

BMJ Open Exploration of home care nurse's experiences in deprescribing of medications: a qualitative descriptive study

Winnie Sun,¹ Farah Tahsin,¹ Caroline Barakat-Haddad,¹ Justin P Turner,² Cheryl Reid Haughian,³ Jennifer Abbass-Dick¹

To cite: Sun W, Tahsin F, Barakat-Haddad C, *et al.* Exploration of home care nurse's experiences in deprescribing of medications: a qualitative descriptive study. *BMJ Open* 2019;**9**:e025606. doi:10.1136/bmjopen-2018-025606

► Prepublication history for this paper is available online. To view these files, please visit the journal online (<http://dx.doi.org/10.1136/bmjopen-2018-025606>).

Received 24 July 2018
Revised 15 March 2019
Accepted 11 April 2019



© Author(s) (or their employer(s)) 2019. Re-use permitted under CC BY-NC. No commercial re-use. See rights and permissions. Published by BMJ.

¹Faculty of Health Sciences, Ontario Tech University, Oshawa, Ontario, Canada

²Faculty of Pharmacy, University of Montreal, Montreal, Quebec, Canada

³Informatics, CellTrak Technologies Inc., Cambridge, Ontario, Canada

Correspondence to

Dr Winnie Sun;
winnie.sun@uoiit.ca

ABSTRACT

Objectives The aim of this study is to explore the barriers and enablers of deprescribing from the perspectives of home care nurses, as well as to conduct a scalability assessment of an educational plan to address the learning needs of home care nurses about deprescribing.

Methods This study employed an exploratory qualitative descriptive research design, using scalability assessment from two focus groups with a total of 11 home care nurses in Ontario, Canada. Thematic analysis was used to derive themes about home care nurse's perspectives about barriers and enablers of deprescribing, as well as learning needs in relation to deprescribing approaches.

Results Home care nurse's identified challenges for managing polypharmacy in older adults in home care settings, including a lack of open communication and inconsistent medication reconciliation practices. Additionally, inadequate partnership and ineffective collaboration between interprofessional healthcare providers were identified as major barriers to safe deprescribing. Furthermore, home care nurses highlighted the importance of raising awareness about deprescribing in the community, and they emphasised the need for a consistent and standardised approach in educating healthcare providers, informal caregivers and older adults about the best practices of safe deprescribing.

Conclusion Targeted deprescribing approaches are important in home care for optimising medication management and reducing polypharmacy in older adults. Nurses in home care play a vital role in medication management and, therefore, educational programmes must be developed to support their awareness and understanding of deprescribing. Study findings highlighted the need for the future improvement of existing programmes about safer medication management through the development of a supportive and collaborative relationship among the home care team, frail older adults and their informal caregivers.

BACKGROUND

Polypharmacy, defined as the use of multiple medications or more medications than is medically necessary, is a growing concern for older adults.¹ With the increasing number of

Strengths and limitations of this study

- This study explored a novel topic of research: deprescribing of medications and managing polypharmacy from the perspectives of nurses in home care settings.
- The use of qualitative description allowed for a descriptive summary of the experiences of home care nurses about deprescribing that could serve as entry points for further study.
- The current study explored the perspectives of deprescribing from a small sample of home care nurses; therefore, future research would benefit from broadening the sample size to include nurses from diverse healthcare settings (ie, primary care nurses) to gain a deeper understanding of their educational needs about deprescribing.

older adults with multiple chronic diseases, older adults are frequently prescribed five or more medications.² Nearly 50% of older adults take one or more medications that are medically unnecessary thus requiring a clinical medication review.³ Polypharmacy is a growing concern for older adults in home care settings. Chronic conditions are common among older home care clients with 77% of people aged 65 years and over experiencing at least one chronic disease.^{4 5} There are many negative consequences associated with polypharmacy, including increased healthcare costs; the risk for adverse drug events and drug interactions; medication non-adherence; reduced functional and cognitive status; and the risks for falls.³ Increased prescription medication use has been associated with diminished ability to perform instrumental activities of daily living among older adults with frailty (a syndrome of physiological decline in later life), including shopping, meal preparation, managing finances, driving or using public transportation,

performing housework and medication management.⁶ As a result of the prevalence of polypharmacy and the associated negative consequences, reducing complex medication regimens to those necessary should be central to the promotion of active and independent living of older adults in home care.

One important way of optimising medication management and reducing polypharmacy for older adults in home care is through deprescribing. Deprescribing is the process of tapering, stopping, discontinuing or withdrawing drugs, with the goal of managing polypharmacy and improving patient outcomes.⁷ Deprescribing is considered to be an essential part of the prescribing process where healthcare providers reduce the dose and stop medications after carefully assessing the patient's goals of care and weighing the potential harm and benefit of the medication.⁸ Deprescribing is a vital part of supporting older adults in the self-management of multiple chronic conditions, because it can reduce the risk of adverse events and improve health-related quality of life.^{9,10} Research has indicated that educational training for nurses about deprescribing had the potential to improve the quality of life in clients of assisted living facilities by reducing the use of harmful medications.¹¹ Nurses in home care play a vital role in medication management and, therefore, educational training must be developed to support them in the development of their awareness and understanding of deprescribing approaches to help enable the opportunities for active and independent living of the frail older adults at home.¹¹ To date, little is known about the perspectives of home care nurses in regards to their educational needs about appropriate deprescribing of medications for community-dwelling older adults.

Given this knowledge gap, our project focuses on the exploration of the barriers and enablers of deprescribing from the perspectives of home care nurses, as well as the development of an educational plan to address the learning needs of home care nurses about deprescribing. Specifically, the current project is one part of a larger body of research with the aim of promoting the awareness and the adoption of deprescribing approaches among home care nurses through education using a scaling up approach. The process of scaling up was used that involved the deliberate effort to increase the impact of educational interventions to benefit the target populations and to promote future policy and programme development on an ongoing basis.¹² This was achieved using the following three phases of scaling up process: (1) phase I: scalability assessment: conducting a focus group with home care nurses to assess their barriers and enablers in relation to deprescribing approaches and the opportunities for appropriate use of non-pharmacological measures. (2) Phase II: develop a scaling up plan: developing an educational plan for home care nurses about deprescribing based on feedback from the focus group sessions. (3) Phase III: implement the scale-up plan: conducting the scaling up of education about

deprescribing and appropriate use of non-drug therapies with home care nurses to evaluate the appropriateness, acceptability and effectiveness of the educational intervention using questionnaire data.

Objectives

The objectives of this study were to explore the barriers and enablers of deprescribing from the perspectives of home care nurses, as well as to conduct a scalability assessment of an educational plan to address the learning needs of home care nurses about deprescribing.

METHODS

Study design, setting and sampling (Inclusion/exclusion)

An exploratory qualitative descriptive research design was used with the aim of generating qualitative descriptive data to allow for a descriptive summary of the phenomenon of interest.¹³ Qualitative descriptive studies are underpinned by the general tenets of naturalistic inquiry, without a priori commitment to any one theoretical view of a target phenomenon.¹³ The goal of a qualitative descriptive design for this study was to provide a comprehensive summary of descriptions of the phenomenon of interest: deprescribing in the context of home care. This study design allowed the researcher to conduct a scalability assessment using focus group sessions to examine home care nurse's perspectives about barriers and enablers of deprescribing, as well as learning needs in relation to deprescribing approaches. Focus groups have been widely used in the continuing health education field for assessment of learning needs among healthcare professionals,¹⁴ and therefore this was the chosen method to achieve our research objectives.

On ethics approval from the Research Ethics Board at the Ontario Tech University study recruitment using purposive sampling took place at one designated home care organisation in Ontario, Canada. The relationship with participants was not established prior to study commencement. Home care nurses who met the following inclusion criteria were invited to participate in the focus group: (1) a registered nurse or registered practical nurse with a casual/part-time/full-time status who has direct clinical contact with patients; (2) having experience (2 years and above) in working with older adults in home care settings; and (3) over the age of 18 years and having the ability to understand and speak English. Eligible study participants were provided with informed consent via face-to-face meeting with the research assistant. The informed consent included information about the study purpose, procedure, potential risks and benefits, rights of the participants and confidentiality.

Data collection

The first focus group session involved five home care nurses, and the second focus group session included six nurses. Focus groups lasted about 60–90 min. The questions were guided by the following four topic domains:

(A) polypharmacy among frail older adults in home care; (B) learning and educational needs about deprescribing; (C) barriers and enablers to deprescribing approaches; and (D) exploration of non-pharmacological alternatives to medications. During each focus group session, the facilitators (WS and FT) asked open-ended questions to ensure the relevant topics were discussed and to allow all study participants to speak freely and openly. A research assistant was present to take field notes to make observations. The focus group interviews were audio-recorded with the permission from study participants, and they were transcribed prior to the data analysis.

Data analysis

Thematic analysis was used for analysing the focus group data by identifying themes across the datasets that described the phenomenon.¹⁴ The research team began by reading and rereading the transcripts to immerse themselves in the dataset and to develop a general understanding of the focus group data with descriptive summaries. Coding of the dataset was performed by two data coders (WS and FT). Common themes from the focus groups were derived based on the coding tree to help us identify the relationships between the emerging themes and the associated meanings. Finally, the identified themes and accompanying data extracts (quotes) were reviewed to determine whether the data in the themes were related in an accurate, coherent and meaningful way in relation to our study purpose and research questions. Results are presented in a way that tells the story of the phenomenon as well as describing the interpreted findings that reflected the experiences of the study participants.¹⁴ The researchers engaged in reflexivity, where this process enabled the researchers to become sensitive to their own biases, as well as revealing their preconceptions to ensure the codes and themes of the analysis were data derived.

Patient and public involvement statement

There is no patient/public involvement in this research project.

Study findings

Focus groups were held in Ontario, Canada, during October 2017. Fifteen registered or registered practical nurses from the designated home care organisation met the eligibility criteria and were invited to participate. Of those, 73% (n=11) home care nurses provided informed consent to participate. There was no participant who dropped out from the study. The demographics of the participants are presented in table 1. Participants were all female, with a mean age of 49.5 years and had in-depth nursing experiences in working with older adults in the field of home care.

The focus group sessions held with participants provided a rich description of deprescribing from the perspectives of home care nurses, as well as providing in-depth insight into the learning needs of nurses in relation to

Table 1 Demographic characteristics of home care nurses (n=11)

Characteristics (n=11)	Mean (range)
Age (years)	49.5 (30–69)
	N (%)
Gender (female)	11 (100)
Nursing, years of experience (years)	18.72 (2–40)
Nursing, years of experience in home healthcare (years)	11.18 (2–20)
Nursing, experience working with older adults (years)	16.72 (2–40)

deprescribing approaches in home care. The presentation of our qualitative findings focused on the following eight overarching themes: (1) causes of polypharmacy among older adults in home care; (2) challenges to the management of polypharmacy in the community; (3) meaning of deprescribing; (4) importance of deprescribing; (5) potential barriers to raising awareness about deprescribing in home care; (6) potential facilitators to promote deprescribing in home care; (7) educational topics about deprescribing; and (8) learning tools and resources about deprescribing.

Causes of polypharmacy among older adults

Polypharmacy is a result of the lack of understanding about client's medical conditions

Home care nurses indicated that polypharmacy in older adults is the primary reason for the need to deprescribe, and polypharmacy can be a result of the healthcare provider's lack of understanding about the client's medical conditions. Due to the involvement of multiple healthcare providers, it was often difficult to 'track down' which medication had been prescribed for which medical condition and by which healthcare provider. Healthcare provider's lack of understanding about the clients' complete picture of their medical diagnosis can lead to the prescription of multiple medications that are redundant and inappropriate. The following statement illustrates this:

I (the nurse) was just out to a home visit today and he (the client) said 'I think I'm on too many, too many medications'. His daughter questioned: I wasn't exactly sure what diagnosis my father has... why he has many medications and who prescribed these and why he needed them? (FG2, P1)

Polypharmacy is a result of the lack of client follow-up by multiple healthcare providers

Home care nurses acknowledged that there are usually multiple healthcare providers involved in client care, and they often do not have proper follow-up with the client after prescribing medications. Due to the lack of follow-up, clients are at risk of taking medications that are no longer needed.

Numerous doctors ordered different medications and they don't usually follow-up on the medications that have been ordered. (FG2, P1)

Polypharmacy is a result of the client's lack of knowledge about medication management

Home care nurses indicated that clients, particularly individuals with cognitive impairment are at the greatest risk for having a lack of understanding about the rationale and the need for medications. This could lead to medication errors, medication non-adherence or incorrect medication dosages. The following statement illustrates this:

When you admit new clients, you asked them for their medications and they handed you over a grocery bag filled with medications... Often they're not even taking half of the medications found in this grocery bag but they keep these medication bottles just in case. They like to hold on to the old medications and not knowing why they need them... (FG2, P2)

Challenges to the management of polypharmacy among older adults in home care

Lack of centralised and universal database related to client's health and medication information

Participants shared their frustration towards the lack of a centralised and universal database that allowed for timely access to client's health and medication information. Home care nurses highlighted this information is important to medication management:

Nobody can access the same file for every client... There's the need for the client's chart to be in one central place. When you complete the documentation, you can find out who this client has visited in the past. Even if it's for foot care or an ear doctor... Whatever it is, so that everybody knows exactly what each healthcare provider has done and who the clients have seen and what happened. (FG1, P5)

Lack of medication system that alerts healthcare providers regarding polypharmacy of at-risk older adults

Similarly, participants continued to indicate that there is a need for a centralised medication system that cues/alerts or flags healthcare providers about clients' medication information. The participants shared that having a cueing or alert system can help identify older adults who are at risk for adverse events due to polypharmacy and can suggest the need for appropriate deprescribing. One respondent suggested the possibility of having such technology to help promote safety of medication management in home care:

It would be ideal if there's something (a system) to flag us when we type in client's information electronically, such as their medication list... A warning would

pop up right away and will flag us about a potential problem about the medications. (FG2, P2)

Lack of time for medication review and reconciliation

Participants expressed their concerns about their workload and how their overwhelming work schedule leaves little room for medication review and reconciliation. One participant shared that time constraint discouraged nurses from engaging in a complete medication review and reconciliation process with their clients at home. The following statement illustrates that:

I am just thinking of some medication errors that we had... it just comes down to if medication reconciliation has ever been done properly... these errors wouldn't have happened. It's all because of workload and time constraint... (FG1, P3)

The meaning of deprescribing

Participants had different levels of understanding on the topic of deprescribing. Some participants were more aware of the deprescribing approaches than others. The following are subthemes that emerged as home care nurses defined what deprescribing means to them in practice.

Deprescribing is about adjusting dosages of high-risk medication

Home care nurses shared their concerns about the associated risks of certain types of medications such as: cardiac, antihypertensive, laxatives, anticonvulsant and diuretics medications. One participant shared her clients' experience with high dosages of antihypertensive medication:

When I got a referral that the patient was complaining about dizziness, I made a home visit and found out that they were on high dosages of anti-hypertensive... I have been communicating with the doctor to adjust the level of this medication. (FG1, P1)

Another participant added that medications are often being prescribed without proper evaluation or follow-up to assess for the appropriateness of the medication regimen.

When one medication is not successful, they (the doctors or nurse practitioners) added on something else instead of just working through and figuring out which medication is the most appropriate for that particular client. (FG1, P5)

Deprescribing is about finding the right medication

Home care nurses responded that the meaning of deprescribing lies in the healthcare provider's ability in choosing the appropriate medication that is effective in managing their client's disease conditions. In particular, nurses indicated that the goal of deprescribing is to minimise polypharmacy through having the least number of medications to treat the client's disease conditions. The following statement illustrates this idea:

I would say yes to deprescribing if we can find a medication that treats all three conditions and clients only have to take one pill instead of three... it's better for the clients. (FG1, P2)

Deprescribing is about removing the inappropriate medication at the right time

Participants emphasised that finding the right timing to deprescribe inappropriate and unnecessary medications is the essence of successful deprescribing. Home care nurses added that removing inappropriate and unnecessary medications require a proper schedule of tapering off medication dosages gradually over a period of time. They believe that a sudden and abrupt deprescribing approach would be harmful to the client's health and well-being. The following statement illustrates this subtheme:

You have to get rid of the right things (inappropriate medication) at the right time, you know what I mean. Like scaling down (tapering) the dosages and not just stopping the medication right away... (FG1, P1)

The importance of deprescribing

The use of multiple pharmacies leading to multiple prescriptions

Home care nurses indicated that the pharmacist plays an important role in deprescribing. However, they shared that their clients tend to visit multiple pharmacies for their prescriptions that contributes to the problem of polypharmacy.

When the client came home from their hospitalization, they filled the new prescription in the hospital and therefore the community pharmacy that client used to go to would not know about this new prescription. It is problematic when clients are getting multiple prescriptions from different pharmacies. (FG1, P5)

Non-adherence leading to medication under-dosage/overdosage

Home care nurses indicated that medication non-adherence is a major issue for their clients in the community. As a result of the lack of understanding about medication management, clients are at risk of non-adherence to their medication regimen, which can lead to possible adverse events due to under-dosage or overdosage of medications. The following statement illustrates this subtheme:

You are right that they (the clients) don't get rid of their old prescriptions. They take both new and old prescriptions instead of wasting the old pills. When they go back to the pharmacy, the pharmacist will often find out that the clients are actually taking incorrect dosages of medication because they were having two bottles of the same medication (with different dosages). (FG1, P5)

Medication reconciliation to deprescribe unnecessary medications

Participants continued to describe the importance of deprescribing by highlighting the need for a timely and appropriate medication reconciliation process for their clients in the community. The challenge for home care nurses is that they would often conduct medication reconciliation on the client's admission, but there is a lack of follow-up in place to allow for an ongoing review and monitoring of the client's medication regimen. The respondent further described this subtheme:

I would say that the medication review (reconciliation) is beneficial because sometimes they're on these medications for years and years, but they should have been on it for just a month or two. And the therapeutic ranges of medications? Nobody is even monitoring... So, I think deprescribing is very important in these situations. (FG2, P3)

Potential barriers to raising awareness about deprescribing in home care

Overusage of over-the-counter (non-prescription) medications

Home care nurses identified that the excessive use of over-the-counter medications can potentially be more difficult to deprescribe than prescription medications. They indicated that home care clients have easy access to a variety of non-prescription medications without proper education about their safety risks and concerns to their health and well-being. Some clients have the misunderstanding that non-prescription medications are considered as a 'safer' alternative than prescription medications.

A lot of them (clients) considered that Tylenol and Antacids are over the counter so they don't count these as 'real medications'. (FG2, P3)

Lack of standardised process of medication reconciliation in home care

Another barrier to deprescribing in home care is the lack of a standardised approach to the medication reconciliation process in home care. Home care nurses shared their frustration that the current medication reconciliation process is not considered user-friendly. They highlighted the need for a centralised and systematic approach to medication reconciliation that would help facilitate deprescribing effectively and in an efficient manner. In particular, it was suggested that the use of a single pharmacy by the client rather than the use of multiple pharmacies would help reduce the risk for a segregated and fragmented medication database.

A suggestion is to encourage client to use a single, centralized pharmacy; and nurses would have access to a centralized medication reconciliation database (to facilitate deprescribing). We need to make the medication reconciliation process more user-friendly and less compartmentalized, so that deprescribing would be a simpler process. (FG1, P5)

Potential facilitators to raising awareness about deprescribing in home care

The need for interprofessional education and collaboration for deprescribing

All home care nurses acknowledged that an important facilitator to raising awareness about deprescribing is through interprofessional education and collaboration among the healthcare team, including the nurses, home support workers, nurse practitioners, physicians and pharmacists. Nurses indicated their fears about the misunderstanding and communication gap that arises from the lack of inter-professional education and collaboration puts clients at greater risk for adverse medication problems:

Education and working together is important. The pharmacists know the medications better than the doctors and the nurses. So it is easier for them (pharmacists) to flag any problems right away, probably by just looking at the medication list. For us (home care nurses) we would have to look up every medication to determine the drug interactions whereas they (pharmacists) might already know this. So it is great if the pharmacist can work with us to alert us about any problems. (FG2, P2)

Consistency and continuity of care among healthcare providers

Participants emphasised that there is a need for continuity of care to support safe deprescribing. Otherwise, different healthcare providers might have different pieces of advice for their clients, then it would be difficult to build a therapeutic relationship between the care providers and care recipients.

Consistency not redundancy among healthcare providers is important. When doctors, pharmacists and nurses are all telling the same story... then this should go over a lot better... we must send a consistent message, not a conflicting message. (FG2, P3)

Deprescribing must be part of health teaching in home care

Home care nurses identified that deprescribing must be incorporated as part of client's health teaching in home care. Participants indicated that older adults must be educated about their medication management and deprescribing needs in order to make informed decisions about their medication regimen.

I think deprescribing needs to be part of client health teaching... As a nurse you need to conduct thorough medication review, and provide the clients with important explanation and information regarding their medications. (FG1, P2)

Deprescribing must be based on accurate and reliable data sources

Evidence-informed deprescribing is crucial to ensure safe medication management. Home care nurses indicated

that an important facilitator to deprescribing is the utilisation of accurate and reliable sources of data, such as complete client history as well as centralised reports from a primary healthcare provider.

You don't want to deprescribe a medication that was actually a need. Yes, deprescribing is extremely crucial but only if you have reliable sources, reliable history, and complete data... you need to have direct contact with only one prescribing physician, so that all of the prescribing goes to this one physician. Even if they see a specialist, they have a card that says you need to refer this back to my family doctor, so that my family doctor can add the information to my medication list and only he can prescribe and give out the prescription. We need a thorough circle of care without breaches... (FG2, P5)

A strong circle of care network facilitates deprescribing

In general, home care nurses suggested that a strong circle of care network that involves the clients, healthcare providers and informal caregivers is an important facilitating factor to safe deprescribing approaches. In particular, the lack of involvement from the clients, healthcare providers or informal caregivers within this circle of care network can potentially contribute to inappropriate and unsafe deprescribing practices. The following statement illustrates this theme:

If the 'circle of care link' is pretty tight, then I can say to you that we could probably deprescribe the medications. Other than that, if you have a breach anywhere in this 'circle of care', I would say it's not safe to deprescribe. (FG1, P5)

Educational topics about deprescribing

Best practices in medication reconciliation to promote safety in medication management

Home care nurses recognised that there is a lack of guidelines for best practices in medication reconciliation. They acknowledged the importance of medication reconciliation to promote safe medication management but expressed concern about the existing knowledge gap on this topic.

The topic of medication reconciliation is huge. Our current policies and procedures about medication reconciliation are all over the place. We still aren't doing a good job of it. I don't think some healthcare providers realize that when clients come home from the hospital, we have the obligation to conduct medication reconciliation because clients are at high risk for medication errors. (FG2, P3)

Raising awareness about available community resources on deprescribing

Study participants indicated that they have a lack of knowledge about the available community resources on

deprescribing. Specifically, they strongly recommended involving community partners to promote and educate deprescribing approach among community-dwelling older adults. Some examples of potential community partners to support deprescribing approaches for seniors include Alzheimer's Society, Seniors' Club, Community Care programmes and so on. They believe that future educational focus on deprescribing should include a description of the existing resources that would help mobilise deprescribing approaches in the community:

The nurses in the community and their supervisors must know what is available out there to support them with deprescribing. (FG2, P3)

Basic principles and approaches about deprescribing for the commonly used medications

Home care nurses expressed their interests in learning more about the foundational approaches about deprescribing for the at-risk medications, including their side effects and drug interactions. The nurses believe that this knowledge would support safe deprescribing of medications for their clients in the community:

Reviewing some basic deprescribing principles for the most commonly used medications like blood pressure, bowel, and urinary medications etc. (FG1, P3)

Learning tools and resources for nurses, older adults and their informal caregivers about deprescribing

Mixture of online/in-person educational training with print material and interactive information session

In regards to the development of educational training for deprescribing, study participants indicated their preference towards a variety of reading materials with case examples being presented as infographic, brochures and pamphlets in addition to the use of power-point presentation. Furthermore, they preferred a mixture of online and in-person educational session to provide a variety of learning platform to meet the scheduling needs of home care nurses.

I think in-person (educational training about deprescribing) is best if possible. However, it would probably be better with a mix of online and in-person training. Because I don't think you would get all the nurses for in-person training due to work scheduling. (FG2, P1)

Considering the different learning styles of individuals, study participants suggested that interactive information sessions about deprescribing would be most beneficial for nurses, older adults or their informal caregivers to facilitate in-depth discussion and sharing of ideas.

Interactive information sessions are needed so that they (nurses/older adults/caregivers) can get an understanding of what deprescribing means, and they

can ask questions and interact with the facilitators. (FG1, P5)

Non-drug therapies and non-pharmacological measures

Home care nurses indicated that deprescribing education must include the alternative approaches such as the use of non-drug therapies and non-pharmacological approaches. Some examples of these alternative approaches may include: hydrotherapy, music therapy, aromatherapy, therapeutic touch, acupuncture, reminiscence therapy and sleep therapy. In particular, home care nurses emphasised that lifestyle changes such as exercise and healthy nutrition are important non-pharmacological approaches to promote health and well-being. The following statement illustrates this theme:

Nutrition can facilitate deprescribing, especially for frail older adults... there's always a need for proper nutrition. (For example, adjusting fiber intake for constipation instead of using laxatives). (FG2, P1)

Family education about behavioural and symptoms management

Home care nurses raised concern that medications such as benzodiazepine are prescribed too often and in high dosages for frail older adults. If the family members of older adults are well educated about behavioural and symptoms management, the need for unnecessary benzodiazepine and other psychotropic medication would likely be reduced in the community.

Family education about behavioral and symptoms management can help with deprescribing. Often times, family members don't have the skill to deal with behavioral problems because they don't have the education needed to respond to client's symptoms or behaviors. (FG1, P5)

DISCUSSION

The objectives of this study were to explore the barriers and enablers of deprescribing from the perspectives of home care nurses, as well as to conduct a scalability assessment of an educational plan to address the learning needs of home care nurses about deprescribing. Our study findings revealed that home care nurse's perspectives on deprescribing reflected the current literature where deprescribing is about medication optimisation through the following approaches: adjusting the dosages of high-risk medications; timely removal of inappropriate prescriptions and over-the-counter medications; as well as finding appropriate pharmacological or non-pharmacological alternatives.⁶ Specifically, our study findings highlighted the complexity of managing polypharmacy among older adults in home care, as well as the facilitators and challenges that home care nurses face when undertaking deprescribing approaches. Our current findings are congruent with previous literature where multiple healthcare providers and pharmacy visits, contradicting

treatments from multiple health providers, resource constraints, client's non-adherence and lack of knowledge about medication, as well as the lack of follow-up by healthcare providers are suggested to be barriers to medication management.^{11 15 16} In particular, home care nurses identified the time constraint for medication review and reconciliation as a major challenge to the management of polypharmacy.

Medication reconciliation is the process in which healthcare providers work together with clients, families and care providers to ensure accurate and comprehensive medication information is communicated consistently across transitions of care to provide continuity of care.^{17 18} There is the need for the future development of educational training for home care nurses about the best practice guidelines in medication reconciliation using a standardised and systematic approach that would facilitate deprescribing in an effective and efficient manner. Currently, there is a lack of a centralised and universal database that allows for an online medication repository to provide seamless access to client's medication information by home care nurses. To overcome this barrier, it is suggested that future technological innovation should focus on the development of a centralised medication system that provide cues to alert healthcare providers of at-risk older adults with deprescribing needs. For example, the North Eastern Region Connect is a province-wide programme funded by eHealth Ontario with the goal of providing healthcare providers timely access to electronic client health information across the care continuum.¹⁹ This eHealth initiative helps improve efficiency of clinical decision making and provides a more complete picture of client health information, including the medication profiles. In particular, future medication databases may develop built-in decision support systems that could trigger deprescribing algorithms for certain high-risk medications to facilitate deprescribing.

Our study findings underscored the important enablers to help raise awareness about deprescribing in home care. Interprofessional education and collaboration among the healthcare team, including the nurses, home support workers, nurse practitioners, physicians and pharmacists can help facilitate deprescribing by promoting open communication, consistency and continuity of care within home care. Previous literature identified that nurse's communication with and receptivity of the physician is the key to facilitating successful deprescribing.^{15 20} In particular, the multiple layered communication gap within the health system hierarchy can contribute to potential medication errors and can act as a major barrier to effectively deprescribing unnecessary and inappropriate medications.²⁰ Therefore, home care nurses recommended the involvement of community resources and partners to help facilitate open communication, raise awareness and mobilise deprescribing approaches in the community. Additionally, client and family members' lack of understanding about medication regimens can create another layer of communication complexity in the

community.¹⁷ Our study findings suggested the need for deprescribing to be incorporated as part of the client's health teaching by home care nurses. Older adults and their informal caregivers must be educated about their medication management to facilitate evidence-informed deprescribing.¹⁷

Various tools have been developed to promote patient education (eg, Eliminating Medications thorough Patient Ownership of End Results [EMPOWER] brochures available at www.Deprescribing.Network.ca) and evidence-based deprescribing guidelines and algorithms (available at www.Deprescribing.org).²¹⁻²⁷ These communication aids and resources can help facilitate an open dialogue about deprescribing among clients, caregivers and prescribers. In addition to the utilisation of educational resources, home care nurses proposed the need for the development of deprescribing education with the emphasis on the exploration of client's alternatives to non-drug therapies. For instance, enabling the development of personal health practices and coping skills of older adults may involve the substitution of prescription medications with non-pharmacological approaches, such as the use of music or reminiscence therapy in lieu of anxiolytic medications.²⁰ Finally, our study findings highlighted the role of a strong circle of care network with the collaborative involvement of the older adults, informal caregivers and healthcare providers as an important enabler to safe deprescribing in home care. The breakdown of this circle of care network can potentially contribute to inappropriate and unsafe deprescribing practices in the community.

CONCLUSION

This paper reported the findings of our scalability assessment that focused on the examination of home care nurse's understanding about deprescribing approaches, polypharmacy and non-pharmacological measures to medication management for older adults in the community. Past literature about the experiences and perspectives of nurses on deprescribing focused primarily in long-term care settings.¹⁵ The current study expanded our understanding of home care nurse's awareness and understanding of deprescribing approaches in the community. This study using focus group interviews allowed the researchers to gain valuable insight into a wide range of perceptions and beliefs that home care nurses hold in relation to medication optimisation for older adults. It should be noted that our study explored the perspectives of deprescribing from a small sample of home care nurses; therefore, future research would benefit from broadening the sample size to include nurses with different roles and from diverse healthcare settings in order to gain a deeper understanding about their educational needs regarding deprescribing that are role and context specific. Future phases of our project will focus on mobilising the scale-up plan by implementing the evidence-based educational intervention targeted to

address the learning needs of nurses about safe deprescribing practices for older adults in home care settings. Findings from this research project will help lead the future development of programmes about optimisation of medication management that will foster a supportive and collaborative relationship among the home care team, frail older adults and their informal caregivers.

Contributors All authors provided input into the development of the manuscript and have read and approved this manuscript. WS, FT, JAD, CBH and CRH are female researchers, while JPT is a male researcher for this research study.

Funding This work was supported by Social Sciences and Humanities Research Council grant number #211005.

Competing interests None declared.

Patient consent for publication Parental/guardian consent obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

Data sharing statement Additional unpublished data may be available for review on request made to the primary author.

Open access This is an open access article distributed in accordance with the Creative Commons Attribution Non Commercial (CC BY-NC 4.0) license, which permits others to distribute, remix, adapt, build upon this work non-commercially, and license their derivative works on different terms, provided the original work is properly cited, appropriate credit is given, any changes made indicated, and the use is non-commercial. See: <http://creativecommons.org/licenses/by-nc/4.0/>.

REFERENCES

- Masnoon N, Shakib S, Kalisch-Ellett L, *et al*. What is polypharmacy? A systematic review of definitions. *BMC Geriatr* 2017;17:230.
- Barnett K, Mercer SW, Norbury M, *et al*. Epidemiology of multimorbidity and implications for health care, research, and medical education: a cross-sectional study. *Lancet* 2012;380:37–43.
- Maher RL, Hanlon J, Hajjar ER. Clinical consequences of polypharmacy in elderly. *Expert Opin Drug Saf* 2014;13:57–65.
- Boyd CM, Darer J, Boult C, *et al*. Clinical practice guidelines and quality of care for older patients with multiple comorbid diseases. *JAMA* 2005;294:716.
- Canadian Home Care Association [Internet]. Portraits of home care in Canada. <http://www.cdnhomecare.ca/content.php?doc=293> (cited 18 July 2018).
- Scott IA, Hilmer SN, Reeve E, *et al*. Reducing inappropriate polypharmacy. *JAMA Intern Med* 2015;175:827.
- Thompson W, Farrell B. Deprescribing: what is it and what does the evidence tell us? *Can J Hosp Pharm* 2013;66:201–2.
- Garfinkel D, Mangin D. Feasibility study of a systematic approach for discontinuation of multiple medications in older adults: addressing polypharmacy. *Arch Intern Med* 2010;170:1648–54.
- Jyrkkä J, Enlund H, Lavikainen P, *et al*. Association of polypharmacy with nutritional status, functional ability and cognitive capacity over a three-year period in an elderly population. *Pharmacoepidemiol Drug Saf* 2011;20:514–22.
- Canadian Deprescribing Network (CaDeN). What is deprescribing? 2017 <http://www.deprescribing.org>.
- Pitkälä KH, Juola AL, Kautiainen H, *et al*. Education to reduce potentially harmful medication use among residents of assisted living facilities: a randomized controlled trial. *J Am Med Dir Assoc* 2014;15:892–8.
- Milat A, Newson R, King L, *et al*. A guide to scaling up population health interventions. *Public Health Res Pract* 2016;26.
- Sandelowski M. Combining qualitative and quantitative sampling, data collection, and analysis techniques in mixed-method studies. *Res Nurs Health* 2000;23:246–55.
- Krueger R, Casey M. *Focus groups: a practical guide for applied research*. 5th ed. Thousand Oaks, CA: Sage Publications, 2015.
- Milat AJ, Newson R, King L, *et al*. A guide to scaling up population health interventions. *Public Health Res Pract* 2016;26:e2611604.
- Turner JP, Edwards S, Stanners M, *et al*. What factors are important for deprescribing in Australian long-term care facilities? Perspectives of residents and health professionals. *BMJ Open* 2016;6:e009781.
- Kouladjian L, Gnjjidic D, Reeve E, *et al*. Health Care Practitioners' Perspectives on Deprescribing Anticholinergic and Sedative Medications in Older Adults. *Ann Pharmacother* 2016;50:625–36.
- Ismp-canada.org. ISMP Canada Medication Reconciliation Project [Internet]. 2018 <https://www.ismp-canada.org/medrec/> (cited 13 June 2018).
- Kim JM, Suarez-Cuervo C, Berger Z, *et al*. Evaluation of patient and family engagement strategies to improve medication safety. *JAMA* 2018;11, 193–206.
- Ehealthontario.on.ca. Northern and Eastern Region - eHealth Ontario | It's Working For You [Internet]. 2018 <https://www.ehealthontario.on.ca/en/regional-partners/northern-eastern-region> (cited 16 July 2018).
- Anderson K, Stowasser D, Freeman C, *et al*. Prescriber barriers and enablers to minimising potentially inappropriate medications in adults: a systematic review and thematic synthesis. *BMJ Open* 2014;4:e006544.
- Tannenbaum C, Martin P, Tamblyn R, *et al*. Reduction of inappropriate benzodiazepine prescriptions among older adults through direct patient education: the EMPOWER cluster randomized trial. *JAMA Intern Med* 2014;174:890–8.
- Canadian Deprescribing Network (CaDeN). Evidence-base deprescribing guidelines. <http://www.deprescribingnetwork.ca> (Retrieved April, 2018).
- Bjerre LM, Farrell B, Hogel M, *et al*. Deprescribing antipsychotics for behavioural and psychological symptoms of dementia and insomnia: Evidence-based clinical practice guideline. *Can Fam Physician* 2018;64:17–27.
- Farrell B, Black C, Thompson W, *et al*. Deprescribing antihyperglycemic agents in older persons: evidence-based clinical practice guideline. *Can Fam Physician* 2017;63:832–43.
- Farrell B, Pottie K, Thompson W, *et al*. Deprescribing proton pump inhibitors: evidence-based clinical practice guideline. *Can Fam Physician* 2017;63:354–64.
- Pottie K, Thompson W, Davies S, *et al*. Deprescribing benzodiazepine receptor agonists: Evidence-based clinical practice guideline. *Can Fam Physician* 2018;64:339–51.