



Knowledge of Implanon® users: implications for nursing care*

Conhecimento de usuárias de *Implanon*®: implicações para o cuidado de enfermagem

Lidiane Nogueira Rebouças¹, Escolástica Rejane Ferreira Moura¹, Fabiane do Amaral Gubert¹, Paulo César de Almeida², Mônica Oliveira Batista Oriá¹, Sarah Rayssa Cordeiro Sales Pinheiro¹

Objective: to evaluate the knowledge of Implanon® users on the characteristics and side effects of the method.

Methods: transversal research, with 106 Implanon® users, with data collected through a form. For bivariate analysis, the chi-square test and the likelihood ratio test were used. **Results:** the majority of women (91.5%) presented adequate knowledge about the fact that the method does not offer protection against sexually transmitted diseases. Regarding the side effects, 35.8% presented moderate knowledge. Years of study showed association with inadequate knowledge about the period of exchange and absence of knowledge about side effects. Time of use did not influence inadequate knowledge about characteristics and side effects. **Conclusion:** the majority of users presented adequate knowledge about the characteristics of the method, years of study obtained association with inadequate knowledge about the period of exchange and lack of knowledge about side effects.

Descriptors: Knowledge; Contraception; Contraceptive Agents; Women's Health.

Objetivo: avaliar o conhecimento de usuárias de *Implanon*® sobre características e efeitos colaterais do método.

Métodos: pesquisa transversal, com 106 usuárias de *Implanon*®, com dados coletados por meio de formulário. Para análise bivariada, utilizou-se o teste de qui-quadrado e de razão de verossimilhança. **Resultados:** a maioria das mulheres (91,5%) apresentou conhecimento adequado sobre o fato de o método não oferecer proteção às doenças sexualmente transmissíveis. Quanto aos efeitos colaterais, 35,8% apresentaram conhecimento moderado. Anos de estudo apresentou associação com conhecimento inadequado sobre período de troca e ausência de conhecimento sobre efeitos colaterais. Tempo de uso não influenciou conhecimento inadequado sobre características e efeitos colaterais. **Conclusão:** a maioria das usuárias apresentou conhecimento adequado sobre características do método, anos de estudo obteve associação com o conhecimento inadequado sobre o período de troca e ausência de conhecimento acerca dos efeitos colaterais.

Descritores: Conhecimento; Anticoncepção; Anticoncepcionais; Saúde da Mulher.

*Extracted from the Dissertation "Conhecimento, satisfação e segurança à saúde de usuárias de implante subcutâneo com etonogestrel", Universidade Federal do Ceará, 2015.

¹Universidade Federal do Ceará. Fortaleza, CE, Brazil.

²Universidade Estadual do Ceará. Fortaleza, CE, Brazil.

Corresponding author: Lidiane Nogueira Rebouças

Rua Alexandre Baraúna, 1115. Rodolfo Teófilo. CEP: 60416-000. Fortaleza, CE, Brazil. E-mail: lidianereboucas@hotmail.com

Introduction

The subcutaneous implant is a contraceptive method composed of small flexible rods that implanted in the subcutaneous tissue of the inner part of the forearm, daily release progesterone-derived hormone into the bloodstream⁽¹⁾.

This etonogestrel method (3-keto-desogestrel) (Implanon[®]) is the only method used in Brazil, approved by the National Sanitary Surveillance Agency, and made available for commercial use in the country since 2000. It contains 68mg of crystalline etonogestrel in ethylene vinyl acetate transporter in the form of a polymerized silicone rod measuring 4 cm in length and 2 mm in diameter. It has an absorption rate of around 60mcg/day after 12 weeks of implantation. At the end of the second year of use, it slowly decreases to 30mcg/day. The bioavailability remains constant throughout this period, with no accumulation of etonogestrel⁽²⁻³⁾.

Pre-insertion counseling is critical to assisting women in deciding how to use the method. Therefore, the orientation should provide global learning about the method, in order to promote the user's autonomy in the post insertion, in order to increase the chances of acceptance and continuity of use⁽⁴⁾. The main side effects that derive from the subcutaneous implant are the menstrual alterations (menstrual cycle irregularity and amenorrhea), mastalgia, headache, nausea, weight gain and acne, being more frequent in the first year of use⁽⁵⁾.

Nurses and physicians of the Family Health Strategy are responsible for offering the subcutaneous implant (orientation, insertion and follow-up), which must be trained, following a technique of adequate asepsis and local anesthetic block. In Ceará, Brazil, the transfer of implants to the municipalities had as a prerequisite the training of a physician and a nurse, who would be at the forefront of promoting the respective sites of action⁽⁶⁾.

In view of the above, it is justified the study by the insertion of nurses in this area of care regarding

the new contraceptive option for users of the reproductive health service, in order to provide the generation of knowledge, based on the demands of the services. So the present research was carried out in order to answer the questions: what is the knowledge of Implanon[®] users about the characteristics and side effects of the method? Is there an association between this knowledge with years of study and time of use?

Thus, the objective was to evaluate the knowledge of Implanon[®] users on characteristics and side effects of the method.

Methods

A cross-sectional study was carried out in municipalities of the 2nd Coordenadoria Regional de Saúde (Regional Coordination of Health) in Ceará, Brazil. The population corresponded to the Implanon[®] users of that Coordination (n=181) and the sample consisted of 106 users, due to the non-location of 75 users (55 were not located by the community health agent, 19 no longer resided in the municipality and one had used the implant for less than three months).

Inclusion criteria were: insertion of the implant into the public service for at least three months, period in which the main side effects may occur; and users permanently or not with the implant, residing in the 2nd Regional Health Coordination. Exclusion criteria were: users who were unable to participate because of health problems (hospitalization) or work or with cognitive impairment, with some neurological disease identified at the beginning of the research presentation and that made it impossible to respond.

Data collection took place from March to November 2014. The interviews were previously scheduled with the users through the Community Health Agents, carried out by one of the authors and took place, in person, in a private venue of the Basic Health Unit, lasting around 20 minutes. The instrument used was a form, elaborated by one of the authors, who underwent a pilot test for adjustments, in which we address the following aspects: socioeconomic cha-

characteristics of subjects (age, years of study and family income); time of use of Implanon®; knowledge about characteristics of the method (no protection against sexually transmitted infections, reversibility, efficacy, time to change method, manner of operation, return to fertility after withdrawal and offer of protection to anemia); and knowledge about side effects.

Knowledge about the characteristics of the method was verified using the five-level Likert Scale developed by the authors (1 strongly agree, 2 agree in part, 3 have no opinion, 4 disagree in part and 5 strongly disagree). Knowledge was considered adequate when participants fully agreed; and inadequate, if not another answer. In the evaluation of the knowledge about side effects, it was considered knowledgeable if the subject did not know any effect; and with knowledge, if the subject knew one or more effects, these being classified in: scarce knowledge, if he knew an effect; moderate, two effects; three effects; substantial and extensive, four or more effects.

For data analysis, bivariate treatment was performed using chi-square and likelihood ratio tests: knowledge about method, adverse effects and time of use of Implanon® and schooling. The data was processed in the Statistical Product and Service Solutions, version 20.0, license no. 10101131007.

This study obtained a favorable opinion from the Research Ethics Committee of the Federal University of Ceará, according to Certificate of Presentation for Ethical Appreciation no. 26418914.5.0000.5054, and opinion nº 543,743. The recommendations of Resolution 466/2012 of the National Health Council of the Ministry of Health of Brazil, which deals with research with human beings, were obeyed. Participants signed a Free and Informed Consent Form.

Results

The age of the participants of Implanon® ranged from 19 to 48 years, with a mean of 31.32 ± 6.18 years, with a prevalence of younger women aged 19 to 34 years 74 (69.8%), followed by the prevalence of wom-

en aged 35-48 years 32 (30.2%). Schooling ranged from five years to 18 years. The predominant groups were: 10 to 12 years of study, 52 (49.1%); and 13 to 18 years of schooling, 34 (32.1%), making a mean of 11.83 ± 3.738 years of study.

The average per capita income was 2.22 ± 2.18 minimum wages, varying from families with income of up to $\frac{1}{4}$ of minimum wage to those with income between one and four minimum wages. There was a predominance of per capita income of more than $\frac{1}{4}$ to $\frac{1}{2}$ minimum wages, 43 (40.6%), followed by income from $\frac{1}{2}$ to 1 minimum salary, 25 (23.6%).

When verifying Implanon® users' knowledge of the characteristics of the method, of the seven items applied, the topics "the method does not prevent sexually transmitted infections", "it is a reversible method", "it is a very effective method and can occur less than one gestation/100 women year" and "method change occurs every three years" presented adequate knowledge by 97 (91.5%). The item "the method works by releasing hormone, which could interrupt menstruation and/or sperm rise and/or ovulation" also indicated adequate relative knowledge by 88 (83.0%) of the subjects, with the items "return of fertility occurs between three and six weeks after the withdrawal of the method" and "the method protects against anemia due to scarcity or absence of menstruation" with lower percentages of subjects with adequate knowledge, 60 (56.6%) and 31 (29, 2%), respectively.

Regarding users' knowledge of the possible side effects of the method, 77 (72.6%) reported that one of the effects referred to changes in the menstrual pattern (increased or decreased flow, irregularity and amenorrhea); 55 (51.9%) were aware of systemic changes (mastalgia and weight changes) and 52 (49.1%) of nervous system disorders (mood changes, irritability, decreased libido, dizziness and mild headache). In this type of questioning, moderate knowledge predominated, 38 (35.8%); and substantial, 29 (27.4%); followed by the scarce, 22 (20.8%); without knowledge, 11 (10.4%); and extensive knowledge, six (5.6%).

Table 1 shows the relationship between the inadequate knowledge of Implanon® users regarding the characteristics of the method and the years of study.

It is observed in Table 1 that inadequate knowledge about the characteristics of the method had a significant association with years of study only in item

four (the change of method occurs every three years). Table 2 presents data between inadequate knowledge about the characteristics of Implanon® and time of using the method.

According to Table 3, inadequate knowledge about the characteristics of Implanon® did not depend on the time of use.

Table 1 – Distribution of the number of Implanon® users, according to inadequate knowledge about method characteristics and years of study

Characteristics of Implanon®	Years of study				p
	≤5 n (%)	6 - 9 n (%)	10 - 12 n (%)	13 - 18 n (%)	
1. Does not prevent against sexually transmitted infections	2(20.0)	1(10.0)	2(3.8)	-	0.077*
2. It is reversible	-	-	6(11.5)	1(2.9)	0.147*
3. It is effective, less than one gestation per 100 women per year	2(20.0)	-	5(9.6)	2(5.9)	0.326*
4. Replace every three years	2(20.0)	-	7(13.5)	-	0.015*
5. It works by releasing hormone, which can interrupt menstruation and/or increase sperm and/or ovulation	4(40.0)	1(10.0)	10(19.2)	3(8.8)	0.144*
6. Return of fertility between three and six weeks after withdrawal of the method	6(60.0)	3(30.0)	26(50.0)	11(32.4)	0.216†
7. Protects against anemia due to scarcity or absence of menstruation	6(60.0)	7(70.0)	37(71.2)	25(73.5)	0.875†

*Likelihood Ratio Test; †Test of χ^2

Table 2 – Distribution of the number of Implanon® users, according to inadequate knowledge about method characteristics and time of use

Characteristics of Implanon®	Time of use (months)				p
	3-12 n (%)	13-24 n (%)	25-36 n (%)	37-42 n (%)	
1. Does not prevent against sexually transmitted infections	-	-	5(6.9)	-	0.263*
2. It is reversible	2(13.3)	12(92.3)	68(94.4)	6(100.0)	0.605*
3. It is effective, less than one gestation per 100 women per year	2(13.3)	1(7.7)	6(8.3)	-	0.689*
4. Replace every three years	1(6.7)	3(23.1)	5(6.9)	-	0.273*
5. It works by releasing hormone, which can interrupt menstruation and/or increase sperm and/or ovulation	1(6.7)	4(30.8)	12(16.7)	1(16.7)	0.407*
6. Return of fertility between three and six weeks after withdrawal of the method	5(33.3)	5(38.5)	32(44.4)	4(66.7)	0.551†
7. Protects against anemia due to scarcity or absence of menstruation	12(80.0)	10(76.9)	50(69.4)	3(50.0)	0.550*

*Likelihood Ratio Test; †Test of χ^2

Table 3 – Distribution of the number of Implanon® users, according to lack of knowledge about adverse effects of the method and years of study/time of use

Adverse effects of Implanon®	Years of study				p	Usage time (month)				p
	≤5 n(%)	6-9 n(%)	10-12 n(%)	13-18 n(%)		3-12 n(%)	13-24 n(%)	25-36 n(%)	37-42 n(%)	
1. Variations of the menstrual pattern	2(20.0)	3(30.0)	13(25.0)	11(32.0)	0.830†	5(33.0)	5(38.0)	17(23.0)	2(33.0)	0.651*
2. Systemic alterations	8(80.0)	3(30.0)	28(53.0)	12(35.0)	0.040†	5(33.0)	3(23.0)	41(56.0)	2(33.0)	0.062†
3. Nervous system disorders	8(80.0)	6(60.0)	26(50.0)	14(41.0)	0.170†	6(40.0)	4(30.0)	42(58.0)	2(33.0)	0.161†
4. Changes in the gastrointestinal system	7(70.0)	8(80.0)	44(84.0)	23(67.0)	0.291†	11(73)	7(53.0)	58(80.0)	6(100.0)	0.068*

*Likelihood Ratio Test; †Test of χ^2

When crossing the user's knowledge about the adverse effects of Implanon® and years of study, table 3 shows statistical significance in relation to systemic alterations ($p=0.040$), with 80.0% lack of knowledge in the users with up to five years of study. Thus, it can be related to low schooling with the difficulty in assimilating the transmitted knowledge. However, more than 50.0% of the interviewees from 10 to 12 years of study with knowledge deficiency in systemic alterations were obtained. No association was found between absence of knowledge about side effects and time of use.

Discussion

The study presented limiting aspects, such as lack of registration of users of the method, change of managers after distribution and insertion of the implant and turnover of nurses, making it difficult to identify the potential participants. As contributions, the study provided a broader discussion about the knowledge of users about characteristics and side effects of the method.

With respect to the users' participation, it is observed that Implanon® is a method used in different age groups, predominating, however, in the reproductive phase⁽⁷⁾.

As for the variable years of study, high school concluded or in conclusion was the aspect that seems to be positive to the knowledge about the use of contraceptive methods. In Brazil, women with up to seven years of schooling had a total fertility rate of 3.07 children, while among those with more years of schooling the rate was 1.69 children per woman⁽⁸⁾. Therefore, in the low educational level variable, the knowledge and use of contraceptive methods were smaller, but it was not, however, the only cause of double fertility.

Low-income women can contribute to less knowledge about contraceptive methods, since access to health services and schooling tends to be lower in this group⁽⁹⁾. The high percentage of women with adequate knowledge about the Implanon® characteristic

of not preventing sexually transmitted infections may be the result of the integration between family planning and sexually transmitted infections services in the cities surveyed, action recommended by public policies on sexual and reproductive health, in Brazil⁽¹⁰⁾.

Adequate knowledge about the reversibility of the subcutaneous contraceptive is also expressive, which may be justified by the predominance of young users, a condition that arouses interest in this characteristic of the method, since the offspring are probably not defined. Over the years, there is a tendency for more women to use long-acting reversible contraception until menopause, even avoiding surgical sterilization. However, some obstacles need to be overcome, such as difficulty of access and high cost⁽¹¹⁾.

The efficacy and timing of replacement of Implanon® other two characteristics of the method with a high percentage of users evaluated with adequate knowledge, may be stimulating users to the method, as it is the case of this and others of prolonged use⁽⁷⁾.

The mode of operation of Implanon® also obtained a high percentage of users with adequate knowledge, when analyzing from the point of view that they are more technical information and that the method does not require user control, making it less interested in the way of functioning, could be justified if it had lower knowledge percentage⁽¹²⁾.

Return to fertility after withdrawal of the subcutaneous contraceptive and non-contraceptive benefit of the method in contributing to anemia prevention were the two characteristics with lower percentile of users evaluated with adequate knowledge. In this respect, it is relevant for professionals dealing with the offer of the method researched, to emphasize such information in the guidelines given to the target audience, since these are reports that may arouse interest and aggregate more users to the method⁽¹²⁾.

Years of study presented association only with inadequate knowledge about the characteristic of Implanon® "the change of method occurs every three years". Despite the absence of statistical association, the inadequate knowledge corresponded to the high-

est percentage of users with up to five years of study, on the characteristics of the subcutaneous contraceptive: it does not offer protection against sexually transmitted infections, high efficacy and mode of functioning. A study carried out in southern Ethiopia found a similar finding, identifying that women who did not have formal education and with fragility in the pre-insertion counseling were determinant in the discontinuation of Implanon®⁽¹³⁾.

Regarding the side effect, the menstrual changes (increased or decreased flow, irregularity and amenorrhea) reached a higher percentage of subjects with adequate knowledge, while the alterations of the gastrointestinal system presented a lower percentage of subjects with adequate knowledge. The menstrual alteration is experienced in the first six months of use, with a tendency to improve the pattern in the future, and in the face of the experience, women assimilate the effect well⁽¹¹⁾, which may have resulted in a higher adequate percentage in this research. In gastrointestinal alterations, since women do not experience this effect more intensely, they may have had communication weaknesses in order to assimilate information and have failed the health education process. The main reasons for discontinuation of Implanon® are in coping with side effects⁽¹¹⁾.

Some justifications may explain the findings regarding users' knowledge gaps about side effects. The deficiency in the guidelines by the professional⁽¹³⁾ is one of these, adding also the limitation of time for greater clarification and better assimilation of the knowledge by the users or many users, in a long time of use of the method, with difficulty to remember guidelines.

Years of study influenced the lack of knowledge about side effects resulting from the use of the implant, with regard to systemic alterations. One of the systemic alterations mentioned by the users of the method was weight gain, but this gain with isolated progestogen methods is similar to that found in users of other hormonal and non-hormonal contraceptive methods, and women should be reviewed if there was any change in the style of life and in the diet⁽¹¹⁾.

The data of this research show that despite the predominance of women with high school or university, there was no effective assimilation of knowledge, which may have had an impact on the quality of professional assistance when offering the method. Interventions are necessary for follow-up of reproductive health services, and availability of guidelines on adverse effects, making sure that they are understood by the user, making an informed choice⁽¹³⁾.

A study carried out in Yemen, an Arab country, with a large number of women using Implanon®, with grade school, found prevalence of users with little knowledge about side effects, however, they presented a satisfactory attitude related to these consequences, identifying a correlation between them⁽¹⁴⁾.

Therefore, it is recommended a more effective educational approach on the side effects of long-term reversible contraceptive methods, such as the Implanon® case, which is not well understood by users of contraceptive methods, as these effects may increase the dropout rate due to the absence confidence in the information⁽¹⁵⁻¹⁶⁾.

Family planning counseling, carried out by nurses, should reinforce the strategy of health education, aiming to constitute a tool for the construction and reconstruction of knowledge, which stimulates dialogue and the participation of users in the promotion of autonomy and decision in the process of safe choices that better fit life and provide a higher level of satisfaction and adherence to the method⁽¹³⁾.

Fragility in previous contraceptive counseling, difficulty in accessing health professionals, and inadequate management of adverse effects may contribute to discontinuity, weakening effective adherence to the method⁽⁷⁾.

Conclusion

The majority of users presented adequate knowledge about the characteristics of the method. There were gaps in the users' knowledge of the side effects. In addition, the variable years of study present-

ted association with inadequate knowledge about the period of exchange and absence of knowledge about side effects.

Acknowledgments

To the Coordenação de Aperfeiçoamento de Pessoal de Nível Superior, for the granting of the scholarship during the period of master's degree of author Lidiane Nogueira Rebouças.

Collaborations

Rebouças LN contributed in the conception and design, analysis and interpretation of the data, writing and final approval of the version to be published. Moura ERF and Gubert FA collaborated with design, relevant critical review of intellectual content and final approval of the version to be published. Almeida PC, Oriá MOB and Pinheiro SRCS assisted in the analysis and interpretation of the data and relevant critical revision of the intellectual content.

References

1. Ministério da Saúde (BR). Relatório de recomendação - n°. 208: Implante subdérmico liberador de etonogestrel 68 mg para anticoncepção em mulheres de 15 a 19 anos de idade [Internet]. 2016 [citado 2019 jan. 09]. Disponível em: http://conitec.gov.br/images/Relatorios/2016/Relatorio_ImplanteEtonogestrel_Anticoncepo_final.pdf
2. Ministério da Saúde (BR). Secretaria de Atenção à Saúde, Departamento de Atenção Básica. Caderno de Atenção Básica – n°. 26: saúde sexual e reprodutiva [Internet]. 2013 [citado 2019 jan. 09]. Disponível em: http://bvsms.saude.gov.br/bvs/publicacoes/saude_sexual_saude_reprodutiva.pdf
3. Vickery Z, Madden T, Zhao Q, Secura GM, Allsworth JE, Peipert JF. Weight change at 12 months in users of three progestin-only contraceptive methods. *Contraception*. 2013; 88(4):503-8. doi: <https://doi.org/10.1016/j.contraception.2013.03.004>
4. Kukstas C. The contraceptive implant. *InnovAiT: education and inspiration for general practice*. 2016; 9(8):461-7. doi: <https://doi.org/10.1097/GRF.0b013e318159c2f6>
5. Pillay D, Chersich MF, Morroni C, Pleaner M, Adeagbo OA, Naidoo N, et al. User perspectives on Implanon NXT in South Africa: a survey of 12 public-sector facilities. *S Afr Med J*. 2017; 107(10):815-21. doi: <https://doi.org/10.7196/SAMJ.2017.v107i10.12833>
6. Øvre-Eide V, Skjeldestad F. Use pattern for contraceptive implants in Norway. *Acta Obst Gynecol Scand*. 2016; 95(11):1244-50. doi: <https://doi-org.ez11.periodicos.capes.gov.br/10.1111/aogs.13002>
7. Mubarik M, Jameel N, Khalil R. Knowledge, attitude and utilization of sub-dermal birth control implants among married rural women of Pakistan. *Int J Res Med Sci [Internet]*. 2016 [cited Jan 09, 2019]; 4(6):2229-39. Available from: https://www.ejmanager.com/mnstemps/1/khb_004_06-321.pdf?t=1544386738
8. Instituto Brasileiro de Geografia e Estatística. Síntese de Indicadores Sociais: uma análise das condições de vida da população brasileira: 2018 [Internet]. 2018 [citado 2019 jan. 09]. Disponível em: <https://biblioteca.ibge.gov.br/visualizacao/livros/liv101629.pdf>
9. Braga GC, Vieira CS. Anticoncepcionais reversíveis de longa duração: Implante Liberador de Etonogestrel (Implanon®). *Femina [Internet]*. 2015 [citado 2019 jan. 09]; 43(1):7-14. Disponível em: <http://files.bvs.br/upload/S/0100-7254/2015/v43nsuppl1/a4849.pdf>
10. Federação Brasileira das Associações de Ginecologia e Obstetrícia (Febrasgo). Contracepção reversível de longa ação. Série Orientações e recomendações [Internet]. 2016 [citado 2019 jan. 09]. Disponível em: https://www.febrasgo.org.br/media/k2/attachments/03CONTRACEPCAO_REVERSIVEL_DE_LONGA_ACAO.pdf
11. Almeida RAAS, Corrêa RGCF, Rolim ILTP, Hora JM, Linard AG, Coutinho NPS, et al. Knowledge of adolescents regarding sexually transmitted infections and pregnancy. *Rev Bras Enferm*. 2017; 70(5):1033-9. doi: [dx.doi.org/10.1590/0034-7167-2016-0531](https://doi.org/10.1590/0034-7167-2016-0531)

12. Almeida RAAS, Corrêa RGCF, Rolim ILTP, Hora JM, Linard AG, Coutinho NPS, et al. Knowledge of adolescents regarding sexually transmitted infections and pregnancy. *Rev Bras Enferm.* 2017; 70(5):1033-9. doi: [dx.doi.org/10.1590/0034-7167-2016-0531](https://doi.org/10.1590/0034-7167-2016-0531)
13. Nageso A, Gebretsadik A. Discontinuation rate of Implanon and its associated factors among women who ever used Implanon in Dale District, Southern Ethiopia. *BMC Women's Health.* 2018; 18(1):189. doi: [dx.doi.org/10.1186/s12905-018-0678-x](https://doi.org/10.1186/s12905-018-0678-x)
14. Banafa NS, Al-Hanshi AS, Almualm Y, Alkathiri, MO. Knowledge and attitude about side effect of implanon (implant) among women attend Primary Health Center - Al-Mukalla District, Yemen. *Acta Sci Med Sci [Internet].* 2017 [cited Jan 9, 2019]; 1(1):32-7. Available from: <https://actascientific.com/ASMS/pdf/ASMS-01-0009.pdf>
15. Manica D, Nucci M, Sob a pele: implantes subcutâneos, hormônios e gênero. *Horiz Antropol.* 2017; 23(47):93-129. doi: [dx.doi.org/10.1590/s0104-71832017000100004](https://doi.org/10.1590/s0104-71832017000100004)
16. Averbach S, Kakaire O, Kayiga H, Lester F, Sokoloff A, Byamugisha J, et al. Immediate versus delayed postpartum use of levonorgestrel contraceptive implants: a randomized controlled trial in Uganda. *Am J Obstet Gynecol.* 2017; 217(5):568.e1-568.e7. doi: <https://doi.org/10.1016/j.ajog.2017.06.005>