

Birth Control and Family Planning: Are Ratings and Rankings of Contraceptive Methods Reliable Sources of Information?

Kurt Kraetschmer

Department of Reproductive Medicine, Austrian-American Medical Research Institute, Vienna, Agnesgasse 11, Austria

ABSTRACT

Aims: The aim of the article is to determine as to whether or not the various ratings and rankings propounded by the World Health Organization, government agencies, professional organizations, and research institutes are reliable instruments for consumers in search of contraceptive methods and for health care providers who assist women in these pursuits. **Methods:** To accomplish its goal the study analyzes tables, surveys, and charts contained in the most frequently consulted sources of information, namely pertinent research articles as well as publications disseminated by government agencies. To accurately reflect the present state-of-the-art, only top-ranked publications of the most influential agencies and institutions are selected among the vast number of available past and present sources. **Results:** The most noticeable result of systematic meta-analyses of presently available rankings is the recognition of an undue neglect of the parameter safety. To remedy this neglect a ranking prioritizing safety is being proposed which aims at guiding women in their search for the personally most suitable method of contraception and at assisting physicians in their efforts to counsel women in these matters. **Implications:** In conclusion, women are encouraged to implement autodidactic strategies to obtain reliable information. The pivotal role of the health care provider is thereby not put into question because her/his obligation to honor the bioethical principle of informed consent must be considered valid not only for the clinical practice but also for forensic proceedings.

Key words: Birth control, contraception, contraceptive efficacy, family planning, safety

INTRODUCTION

Recently, open criticism has been voiced due to lack of adequate counseling for women in search of safe and effective contraception. This criticism emanated from the FDA in response to reports about severe injuries caused by an implant for permanent contraception. The FDA had approved this implant in 2002 and declared as safe. In 2018, a spokesman of the FDA accused implicitly physicians for not informing their patients about possible complications associated with the use of the device: “Despite previous efforts to alert women to the potential complications of Essure, we know that some patients still aren’t receiving this important information,” said FDA Commissioner Scott

Gottlieb, in a statement. ‘That is simply unacceptable.’^[1] To cope with the dilemma of insufficient counseling in the clinical practice, alternative measure must be implemented to assure that the bioethical principle of informed consent can be upheld despite the pressure of economic principles such as cost-effectiveness.^[2] Given the possibility of accessing salient information through social media, women must be encouraged to engage in autodidactic strategies and remedy in this fashion the lack of counseling through health professionals.

The primary target of information gathering by means of social media should be ratings and rankings of contraceptive methods. They can be a valuable instrument for women in search of a suitable contraceptive method and for health care providers who counsel women during this quest. Rankings

Address for correspondence:

Kurt Kraetschmer, Department of Reproductive Medicine, Austrian-American Medical Research Institute, A-2700 Wr. Neustadt, Hermannsgasse 4, Austria. Tel.: 0043262228987. Fax: 0043262228987. E-mail: Kurt.kraetschmer@aon.at

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offer an instant and comprehensive overview of all available methods including data on their efficacy – provided these data are complete and accurate. Completeness and accuracy are in fact those characteristics by which trustworthy rankings can be distinguished from unreliable ones.

The aim of the following discussion is to elaborate on this dichotomy by analyzing the internationally most authoritative rankings and ratings. In view of the vast amount of rankings propounded hitherto, the focus is on those that are most widely used by consumers and emanate from the most influential organizations and research institutes. As some of these rankings depend on predecessors, the historical dimension of the topic is also taken into account. Hence, the following discussion provides information not only on the most recent data but also on data from the last decades. This methodological procedure will contribute to a better understanding of the methodologies used for rankings and provide an impetus for future inquiries in this area.

DISCUSSION

Although it is difficult to determine with precision the point in time where the first rankings saw the light, it can be ascertained that in 1982 one of the world's leading medical journals published a ranking entitled "Relative effectiveness of frequently used contraceptive methods."^[3] Modern rankings differ essentially from this archetype, as can be seen in publications by the most recognized authorities in this field, as for example Contraceptive Technology research.^[4,5]

The most recent and most comprehensive ranking presently available is based on a rating developed by Contraceptive Technology and by the World Health Organization (WHO). This "Safety-Efficacy-Satisfaction Table" (2018)^[6] provides information not only on the commonly used parameters "efficacy" and "continuation of use" but also on the hitherto neglected parameter "safety." As safety is for an increasing number of women the most important guiding principle in their contraceptive pursuits, the methods are ranked primarily according to safety and not according to efficacy.

The uniqueness of this most recent ranking – which prioritizes safety and encompasses substantially more parameters than other tables presently available – becomes apparent in a comparison with other tables or surveys. The most reliable of these tables and surveys are those proposed by Contraceptive Technology in 2011,^[4] by the WHO in 2016,^[7] and the Synoptic Contraception Overview of 2019.^[8] Less reliable are tables presented by the U.S. Food and Drug Administration (FDA) in 2013^[9] and by German research in 2000.^[10]

The contraceptive failure table (CTFailure Table) as a source of reliable information

Contraceptive Technology Research provided information in several publications and presented its finding in form of a

CTFailure Table in 2011.^[4] This table has become a source of information for some of the most authoritative ratings and rankings, including the one by the WHO.^[7] Contrary to older rankings, Contraceptive Technology rates the different methods – without ranking them – according to estimates for women experiencing an unintended pregnancy during the 1st year of "typical use" and the 1st year of "perfect use;" an additional distinction is made between "1st year of use" and "continuing use at 1 year."^[4]

As can be seen from this table, the long-acting reversible contraceptives (LARC), i.e., implants and intrauterine devices (IUDs), are considered the most effective, especially the implant Implanon (precursor of Nexplanon) with a failure rate of 0.05 for both perfect and typical use. Among intrauterine contraceptives, Mirena (Levonorgestrel = LNG) with a perfect and typical use failure rate of 0.2 is superior to the other IUD, namely ParaGard (copper T) with a perfect use failure rate of 0.6 and a typical use failure rate of 0.8. Almost equally effective in perfect use are Depo-Provera with 0.2 perfect use (6 typical use), NuvaRing with 0.3 perfect use (9 typical use), Evra patch with 0.3 perfect use (9 typical use), as well as combined pill and progestin-only pill with 0.3 perfect use (9 typical use). Drawbacks of Contraceptive Technology's table are the lack of ranking and the neglect of the parameter safety. In addition, obsolete data are used for typical use estimates for fertility awareness-based methods. [4, Table 3-2]

Consumers using this rating must keep in mind that perfect use estimates for certain non-hormonal methods can be attained only if instructions for implementation of the specific method are followed religiously with discipline and utmost adherence. Given the accuracy and reliability of the CTFailure Table presented by Contraceptive Technology research, it is not surprising that various organizations, such as the WHO used it as a source for its own listing of methods.^[7]

Due to the WHO's authorship of this listing, its international recognition is guaranteed, and presently it is available in five different languages. Regarding its format and content resemblance to the survey provided by the U.S. FDA is obvious.^[9] An in-depth comparison, however, reveals fundamental discrepancies. Regarding efficacy, both the WHO table and the FDA survey present information, but data diverge sometimes substantially from one another. Regarding safety, only the WHO table mentions adverse events and risks; the FDA survey, on the other hand, makes only one explicit comment pertaining to safety when it recommends latex condoms as well as abstinence for protection against sexually transmitted diseases (STD).^[9]

Besides loss of precision in the FDA survey compared to the CTFailure Table, there is an additional shortcoming, namely omission of several non-hormonal methods whose perfect use failure rates range from 0.4 (symptothermal) to 5 (Standard Days Method) and which have been acknowledged not only

by the WHO,^[7] but also by international research, including recent research on HIV patients. In this research, a study on the use of fertility awareness methods (FAMs) concludes: “FAMs provide effective, economical, and accessible options for HIV serodiscordant couples to conceive while minimizing unnecessary viral exposure.”^[11]

With respect to international research, a European ranking according to the Pearl Index, propounded by German authors in 2000, might be of interest to consumers.^[10] Regrettably, the research projects from which the estimates of this ranking are derived cannot be identified. The most noteworthy feature of the German ranking is the high Pearl Index for the symptothermal method, namely 0.8.

Deficits of presently available rankings

While the FDA survey of 2013 lacks precision and fails to mention several internationally recognized methods, other rankings are plagued by inaccurate data. Thus, the U.S. Centers for Disease Control and Prevention (CDC) provide some data on contraception in a 2016 “U.S. Medical Eligibility Criteria for Contraceptive Use.”^[12] In contrast to the CTFailure Table, which distinguishes unequivocally between typical use and perfect use, and even includes an additional distinction between “1st year of use” and “continuing use at 1 year,” the CDC ranking lacks these distinctions. Consequently, users of the CDC ranking might assume that the efficacy of the methods listed is the same for perfect use and typical use.

One of the perplexing features of the CDC ranking is the omission of the most effective of the fertility awareness methods, i.e., the symptothermal method. According to the CTFailure Table,^[4] its perfect use estimate is a remarkable percentage of 0.4 and its application is not particularly complicated, as can be seen from a WHO description: “Measuring of body temperature, observation of cervical mucus (clear texture), and palpation of cervix (soft consistency and opening).”^[7]

Regarding controversial estimates in ratings and rankings of contraceptive methods, attention must be drawn to publications by the American Congress of Obstetricians and Gynecologists (ACOG). Recent publications by ACOG aim at rectifying earlier statements on FAMs by emphasizing their efficacy in case of perfect use (“... fewer than 1–5 women of 100” will get pregnant) and their high degree of safety: “They cost very little... Many women like the fact that fertility awareness is a form of birth control that does not involve the use of medications or devices.”^[13]

Safety – the most neglected parameter

As the above analysis shows, numerous ratings and rankings have been propounded not only in the scientific literature but also in publications disseminated by government agencies and organizations. The common factor in the ratings and

rankings is the absence of any serious attempt to define safety and to provide data concerning this essential characteristic of each contraceptive method.

Obviously, in an attempt to define the concept of “safety,” one has to bear in mind the multifold semantics of this term. For some consumers, safety means protection against STDs, and these are well-advised to follow the recommendation of the FDA: “Except for abstinence, latex condoms are the best protection against HIV/AIDS and other STIs.”^[9] For those consumers who understand “safe” as “truly effective,” the rankings according to efficacy provide the relevant information. For those consumers who interpret “safe” as “not harmful,” a multitude of questions remain unanswered since all rankings available hitherto focus on efficacy and do not explicitly take into account the aspect of safety, except the comprehensive survey presented by the WHO, which refers explicitly to adverse events.^[7] These brief references to safety might not be sufficient for those women who place the highest emphasis on “safe” drugs and devices. These women will remain dissatisfied when they are told that the absence of death and a serious complication is sufficient to declare a product as “safe.” In fact death or serious complications are for some authors the only benchmarks for determining safety. “No deaths or serious complications have been causally linked” to emergency contraception (EC) (p. 8).^[14] Equally dissatisfying is the statistics-based stereotyped argument “the benefits outweigh the risks” because benefits and risks depend on subjectively perceived experiences.

In the face of futile attempts to define safety and due to inaccurate rankings, consumers are encouraged to use sources of information which focus precisely on the essential characteristics of a reliable ranking, namely accuracy and completeness. One of these sources is the Safety-Efficacy-Satisfaction Table mentioned above.^[6] By using this table, consumers will be enabled to make sure that the ancient medical principle of *nil nocere* is honored, which emphasizes safety as the highest principle of medical practice. In addition, they will be in a position to make an intelligent choice, as required by the American Medical Association in conjunction with the principle of informed consent: “The patient’s right of self-decision can be effectively exercised only if the patient possesses enough information to enable an intelligent choice” (p. 38).^[15] Concerning self-decision, it must be requested that future publications pay heightened attention toward each woman’s right to self-decision, an awareness that has been unduly neglected in past publications.^[16] In addition to medical and bioethical principles, the question of the impact of hormonal contraception on the quality of life should be an integral part of future ratings and rankings.^[17]

RESULTS

As the above analyses show, reliable data on pertinent issues are scarce in the ratings and rankings propounded by various

authors, agencies, and organizations. The most serious deficit is a lack of efforts to compare systematically the safety of contraceptive methods, although such efforts would be dictated by the bioethical principles of “nil nocere” and “informed consent.”

CONSEQUENCES

To remedy present deficits, a ranking prioritizing safety, e.g., the Safety-Efficacy-Satisfaction Table, is being proposed which aims at guiding women in their search for the personally most suitable method of contraception and at assisting physicians in their efforts to counsel women in these matters. Regardless of the reliability of future findings in pharmacovigilance and pharmaceuticovigilance, women are encouraged to implement autodidactic strategies to be able to access trustworthy and complete information. The pivotal role of the health care provider is thereby not put into question because her/his obligation to honor the bioethical principle of informed consent must be considered valid not only for the clinical practice but also to avert possible court actions.

REFERENCES

1. Washington Post. Available from: <https://www.washingtonpost.com/2018/sales-of-essure-birthhtml>. [Last accessed on 2018 Apr 11].
2. Kraetschmer K. Is the “lege artis” principle obsolete? *J Forensic Res* 2013;4:3.
3. Vessey M, Lawless M, Yeates D. Efficacy of different contraceptive methods. *Lancet* 1982;1:841.
4. Trussell J. Contraceptive efficacy. In: Hatcher RA, Trussell J, Nelson AL, Cates W, Kowal D, Policar M, editors. *Contraceptive Technology: Twentieth Revised Edition*. New York: Ardent Media; 2011. Available from: <http://www.contraceptivetechnology.org/the-book/take-a-peek/contraceptive-efficacy>.
5. Trussell J. Contraceptive failure in the United States. *Contraception* 2011;83:397-404.
6. Kraetschmer K. Can ratings of contraceptive methods motivate women to engage in family planning and birth control? *J Gynecol Womens Health* 2018;11:3.
7. World Health Organization. Effectiveness to Prevent Pregnancy. Geneva: World Health Organization 2017. Available from: <https://www.who.int/news-room/fact-sheets/detail/family-planning-contraception>. [Last accessed on 2019 Nov 20].
8. Kraetschmer K. How Women can Remedy the Lack of Counseling on Contraception and Circumvent Untrustworthy Information Disseminated by Various Media. (In Press).
9. Food and Drug Administration. Approved Methods of Birth Control; 2013. Available from: <http://www.fad.gov/forconsumers/byaudience/forwomen/freepublications/ucm313215.htm>. [Last accessed on 2017 Jan 16].
10. Gröger S, Grüne B. Kontrazeption. In: Diedrich K, editors. *Gynäkologie und Geburtshilfe*. Berlin: Springer; 2000. p. 60-87.
11. Liao C, Wahab M, Anderson J, Coleman JS. Reclaiming fertility awareness methods to inform timed intercourse for HIV serodiscordant couples attempting to conceive. *J Int AIDS Soc* 2015;18:19447.
12. Centers for Disease Control and Prevention. U.S. Medical Eligibility Criteria for Contraceptive Use; 2016. Available from: <https://www.cdc.gov/mmwr/volumes/65/rr/rr650301.htm>. [Last accessed on 2017 Mar 26].
13. American Congress of Obstetricians and Gynecologists. Available from: <https://www.acog.org/patients/faqs/fertility-awareness-based-methods-of-family-planning>. [Last accessed on 2017 Feb 14].
14. Trussell J, Raymond EG, Cleland K. *Emergency Contraception: A Last Chance to Prevent Unintended Pregnancy*. New Jersey: Office of Population Research, Princeton University; 2017.
15. American Medical Association. *Code of Medical Ethics. Current Opinions*. Chicago, Illinois: American Medical Association; 1992.
16. Kraetschmer K. *Are Women Denied the Right of Self-Decision?* Saarbrücken: Scholars’ Press; 2017.
17. Zethraeus N, Dreber A, Ranchill E, Blomberg L, Labrie F, von Schoultz B, *et al*. A first-choice combined oral contraceptive influences general well-being in healthy women: A double-blind, randomized, placebo-controlled trial. *Fertil Steril* 2017;107:1238-45. Available from: ki.se/oral-contraceptives-reduce-general-well-being-in-healthy-women. [Last accessed on 2017 Jun 21].

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