Contraception 100 (2019) 152–154

Contents lists available at ScienceDirect

Contraception

journal homepage: www.elsevier.com/locate/con

Short communication

An exploratory study of the perception of contraceptive safety and impact on lactation among postpartum nurses at Women and Infants Hospital in 2017☆,☆☆

Kathleen E. Cohen *, Phinnara Has, Rebecca H. Allen, Kristen A. Matteson

Department of Obstetrics and Gynecology, Women and Infants Hospital/Brown University, 101 Dudley Street, Providence, Rhode Island 02905, USA

ARTICLE INFO

Article history:
Received 3 January 2019
Received in revised form 2 April 2019
Accepted 3 April 2019

Keywords:
Postpartum
Contraception
Education
Lactation
LARC
Nursing

ABSTRACT

Objective: To describe contraceptive knowledge and counseling practices of postpartum nurses.
Methods: We surveyed postpartum nurses at the largest women's hospital in Rhode Island.
Results: We distributed 117 anonymous questionnaires and received 58 responses (response rate=50%). Twenty-three of 51 nurses (45%) reported routinely offering contraceptive advice to new mothers. Only 5/55 (9%) responded correctly that combined hormonal contraceptives were an "unacceptable health risk" in the immediate postpartum period. A minority of respondents correctly classified the progestin-only pill, depot medroxyprogesterone acetate, the etonogestrel implant, the levonorgestrel intrauterine system and the copper intrauterine device as safe to use during lactation [14/56 (25%), 24/56 (43%), 27/56 (48%), 19/55 (35%) and 9/55 (16%), respectively]. Thirty-three of 51 nurses (65%) incorrectly responded that depot medroxyprogesterone acetate decreases milk supply if started immediately postpartum.
Conclusion: There are opportunities to improve knowledge regarding contraceptive safety and impact on lactation among postpartum nurses at our institution.

1. Introduction

Postpartum nurses are on the front-line of postpartum care and education and may serve as an importance source of information regarding contraception [1–3]. The primary aims of this study were to assess postpartum nurses' knowledge of contraceptive safety in the immediate postpartum period for breastfeeding women and elicit postpartum nurses' understanding of the milk-supply effects of contraceptive methods including combined hormonal contraception (CHC), the progestin-only pill (POP), depot medroxyprogesterone acetate (DMPA), the etonogestrel implant, the levonorgestrel intrauterine system (LNG-IUS) and the copper intrauterine device (Cu-IUD). The secondary objective was to assess whether or not there was an association between prior contraception education and knowledge related to contraceptive safety.

2. Materials and methods

We conducted an anonymous survey of the postpartum nursing staff at Women and Infants Hospital (WIH) in Providence, Rhode Island. WIH provides labor and delivery care for the majority of women in Rhode Island. The Institutional Review Board at WIH approved the study.

We distributed the survey in-person during all three nursing shifts on all postpartum units from November through December of 2017 and used a numbering system to track response rate. We excluded nurses who acknowledged their current job included no direct patient care. We collected surveys in a locked box and entered data into a secure electronic database. We adapted the survey from a nationwide study of lactation consultants [4]. Our survey contained 28 questions about age, gender, race, ethnicity, years worked as a postpartum nurse, shift worked, part- or full-time status, prior breastfeeding and contraception education, contraceptive counseling practices, and knowledge of the safety and efficacy of contraceptives in the postpartum period.

To assess knowledge of contraceptive safety, we asked nurses to rate contraceptive methods on a 1 to 4 scale of increasing risk using the same categories as the Centers for Disease Control and Prevention's US Medical Eligibility Criteria (USMEC) [5], prefacing with the statement "The following questions refer to breastfeeding women without risk factors (other than recent pregnancy) for venous thromboembolism. Please indicate your perception of the relative safety of each contraceptive

☆ Declaration of interest: none (for all authors except Allen).Allen: Nexplanon trainer for Merck; research funding from Bayer.
☆☆ Funding sourcesThis research did not receive any specific grant from funding agencies in the public, commercial or not-for-profit sectors.
* Corresponding author.
E-mail address: kacohen@wihri.org (K.E. Cohen).

https://doi.org/10.1016/j.contraception.2019.04.003
0010-7824/

method during the first 3 weeks after delivery for women who are breastfeeding." To assess knowledge of contraceptives' impact on breastfeeding, we asked the question "Please indicate for each contraceptive method whether it does or does NOT decrease milk supply for breastfeeding mothers if started immediately postpartum (e.g. within 1 week of delivery)." To measure knowledge of lactational amenorrhea method (LAM) efficacy, we asked whether LAM was an effective form of contraception for women whose menses had returned or who were not exclusively breastfeeding. The primary outcomes were the proportion of postpartum nurses that responded correctly to questions about method safety and impact on milk supply. The secondary outcome was the association between prior contraception education and knowledge of contraceptive safety. For these analyses, we divided knowledge-based questions into three domains: USMEC risk rating, contraceptives' impact on lactation and contraceptive efficacy of LAM. We scored each domain and assigned a total score based on number of correct responses, with 6, 5 and 2 being the highest possible scores for the USMEC risk rating, impact on lactation and LAM efficacy domains, respectively. We analyzed data using Stata 15.1 (College Station, TX, USA). We performed descriptive analysis for univariate analyses. We compared continuous variables using *t* test or Wilcoxon rank-sum for two groups. Analysis of variance or Kruskal–Wallis was used for three or more groups.

Table 1
Sociodemographic and employment characteristics of postpartum nurses surveyed at Women and Infants Hospital in 2017[a] (*N*=58).+a, *b

Variable	*n* (column %)
Age (years)	
Mean (range)	40.9 (23–63)
Gender	
Female	54 (100)
Hispanic or Latina	
Yes	3 (5.6)
Decline to answer	1 (1.9)
Race[b]	
Black or African	0 (—-)
White	46 (85.2)
Asian	0 (—-)
American Indian/Alaskan Native	1 (1.9)
Native Hawaiian/Pacific Islander	0 (—-)
Other or multiracial	6 (11.1)
Decline to answer	1 (1.9)
Years as postpartum nurse	
<1	9 (15.5)
1–5	13 (22.4)
6–20	26 (43.1)
>20	11 (18.9)
Part- or full-time nurse	
Full time	33 (61.1)
Shift worked[b]	
7 a.m.–3 p.m.	22 (40.7)
3 p.m.–11p.m.	13 (24.1)
11 p.m.–7 a.m.	20 (37.0)
Prior breastfeeding education	
Yes	58 (100)
Prior contraception education	
Yes	9 (16.1)
I don't know	3 (5.4)
Aware of the USMEC	
Yes	1 (1.8)
I don't know	1 (1.8)
Interest in more education	
Yes	52 (96.3)
Preferred method of education[b]	
Brochure or handout	29 (52.7)
Chapter in textbook	2 (3.6)
Lecture or presentation	23 (41.8)
Webinar	19 (34.6)
Other	1 (1.8)

[a] Numbers may not sum to total due to missing data in the following categories: age (*n*=5), gender (*n*=4), Hispanic or Latina (*n*=4), race (*n*=4), part- or full-time nurse (*n*=4), shift worked (*n*=4), prior contraception education (*n*=2), aware of USMEC (*n*=1), interest in more education (*n*=4), preferred method of education (*n*=3).
[b] Check all that apply; does not sum to 100%.

3. Results

We distributed 117 surveys and received 58 completed surveys (response rate=50%). We describe the univariate distribution of variables in Table 1. While 58/58 nurses (100%) reported prior breastfeeding education, only 9/56 (16%) reported prior contraception education, and only 1 respondent was aware of the USMEC. Many (26/58, 45%) agreed with the statement "Mothers ask for my advice about postpartum contraception." Many (23/51, 45%) also agreed with the statement "I offer mothers advice about postpartum contraception" and "the advice I provide a woman about contraception differs based on whether or not she is breastfeeding" (23/41, 56%).

Nurses rated the risk of each contraceptive method according to the USMEC risk categories (Table 2). Five out of 55 nurses (9%) correctly responded that CHC is rated as category 4 ("unacceptable health risk"). A minority of respondents correctly responded that POP, DMPA, the etonogestrel implant and the LNG-IUS are classified as "advantages generally outweigh the risks" [14/56 (25%), 24/56 (43%), 27/56 (48%), and 19/55 (35%), respectively]. Nine out of 55 nurses (16%) correctly responded that Cu-IUD is rated "no restriction." For the risk rating of each method, a significant proportion of nurses responded "I don't know," and 11/58 (19%) of respondents universally answered "I don't know" to all of the contraceptive safety questions.

We also asked nurses to respond to questions related to the impact of contractive methods on breastfeeding. Thirty-three of 51 nurses (65%) incorrectly responded that DMPA decreases milk supply if started immediately postpartum. Other contraceptive methods including POP, etonogestrel implant, LNG-IUS and Cu-IUD were less commonly perceived to decrease milk supply [13/50 (26%), 14/49 (29%), 6/49 (12%) and 4/48 (8%), respectively]. All participants (55/55) correctly responded that LAM was not an effective form of birth control for women whose menses had returned or who were not exclusively breastfeeding.

In bivariate analyses, prior contraception education was not associated with a difference in correct responses to contraceptive risk rating (no prior education=1.74, prior education=1.67, p=.97). Age greater than the median of 41 years (age≤41 years=1.19, age>41 years=2.12, p=.02) and greater than 20 years of nursing experience (<1 year=1.11, 1–5 years=1.62, 6–20 years=1.56, >20 years=3.11, p=.04) were associated with a significantly higher number of correct responses regarding contraceptive risk rating. We performed a sensitivity analysis that allowed correct responses to include approximate matches by grouping USMEC risk ratings 1 and 2 versus 3 and 4. This analysis also failed to show a significant difference in knowledge of contraceptive safety between nurses with and without prior contraceptive education (no prior education=2.79, prior education=3.0, p=.94).

4. Discussion

This study showed that, at our institution, postpartum nurses often address contraceptive use postpartum with their patients. However, postpartum nurses' knowledge of contraceptive safety and impact on lactation was not consistent with current guidelines, highlighting opportunities for education.

Fewer than one in five postpartum nurses reported having received any contraceptive education. Although we did not find a difference in correct responses to contraception safety questions between nurses who did and did not report prior contraception education, we did not elicit additional detail about the quality, duration or timing of this prior education. In 2018, Benfield et al. [6] showed that formalized contraceptive education for postpartum nurses increased their likelihood of counseling women about long-acting reversible methods but did not have an impact on contraceptive knowledge.

Table 2
Knowledge of immediate (<21 days) postpartum contraceptive safety during lactation among postpartum nurses surveyed at Women and Infants Hospital in 2017

n (row %)	1=No restriction	2=Advantages generally outweigh the risks	3=Risks usually outweigh the advantages	4=Unacceptable health risk	5=I don't know
Combined hormonal contraceptive (estrogen and progestin containing pills, patch, ring) (*n*=55)	2 (3.6)	20 (36.4)	8 (14.6)	5 **(9.1)**[a]	20 (36.4)
Progestin-only pill (*n*=56)	9 (16.1)	14 **(25.0)**[a]	6 (10.7)	2 (3.6)	25 (44.6)
Injectable depot medroxyprogesterone acetate (*n*=56)	7 (12.5)	24 **(42.9)**[a]	7 (12.5)	1 (1.8)	17 (30.4)
Etonogestrel implant (*n*=56)	10 (17.9)	27 **(48.2)**[a]	2 (3.6)	1 (1.8)	16 (28.6)
Levonorgestrel intrauterine system (*n*=55)	9 (16.4)	19 **(34.6)**[a]	4 (7.3)	2 (3.6)	21 (38.2)
Copper intrauterine device (*n*=55)	9 **(16.4)**[a]	17 **(30.9)**	4 (7.3)	2 (3.6)	23 (41.8)

[a] Correct answers in gray boxes.

Only 16% of nurses reported prior contraceptive education, which is in stark contrast to the 100% who reported prior breastfeeding education. Universal breastfeeding education can be attributed to our institution's Baby-Friendly Hospital Initiative [7] that requires lactation education for all hospital staff. The 100% correct response rate to the LAM questions may also be attributed to the education provided as part of this initiative. However, the proportion of correct responses was much lower for questions related to the impact of contraceptive methods on milk supply. Similar to the findings of earlier research [6], our study showed that over half of nurses incorrectly responded that DMPA was detrimental to lactation. These findings suggest that educational initiatives for our nursing team can optimize knowledge related to breastfeeding and contraception. Based on the results of our study, our institution plans to incorporate postpartum contraception education into Baby-Friendly Hospital recertification in order to support both breastfeeding and contraception as two essential and compatible components of postpartum care.

This single-site study is limited by its small sample size and may have been subject to nonresponse bias, possibly limiting generalizability to other settings and populations. Although our response rate was only 50%, our study sample was representative of our postpartum nursing staff in terms of gender, race, ethnicity and age. Additionally, we did not elicit information on specifically how nurses change their contraception counseling based on lactation status. Nevertheless, this investigation highlights an opportunity for improving nursing education on the safety of hormonal contraception for breastfeeding mothers. We hope that this research can be replicated at other institutions with the goal of creating healthcare teams that present accurate and consistent information to postpartum women about contraceptive safety during lactation. Future educational initiatives should aim to integrate information on lactation and contraception for improved maternal health.

Acknowledgments

We would like to acknowledge Lauren Thorngate, PhD, RN, CCRN-K, and the postpartum nurse managers for their roles in implementing this study.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.contraception.2019.04.003.

References

[1] Gelfer P, Cameron K, Kennedy KA. Integrating "back to sleep" recommendations into neonatal ICU practice. Pediatrics 2013;131(4):e1264–70. https://doi.org/10.1542/eds.2012-1857.
[2] Rogers SC, Gallo K, Salaheen H, Lapidus G. Can nurse education in the postpartum period reduce car seat misuse among newborns? J Trauma Acute Care Surg 2013;75(4 Suppl 3):S319–23. https://doi.org/10.1097/TA.0b013e31829cba75.
[3] Bryanton J, Beck CT, Montelpare W. Postnatal parental education for optimizing infant general health and parent-infant relationships. Cochrane Database Syst Rev 2013;11:CD004068. https://doi.org/10.1002/14651858.CD004068.pub4.
[4] Dunn K, Bayer L, Mody S. Postpartum contraception: an exploratory study of lactation consultants' knowledge and practices. Contraception 2016;94(1):87–92. https://doi.org/10.1016/j.contraception.2016.03.007.
[5] Farr S, Folger SG, Paulen M, Langs Jimmy B, Guyton Arthur C, Douglas BH. US medical eligibility criteria for contraceptive use, 2010: adapted from the World Health Organization medical eligibility criteria for contraceptive use, 4th edition. MMWR Recomm Rep 2010;59(RR-4):1–86.
[6] Benfield N, et al. Exposure to routine availability of immediate postpartum LARC: effect on attitudes and practices of labor and delivery and postpartum nurses. Contraception 2018;97(5):411–4. https://doi.org/10.1016/j.contraception.2018.01.017.
[7] The Baby-Friendly Hospital Initiative: guidelines and evaluation criteria for facilities seeking baby-friendly designation. Retrieved from https://www.babyfriendlyusa.org; 2010.