Impediments to deprescription in Brazil: overview from a panel of geriatrics experts

Os condicionantes à desprescrição no Brasil: o panorama de um painel de especialistas em geriatria

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Abstract

Objectives: To identify impediments to deprescription among older adults from the perspective of a panel of Brazilian geriatricians.

Methods: The Delphi method was used to obtain a consensus among Brazilian geriatricians about the factors that influence the lack of deprescription for older adults in clinical practice. The study was developed in two stages: (i) a survey and description of potential factors involved in deprescription; and (ii) applying the results of the survey to a panel of experts to obtain a consensus.

Results: The deprescription process is influenced by the interaction of three pillars of older adult health care: the prescriber, the patient-family, and the health care system. In the professional and health care systems, professional training and communication skills, prolonged clinical follow-up, access to the multidisciplinary team, medical consultations of an adequate time, and unified electronic health records were identified as facilitators of deprescription. In the patient-family pillar, clear facilitators included health literacy, no sensory or cognitive deficits, and a clinical situation of transitional or palliative care.

Conclusions: Deprescription is a complex, multifactorial process that requires attention, time, and specific skills and competencies from the attending physician, but it also requires shared decision-making and a health system compatible with a culture of deprescription.

Keywords: deprescription, older adults, medication use, health care, consensus.

Resumo

Objetivos: Identificar os fatores condicionantes para a desprescrição em idosos na perspectiva consensual de um grupo de geriatras brasileiros.

Metodologia: Foi utilizado o método Delphi para a obtenção de um consenso entre médicos geriatras brasileiros sobre os fatores que condicionam a desprescrição na assistência à saúde do idoso, na prática clínica. O estudo desenvolveu-se em duas etapas: (i) levantamento e descrição dos potenciais fatores envolvidos na prática da desprescrição; e (ii) submissão do levantamento realizado na etapa anterior a um painel de especialistas para a obtenção do consenso.

Resultados: O processo de desprescrição é influenciado pela interação de três pilares da assistência à saúde do idoso: o prescritor, o paciente-família e o sistema de saúde. Como elementos de destaque, verificou-se que tanto a capacitação profissional, a habilidade em comunicação e o acompanhamento clínico prolongado do paciente quanto o acesso à equipe multidisciplinar, o tempo adequado para a consulta médica e o registro eletrônico único em saúde foram apontados como facilitadores à desprescrição, conforme os pilares do profissional e do sistema de saúde. Sob o pilar do paciente-família, os facilitadores evidenciados foram a literacia em saúde, a ausência de déficits sensoriais ou cognitivos, a situação clínica de cuidados de transição ou cuidados paliativos.

Conclusões: A desprescrição é um processo complexo, multifatorial, que exige atenção, tempo, habilidades e competências específicas do médico assistente, mas requer decisão compartilhada e um sistema de saúde coadunável com uma cultura de desprescrever.

Palavras-chave: desprescrição, idoso, uso de medicamentos, assistência à saúde, consenso.
INTRODUCTION

Old age, which involves a higher prevalence of chronic diseases, is when individuals are most medicated. This can result in multimorbidity and polypharmacy, with a greater risk of drug interactions, adverse drug reactions, and other negative effects, such as increased health expenses, falls, cognitive impairment, and mortality. It should be emphasized that although older adults are the most frequent medication users, they are often excluded from clinical trials due to their complex pathophysiology, altered organ function, polypharmacy, or simply old age. This underrepresentation is problematic because it does not consider the pharmacokinetic and pharmacodynamic changes involved in multiple drug use, which increase the risk of adverse effects in this population.1

Deprescription is the physician-supervised process of withdrawing inappropriate drugs to reduce polypharmacy and negative outcomes.2 Its potential benefits include improved quality of life, functional capacity, and greater medication adherence, in addition to less organ dysfunction, and a reduced risk of falls, syncope, delirium, hospitalization, mortality compression, and lower health care costs.3,4

This is an emerging and essential clinical issue in the safety of older patients, given that they are vulnerable to negative drug outcomes due to the pharmacokinetic and pharmacodynamic changes involved in the aging process, which, compared to non-geriatric patients, lead to twice the risk of functional decline.5

Furthermore, the cognitive deficit and low visual acuity so prevalent in this age group may predispose them to serious errors in adhering to their therapeutic regimen. In Brazil, these risks are magnified by low education, since the current geriatric population has, on average, only 4.20 years of education and 28% have less than 1 year of formal education.6

Despite such circumstances, deprescription is still not a priority. Efforts are currently focused on prescribing and establishing guidelines for pharmacotherapy.1 Studies point out the difficulty of dismantling rigid clinical treatment protocols to individualize prescriptions, fear of the recrudescence of previously controlled symptoms, and the lack of robust evidence and guidelines about deprescription that could guide professional conduct and provide greater certainty. This complex situation often leads to inertia and the perpetuation of inappropriate or futile therapeutic regimens for older patients.7,8 In this context, deprescription can be understood not as an act, but a continuous process that requires planning.2 The success of planning begins with a knowledge base of potentially intricate factors and how they are related to each other. Although some studies have outlined barriers to deprescription, strategies for promoting it have not been described in depth.

Due to these issues, this study presents a more comprehensive view of deprescription for older adults in order to contribute a better understanding of the paths that must be followed to more thoroughly integrate it into clinical practice.

METHODS

This cross-sectional study, conducted in Brazil between July 10, 2019 and February 10, 2020, was approved by the Federal University of Goiás Research Ethics Committee (opinion 3 542 099). It used the Delphi method in a group of Brazilian geriatricians to obtain a consensus about factors that facilitate and impede deprescription for older adults in clinical practice.

A literature review was initially performed to contextualize the problem and design the theoretical framework of the study based the possibilities described in literature from the PubMed and Virtual Health Library databases. Keywords were selected according to the Pan-American Health Organization’s Descritores em Ciências da Saúde and the U.S. National Library of Medicine’s Medical Subject Headings according to the following search strategy: (deprescriptions OR deprescribing OR medication discontinuation) AND (determinants OR facilitators OR barriers OR difficult OR requirement OR condition OR requisite) AND (aged OR elderly OR old man OR old OR elder). Study selection was based on the following inclusion criteria: reviews and original articles published in English, Portuguese, or Spanish and available in full on the Brazilian Ministry of Education (CAPES) Journal Portal, whose theme – “facilitators of and/or impediments to the deprescription process” – was identified and discussed as a primary or secondary outcome.

Based on the results, along with the collaboration of three independent researchers with extensive experience in safe therapy for older adults, a form was created that contained a sequence of statements describing potential factors that facilitate or impede the deprescription process. Using the Delphi technique, this sequence was analyzed by a panel of experts to reach a consensus about factors that facilitate and impede deprescription for older adults in clinical practice.

In developing the method, the specialists were encouraged to express their individual opinion about the pertinence or relevance of each statement in the sequence, as well as to propose new descriptions of factors involved in deprescription. The participants then received feedback on their responses, which guided them to the next round of questions. A 5-point Likert scale was used to express opinions, ranging from “strongly disagree” to “strongly agree”.
To standardize interpretation of the terms, the form’s introduction provided the following definitions:

- pertinent: referring to, related to, establishing relationships or similarities with,
- relevant: having value, relevance or pertinence.

The panel of experts was formed by inviting geriatricians by specialty as recorded in their respective institutions and who belonged to a Brazilian scientific society of that specialty. After e-mailing the invitation and clarifying any questions, those who provided written consent were included in the study. The “snowball” technique was used to recruit specialists, i.e., key informants (agents who work in the field, having in-depth knowledge and experience in the geriatric community) were initially approached, and a link to the informed consent form was sent to those who showed interest. These recruits approached other geriatricians in their region (target population). Those who consented and returned the questionnaire within the designated period were considered participants. Using this technique, 75 geriatricians were recruited and the final panel included 55 participants.

Despite using convenience sampling, we sought to make the panel representative of the five regions of Brazil according to the current distribution of geriatricians. Candidates who were not professionally active and/or who did not directly care for older patients were excluded.

Two forms were then sent to the panel, one on demographics (age and sex) and professional characteristics (time since earning their degree, workplace (public or private sector), and care modality ([outpatient, hospital, domiciliary or long-term institution]) and another containing the statements to be evaluated. The first form was filled out once by each participant, while the second was resent until consensus about the responses was reached. Each resending was considered a round. In the present study, 2 rounds were needed. For each round, 30 days were given to complete and return the responses. Reminder messages were sent on the 15th day after the form was sent.

Consensus for each item was considered ≥ 80% agreement among the participants. The most common model in the literature considers a range of 50 – 80% agreement (0.50 – 0.80). At the end of each step, each statement was analyzed. Statements considered pertinent and relevant by ≥ 80% of the participants were entered into the model, while those considered impertinent or irrelevant by ≥ 80% of the participants were removed. A new questionnaire containing the statements that received < 80% agreement was submitted to the next round, following the same procedures as the first round. In the Delphi method, subsequent rounds are only performed when the degree of agreement for a given item is not reached. The tool is readjusted for items with low consensus. Thus, this study was developed in two stages.

### Data analysis

Demographic and professional data were analyzed using descriptive statistics (absolute and relative frequencies). For continuous variables, the Shapiro–Wilk test was performed to determine the normality of the sample, with p < 0.05 considered significant. All continuous variables were non-normally distributed.

The panel’s responses about each statement were analyzed using descriptive statistics, with the results expressed as a percentage (%): agreement ≥ 80th percentile was considered consensus. To calculate the median response to 5-point Likert scale variables, the following values were ascribed:

1. strongly disagree;
2. partially disagree;
3. indifferent;
4. partially agree;
5. strongly agree.

The measure of central tendency was median and the interquartile range (IQR) to measure dispersion.

The content validity index was used to validate the instrument’s content and interobserver agreement, with values ≥ 0.80 considered concordant. Cronbach’s alpha was used to assess the internal consistency and reliability of the statements in the form, with a cut-off of 0.7.

### RESULTS

The panel consisted of 55 geriatricians, most of whom were women (60%; n = 33) with a median age of 41 years (IQR, 12) and a median of 12 years of professional experience. Most (69%; n = 38) work in both the public and private sector, as well as in academia (74.50%; n = 41), and many provide care in all three settings (hospital, home and outpatient) (34.50%; n = 19; Table 1).

Figures 1-3 show the panel’s agreement pattern. Figure 1 describes the factors that facilitate deprescription, while Figure 2 describes those that impede it. For most items, the IQR and the median range between partial and total agreement. Figure 3 shows that the IQR and median of most items ranged between partial and total agreement. Of the 7 statements reevaluated in the second round, consensus was not reached for only one (item 11) (Figure 3). In the
TABLE 1. Demographic and professional profiles of the geriatricians who participated in the Delphi expert panel, January 2020, Brazil

<table>
<thead>
<tr>
<th>Demographic and professional characteristics</th>
<th>Types of assistance provided</th>
<th>n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time spent as a professional years</td>
<td>Hospital, home, and outpatient</td>
<td>19 (34.50)</td>
</tr>
<tr>
<td>Median (interquartile range)</td>
<td>Hospital, home, outpatient, and long-stay institution</td>
<td>12 (21.80)</td>
</tr>
<tr>
<td>Sex</td>
<td>Home and outpatient</td>
<td>9 (16.40)</td>
</tr>
<tr>
<td>Female</td>
<td>Hospital and outpatient</td>
<td>6 (10.90)</td>
</tr>
<tr>
<td>Male</td>
<td>Outpatient</td>
<td>5 (9.20)</td>
</tr>
<tr>
<td>Type of service n (%)</td>
<td>Hospital, outpatient, and long-term institution</td>
<td>2 (3.60)</td>
</tr>
<tr>
<td>Private</td>
<td>Home, outpatient, and long-term institution</td>
<td>1 (1.80)</td>
</tr>
<tr>
<td>Public</td>
<td>Hospital and outpatient</td>
<td>1 (1.80)</td>
</tr>
<tr>
<td>Both</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Works in academia n (%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td></td>
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</tbody>
</table>

FIGURE 1. Box diagram of the first-round consensus among panelists. FACILITATING factors for deprescription

23. Health professionals with communication skills.
24. When the drug was indicated to treat a symptom rather than a disease.
25. Long-term clinical follow-up by the same professional.
26. Health literacy in the patient and/or family (i.e., the ability to read, perceive, and interpret health information).
27. Patients with intact cognitive ability.
28. Patients with no sensory deficits.
29. “Robust” patient (no imminent or established functional decline).
30. Patient in palliative care.
31. Access to the multidisciplinary team involved in the process (mainly the physician and pharmacist).
32. Hospital setting that allows for a global assessment of the patient, updating the care plan and prescription.
33. Patient in transitional care.
34. Availability of training programs for health professionals.
35. Setting that allows longer consultation times.

Strength of agreement among experts
Box diagram of the first-round consensus among panelists
Factors that IMPEDIE deprescription

1. Lack of a specific code for deprescription in the Brazilian Hierarchical Classification of Medical Procedures (CDBPM), making it impossible to receive pay specifically for the procedure.
2. Longer consultation time required for the deprescription process.
3. Communication difficulties between specialists, limiting access to relevant clinical information for deprescription.
5. Lack of clinical consensus on deprescription.
6. Lack of professional skill/competence for this process.
7. Unavailability of all of the patient’s clinical information, which is necessary to make decisions about deprescription.
8. The professional is afraid deprescription will have negative outcomes.
9. Older patient hospitalized for an acute condition, chronic morbidities or previous medications not addressed.
11. Patient with cognitive impairment.
13. Patient with health illiteracy.
15. Patient with functional disability.
17. Patient with financial difficulties.
18. Personal preferences of the patient and/or family.
19. Patient/family fear of worsening health due to deprescription.
20. Tight appointment scheduling, resulting in little time for medical consultation.
21. Lack of a unified electronic medical record available at all health care levels.
22. Multidisciplinary team unavailable in the service.

FIGURE 2. Box diagram of the pertinence and relevance of statements about factors that impede deprescription: results of the first-round consensus among panelists.
first round, there was consensus on most statements that described the potential factors that facilitate (Figure 1) and impede (Figure 2) deprescription. In the second round, the experts reassessed the statements with a pending consensual decision (Figure 3).

**DISCUSSION**

Deprescription occurs through the interaction of a set of factors that can be classified into three interconnected pillars. The prescriber pillar involves factors such as knowledge, skills, and information, which give the physician greater confidence; the willingness to deprescribe is rooted
in this pillar. The patient pillar includes social, health and aging factors, which determine the possibility of deprescription. The health system pillar, with its structure and organization, offers the opportunity for deprescription.

The interdependence between stakeholders in the deprescription process shows that physicians are not the only party responsible for proposing and continuing pharmacological treatment. In analyzing the role of the patient-family, the panel recognized the negative influence of culture (knowledge and habits) on deprescription. Factors such as the belief in the harmlessness of medications, the presence of the same disease in other family members, and the influence of the media have been pointed out as unfavorable to the deprescription process, as well as the belief in the lifetime efficacy of a prescription and the patient's reluctance to change.2,18,19

According to the panel, access to information and the ability to understand it (health literacy) influence this process. Many older adults are unaware of the concept of deprescription and need to be encouraged or even provoked into it.20 A lack of information about the drug (justification for its use, level of evidence, possible and probable adverse effects) is another barrier to deprescription.2 However, there is evidence that many older patients would indeed like to reduce their regular medications once they are sensitized to the topic.21

The panel also highlighted the negative impact of health illiteracy, since it limits the patient’s autonomy (shared decision-making capacity) by impedes understanding of the risks and benefits of therapy, as well as the idea that deprescription is an option. In Brazil, education is not significantly related to aging. The illiteracy rate among those aged ≥ 60 years is significant, (18.60%; 6 million people), and 65.50% of those in this age range only have an elementary education.4 This directly impacts health literacy and represents a major public health challenge.

The panel also highlighted cognitive impairment, sensory impairment, and social isolation as important obstacles, although with a lesser impact, especially in the consultation environment, since they lead to greater difficulties in understanding medical information. However, according to the literature, the family’s role in clinical care directives (including pharmacotherapy) is essential, even explaining the reasons for deprescription to the patient and convincing the patient of the need for each cutback, thus expanding the possibility of success.20

In patients with dementia, whose clinical challenges are even greater, the opinion of caregivers should be emphasized and treatment goals periodically reviewed, since evidence of benefit or harm in this heterogeneous population is often limited.2

Certain structural elements in the health system that interfere with the deprescription process should be highlighted. The time allowed to doctors to perform a thorough assessment and access all necessary information for each case is strongly determined by the organization of the health system, whether public or private. This was clearly demonstrated by the panel members, who work in both sectors. The time limitations for reviewing and discontinuing medications is the most common resource restriction in clinical practice,22 representing a great impediment to deprescription, which is a complex and time-consuming process.

Although differentiated remuneration might help overcome the time barrier,2 there was consensus among the panel that this statement was not very relevant. This may have been due to the participants’ understanding that reviewing the therapeutic regimen and deprescription are already included in a comprehensive geriatric assessment.23 Comprehensive assessment is already considered an outpatient clinical procedure that receives specific remuneration, being recognized by the Brazilian Medical Association’s Hierarchical Classification of Medical Procedures (CBHPM).

The fragmentation of health care, with the simultaneous action of multiple specialists to individually address coexisting chronic diseases, coupled with the lack of a unified system of electronic medical records were almost unanimously recognized as impediments by the panel. Having access to complete health information facilitates the deprescription process, since a single database would allow for planning, operationalization, and monitoring of the health of older patients. It would also provide information that could contribute to the development of public health policies for older adults and, in the private sphere, to better information management among the various specialists in order to determine the most appropriate clinical treatment.

Electronic records provide improved quality and safety in all health care contexts and allow medications to be monitored and discontinued, helping identify errors in new prescriptions, such as the reintroduction of discontinued medications. More broadly, electronic medical records facilitate bidirectional communication between health professionals, enabling a holistic understanding of the patient and greater monitoring of the care plan.24 The relevance of the electronic health record must be reinforced in the current fragmented care context, which involves the simultaneous
action of numerous specialists for an individualized approach to coexisting chronic diseases. This is reflected in a disease-centered approach (i.e., a greater possibility of polypharmacy) and therapeutic inertia (i.e., with the patient and physician tending to maintain the status quo), which is reinforced by the lack of communication between professionals. The lack of available information is a result of the lack of dialogue between professionals (related to the prescriber) and the lack of a unified electronic health record for each individual (related to the health system). The lack of access to all medical records and the lack of communication between different professionals makes reverse prescription difficult, especially outside the hospital environment, and it can have negative consequences for patients, including increased mortality.

The medication review process is a vital part of health care, especially during the care transition after hospital discharge. According to the panelists, another impediment to deprescription is the failure to address chronic morbidities or medications previously used during hospitalization to treat an acute condition (health system pillar and prescriber pillar). Although the hospital environment promotes prescription review and deprescription, polypharmacy levels and the use of potentially inappropriate medications do not change during hospitalization, given that the focus in most cases is exclusively on the acute clinical condition. Iatrogenic risk from medications, even as a cause of admission, is seldom identified.

It was agreed that the lack of collaboration between the different levels of care and the involvement of the entire team (doctors, nurses and pharmacists), either due to a gap in interaction (prescriber) or the unavailability of a multidisciplinary team (health system), impairs the deprescription process, according to the content validity index analysis.

From the perspective of the prescriber, this study highlighted the role of communication skills (i.e., with the patient-family and between specialists) in the deprescription process, as well as and the presence of the referring physician for prolonged clinical follow-up, with clinical experience and doctor-patient trust considered positive differentials. This reinforces the importance of integrating this professional into the deprescription team, especially for better treatment adherence. Clinical experience has been considered a favorable issue, since the topic is not currently covered in the curricula of most medical schools. Hence, medical students and young professionals, both physicians and pharmacists, are unfamiliar with deprescription, which “can be defined as the act of reverse prescription, that is, the process of gradual reduction, interruption, discontinuation, or withdrawal of medications to improve clinical outcomes, and lack confidence in medication review. The lack of such competence reinforces the uncertainty and inertia of clinical and surgical teams in different older adult health care contexts.

Therapeutic inertia is also reinforced by the rigidity of clinical consensuses focused on standardizing disease treatments, which facilitates polypharmacy and possible interactions between drugs, diseases and patients, increasing the treatment burden. Prescriptions should be based on the individual context, considering functionality and life expectancy, which, when limited, also facilitate deprescription.

Drugs with a high potential for adverse effects and those that are unnecessary or ineffective should be considered for suspension. As with drugs to prevent diseases in palliative care patients, the non-alignment of treatment with the patient’s values, preferences, and purchasing power is a facilitating factor for deprescription that was pointed out by both the panel and the literature. Reducing expenditures for unnecessary medications and adverse events is important in both the public and private sectors.

Scientific evolution has led to a progressive interest in rational therapy and sensible decisions, aiming to reduce inappropriate medical treatments. The “therapeutic illusion”, an unjustified enthusiasm for treatment, has persisted in the history of medicine, and research is needed to define how efforts to reduce this “illusion” can be better integrated into medical education, whether during medical school or as lifelong learning. On the other hand, it is also worth noting that current evidence-based therapeutic guidelines do not provide adequate information on medication efficacy, safety, or dosage for older patients with multimorbidity or polypharmacy, further reinforcing the cumulative drug burden.

This study aimed to identify factors that facilitate or impede deprescription in older adults in Brazil with a panel of Brazilian geriatricians. Although the panel included experts from all regions of the country, it nevertheless represents only a small contingent of the nation’s geriatricians. In addition, a sample “biased” toward participation in the academic environment may not fully represent the context of exclusive care work. Thus, these should be considered study limitations. On the other hand, this same sample homogeneously included professionals working in both public and private health systems and in various care settings (home, long-term institution, outpatient, and hospital), which should be considered a strength. Future studies assessing these conditions among other medical
specialties are required for broader and more assertive actions to encourage deprescription.

CONCLUSION
Deprescription, an essential aspect of “good prescription”, is intrinsically related to reconciling medications to ensure safe and effective use. Its goals include reducing the drug load and the risk of specific geriatric syndromes (falls and cognitive impairment) and improving health outcomes (hospitalization and death) and quality of life. It is a complex process that requires attention, time, and specific skills and competencies, such as determining the ideal timeframes for reduction, titration, shared decision-making, communication skills, and health systems management in a medical culture that has historically tended to add medications rather than remove them. The acceptance of the patient-family, the greater workload, the communication difficulties between specialists, and the discomfort of revoking the prescriptions of colleagues are topics that can guide strategies for increasing deprescription in clinical practice and reinforcing safety in older adult health care.

Conflict of interests
The authors declare they have no conflicts of interest.

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Author contributions
JJMT: Conceptualization, investigation, writing – original draft, writing – review & editing. MPP: Supervision, data curation, methodology, validation, writing – review & editing. MPDF: Supervision, formal analysis, writing – review & editing. FRS: Supervision. MTAP: Project administration. LEAR: Software.

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