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Barriers to and Enablers of Supporting Deprescribing Benzodiazepines in Older Adults: A Survey of European Nonphysician Healthcare Professionals

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ABSTRACT

Although physicians are primarily responsible for Benzodiazepine Receptor Agonist (BZRA) deprescribing, nonphysician healthcare professionals (HCPs) can support deprescribing. This study explored barriers to and enablers of BZRA deprescribing among nonphysician HCPs. We surveyed 258 HCPs (63.2% nurses) working in hospital settings across six European countries using a questionnaire based on the Theoretical Domain Framework (TDF). Logistic regression assessed associations between TDF domains and both intentions to support and routine engagement in BZRA deprescribing. Major barriers (TDF items with mean <3) were found in the goals (competing priorities), environmental context and resources (time and staff lack) and social influences (patient reluctance) domains. Five TDF domains were associated with a stronger intention to support deprescribing: social/professional role and identity (OR, 3.08; 95% CI, 1.77–5.46); beliefs about consequences (OR, 1.91; 95% CI, 1.07–3.34); memory, attention and decision processing (OR, 1.80; 95% CI, 1.16–2.82); intention to promote alternatives (OR, 1.63; 95% CI, 1.07–2.49); and reinforcement (OR, 1.57; 95% CI, 1.08–2.29). Knowledge was the only domain associated with routine BZRA deprescribing support (OR, 1.16; 95% CI, 1.06–1.27). Different categories of HCPs face similar major barriers, but barriers vary across HCP categories and countries. Context-specific, targeted interventions may enhance support for BZRA deprescribing.

Summary

Physicians usually decide on deprescribing Benzodiazepine Receptor Agonists (BZRA), but other nonphysician healthcare professionals (HCPs) can also help. However, their role is overlooked. We surveyed 258 HCPs (nurses, psychologists, pharmacists and physiotherapists) across six European countries to identify barriers to their involvement. Major challenges included lack of time and staff, nonprioritising BZRA deprescribing and perceived patient reluctance. HCPs who saw deprescribing as their job and believed in its benefits were willing to support deprescribing. Stronger knowledge about BZRA was linked to greater involvement in deprescribing. As barriers vary by HCPs' category and country, tailored strategies may enhance deprescribing, improving patient safety.

1 | Introduction

Benzodiazepine receptor agonists (BZRA) are often prescribed to older adults to treat sleep problems. However, they have an unfavourable benefit–risk balance, especially for older adults, leading to adverse events like falls, fractures, cognitive impairment, hospitalisation, and premature death [1–6]. Consequently, guidelines recommend avoiding BZRA prescribing and considering deprescribing for older adults who have taken them for 2 weeks or longer [7–9]. Despite these recommendations, two recent studies revealed alarmingly high BZRA usage across European countries [10, 11].

Although physicians are primarily responsible for BZRA deprescribing, nonphysician healthcare professionals (HCPs) can support the deprescribing process. For instance, nurses working in assisted living facilities can contribute to reducing the use of harmful medications, including BZRA [12]. Pharmacists' involvement in patient education substantially increases BZRA deprescribing [13, 14].

A key issue is that we know little about barriers to and enablers of BZRA deprescribing in nonphysician HCPs [15, 16]. Two systematic reviews on barriers to and enablers of BZRA deprescribing reveal a limited focus on the perspectives of pharmacists and nurses [16]. A few studies focused on HCPs in nursing homes; only one addressed barriers in the hospital setting [15]. Additionally, these reviews highlighted other limitations, such as the lack of theory-driven approaches to report barriers and enablers, and their predominant focus on North America and Western Europe, which limits the generalisability of findings to other regions.

This study is part of the BE-SAFE project, funded by the European Union and the Swiss government, which aims to improve patient safety by reducing BZRA use in older adults through a hospital-initiated deprescribing intervention. The project aligns with the Choosing Wisely De-Implementation Framework (CWDIF) that emphasises the identification of barriers and enablers as the first step of the deimplementation process [17]. We recently reported barriers and enablers to BZRA deprescribing from physicians' perspectives [18]. This paper focuses on nonphysician HCPs, such as nurses, pharmacists and psychologists. The aim is to explore the barriers, enablers and factors associated with HCPs' intention to support deprescribing and their routine support for BZRA deprescribing in older adults.

2 | Materials and Methods

2.1 | Study Design and Recruitment

The study followed the Basic & Clinical Pharmacology & Toxicology policy for experimental and clinical studies [19].

We surveyed nonphysician HCPs in six European countries: Belgium, Greece, Norway, Poland, Spain and Switzerland. The study is reported according to the Consensus-Based Checklist for Reporting of Survey Studies (CROSS) [20], available in the Supporting Information.

Recruitment occurred from December 2022 to May 2023. Eligible participants included nonphysician HCPs, such as nurses, pharmacists and psychologists, and, where relevant, other HCPs involved in patient care, working in acute medical wards or outpatient clinics that provide care for adults aged 65 and older. These nonphysician HCPs were recruited from BE-SAFE participating hospitals (ranging from one to three hospitals per participating country). Wards and clinics with existing structured BZRA deprescribing processes were excluded.

All eligible nonphysician HCPs were invited to complete the survey, either online or on paper. When necessary—for example, to determine which categories of nonphysician HCPs beyond nurses should be included, or to obtain contact information—local principal investigators consulted with senior physicians from the participating wards and clinics. The survey was distributed via hospital communication channels, primarily mailing lists, and two reminder messages were sent at 2-week intervals. Participation was voluntary. Those who preferred a paper-based version were approached directly by a research team member. The local research teams were responsible for entering the paper survey data into Qualtrics Version 09.22.

The study adhered to the principles of the Declaration of Helsinki and received approval from the local ethics committee [21]. All participants provided written informed consent, except in Switzerland, where it was not required.

2.2 | Sample Size

We aimed to recruit 40 nonphysician HCPs per country, totalling 240 HCPs. This sample size was considered feasible within the project timeline and suitable for cross-country comparisons. We sought to ensure that at least half of the sample was comprised of nurses because they have the closest contact with patients.

2.3 | Survey Questionnaire

The questionnaire was based on the Theoretical Domains Framework (TDF) Version 2, which organises 84 constructs from 33 behaviour change theories into 14 domains reflecting determinants of health-related behaviour [20]. The TDF is

widely used to assess barriers and enablers [22]. We initially developed questionnaire items for physicians, drawing on barriers identified in a TDF-based systematic review on BZRA deprescribing [15] and two validated TDF-based questionnaires [23, 24]. Because nonphysician HCPs in participating countries do not have the legal authority to taper or stop BZRA, the physicians' questionnaire was adapted to align with their roles. Members of the research team who represent these HCP categories reviewed and refined the items to ensure clarity and relevance.

The final questionnaire consists of 44 questions: 5 on background characteristics, 35 TDF-based items, 2 yes/no questions on self-reported behaviour (i.e., whether the HCP has ever supported BZRA deprescribing and/or does so routinely) and 2 open questions for additional feedback on barriers and enablers. The 35 items cover 12 TDF domains: knowledge; skills; memory, attention and decision processing; social/professional role and identity; beliefs about capabilities; beliefs about consequences; reinforcement; goals; intentions (including the intention to support deprescribing, which ultimately serves as a dependent variable in the analysis); emotions; environmental context and resources; and social influences. We excluded two TDF domains—optimism and behavioural regulation—due to the lack of relevant barriers in previous literature. Of the 35 items, 17 were identical to those in the physicians' questionnaire, 14 were adapted from the physicians' survey to reflect the nonphysician role of nonphysician HCPs and 4 were newly developed to capture barriers specific to nonphysician HCPs. All items were rated on a 5-point Likert scale, ranging from *strongly agree* [5] to *strongly disagree* [1].

The questionnaire aimed to identify the barriers and enablers faced by nonphysician HCPs in *supporting* patients and physicians during the BZRA deprescribing process. Deprescribing was defined as tapering and stopping the BZRA to minimise BZRA-related harms and improve patient outcomes. *Support* was defined as any action by nonphysician HCPs to assist patients or physicians in the BZRA deprescribing process. These actions vary by professional role and country but may include, for example, educating patients about BZRA-related harms or promoting nonpharmacological approaches.

The questionnaire was translated from English into six languages (French, German, Greek, Norwegian, Polish and Spanish) using the forward/backward translation methodology [25, 26]. Pilot testing was conducted with at least two nonphysician HCPs per site to ensure clarity and comprehension.

The study protocol and questionnaires can be accessed on the Open Science Framework platform (https://osf.io/q5k8r/?view_only=2a527543f0d0486686e9ac47e1925c0b).

2.4 | Analysis

The respondents who provided answers only to background characteristic questions were excluded from the analysis. We conducted descriptive analyses for the entire sample, by HCP category and country (for nurses only). Most descriptive data consisted of categorical variables, reported as numbers and percentages, whereas means and standard deviations were also calculated for TDF-related questionnaire items. To ensure consistency in interpretation, we applied reversed scoring to negatively asked questions so that lower scores reflect higher barriers, regardless of the item wording. The items were classified as follows: items with a mean score of <3 out of 5 were considered major barriers, those between 3 and 3.99 were deemed moderate barriers and items scoring ≥ 4 were categorised as enablers.

We used a multivariable ordinal logistic regression model to identify factors (background characteristics and TDF domains) associated with the intention to support BZRA deprescribing. Additionally, we used a dichotomous logistic regression model to examine the association between these factors and self-reported routine support of BZRA deprescribing. Scores for TDF domains were computed by averaging variables related to each domain. We performed univariate logistic regressions with each background characteristic and TDF domain to identify the variables associated with each outcome. Using a p value of <0.15, we selected the variables for further multivariable models. Then, we built multivariable logistic regression models and applied a stepwise selection to determine the best-fitting final multivariable model.

All statistical analyses were performed using R software (Version 4.2.1) with the packages 'tidyr' and 'Likert'. A two-sided p value of <0.05 indicated a statistically significant association.

Answers to open-ended questions were analysed using a qualitative deductive approach. Two researchers (P.E. and V.S.), experienced in qualitative analysis and TDF, independently coded the citations within the TDF domains using NVivo 14.23.2 (Lumivero). After coding, we mostly focused on retrieving the statements that provided additional information and were not captured by the questionnaire's items and on the most often stated assertions. Any disagreements were resolved during the meeting with a senior researcher (A.S.).

3 | Results

3.1 | Sample Characteristics

The final sample comprised 258 nonphysician HCPs, including primarily nurses (163 [63.2%]), psychologists/psychotherapists (26 [10.1%]), physiotherapists (22 [8.5%]), pharmacists (20 [7.8%]) and others (27 [10.4%]). Most respondents were women (203 [79.9%]), were younger than 40 years (143 [55.5%]) and had less than 10 years of experience (107 [41.8%]). Participant characteristics are presented in Table 1. Detailed characteristics by professional group and country are available in Tables S1 and S2.

3.2 | Barriers and Enablers

Two items from the knowledge domain emerged from the descriptive analysis as enablers for supporting BZRA deprescribing: 79.3% and 81.6% of participants were aware of the

TABLE 1 | Background characteristics of nonphysician healthcare professionals ($N = 258$).

Healthcare professionals' background characteristics	$N = 258$[a] N (%)
Country	
Belgium	47 (18.2)
Greece	47 (18.2)
Norway	36 (14)
Poland	50 (19.4)
Spain	38 (14.7)
Switzerland	40 (15.5)
Age, years	
≤ 30	77 (29.9)
31–40	66 (25.6)
41–50	61 (23.6)
51–60	48 (18.6)
≥ 61	6 (2.3)
Gender	
Men	51 (20.1)
Women	203 (79.9)
HCPs' categories	
Nurse	163 (63.2)
Pharmacist	20 (7.8)
Psychologist/psychotherapist	26 (10.1)
Physiotherapist	22 (8.5)
Others[b]	27 (10.4)
Type of care	
Inpatients	147 (58.8)
Outpatients (seen in clinics)	50 (20)
Both (inpatients/outpatients)	53 (21.2)
Experience, years	
Less than 5 years	64 (25)
5–9 years	43 (16.8)
10–14 years	50 (19.5)
15–19 years	26 (10.1)
20 years or more	73 (28.6)
Supporting deprescribing before	
Yes	140 (57.6)
No	103 (42.4)
Routine deprescribing support	
Yes	65 (27.5)
No	171 (72.5)

Abbreviation: HCP, healthcare professional.
[a]Missing response (excluded from percentages) totalled 4 participants for gender, 8 for type of practice, 2 for experience, 15 for supporting deprescribing before and 17 for routine support of deprescribing.
[b]'Other' includes 10 care assistants (caregivers), 5 occupational therapists, 1 radiology technician and 11 individuals whose roles could not be identified.

risks associated with BZRA use in older adults and the available alternatives, respectively. Major barriers were identified from the descriptive analysis in seven items. Four barriers fell within the environmental context and resources domain, highlighting a lack of time, insufficient staff, low prioritisation of BZRA deprescribing by the healthcare system and the absence of clear deprescribing objectives at the hospital or department level. Additionally, participants reported that their patients are reluctant to stop their BZRA (social influences), that they prioritise other aspects of patient care over deprescribing (goals) and that they have not been trained to support patients in deprescribing (skills). Other items were identified as moderate barriers. For instance, less than half (45.6%) of participants found it relevant to initiate deprescribing within their department (social/professional role and identity); 44.9% were unsure whether there are tools available to support deprescribing (environmental context and resources); and almost half (46.9%) were unsure whether their colleagues support BZRA deprescribing (social influences).

Detailed data on TDF items are provided in Figure 1.

In the free-text responses, most of the open-ended questions were answered by nurses and pharmacists. Their answers predominantly fell under the environmental context and resources domain, highlighting a lack of resources, the absence of standardised approaches to deprescribing and the perception that acute hospital settings may not be the most appropriate setting for initiating deprescribing. Several responses related to the social/professional role and identity domain reflect that some nonphysician HCPs, mostly physiotherapists, do not consider themselves suitable for supporting deprescribing. Additionally, some responses reflect issues related to social influences, with nonphysician HCPs perceiving a lack of communication between hospital and primary care necessary for successful deprescribing and expressing concerns about patients' fears regarding stopping their sleeping pills.

3.3 | Factors Associated With Intention and Self-Reported Behaviour

Intention to support BZRA deprescribing was distributed as follows: *strongly agree*—12.9%; *agree*—53.2%; *neither agree nor*

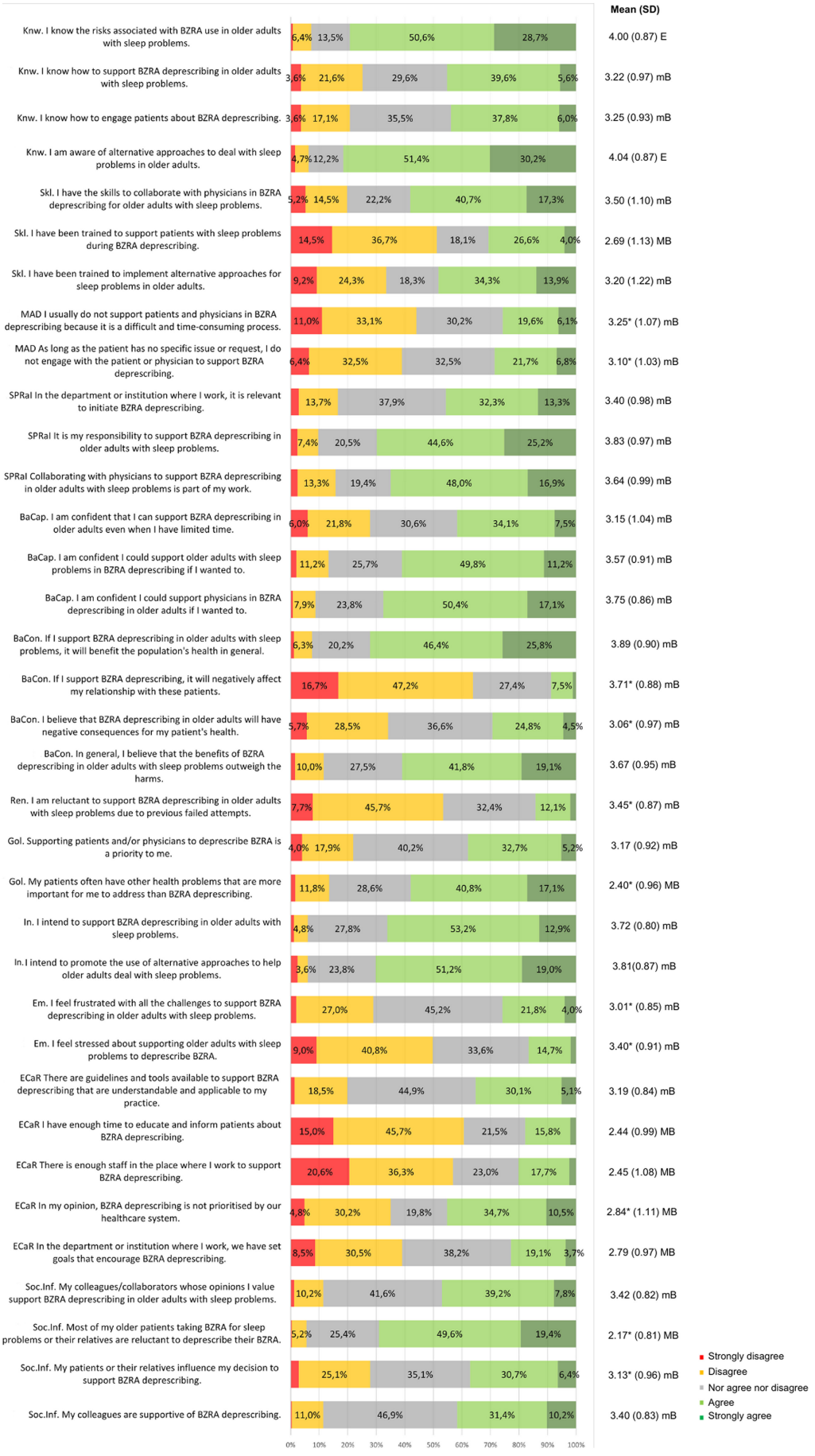

FIGURE 1 | Legend on next page.

FIGURE 1 | Barriers to BZRA deprescribing by TDF-based items for healthcare professionals ($N = 258$). *Reversed scorings. BZRA, Benzodiazepine Receptor Agonist; SD, standard deviation; TDF, Theoretical domain Framework. Items are measured on a 5-point Likert scale from 1 (*strongly disagree*) to 5 (*strongly agree*). E indicates enabler (mean ≥ 4); mB moderate barrier (mean: 3–3.99); MB major barriers (mean < 3) TDF domains: BaCap., beliefs about capabilities; BaCon., beliefs about consequences; ECaR, environmental context and resources; Em., emotions; Gol., goals; In., intentions; Knw., knowledge; MAD, memory, attention and decision processing; Ren., reinforcement; Skl., skills; Soc.Inf., social influences; SPRaI, social/professional role and identity.

TABLE 2 | Factors associated with self-reported intentions to support BZRA deprescribing in multivariable ordinal logistic regression for nonphysician healthcare professionals ($N = 217$)[a].

Variables	OR	95% CI	*p* value
Background characteristics			
Country (Belgium is reference)			
Greece	0.41	0.15–1.09	0.08
Norway	0.37	0.12–1.06	0.07
Poland	0.62	0.21–1.83	0.39
Spain	0.48	0.16–1.40	0.18
Switzerland	1.73	0.55–5.45	0.35
TDF-variables[c]			
Skills	1.51	0.92–2.50	0.10
Memory, attention and decision processing	1.80	1.16–2.82	< 0.001[b]
Beliefs about consequences	1.91	1.07–3.34	0.03[b]
Social/professional role and identity	3.08	1.77–5.46	< 0.001[b]
Reinforcement	1.57	1.08–2.29	0.02[b]
Intention (to promote alternative approaches)	1.63	1.07–2.49	0.02[b]
Social influence	1.58	0.96–2.62	0.07

Abbreviations: CI, confidence interval; OR, odds ratio; TDF, Theoretical Domain Framework.
[a]Forty-one individuals had missing data in some of the variables included in the model and were thus excluded.
[b]Significant result.
[c]Scores at the TDF domain level were computed by averaging item scores for each domain.

TABLE 3 | Factors associated with self-reported routine support BZRA deprescribing, in multivariable binary logistic regression for nonphysician healthcare professionals ($N = 217$).[a]

Variables	OR	95% CI	*p* value
Background characteristics			
Country (Belgium is reference)			
Greece	1.00	0.84–1.20	0.95
Norway	1.09	0.90–1.33	0.36
Poland	0.88	0.72–1.07	0.20
Spain	1.12	0.93–1.35	0.24
Switzerland	0.83	0.67–1.02	0.07
TDF-variables[c]			
Knowledge	1.16	1.06–1.27	< 0.001[b]
Memory, attention and decision processing	1.07	0.99–1.15	0.10
Social/professional role and identity	1.08	0.99–1.18	0.09
Environmental context and resources	1.07	0.97–1.19	0.16

Abbreviations: CI, confidence interval; OR, odds ratio; TDF, Theoretical Domain Framework.
[a]The software automatically omitted 41 individuals due to missing data in some of the variables included in the model.
[b]Significant result.
[c]Scores at the TDF domain level were computed by averaging item scores for each domain.

disagree—27.8%; *disagree*—4.8%; and *strongly disagree*—1.3%. Five TDF domains were significantly associated with higher odds of intention to deprescribe BZRA: memory, attention and decision processing (OR: 1.80, 95% CI: 1.16–2.82); social/professional role and identity (OR: 3.08, 95% CI: 1.77–5.46); beliefs about consequences (OR: 1.91, 95% CI: 1.07–3.34); reinforcement (OR: 1.57, 95% CI: 1.07–2.29); and intentions to promote alternative approaches (OR: 1.63, 95% CI: 1.07–2.49).

Twenty-seven and a half per cent of participants self-reported routinely supporting BZRA deprescribing. Knowledge was the only TDF domain significantly associated with higher odds of routine support for BZRA deprescribing (OR: 1.6, 95% CI: 1.06–1.27).

More details on both regression models are available in Tables 2 and 3.

3.4 | Comparative Analysis of Responses by HCP Categories

When analysing the data by professional group, the major barriers cited above were consistent across groups. However, significant differences in barriers and enablers were observed between professions. Pharmacists, and to a lesser extent, psychologists/psychotherapists, consistently scored higher across questionnaire items (items with a mean of 4 and higher). Several items in the knowledge, beliefs about consequences, intention and social influences (from colleagues) domains were identified as enablers for both groups. Additional

enablers were found for pharmacists in the social/professional role and identity, skills and beliefs about capabilities domains. Furthermore, most pharmacists reported being aware of existing BZRA deprescribing guidelines (environmental context and resources). In contrast, physiotherapists had lower scores across many items, indicating they face the most significant barriers to supporting deprescribing. Detailed data are provided in Table S4.

3.5 | Cross-Country Comparative Responses From Nurses

The number of nurses in the sample ($N = 163$) allowed cross-country comparisons. Major barriers were consistent across all six countries, including a lack of staff and time (environmental context and resources), the belief that patients are reluctant to deprescribe (social influences) and the perception that other issues take priority over BZRA deprescribing (goals). We found more enablers in Spain and, to some extent, in Switzerland and Belgium than in other countries. In these countries, intentions were higher, as was the perception of their professional role in supporting BZRA deprescribing. They also had the highest ratings in the beliefs about capabilities and beliefs about consequences domains. Conversely, we found no enablers and more major barriers among Greek and Polish nurses. In Poland, Greece and Belgium, nurses generally did not support deprescribing unless requested. Additionally, between 36% and 48% of nurses in Poland, Greece and Switzerland believed that deprescribing could negatively impact patients' health. Greek nurses reported a lack of support from colleagues as a major barrier, marking almost the entire social influences' domain as a significant barrier. Detailed data are provided in Table S3.

4 | Discussion

In this cross-sectional, multinational survey, we found that nonphysician HCPs, irrespective of their professional role and country of work, face several major barriers: low prioritisation of deprescribing (goals), lack of staff and time for deprescribing (environmental context and resources) and a strong perception that patients are reluctant to deprescribe (social influences). Yet we found differences across categories of nonphysician HCPs and countries in moderate barriers and enablers. In addition, five TDF domains were significantly associated with nonphysician HCPs' intention to support BZRA deprescribing: memory, attention and decision processing; social/professional role and identity; beliefs about consequences; reinforcement; and intention to promote alternatives.

4.1 | Main Barriers and Implications

In our results, many major barriers appeared in the environmental context and resources domain, including limited time and staff. Although increasing resources may not be realistic, other approaches may reinforce capacity and indirectly enhance perceptions of available resources and time. Providing tools such as algorithms, leaflets or videos is one approach to optimise resources and efficiency. Another opportunity is to improve interprofessional collaboration between physicians and nonphysician HCPs within and across settings. Previous studies have demonstrated that interventions promoting interprofessional collaboration can effectively address these barriers, yielding promising results for BZRA deprescribing [27, 28]. Because most nonphysician HCPs in our sample recognise their responsibility to support BZRA deprescribing, enhancing interprofessional collaboration in such a context seems relevant and valuable.

Similarly to our survey of physicians [18], two thirds of nonphysician HCPs perceive that most patients are reluctant to deprescribe. However, patients' willingness to reduce their medication is greater than physicians perceive [29, 30]. Additionally, studies show that patients often lack knowledge about the risks of prolonged BZRA use or hold misleading beliefs about its benefits [16, 31, 32]. Nonphysician HCPs could effectively support patients by providing clear and trustworthy information and initiating conversations about BZRA use. However, because the nonphysician HCPs in the present survey reported a lack of training, educational interventions are crucial to improve nonphysician HCPs' knowledge, skills and confidence in the benefits of BZRA deprescribing. Although previous educational interventions have focused mostly on physicians [33–36], showing significant improvements in knowledge and beliefs, studies targeting nonphysician HCPs are fewer but show similar potential [12].

Lastly, the goals domain suggests nonphysician HCPs prioritise other healthcare issues over BZRA deprescribing. Across all surveyed countries, BZRA deprescribing is not part of nonphysician HCPs' typical roles, which likely influences their behaviour. However, this does not mean they consider deprescribing unimportant. Future interventions should explore ways to elevate its priority and integrate it with other in-role responsibilities.

4.2 | Factors Associated With Intention

Several TDF domains were associated with the intention to support BZRA deprescribing. Interestingly, these domains were similar to those identified in our survey of physicians [18]. This suggests that similar implementation interventions to increase motivation could be used with physicians and nonphysician HCPs to enhance intentions to deprescribe.

4.3 | Similarities and Differences Among Nonphysician HCPs' Categories

Pharmacists reported fewer barriers and more enablers to support deprescribing, highlighting the highest levels of professional identification, knowledge, skills, self-efficacy and intention. This aligns with evidence of pharmacists' positive impact on deprescribing and could be leveraged in future interventions [37, 38]. However, their roles vary across countries. In this study, pharmacists were from Belgium, Spain and Switzerland; however, in other countries, they may not be involved in direct patient care, necessitating different approaches to deprescribing interventions or new developments in pharmaceutical care.

Our findings suggest that psychologists and psychotherapists, from inpatient and outpatient settings, are willing to support deprescribing and often see themselves as suitable specialists for this role. They can address underlying mental health conditions, facilitate behavioural support during tapering and provide CBT-I sessions. Given that recent guidelines recommend cognitive-behavioural therapy as the first-line treatment for sleep problems [39–41], it is important to strengthen their role. However, the limited availability of psychologists specifically trained in CBT-I remains a significant barrier to its widespread implementation [42].

Physiotherapists often work with older adults recovering from falls and can potentially encourage deprescribing to prevent future incidents. In our study, which included participants from Belgium, Greece and Poland, we found that physiotherapists face significant barriers, such as a low perception of their role in BZRA deprescribing for older adults, making their involvement potentially resource-intensive with limited benefits. Therefore, prioritising other healthcare professionals, like pharmacists, nurses and psychologists, might be more effective, although the best approach may differ by country.

4.4 | Cross-Country Differences in Nurses' Barriers

Nurses were a major group surveyed in our study. In the cross-country analysis of nurses, key barriers were consistent across all countries. Yet we also found pronounced differences. These discrepancies may stem from variations in nurse training programmes, prior experience with BZRA deprescribing or differences in healthcare organisations or healthcare systems. Additionally, the departments where nurses in our study worked varied across countries, which may also have influenced the barriers they faced. Some nurses' barriers, such as a lack of stronger knowledge and training on BZRA deprescribing, are easy to address. Others, such as reinforcing nurses' roles in deprescribing or strengthening interprofessional collaboration, are more complex and may require organisational changes.

4.5 | Continuity of Care and Interprofessional Collaboration

Hospital care is often regarded as an unsuitable setting for BZRA deprescribing, due to the acute nature of patients' illnesses, the typically short duration of hospital stays and the fact that most BZRA prescriptions originate in ambulatory care [43]. However, the high prevalence of BZRA use among older adults in hospital wards and outpatient clinics suggests that secondary care may present valuable opportunities to initiate deprescribing. Our survey identified similar barriers to deprescribing in both ambulatory and hospital care settings, including limited time, staffing constraints and lack of motivation [18]. Notably, general practitioners expressed a willingness to continue deprescribing efforts initiated in hospital and to provide follow-up care [18], and emerging evidence supports the effectiveness of such interventions in hospital care settings [44–46]. To ensure continuity when deprescribing is initiated in the hospital, effective communication with primary care providers is essential [47, 48]. Strengthening interprofessional collaboration across care settings may further support these efforts. Involving nonphysician HCPs during hospitalisation could help initiate the process, reduce the burden on physicians and enhance engagement, whereas established collaborations between pharmacists and general practitioners in primary care have already demonstrated positive outcomes [49, 50].

4.6 | Strengths and Limitations

Our study has several strengths. First, we used a theoretical framework to comprehensively report the barriers and enablers that nonphysician HCPs face while deprescribing. This helps our findings contribute to a consistent and cumulative evidence base. Second, it is one of the few studies focusing on nonphysician HCPs in the hospital setting, exploring their perspectives on BZRA deprescribing support. Although we did not provide a detailed account of their current involvement in the medication process, this aspect is addressed in a parallel qualitative study on care trajectories, which will be reported separately. Third, we collected data from nonphysician HCPs across six countries, with questionnaires translated into six languages.

However, this study has several limitations. First, there is a potential for selection bias, as HCPs with a stronger interest in BZRA deprescribing may have been more inclined to participate. Second, we did not collect data on the departments or wards in which nonphysician HCPs worked, despite the potential for significant differences in care objectives and organisational structures across settings. Similarly, we did not provide detailed descriptions of how each HCP type is currently involved in the medication process in each country, which limits the interpretation of cross-national variation in reported barriers and enablers. A parallel qualitative study was conducted to map care trajectories and characterise contextual factors relevant to hospital-initiated BZRA deprescribing in older adults; its findings will be reported separately.

Other limitations relate to the questionnaire. The self-reported nature of responses may introduce social desirability bias. Although grouping items by mean scores enabled us to categorise them as major or moderate barriers and enablers, this approach was based on the research team's consensus. As such, the interpretation of results should be approached with caution. Furthermore, the questionnaire was initially designed for physicians and drew primarily on literature focused on physician-related barriers. Although its relevance for nonphysician HCPs was assessed during development, some profession-specific barriers may not have been captured.

5 | Conclusion

Nonphysician HCPs face several behavioural barriers in supporting patients or physicians with BZRA deprescribing, including limited knowledge, lack of capacity, motivation and opportunities. Major barriers were similar across professional categories and countries, suggesting that improvement approaches may share core strategies or components. Beyond nurses, pharmacists and psychologists—where available—could take a

proactive role. Contextualising these barriers according to the country's healthcare organisation can facilitate successful implementation strategies to tackle them.

Author Contributions

Questionnaire conception: items' development—Anne Spinewine, Vladyslav Shapoval, and Perrine Evrard; items' revision—all coauthors. Protocol development: Vladyslav Shapoval and Anne Spinewine. Protocol revision: all coauthors. Authors contributing to the data collection are Vladyslav Shapoval and Anne Spinewine in Belgium; Vagioula Tsoutsi, Maria Ntafouli in Greece; Adam Wichniak and Katarzyna Gustavsson in Poland; Torgeir Bruun Wyller and Enrico Callegari in Norway; Laura Fernández Maldonado and Ramon Miralles Basseda in Spain; and Carole E. Aubert and Lucy Bolt in Switzerland. Data analyses: Vladyslav Shapoval, Séverine Henrard, Perrine Evrard, and Anne Spinewine. Writing – original draft: Vladyslav Shapoval, Anne Spinewine. Review and editing: all coauthors.

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Ethics Statement

The study protocol received approval from all local ethics committees where the survey was conducted: CHU UCL Namur, site Godinne (Approval Number: B0392022000083, Belgium); Bioethics Committee of the Institute of Psychiatry and Neurology (Approval Number: 39/2022, Poland); Regional Committee for Medical and Health Research Ethics (Approval Number: 546244, Norway); Ethics Committee of Eginition Hospital (Approval Number: 900/22-11-2022, Greece); and the Commission on Ethics in Animal and Human Experimentation (CEEAH) of the Universitat Autònoma de Barcelona (Approval Number: CEEAH 6351, Spain). In Switzerland, ethical approval was waived by the Ethical Committee of the Canton of Bern following Swiss regulations on human research (Request Number: Req-2022-01423). Informed consent was obtained from each participant, except in Switzerland, where the ethics committee does not require signed informed consent from healthcare professionals.

Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

The data dictionary and deidentified data will be made available to others. The data dictionary can be accessed on the Open Science Framework (OSF) platform via the link: https://osf.io/q5k8r/?view_only=2a527543f0d0486686e9ac47e1925c0b. To obtain the data, please contact vladyslav.shapoval@uclouvain.be or anne.spinewine@uclouvain.be. The data will be provided to anyone who requests it and specifies the purpose of their analysis. There will be no restrictions on the type of analysis or any other limitations on access.

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Supporting Information

Additional supporting information can be found online in the Supporting Information section. **Table S1:** Background characteristics of nurses, by country **Table S2:** Background characteristics of non-prescribing healthcare professionals, by category of healthcare professionals **Table S3:** Barriers to and enablers of Benzodiazepine Receptor Agonist deprescribing by TDF-based domains and items for nurses only: country-specific data. **Table S3:1** Items in the 'Knowledge' domain **Table S3:2** Items in the 'Skills' domain **Table S3:3** Items in the 'Memory, Attention, and Decision Processes' domain **Table S3:4** Items in the 'Social/Professional Role and Identity' domain **Table S3:5** Items in the 'Beliefs about Capabilities' domain **Table S3:6** Items in the 'Beliefs about Consequences' domain **Table S3:7** Items in the 'Reinforcement' domain **Table S3:8** Items in the 'Goals' domain **Table S3:9** Items in the 'Intentions' domain **Table S3:10** Items in the 'Emotions' domain **Table S3:11** Items in the 'Environmental Context and Resources' domain **Table S3:12** Items in the 'Social Influence' domain **Table S4:** Barriers to and enablers of Benzodiazepine Receptor Agonist deprescribing by TDF-based domains and items for healthcare professionals: category-specific data. **Table S4:1** Items in the 'Knowledge' domain **Table S4:2** Items in the 'Skills' domain **Table S4:3** Items in the 'Memory, Attention, and Decision Processes' domain **Table S4:4** Items in the 'Social/Professional Role and Identity' domain **Table S4:5** Items in the 'Beliefs about Capabilities' domain **Table S4:6** Items in the 'Beliefs about Consequences' domain **Table S4:7** Items in the 'Reinforcement' domain **Table S4:8** Items in the 'Goals' domain **Table S4:9** Items in the 'Intentions' domain **Table S4:10** Items in the 'Emotions' domain **Table S4:11** Items in the 'Environmental Context and Resources' domain **Table S4:12** Items in the 'Social influence' domain **Text S1:** Summary of answers to open questions on barriers of and enablers to Benzodiazepine Receptor Agonist deprescribing (non-prescribing healthcare professionals)