)	
Income (Baht/month)			0.059
Less than 15,000	69 (37.10)	61 (48.41)	
15,000-30,000	81 (43.55)	51 (40.48)	
More than 30,000	36 (19.35)	14 (11.11)	
Multiparity	54 (29.03)	29 (23.02)	0.238
Unintended pregnancy	27 (14.52)	27 (21.43)	0.113
Neonatal birth weight			0.856

Table 1. Baseline characteristics. (Cont.)

	Non-LARC N = 186	LARC N = 126	p value*
Less than 2,500 grams	13 (6.99)	11 (8.73)	
2,500 – 4,000 grams	171 (91.94)	114 (90.48)	
More than 4,000 grams	2 (1.08)	1 (0.79)	
Follow-up Hospital			0.014
Clinics/ private hospital	41 (22.04)	40 (31.74)	
Primary care hospital	47 (25.26)	18 (14.28)	
Secondary care hospital	21 (11.29)	7 (5.55)	
Tertiary care hospital	77 (41.39)	61 (48.41)	

Abbreviation: LARC, long acting reversible contraception
Data are presented as number (percentage)
* p value was calculated via the Chi-square or Fisher exact test, as appropriate

Table 2 shows the results of logistic regression analysis. Three variables were independently associated with the LARC use: intention to use LARC (as declared at admission to the postpartum ward), occupation, and type of health care coverage.

Only 69 out of 114 participants (60.5%) who had expressed a desire to use LARC were actually using it at the time of their postpartum visit. However, 57 out of 198 participants (28.8%) who expressed that they did not intend to use LARC had actually ended up using it at the time of their postpartum visit. The total number of women using LARC at the time of their postpartum visit in this study was only 126 out of 312 (40.4%).

Table 2. Factors associated with LARC used at 6-12 weeks postpartum.

	Crude OR (95% CI)	p value	Adjusted OR* (95% CI)	p value
Occupation				
Housewife/ Unemployed	Reference	Reference	Reference	Reference
Business owner	0.74 (0.35-1.53)	0.420	0.82 (0.37-1.78)	0.618
Government officer	0.60 (0.29-1.20)	0.151	0.96 (0.40-2.29)	0.933
Employee	0.66 (0.35-1.25)	0.206	1.01 (0.47-2.19)	0.958
Student	9.00 (1.90-42.52)	0.006	6.90 (1.40-34.06)	0.018
Desire to use LARC	3.79 (2.33-6.16)	< 0.001	3.55 (2.12-5.96)	< 0.001
Health care coverage				
Civil Servant Medical Benefit Scheme	Reference	Reference	Reference	Reference
Social Security Scheme	1.19 (0.61-2.31)	0.598	1.34 (0.57-3.15)	0.494
Universal coverage Scheme	2.25 (1.11-4.52)	0.023	2.70 (1.07-6.80)	0.035

Abbreviation: LARC, long acting reversible contraception; OR, Odd ratio; CI, confidence interval
* Adjusted for occupation, desire to use LARC and type of health care coverage

The in-depth reasons that the 126 participants used LARC are listed in Table 3. These included convenience, lack of impact on the quantity or quality of breast milk, recommendation by a physician, and planning for a space of ≥ 3 years before their next pregnancy. Table 4 displays the reasons for participants not using LARC, despite having initially expressed their intention to do so.

Table 3. Reasons of 126 participants who finally used LARC methods.

Reasons	N = 126
Convenience	59 (46.82)
No effect on amount of breast milk	25 (19.84)
Suggestion by doctors	15 (11.90)
Desire for 3 years or more between pregnancies	11 (8.73)
Previous LARC use	2 (1.58)
Other	14 (11.10)

Abbreviation: LARC, long acting reversible contraception
Data are presented as number (percentage)

Table 4. Reasons of 45 participants who had initially expressed a desire to use LARC, but who subsequently changed their minds.

Reasons	N = 45
Never had sexual intercourse/ Never lived together	17 (37.77)
Inconvenience	7 (15.55)
Financial problem	5 (11.11)
Previous used	3 (6.66)
No affected to breast milk production	3 (6.66)
No follow up/ instruction	3 (6.66)
Amenorrhea	2 (4.44)
Adverse effects	2 (4.44)
Impropriation of the number/ gender of children	2 (4.44)
Receiving false information	1 (2.22)

Abbreviation: LARC, long acting reversible contraception
Data are presented as number (percentage)

Discussion

This study was conducted at a tertiary university hospital in Northeast Thailand. We found that 114 of the 312 participants (36.5%) enrolled expressed a desire to use LARC at the time of their admission to the postpartum ward, and that 69 (60.5%) of these participants actually ended up using LARC at the time of their six-week postpartum visit. The most common type of LARC used was DMPA (82.5%). The findings observed in this study were consistent with those of a previous study in Thailand[12]. The significant independent factors that

predicted the use of LARC were participants' initial intention to use LARC, occupation, and type of health care coverage.

This study revealed that participants who intended to use LARC were approximately 3.5 times more likely to use when compare to those who did not plan to use. This finding might indicate important considerations when promoting LARC use such as antenatal health education with regard to LARC methods. A previous randomized controlled trial found more contraceptive used among postpartum women who received antenatal counseling than who received only postpartum counselling sessions[13].

Occupation was also found to be a significant independent factor for LARC use (Table 2). Students were 6.9 times more likely to use LARC compared to participants applied as a reference level. This may be the result of an increased effort to offer LARC to students, as well as pressure from their families to use contraception, reduce the risk of contraceptive failure, and prevent unintended pregnancy[8, 9, 12].

The cost of LARC may limit its use if it is not included in woman's health care coverage[14]. The type of health care coverage was also found to be independently associated with the use of LARC in this study (Table 2). Participants whose medical expenses were covered by the universal coverage scheme were more likely to use LARC compared to those who were covered by the Civil Servant Medical Benefit Scheme which is the welfare health services for government or state enterprise officer and do not cover any contraceptive methods (OR, 2.70; 95% CI, 1.07-6.80). However, the uptake rate of LARC among participants whose medical expenses were covered by the social security scheme did not significantly differ from those under the universal coverage scheme (OR, 1.34; 95% CI, 0.57-3.15). Meticulous exploration of the underlying reasons and possible causes leading to the underuse of LARC methods among postpartum women with some types of health care coverage is warranted. This may be due to some women having to pay for LARC out of pocket.

Misconceptions regarding LARC are not uncommon[14]. There were some misconceptions about LARC methods noted in this study (Table 4). For example, some participants who had originally expressed their intention to use LARC did not end up doing so due to cost (approximately 11.1%) and inconvenience (approximately 15.5%). Additionally, some participants who had changed their minds about LARC use were concerned that LARC may affect to their milk production (approximately 6.6%) or cause adverse effects (approximately 4.4%). These findings confirm the importance of counselling and correcting misinformation about the advantages and safety of LARC among postpartum women.

Some limitations of this study were worthy of note. First, the majority of LARC methods used in this study were DMPA. Second, there was no information regarding the details of contraceptive practice among 45 participants who had initially expressed a desire to use LARC but had changed their mind later. Third, we applied face to face interview which might affect to the participants' decision. Additionally, this study was conducted at a tertiary hospital in a low-middle income country. Generalization of the results to the use of other LARC methods and different population settings may be limited.

Conclution

In conclusion, the rate of LARC use in this study was approximately 40%. Significant independent factors affecting the use of LARC were participants' initial intention, occupation, and type of health care coverage.

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Potential conflicts of interest

The authors declare no conflict of interest.

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