

Original Research Article

Knowledge and Practice of Hormonal Contraception among High School Teens

ABSTRACT

Background: Unwanted pregnancies in sexually active teenagers give headaches to many parents and are devastating for the girls themselves. The use of hormonal contraception (HC) is an issue, but the promotion of HC at this age is perhaps a complex issue.

Objective: Evaluate knowledge and practice of HC among high school girls in Rwanda.

Methods: 134 girls aged 15 to 19 from two high schools responded confidentially to a standard open questionnaire on their knowledge and practice of HC.

Results: More than 87% of those surveyed had heard of HC, but not everyone could tell the exact role of taking birth control pills. The main source of information on contraception was the media and health care providers, while parents and the role of school education were negligible. About 10.4% of respondents confirmed having used HC on their own initiative or under pressure from their partners. The reason girls practice sex at this age is mainly poverty, the need to live luxuriously and culture. More than half expect to use contraception if the cost is affordable and they have complete information on side effects and how to use it.

Conclusion: A marginal group of schoolchildren practice HC. They need good information about it. However, there is still controversy in Africa over whether to promote the use of contraception at the secondary level. After all, adequate educational intervention through other means of reducing unwanted pregnancy rates among sexually active adolescents is of great importance.

Keywords: Teenagers, High school, Hormonal contraception, Knowledge, Practice, Rwanda

1. INTRODUCTION

World statistics on pregnancy and childbirth indicate that about 16 million girls aged 15 to 19 give birth each year and the consequences are multiple [1]. Girls who have a baby are very likely to withdraw their school, and their children are likely to have poor education, bad behavior and health problems [1-4]. The practice of contraception (PC) is a way to prevent unwanted pregnancies and their consequences. The PC provides other important health benefits by reducing maternal morbidity and mortality related to pregnancy, promoting women's empowerment and ensuring long-term environmental sustainability [2-4]. Many methods of contraception are available and some are well designed for emergency use. Emergency contraception (EC) is the last chance for women to avoid pregnancy after

unprotected intercourse [5-7]. The combination of oral contraceptive pills and condoms also provides dual protection against pregnancy and sexually transmitted infections.

However, despite a strong awareness among young people about hormonal methods, teenage pregnancy remains a major socio-economic and health problem worldwide. Unwanted pregnancy is associated with many factors such as the frequency of sexual intercourse without reliable contraception, poor sexual communication between partners, over-consumption of alcohol, fear of hormonal contraceptives, and poor school sex education. Data from many surveys show that contraceptive use rates are much lower among adolescents aged 14 to 19 than among young adults aged 20 to 24 years.

In Rwanda, every year, about 47% of all pregnancies in the country are involuntary, a proportion that varies slightly from one province to another [8]. The Government of Rwanda has made great efforts to reduce unwanted pregnancies among girls by integrating a sex education program into secondary education and education throughout the health care cycle. According to the UNICEF report, this resulted in a reduction from 74 births in 1960 to 26 births per 1,000 girls aged 15 to 19 in 2015 [9]. Since the contribution of hormonal contraception (HC) is not known, this study aimed to explore the level of knowledge and practice of HC among adolescent girls in high school and to describe the main factors associated with sexual practices and use of HC.

2. METHODS

A cross-sectional survey was conducted in 2016 in two secondary schools in Rwamagana District, ASPESKA School (Parent Association of Karenghe High School) and LIR (Rwamagana Islamic High School). It was designed to directly explore the degree of knowledge and practice of HC and indirectly the sexual behavior of adolescent girls. A questionnaire with structured closed or open questions was administered. Consent to participate was obtained directly from the participants and permission to conduct the study was obtained from school authorities. Participants were invited to answer the questionnaire themselves while being as objective and fair as possible. All necessary measures have been taken to ensure confidentiality. Participants had the right to skip any questions they could be mistaken while being as accurate as possible. The sample size was calculated in proportion to the number of students aged 14 to 19 in each school and given a 95% confidence limit with a significance level of 5%. A total of 134 girls aged 14 to 19 were recruited: 51 girls at ASPESKA school and 83 girls at LIR school. The data was analyzed using the SPSS v20 software to describe the weighted frequencies of the various measurement variables selected. The results are presented in the graphs since the non-inference statistics were used.

3. RESULTS AND DISCUSSION

3.1. Demographic characteristics of participants

Figure 1 shows the distribution of 134 girls recruited by age and class. The age of participants fell into the normal window of high school students, which is 14-19 years old in

Comment [f1]: Issues of ethical approval needs to be mentioned. Where participants given choices to participate or not to participate in the study?

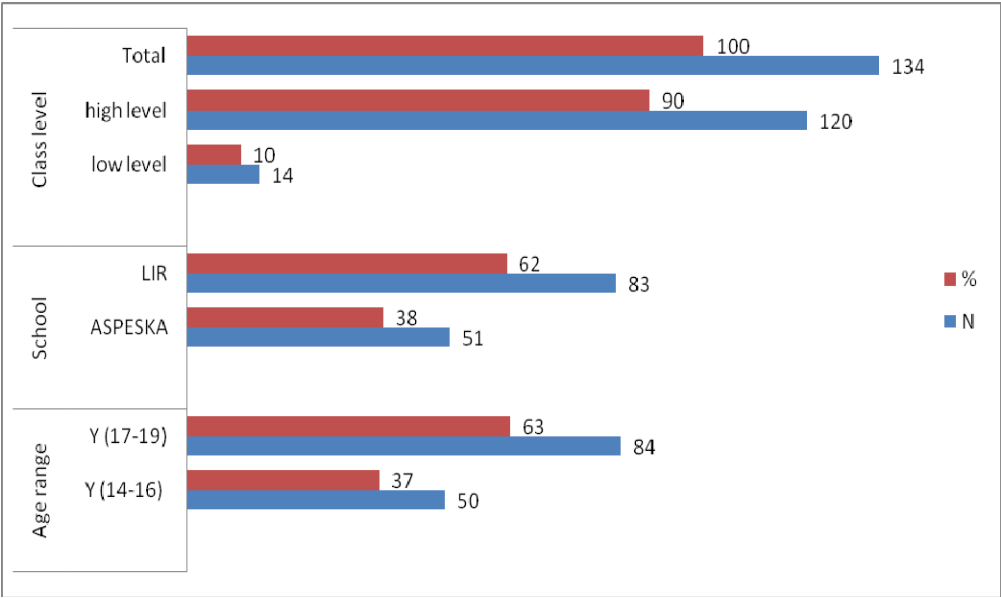
Comment [f2]: What does "It" refers to here? Is the study design?

Comment [f3]: How were participants selected? How was sampling done – convenient sampling or random sampling – if random sampling how was randomization done?

87 many countries. Of these, 50 (37.3%) were aged 14 to 16 years and 84 (62.7%) were
88 between 17 and 19 years old; 14 (10.5%) were at level 1-3 and the majority 120 (89.5%) at
89 level 4-6.

Comment [f4]: Need to define these levels somewhere here or in the methods section.

91 **Figure-1 Frequencies by age and school of participant girls**



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94 **3.2. Knowledge of hormonal contraception**

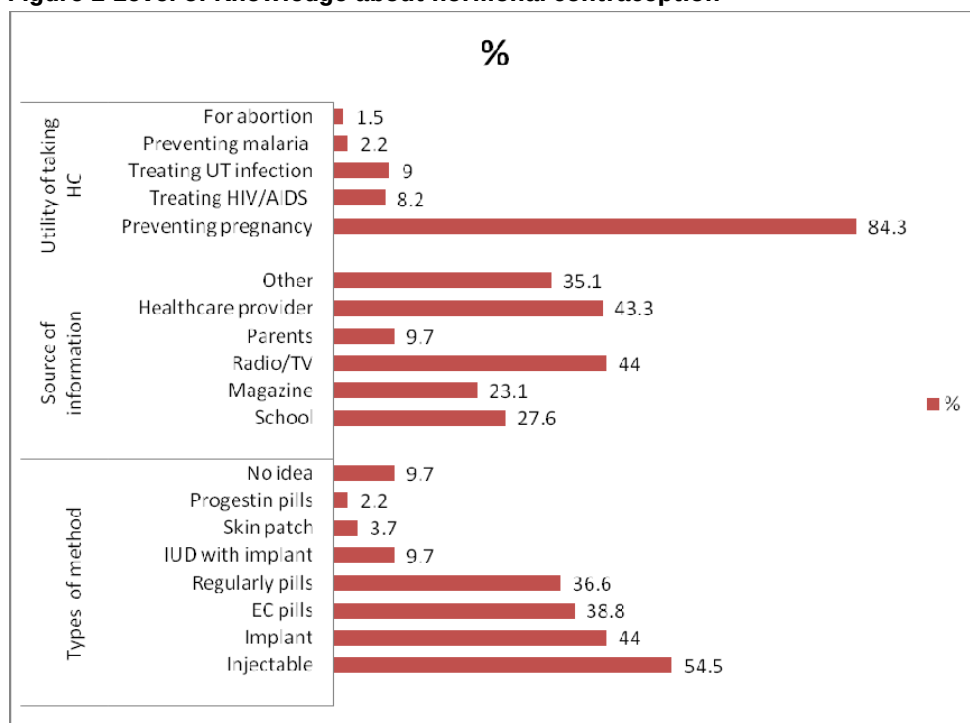
95
96 Figure 2 shows the frequencies observed on the types, the source of information and the
97 role of HC. Of the 134 girls who voluntarily agreed to answer the questionnaire themselves,
98 only 9.7% of those surveyed had no idea of HC-type methods and were the youngest in the
99 group. The methods mentioned were injectables (54.5%), implants (44%), ECPs (38.8%),
100 ordinary pills (36.6%), IUDs with implants (9.7%), transdermal contraceptive patches
101 (3.7%), progestin-only pills (2.2%).

Comment [f5]: Ordinary pills of what? Contraceptive??

102
103 Information was much more obtained from the media (67.1%) and health professionals
104 (43.3%) and less from school education (27.6%) and parents (9.7%). The majority (84.3%)
105 knew that HC was used to prevent unplanned pregnancy, but 25.7% gave poor responses,
106 such as treating HIV, treating urinary tract infections, treating malaria or abortion.
107 The score of 84.3% of those who knew at least one method is higher or close to what has
108 been found in other African countries [10-16]. The discovery also highlighted the important
109 role of the media and the low involvement of parents and school education as sources of
110 knowledge. Our previous survey, which engaged university students, had resulted in the
111 same fact [7].

112
113
114

115 **Figure 2 Level of Knowledge about hormonal contraception**



116
 117 Questions about the type and source of the information were closed multiple choice.
 118 Questions about the usefulness of taking HC were open.

119 3.3. Actual practice of contraception and methods used

120
 121 Figure 3 indicates that only 14 girls (10.4%) confirmed using HC; 8 (6%) were still in use,
 122 and 83 (61.4%) are willing to use it in the future if they receive well-documented
 123 information. Of the 14 users, 8 (57.14%) used ECP, 3 (21.4%) injection, 2 (14.3%)
 124 progestin-only pills and 1 (7.1%) contraceptive implants. The decision to take HC was
 125 inspired by their boyfriends (57.14%), by themselves (35.71%) or by a third. The majority
 126 were aware that community pharmacies (77.6%) and health care providers (61.2%) were
 127 appropriate places to buy HC products, but 0.7% thought they could get them in the stores.
 128 This shows that ECPs are well known and implemented in Rwanda among young men and
 129 women. Indeed, among the 14 girls who used HC, 8 of them were advised by their partner.
 130 In other African countries, contraception by injection was the most widely used at average
 131 rates close to 40%. In 2012, the Canadian Sexual Information and Education Council
 132 (CCISC) reported that 47% of teens aged 15 to 19 had used condoms and oral
 133 contraceptives in the previous six months [17]. In the United States, studies have shown
 134 that in the 2013 surveys, 19% of high school students had used the birth control pill during
 135 their most recent sexual intercourse [18]. The difference may be related to the number of
 136 sexually active girls in each population. Regarding sexual activity in Rwanda, the overall
 137 proportion of young people aged 15 to 24 who reported having already had sex was 31%
 138 for young men and women in 2009, or about 16% for women only [19, 20]. The experience

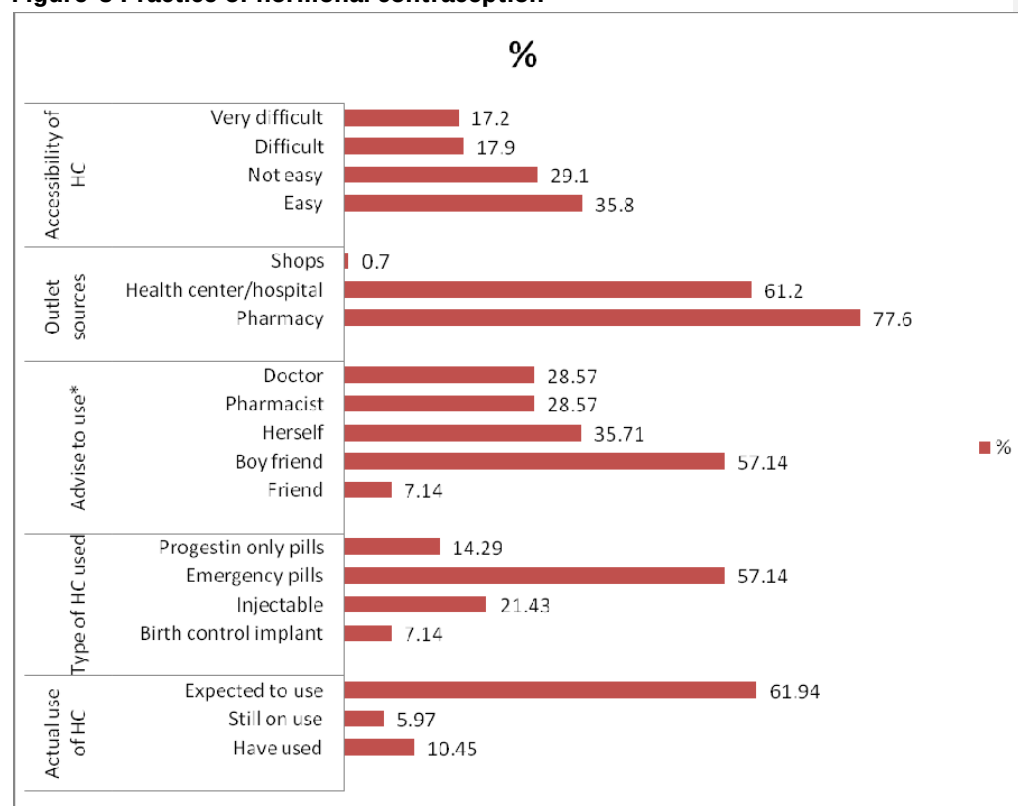
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of sexual activity reported by young Rwandan women in 2014 was only 14%, indicating the lowest levels of sub-Saharan Africa compared to Tanzania and Uganda with rates of 35-40%. Another report analyzing demographic and health survey data from 38 developing countries found that the proportion of adolescent girls aged 15 to 19 ranged from 4% in Rwanda to 43% in Mozambique [21].

Comment [f8]: Need reference of other studies from Tanzania and Uganda as mentioned here

Figure-3 Practice of hormonal contraception



3.4. Factors promoting sex or abstaining from contraception

As shown in Figure 4, when asked about the causes that push some girls to have an unwanted pregnancy, respondents mentioned ignorance (34.3%), the need to live luxuriously (61.2%), poverty (44%), lack of information on contraception (16.4%), unavailability of ECPs (20.9%), fear of using hormonal contraceptives (29.9%) and influence of the partner (17.2%). The need to live luxuriously means to live beyond his means, bedecked in jewels and clothing high class.

Also, many factors have been given to prevent adolescents from using HC. The main concerns were fear of side effects, cultural and religious issues, lack of information and affordability. When asked about accessibility or installation for HC preparations, 35.8% said it was easy, while others thought it was difficult to get it.

Comment [f9]:

Comment [f10R9]: His or her means. This study involves female gender as I understand

Similar problems have been identified in other studies [22, 23]. The pricing system of contraceptive pills makes them inaccessible to adolescents. Making them affordable would require government intervention and NGOs, but the feasibility should be verified.

In Rwanda, a number of projects have been designed to combat poverty through agriculture and livestock development for the poorest rural populations. However, it is still far from the millennium goal of reducing 75% of poverty. Forced child marriage is a big concern in the developing world and especially among Muslims; it is a cultural or religious problem [24, 25]. Fighting against this practice is a declared war by many activists all over the world. In Rwanda, the official legal age of marriage is 21 for girls.

There is still discussion about whether contraceptives can cause or not cancer and irreversible sterility. [Scientifically, a study published by Mørch et al. [26] in N Engl JM concluded that "the risk of breast cancer was higher among women who were currently or recently using modern hormonal contraceptives than those who had never used hormonal contraceptives, and this risk increased with longer durations of use; however, absolute increases in risk were minimal".] Many people use pills without problems at all, however, the most common side effects are: mood swings and depression, breast pain or tenderness, enlarged breasts, fungal infections and cystitis, migraine or headache, nausea and vomiting, stomach problems and diarrhea, irregular bleeding, rashes, and acne.

Comment [f11]: Need to define poverty and/or poor in this context. Poverty and poor are just relative terms.

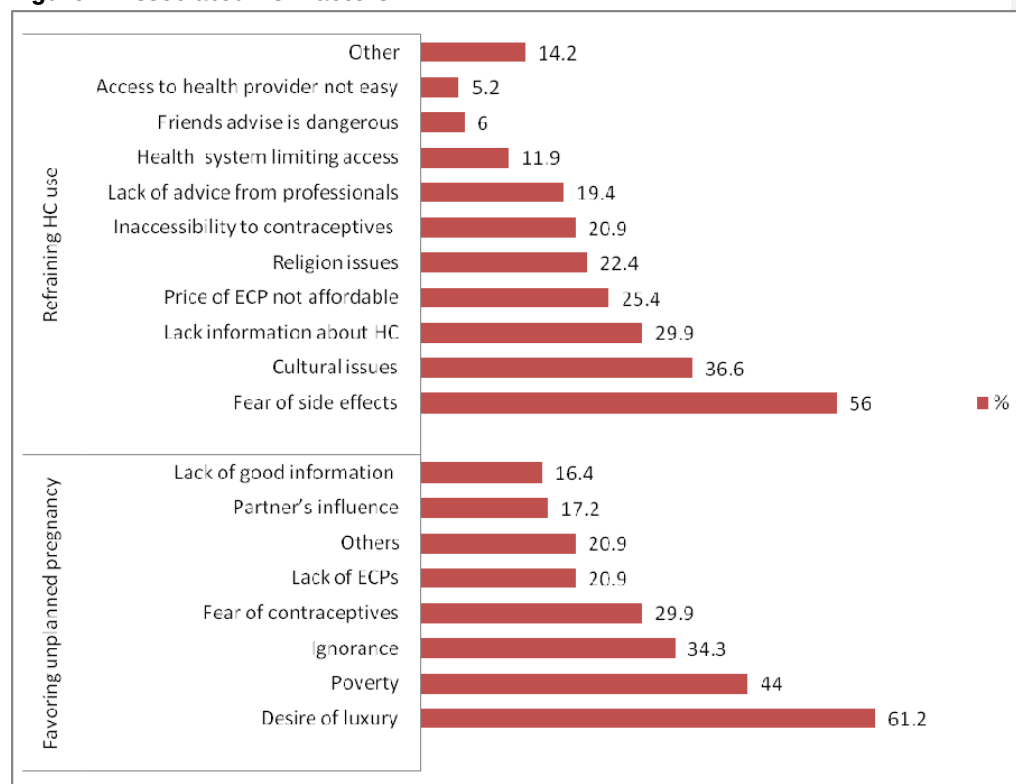
Comment [f12]: Correct part of this sentence line

Comment [f13]: Give year of publication and volume

Comment [f14]: Too long. Need two sentences for clarity

Comment [f15]: What are pills? Appropriately should be contraceptive "Pills".

Figure-4 Associated risk factors



The questions were open; HC (hormonal contraceptives); ECPs (Emergency contraceptive pills)

CONCLUSIONS

Of all the reports, it is obvious that a good number of high school girls in the world are sexually active, but only a small number are protected against pregnancy. The driving force behind teen sex practice in developing countries is poverty and culture combined. This factor is very complex and difficult to solve. The best way would be the commitment of governments to improve family welfare. Whenever it is difficult to contain sexual desire, education on methods of protection, including condoms and hormonal pills can be absolutely recommended. Parents, schools and churches can make a tremendous contribution in educating our girls to live happy with what the family is able to offer. Promoting the use of hormonal contraception at this age is certainly a complex issue, but adequate educational intervention on all alternative means to reduce unwanted pregnancy rates in sexually active adolescents is needed.

REFERENCES

1. World Health Organization (WHO). Adolescent pregnancy 2014. <http://www.who.int/mediacentre/factsheets/fs364/en/> Accessed 30 December 2017.
2. Institute of Medicine (US) Committee on Unintended Pregnancy, Consequences of unintended pregnancy. In "The Best Intentions: Unintended Pregnancy and the Well-Being of Children and Families" Editors: Sarah S. Brown and Leon Eisenberg. Washington (DC): National Academies Press (US); 1995. <http://www.nap.ed/openbook.php/record> Accessed 30 December 2017.
3. Jennifer KB, Morgan SP, Harris KM, and Guilkey DK. The Educational Consequences of Teen Childbearing. *Demography*. 2013; 50 (6): 2129-2150.
4. Singh AB, Singh AS, and Thapa S. Adverse Consequences of Unintended Pregnancy for Maternal and Child Health in Nepal. *Asia Pacific Journal of Public Health*. 2015; 27(2).
5. YouthLens30. Hormonal Methods of Contraception for Youth. www.iywg.org/sites/iywg/files/y130e.pdf Accessed 30 December 2017.
6. Trussell J, Raymond EG, Cleland K. Last chance to prevent unintended pregnancy. <http://ec.princeton.edu/questions/ec-review.pdf> Accessed 30 December 2017.
7. Uwamariya J, Nyandwi1 JB, Mukanyangezi MF and Kadima NJ Sexual Activity and Emergency Contraception among Female Students in the University of Rwanda *International Journal of TROPICAL DISEASE & Health*. 2015; 8(4): 170-177.
8. Basinga P, Moore AM, Singh S, Remez L, Birungi F, Nyirazinyoye L. Unintended Pregnancy and Induced Abortion in Rwanda. https://www.guttmacher.org/sites/default/files/report_pdf/unintended-pregnancy-rwanda.pdf Accessed 30 December 2017
9. The World Bank. Adolescent fertility rate (births per 1,000 women ages 15-19) <https://data.worldbank.org/indicator/SP.ADO.TFRT> Accessed 31 December 2017.
10. Anoché I, Ikpeme E. The knowledge, attitude and use of contraception among secondary school girls in Port Harcourt. *Niger J Med*. 2003;12(4):217-20.
11. Mshweshwe-Pakela NT, Matlakala MC, and Mbengo F. Attitudes to, and Knowledge and Use of Contraception among Female Learners Attending a High School in Mdantsane.

Comment [f16]: Conclusion should be drawn from research findings in this study. The first sentence could be rephrased as such.

Comment [f17]: All girls? Or sexually active, reproductive young women.

229 *Africa Journal of Nursing and Midwives*. 2017;19(1) DOI: [https://doi.org/10.25159/2520-](https://doi.org/10.25159/2520-5293/685)
 230 [5293/685](https://doi.org/10.25159/2520-5293/685)

231 12. Jahnavi G, and Patra SR. "Awareness Regarding Contraception and Population Control
 232 among School-going Adolescents." *East Africa Journal of Public Health*. 2009;6 (3): 229–
 233 231.

234 13. Kanku T and Mash R. "Attitudes, Perceptions and Understanding amongst Teenagers
 235 regarding Teenage Pregnancy, Sexuality and Contraception in Taung." *South African*
 236 *Family Practice Journal*. 2010; 52 (6): 563–572.

237 14. Onyensoh O, Govender I, and Tumbo J. "Knowledge of, Attitude towards, and Practices
 238 of Contraception in High School Pupils in Tswaing Sub District, North West Province."
 239 *South African Journal of Epidemiological Infection*. 2013; 28 (4): 227–232.

240 15. Ramathuba DU, Khoza LB and Netshikweta ML. Knowledge, attitudes and practice of
 241 secondary schools girls towards contraception in Limpopo Province. *Curationis*. 2012;
 242 35(1):1-7. <http://dx.doi.org/10.4102/curationis.v35i1.45>

243 16. Kagashe GA and Honest G. Knowledge and use of contraceptives among secondary
 244 school girls in Dar es Salaam Tanzania. *Journal of Applied Pharmaceutical Science*. 2013;
 245 3(1): 66-68 DOI: 10.7324/JAPS.2013.30112.

246 17. SIECCAN. Contraception use among young women in Canada: what are the trends? The
 247 Canadian Journal of Human Sexuality Publisher.
 248 [http://www.biomedsearch.com/article/Contraception-use-among-young-](http://www.biomedsearch.com/article/Contraception-use-among-young-women/276516869.html)
 249 [women/276516869.html](http://www.biomedsearch.com/article/Contraception-use-among-young-women/276516869.html)

250 18. Kaiser Family Foundation. Sexual Health of Adolescents and Young Adults in the
 251 United States. [https://www.kff.org/womens-health-policy/fact-sheet/sexual-health-of-](https://www.kff.org/womens-health-policy/fact-sheet/sexual-health-of-adolescents-and-young-adults-in-the-united-states/)
 252 [adolescents-and-young-adults-in-the-united-states/](https://www.kff.org/womens-health-policy/fact-sheet/sexual-health-of-adolescents-and-young-adults-in-the-united-states/) Accessed 31 December 2017

253 19. Ntaganira J, Hass LJ, Hosner S, Brown L, and Mock NB. Sexual risk behaviors among
 254 youth heads of household in Gikongoro, south province of Rwanda. *BMC Public Health*.
 255 2012; 12: 225. doi: 10.1186/1471-2458-12-225

256 20. Ministry of Health Rwanda. Behavioral Surveillance Survey Among Youth 15-24 Years.
 257 [http://www.rbc.gov.rw/fileadmin/user_upload/behavior_and_biological_survey_among_y](http://www.rbc.gov.rw/fileadmin/user_upload/behavior_and_biological_survey_among_youth_15-24_years_rwanda_2009-2.pdf)
 258 [outh_15-24_years_rwanda_2009-2.pdf](http://www.rbc.gov.rw/fileadmin/user_upload/behavior_and_biological_survey_among_youth_15-24_years_rwanda_2009-2.pdf)

259 21. Gribble J. Reproductive Health of Youth in East Africa. Population Reference Bureau.
 260 <http://www.prb.org/Publications/Articles/2010/youth-east-africa-rh.aspx>

261 22. Williamson LM, Parkes A, Wight D, Petticrew M, and Hart GJ. Limits to Modern
 262 Contraceptive Use among Young Women in Developing Countries: A Systematic Review
 263 of Qualitative Research. *Reprod Health*. 2009;19(6):3. doi: 10.1186/1742-4755-6-3.

264 23. Blumenthal PD, Voedisch A, Gemzell-Danielsson K. Strategies to prevent unintended
 265 pregnancy: increasing use of long-acting reversible contraception. *Hum Reprod Update*.
 266 2011;17(1):121-37. doi: 10.1093/humupd/dmq026. Epub 2010 Jul 15.

267 24. Robert J and Thornton R. Early female marriage in the developing world. *Gender and*
 268 *Development*. 2003; 11(2): 9–19.

269 25. Lilian GK, Nancy IA, Odundo PA, Ochieng JO & Ngaruiya B. Early and Forced Child
 270 Marriage on Girls' Education, in Migori County, Kenya: Constraints, Prospects and Policy.
 271 *World Journal of Education*. 2015; 5(4). <http://dx.doi.org/10.5430/wje.v5n4p72>

272 26. Mørch LS, Skovlund CW, Hannaford PC, Iversen L, Fielding S and Lidegaard Ø.
273 Contemporary Hormonal Contraception and the Risk of Breast Cancer. N Engl J Med.
274 2017; 377:2228-39. DOI: 10.1056/NEJMoa1700732.