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The Nurse as Catalyst: Investigating and Expanding the Role of Nursing within a Deprescribing Model with Physicians and Pharmacists of General Medicine

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Abstract:

Background: Polypharmacy is widespread among older adults and individuals with chronic conditions and increases the risks of adverse drug events, hospitalizations, and mortality. Deprescribing, the systematic reduction of medications that are unnecessary or potentially inappropriate (PIMs), can help mitigate these risks. Although nurses are well-suited to do deprescribing because of frequent patient interactions and a holistic lens to the overall patient, the role of the nurse in deprescribing remains underexplored. **Aim:** The purpose of this review is to explore the role of nurses in deprescribing in general medicine and to examine their involvement along with physicians and pharmacists. The paper identifies barriers and facilitators to involvement and pathways forward. **Methods:** We conducted a narrative review focused on peer-reviewed studies from 2020-2024 using PubMed, CINAHL, Scopus, and Web of Science. We used variations of the search terms "deprescribing", "nursing," and "polypharmacy." The inclusion criteria were English-language, peer-reviewed studies that focused on nurse-led deprescribing within the general medicine scope. We extracted data on nurse role, patient outcomes, and barriers/facilitators relevant to the study, using inductive thematic analysis. **Results:** Nurses were found to contribute through patient assessment, education, advocacy, and interdisciplinary care, reducing PIMs by as much as 30% and ADEs by 20%. Barriers included a lack of authority and a lack of time, and factors that facilitated successful nursing involvement included previous training in deprescribing methodology and integration of the Educator role with Electronic Health Records (EHR) nursing documentation. **Conclusion**: Nurses must play a central role in the process of deprescribing (to improve patient safety). Policy changes, nurse education, and technology will assist in embedding the nursing profession into deprescribing initiatives. Future research must focus on the use of a diverse range of settings, with longer-term follow-up outcomes.

Keywords: Polypharmacy, Deprescribing, Nursing, Patient Safety, Interprofessional Collaboration

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Introduction

Polypharmacy refers to the "simultaneous use of multiple medications" as described by the World Health Organisation, and in clinical practice often refers to the concurrent use of five or more medications where the patient is being prescribed medication with the same therapeutic intention (Kim et al., 2021). There is a substantial prevalence of polypharmacy, ranging from 20% to 70% in general medicine, which places both older adults and those taking multiple medications for chronic care and older adults with chronic conditions (Kim et al., 2021). Global attention is focused on polypharmacy in patients with chronic disease or older adults, as the risk of obvious consequences such as readmission to hospital or mortality is an important consideration for clinical practitioners and health systems. Evidence suggests that approximately 50% of older adults will experience polypharmacy in primary care (Garcia-Argibay et al., 2022; Reeve et al., 2017), and the risk of polypharmacy is particularly concerning with rising population levels and chronic disease burden. In addition to Polypharmacy is the important clinical aspect of potentially inappropriate medications (PIMs), where there is little evidence that the treatment offered was beneficial for an individual patient. When prescribing PIMs, there is also an important probability of causing harm by exposing older adults to an increased probability of drug interactions, falls, or delirium/cognitive impairments.

Deprescribing, in this context, is defined as a "deliberate process of reducing or stopping medications that are being taken" or taking a systematic and patient-centred approach to identify and stop medications such that the risk of harm does not outweigh the benefits has significant implications in practice (Reeve et al., 2017). This approach involves painstaking consideration of clinical evidence, patient needs and preferences, and interprofessional cooperation to achieve optimal medication regimens of care. Nurses, as a crucial point of contact for patients, have the potential to be at the forefront of deprescribing practices as they are constantly interacting with patients and when the patients require care. Because nurses provide holistic care encompassing the physical, emotional, and psychosocial dimensions of health, they can identify muscle and psycho-social opportunities to deprescribe medications according to patient values and preferences.

Nurses are involved with patients in a variety of ways while they provide education to patients and families, provide advocacy for patients to ensure patient-centered care, and interprofessional collaboration with physicians and pharmacists to actively deprescribe (Kua et al., 2021). The literature regarding the role of nurses in deprescribing is scant in the past, where the focus was on physicians and pharmacists. Not giving nurses their due place in deprescribing undermines their potential to assist with improving medication safety and ultimately patient outcomes in general terms of medicine (e.g., primary care, hospitals, or community care). Figure 1 represents the conceptual framework of nurses' roles in deprescribing.

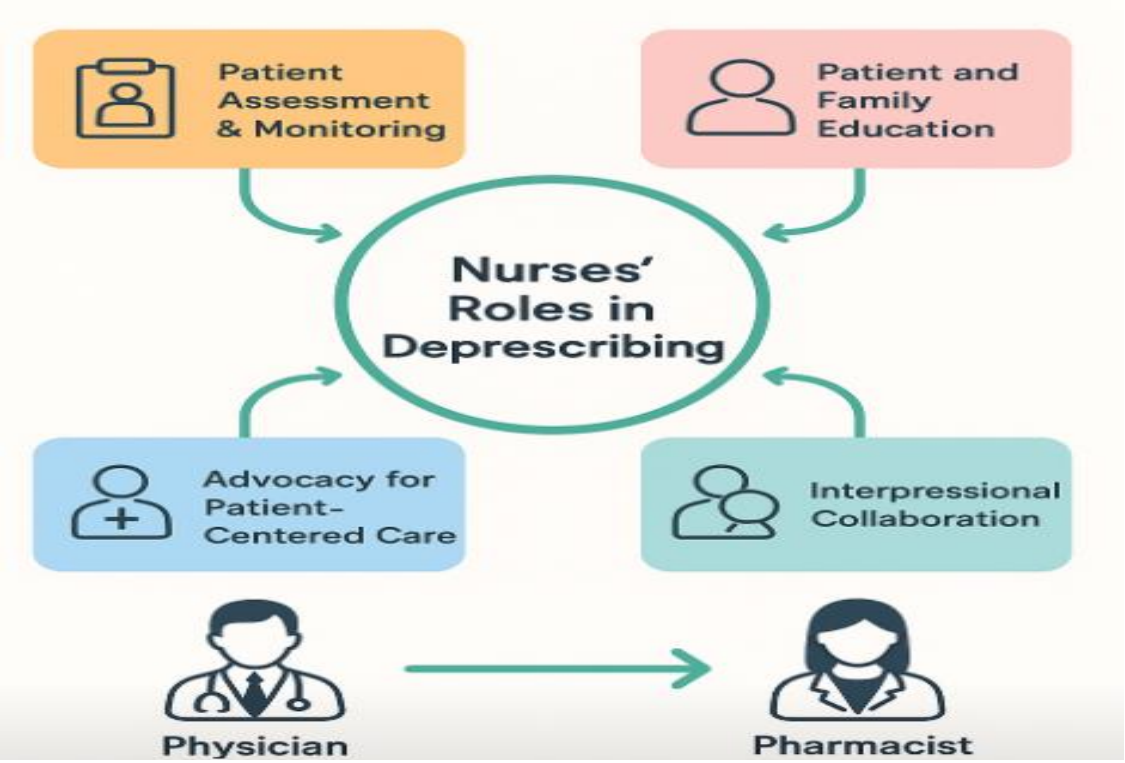

Figure 1. Conceptual Framework of Nurses' Roles in Deprescribing

This review discusses the state of the art of nursing in addressing deprescribing in general medicine, as well as the specific roles nurses undertake in the domains of resource and patient assessment, education, advocacy, and working interprofessionally with physicians and pharmacists. Furthermore, the review further points out a set of barriers limiting nurse engagement, such as a lack of authority and time, as well as facilitators, including training programs and technological assistance, that promote their efficacy. The goal of the review was to provide a greater understanding of the contributions of nurses as part of deprescribing activity, and articulate future directions for practice, education, and policy to enhance the role of nurses. The findings highlight the importance of including nurses in deprescribing approaches to address polypharmacy, reduce ADEs, and support patient-centred care in general medicine.

Methods

A narrative review of literature spanning 2020 to 2024 available through PubMed, CINAHL, Scopus, and Web of Science was conducted using search terms "deprescribing", "nursing", "general medicine", "polypharmacy," and "interprofessional collaboration." There was no restriction on study types. Inclusion criteria were peer-reviewed studies in the English language that reported on nurses' roles in deprescribing in a general medicine context. Exclusion criteria were studies that reported only non-nurse-led interventions or were not in a general medicine context.

Results

Nurses' Role in Deprescribing

Nurses also play an important role in deprescribing and can utilize their knowledge of patients' needs and proximity to patients for medication optimization. The contributions of nurse

practitioners and nurses in deprescribing can be organized by four main tenets, listed as follows: patient assessment and monitoring; education; advocacy for person-centered care; and interprofessional practice.

Patient Assessment and Monitoring

Because nurses have the most contact with patients, they are often the first line of assessment of potentially inappropriate medications (PIMs). The routine nurse assessments provide insight into medication adherence, side effects, and preferences, all of which are relevant to deprescribing (Stolz et al., 2023). Forexample, nurses may assess for high-risk medications in older adults in standard practice using validated tools (e.g., Beers Criteria) and identify medications that may require further intervention (Staff, 2015). An example of the effectiveness of nurse monitoring is the study conducted by Forgerini et al. (2020), in which 30% of elderly patients in primary care settings were taking potentially harmful medications through physician assessment. Forgerini et al. (2020) report that this provided impetus to physician-led deprescribing. The STOPP/START criteria provide examples of criteria for nurse assessment use regarding inappropriate medications, while medication-reconciliation forms will allow for standardized reviewing and reporting to physicians (O'Mahony et al., 2023; Vaismoradi et al., 2024). This empowers nurses to contribute crucial data that informs deprescribing plans to mitigate the incidence of ADEs (Table 1).

Table 1. Nurse-led assessment tools in deprescribing.

Tool	Description	Application in Nursing	Reference
Beers Criteria	Identifies potentially inappropriate medications in older adults	Used by nurses to flag high-risk medications during patient assessments	Staff (2015)
STOPP/START	Screening tool to identify inappropriate prescribing and potential prescribing omissions	Guides nurses in evaluating medication appropriateness for elderly patients	O'Mahony et al. (2023)
Medication Reconciliation Forms	Standardized forms for reviewing and documenting medication use	Facilitates nurse-physician communication to support deprescribing decisions	Vaismoradi et al. (2024)

Patient and Family Education

Nurses play a vital role in educating patients and families about the risks and benefits of deprescribing to help patients make informed decisions. Education can help alleviate common concerns about stopping medications, such as the potential worsening of other symptoms, and build patients' trust in the deprescribing process (Warmoth et al., 2020). For example, a qualitative study by Naughton & Hayes (2017) reported that nurse-led patient education increased patient acceptance of deprescribing by 25%. Overall, patients indicated that they found comfort in the literal and empathetic explanations provided by the nurse, which were guided by their knowledge of what patients wanted and needed. In addition, nurses adjust their information for various health literacy levels in order to support patients' understanding of the reason for the deprescribing and how it fits into their health goals (Bužančić, 2024). Nurses provided education both in hospitals and in community organizations, and therefore enhanced the patient's ability to follow clinical guidelines and develop plans for deprescribing.

Advocates for Patient-Centered Care

As advocates for patient-centered care, nurses must ensure that patients' preferences and goals are incorporated into the decision to deprescribe. This involves being an advocate for vulnerable populations like older adults or those who lack decisional capacity due to cognitive impairment, who may not be able to communicate their needs (Cernasev et al., 2024). Evrard et al. (2023) completed an evaluation to describe how nurse advocacy prompted discussions between patients and prescribers, resulting in a 40% decrease in inappropriate benzodiazepine use among older patients. Advocacy by nurses, as it relates to the deprescribing process, entails elevating patient voices in interprofessional discussions with prescribers and ensuring the deprescribing plan aligns with the patient's quality of life priorities (Jing et al., 2024). By using shared decision-making during the deprescribing process, nurses are able to address clinical goals while also addressing patient preferences, ultimately making deprescribing more feasible and successful.

Interprofessional Collaboration

Successful deprescribing requires collaboration between nurses, physicians, and pharmacists, and nurses are usually the coordinating team member for these interprofessional teams. Pharmacist-led medication reviews often utilize nurses' observations and insights into the patient's social history to determine, in part, a priority list of medications they may safely discontinue (Kim et al., 2019). A randomized controlled trial by Hodulik (2024) highlighted the value of working in triads with nurses-pharmacists-physicians and showed a 15% decrease in polypharmacy in a hospitalized patient population more to a physician-led strategy alone. Nurses add value by collecting and conveying relevant patient information to pharmacists and physicians, engaging in medication review sessions with the other members of the triad, and developing and executing deprescribing plans developed by external nurse-pharmacist-physician teams before the patient is discharged from a hospital or other health care service. Nurses can work within their scope of practice while contributing to triad residents working collaboratively as professionals, with a patient-centered focus on optimal deprescribing (Table 2).

Table 2. Evidence of nurse involvement in deprescribing.

Study	Setting	Intervention	Outcome	Reference
Hodulik (2024)	Hospital	Nurse-pharmacist-physician collaboration	15% reduction in polypharmacy	Hodulik (2024)
Forgerini et al. (2020)	Primary Care	Nurse-led PIM identification	30% of patients had PIMs flagged	Forgerini et al. (2020)
Naughton & Hayes (2017)	Community	Nurse-led patient education	25% increase in deprescribing acceptance	Naughton & Hayes (2017)

Barriers to Nursing Involvement

Despite supporting evidence in the literature, nurses encounter barriers to their full participation in nurse-driven deprescribing activities. First, not being able to prescribe is a key barrier, as the majority of nurses do not have independent prescribing rights, in most cases, not having the authority to independently deprescribe (Salwen-Deremer et al., 2021). Based on a survey by Niznik et al. (2022), 60% of nurses reported that they felt limited in their participation in deprescribing, especially hierarchical decisions about who can be responsible for deprescribing, i.e., nurses were supporting the activity, not leading the activity. Second, redeployed and overworked nurses often stated they do not have time to be involved or engage in deprescribing activities because of competing priorities, like providing patient care or doing the paperwork associated with the discharge plan. Based on a study by Wright et al. (2019), nurses spent only 10% of their shift discussing medications as they were focused on providing high-quality patient care (Berardinelli et al., 2024). Third, the knowledge deficit in deprescribing frameworks is lowering nurses' confidence to contribute to overall decision-making. Quek et al. (2024) note that many nurses lack formal training to initiate and facilitate deprescribing, although education has been shown to improve competency to initiate deprescribing by 35% (Clark et al., 2020). Lastly, opposition from stakeholders (physicians, patients) can undermine nurse-led deprescribing, mainly due to a lack of trust or uncertainty about the role of nurses (Karrer et al., 2020).

Facilitators of Nursing Involvement

A number of facilitators have been known to increase nurses' capacity to effectively contribute to deprescribing. First, education and training a significant facilitator to improve nurse confidence and competence. Education, such as structured training on deprescribing tools including Beers Criteria or STOPP/START, helps nurses identify PIMs and have informed discussions with their colleagues (Vaismoradi et al., 2024). Farrell et al. (2023) completed a pilot program to educate nurses on deprescribing, finding that nurse-led deprescribing improved by 20%, reinforcing the importance of specific education. Second, protocols for interprofessional teams that clearly outline nurses, pharmacists, and physicians' roles increase the ability for teams to deprescribe. Kim et al. (2019) established that standardized protocols for deprescribing led to a

12% decrease in ADEs based on methods for collaboration and decision making (Sun et al., 2020). Lastly, use of technology and support with deprescribing, such as electronic health records (EHRs) or clinical decision-support systems, can help nurses identify PIMs and monitor outcomes related to deprescribing. A study conducted by Choi et al. (2024) demonstrated that EHR integration achieved an 18% increase in deprescribing efficiency (Choi et al., 2024). Supportive leadership environment values nurses' contribution and encourages nurses in deprescribing (Bellon et al., 2023; Figure 2). Table 3 provides an overview of barriers and facilitators to nurse-led deprescribing.

Table 3. Barriers and facilitators to nurse-led deprescribing.

Factor	Barrier	Facilitator	Reference
Authority	Limited prescribing rights	Clear interprofessional protocols	Salwen-Deremer et al. (2021); Sun et al. (2020)
Time	Heavy workloads	Task delegation and prioritization	Berardinelli et al. (2024); Wright et al. (2019)
Knowledge	Lack of deprescribing training	Structured educational programs	Quek et al. (2024); Clark et al. (2020)
Technology	Inadequate EHR integration	Decision-support systems	Choi et al. (2024); Huang et al. (2020)

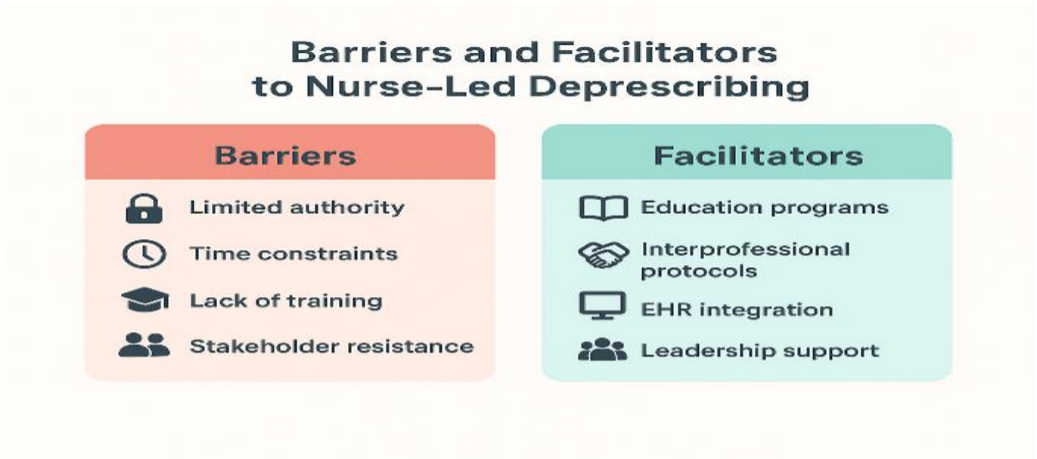

Figure 2. Barriers and Facilitators to Nurse-Led Deprescribing

Discussion

The multi-dimensional involvement of nurses in deprescribing approaches in general medicine establishes the importance of nurses to improve medication safety and patient outcomes. Nurses are uniquely placed to recognize potentially inappropriate medications (PIMs) and support deprescribing due to their proximity to patients and holistic viewpoint. Nurses' involvement in patient assessment is uniquely important because they are often the first to discover adverse drug events (ADEs) or medication non-adherence when ultimately interacting with the patient. Research suggests that by nurses recognize PIMs early reduces the occurrence of ADEs is reduced by 20%, thus underlining the nurses' impact on patient

safety perspective (Chua et al., 2024). Nurses using instruments such as the Beers Criteria or STOPP/START allow them to flag high-risk drugs, and constitute data for physicians or pharmacists to initiate deprescribing (Staff, 2015; O'Mahony et al., 2023). These forms of early engagement ensure that deprescribing is responsive and patient-centered, improving patient safety and reducing polypharmacy.

Nurses focus on patient and family education, which is important to address barriers to deprescribing, such as a lack of health literacy or patient fear of stopping medications. Through clear and compassionate messaging regarding the benefits of stopping, nurses empower patients to engage in shared decision-making, which builds trust and acceptance (Warmoth et al., 2020). Research indicates that nurse-led patient education can improve patients' acceptance of deprescribing by up to 25%, which reflects the comfort patients felt having personalized messages that addressed their respective concerns, plus they were able to relate the outcomes of deprescribing to their health goals (Naughton & Hayes, 2017). In addition, nurses promote patient-centered care through advocacy, meaning that deprescribing decisions are more real given the preferences of the individual, especially when addressing vulnerable populations such as older adults or individuals with cognitive decline. This advocacy led to decreased use of inappropriate medications like benzodiazepines, to support patient-pharmacist discussions (Evrard et al., 2023; Jing et al., 2024).

Interprofessional collaboration is also a cornerstone of their contribution to deprescribing. Nurses enhance the expertise of pharmacists and prescribers by developing patient-specific insights. Studies show that interdisciplinary teams with nurses have better outcomes than single disciplines. Studies document polypharmacy reductions of roughly 15% when the entire team of pharmacists, prescribers, and nurses is working collaboratively in hospital settings (Hodulik, 2024). Nurses facilitate communication by observing how patients respond to their medications in real time, and they share those observations with pharmacists for medication reviews, and share with physicians as they make prescribing decisions for their patients. As such, this type of inter-professional collaboration utilizes the strengths of each profession to ensure deprescribing plans are comprehensive, evidence-based, and centered on the patient. By integrating nurses into these teams, there is an opportunity to maximize the impact of deprescribing across systems of care, further enhancing quality of care.

Despite these contributions, there are many barriers preventing nurses from fully participating in deprescribing. One major barrier is the limited power that nurses have, since most nurses are not prescribers, leaving them unable to start or lead a deprescribing endeavour. Niznik et al. (2022) found in their survey that 60% of nurses felt there were multiple limitations due to decision-making hierarchies that often have physicians as the only decision-makers in medication management (Salwen-Deremer et al., 2021). Then, there is the time factor. Nurses report heavy workloads often associated with general medicine settings, where they have limited time to increase their participation in deprescribing. According to the literature, nurses spend as little as 10% of their shift discussing medications, as they need to prioritize both direct patient care and administrative responsibilities (Wright et al., 2019; Berardinelli et al., 2024). Furthermore, knowledge deficits in deprescribing frameworks can undermine nurses' self-efficacy to take on this role, particularly when no formal education exists. However, studies show that

education can improve nurse competency in deprescribing by 35%, providing a clear potential pathway for overcoming this barrier (Quek et al., 2024; Clark et al., 2020). The reluctance of stakeholders, including physicians and patients, can also present problems for deprescribing efforts, which can be caused by a lack of clarity as to the role of nurses or trust issues; this reluctance can reduce the adherence or acceptance of a nurse's recommendation for deprescribing (Karrer et al., 2020).

Facilitators for nurse involvement in deprescribing present useful opportunities for overcoming these barriers. Structured educational and training programs are essential because they provide nurses with essential knowledge and the self-efficacy and confidence to use deprescribing tools. In a pilot program, Farrell et al. (2023) showed that nurse-led deprescribing improved by 20% after targeted education, which further emphasizes the importance of professional learning opportunities (Vaismoradi et al., 2024). Interprofessional protocols that clearly define roles for nurses, pharmacists, and physicians provide structure and shared responsibility in the deprescribing process and allow more effective implementation of collaborative care; as demonstrated by a study showing an average of 12% lower rates of ADEs when protocols are in place (Kim et al., 2019; Sun et al., 2020).

Technology also has an essential role to play in deprescribing, particularly in the form of electronic health records (EHRs) and clinical decision support, and also enables nurses to efficiently identify potentially inappropriate medications (PIMs) and review the outcomes of their deprescribing efforts. Integration of EHRs has improved deprescribing efficiency by 18%, pointing to the value of digital tools to aid nursing practice (Huang et al., 2020; Choi et al., 2024). Supportive leadership is critical for establishing a culture that values the role that nurses play in deprescribing, and support from an administration will allow interprofessional collaboration and enable nurses to play more active roles in medication management, creating environments for deprescribing initiatives to begin (Bellon et al., 2023).

Implications for Practice

In order to maximize nurses' role in deprescribing, health systems will need to overcome systemic barriers and appropriately utilize facilitators through designated strategies. First, policy must be implemented to incorporate nurses into deprescribing protocols, potentially limiting the scope of practice where appropriate. Nurse practitioners authorized to prescribe have been found to have enhanced deprescribing competency (Niznik et al., 2022; Salwen-Deremer et al., 2021). Second, both nursing education and non-academic continuing education should integrate deprescribing frameworks and interprofessional collaboration as part of developing competency and confidence (Clark et al., 2020). The third investment can be related to systems, within information technology, such as EHRs and decision-support tools for nurse-initiated deprescribing, that take data in real-time and provide alerts for PIMs, which will improve efficiency and accuracy (Choi et al., 2024). In conclusion, future studies should examine nurse-led deprescribing across multiple settings, such as rural or community-based care, and characterize long-term patient outcomes, such as hospitalizations or quality of life, can provide an even better foundation of evidence (Forgerini et al., 2020).

Limitations

This review was limited in several significant areas. First, this review was focused on general medicine contexts and did not identify any insights into nursing roles in deprescribing from specialized

contexts, which can be very different, such as oncology or mental health. Second, many of the studies were very different in terms of design and outcomes, which also limits external validity, as different measures and designs are difficult to compare directly. Third, excluding non-English studies may limit perspectives from around the world. In the future, reviews should encourage more perspectives from different settings and languages to gain a better understanding of nursing roles in deprescribing.

Conclusion

Nursing roles in deprescribing in general medicine contexts are most valuable, including all elements of patient assessment, education, advocacy, and inter-professional collaboration. Nurses are specially positioned in the patient care continuum to identify potentially inappropriate medications, provide education to patients, advocate for patient preferences, and work with physicians and pharmacists to optimize and limit medications. Despite the obstacles presented by limited authority, time, knowledge, and resistance from staff and stakeholders, there is evidence for system changes. While facilitators, including education, interprofessional guidelines, technology, and supportive leaders can help to improve how nurses can do their roles. If organizations can work to address these barriers while utilizing facilitators, they will be better able to support nurses' leadership in deprescribing enhancing patient safety and outcomes. Future research and policy should advocate for the empowerment of nurses and their integration in interprofessional practice to build upon advances in deprescribing practice and recognize nurses' contributions to explore and advance high-quality, patient-centered care.

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الممرضة كمحفز: التحقيق في وتوسيع دور التمريض ضمن نموذج إيقاف الأدوية بالتعاون مع الأطباء والصيادلة في الطب العام

ملخص

الخلفية :تعد كثرة الأدوية (polypharmacy) منتشرة على نطاق واسع بين كبار السن والأفراد الذين يعانون من حالات مزمنة، وتزيد من مخاطر الأحداث الدوائية الضارة، والدخول إلى المستشفى، والوفيات. يمكن أن يساعد إيقاف الأدوية (deprescribing)، وهو التخفيض المنهجي للأدوية غير الضرورية أو غير المناسبة(PIMs) ، في التخفيف من هذه المخاطر. على الرغم من أن الممرضات مؤهلات بشكل جيد للقيام بإيقاف الأدوية بسبب التفاعلات المتكررة مع المرضى والنظرة الشمولية لحالة المريض العامة، إلا أن دور الممرضة في إيقاف الأدوية لا يزال غير مستكشف بشكل كاف .**الهدف :**الغرض من هذا الاستعراض هو استكشاف دور الممرضات في إيقاف الأدوية في الطب العام وفحص مشاركتهم جنبًا إلى جنب مع الأطباء والصيادلة. وتحدد الورقة العوائق والعوامل المساعدة للمشاركة والمسارات المستقبلية .**الطرق :**أجرينا استعراضًا سرديًا ركز على الدراسات التي استعرضها الأقران من 2020-2024 باستخدام قواعد PubMedو CINAHLو Scopusو .Web of Scienceاستخدمنا متغيرات من مصطلحات البحث "إيقاف الأدوية" و"التمريض" و"كثرة الأدوية". كانت معايير الاشتمال هي الدراسات التي استعرضها الأقران والمنشورة باللغة الإنجليزية والتي ركزت على إيقاف الأدوية بقيادة التمريض ضمن نطاق الطب العام. استخرجنا البيانات حول دور الممرضة، ونتائج المريض، والعوائق/العوامل المساعدة ذات الصلة بالدراسة، باستخدام التحليل الموضوعي الاستقرائي .**النتائج :**وجد أن الممرضات يساهمن من خلال

تقييم المريض، والتثقيف، والدعوة له، والرعاية متعددة التخصصات، مما يقلل من الأدوية غير المناسبة (PIMs) بنسبة تصل إلى 30% والأحداث الدوائية الضارة (ADEs) بنسبة 20%. وشملت العوائق نقص السلطة ونقص الوقت، وشملت العوامل التي سهلت نجاح مشاركة التمريض التدريب السابق على منهجية إيقاف الأدوية ودمج دور المثقف الصحي مع توثيق التمريض في السجلات الصحية الإلكترونية .(EHR) **الاستنتاج :**يجب أن تلعب الممرضات دورًا محوريًا في عملية إيقاف الأدوية (لتحسين سلامة المرضى). سوف تساعد التغييرات في السياسات، وتعليم التمريض، والتكنولوجيا في تضمين مهنة التمريض في مبادرات إيقاف الأدوية. يجب أن تركز الأبحاث المستقبلية على استخدام مجموعة متنوعة من الأوساط، مع متابعة النتائج على المدى الطويل.

الكلمات المفتاحية :كثرة الأدوية، إيقاف الأدوية، التمريض، سلامة المريض، التعاون بين المهنيين الصحيين.