ARTICLE

An Early Feasibility Study of Midwifery Services in a Vulnerable Population

Étude de faisabilité préliminaire de la prestation des services de sage-femme à une population vulnérable

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ABSTRACT

Objectives: Canadian women and newborns are usually healthy due to the availability of prenatal care, postnatal care, and the presence of a skilled health professional. However, social determinants of health can have a significant impact on women's ability to access high-quality care, particularly during pregnancy. We partnered with Aspen, a not-for-profit social service organization in Calgary, to explore the feasibility of implementing midwifery services for a vulnerable population.

Methods: We conducted interviews with Aspen clients, Calgary registered midwives, and focus groups with Aspen staff to understand their perceptions of midwifery services, including benefits and potential barriers to their implementation. We used administrative data to develop a demographic profile of Aspen clients.

***Results*:** Our results suggest that midwives would be acceptable birth providers, but this further depends on women's culture and their previous pregnancy experience. The study highlighted key aspects that should be considered to successfully implement midwifery services for the vulnerable population, including public awareness about midwifery services, access to an interprofessional team, and allocation of additional funding to practicing midwives.

***Conclusion*:** Midwifery care would be an acceptable and perhaps more-appropriate maternity care model for vulnerable populations.

KEYWORDS

midwifery, community, vulnerable populations, health equity

This article has been peer reviewed.

RÉSUMÉ

***Objectifs* :** Les femmes et les nouveau-nés canadiens sont habituellement en santé grâce à la disponibilité de soins prénatals et postnatals et à la présence d'un professionnel de la santé qualifié. Cependant, les déterminants sociaux de la santé sont susceptibles d'avoir une incidence considérable sur la capacité des femmes à avoir accès à des soins de haute qualité, en particulier durant la grossesse. Nous nous sommes associés avec Aspen, un organisme de services sociaux sans but lucratif de Calgary, pour examiner la faisabilité d'offrir des services de sage-femme à une population vulnérable.

Méthodes : Nous avons réalisé des entrevues avec des clientes d'Aspen, des sages-femmes autorisées de Calgary et des groupes de discussion avec le personnel d'Aspen, afin de comprendre leurs perceptions des services de sage-femme, y compris les bienfaits et les obstacles potentiels à leur mise en place. Nous avons utilisé des données administratives pour établir un profil démographique des clients d'Aspen.

Résultats : Nos résultats laissent entendre que les sages-femmes constitueraient des accoucheuses acceptables, mais cela dépend en plus de la culture des femmes et de leur expérience de grossesse antérieure. L'étude a mis en évidence les principaux aspects dont il faudrait tenir compte pour offrir avec succès des services de sage-femme à la population vulnérable, y compris la sensibilisation des gens à ces prestations, l'accès à une équipe interprofessionnelle et le versement d'un financement supplémentaire aux sages-femmes en exercice.

Conclusion : Les soins prodigués par des sages-femmes constitueraient un modèle de soins de maternité acceptable et peut-être plus approprié pour des populations vulnérables.

MOTS-CLÉS

pratique sage-femme, communauté, populations vulnérables, équité en santé

Cet article a été évalué par un comité de lecture.

BACKGROUND

Canadian women and newborns usually experience healthy pregnancy and birth, due to the availability of maternal care, such as prenatal care, skilled birth attendants, and postpartum care.[1] However, not all Canadian women have equal access to maternity services. Lack of access is a problem among vulnerable populations, rural or remote populations, and Indigenous populations living on reserves.[2–5] Socio-economic status (e.g., education level, place of residence, health literacy, language proficiency, and social support) can contribute to pregnant women's ability to obtain quality and comprehensive care.[2–7] The peer-reviewed literature indicates that different health care–seeking behaviours (e.g., late engagement with health care services, health illiteracy, and poor communication) may explain low utilization of maternal care and suboptimal birth outcomes (e.g., preterm birth, intrauterine growth restriction, or neonatal death) among these populations.[7–11] An extensive body of literature shows that improved access to maternity care for vulnerable populations is associated with positive birth outcomes.[12–15] Therefore, it may be beneficial to explore a comprehensive model of maternity care, such as midwifery care that addresses not only maternity health but also the social needs of vulnerable populations.

Midwives offer maternity care that is client- and family-centred and grounded in the following principles: professional autonomy, partnership, continuity of care providers, informed choice, choice of birthplace, evidence-based practice, and collaborative care.[16] Midwives' scope of practice extends beyond medical care to include social and mental care, which could be beneficial to vulnerable populations. Midwives are trained to manage both low- and high-risk pregnancies in an interdisciplinary setting. Health outcomes that are associated with the midwifery model of care are comparable to those of physician-led maternity care.[17,18] Midwifery services tend to focus more on continuity of care, satisfaction, communication, and shared decision making.[17,18] Overall, these studies show that midwifery may be a good fit for vulnerable people because it increases access to prenatal care (earlier engagement, increased numbers of visits, and increased screening for risk factors), is associated with fewer medical interventions, and improves maternal and infant outcomes.[9–13,15,19]

In comparison to midwives in other developed countries, midwives in Canada play a relatively small role in providing low-risk maternity care, especially in Alberta, where approximately 5.5% of babies are delivered by midwives.[20] Publicly funded midwifery services were introduced in March of 2009 in Alberta to improve access to maternity care.[21] According to the Alberta Perinatal Health Program (APHP), only 13.7% of women who access midwifery care reside in the most deprived neighbourhoods. The majority of midwifery clients in Alberta are from the most affluent neighbourhoods in major cities.[22] As a result, equitable access to midwifery services remains a challenge for vulnerable populations across Alberta.

RESEARCH PURPOSE AND QUESTIONS

The primary purpose of this study was to explore the feasibility of implementing midwifery services to improve health and social outcomes for vulnerable populations. A research partnership was developed between Alberta Health Services (a provincial health authority) and the Aspen Family and Community Network (hereafter referred to as Aspen), a not-for-profit social service organization that supports vulnerable people and communities in the Calgary area).[23] Our aim was to thoroughly understand all aspects of embedding midwifery services in a vulnerable community and to explore potential factors that could influence their implementation. Our specific research questions were the following:

- What social and maternity health issues do Aspen's clients face?
- What are the perceptions of Aspen's leaders, frontline staff, and clients in regard to implementing a midwifery program in the community?
- What are the potential facilitators for and barriers to implementing midwifery services for vulnerable populations?

METHOD

We used a mixed-methods approach to answer the research questions. Qualitative interviews

> A midwifery model could meet the complex social and health needs of vulnerable people and their families.

explored the participants' perceptions and expectations of midwifery services and the potential facilitators for and barriers to midwifery services. We used administrative data to characterize our Aspen population and better understand its demographics, health needs, and service use. The Conjoint Health Research Ethics Board of the University of Calgary granted ethical approval for this study.

Client Interviews

Using a semistructured interview guide, we interviewed current Aspen clients who gave birth at least once in Alberta after midwifery services were publicly funded by the government of Alberta in March 2009. We asked clients about potential barriers to accessing maternity services, opportunity for or experience with using midwifery services, and the reasons behind their choice of birth providers. Participants were recruited with the assistance of Aspen staff. A member of the research team contacted interested clients to schedule a face-to-face or telephone interview, depending on their preference. An interpreter facilitated communication if participants were not comfortable speaking English. All clients received a grocery store gift card for twenty-five dollars in appreciation of their participation. We acknowledge that females are not the only recipients of maternity care; people across the gender spectrum (i.e., transgender, genderqueer, and gender nonconfirming) may access maternity care. However, the Aspen clients who consented to be interviewed were female.

Staff Focus Groups

We created focus groups with the Aspen leadership team and frontline staff to obtain their perceptions of the current gaps in maternity care services and the potential effect of midwifery services on the health and social outcomes of their clients. So that interviewees could provide informed opinions, the focus groups were presented with a short description of midwifery services and their scope of practice.

Midwife Interviews

We also interviewed registered midwives in Calgary to obtain their perceptions on how midwifery care may benefit vulnerable populations. We recruited midwives with the assistance of the Alberta Association of Midwives, a provincial organization representing midwives and the profession of midwifery. We acknowledge that not all midwives identify as women; some midwives are male or identify as male or have a nonbinary sexual identity. However, all interviewed midwives in this study were female.

Informed consent was secured at the outset of the individual and group interviews. All individual interviews and focus group discussions were recorded and transcribed verbatim. We analyzed the data by using thematic and emergent analysis in NVivo 10 (QSR International, Doncaster, Australia). Emerging themes were guided by interview questions and topics raised in the interviews. Responses were reviewed by one member of the research team to develop a coding scheme, which was then validated by a second researcher using a subset of interviews.

Administrative Data

We retrieved data from several sources to create a profile of our sample, including socio-economic characteristics, maternity care, and health service use by Aspen clients. Data sources included

Table 1. Demographic Characteristics of Women Who Gave Birth in the Aspen Catchment Area, 2013–2015

Demographics	All (*N* = 7,493)		Receiving Assistance (*N* = 1,164)		Not Receiving Assistance (*N* = 6,206)		*p* Value
Age (mean ± SD)	29.78 ± 5.27		28.11 ± 5.99		30.10 ± 5.06		< .0001
Age (yrs)	***N***	**%**	***N***	**%**	***N***	**%**	
< 16	3	0.04	2	0.17	1	0.02	
16–19	189	2.52	90	7.73	98	1.58	
20–24	1,019	13.6	248	21.31	751	12.1	
25–29	2,347	31.32	336	28.87	1,967	31.7	
30–34	2,532	33.79	305	26.20	2,188	35.26	
35–39	1,167	15.57	153	13.14	997	16.07	
40+	236	3.15	30	2.58	204	3.29	

SD, standard deviation

Aspen's information system, Statistics Canada, and provincial health administrative databases. Aspen did not collect data that specifically identified their clients. We were unable to directly link individuals' data to provincial health outcomes data. Therefore, we used the postal codes of these clients as proxies for unique identifiers. We requested the APHP to pull data on all clients living in those postal codes who gave birth from January 2013 to 2015. The data provided maternal and birth outcomes data along with the Personal Health Number (PHN) of each individual. We then used these PHNs to link to provincial health databases. SAS 9.3 (SAS Institute, Cary, NC) was used for the analysis of the administrative data.

RESULTS

Administrative Data Results

Linking Aspen postal code data to the administrative databases resulted in a total sample size of 7,493 women who gave birth in 2013, 2014, and 2015. Approximately 15.5% of women in the sample received social assistance, including Assured Income for Severely Handicapped assistance, welfare, programs designed for Indigenous populations, and other government-sponsored programs. We used social assistance as a proxy for social vulnerability, which was not measured or reported in any databases. Administrative data analysis revealed that females residing in Aspen's catchment area and receiving social assistance were younger ($p < 0.0001$), had more pregnancies ($p < .0001$), had more vaginal births, and fewer cesarean sections and assisted births ($p < 0.0001$) than those not receiving assistance (Table 1 and Table 2).

We found further statistically significant differences in Antenatal Risk Score (ARS),[24] which is based on mothers' health- and social-related factors (smoking, drinking alcohol, and using drugs) on initial booking and at 36 weeks of pregnancy. A score between 0 and 2 indicated a low-risk assessment; between 3 and 6 indicated a moderate risk, and ≥ 7 indicated a high-risk. Women receiving social assistance tended to have higher ARS scores ($p < 0.0001$) and used a midwife significantly less than those not receiving assistance ($p < 0.0001$) (Table 2).

We examined health service use within our sample during pregnancy and postpartum. Inferential statistics were not run on service

Table 2. Clinical Characteristics and Care Pathway of Women Who Gave Birth in the Aspen Catchment Area, 2013–2015

Clinical Characteristics	All (mean ± SD)		Receiving Assistance (mean ± SD)		Not Receiving Assistance (mean ± SD)		*p* Value
Gravida (number of pregnancies)	2.58 ± 1.61		3.44 ± 2.16		2.42 ± 1.43		< .0001
Antenatal risk score	2.61 ± 2.65		3.28 ± 3.12		2.49 ± 2.54		< .0001
Birth Delivery Method	***N***	**%**	***N***	**%**	***N***	**%**	< .0001
Assisted (forceps/vacuum)	1,378	18.39	139	11.94	1,223	19.72	
Vaginal	3,921	52.33	742	63.75	3,106	50.08	
Cesarean section	2,189	29.21	283	24.31	1,873	30.20	
Unknown	5	0.07					
Antenatal Risk Categories	***N***	**%**	***N***	**%**	***N***	**%**	
Low risk (0–2)	4,310	57.52	576		3,657	58.93	
Moderate risk (3–6)	2,519	33.62	426	36.6	2,054	33.1	
High risk (> 7)	642	8.57	156	13.4	479	7.72	
Unknown	22	0.29	6	0.52	16	0.26	
Alcohol Use							< .0001
Yes	104	1.39	59	5.09	42	0.68	
No	7,367	98.32	11,099	94.91	6,148	99.32	
Unknown	22	0.29					
Drug Use							< .0001
Yes	63	0.84	32	2.76	28	0.45	
No	7,408	98.87	1126	97.24	6,162	99.55	
Unknown	22	0.29					
Smoking							< .0001
Yes	821	10.96	292	25.22	519	8.38	
No	6,650	88.7	866	74.78	5,671	91.62	
Unknown	22	0.29					
Care Pathway							< .0001
Midwife, home birth	79	1.05	0	0	77	1.24	
Midwife, hospital birth	64	0.86	7	0.61	56	0.91	
General practice	2,424	32.35	404	34.71	1,978	31.87	
Specialist	3,591	47.92	562		2,967	47.81	
Physician	1,334	17.80	190	16.32	1,128	18.17	

SD, standard deviation

use data, because of data accuracy constraints. Descriptive analysis showed that women receiving social assistance accessed emergency care more often and had more in-patient visits during their pregnancy than those not receiving assistance. For both groups, however, the number of primary care visits during pregnancy averaged 12 visits, which aligned with Alberta prenatal care guidelines.[25] We found no differences in health care service utilization between the two groups during their postpartum period (Table 3).

Interviews and Focus Groups Findings

We interviewed 17 Aspen clients and 8 Calgary midwives. We conducted four focus groups with Aspen staff: two with frontline staff, one with program lead, and one with the leadership team. A total of 18 staff members participated. The following themes emerged from the data: socio-economic circumstances of Aspen population, access to maternity care, knowledge and expectations of midwives, perceived benefits of midwifery services, acceptability of midwives as care providers, facilitators of implementing midwifery services, and barriers to integrating midwifery services into the health system.

Socio-economic Circumstances of the Aspen Population

Most clients interviewed were renting a house and had difficulties affording monthly rent payments, as well as providing food and clothes for their families. They used available community resources when needed. Only a few participants were homeowners and did not have financial challenges. Lack of social support (i.e., reliable connections to family, community, or health team) was noted as the biggest social disparity among Aspen clients. According to Aspen staff, the majority of their clients struggle with poverty, addictions, and trauma; as such, pregnancy is often not their top priority. These women may be hesitant to seek medical attention, due to past experiences of poor treatment and fear of stigmatization. The staff believed that some of their clients experience domestic violence or are more at risk of it while pregnant. Staff members reported that depression, diabetes, and hypertension were the main health disparities among Aspen clients.

> Staff member: *We have a mom who has three children trying to get them out of the door to her appointment. She had to get on the bus and the bus was stuck in traffic. She finally got to her appointment. She was half an hour late, and the appointment got cancelled because she was late.*

Access to Maternity Care

All clients interviewed had accessed prenatal and postnatal care. A family physician was their primary care provider. Participants with low-risk pregnancies were referred to a maternity care clinic at around 28 weeks of pregnancy. They did not have major problems in accessing a care provider and did not miss any regular appointments. Most of them used public transportation to get to the clinics. Distance and child care were challenges that some participants faced when accessing care, as one client described.

> Client: *Any time I went to see doctor during my pregnancy, I had to take the other children with me because my oldest kids were in school. The cold weather also made it more difficult to travel such a distance.*

Knowledge and Expectations of Midwives

The majority of clients interviewed had not heard about midwives and their practices in Calgary. Those who had heard about midwives did not know about their services, their associated costs, or their location. They had heard about midwives through friends, people in their home countries, or on the news. Aspen staff also acknowledged that lack of awareness about available maternity services is an issue for their clients.

> Client: *I'm not really sure what [midwives] do; I think they help pregnant women through pregnancy. My care provider did not say anything about midwives. I've never been told.*

We also asked Aspen clients to comment on their

Table 3. Utilization of Health Services by Women Who Gave Birth in the Aspen Catchment Area During Prenatal and Postpartum Periods, 2013–2015

Health Service	All (mean ± SD)	Receiving Assistance (mean ± SD)	Not Receiving Assistance (mean ± SD)
Prenatal Period			
Diagnostic/ultrasound	5.08 ± 2.61	4.56 ± 2.12	5.17 ± 2.67
Emergency/ambulatory care	5.67 ± 4.32	7.12 ± 5.16	5.26 ± 3.94
ICU	1.36 ± 0.66	1.64 ± 0.96	1.31 ± 0.57
In-patient care	4.14 ± 4.46	6.11 ± 6.22	3.45 ±3.36
Primary care	12.75 ± 4.69	11.58 ± 4.50	12.93 ± 4.70
Urgent care centre	1.48 ± 0.61	1.74 ± 0.73	1.33 ± 0.48
Postpartum Period			
Emergency/ambulatory care	1.42 ± 0.76	1.54 ± 0.77	1.39 ± 0.75
ICU	1.17 ± 0.60	1.30 ± 0.59	1.14 ± 0.61
In-patient care	2.10 ± 2.76	1.99 ± 1.81	2.14 ± 2.93
Primary care	2.37 ± 1.52	2.01 ± 1.15	2.42 ± 1.56
Urgent care centre	1 ± 0	1 ± 0	1 ± 0

ICU, intensive care unit; SD, standard deviation

expectations of midwives as potential future care providers. They all expected that midwives, as primary care providers, would take full responsibility for prenatal and postnatal care and manage emergencies during labour. They also expected midwives to spend quality time with them during visits, answer their questions, and help them build knowledge about the experience of child-bearing. Most participants believed that midwives could help them with problems outside of their pregnancy by directing them to reliable resources.

> Client: *I understand that they are educated to help with pregnancy, but I expect more emotional support. I think it is extremely important, especially in this country, where we are so socially isolated.*

Perceived Benefits of Midwifery Services

Aspen clients, staff, and midwives found the high accessibility of midwives–by way of pagers or cell phones, longer appointments, home visits, and home births–to be beneficial to vulnerable populations. They also highlighted the continuity of care and midwives' presence at labour, which can lead to connections and build a trusting relationship throughout pregnancy, at birth, and following birth. This trusting relationship would help women feel safe and comfortable sharing the stressors that affect them and their family. As one client stated, "Having a midwife and home delivery makes mothers more relaxed in the labour if she had been in a home setting and not having all of the strangers all around her."

One midwife participant and one staff member, respectively, noted the following about the relationship of midwife to client:

> Midwife: *I think because we have really good continuity with the women that we take care of, we really get to know them and they get to know us. So sometimes the women who are reluctant to disclose trouble in their relationship or histories of*

abuse or social issues like that, begin to feel more comfortable as they get to know us.

Staff member: *I think midwives would be able to provide a more holistic environment where you can build trust and have a relationship instead of feeling the person who is treating you does not even know you or cares about you and what you have been through.*

Acceptability of Midwives as Care Providers

The midwives noted that whether they are received as acceptable birth providers to vulnerable clients could depend on (1) culture, as some cultures are more open to midwifery care, and (2) preference for type of care, since the holistic midwifery approach to pregnancy and birth is not for everyone. Ultimately, midwives are strong advocates for clients' having a choice in birth care provider.

Midwife: *It depends on the population and history. I have indigenous clients, and [midwifery] is widely accepted there. I have Iranian clients, and that is successful there; however, I know that is not true in all of the Middle East. In some cultures, it would be more acceptable to have an obstetrician.*

Midwife: *I think a midwife would be acceptable if the mom wants it. We can provide the best care, but if we are not the provider she wants…I mean the style of care. There are lots of women that they don't want that. They want the medical epidural birth, they don't want someone who is going to be really fluffy with them.*

A few Aspen clients were not keen to use a midwife for their next pregnancy or were reluctant to recommend a midwife to family and friends. They were satisfied with receiving care from physicians during past pregnancies. Some clients had experienced a complicated pregnancy and labour in the past, so they did not want to take any risks to their own health and their future baby's health.

Client: *I might have definitely considered a midwife if everything had gone smoothly for my first pregnancy and the labour.*

Client: *I don't know if I want to have a midwife; probably I just go for a doctor than a midwife. Doctors have more experience and more years of study. So probably I would trust more in a doctor than a midwife, even if they specialize in that area.*

Facilitators of Implementing Midwifery Services

Making midwifery services more acceptable to vulnerable clients requires improving client awareness and service visibility. It was important that all the workers and agencies that might be in contact with pregnant clients be aware of and knowledgeable about midwifery services and functions. Aspen staff members felt that, rather than providing clients with "a piece of paper," they needed to explore all aspects of midwifery services with their clients and have conversations with them to ensure that they would be comfortable and able to access the services. Aspen staff also proposed advertising the community services–for example, maternity clinics, physicians' offices, women's shelters–as another method for increasing clients' awareness.

In addition, the inclusion of midwives in interprofessional teams emerged as another important facilitator, as it would ease challenges to accessibility and transportation and also provide midwives and their clients timely access to important resources and services.

Finally, midwives' persistence and understanding were also key facilitators. Midwives must be cognizant that some of their clients will face certain barriers (such as transportation problems), have mental health issues, have different priorities, or be subject to different cultural norms. Thus, midwives must be flexible, which could involve making home visits, rescheduling appointments, and using simple paperwork. Midwives' flexibility and customized care (e.g., clients' having the option to choose between home or birth centre, home visits, or holistic care) may contribute to clients' willingness to use or recommend their services.

Barriers to Integrating Midwifery Services into the Health System

Midwives who were interviewed considered their inability to refer women to key services to

be a major challenge. For example, most mental health programs accept only a physician referral, a policy that creates another hurdle for women. This is one of the reasons why having access to an interprofessional team would be integral to meeting all the needs of clients. Midwives also argued that working with vulnerable high-needs populations would require a significant change in how midwives work, potentially affecting their work/life balance and even increasing their stress. Thus, midwives could dedicate only a small portion of their caseload to working with vulnerable women. Furthermore, working with a vulnerable population requires more-intense work, both emotionally and physically, particularly if more home visits are needed. Therefore, midwives would like to see additional funding for the care of vulnerable women to compensate for the additional time and workload.

DISCUSSION

Social determinants of health, such as income, employment, education, and social supports, can have a significant impact on a person's ability to access care, especially during pregnancy.[9,10,13,14] Our study explored–from the perspectives of vulnerable women, midwives, and social service providers–whether a midwifery model of care might be accepted and utilized. We further aimed to identify the potential barriers to and facilitators for implementing midwifery services in vulnerable communities.

Administrative health databases indicated that more than 15% of women residing in Aspen's catchment area are socially vulnerable and receiving social assistance. These women were younger, had more pregnancies, and showed a higher rate of unhealthy behaviours (e.g., smoking, drinking), which put them at higher risk during and after pregnancies. Interviews with Aspen clients and staff confirmed that many of these women struggled to meet their basic needs and access community resources.

Our study participants felt that a midwifery model might be valuable for Aspen clients, which aligns with the existing evidence that midwifery care benefits vulnerable women.[12–15] They believed that the accessibility of midwifery services can strengthen the trust women place in their midwives and can develop a strong relationship between midwives and their clients. The connection can promote an open and safe environment where clients can discuss issues that may significantly affect their pregnancy, such as food insecurity, domestic violence, and poverty.[18,19] Finally, continuity of care was another perceived benefit for this population.[18] Evidence shows that clients were more likely to feel cared for and attended to by care providers they already knew during labour.[26]

Our findings indicate that several key facilitators and barriers need to be addressed for the successful implementation of a midwifery program for vulnerable women. First, Aspen clients commonly lacked a knowledge of midwifery services and their associated costs. Inadequate public awareness can hinder the successful uptake of midwifery.[27] Public opinion is a key facilitator in public policy and program implementation; public support grows and facilitates program delivery once people are informed about the new program.[28] Also, the involvement of stakeholders (i.e., patients, families, and health care providers) was critical to implementing a new program. Communication strategies to raise public awareness of midwives, their scope of practice, and their positive contributions to clients, families, and communities can help women make informed choices and improve their maternal health. Public events and media announcements are recommended, as well as collaboration with government, the College of Midwives of Alberta, Primary Care Networks, and the Alberta Association of Midwives.

Second, additional funding will needed for the care of vulnerable populations. Midwifery care is relatively new in Alberta. Only 13.7% of midwifery clients resided in the most disadvantaged neighbourhoods.[22] Our midwife participants recognized that working with vulnerable populations would require more time and resources, particularly if home visits were expected. To see a real change, midwifery practices need to be located in more vulnerable communities. Additional funding needs to be available to vulnerable women so that they can compensate for midwives' additional time and workload.

Finally, access to an interprofessional team was a major theme that emerged from our

interviews with midwives. Evidence identified interprofessional teams as a key to coordinating care in the community and supporting the delivery of high-quality care to a vulnerable population.[29] Partnering with social service agencies such as Aspen can streamline the health care process by supporting and connecting health care professionals with the community.[30] Most of the midwives acknowledged that serving vulnerable women experiencing mental health and social issues may be outside of their expertise. Therefore, access to and collaboration with other health professionals and community resources would be imperative to provide well-rounded health and support for these women. Registered midwives need to work closely with social service agencies such as Aspen to make sure their clients have wrap-around necessary services.

Further research needs to address how midwifery services can be designed, implemented, and evaluated to meet the complex health and social needs of vulnerable populations. This study had three limitations that should be addressed in future research. First, we had difficulties recruiting the most vulnerable Aspen clients for the interviews; this may explain the difference between the client health and social issues described by Aspen staff and those reported by clients. Second, we did not interview any other maternity care providers (e.g., family physicians, nurse practitioners) to explore their scope of practice and to understand how they can work with midwives in an interprofessional team to address the needs of vulnerable women. Third, we used postal codes as a proxy for a unique identifier; this may have resulted in our including data from people who did not use Aspen services. Although we felt this error was acceptable (as these clients likely had a socio-economic profile similar to that of Aspen service users), the use of a unique identifier such as a PHN to directly link individuals' data to provincial health outcomes data would have resulted in more-precise analytical results.

CONCLUSIONS

The findings of our feasibility study indicate that maternity care led by midwives would be acceptable and appropriate for vulnerable populations. Midwives, social service providers, and their clients saw great benefits in the accessible, continuous, and trusting relationships that can develop between midwives and their clients. Participants believed a midwifery model could meet the complex social and health needs of vulnerable people and their families. Nevertheless, several challenges need to be addressed to successfully implement midwifery services for vulnerable populations. These include the necessity to increase public awareness and understanding of midwifery services, the need to integrate midwifery services with other health services, and the need to obtain public funding for midwifery services for vulnerable populations.

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