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Impact of Contraceptive Education on Contraceptive Knowledge and Decision Making:

A Systematic Review

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Abstract

Context—Educational interventions can help increase knowledge of available contraceptive methods, enabling individuals to make informed decisions and use contraception more effectively. This systematic review evaluated contraceptive education interventions to guide national recommendations on quality family planning services.

Evidence acquisition—Three databases (CINAHL, PubMed, and PsycINFO) were searched from 1985 through 2012 for peer-reviewed articles on educational interventions, with supplemental searches conducted through 2015. Primary outcomes were knowledge, participation in and comfort with decision making, and attitudes toward contraception. Secondary outcomes included contraceptive use behaviors and unintended pregnancy.

Evidence synthesis—Database searches in 2011 identified 5,830 articles; 17 met inclusion criteria and were abstracted into evidence tables. Searches in 2012 and 2015 identified four additional studies. Studies used a wide range of tools (decision aids, written materials, audio/videotapes, and interactive games), with and without input from a healthcare provider or educator. Of 15 studies that examined the impact of educational interventions on knowledge, 14 found significant improvement using a range of tools, with and without input from a healthcare provider or educator. Fewer studies evaluated outcomes related to decision making, attitudes toward contraception, contraceptive use behaviors, or unintended pregnancy.

Conclusions—Results from this systematic review are consistent with evidence from the broader healthcare field suggesting that a range of educational interventions can increase knowledge. Future studies should assess what aspects of educational interventions are most effective, the extent to which it is necessary to include a healthcare provider or educator, and the extent to which educational interventions can impact behaviors.

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Context

Despite the availability of a wide variety of effective contraceptive methods,[1] unintended pregnancy rates in the U.S. remain high.[2] Unintended pregnancy occurs primarily among couples who use contraception incorrectly or inconsistently, or do not use any contraception.[2,3] Contraceptive counseling provided by trained healthcare professionals may help prevent unintended pregnancy by encouraging sexually active individuals and couples to adopt and correctly use contraceptive methods that are the most appropriate and effective for them. An essential component of the counseling process is education. Contraceptive education aims to provide clients the basic information they need to make informed decisions about their use of contraception and to effectively use the contraceptive methods they have selected.

The importance of contraceptive education can be seen in the impact of knowledge on the selection and correct and consistent use of contraception. Many women indicate that contraceptive effectiveness is one of the most important considerations when selecting a method.[4–7] Consistent with this priority, better knowledge of contraceptive effectiveness is associated with increased adoption rates for long-acting reversible contraceptives (LARCs), which have extremely low failure rates, even with typical use.[8,9] Conversely, inadequate knowledge of contraception is associated with incorrect perceptions of the risks and side effects of contraceptive use, incorrect or inconsistent use, and method discontinuation.[10–13] However, despite the importance of education, gaps in contraceptive knowledge have been documented frequently.[9,14,15]

The objective of this systematic review was to understand the aspects of educational interventions that best promote understanding and informed decision making with respect to method selection and correct and continued method use. Educational interventions delivered through a variety of mediums (e.g., written, audio/visual, computer/web-based, interactive versus non-interactive) were assessed. In addition, the impact of having a healthcare provider or health educator work with clients to help them understand the information presented was evaluated. The evidence presented here was used by the Office of Population Affairs and CDC to inform the 2014 “Providing Quality Family Planning Services: Recommendations of CDC and the U.S. Office of Population Affairs.”[16]

Evidence Acquisition

Definition of Contraceptive Education

This systematic review complements findings of the accompanying systematic review[17] in this issue on contraceptive counseling in clinical settings. That review defined contraceptive counseling as an interactive process between a provider and client intended to help the client achieve a reproductive health goal related to contraceptive use; this review focused more narrowly on contraceptive education, defined as a process concerned with helping clients to increase their knowledge and make informed decisions about their reproductive health related to contraceptive use. It was assumed that education is a critical component, but all steps in the counseling process are needed to impact behavioral outcomes, including contraceptive use.

Development of Key Questions and Search Strategy

An overview of the systematic review methods for the articles in this series has been included in a separate paper[18] in this issue. Briefly, an analytic framework was developed to show the logical relationships among the population of interest, the interventions, and the outcomes of interest (Figure 1). In contrast to the other reviews in this series, this review focused on short-term outcomes (e.g., knowledge) rather than medium- and long-term outcomes; studies were excluded if they only assessed interventions for modifying skills or behaviors. Seven key questions were addressed (Table 1). The first six (Q1–Q6) asked whether educational interventions affected knowledge of contraceptive risks and benefits, including side effects and method effectiveness, knowledge of correct method use, participation in decision making, level of comfort with decision making, attitudes toward contraception, and selection of more versus less effective contraceptive methods. The last key question (Q7) asked whether a client's literacy influenced the effectiveness of educational interventions. During the review process, Q1 and Q2 were combined because many studies reported a composite knowledge score addressing knowledge of contraceptive risks, benefits, effectiveness, and correct use.

Our search strategy (Appendix A) included terms common to the other systematic reviews in this series, as well as terms reflecting the key questions and analytic framework specific to this review. Database searches were limited to PubMed, PsycINFO, and CINAHL, but were supplemented by hand searches of bibliographies contained in key review articles and articles identified as relevant through our initial searches. Our initial database searches identified articles published in English between January 1985 and February 2011. This search was rerun from March 2011 through September 2012 to identify newly published research in the area, with more targeted searches being conducted for the period from October 2012 through March 2015.

Inclusion criteria were developed a priori. To be included, a study had to address one of our key questions. However, for studies meeting our inclusion criteria, outcomes of interest to other systematic reviews in this series (e.g., behavioral outcomes such as uptake of contraception, and long-term outcomes such as unintended pregnancy) also were evaluated. Outcomes related to our key questions were considered primary outcomes; outcomes of interest to other reviews in this series were considered secondary outcomes. To meet our inclusion criteria, studies also had to take place in a clinic-based setting where family planning services were provided, or they had to describe an intervention that could be implemented feasibly in a clinic-based setting (e.g., not a multisession course series). Studies focusing primarily on sexually transmitted infections were included only if they incorporated education on how to use condoms or addressed the use of condoms for preventing unplanned pregnancy. Studies taking place outside of the U.S., Western Europe, Australia/New Zealand, or Japan were excluded.

Data Abstraction

Detailed information on the studies included in this systematic review was collected, including information on study design, interventions, results, and information necessary to evaluate study quality. Pertinent data from the articles identified in the original database

search were abstracted in 2011 by two independent abstractors. Differences in abstraction were reconciled by consulting a third abstractor. Studies identified in each article were examined to determine if they had evaluated at least one of the seven key questions outlined in the analytic framework of this review. In addition, identified education interventions were evaluated for the degree of involvement of a healthcare provider or educator. In provider-enhanced interventions, a healthcare provider or educator went beyond the standard of care to help participants in at least one study group understand the presented information. By contrast, in provider-independent interventions, a healthcare provider or educator did not go beyond the standard of care to help participants understand the presented information; if participants did meet with a provider in these studies, they received the educational intervention either before or after, rather than during their appointment, and providers were given no specific instructions to help participants understand the presented information.

Assessment of Study Quality and Synthesis of Data

Study quality was assessed using a modification of the grading system developed by the U.S. Preventive Services Task Force (USPSTF).[19] Studies were given a quality rating based on the USPSTF evidence scale. Level I studies were properly designed RCTs. Level II-1 studies were well-designed controlled trials without randomization. Level II-2 studies were well-designed cohort or case-control studies. Level II-3 studies obtained data from multiple time series. Within each evidence level, specific criteria were then used to determine whether the study had a high, moderate, or low risk for bias.[18]

Data synthesis was primarily narrative, rather than quantitative, in nature. Meta-analysis was not performed because of the large degree of heterogeneity across studies with respect to study design, study populations, lengths of follow-up, and measured outcomes.

Summaries of evidence are presented in Appendix B, with findings stratified by primary (based on key questions developed for this review) and secondary (of interest to the other systematic reviews that were reported among included studies) outcomes. Secondary outcomes are summarized in Appendix B, but they are not discussed in detail in the text.

Evidence Synthesis

Our systematic database search identified 5,818 abstracts. Based on title and abstract review, 94 articles were retrieved. Thirteen[20–32] of the 94 retrieved articles met our inclusion criteria; however, because two articles[27,28] were based on the same study and subjects, they are described together, representing one piece of evidence, for a total of 12 independent studies. Hand searches yielded an additional 12 studies for possible inclusion. Five[33–37] of these studies met our inclusion criteria, for a total of 17 included studies (Figure 2). Common reasons for exclusion were as follows: the intervention could not feasibly be carried out in a clinic setting (e.g., multisession course series), and the effect of the educational intervention could not be separated from a broader counseling intervention.

Of the 17 included studies, 15[20–22,24–27,29–31,33–37] examined the impact of educational interventions on knowledge of contraceptive risks and benefits, including side effects and method effectiveness, or correct method use (Q1 and Q2). Three[23,26,31] examined level of

comfort with the decision-making process (Q4), and three[21,29,32] examined attitudes related to contraceptive methods (Q5). No studies examined the effect of educational interventions on participation in the decision-making process or the selection of a more versus less effective contraceptive method (Q3 and Q6). Similarly, no studies examined whether the effectiveness of interventions depended on the participants' literacy (Q7). With respect to secondary outcomes, two studies[24,28] examined how intentions to use condoms were affected when a voucher was offered, three studies[22,24,29] examined adoption of contraceptive methods, one study[20] looked at contraceptive continuation at a 1-year follow-up, and one study[21] looked at correct contraceptive use. Two studies[20,29] examined unintended pregnancy.

Fifteen of the 17 studies included at least one intervention arm that evaluated the impact of a provider-independent intervention. Of these studies, seven[21,23–25,30,31,33] included at least one group that received only written materials, five[21,22,26–29] used audiotapes or videotapes alone or in combination with written materials, and three[34,36,37] used only interactive computer games. Two studies[25,31] provided different written materials to each of the study groups to assess the effect of different complexities of information.

Six studies included at least one intervention arm that evaluated the impact of a provider-enhanced intervention. Among these interventions, four[22,27,28,32,35] used audiotapes or videotapes, one[25] used written materials, and one[20] used a contraceptive decision aid, defined as a tool providing a structured yet interactive framework for individuals to systematically evaluate their options and consider the personal importance of perceived advantages and disadvantages.[38,39] Three[22,25,27] of these studies also included a study arm with a provider-independent intervention, and one[25] varied the complexity of the materials across study groups.

Eight[21,22,24–29,31] of the studies were RCTs, although two were classified as having either a high[26] or a moderate risk[21] for bias. Four were interventions that included a control group, two[20,34] of which were classified as having a moderate risk for bias and two[23,37] of which were classified as having a high risk for bias. The remaining five[30,32,33,35,36] used a pre-/post-test design and were classified as having a high risk for bias.

Knowledge

Of the 15 studies that examined the effect of educational interventions on contraceptive knowledge, 14 found a statistically significant improvement in knowledge of contraceptive risks, benefits, side effects, effectiveness, or correct use. Of these 15 studies, 13 included a provider-independent intervention arm, with one study including two different provider-independent interventions and five studies including at least one provider-enhanced intervention arm, for a total of 19 different approaches to providing education (Table 2, Appendix B). Of the 19 approaches, 18 resulted in a significant increase in knowledge. Details are described separately (below) for provider-independent and -enhanced interventions.

Thirteen of the 14 provider-independent interventions that included an evaluation of knowledge found a significant increase. These included five studies[21,24,25,30,31] that used

written materials alone, five[21,22,26,27,29] that used audiotapes or videotapes alone or in combination with written materials, and three[34,36,37] that used interactive computer games alone. Among the studies with statistically significant findings, six[21,22,24,25,27,29] were RCTs with a low risk for bias. The one study[33] that did not find significant improvement was based on pre-/post-test study design and had a high risk for bias.

In two RCTs[25,31] with low risk for bias, participants were presented with differing complexities of written information. In both studies, information of all complexity levels had a significant positive effect on knowledge. However, in only one[31] of the two studies did the effect vary with the complexity of provided information. In this study, participants were assigned to one of three experimental groups and were asked to correctly identify the more effective of two contraceptive methods (hormonal shots versus pills and pills versus condoms). Participants were asked to complete this task prior to and while viewing one of three different tables containing different complexities of information to illustrate method effectiveness. In all three groups, women were better able to answer questions about method effectiveness after they had been given the table, but the degree of improvement was two times higher for women in the intervention arm that was provided the simplest as compared with the more complex information tables ($p<0.05$).

Five[20,22,25,27,35] of the six studies with provider-enhanced interventions assessed their effect on knowledge. All five found a significant positive effect. Of these studies, one[25] used written materials, one[20] used a contraceptive decision aid, and three[22,27,35] used audiotapes or videotapes in combination with feedback from a provider (Table 2).

Among these five studies, three[22,25,27] were RCTs with low risk for bias that also included an experimental group in which there was no provider enhancement. This allowed for better isolation of the potential effect of provider-enhanced contraceptive education. Relative to the control groups, one study[22] found a greater increase in knowledge with the use of a health educator, one[25] found mixed effects depending on the complexity of the presented materials, and one[27] found no difference in knowledge gains with or without a health educator.

In the first study[22] that did find a greater effect with a health educator, the standard of care was compared with the use of a culturally appropriate, theoretically based videotape, and to a face-to-face session with a trained health educator. Although participants in both experimental groups, as compared with the standard-of-care group, showed a greater increase in knowledge of correct method use, the increase was greatest for participants in the health educator as compared with the videotape group ($p<0.001$). In the second study[25] that found mixed effects, women were assigned either to a control group, a group that received a wallet-sized summary card explaining pill-taking rules, or a group that received a full-length educational leaflet. Each of these groups was then subdivided so that some women in each group received a series of interactive questions from their healthcare provider during a 2–5-minute session. The summary card and full-length leaflet had a similar effect when presented independent of the provider session. When paired with interactive questions, the effect of the summary card on knowledge of pill-taking rules increased (AOR relative to controls, with questions =6.81, 95% CI=2.85, 16.27; without questions=4.04, 95% CI=1.68,

9.75), but the effect of the full-length leaflet was smaller (AOR relative to controls, with questions=2.58, 95% CI=1.45, 6.18; without questions=3.4, 95% CI=1.45, 8.09).

Comfort With the Decision-Making Process

Three provider-independent interventions assessed level of comfort with the decision-making process. The first[26] of these studies used a videotape and found no effect; however, although this was an RCT, it had a high risk for bias. The second study[23] used written materials. This study found that a higher percentage of women who received comprehensive materials on their postpartum contraceptive options felt comfortable with the amount of information they received, as compared with women who received standard materials ($p<0.01$). However, this study used a post-test design with sequential study groups and also had a high risk for bias. The final study[31] also used written materials, but was an RCT with low risk for bias. This study found mixed results. When participants in this study were presented with contraceptive effectiveness charts with varying degrees of complexity, 77% of those who viewed the simplest chart, as compared with 85% of those in each of the two groups who viewed more complex charts, indicated that they had enough information to choose a method (significance not reported). However, a greater percentage of participants viewing more complex charts (15% and 19%) as compared with the simplest chart (6%), reported that the chart was too difficult to understand ($p<0.01$).

Positive Attitudes Toward Contraception

Two provider-independent studies[21,29] examined attitudes toward contraception following an intervention using either an audiotape or videotape, alone or in combination with written materials. Both studies were RCTs with low to moderate risk for bias. The first study[21] included women who had selected oral contraceptives. In this study, women who received a brochure plus an audiotape reported higher perceived medical advantages to using oral contraceptives, as compared with controls who received the standard of care ($p<0.04$); however, there was no difference in scores between women who received the brochure alone as compared with women in the control group. In the second study,[29] a slightly higher proportion of women who viewed an educational videotape had a positive attitude about using emergency contraception, as compared with women in a control group who received the standard of care, but this difference missed significance (8% vs 4%, $p=0.06$).

Only one provider-enhanced intervention[32] assessed attitudes related to contraception. In this study, a higher proportion of participants who watched a videotape with active input from a healthcare provider had a positive attitude about intrauterine devices, as compared with participants in the control arm who received the standard of care (64% vs 38%, $p<0.01$). However, this study was based on a pre-/post-test design and had a high risk for bias.

Discussion

Our initial database searches identified 17 studies that met the inclusion criteria for this systematic review. Of these, 15 studies[20–22,24–27,29–31,33–37] looked at knowledge of correct method use or contraceptive risks and benefits, including side effects and method

effectiveness. All but one[33] found a statistically significant positive impact of educational interventions. These studies included six RCTs with low risk for bias and covered a variety of educational mediums (i.e., written materials, audiotapes or videotapes, interactive computer games, and contraceptive decision aids). Thus, our findings are consistent with other systematic reviews[40,41] from the broader healthcare field, suggesting that a range of educational interventions can help increase client understanding.

This review provides more limited evidence for our other primary outcomes. Of the three studies[23,26,31] that looked at comfort with decision making, only one,[23] which had a high risk for bias, showed a clear positive effect. All three studies[21,29,32] that measured attitudes toward contraceptive methods found a positive effect, although the one with the clearest results had a high risk for bias.[32] Previous systematic reviews[40,41] from the broader healthcare field have found more limited evidence for client attitudes and comfort with decision-making processes. Although this may indicate decision-making tools have only a limited impact on these outcomes, it may also be that such effects are difficult to detect because of other influences, such as the difficulty of the choice to be made and the quality of the healthcare provider relationship and other aspects of care.[41]

We were unable to draw conclusions about our other outcomes. None of the studies we identified addressed our remaining primary outcomes. With respect to our secondary outcomes, we identified only two studies that addressed intentions to use condoms[24,28] or unintended pregnancy.[20,29] We identified five studies that evaluated uptake of contraception, or correct and continued use of contraception. Though four[20,21,24,29] of these were RCTs with low to moderate risk for bias, only two[21,29] found a positive effect. The absence of studies finding an impact on our secondary outcomes likely is related to the fact that educational interventions are generally intended to impact short-term outcomes such as knowledge, whereas broader counseling interventions are theorized to address outcomes that are associated with behavioral changes.[17]

Although this systematic review provides evidence that a wide range of mediums are effective at increasing knowledge, we identified only three studies[23,25,31] that looked at the complexity of educational interventions, and one[23] had a sequential post-test study design with a high risk for bias. Of the two RCTs with low risk for bias, one[31] found the simplest presentation of numeric information was the most effective, but in the other,[25] simpler materials were only more effective when paired with interactive questions from a healthcare provider. Research from other areas of healthcare suggests that using plain language,[42–44] attending to the client's cultural and linguistic preferences,[45–47] limiting the amount of presented information and discussing important facts first,[48–50] and simplifying the presentation of numeric quantities[51–64] are important for promoting client comprehension. More-detailed research specific to these topics is needed in relation to contraception.

This review also leaves open questions about the extent to which educational interventions are more effective with input from a health educator or healthcare provider. Though we identified three RCTs with low risk for bias that included both provider-independent and -enhanced interventions, their results are not straightforward. The study by DeLamater and colleagues[22] found knowledge increases were greater with the input of a health educator.

However, in the study by Little and colleagues,[25] interactive questions increased the effectiveness of a simplified tool, but not standard written materials. In the study by O'Donnell et al.,[27] the addition of a facilitator-led discussion session was no more effective than a videotape alone for increasing knowledge, but it did result in a higher proportion of subjects redeeming the vouchers for free condoms.[28] Nonetheless, in spite of the limited evidence provided by this review, research in other areas of healthcare suggests clients value spoken information and do not see written materials as a replacement.[65,66] Moreover, provider delivery allows for active learning techniques with demonstrated effectiveness, such as the presentation of information in a question-and-answer format[67–70] and use of the teach-back method in which clients restate the most important information.[71,72]

Additional studies addressing outcomes of interest were identified subsequent to the presentation of this systematic review to the Technical Panel on Counseling and Education weighing evidence for the recommendations: "Providing Quality Family Planning Services: Recommendations of CDC and the U.S. Office of Population Affairs."[16] Two studies subsequently identified examined literacy and found that it did not interact with other features of educational tools to impact their effectiveness. The first subsequently identified study[73] was a post hoc analysis of the RCT in our review addressing the impact of written materials paired with interactive questions.[25] In this analysis, the impact of the interventions did not differ by educational level. The second study[74] was an RCT using daily educational text messages to provide information on the risk, benefits, side effects, effectiveness, and mechanisms of action for oral contraceptives. The effect of these messages on knowledge scores at 6 months was similar for women who had or had not completed high school. The lack of significant findings in these studies concurs with prior research suggesting that simplified materials may be more effective and preferred by users of all literacy levels.[42–44]

Four subsequently identified studies provide evidence addressing the impact of educational tools on knowledge of contraception, attitudes about contraception, selection of effective contraceptive methods, and continued use of contraception. In one retrospective cohort study, intrauterine device (IUD) continuation rates were compared among women who did and did not receive an enhanced health educator session that included culturally appropriate materials written in plain language, demonstrations with models and visuals, and use of the teach-back method to ensure understanding. Women who did not receive the enhanced session had significantly increased odds of having their IUD removed by 6 months.[75] The second study was the aforementioned RCT using daily text messages, with respect to literacy. In this study, participants who received the text messages had significantly higher knowledge scores and continuation rates at 6 months relative to controls.[74,76] The third study was an RCT that evaluated a computer-based contraceptive assessment module. Upon completing its use, participants received either a list of methods tailored to the responses they provided or a generic list of methods. Although participants in both experimental arms had significantly increased odds relative to controls of selecting an effective method (i.e., injectables, pills, patches, or rings) or highly effective method (i.e., an IUD or implant),[77] only the participants who received the tailored list had increased odds relative to controls of using their selected method correctly and continuing this method through 4 months.[78] The fourth study was an RCT evaluating use of an interactive iOS app designed to increase awareness of long-activing reversible contraceptives (LARCs, i.e., IUDs and implants)

among clients waiting for a contraceptive appointment. Compared with participants who received the standard of care, a significantly higher percentage of app users correctly answered questions about contraceptive effectiveness and expressed an interest in receiving information about implants. There was no difference between the groups expressing interest in receiving information about IUDs, or in selection of a LARC method, although the study was not powered to detect an increase in LARC selection.[51]

Conclusions

This systematic review provides clear evidence that a wide range of educational tools can effectively increase client knowledge. More limited evidence is provided for the impact of educational interventions on client comfort with the decision-making process or the development of attitudes toward contraceptive methods. Although few studies identified for inclusion in this review found an effect of educational interventions on correct or continued contraceptive use, recently identified studies provide more promising results. Although the heterogeneity of studies in this review did not allow us to calculate summary measures of association, each of our outcomes were supported by some high-quality studies with a low risk for bias. Future studies in the area of family planning are needed to assess how the content and format of information can best be structured and delivered, the extent to which it is necessary to have a knowledgeable person such as a healthcare provider or educator work with clients to enhance the effectiveness educational tools, and the extent to which educational interventions can influence related contraceptive use behaviors. The information in this review was presented to an expert technical panel in May 2011 at a meeting convened by the Office of Population Affairs and CDC. Along with expert feedback and findings from a complementary review on contraceptive counseling, the information in this review was used to develop recommendations for providing quality contraceptive counseling and education in the 2014 “Providing Quality Family Planning Services: Recommendations of CDC and the U.S. Office of Population Affairs.”[16]

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Appendix: Supplementary data

Supplementary data associated with this article can be found at http://dx.doi.org/10.1016/j.amepre.2015.03.031.

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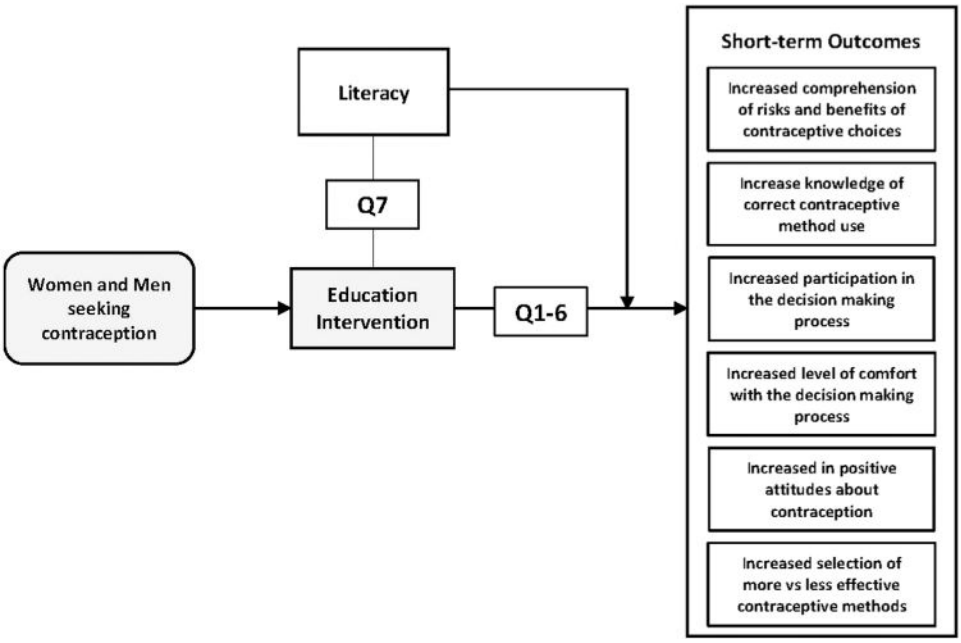

Figure 1.
Analytic framework for systematic review of impact of contraceptive education.

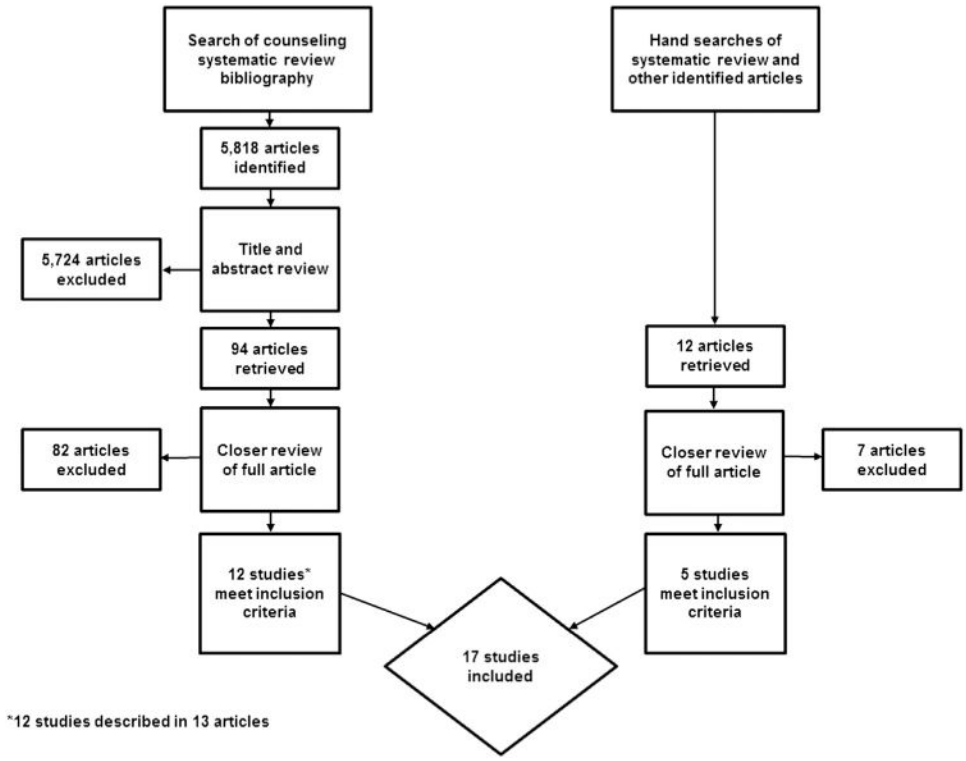

Figure 2.

Flow diagram of the process of identifying studies to include in this systematic review of contraceptive education.

Table 1

Key Questions for Systematic Review on Impact of Education Interventions

Key question no.	Question
1	Does contraceptive education increase comprehension of risks and benefits of contraceptive choices, including knowledge of side effects and method effectiveness?
2	Does contraceptive education increase knowledge of correct contraceptive method use?
3	Does contraceptive education increase participation in the decision-making process?
4	Does contraceptive education increase the level of comfort with the decision-making process?
5	Does contraceptive education increase positive attitudes about contraception?
6	Does contraceptive education increase selection of more as compared with less effective methods?
7	Does a client's literacy level modify the effectiveness of educational interventions?

Note: The key questions are put into context by the analytic framework presented in Figure 1.

Table 2

Summary of Evidence From Systematic Review on Contraceptive Education

	Mode of education delivery: provider independent[a]				Mode of education delivery: provider enhanced[b]		
Impact on	**Decision aids**	**Written materials**	**Audio or videotape**	**Interactive computer games**	**Decision aids**	**Written materials**	**Audio or videotape**
Number of studies	0	7	5	3	1	1	4
Primary outcomes							
Knowledge, including knowledge of risks and benefits and knowledge of correct method use	–	▲▲▲▲▲●	▲▲▲▲▲	▲▲▲	▲	▲	▲▲▲
Participation in the decision making process	–	–	–	–	–	–	–
Comfort with decision making process	–	▲▲	●	–	–	–	–
Positive attitudes about contraception	–	●	▲▲*		–	–	▲
Selection of effective contraceptive methods	–	–	–	–	–	–	–
Secondary outcomes							
Short-term							
Intentions to use contraception (condom vouchers redeemed)	–	–	▲▲	–	–	–	▲
Medium-term							
Contraceptive use, including continuation, and correct and consistent use	–	●●	●▲▲*	–	●	–	–
Long-term							
Pregnancy	–	–	▲	–	▲*	–	–

Note: Each symbol=1 study; studies with multiple types of interventions have a symbol for each type of intervention. ▲ education intervention had a significant positive impact ($p<0.05$) on this outcome; * finding had marginal significance ($0.05<p<0.1$); ● education intervention had neither positive nor negative impact on this outcome; – no studies identified for this outcome.

[a] Findings for studies without input beyond the standard of care from a person, such as a healthcare provider or a health educator.

[b] Findings for studies with enhanced input from a healthcare provider or a health educator.