



Importance and Benefits of the Use of Combined Injectable Contraceptives in Adolescents Aged 15 to 19 Years in Ecuador

Genesis Vanesa Montesdeoca Abad¹, Gerardo Ramos Serpa²

¹Carrera de Enfermería. Extensión Ambato. Email: ea.genesisvma96@uniandes.edu.ec
ORCID ID: 0000-0001-6236-684X

²Carrera de Enfermería. Matriz Ambato. Email: gerardoramos@uniandes.edu.ec
ORCID ID: 0000-0003-3172-555X

*Corresponding author's E-mail: ea.genesisvma96@uniandes.edu.ec

Article History	Abstract
Received: 06 May 2023 Revised: 05 August 2023 Accepted: 31 August 2023	<p>Currently in Ecuador the rate of teenage pregnancies has increased despite the strategic plans established by the Ministry of Public Health, which indicates the need to socialize the use of contraceptive methods. The objective of the study was to delimit the degree of knowledge and preferences regarding combined injectable contraceptive methods (CIC) in adolescents and to characterize the benefits of their use. For this, the methods of bibliographic review, interview and analytical-synthetic were used. The results indicated that a high rate of adolescents are unaware of the benefits of CIC, showing the need to socialize contraceptive methods that currently have shown positive results, as well as that the side effects of the use of these contraceptives decrease, they are low cost, easy to acquire and administer, which has made it suitable for adolescents, also showing benefits at the level of the lipid profile, maintaining these normal levels or even reducing them, likewise at the level of the cardiovascular system, maintaining hemostasis and reducing weight.</p>
CC License CC-BY-NC-SA 4.0	Keywords: Contraception, Adolescent pregnancy, Combination drug therapy.

1. Introduction

Although contraceptive methods had their appearance for 6 decades according to data from the World Health Organization (WHO) of the year 2020, approximately 214 million women in industrializing countries, of childbearing age, are not users of contraceptives.

More than 22% of Latin American women start their sexual life before the age of 15, according to the United Nations Children's Fund (UNICEF) (1). Likewise, the early pregnancy rate in Latin America and the Caribbean remains the second highest in the world, estimated at 66.5 births per 1000 girls between 15 and 19 years of age, adolescent pregnancy is an international health problem, and no effort should be spared to generate rules, regulations and intervention strategies in primary health care that allow these rates to be gradually reduced (2). This may be due to population growth, the scarcity of family planning services, and the lack of information and access to health services, especially for adolescents and low-income people, whether for cultural or religious reasons.

Currently in Ecuador Two out of three adolescents between the ages of 15 and 19 are mothers or pregnant for the first time. And of these, 44.3% interrupted their studies or did not return to study without taking into account the health problems that a teenage pregnancy entails, as well as the social and economic problems that lead to poverty due to the condition and the means in which they develop (3).

According to data from the National Institute of Statistics and Censuses (INEC), a sociodemographic study on knowledge of contraceptive methods showed that the highest percentage of lack of knowledge about contraceptive methods and that encompasses all levels of education is observed in the group of women between 15 and 24 years of age. this is linked to the lower level of education, since only in 2005 and 2006 35.8% of women without any type of education were totally unaware of family planning, mainly in the Ecuadorian Amazon (4).

Ecuador has the highest rate of teenage pregnancy in Latin America and the Caribbean, followed by countries such as Honduras and Venezuela, the predominant age of pregnant adolescent women is between 17 and 19 years of age, however, there are also pregnancies in ages ranging between 14 and 16 years, glimpsing a problem that requires attention from the instances of health (5).

This problem that has been present in the country for several years could be controlled with appropriate advice and the pertinent provision of contraceptive means, which according to the Regulation on Access to Contraceptive Methods established by the Ministry of Public Health (MSP) in ministerial agreement 2490 in chapter III Art. 6 mentions that the establishments of the health system will guarantee the necessary information on contraception, as well as personalized attention in a medical center which has sufficient supply to offer the contraceptive required by the user (6).

The opening to this service is an essential component of comprehensive health care for adolescents, since contraception aims to delay pregnancy, which in adolescents allows to reduce health problems related to maternal death, abortions (7), and the health risks that these entail and continue with their studies and personal development together with a responsible sex life.

The scientific problem in this study is the lack of knowledge among adolescents of the importance and benefits of using combined injectable contraceptive methods.

Objectives

To limit the degree of knowledge and preferences regarding combined injectable contraceptive methods in adolescents. To characterize the benefits of using combined injectable contraceptive methods in adolescents.

2. Materials And Methods

A The present study was carried out with the method of bibliographic review, in which articles, contraceptive guides and sociodemographic data were used as sources of information, from sources such as:

BMC Public Health (Impact of a community contraceptive counselling intervention on adolescent fertility rates a quasi-experimental study)

Committee on Sexual and Reproductive Rights Ecuador CODESER (Hormonal Contraception)
Elsevier (Preventing, but not caring for, Adolescent Pregnancies? Disparities in the Quality of Reproductive Health Care in Sub-Saharan Africa, Best Practice & Research Clinical Obstetrics and Gynaecology Improving access to and use of contraception by adolescents: What progress has been made, what lessons have been learnt, and what are the implications for action? Beyond Individual-Level Theorizing in Social Norms Research: How Collective Norms and Media Access Affect Adolescents Use of Contraception)

Nursing Research (Public policies associated with sexual and reproductive education and the contribution of nursing)

INEC (Ecuadorian women who know and use contraceptive methods, Analysis of statistical information)

Journal of Adolescent Health (Preventing, but Not Caring for, Adolescent Pregnancies? Disparities in the Quality of Reproductive Health Care in Sub-Saharan Africa)

Korean Journal of Family Medicine (Effect of the Monthly Injectable Combined Contraceptives versus Oral Contraceptive Pills on Mood)

MSP (National Plan for Sexual and Reproductive Health 2017-2021; Regulations to Regulate Access to Contraceptive Methods)

PubMed: (Comparative performance of a combined injectable contraceptive (50 mg norethisterone enanthate plus 5mg estradiol valerate) and a combined oral contraceptive (0.15 mg levonorgestrel plus 0.03 mg ethinyl estradiol) in adolescents)

PAHO (Family Planning, a Global Handbook for Family Planning Providers)

Revista de Pesquisa Cuidado é Fundamental Online (Safe use of injectable hormonal contraceptives according to medical eligibility criterio)

Revista ginecológica y obstetricia de México (Combined injectable contraceptives)

Revista de Obstetricia y Ginecología de Venezuela (Hormonal contraceptives)

Espacios Magazine (Teenage pregnancy as a public health problem in Latin America)

A total of 20 documents were analyzed, 15 of them with population samples.

The tool used to obtain data was the interview, applied to a population of 23 adolescents, whose defining characteristic was the age range of 15 to 19 years.

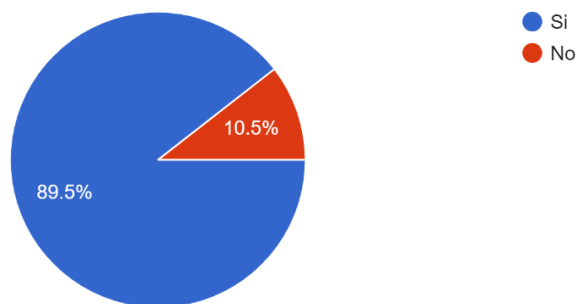
In addition, the analytical-synthetic method was used to interpret the materials and the results obtained.

3. Results and Discussion

A survey was applied to 23 adolescents, students of the first semester of the career of Nursing, Faculty of Health Sciences, of the Regional Autonomous University of the Andes - Uniandes - in Ambato, all of Ecuadorian nationality, 88.5% of mestizo ethnicity and 10.5% indigenous, as for the area in which they reside 55.6% reside in rural areas while 44.4% reside in urban areas. 89.5% from the Sierra region and 10.5% from the Amazon, which allowed the following results to be obtained.

Question 1: Have you received information about sexual and reproductive health (contraception) from sources such as the MSP or educational talks?

Figure 1.



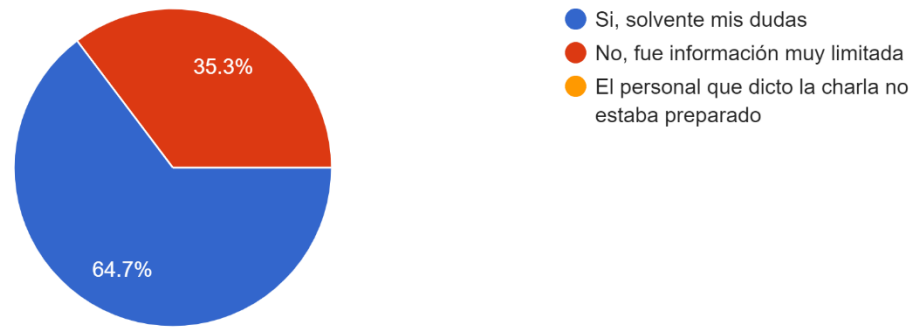
Source: Authors.

89.5% of the population mentioned having received talks about sexual and reproductive health, that is, about "contraception", speaking in general terms, and only 10.5% did not know about these issues.

Question 2: If your answer was "YES", do you think that information was enough to answer your questions about contraception?

Figure 2

Importance and Benefits of the Use of Combined Injectable Contraceptives in Adolescents Aged 15 to 19 Years in Ecuador

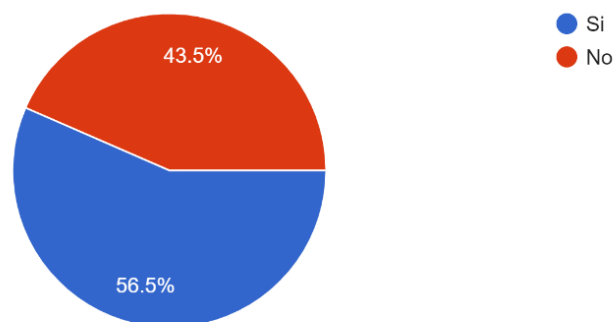


Source: Authors.

Adolescence is a time of constant both physical and psychological and social, where doubts arise about sexuality mainly, previously mentioned that 89.5% have received information on sexual and reproductive health where adolescents are expected to receive sufficient and necessary information to be able to lead a responsible sex life, here it is evident that 35.3% received very limited information about it, that is, They have doubts about contraception. As for the work carried out by nursing staff in the field of sex education, it can be substantiated that they are one of the important actors in this process, since their role is the education of the individual, family and community, and although in our country there is a shortage of resources (8).

Question 3: Do you know about combined injectable contraceptive methods?

Figure 3.

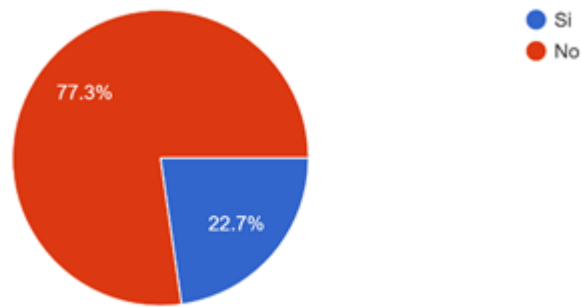


Source: Authors.

The data show that 43.5% of the population studied does not know about combined injectable contraceptive methods, this being a determinant when choosing a contraceptive method or being informed about it.

Question 4: If your answer was positive, do you know the benefits of combined injectable contraceptives?

Figure 4.



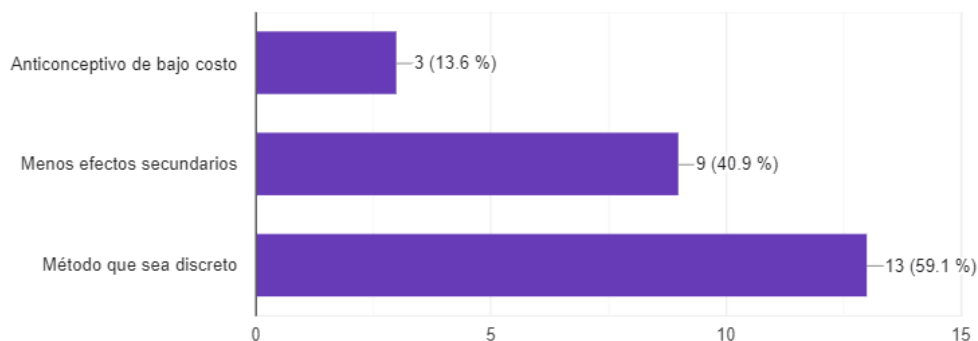
Source: Authors.

77.3% of the population does not know the benefits of using a combined injectable contraceptive method, this response responds to the objective of this research to be able to socialize the importance of choosing a contraceptive method that contains a minimum of side effects, as well as a greater adherence to the treatment by its mode of administration. A study of 251 adolescents undergoing ICA and COC between 14 and 19 years of age concluded that the monthly injectable is a recommended contraceptive option for adolescents, especially for those facing psychosocial risk factors. (9).

Hence the need to be able to carry out future research to find the failure of the health system in Ecuador in terms of improving the sexual and reproductive health plan or promoting the use of contraceptive methods in an adolescent population.

Question 5: When choosing a contraceptive method, your choice criteria are:

Figure 5.



Source: Authors.

59.1% when choosing a contraceptive method focuses on discretion, which in the first instance leaves aside the use of oral contraceptives that are daily or the use of patches that are visible. Focusing on fewer side effects, 40.9% are guided by this characteristic which sets AICs apart from others. Likewise, 13.6% say they choose for the cost which is also one of the benefits that stand out above the others since an AIC such as the one composed of norethisterone enanthate and estradiol valerate is very accessible, surrounding the \$ 4.00 to \$ 6.00 dollars. Similarly, together with the above, from the literature review carried out it has been possible to verify that the high rate of teenage pregnancies over these years has increased, and with it its consequences.

According to the data shown at the country level, an early intervention is needed to socialize about the use of contraceptive methods (10), even more so of those that, as in this case, are combined injectable contraceptives (AIC), whose benefit is not based solely on contraception, but on the characteristics of this that make it very eligible because it is practical, safe, discreet and above all because it is very

Importance and Benefits of the Use of Combined Injectable Contraceptives in Adolescents Aged 15 to 19 Years in Ecuador

applicable in late adolescence, which includes a range of 15 to 19 years of age, in which a high percentage of adolescents begin their sexual life. This type of contraceptive is comfortable to administer and causes a lower metabolic risk creating a good adherence to treatment since it has high effectiveness, long action because they are monthly, and causes fewer alterations in the bleeding pattern.

It has been found a high percentage of unwanted pregnancies in adolescents that generates an impact at an economic, family and social level without neglecting the health problems caused by this situation, being able to offer the benefits of a safe, effective, discreet contraceptive method, with a lower impact, which presents a minimum of side effects at a general level and above all stands out for its excellent control of lipid metabolism compared to others methods, and likewise its accessibility, which is available in health centers with free access to these but also accessible particularly at a price ranging from \$4.00 to \$6.00 dollars with a single monthly administration.

The evaluation of the National Plan for Good Living 2013-2017 showed an increase in the rate of live births to adolescent mothers, related to the implementation of the Family Plan in 2014, which showed an increase of eight points in the rate of live births per 1,000 adolescent women aged 15 to 19 (from 71.86 to 80.31), which contrasts with the values of this rate in Latin America and the Caribbean, reaching 66.5 births per 1,000 adolescent females aged 15-19 (11).

The above shows that this curve of teenage pregnancy, despite the strategic plans established at the country level and the efforts made to have a strategy on paper, present a failure since the values have been increasing since 2014, also as a result of the pandemic the figures are alarming.

This research is evidence of the need to socialize adolescents with a contraceptive method, speaking in this case of a Combined Injectable Contraceptive (AIC) for its benefits and especially for being a reversible method for this age group. Adolescence is a period of rapid sociocognitive development, where the social environment plays an important role in the formation of identity, the development of value systems and modes of behavior. For this reason it is important that adolescents also know about their sexual and reproductive rights for access to contraception according to their needs. (12).

Some characteristics of injectable contraceptives that allow the satisfaction of users are: access to the method (including application), high efficacy, long duration (dispensing daily control as in oral use), being reversible since fertility recovers once treatment is suspended, and presenting few side effects, unlike for example progestin monotherapy.

In 2016 a study was conducted in Denmark in women aged 15 to 34 years without a clinical history of diagnosis of depression, through this study they concluded that the use of hormonal contraceptives, especially rings, patches or forms of progesterone alone, was associated with the subsequent use of antidepressants (13).

According to a study conducted with a formulation of progestin alone injectable, I conclude that this is the only contraceptive method with a deleterious effect and demonstrated on insulin resistance, it is injectable medroxyprogesterone acetate of 150 mg quarterly, as it increases BMI and abdominal fat, also bone mineral loss in adolescents which may increase the risk of osteoporosis in the future (14), and if administered in the puerperium increases the risk of developing diabetes mellitus in the following 2 years, also mentioned that there has been a slight increase in triglycerides in healthy women using OAC, patches and rings (15).

Within the medical criteria for eligibility for the use of an injectable hormonal contraceptive (AHI), a study was conducted with participants aged 16 to 41 years where nursing students offered family planning services, with nursing consultations and health education activities such as health promotion. Within this study it was concluded that as the nursing staff is the one who administers the injection in the nursing service, they should value the information that the patient has about the method both in the sense of understanding the use and functioning of this, and in the sense of keeping under control possible side effects of each type of contraceptive since these factors also intervene in the continuation of the method (16).

The aforementioned studies show how the use of hormonal contraceptives such as the use of a single progestin, patch, oral contraceptive or ring, have a variety of negative effects on users compared to the effects of an AIC that apart from its limited side effects brings very interesting benefits for use in contraception. There are factors associated with the satisfaction of injectable contraceptive users with the method: type of contraceptive and continuity of use, with the highest percentages of dissatisfaction among users of exclusive progestogen injectable contraceptives, who decided not to continue with the use (17).

The AIC has a mechanism of action that prevents ovulation in 99% of cases, which have a regular application ie 1 single dose 1 time a month administered correctly, this will facilitate adherence to treatment (18). The most commonly used compound that meets all the above characteristics contains 50 mg of norethisterone enanthate and 5 mg of estradiol valerate whose trade name is Mesigyna, Femgyl, Soluna 5, Noferty.

A phase III clinical trial in Latin American women evaluated the side effects and efficacy of Mesigyna, where the 1-year pregnancy rate was 0 per 100 women, The discontinuation rate for bleeding problems was 5.1%. Colombian women had a significant increase in bleeding problems compared to other countries. The dropout rate for amenorrhea was 1.1%. There were no significant differences between groups regarding discontinuation for other medical or non-medical reasons. The mean weight gain after one year of use was 1.02 kg (19). Mesigyna is a once-a-month injectable contraceptive appropriate for Latin American women as it is highly effective and their perception of normal menstrual bleeding is important in the Latin American population.

In another study conducted on a total of 251 adolescents aged 14 to 19 provided significant information for the present research, this study group was followed for 12 months. Where the AIC group (124 subjects) was studied for 1044 cycles and the AOC group (127 subjects) was studied for 1368 cycles. The groups were compared using methods that yield 95% confidence results, here it was shown that at 12 months, the AIC group showed a significant decrease in weight and an increase in hypermenorrhea. In the COC group, dysmenorrhea decreased, and hypomenorrhea and regular cycles were significantly more frequent. One pregnancy occurred in the OC group. The final continuation rates at 12 months were 41.9% and 37.8% for HF and OC, respectively. Thus, it was concluded that the monthly injectable is a recommended contraceptive option for adolescents, especially for those who face psychosocial risk factors (20). Likewise, in a multicenter WHO study on Mesigyna and its lipid metabolism level, a decrease in high-density lipoproteins (HDL-C, -10%), apolipoprotein AI (-9%) and triglycerides (-15%) (9).

4. Conclusion

It is concluded that, in view of the statistical data from Ecuador, adolescent pregnancy levels have increased significantly compared to the measures and plans for the reduction of these percentages at the country level, and it is necessary to take measures to socialize a contraceptive method that adheres to the needs of adolescents in the face of their lack of knowledge of the benefits of an AIC. Similarly, in the population of adolescents studied, it was found that there is a low level of knowledge and preferences regarding combined injectable contraceptive methods. The study shows the enormous benefits and advantages of using this type of contraceptive in adolescents.

References:

1. ECLAC. Latin America and the Caribbean 30 years after the adoption of the Convention on the Rights of the Child. COMEconomic Agency for Latin America and the Caribbean (ECLAC)/United Nations Children's Fund [Internet]. 2018;87. Available from: https://www.unicef.org/lac/media/8481/file/PDF_Latin_America_and_the_Caribbean_30_years_after_the_adoption_of_the_Convention_on_the_Rights_of_the_Child.pdf
2. Authors D. ScienceDirect Response to the article : Pregnancy in adolescence and adverse neonatal outcomes in Ecuadorian mestizo newborns. 2022;(2020):463–4.
3. Flores E. Contraception hormonal. Second Ed. Bucheli R, Noboa E, editors. Quito: Imprenta Mariscal Cía Ltda: Bayer Pharmaceuticals Ecuador; 2021. 696 p.

4. Ramos E. Ecuadorian women who know and use contraceptive methods. INEC [Internet]. 2008;(Printing Graphic Workshops of INEC Quito-Ecuador):20. Available from: https://www.ecuadorencifras.gob.ec/documentos/web-inec/Bibliotecas/Estudios/Estudios_Socio-demograficos/Metodos_anticonceptivos.pdf
5. Martínez EA, Montero GI, Zambrano RM. Teenage pregnancy as a public health problem in Latin America. *Spaces*. 2020;41(47):1–10.
6. Ministry of Public Health of Ecuador. Instructions for implementation of contraceptive methods - Ministerial Agreement 2490. Dirección Nacional de Normatización [Internet]. 2014;8–11. Available from: https://aplicaciones.msp.gob.ec/salud/archivosdigitales/documentosDirecciones/dnn/archivos/instrutivo_de_implementación_del_acuerdo_ministerial_2490_aprobado.pdf
7. Moucheraud C, McBride K, Heuveline P, et al. Preventing, but not caring for, adolescent pregnancies ? Disparities in the quality of reproductive health care in Sub-saharan Africa. *J Adolesc Heal* [Internet]. 2022;1–7. Available from: <https://doi.org/10.1016/j.jadohealth.2022.02.012>
8. Lopez Andy GL, Analuisa Jimenez EI. Policies public studies associated with sexual and reproductive education and the contribution of Nursing. *Nursing Research*. 2021;6(5):74.
9. Vallejo-Maldonado MS. Combined injectable contraceptives. *Ginecol Obs Mex* [Internet]. 2020;88(1):S32–41. Available from: <https://www.medigraphic.com/pdfs/ginobsmex/gom-2020/goms201e.pdf>
10. Garcia-Franco AL, Antonio J, Fernández B, Pi MJI, Ortega A, Mu EB, et al. Primary Care. 2022;52.
11. Ministry of Public Health of Ecuador. National Plan for Sexual and Reproductive Health 2017-2021. Direction of Normatization of the National Health System. Ministry of Public Health of Ecuador [Internet]. 2017;85. Available from: SS & SR https://ecuador.unfpa.org/sites/default/files/pub-pdf/PLAN_2017-2021.pdf
12. Sedlander E, Rimal RN. Beyond individual-level theorizing in social norms research : how collective norms and media access affect adolescents' use of contraception. *J Adolesc Heal* [Internet]. 2022;64(4):S31–6. Available from: <https://doi.org/10.1016/j.jadohealth.2018.12.020>
13. Khafagy GM, Shalaby HL, Saad NE, Hasan MD. Effect of the monthly injectable combined contraceptives versus oral contraceptive pills on mood. *Korean J Fam Med*. 2021;42(6):471–6.
14. Jatlaoui TC, Ermias Y, Zapata LB. Contraception [Internet]. 21st Editi. Nelson. Treatise on pediatricsía. Elsevier Espa#241;a, S.L.U.; 2022. 992–1010 p. Available from: <http://dx.doi.org/10.1016/B978-84-9113-684-2/00143-6>
15. Yaremenko F. ACOS review. 2016;76(Suppl 1):85–8.
16. Farias AG da S, Lima ACS, Brasil RFG, Moura ERF, Cunha M da C dos SO, Melo FM de S. Safe use of injectable hormonal contraceptives according to medical eligibility criteria. *Rev Pesqui Cuid é Fundam Online*. 2018;10(2):368–73.
17. Farias A, Lima A, Brasil R, Cunha M da C, Oliveira G, Moura E. Satisfaction of combined and exclusive injectable contraceptive users of progestogen and associated factors. *Rev da Rede Enferm do Nord*. 2017;18(3):345.
18. PAHO. Family planning. A Global Handbook for Family Planning Providers [Internet]. Pan American Health Organization and Johns Hopkins Bloomberg School of Public Health/Center for Communication Programs. 2019. 291–306 p. Available from: https://iris.paho.org/bitstream/handle/10665.2/51918/9780999203729_spa.pdf?sequence=6&isAllowed=y
19. Bassol S, Cravioto MC, Durand M, Bailon R, Carranza S, Fugarolas J, et al. Mesigyna® once-a-month combined injectable contraceptive: Experience in Latin America. *Contraception* [Internet]. 2000 Sep 1;61(5):309–16. Available from: [https://doi.org/10.1016/S0010-7824\(00\)00109-8](https://doi.org/10.1016/S0010-7824(00)00109-8)
20. Molina RC, Sandoval JZ, Montero A V, Oyarzún PG, Molina TG, González EA. Comparative performance of a combined injectable contraceptive (50 mg norethisterone enanthate plus 5mg estradiol valerate) and a combined oral contraceptive (0.15 mg levonorgestrel plus 0.03 mg ethinyl estradiol) in adolescents. *J Pediatr Adolesc Gynecol*. 2009 Feb;22(1):25–31.