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Deprescribing benzodiazepine receptor agonists in older adults: a mixed-methods study to adapt the Canadian D-PRESCRIBE intervention to the Belgian community setting

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ABSTRACT

Objective Guidelines recommend deprescribing benzodiazepine receptor agonists (BZRA) in older adults, yet implementation in clinical practice remains limited. Adapting effective, evidence-based interventions to a new context is a resource-saving strategy. In Canada, the D-PRESCRIBE intervention comprised a patient educational brochure and a pharmaceutical opinion inviting physicians to revise BZRA prescribing and consider safer alternatives. Due to its effectiveness on BZRA deprescribing among Canadian older adults, we aimed to adapt the D-PRESCRIBE intervention to the Belgian community setting.

Design Recommendations from the ADAPT guidance, that provides a systematic approach for adapting interventions to new contexts, were followed. We conducted a mixed-methods study that comprised (1) group discussions and cognitive interviews to assess the acceptability and need for adaptation of the intervention's components and (2) a survey on the adapted pharmaceutical opinion. A research committee involving stakeholders' representatives decided on the adaptations, respecting the core functions of both tools. Changes in intervention components were reported following the Model for Adaptation Design and Impact framework.

Setting Belgian French-speaking community setting.

Participants Six older adults (≥65 years), six general practitioners (GPs) and seven pharmacists participated in the group discussions or interviews. 46 GPs and 91 pharmacists responded to the survey.

Results Participants welcomed the brochure positively. Still, some changes in the vocabulary, wording, photos and icons were made for several purposes including making the patient feel concerned about the brochure and softening the use of fear. The pharmaceutical opinion aroused mixed perceptions. Its name, layout and content were adapted to enhance its acceptability and fit with our healthcare system, practices and national guidelines. The survey highlighted several enablers and barriers to its use from the perspectives of GP and pharmacist.

Conclusions The Canadian D-PRESCRIBE intervention was adapted to the Belgian setting following a thorough and transparent process. Its feasibility will be tested in a future pilot study (NCT:05929417).

STRENGTHS AND LIMITATIONS OF THIS STUDY

⇒ This study followed recommendations from (1) the ADAPT guidance for adapting interventions to new contexts and (2) the new Medical Research Council framework for developing and evaluating complex interventions.
⇒ Stakeholders (ie, older adults, community pharmacists and general practitioners (GPs)) were involved throughout the adaptation process.
⇒ As participants were recruited voluntarily, they could have more positive views on intervention components than the general population.
⇒ Young GPs and GPs working in group practice were over-represented in our survey, therefore limiting the generalisability of our results.

BACKGROUND

Benzodiazepine receptor agonists (BZRA) are often prescribed to treat insomnia or anxiety. In older adults (≥65 years), current guidelines recommend avoiding or limiting their use to the management of acute situations[1] and for a period not exceeding 2–4 weeks.[2] BZRA have well-known potential adverse effects encompassing higher risks of falls, hip fractures, car accidents and death.[3–6] Therefore, BZRA deprescribing is strongly recommended especially when they are taken for insomnia.[7] However, despite the evidence and recommendations, between 15% and 20% of older adults in Western countries use a BZRA.[8–11] In Belgium, a limited reduction in BZRA use in older adults was observed over the past years but its prevalence remains high with around 18% of older adults (≥65 years) using a BZRA.[12]

Numerous barriers to BZRA deprescribing have been highlighted from older patients' and prescribers' perspectives, for example, the patients' and prescribers' belief in BZRA

efficacy, the perceived absence of benefits of BZRA deprescribing, the belief of patients that prescription renewal means the safety of BZRA use, the fear of withdrawal symptoms or return of the condition, the prescriber's expected resistance of patients toward BZRA deprescribing or perceived pressure for continuous prescribing.[13] A recent qualitative study explored Belgian patients', pharmacists' and general practitioners' (GPs) perspectives on factors participating in BZRA long-term use.[14] The results revealed additional barriers to BZRA deprescribing, such as patients' belief that BZRA use is harmless, the social acceptance of the 'medicalization of psychosomatic problems' and the existing stigma around BZRA long-term use that impedes open discussion around potential deprescribing. The study also showed that BZRA use was preferred over non-pharmacological alternatives because it was more financially and practically accessible. Besides, the authors highlighted a 'wait-and-see attitude' from prescribers and pharmacists, and poor interprofessional collaboration whereas they pinpointed it as a key element.

In Belgium, federal awareness campaigns have been organised since 2002 to reduce BZRA use, producing educational materials for both patients and healthcare providers.[15] However, these campaigns target the general population and may not effectively reach older adults. The 2018 campaign promoted alternative treatments,[15] although research indicates older adults prefer warnings about BZRA side effects.[16] The 2023 campaign emphasises interprofessional collaboration but lacks practical communication tools.[17] The continued high use of BZRAs among Belgian older adults highlights the need for alternative interventions.

The Canadian D-PRESCRIBE intervention combined a patient educational brochure (EMPOWER) with a communication tool between the pharmacist and the prescriber, called pharmaceutical opinion, aiming to promote BZRA deprescribing (among three other medication classes).[18] The EMPOWER brochure invites older patients to test their knowledge of the risks of BZRA use. It also provides information on these risks and possible non-pharmacological alternatives, along with a testimonial from an older adult who successfully stopped their BZRA and a BZRA tapering scheme. Throughout the brochure, patients are encouraged to discuss BZRA deprescribing with their healthcare provider. In Quebec, the sending of this brochure by the pharmacist to community-dwelling older adults resulted in 27% of the intervention group ceasing their BZRA at 6 months (vs 5% in the control group).[19] The pharmaceutical opinion is 'a document sent from the pharmacist to the prescriber detailing a problem with a patient's pharmacotherapy and recommending a management strategy to address the drug-related problem' (p.134).[20] For the D-PRESCRIBE trial, an evidence-based pharmaceutical opinion about BZRA was elaborated and made available for pharmacists.[20] The D-PRESCRIBE intervention has shown substantial effectiveness with a BZRA deprescribing rate of 43% at 6 months in the intervention group compared with 9% in the control group,[18] supporting the importance of interprofessional collaboration to potentiate the effects of the EMPOWER brochure.

If other interventions were found to be effective in reducing BZRA use among older adults, such as pharmacological substitution combined or not with psychological support or tapering programmes combined with psychological support, these interventions require a lot of resources.[21]

The D-PRESCRIBE intervention seemed most appropriate to test in our country for several reasons: (1) it has demonstrated efficacy and cost-effectiveness in Canada[22]; (2) it addresses important barriers to BZRA deprescribing that were highlighted previously; (3) as other educational interventions, it might be easy to implement in real-life practice[21]; (4) it addresses the three dimensions needed for behaviour change described by the COM-B model (capability, opportunity and motivation).[23]

If implementing an effective intervention could spare considerable resources by avoiding 'reinventing the wheel', its adaptation to a new context or country is often required to ensure fit with a different healthcare system and culture.[24] For instance, the pharmaceutical opinion currently does not exist in Belgium, contrary to Quebec.

The ADAPT guidance provides recommendations and a systematic approach for adapting interventions to new contexts.[25] The purpose of this study was to adapt both components of the D-PRESCRIBE intervention for the Belgian community setting following this guidance, and recommendations from the new Medical Research Council (MRC) framework on developing and evaluating complex interventions.[26] The guidance for reporting intervention development studies in health research (GUIDED) was used to report this study.[27] The GUIDED checklist is available in online supplemental file 1.

METHODS

The ADAPT guidance recommends four steps: (1) assess the rationale for the intervention and consider the intervention-context fit, (2) plan and undertake the adaptations, (3) plan and undertake piloting and evaluation and (4) implement and maintain the adapted intervention and scale.[25] The current study reports the process and results for the two first steps.

Step 1: assess the rationale for the intervention and consider the intervention-context fit

This first step aimed to have a clear idea of:

1. The 'core functions and forms' of the intervention.[28] A core function relates to 'the underlying mechanisms of change that make an intervention effective' and forms relate to activities that are performed to achieve core functions.[28] The identification of the core functions is essential to preserve the integrity of the original intervention: core functions must remain unchanged while forms are adaptable.[28]

2. Similarities and differences between Quebec's and Belgian contexts (defined as 'any feature of the circumstances in which an intervention is implemented that might interact with the intervention to produce variation in outcomes' (p.2)[25]).

For these purposes, published data on the D-PRESCRIBE intervention was reviewed. Core functions and forms are similar in their definition to programme theory which describes how each component of the intervention is supposed to work to achieve the desired outcomes in a specific context.[29] We searched, therefore, for any element related to core functions or programme theory. In addition, the intervention developers were contacted. We asked them for permission to adapt the D-PRESCRIBE intervention and to validate the core functions and forms that we had highlighted as a result of the literature review. In addition, Quebec's and Belgian contexts were compared using the Context and Implementation of Complex Interventions framework.[30] This framework defines context with seven major domains: geographical, epidemiological, socio-cultural, socioeconomic, ethical, legal and political context.[30] We limited the comparison to domains and aspects relevant to our project. First, related to the epidemiological context, published literature on BZRA use prevalence between Quebec and Belgium was reviewed to compare rates of BZRA use in both contexts. Second, related to the socio-cultural, socioeconomic, ethical and legal contexts, we compared the pharmacist's role and remuneration system in both countries. Indeed, as the D-PRESCRIBE intervention was pharmacist-led, we anticipated that these two aspects could influence the uptake of the intervention. This comparison of contexts was also submitted to the intervention developers to ascertain that all important elements had been considered.

Step 2: plan and undertake the adaptations

Steering committee

Three categories of key stakeholders were identified based on the MRC framework definition: patients (intervention recipients), community pharmacists (intervention deliverers) and GP, who will support or not the deprescribing process after receiving the pharmaceutical opinion. As a starting point, a steering committee was set-up to manage this project and included one representative of each category of key stakeholders and members of the research team. The stakeholders' representatives brought their specific points of view during the research meetings. All participants in the steering committee read and revised the research protocol and related documents, gave feedback and advice regarding the results and finally, helped in making decisions regarding the adaptation of the intervention components.

Interviews and group discussions with stakeholders

To explore in detail the need for adaptation and acceptability of both the EMPOWER brochure and the pharmaceutical opinion, group discussions and interviews were conducted with additional stakeholders. We aimed to recruit at least four community pharmacists, three to four GPs and three to five patients to participate. GPs and pharmacists were recruited through advertising professional organisations, university alumni (community pharmacists who attended a pharmaceutical care certificate programme) and professional networks. Patients were recruited through participating GPs and pharmacists. The patient's inclusion criteria comprised being aged 65 years and older, using a BZRA for at least 4 weeks and living at home. Exclusion criteria included cognitive impairment, current alcohol withdrawal, major mental health issues (eg, schizophrenia, major depression) and incapacity to understand French. All participants were asked to sign an informed consent form before participation.

Group discussions gathering community pharmacists and GPs were organised in a meeting room at the research team office with the possibility to attend online. Some of them were interviewed individually in case they could not join a group discussion. For practical reasons and for avoiding power issues during group discussions with healthcare professionals (HCPs), patients were only interviewed individually. Interviews took place at the participant's home, workplace or online. The cognitive interview technique was used, including 'think aloud' interviewing, and probing. These techniques were originally developed for improving questionnaires and surveys[31] but have also been used in the cultural adaptation of interventions and decision aids.[32–34] Practically, both the EMPOWER brochure and the pharmaceutical opinion were discussed, asking participants to express feelings and comments while reading each page. Probes included open questions such as 'What do you understand of what is presented here?', 'Does anything on this page bother you?', 'Are you feeling comfortable with the content/layout of the page?', 'What would you formulate/present differently?'. In addition to the content of the intervention, its delivery mode was also discussed with participants. At the end of the detailed review, the general acceptability of both materials and intervention as a whole was also explored based on the theoretical constructs of acceptability described by Sekhon *et al*.[35] These authors described seven constructs 'that reflect the extent to which people delivering or receiving a healthcare intervention consider it to be appropriate based on anticipated or experiential cognitive and emotional responses to the intervention' (eg, affective attitude, opportunity cost) (p.93).[35] Questions about each of these constructs were included in our interview guides (available in online supplemental files 2 and 3 (in French)).

Each group discussion or interview was audio-recorded and a summary of comments and suggestions for change was transcribed. Synthesised results of these group discussions and interviews were discussed with the steering committee to make decisions on how to adapt the brochure and the pharmaceutical opinion. The guiding principles for the adaptations were that the intervention components should be best suited for the Belgian context,

acceptable to the three categories of stakeholders and feasible to implement in routine practice. The Model for Adaptation Design and Impact framework was used to report all adaptations made during the process.[36]

Survey to assess the adapted pharmaceutical opinion

An online survey was performed to allow a larger panel of pharmacists and GPs to give feedback on the first version of the adapted pharmaceutical opinion (online supplemental file 4). As already stated, pharmaceutical opinions are fully innovative in Belgium, hence the need to explore its acceptability on a broader scale. The questionnaire was based on the study of Martin and Tannenbaum about the development of their evidence-based pharmaceutical opinion and comprised questions to be rated on a Likert scale, multiple-choice and open-ended questions.[20] The results helped refine the pharmaceutical opinion.

The online survey was published online on 11 October 2022 and closed on 5 December 2022. The survey was hosted on Qualtrics software, V.10/2022 (Qualtrics, copyright 2022 Provo, Utah, USA. Available at https://www.qualtrics.com, accessed on 11 October 2022), and disseminated through professional organisations and social networks. To enhance the GP participation rate, a paper version of this survey was distributed to GPs attending a professional meeting in December 2022. These questionnaires were then encoded into Qualtrics.

Patient and public involvement

This study included the involvement of a patient representative (ED) in the steering committee. For recruiting this person, the Belgian association of healthcare service users (Ligue des Usagers des Soins de Santé) was contacted before the beginning of this study and one of its members accepted to participate. The role of steering committee members is described above.

RESULTS

Step 1: assess the rationale for the intervention and consider the intervention-context fit

Identification of the core functions of the D-PRESCRIBE intervention

The core functions and forms of the D-PRESCRIBE intervention or its programme theory were not described as such by the authors. However, their main elements are presented in the D-PRESCRIBE study protocol[37] and research article.[18] Besides, the programme theory of the EMPOWER brochure was described in a realist evaluation.[38] Briefly, the EMPOWER brochure triggers two main mechanisms or core functions: (1) motivation by increasing knowledge and concerns about BZRA long-term use, and (2) capacity to initiate BZRA deprescribing by enhancing patients' self-efficacy.[38] The importance of the prescriber's support in deprescribing led the intervention developers to combine the EMPOWER brochure with the sending of a pharmaceutical opinion from the pharmacist to the prescriber in the later D-PRESCRIBE trial.[37] One objective of the pharmaceutical opinion is to increase knowledge and skills among pharmacists and physicians about pharmacological recommendations so that they are better equipped to support patients in deprescribing.[37] The intervention also tackled clinical inertia by increasing 'accountability for adhering to evidence-based recommendations' (p.1895)[18] made possible by a communication strategy involving the triad patient–physician–pharmacist.[18 37]

In light of this information and validation by intervention developers, the core functions of the D-PRESCRIBE intervention are:

1. To increase patients' knowledge and concerns about BZRA use.
2. To empower patients by increasing their self-efficacy.
3. To increase physicians' and pharmacists' knowledge about current guidelines regarding BZRA use in older adults.
4. To provide tripartite communication about BZRA deprescribing and therefore limiting clinical inertia.

Kirk recommends mapping core functions to forms by asking 'Does this particular form activate the core function?'(p.328).[28] The EMPOWER brochure activates core functions 1 and 2, and the pharmaceutical opinion activates core functions 3 and 4.

Quebec and Belgian context comparison

Epidemiological context

BZRA use in older adults is decreasing both in Quebec and Belgium but remains high with, respectively, 24.8% in 2016 and 18% in 2013 taking at least one BZRA.[12 39] The percentage in Quebec does not include z-drugs use.[39] However, authors defined BZRA use as 'one drug claim in the year' while the Belgian study is based on medications taken during the last 24 hours, making accurate comparisons difficult. However, some similarities can be found between the two populations: first, the higher BZRA use prevalence in women compared with men.[12 39] Second, the relationship between BZRA use and multimorbidity, in Quebec, 30% of multimorbid older adults (≥2 chronic conditions) were BZRA users and in Belgium, 69.1% of BZRA users reported suffering from two or more chronic conditions.[12 39] If the results of these studies cannot be directly compared, both demonstrate a link between BZRA use and multimorbidity in these countries. Differences in most used molecules are to be noted, with lorazepam, oxazepam and clonazepam being the top three most used BZRA in Quebec while lormetazepam, lorazepam and alprazolam were the most used in Belgium.[12 39] Besides, in Belgium, most long-term BZRA prescriptions in 2019 were for older adults (55%).[40] If we found no recent data on the long-term BZRA use prevalence in Quebec, the systematic review of Kurko *et al*, estimated that it concerned 47% of older BZRA users.[41] Despite the lack of more detailed information on prescribing patterns, the data clearly highlight opportunities for BZRA deprescribing in both countries.

Socio-cultural, socioeconomic, ethical and legal context

In Belgium, people are covered by a mandatory health insurance scheme, which intervenes in healthcare expenses such as medical consultations or the purchase of medications, either by reimbursing part or all the costs or by paying the provider directly.[42] This health insurance is financed jointly and severally by social contributions deducted from citizens' income.[42] In Quebec, however, people must individually subscribe to a medication insurance either private (mostly through their employer) or public (if not eligible for private insurance).[43] Older adults may choose between private or public insurance.[43] If benzodiazepines (but not z-drugs) are covered by Quebec's public insurance,[44] no BZRA are covered in Belgium.

Major differences exist between both healthcare systems in terms of pharmacists' role and remuneration system. In Quebec, the pharmacist's role encompasses medication dispensing while ensuring that they are safe and appropriate, and, since 2020, medication prescription (in collaborative practice setting/agreement, for minor health conditions, for tobacco cessation or in an emergency), therapeutic substitution, dosage, formulation or regimen adjustment of specific medications, prescription renewal or extension for continuity of care and vaccination.[45 46] The clinical role is emphasised through the remuneration system based on professional dispensing and pharmaceutical care fees[47] that are included in the total price of the medication.[48] Until April 2024, pharmaceutical opinions were part of the remunerated pharmaceutical care services, but from April 2024, only pharmaceutical opinions sent in the frame of medication initiation will be funded.[49] Indeed, pharmaceutical opinions have been less used since 2020 because of the extension of pharmacists' prescribing privileges. In Belgium, the role of the pharmacist in pharmaceutical care comprises the analysis and validation of the prescription, medication dispensing and provision of information to ensure safe and efficient use.[50] The scope of pharmaceutical care practice is less extensive than in Quebec, with medication prescription (except for COVID-19 and influenza vaccination[51]) and dosage adjustment being an exclusive medical prerogative. The remuneration system emphasises the pharmacist dispensing role as it is essentially based on the profit margin and a fixed dispensing fee due per medication box (for reimbursed medications).[52] To date, four specific pharmaceutical care activities are remunerated,[52] which is much less than the 30 or so pharmaceutical services listed in Quebec.[49] Besides, contrary to Quebec where pharmaceutical opinions are a formal way to communicate between pharmacists and prescribers, no formal communication system exists in Belgium, the communication takes place mostly by telephone.[53]

We assume that these differences shape patients' expectations about pharmacists' services as well as physician's expectations in terms of collaboration and professional role.

The uptake of the intervention by patients, pharmacists and GPs might be influenced by these differences. However, there is a growing interest for pharmacists to take a more clinical role in Belgium, as demonstrated by recent studies assessing the implementation of medication reviews led by the community pharmacist.[54–56]

Step 2: plan and undertake the adaptations

Participants

Between May and June 2022, two group discussions gathered pharmacists and GPs to discuss the EMPOWER brochure and one to discuss the pharmaceutical opinion. In total, seven pharmacists and six GPs participated either in a group discussion or an interview. All healthcare providers (HCPs) discussed both topics (ie, the EMPOWER brochure and the pharmaceutical opinion). All pharmacists were women, and four of six GPs were men. The age of the pharmacists ranged from 29 years to 52 years and GPs from 26 years to 64 years. Five pharmacists worked as independent pharmacists and two worked in a chain group pharmacy. Three pharmacists but no GP worked in a rural setting. All GPs worked in a group practice. Four pharmacists and five GPs declared having sometimes or regularly deprescribed or collaborated with BZRA deprescribing.

Six patients were interviewed, two online and four at home. Four of the six patients were women. Their median age was 76.5 years (range: 62–92 years). One patient was slightly younger than the inclusion criteria (62 years). As the patient was in a BZRA-reducing process and therefore had meaningful feedback to provide on the D-PRESCRIBE tools, the research committee agreed on the inclusion.

Adaptations

Overall, the EMPOWER brochure was positively perceived by both patients and HCPs, who acknowledged that it was well-structured and documented. HCPs more than patients disliked the main message 'You are at risk' which was considered too aggressive. However, the brochure was deemed simple, corresponding to professional values and able to engage patients in a deprescribing attempt. Many minor changes were suggested by participants and arbitrated with the research team. The structure of the brochure remained unchanged. However, colours, most of the photos and some icons were replaced. Minor changes were made to the wording and content of the brochure. Five main goals underpinned these changes: soften the message, make the patient feel concerned, provide important information, provide practical information and maintain the relationship with the patient.

The pharmaceutical opinion aroused mixed perceptions. Interviewed HCPs found that it was a good idea but acknowledged that some colleagues could be less open. Two patients found the document interesting but four had negative reactions, doubting that it was the role of the pharmacist to proactively communicate with the physician. Again, five main goals underpinned the adaptations

Table 1 Examples of adaptations made to the EMPOWER brochure

Goals for adaptation	Nature of adaptation	Anticipated obstacle/justification
Soften the message	The title of the brochure was changed to 'You may be at risk'.	'You are at risk' was considered too aggressive.
	The photo on page 4 was replaced.	The facial expression of the man in the original photo was perceived too negatively.
Make the patient feel concerned	Logos on page 1 were replaced by logos of Belgian scientific societies that agreed to support this brochure.	Belgian logos can be recognised by the patient and be perceived as proof of the quality of the brochure.
	On page 8, the message 'Get exercise during the day' was replaced by 'Stay active during the day'	'Get exercise' was assimilated to 'Do some sport' which was perceived as inapplicable for most older adults.
	On page 10, the name of the woman who provides a testimony was replaced.	The original family name 'Robinson' is not a common Belgian family name.
Provide important information	On page 3 (quiz), the order of the questions was changed. The wording of the questions was modified to be more specific (eg, using 'insomnia and/or anxiety' instead of 'symptoms') or to shorten the sentences.	Rearranging the order of the questions was felt necessary to allow a more logical flow. Shortening a bit the questions allowed better understanding, especially for patients with lower literacy.
	On page 7, a question about the tolerance phenomena was added.	Stressing somehow tolerance and dependence related to BZRA use was judged important.
Maintain the relationship with the patient	On page 5, the wording 'these medications are not the best long-term treatment' was changed to 'these medications are no longer the best long-term treatment'.	The original affirmation was perceived as too aggressive for patients and too blaming for the healthcare providers.
	On page 5, The answer 'TRUE' was changed to 'TRUE…temporarily'. Some words about the potential difficulty of BZRA deprescribing were added.	Adding some message of empathy and encouragement was judged necessary to avoid being perceived as too moralising.
Provide practical information	On page 9, a word about the availability of activities adapted for seniors was added. A message about whom to ask for more information about these activities was also added.	Some patients and HCPs perceived that the original message could be disregarded because yoga or tai-chi was perceived as too difficult for older adults. It was found that providing more practical and concrete information could help older adults to engage in these activities.

BZRA, benzodiazepine receptor agonists; HCP, healthcare provider.

made to the document: preserve a good pharmacist-GP relationship, enhance document clarity, refer to national clinical guidelines, adapt the document to the Belgian healthcare system and provide important information. The final document is held on one double-sided page and is designed for quick and efficient use. The research team decided to name the document 'pharmaceutical proposal' as suggested by an interviewed pharmacist, with 'proposal' being perceived as less blaming or moralising than 'opinion'.

Tables 1 and 2 present examples of changes to the brochure and pharmaceutical opinion along with their goal of adaptation and justification. The full list of adaptations may be found in online supplemental file 5. We estimate that none of these adaptations changed the core functions of the D-PRESCRIBE intervention.

Regarding the delivery mode of the intervention, pharmacists unanimously thought that the brochure should be given hand-to-hand to patients, which would allow a small conversation about its content with them. Sending the brochure by postal mail—one of the mechanisms used in D-PRESCRIBE—seemed inappropriate for the participants. Patients stated that they would welcome this brochure from their pharmacist, especially if given directly. The pharmaceutical proposal cannot be sent by fax as it was done during the D-PRESCRIBE as no Belgian pharmacy or GP uses commonly this communication tool nowadays. No consensus on a unique mode was identified by stakeholders, therefore a question of the online survey investigated the best communication channel for smooth communication between HCPs.

Survey on the first version of the pharmaceutical proposal

A total of 91 pharmacists and 46 GPs participated. Table 3 presents the main characteristics of respondents. 43% of GPs were aged from 25 to 34 years. Most participants were

Table 2 Examples of adaptations made to the pharmaceutical opinion

Goals for adaptation	Nature of adaptation	Anticipated obstacle/justification
Preserve a good pharmacist-GP relationship	The name of the document was changed to 'pharmaceutical proposal' instead of 'pharmaceutical opinion'.	Participants feared the document to be perceived as blaming or moralising by the GP.
	The wording 'Your patient' was replaced with 'Our patient'.	
Enhance document clarity	Proposals were added for the pharmacist to tick specific risk factors observed with the patient.	As all older adults share the same risks of falls, fractures, etc due to BZRA use, pharmacists did not know what to write in the blank space to specify risks.
Provide important information	The proposal presents two tapering options: 1. The EMPOWER tapering programme with a mention that this tapering scheme is an example (to use with some freedom depending on the patient). A sentence was added to emphasise that the pharmacist could help if the pill is difficult to cut. 2. Three stepwise (5, 7 or 10 steps) tapering programmes using capsules containing a decreasing percentage of the compound, prepared by the pharmacist. Reimbursement opportunities regarding these preparations were mentioned.	In February 2023, a national pilot programme aiming for BZRA deprescribing through stepwise reduction using capsules compounded by the pharmacist was launched. These stepwise programmes were added to fit with this new opportunity.
Adapt to the Belgian healthcare system	The sentence indicating a replacement by another molecule as well as the box for certifying this document stands for a new prescription were removed.	As pharmaceutical opinions are not used in Belgium, this document does not comply with Belgian requirements for a prescription, which is mostly electronic.
Refer to national clinical guidelines	The original reference to Beers criteria was replaced by STOPP criteria and Belgian references.	Beers criteria are not well-known in Belgium contrary to STOPP criteria. A national pharmaceutical platform (CBIP) provides Belgian recommendations in terms of prescribing. It is widely used in Belgium and known by both pharmacists and GPs.

BZRA, benzodiazepine receptor agonists; CBIP, Centre Belge d'Information Pharmacothérapeutique (Belgian Centre for Pharmacotherapeutic Information); GP, general practitioner; STOPP, Screening Tool of Older Person's Prescriptions.

women (60.9%) and worked in a group practice (80.4%). Community pharmacists were also mainly women (60.4%) and self-employed for 80.2% of them.

Table 4 presents the results of the survey. Overall, the first version of the pharmaceutical proposal was judged clear and understandable. However, 30 participants (22%) left a comment asking for a simpler and clearer document. The layout of the document was therefore revised. Most of the HCPs agreed with the proposed alternatives to BZRA and judged the content of the pharmaceutical proposal solid scientifically (table 4). Some comments asked for adding pharmaceutical alternatives such as melatonin and valerian to the proposed alternatives. As there is currently no evidence of their efficacy, the Belgian current guidelines do not recommend them.[57] Therefore, we added them to a new paragraph entitled 'non-recommended alternatives'.

Most of the pharmacists (80.2%) would accept sending the proposal to a doctor they know, and most GPs (84.8%) would welcome this document positively from a pharmacist they know. Lower acceptance was observed if the pharmacist and GP did not know each other. While the great majority of pharmacists (79.1%) do believe it is their role on behalf of the patient to proactively ask about a potential BZRA deprescribing to the prescriber, only 54.3% of the GPs agree with that statement. However, 84.8% of the GPs agree that collaborating with the pharmacist on BZRA deprescribing corresponds to their professional values. 22% of the pharmacists would be afraid of damaging their relationship with the GP by sending the document, and 17.4% of the GPs would be afraid of losing the patient's trust over the pharmacist's questioning. However, a large majority of the GPs (82.6%) agree that receiving this document would give them a good opportunity to discuss BZRA deprescribing with their patients. Finally, some comments underlined that the Canadian EMPOWER deprescribing scheme would be too complex for some patients. Indeed, this deprescribing scheme involves taking different dosages every day (eg, half a tablet on 2 days of the week, whole

Table 3 Characteristics of the participants in the survey about the first version of the pharmaceutical proposal

Variables n (%)	General practitioners (n=46)	Community pharmacists (n=91)
Age		
<35 years	21 (45.7)	30 (33.0)
35–44 years	7 (15.2)	18 (19.8)
45–54 years	5 (10.9)	26 (28.6)
≥55 years	13 (28.3)	17 (18.7)
Gender		
Female	28 (60.9)	55 (60.4)
Professional experience		
Less than 5 years	15 (32.6)	19 (20.9)
5–14 years	12 (26.1)	21 (23.1)
15–24 years	4 (8.7)	21 (23.1)
25–34 years	7 (15.2)	24 (26.4)
≥35 years	8 (17.4)	6 (6.6)
Professional environment		
Urban	30 (65.2)	35 (61.5)
Rural	16 (34.8)	56 (38.5)
Type of practice		
GP		
Group practice	37 (80.4)	
Solo practice	9 (19.6)	
Pharmacists		
Collaborative practice		18 (19.8)
Independent practice		73 (80.2)
Frequency of BZRA deprescribing (GP) or contribution to BZRA deprescribing (pharmacists)		
Never	2 (4.3)	28 (30.8)
Sometimes	29 (63.0)	52 (57.1)
Regularly	15 (32.6)	11 (12.1)

BZRA, benzodiazepine receptor agonists; GP, general practitioner.

tablet on the other days). The final pharmaceutical proposal presents two tapering options: the EMPOWER tapering scheme and three stepwise tapering schemes, using capsules containing a decreasing percentage of the compound, prepared by the pharmacist. This latter option was made possible by the launch, in February 2023, of a pilot programme funded by the Belgian National Institute of Health and Disability Insurance (NIHDI) to promote BZRA deprescribing in the adult population (≥18 years).[58] Under certain conditions, including the signature of a contract between the pharmacist, the GP and the patient, the patient can benefit from a tapering programme using capsules compounded by the pharmacist.[58] The fees for the making of the capsules and two consultations with the pharmacist are financed by the NIHDI.[58] Except for the cost of the BZRA itself, this pilot programme is free for the patient.[58] We decided to include that option in the pharmaceutical proposal.

Regarding the delivery mode of the pharmaceutical opinion, no consensus was obtained. Using emails was excluded due to privacy concerns. Handing the document through the patient moved the intervention away from direct contact between professionals. It was decided to propose several channels: postal mail and an application or an electronic mailbox both secured and specific to HCPs.

The adapted EMPOWER brochure and pharmaceutical proposal are available in online supplemental files 6 and 7.

DISCUSSION

We adapted the D-PRESCRIBE intervention to the Belgian community setting using the ADAPT guidance and recommendations of the new MRC framework.[25 26] To our knowledge, this study is one of the first to use the recent ADAPT guidance to conduct the adaptation process.

The EMPOWER brochure has already been used in different contexts, with or without adaptations. For example, the original brochure was used in the hospital setting in Canada.[59 60] For its use in the Australian hospital setting, adaptation consisted of changing the names of the available benzodiazepines.[61] Other researchers adapted it for older American veterans, with more extensive changes such as the replacement of photos, the removal of the tapering programme or the addition of a section dedicated to a specific website offering cognitive and behavioural therapy online.[62 63] Our adaptations remain minor but essential to fit with the Belgian context and optimise its uptake. Changes comprised a change in colour, the replacement of most photos and minor changes to the content (eg, the adaptation of some sentences or the addition of extra information related to the Belgian context).

However, the pharmaceutical opinion, renamed 'pharmaceutical proposal', undertook more significant changes to enhance its acceptability as a new tool in the Belgian context. Despite these adaptations, some uncertainties remain regarding the implementation of the pharmaceutical proposal in our country. These uncertainties are mainly related to the change in pharmacists' role that the document would entail. If most interviewed HCPs were open to this new tool, most patients expressed reluctance or scepticism. Even if the provision of clinical services is slowly expanding in our country, patients do not expect such initiative from their pharmacist and can feel trapped in a conflict of loyalty to their doctor. A focus-group study was conducted in the Canadian province of Alberta in 2012 and 2013, 5 years after policies widened pharmacy services largely (up to prescribing).[64] The authors stressed the importance of pharmacists' communication about this new role to inform patients about what they can expect.[64] Their results also showed that personalising

Table 4 General practitioners' and pharmacists' assessment of the first version of the pharmaceutical proposal

General assessment	GP (N=46) agree/strongly agree (%)	Pharmacists (N=91) agree/strongly agree (%)
Filling in the document		
The document is clear and well-presented.	33 (71.7)	76 (83.5)
I understand easily what I would have to complete as a pharmacist/doctor.	38 (82.6)	83 (91.2)
Time for reading and completing the document is acceptable.	30 (65.2)	65 (71.4)
Content of the document		
I agree with the alternatives to benzodiazepines proposed in the document.	34 (73.9)	60 (65.9)
The information provided by the document is scientifically solid.	40 (87.0)	75 (82.4)
Some information provided by the document was new to me.	11 (23.9)	14 (15.4)
Acceptability of the pharmaceutical proposal: pharmacists' perspective		**Pharmacists (N=91) agree/strongly agree (%)**
Relationship with the prescriber		
I would be willing to send this document to a prescribing doctor I know.		73 (80.2)
I would be willing to send this document to a prescribing doctor I know little or do not know.		51 (56.0)
Communicating with the doctor through this document seems an interesting idea to me.		56 (61.5)
I would be afraid of damaging the relationship with the doctor if I sent him this document.		20 (22.0)
I think that sending this document to the prescribing doctor would help to promote benzodiazepine deprescribing in older adults.		55 (60.4)
I think it is necessary to contact the prescribing doctor personally before sending this document.		55 (60.4)
Communication with the prescribing doctor in the context of benzodiazepine deprescribing corresponds to my professional values.		78 (85.7)
Relationship with the patient		
I would be willing to propose to a patient I know well to communicate with his prescribing doctor through this document.		73 (80.2)
I would be willing to propose to a patient I do not know well to communicate with his prescribing doctor through this document.		29 (31.9)
I think this could strengthen the therapeutic bond I have with the patient.		69 (75.8)
As a pharmacist, it is my role on behalf of the patient to be proactive with the doctor concerning benzodiazepine deprescribing in older adults.		72 (79.1)
Acceptability of the pharmaceutical proposal: general practitioners' perspective		**GP (N=46) agree/strongly agree (%)**
Relationship with the pharmacist		
I would receive this document positively from a pharmacist I know.		39 (84.8)
I would receive this document positively from a pharmacist I know little or do not know.		28 (60.9)
I would prefer to be contacted personally by the pharmacist (by email or telephone) before receiving this document.		28 (60.9)
I think it is the pharmacist's role to ask me about potential benzodiazepine deprescribing for my patients.		25 (54.3)
Collaborating with the pharmacist on benzodiazepine deprescribing in older adults is in line with my professional values.		39 (84.8)
I would be happy to respond to the pharmacist if I received such a document.		38 (82.6)
Communicating with the pharmacist through this document seems an interesting idea to me.		32 (69.6)
Relationship with the patient		
Receiving this document would give me a good opportunity to start a discussion with my patient about benzodiazepine deprescribing.		38 (82.6)
I am concerned about losing the patient's trust if the pharmacist asks me about a potential benzodiazepine deprescribing for my elderly patient.		8 (17.4)

GP, general practitioner.

the professional relationship with patients helped them to recognise the expertise and clinical role of the pharmacist.[64] Therefore, we anticipate that pharmacists' attitudes and communication skills will be essential for the uptake of this new tool by patients. Besides, our results showed that only one-third of the pharmacists would use the pharmaceutical proposal with a patient they know little or do not know. If patients are free to go to any pharmacy to obtain medicines in Belgium, we believe that this initiative is more likely to be adopted by both patients and pharmacists if it comes from a reference or regular pharmacist. As HCP support is a key element in the success of BZRA deprescribing,[38] it is even more important. In Belgium, a patient with chronic polypharmacy can sign a contract with a community pharmacist who is appointed as the reference pharmacist. The role of the reference pharmacist is to keep an updated list of medicines and make it available to the patient's HCPs.[65] This status could help the pharmacist to take a more proactive role on behalf of the patient.

The survey also highlighted other barriers to the pharmaceutical proposal from the perspective of HCPs. Unsurprisingly, not knowing the other side reduced the acceptability of the pharmaceutical proposal for both pharmacists and GPs. The paucity of professional relationships has indeed been described as an obstacle to GP and pharmacist collaboration.[66] Previous literature also underlined that GP-pharmacist collaboration could be hindered by role boundaries issues and power imbalance.[66 67] Our results showed that the sending of the pharmaceutical proposal, even adapted, could also raise these issues (eg, more than one out of five pharmacists would be afraid of damaging the relationship with the prescriber over the sending of the document). Most pharmacists and GPs agree on the necessity of a contact before the sending of this document. In practice, this contact could increase pharmacists' workload by adding an extra task. However, taking the time to present and explain this innovation may be unavoidable during the period needed to change habits. Medical-Pharmaceutical Concertations (MPC) could also help in this matter. MPC are meetings between GPs and pharmacists, funded by the NIHDI, organised at the local level on a voluntary basis and designed to improve interprofessional collaboration.[68] Despite these challenges, a change in the pharmacist's role from dispensing to providing more pharmaceutical care seems feasible, as demonstrated by other results of the survey (eg, 80% of the pharmacists thought it was their role on behalf of the patient to be proactive with the doctor concerning benzodiazepine deprescribing). The example of Alberta, where that shift has already occurred is also encouraging.[64] The Belgian context is moving further in that direction. BZRA deprescribing might not be the simplest clinical situation to begin implementing pharmaceutical proposals as others could draw less resistance from patients, pharmacists and physicians. However, tools must evolve with the scope of practice. As such, implementing pharmaceutical proposals in Belgium might meet an unaddressed need for a more formal communication between the pharmacist and the GP, and help pharmacists to take a more clinical role. The launch of the NIHDI BZRA tapering pilot programme that fosters interprofessional collaboration could be particularly timely and facilitate pharmaceutical proposal implementation.

This study has several strengths and limitations. A first strength is the use of the ADAPT guidance that allowed a rigorous and transparent adaptation process of the D-PRESCRIBE intervention. The second strength of this study is the implication of stakeholders, including older adults, throughout the whole process, as recommended by both ADAPT and MRC recommendations.[25 26] In the context of clinical trials, involving patients in the development of information tools has been found to enhance their readability and appropriateness.[69] Similarly, we believe that their participation increased the relevance of adaptations that were made to the D-PRESCRIBE intervention. Finally, using both qualitative and quantitative data allowed a reliable adaptation of the pharmaceutical opinion. One limitation is that participating HCPs and patients were recruited voluntarily. We cannot exclude that they might have been more positive than the general population of HCPs and patients. Besides, young GPs and GPs working in group practice were over-represented in our survey. Literature has shown that experienced GPs collaborate less with pharmacists.[47](47) Therefore, the barriers that we have highlighted regarding the pharmaceutical proposal may be more important than shown by our results. In addition, the adaptation of this tool was limited to the French-speaking part of our country. Apart from a different language, cultural differences exist between the Flemish and French-speaking parts of Belgium, making similar work necessary before using them in Flanders.

The adaptation process of the D-PRESCRIBE intervention is still in progress. We will next test the adapted D-PRESCRIBE intervention in a feasibility study (NCT: 05929417) (step 3 of the ADAPT guidance).[25] Concerning the remaining uncertainties about the pharmaceutical proposal, the coming feasibility study is crucial to assess the level of uptake of this new tool by patients, pharmacists and GPs.

CONCLUSIONS

The D-PRESCRIBE intervention was adapted following a transparent and rigorous process with the help of the ADAPT guidance. Of its two components, one (the EMPOWER brochure) undertook minor changes and was well accepted by both patients and HCPs. Some uncertainties remain about the uptake of the second component (the pharmaceutical proposal) in our country, mainly because of the changes that this document would imply regarding the role of pharmacists. An ongoing feasibility study will allow us to test the adapted intervention in real practice and evaluate if further adaptations are needed.

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