



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 les sages-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.”¹ 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,² as well as reduce system costs.³ 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.^{3,4} Task sharing has also been identified as a strategy to increase access to contraception for populations with a lower use of contraception,⁵ including new immigrants, women of a young age, individuals living in poverty, and women living in rural areas.⁶

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.^{7,8} 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.⁷ A 2015 study estimated Canada’s annual direct health care costs associated with unintended pregnancy to be \$320 million.⁹ 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.¹⁰ Despite the benefits associated with task sharing of family planning³ and position statements by the Society of Obstetricians and Gynaecologists of Canada¹¹ and the WHO¹ 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.^{12,13,22,23,14–21}

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.²⁴ 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.⁵ 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 (e.g., midwives, nurses, physician assistants, and community health workers).

METHODS

We conducted a scoping review using methods described by Arksey and O’Malley.²⁵ 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.²⁵ 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

The scope of practice of Canadian midwives related to family planning continues to vary across Canadian jurisdictions.

gross national income of over US\$12,375 per capita:²⁶ 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,²⁷ 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).^{12,13,22-25,28-33,14,34-43,15,44,16-21} 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.⁴⁵⁻⁴⁹ 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,⁴⁶ Colombia,^{45,48} Turkey,⁴⁷ Kenya,⁴⁹ and the Philippines.⁴⁷ The studies were published between 1977 and 2018. The health care providers who were compared with physicians

include midwives^{44,46,49} and nurses. Included studies measured the outcomes of nonphysicians' prescribing a range of contraception care, including the use of intrauterine devices (IUDs),⁴⁵⁻⁴⁹ oral contraception,^{45,48,49} contraceptive implantation,⁴⁹ contraceptive injection,⁴⁹ sterilization,^{45,48} and barrier-method dispensing.^{45,48,49} Two studies indicated that the majority of their participants were at less than 1 year post partum.^{47,48}

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

Province/Territory	Contraceptive Prescribing?	IUD Insertion?	Postpartum Contraception Scope of Practice
British Columbia	Yes, with the completion of an additional certification program ²⁸	Yes, with the completion of an additional certification program	Midwives may provide contraceptive services to 3 months post partum.
Alberta	New legislation recently approved; advanced authorization required ²⁹ [Midwives are not yet prescribing contraception.]*	New legislation recently approved; advanced authorization required ²⁹ [Midwives are not yet inserting IUDs.]*	Once changes to legislation are implemented, contraceptive service provision will not be limited to the postpartum period.*
Saskatchewan	Yes	Yes	6 weeks post partum
Manitoba	Yes ¹³	Yes (However, proof of competency is required.)	6 weeks post partum†
Ontario	No, unless delegated by another health care provider and competency is proven	No, unless delegated by another health care provider and competency is proven	6 weeks post partum, unless delegated by another health care professional and competency is proven ^{20,21}
Quebec	No‡	No‡	6 weeks
Nova Scotia	Yes	Yes	6 weeks
New Brunswick	Yes, if additional training is completed	Yes, if additional training is completed	6 weeks§
Nunavut	Yes	Yes, if additional training is completed and competency proven	The duration of period in which midwives can provide contraception care is not defined.
Northwest Territories	Yes, after completion of additional certification course	Yes, if competency can be proven	1 year post partum, unless under the order of a physician

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,^{45,48} continuation rate of IUD use,⁴⁵⁻⁴⁷ rate of pregnancy with an IUD,⁴⁵⁻⁴⁸ rate of IUD expulsion,^{46,47} and rate of side effects with contraception.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],⁴⁶ fewer patient-initiated appointments for

complications [nurses],⁴⁵ more frequent reinsertion after expulsion [nurse-midwives],⁴⁷ and lower loss to follow up [auxiliary nurse-midwives].⁴⁷ In contrast, the following findings favoured physicians: less frequent referral to an obstetrician-gynecologist [versus referrals by nurse-midwives],⁴⁷ less frequent unsuccessful IUD insertion, particularly for nulliparous women [physicians [3.3%] versus nurses [1.3%]];⁴⁶ and, compared to nurses, less-frequent prescription of less-effective contraceptive methods.^{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?	Midwifery Education Requirements
New Zealand	Yes	Yes, if competency can be demonstrated	Bachelor's degree
Australia	Endorsement on registration required to prescribe	No	Either a bachelor's degree, or nursing followed by a graduate diploma of midwifery
United States [CNM and CM]	Yes	Yes (However, not commonly practiced by most midwives)	Graduate degree
United Kingdom	No*	No*	Bachelor's degree
Sweden	Yes	Yes, with appropriate training	Graduate degree and nursing experience usually required prior to program entry.
Norway	Yes†	Yes†	2-year postgraduate education program; bachelor's degree in nursing required
Netherlands	Yes	Yes	Bachelor's degree
Denmark	No	No	Bachelor's or master's degree
Finland	Yes, with additional training, but this is not typical in practice.‡	Yes, but IUD insertions are not typically performed by midwives.‡	1.5-year training program completed after 3-year nursing program
Germany	Unable to determine	No	3-year program
France	Yes	Yes	5-year training program

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 3. Demographics of Included Studies

Article Title	Year	Country	Authors	Intervention, Comparison	Study Population	Contraceptive Methods Assessed
Differences between physicians and nurses in providing family planning services: findings from a Bogota clinic	1978	Colombia	Einhorn RF, et al	Nurses vs. physicians	1,532 new clients seeking contraceptive services at the Profamilia clinic	Administration of IUDs, oral contraception, barrier methods, and sterilization
Contraceptive method continuation according to type of provider	1977	Colombia	Einhorn RF, et al	Nurses vs. physicians	1,532 new clients seeking contraceptive services at the Profamilia clinic	Administration of IUDs, oral contraception, barrier methods, and sterilization
Comparative study of safety and efficacy of IUD insertions by physicians and nursing personnel in Brazil	1995	Brazil	Lassner KJ, et al	Physicians vs. nurses	1,711 women who requested IUD insertion at the Center for Research on Integrated Maternal and Child Care	IUD insertion and follow-up
Physicians vs. auxiliary nurse-midwives as providers of IUD services: a study in Turkey and the Philippines	1983	Turkey and the Philippines	Eren N, et al	Auxiliary nurse midwives vs. physicians	1,005 acceptors of IUDs in Turkey and the Philippines [90% of women in the Philippines were in the first 1-3 days post partum]	IUD insertion and follow-up
Contraceptive uptakes in post-abortion care—secondary outcomes from a randomized controlled trial, Kisumu, Kenya	2018	Kenya	Makenzius M et al	Midwives vs. physicians	810 women seeking contraception post-abortion	Injectable contraceptives, IUD, oral contraceptive pill, condoms, implant

IUD, intrauterine device

not different in regard to rates of pregnancy and method continuation.^{45,48}

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.⁴⁵⁻⁴⁹ The outcomes between the two classes of providers were similar across the studies,⁴⁵⁻⁴⁹ and several studies reported benefits associated with care by nonphysicians.⁴⁵⁻⁴⁷

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.⁴⁹ 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.^{4,5,50} Another

limitation of the available studies on this topic is that most research was conducted in low- or middle-income countries.⁴⁵⁻⁴⁹ 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.⁴

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.⁴⁵⁻⁴⁹ 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.⁵¹ 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.⁴⁵⁻⁴⁹ One study reported that pain with IUD insertion was greater in the physician group versus the nonphysician group.⁴⁶

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.⁴⁵⁻⁴⁹ The number of weeks post partum is a known predictor of the likelihood of IUD complications such as perforation.⁵² 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.⁴⁸

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.⁵³ It is possible

Table 4. General Contraceptive Prescribing Differences between Physician and Nonphysician Providers

Article Title	Type of Contraceptive Method Prescribed	Change in Contraceptive Method	Patient Revisit Patterns	Referral to OB/GYN	Rate of Pregnancy	Method	Rate of Side Effects	Acceptance Rate of
Contraceptive uptake in post-abortion care—secondary outcomes from a randomized controlled trial, Kisumu, Kenya	No difference	NR	NR	NR	NR	No	NR	No difference
Differences between physicians and nurses in providing family planning services: findings from a Bogota clinic	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.	For clients prescribed temporary contraception, nurses were more likely than physicians to continue to use conventional contraception methods (ie foam and condoms) rather than change to a more effective form of contraception.	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.	NR	No difference	No	No	NR
Contraceptive method continuation according to type of provider	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.	Reported on but not analyzed for significance	NR	On initial visit, none of the physician patients also needed to be examined by the nurse due to complicating problems.	Reported as “virtually the same” but not analyzed for significance	Greater method		Slightly more nurses than physicians did not prescribe any method at first visit; not analyzed for significance.

IUDs, intrauterine devices; NR, not reported; OB/GYN, obstetrician/gynecologist

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

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

NR, not reported

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

Table 6. Intrauterine Device–Related Results of Physician vs. Nonphysician Providers

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

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.^{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,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 nonphysicians and physicians have similar outcomes in regard to the administration and prescription of contraception.⁴⁵⁻⁴⁹ Further, midwives insert IUDs and prescribe contraception in many Canadian provinces and in other high-income regions internationally,^{12,13,22-25,28-33,14,34-43,15,44,16-21} indicating the feasibility of adding contraception to midwives' scope of practice. This information, in addition to potential benefits such as cost savings⁹ and increased accessibility of contraception,⁵ lend support to the safety and benefit of adding contraception prescription and administration to the scope of practice for all Canadian midwives.

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