The Safety and Feasibility of Contraception Care by Midwives and Other Nonphysician Providers: A Scoping Review of Randomized Control Trials

Innocuité et faisabilité des soins de contraception prodigués par lessages-femmes et d’autres fournisseurs non médecins : examen de la portée d’essais contrôlés randomisés

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ABSTRACT

Background: Although midwives in most Canadian provinces and other high-income countries have contraceptive prescribing ability, it is not within the Ontario midwifery scope of practice.

Aim: To outline the contraceptive-related scope of practice of midwives in Canada and other high-income countries and to review the outcomes of contraceptive provision by physician versus nonphysician providers.

Methods: We conducted an environmental scan through a search of grey literature to summarize contraception-related scopes of practice of midwives in provinces across Canada and in other high-income countries. We then conducted a scoping review of randomized controlled trials (RCTs) that examined the outcomes of physicians compared with nonphysician providers for the provision of contraception care, and summarized that evidence.

Findings: Our environmental scan revealed that Quebec and Ontario are the only provinces in Canada in which midwives cannot prescribe contraception. In the following industrialized countries, midwives with education similar to that of Ontario midwives are able to prescribe contraception: New Zealand, Australia, United States, Sweden, Norway, Netherlands, Finland, and France. Our review of RCTs indicates that for most measures of competency, the outcomes of physician and nonphysical providers are similar when providing contraception care.

KEYWORDS
contraception, scoping review, midwifery, physicians, task sharing

This article has been peer reviewed.

RÉSUMÉ

Contexte : Bien que les sages-femmes de la plupart des provinces canadiennes et d’autres pays à revenu élevé puissent prescrire des contraceptifs, ce type de prescription ne s’inscrit pas dans le champ d’exercice de la pratique sage-femme en Ontario.

But : Présenter le champ de pratique des sages-femmes au Canada et dans d’autres pays à revenu élevé en matière de contraceptifs et examiner les résultats des soins de contraception prodigués par des médecins par rapport à ceux offerts par des fournisseurs qui n’en sont pas.

Méthodes : Nous avons effectué une analyse du contexte au moyen d’une recherche de la littérature grise, dans le but de résumer les champs de pratique des sages-femmes dans les provinces canadiennes et dans d’autres pays à revenu élevé en matière de contraceptifs. Nous avons ensuite examiné la portée d’essais contrôlés randomisés (ECR) qui avaient comparé les résultats des soins de contraception selon qu’ils avaient été prodigués par des médecins ou des fournisseurs qui n’en étaient pas. Enfin, nous avons résumé les données recueillies.

Constatations : Notre analyse du contexte a révélé que le Québec et l’Ontario sont les seules provinces canadiennes où les sages-femmes ne peuvent pas prescrire des moyens contraceptifs. Dans les pays industrialisés suivants, les sages-femmes ayant reçu la même formation que celles de l’Ontario sont en mesure de le faire : la Nouvelle-Zélande, l’Australie, les États-Unis, la Suède, la Norvège, les Pays-Bas, la Finlande et la France. Notre examen d’ECR révèle que, pour la plupart des indicateurs de compétence, les résultats des soins de contraception sont semblables, qu’ils aient été donnés par un médecin ou un fournisseur qui n’en est pas un.

MOTS-CLÉS
contraception, examen de la portée, pratique sage-femme, médecins, partage des tâches

Cet article a été évalué par un comité de lecture.
INTRODUCTION

The World Health Organization (WHO) defines task sharing as “the expansion of the level of health providers who can appropriately deliver health services.”

Task sharing has become increasingly utilized over the last several decades for a variety of health interventions and has shown to benefit health care accessibility in rural communities, as well as reduce system costs. Family-planning task sharing is associated with benefits for population health, including lower health care costs, improved access to contraception in remote areas, and more time for physicians to handle cases of higher complexity.

Task sharing has also been identified as a strategy to increase access to contraception for populations with a lower use of contraception, including new immigrants, women of a young age, individuals living in poverty, and women living in rural areas.

Access to sexual and reproductive care is defined by the WHO and the United Nations as a human right, and access to contraception is important for the physical, social, financial, emotional, and psychological health of women.

The consequences of unintended pregnancy are significant and include (1) the financial, social, and emotional implications of terminating a pregnancy and (2) the cost of raising a child to adulthood. A 2015 study estimated Canada's annual direct health care costs associated with unintended pregnancy to be $320 million. In 2016, the United Nations Human Rights Commissioner drew attention to geographical and social inequities in access to contraception and abortion care and called on the Canadian government to improve access to care.

Despite the benefits associated with task sharing of family planning and position statements by the Society of Obstetricians and Gynaecologists of Canada and the WHO supporting its safety, the scope of practice of Canadian midwives related to family planning continues to vary across Canadian jurisdictions, some Canadian midwives being unable to prescribe any contraceptives and many being restricted to only providing contraception care for people in the first 6 to 12 weeks post partum.

The aim of our research was to summarize information from the research literature and the grey literature related to family-planning scope expansion for Canadian midwives. The most recent summary of midwives’ contraceptive prescribing abilities in other high-income countries compared to Canada was published in 2009, and there have been various changes to midwives’ scope of practice since then. The most recent systematic review comparing the safety of nonphysician providers to that of physicians in regard to prescribing and administering contraception was limited to evidence from low- and middle-income countries. To address these evidence gaps, we had three objectives: (1) to summarize the current scope of midwives to prescribe and administer contraceptive options across Canadian jurisdictions, (2) to summarize midwives’ scope of practice with respect to contraception care in other high-income countries, and (3) to summarize available high-quality evidence about the outcomes of family-planning care provided by physicians compared to the outcomes of family-planning care provided by other health care providers.

METHODS

We conducted a scoping review using methods described by Arksey and O'Malley. In a scoping review, the development of a research question, the choosing of search terms, and the gathering of evidence constitute an iterative process that continually evolves as the authors gather more information on the chosen subject. Scoping reviews tend to explore broader research questions than do systematic reviews and aim to produce a summary of evidence on a topic rather than a detailed evaluation of the quality of evidence available.

We chose to conduct a scoping review, because our overall goal of identifying information of relevance to family-planning scope expansion for Canadian midwives was broad, and because we wanted to include information from a variety of sources.

Three searches were done to gather data to address our objectives. First, we conducted an environmental scan by searching for online grey literature from various midwifery associations in regard to contraception-related scopes of midwifery practice in Canadian jurisdictions. We performed a second environmental scan of grey literature online in regard to the scope of practice of midwives in the following high-income regions, defined as having a
New Zealand, Australia, United States, United Kingdom, Sweden, Norway, Netherlands, Denmark, Finland, Germany, and France. Information for these two searches was primarily drawn from the websites of midwifery regulators and professional associations. Finally, a systematic literature search was conducted to synthesize evidence from randomized controlled trials (RCTs) examining the outcomes of physicians compared to outcomes of other health care providers in regard to the provision of contraception care. We defined contraception care as the authority to prescribe or administer contraception, including intrauterine devices and the oral contraceptive pill. We included studies that [1] reported outcomes of nonsurgical contraceptive care provided by physicians as compared to those of other health care providers and [2] were RCTs. Studies were excluded if they were written in a language other than English or did not directly compare the outcomes of physicians to those of nonphysician providers. There were no constraints placed on the date of publication of the studies.

Through consultation with a librarian, two of the authors developed a search strategy. Synonyms for the categories of physicians, nonphysician providers, and contraceptive methods were compiled. The initial strategy did not include contraceptive implants. (The full search strategy is available from the authors upon request.) Initial searches were conducted by one author in four databases: EMBASE, the Cochrane Library, MEDLINE, and CINAHL; the searches were limited to RCTs on each database. We used Mendeley, an open-access reference management software, to manage the results; search results were imported into Mendeley, and duplicates were removed. Titles and abstracts were screened to determine if inclusion criteria were met, and full-text articles were retrieved and assessed if eligibility could not be determined on the basis of title and abstract alone. One author conducted screening, in consultation with another author. Included studies were subsequently searched on the Web of Science citation database, and studies that referenced an included study were screened for inclusion eligibility [forward reference chaining]. We also hand-searched the reference lists of key policy documents and systematic reviews identified by any of our searches. In July 2019, an updated search was done, expanded to include contraceptive implant studies that also met the inclusion criteria. Contraceptive implants, while not currently available in Canada, are widely used in other high-income countries, and we decided to include studies about the implant for this reason.

RESULTS

Table 1 summarizes midwives’ scope of practice with respect to contraception care across Canadian jurisdictions where midwifery is regulated. Table 2 summarizes the scope of midwives’ practice with respect to contraception care in other high-income countries. Our scan of both Canadian jurisdictions and high-income countries with similar levels of midwifery education shows that in most locations, midwives have the authority to prescribe oral contraceptives and to insert intrauterine devices (In communication with K. Aarø, J. Garcia and A. Heino, via email message in April 2019). Clarifications of publicly available information were
made through email communication with J. Erickson (registrar, College of Midwives of Manitoba), J. Arpin (Order of Midwives of Quebec) and K. Ebbett (Midwifery Council of New Brunswick).

In our search, five RCTs met our eligibility criteria. The characteristics of the included studies are shown in Table 3. All of the studies were conducted in low- or middle-income countries, including Brazil, Colombia, Turkey, Kenya, and the Philippines. The studies were published between 1977 and 2018. The health care providers who were compared with physicians include midwives and nurses. Included studies measured the outcomes of nonphysicians’ prescribing a range of contraception care, including the use of intrauterine devices (IUDs), oral contraception, contraceptive implantation, contraceptive injection, sterilization, and barrier-method dispensing. Two studies indicated that the majority of their participants were at less than 1 year post partum.

Overall, the clinical outcomes of contraception care provided by physicians and by nonphysician health care providers were similar (see Tables

### Table 1. Contraceptive-Related Scope of Practice of Midwives in Canada

<table>
<thead>
<tr>
<th>Province/Territory</th>
<th>Contraceptive Prescribing?</th>
<th>IUD Insertion?</th>
<th>Postpartum Contraception Scope of Practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>British Columbia</td>
<td>Yes, with the completion of an additional certification program</td>
<td>Yes, with the completion of an additional certification program</td>
<td>Midwives may provide contraceptive services to 3 months post partum.</td>
</tr>
<tr>
<td>Alberta</td>
<td>New legislation recently approved; advanced authorization required (Midwives are not yet prescribing contraception.)</td>
<td>New legislation recently approved; advanced authorization required (Midwives are not yet inserting IUDs.)</td>
<td>Once changes to legislation are implemented, contraceptive service provision will not be limited to the postpartum period.</td>
</tr>
<tr>
<td>Saskatchewan</td>
<td>Yes</td>
<td>Yes</td>
<td>6 weeks post partum</td>
</tr>
<tr>
<td>Manitoba</td>
<td>Yes (However, proof of competency is required.)</td>
<td></td>
<td>6 weeks post partum†</td>
</tr>
<tr>
<td>Ontario</td>
<td>No, unless delegated by another health care provider and competency is proven</td>
<td>No, unless delegated by another health care provider and competency is proven</td>
<td>6 weeks post partum, unless delegated by another health care professional and competency is proven</td>
</tr>
<tr>
<td>Quebec</td>
<td>No‡</td>
<td>No‡</td>
<td>6 weeks</td>
</tr>
<tr>
<td>Nova Scotia</td>
<td>Yes</td>
<td>Yes</td>
<td>6 weeks</td>
</tr>
<tr>
<td>New Brunswick</td>
<td>Yes, if additional training is completed</td>
<td>Yes, if additional training is completed</td>
<td>6 weeks§</td>
</tr>
<tr>
<td>Nunavut</td>
<td>Yes</td>
<td>Yes, if additional training is completed and competency proven</td>
<td>The duration of period in which midwives can provide contraception care is not defined.</td>
</tr>
<tr>
<td>Northwest Territories</td>
<td>Yes, after completion of additional certification course</td>
<td>Yes, if competency can be proven</td>
<td>1 year post partum, unless under the order of a physician</td>
</tr>
</tbody>
</table>

IUD, intrauterine device

* M. Waters, personal communication, April 2019
† J. Erickson, email message, April 2019
‡ C. Arpin, email message, April 2019
§ K. Ebbett, email message, April 2019
4, 5, and 6). The included studies found no differences between physician and nonphysicians for the following outcomes: continuation rate of oral contraception,\textsuperscript{45,48} continuation rate of IUD use,\textsuperscript{45–47} rate of pregnancy with an IUD,\textsuperscript{45–48} rate of IUD expulsion,\textsuperscript{46,47} and rate of side effects with contraception.\textsuperscript{45}

The studies reported some differences between physicians and other health care providers. The following outcomes favour nonphysician providers: less pain associated with IUD insertion (nurses),\textsuperscript{46} fewer patient-initiated appointments for complications (nurses),\textsuperscript{45} more frequent reinsertion after expulsion (nurse-midwives),\textsuperscript{47} and lower loss to follow up (auxiliary nurse-midwives).\textsuperscript{47} In contrast, the following findings favoured physicians: less frequent referral to an obstetrician-gynecologist (versus referrals by nurse-midwives);\textsuperscript{47} less frequent unsuccessful IUD insertion, particularly for nulliparous women (physicians [3.3%] versus nurses [1.3%]);\textsuperscript{46} and, compared to nurses, less-frequent prescription of less-effective contraceptive methods.\textsuperscript{45,48} Of note, despite the differences in rates of prescribing less-effective methods of contraception, the groups were

| Table 2. Contraceptive-Related Scope of Practice of Midwives in Other High-Income Countries |
|----------------------------------------|-------------------------------------------------|-------------------------------------------------------------------------------------------------|
| **Country**                            | **Contraceptive Prescribing?**                  | **IUD Insertion?**                                                                             |
| New Zealand                           | Yes                                             | Yes, if competency can be demonstrated                                                        |
| Australia                             | Endorsement on registration required to prescribe | No                                                                                              |
| United States (CNM and CM)            | Yes                                             | Yes [However, not commonly practiced by most midwives]                                        |
| United Kingdom                        | No*                                             | No*                                                                                            |
| Sweden                                | Yes                                             | Yes, with appropriate training                                                                 |
| Norway                                | Yes†                                            | Yes†                                                                                            |
| Netherlands                           | Yes                                             | Yes                                                                                            |
| Denmark                               | No                                              | No                                               |
| Finland                               | Yes, with additional training, but this is not typical in practice.† | Yes, but IUD insertions are not typically performed by my midwives.‡ |
| Germany                               | Unable to determine                             | No                                               |
| France                                | Yes                                             | Yes                                                                                            |

Certified Midwife (CM)
Certified Nurse Midwife (CNM)
IUD, intrauterine device

*J. Garcia, email message, April 2019
†K. Aarø, personal communication, April 2019
‡A. Heino, email message, April 2019
<table>
<thead>
<tr>
<th>Article Title</th>
<th>Year</th>
<th>Country</th>
<th>Authors</th>
<th>Study Population</th>
<th>Intervention, Comparison</th>
<th>Contraceptive Methods Assessed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Differences between physicians and nurses providing family planning services at a Bogota clinic</td>
<td>1978</td>
<td>Colombia</td>
<td>Einhorn RF, et al</td>
<td>1,532 new clients seeking contraceptive services at the Profamilia clinic</td>
<td>Nurses vs. physicians</td>
<td>Administration of IUDs, oral contraception, barrier methods, and sterilization</td>
</tr>
<tr>
<td>Contraceptive method continuation according to type of provider</td>
<td>1977</td>
<td>Colombia</td>
<td>Einhorn RF, et al</td>
<td>1,532 new clients seeking contraceptive services at the Profamilia clinic</td>
<td>Nurses vs. physicians</td>
<td>Administration of IUDs, oral contraception, barrier methods, and sterilization</td>
</tr>
<tr>
<td>Comparative study of safety and efficacy of IUD insertion by physicians and nurses in Brazil</td>
<td>1995</td>
<td>Brazil</td>
<td>Lassner KJ, et al</td>
<td>1,711 women who requested IUD insertion at the Center for Research on Integrated Maternal and Child Care</td>
<td>Physicians vs. nurses</td>
<td>Administration of IUDs, oral contraception, barrier methods, and sterilization</td>
</tr>
<tr>
<td>Physicians vs. auxiliary nurse-midwives as providers of IUD services: a study in Turkey and the Philippines</td>
<td>1983</td>
<td>Turkey and the Philippines</td>
<td>Eren N, et al</td>
<td>1,005 acceptors of IUDs in Turkey and the Philippines were in the first 1–3 days post partum</td>
<td>Auxiliary nurse-midwives vs. physicians</td>
<td>IUD insertion and follow-up</td>
</tr>
<tr>
<td>Contraceptive uptake in post abortion care: secondary outcomes from a randomized controlled trial, Kisumu, Kenya</td>
<td>2018</td>
<td>Kenya</td>
<td>Makenzius M et al</td>
<td>810 women seeking contraception post abortion</td>
<td>Midwives vs. physicians</td>
<td>Injectable contraceptives, IUD, oral contraception, contraceptive pill, condoms, implant</td>
</tr>
</tbody>
</table>

**Table 3. Demographics of Included Studies**
DISCUSSION

Overall, our scoping review provides convergent sources of information that support (1) the addition of contraception care within the scope of practice of Canadian midwives in jurisdictions where such care is not yet provided and (2) the expansion of the provision of such care beyond the immediate postpartum period. First, our review of the scope of practice of midwives across Canada and in other high-income countries shows that midwives are already providing this type of care in many industrialized settings. Of note, in Alberta, legislation is in place for midwives to provide contraception care to clients beyond 6 weeks post partum [M. Waters [executive director of the College of Midwives of Alberta], personal communication, April 2019]. This model will likely help improve the accessibility of contraception to Canadians by increasing the number of providers able to offer contraception care. Second, we identified five studies comparing outcomes of physicians and nonphysician providers in regard to the provision of contraception. The outcomes between the two classes of providers were similar across the studies, and several studies reported benefits associated with care by nonphysicians.

The five studies have a number of limitations that should be considered when interpreting the results of this review. First, all but one of these studies was published prior to 2000. The only current RCT, published in 2018, reported on limited outcomes related to contraceptive prescription, including acceptance, type, and continuation of contraception. A number of problems may arise due to the dated nature of studies available on this topic. There have been significant changes to the education of health care providers—especially nonphysician health care providers—over the past 20 to 40 years. There have been changes in the demographics (related to age, parity, and comfort with contraception) of women seeking contraception, as well as changes in methods and administration practices for contraception that may influence the outcomes of various providers administering contraception care. Another limitation of the available studies on this topic is that most research was conducted in low- or middle-income countries. Such countries differ from higher-income countries in the training of health care providers, the demographics (i.e., parity, age, comfort with a male provider, and comfort in discussing sexual health) of women using contraception, and the availability of various types of contraception.

Finally, several methodological limitations of the included studies should be noted. One limitation is that participants were usually not blinded to the type of provider administering contraceptive services. Arguably, although blinding to the type of health care provider does not occur in practice, the dated nature of the included studies necessitates that consideration be given to how the perception of various providers has changed over the last quarter century. For example, nurses historically were perceived to be “nicer” and more approachable than physicians, but less competent. This perception may influence how participants rated subjective measures (such as levels of pain with IUD insertion) or reported side effects. However, in regard to side effects or the rate of complications, none of the studies reported differences between patients cared for by physicians and those cared for by nonphysicians. One study reported that pain with IUD insertion was greater in the physician group versus the nonphysician group.

Another limitation was that none of the included RCTs controlled for the number of weeks post partum of patients in physician groups compared to nonphysician groups. The number of weeks post partum is a known predictor of the likelihood of IUD complications such as perforation. It is therefore problematic that this variable was not controlled for in any of the RCTs and that it may have influenced the validity of the reported results. In addition, in the study by Einhorn et al. there were more nulliparous clients in the nursing group than in the physician group. The study’s authors postulated that this difference may have contributed to differences in the efficacy of contraceptive methods prescribed between the two groups.

Finally, as with all studies in which the participants are observed, it is important that the impact of the Hawthorne effect (i.e., behaviour is altered because it is being observed) be considered. It is possible
<table>
<thead>
<tr>
<th>Article Title</th>
<th>Type of Contraceptive Method Prescribed</th>
<th>Change in Contraceptive Method</th>
<th>Patient Revisit Patterns</th>
<th>Referral to OB/GYN</th>
<th>Rate of Pregnancy</th>
<th>Method</th>
<th>Rate of Side Effects</th>
<th>Acceptance Rate of Contraceptive Method Continuation According to Type of Provider</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contraceptive uptakes in post abortion care—secondary outcomes from a randomized controlled trial, Kisumu, Kenya</td>
<td>No difference</td>
<td>NR</td>
<td>NR</td>
<td>NR</td>
<td>NR</td>
<td>No</td>
<td>NR</td>
<td>No difference</td>
</tr>
<tr>
<td>Differences between physicians and nurses in providing family planning services: findings from a Bogota clinic</td>
<td>Physicians were more likely to prescribe highly effective methods of contraception (oral contraception or IUDs) than nurses. Physicians inserted more IUDs than nurses. For clients given temporary contraception, oral contraception was more likely to be the method prescribed at next visit for nurses as compared to physicians, while sterilization was more likely to be prescribed at the next visit for physicians as compared to nurses.</td>
<td>For clients prescribed temporary contraception, nurses were more likely than physicians to continue to use conventional contraception methods (i.e., foam and condoms) rather than change to a more effective form of contraception.</td>
<td>Nurses were more likely than physicians to have patients return for scheduled method-change visits. Physicians were more likely than nurses to have patient-initiated follow-up visits.</td>
<td>NR</td>
<td>No difference</td>
<td>No</td>
<td>No</td>
<td>NR</td>
</tr>
<tr>
<td>Contraceptive method continuation according to type of provider</td>
<td>Nurses were less likely to insert IUDs than were physicians. Nurses were more likely to prescribe less-effective methods of contraception (i.e., foam and condoms) than physicians.</td>
<td>Reported on but not analyzed for significance</td>
<td>On initial visit, none of the physician patients also needed to be examined by the nurse due to complicating problems.</td>
<td>Reported as “virtually the same” but not analyzed for significance</td>
<td>Greater method</td>
<td>Slightly more nurses than physicians did not prescribe any method at first visit; not analyzed for significance.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

IUDs, intrauterine devices; NR, not reported; OB/GYN, obstetrician/gynecologist.
that the health care providers would have behaved differently if their actions had not been watched by the researchers.⁵³

**Strengths and Limitations**

To our knowledge, this study is the only review since 2015 that addresses differences in outcomes of physician providers compared to those of nonphysician providers in regard to contraception care.⁵ Further, our review includes only RCTs and therefore provides a unique summary of the highest-quality evidence available on this topic. A strength of this study is that evidence of the effectiveness of nonphysicians as providers of family planning was examined in terms of available evidence, as well as through a summary of the scope of practice of midwives in various jurisdictions. We believe that this combination of evidence provides information about both the safety and the feasibility of contraception provision by nonphysicians.

Our research has several limitations. Searches pertaining to midwives’ scope of practice in Canada and internationally were based on an online search of midwifery association statements, which may have resulted in some information being outdated. Despite our best efforts, it is also possible that more-recent information was missed during this process. Our scoping review of research comparing the outcomes of recipients of contraception care from physicians with recipients of contraception care from other providers was limited to publications in English. Relevant studies published in another language may have been excluded. In addition, while an extensive list of search terms for health care providers and types of contraception was generated prior to the literature search, it is possible that a relevant study was not identified if location- or culture-specific terminology was used in publications. Only one reviewer assessed the results of the searches and reviewed the retrieved studies. This may have increased the risk of error associated with inaccurate classification of studies based on the exclusion and inclusion criteria, and it is possible that relevant literature may have been missed. A second reviewer verified the eligibility of all included studies. Finally, we could not find one included study⁴⁴ on Web of Science; therefore, forward reference chaining was not done for this study. It should be taken into consideration that scoping reviews do not involve a methodological quality assessment of included studies. However, the homogeneity of the findings lends support to the validity of included studies.⁴⁵⁻⁴⁹

**Implications**

The results of this review indicate similar outcomes for physician and nonphysician providers, including outcomes of postpartum IUD insertion. The nonphysician providers were often either

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**Table 5. Oral Contraception-Related Results of Physician vs. Nonphysician Providers**

<table>
<thead>
<tr>
<th>Article Title</th>
<th>Oral Contraceptive Side Effects or Complications</th>
<th>Continuation Rate of Oral Contraceptive</th>
<th>Rate of Pregnancy</th>
<th>Patient Revisit Pattern</th>
</tr>
</thead>
<tbody>
<tr>
<td>Differences between physicians and nurses in providing family planning services: findings from a Bogota clinic</td>
<td>NR</td>
<td>No difference</td>
<td>Reported on but not analyzed for significance (However, pregnancy rates were virtually identical)</td>
<td>NR</td>
</tr>
<tr>
<td>Contraceptive method continuation according to type of provider</td>
<td>No difference between providers in rate of side effects causing termination of use at 9 months</td>
<td>No difference</td>
<td>Reported on but not analyzed for significance</td>
<td>NR</td>
</tr>
</tbody>
</table>

NR, not reported
<table>
<thead>
<tr>
<th>Article Title</th>
<th>IUD Side Effects or Complications</th>
<th>Continuation Rate of IUD</th>
<th>Pain on IUD Insertion</th>
<th>Rate of Pregnancy</th>
<th>Referral to OB/GYN</th>
<th>Rate of Unsuccessful IUD Insertion</th>
<th>Rate of IUD Reinsertion after Expulsion</th>
<th>Lost to Follow-Up</th>
<th>Rate of IUD Expulsion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Differences between physicians and nurses in providing family planning services: findings from a Bogota clinic</td>
<td>NR</td>
<td>NR</td>
<td>No difference</td>
<td>NR</td>
<td>NR</td>
<td>NR</td>
<td>NR</td>
<td>NR</td>
<td>NR</td>
</tr>
<tr>
<td>Contraceptive method continuation according to type of provider</td>
<td>Nurses were more likely than physicians to remove IUD, due to side effects.</td>
<td>6 months: higher with physicians; 9 months: no difference</td>
<td>No difference</td>
<td>NR</td>
<td>NR</td>
<td>NR</td>
<td>NR</td>
<td>Reported on but not analyzed for significance</td>
<td>NR</td>
</tr>
<tr>
<td>Comparative study of safety and efficacy of IUD insertions by physicians and nursing personnel in Brazil</td>
<td>No difference between physicians and nurses in reported complaints post IUD insertion; no difference in complications with insertion between providers</td>
<td>No difference</td>
<td>Higher with physicians</td>
<td>No difference</td>
<td>NR</td>
<td>Higher in nurses</td>
<td>NR</td>
<td>NR</td>
<td>No difference</td>
</tr>
<tr>
<td>Physicians vs. auxiliary nurse-midwives as providers of IUD services: a study in Turkey and the Philippines</td>
<td>Reported on but not analyzed for significance</td>
<td>No difference</td>
<td>NR</td>
<td>No difference</td>
<td>NR</td>
<td>NR</td>
<td>Higher for nurse-midwives</td>
<td>No difference</td>
<td>No difference</td>
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</table>

IUD, intrauterine device; NR, not reported; OB/GYN, obstetrician/gynecologist
nurses or nurse-midwives. Canadian midwives have equal or more educational training than do health care providers in the included studies.\textsuperscript{15,45–49} Furthermore, we found that prescribing oral contraceptives and inserting IUDs are within the scope of midwifery practice in the majority of Canadian provinces and in several industrialized countries where midwifery education is similar to that offered in Canada. This information, along with the recommendation of the WHO and the Society of Obstetricians and Gynaecologists of Canada that nonphysician providers can safely provide contraception care,\textsuperscript{1,11} provides strong support for the inclusion of contraception care into the scope of practice of all Canadian midwives. Our findings also suggest that there is a need for current, high quality research in Canada and other industrialized countries to quantify the impact of enabling nonphysician providers to provide contraception care.

**CONCLUSION**

Although the studies included in this review are old, the study’s results are likely still relevant and indicate that nonphysicinists and physicians have similar outcomes in regard to the administration and prescription of contraception.\textsuperscript{46–49} Further, midwives insert IUDs and prescribe contraception in many Canadian provinces and in other high-income regions internationally,\textsuperscript{12,13,22–25,28–33,14,34–43,15,44,46–2} indicating the feasibility of adding contraception to midwives’ scope of practice. This information, in addition to potential benefits such as cost savings\textsuperscript{9} and increased accessibility of contraception,\textsuperscript{5} lend support to the safety and benefit of adding contraception prescription and administration to the scope of practice for all Canadian midwives.

**REFERENCES**


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