

Deprescribing practice in a resource-limited setting: Healthcare providers' insights

Henok Tegegn¹, Begashaw Melaku Gebresillassie¹, Daniel Asfaw ERKU², Asrat ELIAS¹, Abdella Birhan YABEYU³, and Asnakew Achaw AYELE¹

¹University of Gondar

²The University of Queensland School of Pharmacy

³Addis Ababa University College of Health Sciences

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Abstract

Aims: Inappropriate polypharmacy poses adverse drug events, mortality, and high healthcare costs. Deprescribing could minimise inappropriate polypharmacy and the consequence thereof. This study aims to evaluate healthcare providers' (HCPs) attitudes toward, and experiences with the deprescribing practice. **Methods:** An institution-based cross-sectional study was conducted among HCPs at the University of Gondar Referral Hospital, Ethiopia. Perception of HCPs on deprescribing was measured by Linsky et al. validated tool. This tool has five dimensions that could affect HCPs' decision to discontinue medications intentionally. One-way ANOVA was used to test the association between socio-demographic variables and their perception of deprescribing decisions. **Results:** Of 85 HCPs approached, about 82 HCPs with a 96.5% response rate were included in the final analysis of this study. Most HCPs (87%) were less likely or not at all to be affected by a strong relationship between HCPs and their patients to make a deprescribing decision. However, HCPs believed that formal education, significant physical health conditions, objective response to the clinical endpoint of the medication (e.g., blood pressure), and on-the-job experience profoundly influenced them to decide on deprescribing. According to the post-hoc analysis of one-way ANOVA, clinical pharmacists seemed to have a better attitude toward deprescribing decisions compared to physicians. ($p = 0.025$). **Conclusion:** HCPs' decision to discontinue a medication could be multifactorial, and HCPs could be influenced by education level and their experience to discontinue a medication intentionally. A therapy-specific deprescribing algorithm, multidisciplinary collaboration, and continuous education development should be instituted to guide HCPs in the deprescribing decision process.

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Keywords: Deprescribing, polypharmacy, medication discontinuation, prescriber, Ethiopia.

What’s known

- Deprescribing is a clinical practice to optimise medication use through reducing inappropriate medication and medication burden, thereby improving clinical outcome.
- Taking decisions to deprescribe is a complex process for healthcare providers (HCPs). However, factors influencing the deprescribing decision for HCPs are not well understood in a resource-limited setting.

What’s new

- HCPs’ decision to deprescribe were influenced by their education level and experience.
- Clinical pharmacists seemed to have a better attitude toward deprescribing decisions compared to physicians.

Introduction

The use of five or more medications can be considered as polypharmacy. Polypharmacy is mostly associated with adverse drug events (ADEs), leading to heightened morbidity, mortality, and healthcare cost (1-3). ADEs due to polypharmacy are prevailing and occur in approximately 25% of outpatients (3).

Medication discontinuation or deprescribing is one of the interventions to reduce inappropriate polypharmacy and its associated ADEs. It is a process of detecting and stopping medications when the actual or potential harms exceed the actual or potential benefits taking into consideration a variety of factors including the individual patient’s therapeutic care plans, level of functioning and needs (4, 5). Discontinuation of inappropriate polypharmacy has several benefits to the patient, such as reducing costs associated with medicines and their ADEs, improving adherence, and overall quality of life (6). This is especially true in developing countries including Ethiopia, where the primary source of drug expenditure is patients’ out of pocket money, and a significant percentage of the population purchase medicines from private drug retail outlets (7).

In addition to the economic implication associated with the prescription of multiple medications, polypharmacy is becoming common, resulting in ADEs in Ethiopia (8). This problem is more pronounced in older Ethiopian patients leading to poor quality of life due to polypharmacy (9). Fortunately, Ethiopian older patients seem to be willing and cooperative to discontinue one or more of their medications as long as their doctors said it was possible. This could potentially facilitate decision making for healthcare providers (HCPs) during the deprescribing process (10).

Unlike medication adherence and medication reconciliation, the concept of deprescribing receive little attention in literature worldwide (11). Though HCPs are keen on deprescribing in developed countries (12), factors like clinical uncertainty and multidisciplinary shared responsibility, could severely hamper their ability to proactively deprescribe (13). However, data on the perception of physicians, clinical pharmacists, and nursing practitioners regarding proactive medication discontinuation and lessening of inappropriate polypharmacy are lacking in the developing and resource-limited countries, including Ethiopia. Hence, we undertook the present institutional-based survey to document the experiences, attitudes, and beliefs of HCPs toward intentional medication discontinuation.

Methods

Study design and setting

An institution-based prospective observational study was conducted at the University of Gondar Referral Hospital, Ethiopia. It is the only referral hospital located in Gondar city and serves as both a teaching and referral centre for the majority of the population in the Amhara region. The study was conducted from 1 October to 30 November 2018.

Healthcare providers, including physicians, nurses, and clinical pharmacists, were recruited in this study. Simple random sampling technique was employed to recruit eligible participants. Participants who refused to participate or with incomplete response were not included in the study. Of 85 HCPs, 82 had a complete response and considered in the final analysis.

Study instrument

The primary outcome of the study is the experiences, attitudes, and beliefs of HCPs towards intentional medication discontinuation, to be measured using a validated tool, “Prescribers’ perceptions of medication discontinuation: survey instrument development and validation” (14). The questionnaire has five significant groups related to constructs of clinical deprescribing decisions of HCPs, namely ‘medication characteristics’ (seven items), ‘current patient clinical factors’ (five items), ‘Predictions of future health states’ (three items), ‘Patients’ resources to manage their own health’ (four items) and ‘Education and experience (four items).

Data collection

Before the actual data collection, data collectors were trained on how to collect the necessary data. A single-day training was given to the research staff on the research protocol. A pre-test was done, and three of the investigators carried out the data collection.

The study was approved by the ethics review committee of the school of pharmacy, University of Gondar. Informed consent was sought from the study participants prior to data collection and confidentiality and anonymity of subjects were maintained by not recording identifying details, such as name or any other personal identifiers.

Statistical analysis

The data were exported to Statistical Package for Social Science (SPSS) window version 25 for analysis. Descriptive statistics were employed to summarise the participant characteristics and outcome measures in percentages and numbers. One-way ANOVA was applied to determine the significant mean difference between socio-demographic characteristics of the HCPs based on their level of perceptions to medication discontinuation.

Result

Socio-demographic characteristics of the participants

A total of 85 HCPs were interviewed, 82 were included in the analysis, and three participants were excluded due to incompleteness with 96.5% response rate. The mean age of the study participants was 25 years \pm 3.01 years. Nearly two-thirds (57.3%) of the participants were males and Amhara in ethnicity (54.9%). The average work experience of the study participants was 2.23 years \pm 2.62 years (Table 1).

Participants’ perception toward medication discontinuation

The overall perception was described by parameters for the perception of medication discontinuation. Participants were considered to be influenced if they score a mean value higher than 1.5 points. Most of the participants (n=73, 89%) have scored less than 1.5 points and are less influenced by the overall five domains. The overall mean level of influence among participants was 1.18 point.

Among the parameters, patient-HCP relationship strength under the domain of ‘patients’ resource scale’ was found to be the lowest influencing level (0.66 points). Almost half of the participants were highly influenced to deprescribe with the occurrence of significant physical health condition (1.55) and objective response to the clinical endpoint of the medication (e.g., blood pressure approaches treatment target) (1.43).

In the domain of “predictions of future health states”, very few HCPs (n=1518.3%) perceive their medication discontinuation decision is more likely to be influenced when it is patient’s concern that symptoms will return if the medication is stopped. Majority of the participants (n=55, 67%) deem formal education is more important to their current level of comfort with making deprescribing decisions. In contrast, almost half of the participants (n=42, 51.2%) mentioned on-the-job experience as a more important factor (Table 2).

The difference in perception level among participants towards medication discontinuation

The difference in the mean perception levels of participants was determined based on socio-demographic characteristics. Based on One-way ANOVA test performed on socio-demographic characteristics, significant difference concerning perception to medication discontinuation were found with different age groups ($p = 0.024$) and the participants’ educational qualification ($p = 0.029$) as shown Table 3. Post-hoc analysis indicated that participants with a qualification of clinical pharmacy (mean=0.313) had good perception level towards medication discontinuation compared to participants with physician qualification (mean=0.262), ($p = 0.025$).

Discussion

To the best of our knowledge, there appear no studies done to investigate HCPs’ insight on deprescribing in Africa, and this study assessed HCPs’ perceptions and experiences with medication discontinuation decisions in Ethiopia. Polypharmacy increases the chance of interactions and inappropriate medications (5, 6, 8) leading to adverse drug reactions and hospital admission (15, 16). As a result, polypharmacy makes prescribing medication be more difficult and complicated (1). Till date, all other studies (17-24) employed qualitative methods to explore HCPs’ perceived barriers to deprescribing practice. To our knowledge, this is the first quantitative study to evaluate factors influencing HCPs’ deprescribing decisions in resource-limited settings like Ethiopia.

Overall, consideration of medication discontinuation is less influenced by the overall five domains in most of the participants for 73 (89%) having a mean influence level of less than 1.5. This may be due to the fact that participants’ deprescribing practice may be suffering from other challenges unaddressed in this quantitative study. In other studies (18, 25), barriers affecting deprescribing practice have been broadly classified into intrinsic factors to the HCPs (beliefs, attitudes, knowledge, skills, and behaviour) and extrinsic factors to the HCPs such as patient, work setting, health care system and culture (18, 25).

In the current study, the occurrence of significant physical health conditions profoundly influenced HCPs to discontinue patients’ medication. They also feel confident to make a deprescribing decision with the patient’s clinical endpoints such as blood pressure. However, HCPs’ level of comfort to decide medication discontinuation is least influenced by the strong relationship they have with their patients. A systematic review by Anderson K. et al. identified intrinsic problems, prescribing inertia (failure to deprescribe inappropriate medication despite the awareness of its presence), and low self-efficacy. The busy workflow and feasibility aspects were also acknowledged as external barriers in routine clinical practice (25).

Similarly, a qualitative study done in Australia and Sweden demonstrated that environmental factors, skills and abilities, and intentions could influence HCPs’ behaviour to deprescribe. The study explained that intentions to deprescribe could also be affected by the HCP’s attitude, norms, and self-efficacy (18). Patients centred decision-making process should be a part of deprescription practice. Involving patients in deprescription necessitates their readiness to discontinue their medications. A study done in Ethiopia showed that

older patients were willing to discontinue their medication as long as their doctor believed it was possible (10). This could enable HCPs to cooperate with their patients in deprescription decisions effectively.

Formal education and on-the-job experience were frequently reported to be more important for HCPs to consider medication discontinuation in our study. In Bolmsjö BB et al. study has also explored that skills and knowledge are mostly lacking (18), and suggested a need for more education for evidence-based deprescribing (26).

The current study showed that clinical pharmacists had good perception level towards medication discontinuation as compared to physicians. Physicians may not be well acquainted with the deprescribing process and its benefit due partly to the lack of adequate evidence to change the usual clinical practise (18). Physicians' decisions for deprescribing could be supported by other HCPs recommendations like pharmacists (27). Thus, inter-professional communication could improve decision making and facilitate successful deprescribing practise since different HCPs may have different barriers and priorities for deprescribing interventions (24, 28).

A study by Forsetlund et al. have shown that interventions, including education and pharmacist-led medication review could lessen harmful medications under certain circumstances (29). A recent study conducted in Canada suggested that pharmacist-led deprescribing focused medication review minimised unnecessary and potentially harmful medications (30). There have been several tools to support HCPs to assuredly deprescribe harmful or unwanted medications (31). However, it is unknown as to which tools are more important to effectively deprescribing and improving patient outcomes particular to the Ethiopian context. As an initial step, developing therapy-specific algorithm could assist HCPs with deprescribing decisions.

Future implications for clinicians and policymakers in Ethiopia

There is a paucity of studies related to deprescribing prescribing in Ethiopia. In a limited-resource setting, inappropriate polypharmacy poses poor clinical outcomes, including ADEs and a high economic burden on the patients and the country at large. Polypharmacy is prevailing in Ethiopian patients, particularly in the older population and patients with cardiovascular disease (9, 32). This could be due partly because, as to the recent studies done in Ethiopia, inappropriate prescribing of medications has been pervasive in chronic patients such as patients with antithrombotic therapy and patients with cardiovascular disease (33, 34) .

Patients with inappropriate polypharmacy could also contribute to suboptimal medication adherence as patients get trouble with remembering to take multiple medications. The problem worsens when HCPs fail to make the deprescribing decision for inappropriate medications, particularly for older patients. Moreover, in a limited resource setting like Ethiopia, medication unavailability, and out-of-pocket expenditure are significant challenges in healthcare (35). The country cannot afford the underutilisation of medications due to non-adherence, and wastage of medications due to the inappropriate commission of medications. Deprescription could optimise medication use and reduce inappropriate polypharmacy, thereby improving medication adherence and utilising the available medications cost-effectively in resource-limited settings. Stakeholders such as the Ethiopian Ministry of Health and professional associations should consider deprescription practice to integrate it into the clinical practice. They could also take the lead and organise to develop therapy-specific guidelines for deprescribing algorithm and providing continuous professional development to HCPs.

Limitation

The findings of this study have some limitations. Only 82 participants were enrolled, and a small proportion of pharmacists and nurses participated in the study. The study was also conducted in a single centre in the University of Gondar Referral Hospital, Ethiopia. Consequently, this study could suffer from generalizability.

Conclusion

This study could inform clinicians and stakeholder on the impediments and enablers for deprescribing decisions among HCPs. The deprescribing practice seems to depend on the type of HCPs, and with their education level and experience. Treatment specific deprescribing guidelines and algorithms, multidisciplinary collaboration and continuous education development should be sought to guide HCPs for evidence-based deprescribing decision process. Pharmacists-led medication review could lessen potentially inappropriate medication. Future studies should focus on impediments and enablers to deprescribing specific to the context in Ethiopia. Further interventions studies are needed with multidisciplinary approach.

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