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## REVIEW ARTICLE

### Psychotropic Deprescribing in the Geriatric Population: A Review

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## ABSTRACT

**Background:** Potentially inappropriate medication (PIM) is defined as the usage of a medication for which the risks surpass the perceived benefits, particularly when more efficient alternatives exist. The focus has now shifted from prescribing to deprescribing, especially with one aging.

**Methods:** Based on the Scale for the Assessment of Narrative Review Articles (SANRA) criteria, we performed a search of articles published in Medline and google scholar databases between 2008 and 2022 using terms such as Deprescribing, Psychogeriatric patients, polypharmacy, psychotropic drugs, benzodiazepines, and potentially inappropriate medication (PIM). The initial search yielded 3058 articles. After review, 53 articles were included for discussion.

**Discussion:** Polypharmacy and multimorbidity are multifaceted interconnected concepts in geriatric care that call for timely intervention and interdisciplinary management across each healthcare and social setting. And although the literature and studies on the benefits are variable, deprescribing appears to be overall efficacious.

**Conclusion:** Further research on the efficacy of strategies and existing guidelines in lowering PIMs in geriatric psychiatry patients is warranted. The purpose of this review is to give an outline of the current evidence to inform effective methods for deprescribing PIMs for older persons, with an emphasis on strategies clinicians can use to address challenges to these approaches

**Keywords:** Deprescribing, Psychogeriatric patients, polypharmacy, psychotropic drugs, potentially inappropriate medication (PIM), Benzodiazepines

**Introduction:**

Elderly patients in primary care and psychiatric facilities frequently receive potentially dangerous medications at the time of discharge. Most physicians pay great attention to the medicines they prescribe to the elderly, but there is no standardized approach to decrease the risk of overprescribing or even under prescribing. Potentially inappropriate medication (PIM) is defined as the usage of a medication for which the risks surpass the perceived benefits, particularly when more efficient alternatives exist.<sup>1</sup> PIM use may be more common in older disabled patients, who generally have complicated comorbidities that necessitate prescribing many drugs.<sup>2</sup> PIM can result in high readmission rates, as well as significantly increased morbidity and mortality.<sup>3</sup> As it can increase the risk of adverse drug reactions, the use of PIM is a serious issue in pharmacological therapy for older persons.<sup>4,5</sup> In order to determine the level of PIMs in older patients, specific screening protocols have been used. The Beers criteria in the United States and the Screening Tool of Older Person's Prescriptions (STOPP) in Europe are the most extensively used and acknowledged tools for PIMs.<sup>6,7</sup>

Patients in old-age psychiatric inpatient units are commonly prescribed drugs from the Beers Criteria's various classes of PIMs, particularly anticholinergic drugs, such as first-generation antipsychotics. Using a standardized measure for assessing anticholinergic load, a study examined the anticholinergic burden of drugs in patients discharged from a geriatric psychiatry ward and found that only 10 percent of discharged patients had not been prescribed anticholinergic drugs, despite the fact that the number of patients using at least one anticholinergic prescription had increased

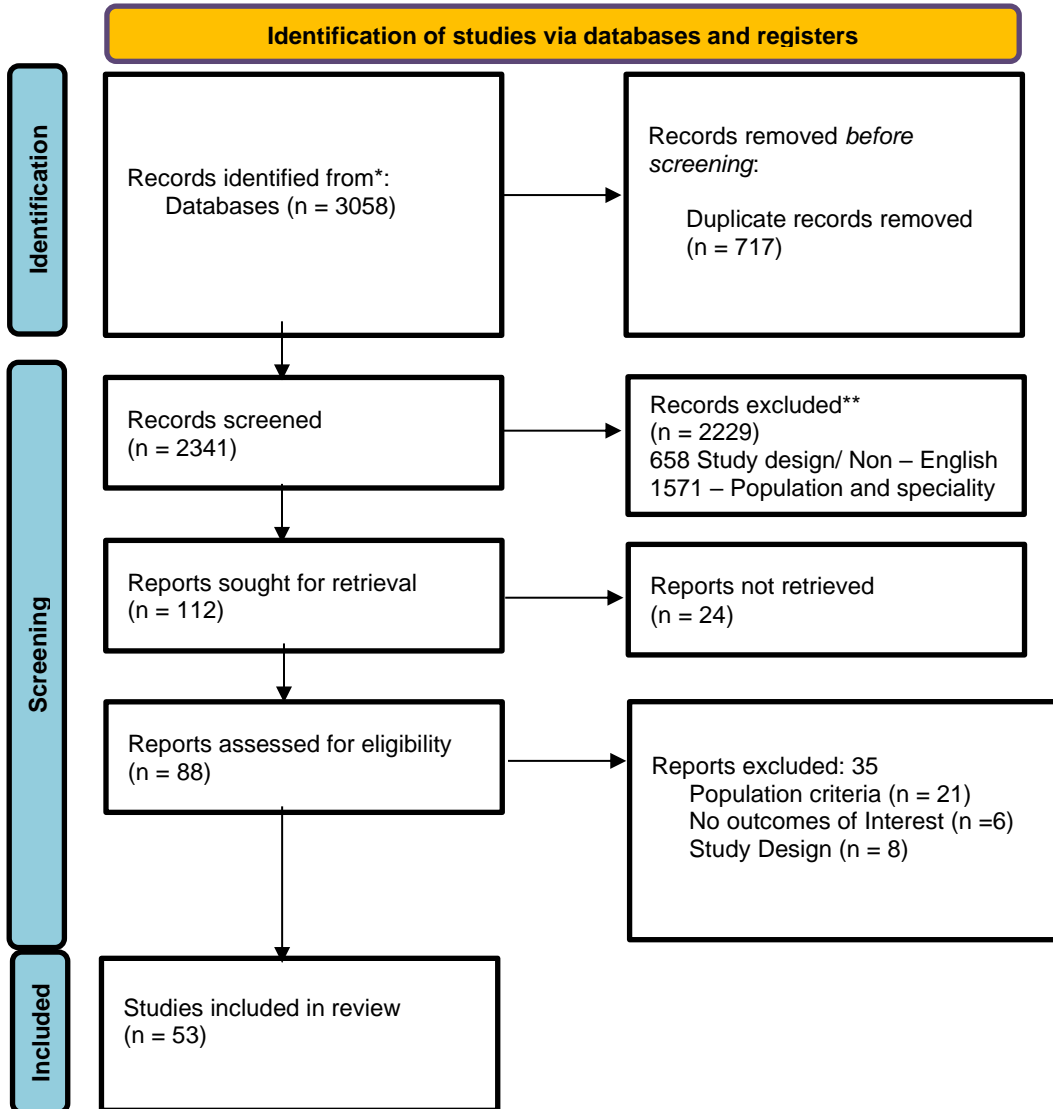
dramatically. PIM was found to be more harmful to elderly people with cognitive impairment.<sup>8,9</sup> The factors that contribute to the inappropriate use of medications are diverse. PIM use is more likely to be correlated with females, older age, polypharmacy, visiting numerous prescribers' physicians, and poor overall health.<sup>10,11</sup> Furthermore, some chronic illnesses like diabetes, hypertension, depression, osteoporosis, and dementia have been linked to an increased incidence of PIM use in senior citizens compared to those who do not have these chronic disorders.<sup>12,13</sup>

Further research on the efficacy of strategies in lowering PIMs in geriatric psychiatry patients is necessary.<sup>14</sup> The purpose of this review is to give an outline of the current evidence to inform effective methods for deprescribing PIMs for older persons, with an emphasis on strategies clinicians can use to address challenges to these approaches.

**Methodology:**

We performed our literature search based on the Scale for the Assessment of Narrative Review Articles (SANRA) criteria.<sup>15</sup> On the 3rd of July 2022, we searched Medline and google scholar databases using terms such as "Deprescribing", "Psychogeriatric patients", "polypharmacy", "psychotropic drugs", and "Potentially inappropriate medication", "Benzodiazepines" and found 3058 articles, published between 2008 and 2022. We screened the abstracts and the title for studies that examined deprescribing potentially inappropriate medication in geriatric psychiatry patients and included the full-text studies and reviews of 53 articles that were relevant to our study objectives. All articles were cited in this article. The number of articles retrieved according to the search terms is summarized in table 1.

**Table 1:** Search terms and results from PubMed/Medline and Google Scholar Search



### A. Indications for Deprescribing

In the context of geriatric mental health care, Benzodiazepines (BZD) and other related Z-drugs are one of the primary targets for deprescribing. Its prolonged use is linked with reduced risk-to-benefit ratio, frequent falls, fractures, impaired cognition, 'pseudo-dementia state', motor-vehicle accidents, potentially fatal withdrawal syndrome, and a significant financial and legal burden to society.<sup>16</sup>

Specific markers can identify which patients are at a higher risk for medication errors, and thus should be given top priority for comprehensive medication evaluation and, where necessary, deprescribing. The prescribed medications should be examined on a frequent basis to verify that each drug is effective for that person and that their treatment is in line with their treatment goals. A current and accurate diagnosis should also be used to guide the

treatment approach.<sup>17</sup> Increased frailty or a decrease in the patient's cognitive function or capacity to handle everyday tasks might also prompt a reconsideration of deprescribing.<sup>17</sup>

### Changing the Risk-to-Benefit Assessment

To construct a drug regimen for a patient, medical and psychosocial components must balance to produce a positive risk-benefit ratio. This ratio can shift over time, providing a reason to stop prescribing. Psychological aspects such as patients' preferences, knowledge of their disease and treatment, and their coping mechanisms may change over time, altering their individual risk-benefit ratio. Revisitation of treatment strategy may be prompted by social circumstances such as geographic displacement, changes in socioeconomic and financial status, and even changes in religious

belief. The emergence of the recovery paradigm and patient-centered treatment in psychiatry, including pharmacological therapy, needs the development of deprescribing expertise even more.<sup>18</sup>

### Polypharmacy

The most significant risk factor for drug-related issues is the use of numerous medications on a daily basis over a long period of time.<sup>19-23</sup> In a study of older veterans, it was reported that those in the uppermost category of medication use had a 6 to 12 times higher risk of medication-related impairments than those in the lowest category.<sup>24</sup> There is no fixed number of medications beyond which risk increases; each extra medication raises the risk.<sup>24</sup> However, recent data suggests that taking five or more drugs can help identify older persons who are at increased risk of clinical consequences due to polypharmacy.<sup>25</sup>

### Adverse effects

Due to increasing frailty, low homeostatic reserve, and other age-related changes in pharmacokinetics and pharmacodynamics, the geriatric group is more sensitive to detrimental consequences.<sup>26</sup> It can be difficult to recognize adverse effects in the elderly, especially in those with a psychological impairment who may be unable to express their concerns. It is relatively usual for a side effect to be mistaken for a new symptom or illness, which can contribute to a further prescription avalanche. Since polypharmacy is more common in these adults, more than one drug may be contributing to the same adverse effect.<sup>27</sup>

### Falls

Falls are substantially more likely in the geriatric group. Certain medicines, like psychotropics, can aggravate this.<sup>25,28</sup> According to a recent study in New Zealand, deprescribing sedative drugs greatly reduced the number of falls each patient experienced.<sup>29</sup> It has also been proven that providing older persons with written material encouraging deprescription of drugs is an effective technique in implementing the discontinuation.<sup>30</sup> However another study found that deprescribing had no effect on the likelihood of a first fall, but it did reduce the number of subsequent falls among patients who have already fallen before.<sup>31</sup>

### Medication Nonadherence

Nonadherence to medication is a majorly neglected problem in healthcare. Even though nonadherence

has been linked to a variety of practical and treatment-specific indicators, the insufficiency in communication between the patient and the healthcare professional when the patient arbitrarily decides to stop taking a drug raises issues of dissonance in the patient-physician relationship, which are especially important in psychiatry. Practitioners may lessen the possibilities of this detachment and improve the relationship by demonstrating experience in collaborative efforts in regard to medication discontinuance from the beginning. An early dialogue with the patient that ensures equal weightage to deprescribing (where appropriate) and prescribing could help to resolve such a dispute.<sup>18</sup>

### **B. Implementing Deprescribing**

In a systematic review of 28 studies by Paquin et al. focussing on tapering BZD in geriatric population, it was revealed that the most common successful tapering protocol included a 25% dose reduction at intervals of 7-14 days until drug-free.<sup>32</sup> The tapering protocols reinforced the importance of flexibility, adjunctive psychotherapy, and an individual-based approach for deprescribing. The most common medication used to facilitate the process included paroxetine, melatonin, valproate/ trazodone, buspirone or progesterone.<sup>32</sup> Benzodiazepine Withdrawal Symptom Questionnaire (BWSQ), Hopkins Symptom Severity Checklist, Clinical Institute Withdrawal Assessment Benzodiazepine and Benzodiazepine Dependence Self-report Questionnaire were some of the most routinely used tools to screen withdrawal symptoms.<sup>32</sup>

A review by Gupta et al. identified seven core aspects of implementing deprescribing in psychiatric clinical practice.<sup>33</sup> They expanded upon a previously proposed guideline by Reeve et al.<sup>34</sup> and asserted the importance of engaging the patients and their family in shared discussion making and risk-taking<sup>35</sup>, patient-centered approach<sup>36</sup>, and nurturing the qualities of empowerment and hope.<sup>37</sup> They named it as recovery-oriented practices, aimed at inculcating the above-mentioned aspects into everyday psychiatric clinical practice. Hope and empowerment, first mentioned by Jacobson and Greenley, called for both the patients and doctors to instill a feeling of hope and feel empowered enough to be actively involved in their treatment plan, giving them the opportunity and resources to take risks, should they be willing to do so<sup>33,37</sup> Shared decision making and patient-centered approach were two other overlapping concepts mentioned, both targeting patient engagement,

individualized treatment and tapering plans, psychosocial support from relatives and healthcare professionals.<sup>33,35</sup>

We recommend the steps described in Table 1 to implement deprescribing in geriatric psychiatry patients and the tools to guide which medicines should be considered for deprescribing have been comprehensively discussed in Table 2 which outlines the various deprescribing guidelines followed in different parts of the world including their respective advantages and drawbacks as well.<sup>38-42</sup>

There is also compelling research suggesting that some nonpharmacological treatments, such as regular physical activity, have a significant preventative benefit associated with lower rates of all-cause death and morbidity.<sup>43</sup> Exercising

regularly is one of the most effective ways to retain vascular functioning as we age as other pharmacological methods can only aid in further postponing, decreasing, or preventing arterial aging.<sup>44</sup> A recent research trial also demonstrated that exercise can restore the declining functional abilities in hospitalized elderly individuals.<sup>45</sup> In actual clinical settings, the importance of this nonpharmacological approach is frequently underestimated, and prescribing physicians do not always prescribe it. Adequate exercise is relatively inexpensive and free of side effects.<sup>46</sup> It slows the rate of aging, illness, and mortality from all causes. On the other side, methods for reducing the burden of polypharmacy, particularly long-term exposure to PIMs, may aid in enhancing physical exercise in geriatric individuals.

**TABLE 1:** The steps of deprescribing

STEP	REMARKS
Choosing the appropriate time and context	Stress exacerbates numerous psychosocial disorders. Hence, it is imperative to start the process at a time when the patient is less susceptible to relapses eg; employment, housing, relationships, etc
A comprehensive medication history	Compiling the list of all psychiatric and non -psychiatric medications, meant to minimize relapse, adverse drug events, and withdrawal symptoms.  Also involves assessing for previous attempts at discontinuation, withdrawal syndrome, and medications prescribed by other health professionals.
Initiating discussion about deprescribing	To gauge the understanding, preferences, attitude, current knowledge, values, and willingness of the patient towards deprescribing. Adopting a shared decision approach.  It is also important to understand that while for some patients stopping a particular medication will be a decision they look forward to, some geriatric patients may associate the decision as “ downgraded treatment” and may express discontent, disappointment or anger.
Including psychosocial support system and resources	Respect and support the patient's decision. Fetch peer support and a reliable team of healthcare professionals ( visiting nurse services, therapists, primary care physicians, other specialists, friends and family) as required and acknowledged by the patient. Recommending them to inculcate productive activities such as hobbies and work.
Initiating the intervention	Gauge an increase in any symptom adversity, and aid patients cope with anxiety, stress during the process. Self help groups, psycho-social support and counseling them throughout the process is also recommended.
Introducing the antipsychotic tapering	From deciding to minimize the negative impact of antipsychotics to selecting which one to taper and the rate of tapering.
Constantly monitor and review the tapering	To avert relapse, life disruptions, and adverse drug events and monitor tapering for early signs and functioning. Also includes slowing or halting the deprescribing if warranted.

**Table 2:** Tools to guide which medicines should be considered for deprescribing

Criteria	Intended Population	Description	Advantages	Remarks / Drawbacks
Beers Criteria (updated in 2019)	- ≥ 65 years in all ambulatory, acute, and institutionalized settings of care.	- The goal is to guarantee that all elderly patients receive safe and suitable medications for their overall health, taking into account three primary factors: age, other medications, and underlying health issues.	- It helps medical professionals with medication assessments and continuous monitoring by raising awareness of PIM in older individuals. - They provide guidance to prescribers as they try to enhance patient outcomes.	- It does not detect all cases of PIM, nor do they address overtreatment or underuse of beneficial medications. - It does not apply to older adults receiving hospice or palliative care.
STOP/START (updated in 2020)	- Hospitalized geriatric patients aged ≥ 65 years	- It is designed to detect both the common and significant PIMs (STOPP criteria) and PPOs (START criteria).	- Multiple single-center clinical trials found that using this treatment intervention improved medication appropriateness, lowered medication costs, minimized falls, and also diminished possible ADRs.	- Although the electronic implementation of these criteria is a significant technical barrier, recent clinical trials of software prototypes show that it is possible. - Even when using reliable software to apply this criterion, face-to-face interaction between medical professionals is still required to explain and qualify these specific recommendations in individual multi-morbid older patients.
EuroForta (updated in 2021)	Older adults (65+)	- In bicentric clinical research, FORTA was verified as a drug listing strategy, effectively improving drug use in older patients. - To facilitate the globalization of this approach, country or region-specific lists, as well as a broader European FORTA List, have been produced.	- EURO-FORTA may aid in the spread of the FORTA system and the improvement of geriatric pharmacotherapy on a global scale.	- A standard list of countries such as the Euro FORTA List, may result in a loss of value due to averaging and majority-driven outcomes. - The recommended FORTA classifications might be biased, influencing the expert participants' decisions. - Some of the experts may have been prejudiced because of their ties to the pharmaceutical industries.
EVOLV-Rx	Individuals who are	- It includes a collection of	- It may improve the discovery of	- Considering the aim was to construct a targeted,

	65 years or older	<p>evaluation criteria that may be scaled and automated to detect low-value prescribing across patient populations in big administrative or clinical data sets.</p> <ul style="list-style-type: none"> <li>- It is distinct in that it incorporates patient, caregiver, and practicing physician perspectives on low-value prescribing and health care quality.</li> </ul>	<p>low-value prescribing practices, eliminating polypharmacy, and allowing older patients to obtain high-value care throughout the healthcare spectrum.</p> <ul style="list-style-type: none"> <li>- It differs from other criteria by using a value-based approach to bring together existing low-value prescribing suggestions to define, prioritize, and systematically quantify them in a form that can get this data summarized.</li> </ul>	<p>acceptable, and scalable metric, the low-value prescribing behaviors listed in the meter aren't comprehensive.</p> <ul style="list-style-type: none"> <li>- It has not been completely outlined for use in EHR data.</li> <li>- Each component of the criteria may not be applicable to all types of health data or to all demographics, which was a necessary tradeoff in defining criteria that best identify each type of low-value prescribing.</li> </ul>
Medication appropriateness tool for co-morbid health conditions in dementia (Match-D)	People with dementia	<ul style="list-style-type: none"> <li>- In patients with dementia, the statements provide detailed consensus-based guidance on symptom control, prescribing to lower the risk of future events, drugs to slow dementia development, side effects, and the indications for a treatment review.</li> </ul>	<ul style="list-style-type: none"> <li>- When individualizing dementia care, the criteria also provide guidance on specific concerns to address with patients and caregivers.</li> </ul>	<ul style="list-style-type: none"> <li>- Further research is needed to see if using this criterion in the clinical setting can enhance overall outcome and quality of life for dementia patients.</li> </ul>
Anticholinergic cognitive burden scale (ACB)/anticholinergic risk scale (ARS)	Anticholinergics prescribed to older people and those with mental illness	<ul style="list-style-type: none"> <li>- Anticholinergic burden can be measured using this scale that assigns a total anticholinergic score to a patient's prescribed medications.</li> </ul>	<ul style="list-style-type: none"> <li>- The overall aim is to reduce overall anticholinergic exposure as much as possible in older patients.</li> <li>- Reducing the anticholinergic burden may result in improvements in short-term memory, confusion, behaviors and delirium.</li> </ul>	<ul style="list-style-type: none"> <li>- More research is needed to establish the ACB scale and create therapeutic guidelines in the context of cognitive anticholinergic adverse effects.</li> </ul>

**PIM:** potentially inappropriate medications; **PPO:** potential prescribing omissions; **STOPP:** Screening Tool of Older Persons' Prescriptions; **START:** Screening Tool to Alert to Right Treatment; **ADR:** adverse drug reactions; **FORTA:** Fit for The Aged; **EHR:** electronic health record

## 1. Challenges Implementing Deprescribing

Introducing and normalizing the concept of deprescribing may be challenging for several reasons. From the paucity of literature, guidelines and scientific evidence to challenging the preconceived notion of prescribing medication or maintaining medications for “lifelong treatment” (especially pertaining to neuropsychiatric comorbidities amongst the geriatric population), advocating and inculcating deprescribing in clinical practice is an uphill battle long called for.

### 1. The Knowledge Gap, Reluctance of Prescribers and Apprehensions of The Patients

In a qualitative study done by Schuling et al., the Dutch GPs (General practitioners) expressed concerns about withdrawing certain medications, pertaining to prevention and those prescribed by specialists for very old people. They cited sparsity of scientific studies and knowledge gap being the foremost reasons for this. Moreover, the prescribers expressed interest in maintaining the status quo, after stability was attained.<sup>47</sup>

Many side effects of psychotropic medications emerge later in life course (for instance, renal impairment, extrapyramidal symptoms), the ‘prescribing culture’, relatively underreported and time consuming non pharmacological methods, drug withdrawal syndrome, disease relapse, and the popular notion that “ mental illnesses call for lifelong medication treatment” may act as contributing factors to challenges in deprescribing.<sup>48</sup> Doctors, patients and their relatives alike have also expressed their apprehensions talking about life expectancy versus quality of life in context to adjusting drugs, fear of disease relapsing taking over the desire to discontinue excessive drugs, coordinating interdisciplinary actions and views of all the healthcare and social settings involved without getting overwhelmed.<sup>34</sup>

A cross sectional study by Qi et al., reported more than 90% of the old people are despite all these challenges stated above, willing to stop their medications if their doctor finds it appropriate.<sup>49</sup> Several meta-analysis studies have explored the theme of doctors and patients influencing each other in context to deprescribing.<sup>34,50</sup> Patients’ views of the specific drug being removed, the process of deprescribing, doctor-patient relationship and their attitude towards cessation played as both enablers and barriers to the process in different cases.<sup>34,50</sup> A concern about medication and consultation visits becoming briefer and more superficial was also a major concern from both sides, warranting for a

better monitored process for deprescribing, shared decision making, support from the healthcare and social facilities, and medication consultations focussing on a more elaborate, and holistic exploration of the disease.<sup>18,34,51</sup>

A qualitative study based on prescriber’s perspective explored three broad themes of important considerations/ challenges while deprescribing. Prescribing factors (lack of or uncertainties while using guidelines, lack of evidence, fear of withdrawal symptoms and relapse), social influences (patient, family and other healthcare workers as influencers), and process of deprescribing (communication, time and funding).<sup>52</sup>

### 2. Underappreciation Of The Harm Inflicted By Polypharmacy

It is less challenging to recognize clinically evident ADEs with a single causality but ADEs mimicking similarly to diseases and symptoms prevalent in geriatric population can go highly undiagnosed. In a cohort study of more than 250 patients (all above 65), doctors failed to diagnose upto 23.2 % of mild to moderately severe ADEs and 16.5 % of severe, or fatal ADEs.<sup>37</sup>

### 3. Dearth of or Unreliable Evidence

Many doctors are still apprehensive about which process to deprescribing is most efficacious in context to clinical outcomes. Existing clinical trials and interventions are currently very different in their approach, sample size and involve healthcare professionals (psychiatrists, GPs, nursing staff, pharmacists) to be able to compare the results and the improvements (if any). Longitudinal research is warranted since most of the available evidence lacked the long term results or a large sample size in the interventions and what can be possibly done further to maintain the improvements.

## Conclusion

There exists a gap between the clinical practice and guidelines in regards to psychiatric geriatric patients and the deprescribing of psychotropic drugs. For instance, the increasing frequency of prescribing antipsychotic medications for indications that are not licensed for or for which they have not been studied (insomnia) warrants cautious deprescribing, especially since the long term side effect profile of these drugs are well established. While deprescribing, the support, appropriate education and training of physicians, relatives, and caregivers is indispensable. Further research is warranted to develop and validate practical guidelines with clinical utility for increasing the safety and quality of deprescribing in the geriatric population.



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