Canadian Journal on Aging / La Revue canadienne du vieillissement

www.cambridge.org/cjg

Article

Cite this article: Murphy, A.L., Turner, J.P., Rajda, M., Allen, K.G., & Gardner, D.M. (2024). Prescriber Acceptability of a Direct-to-Patient Intervention for Benzodiazepine Receptor Agonist Deprescribing and Behavioural Management of Insomnia in Older Adults. *Canadian Journal on Aging / La Revue canadienne du vieillissement* **43**(4), 529–537. https://doi.org/10.1017/S0714980824000114

Received: 06 May 2023
Accepted: 03 January 2024

Mots-clés:
déprescription; benzodiazépines; participation des patients; soins de santé primaires; comportements en matière de santé; acceptabilité

Keywords:
deprescribing; benzodiazepines; patient participation; primary health care; health behaviour; acceptability

Corresponding author:
Dr. David Gardner. College of Pharmacy, Dalhousie University, AJLB 7515, QEII HSC, 5909 Veterans' Memorial Lane, Halifax, Nova Scotia B3H 2E2, Canada (david.gardner@dal.ca).

Prescriber Acceptability of a Direct-to-Patient Intervention for Benzodiazepine Receptor Agonist Deprescribing and Behavioural Management of Insomnia in Older Adults

Andrea L. Murphy[1,2], Justin P. Turner[3,4], Malgorzata Rajda[2,5], Kathleen G. Allen[2] and David M. Gardner[1,2]

[1]College of Pharmacy, Dalhousie University, Halifax, Nova Scotia, Canada, [2]Department of Psychiatry, Dalhousie University, Halifax, Nova Scotia, Canada, [3]Centre for Medicine Use and Safety, Faculty of Pharmacy and Pharmaceutical Science, Monash University, Melbourne, Victoria, Australia, [4]Centre de recherche, Institut universitaire de gériatrie de Montréal, Montréal, Québec, Canada and [5]Sleep Disorders Clinic and Laboratory, QEII Health Sciences Centre, Halifax, Nova Scotia, Canada

Résumé

Les thérapies comportementales sont recommandées pour l'insomnie en soins de première ligne, mais l'usage à long terme d'agonistes des récepteurs des benzodiazépines (ARBZ) demeure courant et il est difficile de motiver les patients à s'engager dans une consultation de déprescription. Les interventions de déprescription directement axées sur les patients sont rares. Le soutien des médecins prescripteurs à des interventions axées sur les patients pourrait en faciliter l'adoption. La méthode Sleepwell (mysleepwell.ca), récemment évaluée dans le cadre de l'étude Vos réponses lorsque vous avez besoin de dormir au Nouveau-Brunswick (YAWNS NB), est une intervention comportementale destinée directement aux patients qui promeut la déprescription des ARBZ et la prise en charge non pharmacologique de l'insomnie. Les médecins prescripteurs d'ARBZ aux participants à l'étude YAWNS NB ont été invités à remplir un questionnaire en ligne visant à évaluer l'acceptabilité de la méthode Sleepwell en tant qu'intervention directe auprès des patients. Le sondage a été élaboré autour des sept composants conceptuels du modèle cadre théorique de l'acceptabilité. Un haut degré d'acceptabilité a été relevé parmi les répondants (40/250 17.2%), leurs réponses positives pour chaque composant conceptuel constituant une moyenne de 32.44 (80.7%). Perçu comme un outil éthique, crédible et utile, Sleepwell a également favorisé les engagements de déprescription d'ARBZ entre médecins et patients (11/19, 58%). Les médecins prescripteurs ont exprimé leur acceptation de la méthode Sleepwell et ils en appuient l'application en tant qu'intervention directe auprès des patients.

Abstract

Behavioural treatments are recommended first-line for insomnia, but long-term benzodiazepine receptor agonist (BZRA) use remains common and engaging patients in a deprescribing consultation is challenging. Few deprescribing interventions directly target patients. Prescribers' support of patient-targeted interventions may facilitate their uptake. Recently assessed in the Your Answers When Needing Sleep in New Brunswick (YAWNS NB) study, Sleepwell (mysleepwell.ca) was developed as a direct-to-patient behaviour change intervention promoting BZRA deprescribing and non-pharmacological insomnia management. BZRA prescribers of YAWNS NB participants were invited to complete an online survey assessing the acceptability of Sleepwell as a direct-to-patient intervention. The survey was developed using the seven construct components of the theoretical framework of acceptability (TFA) framework. Respondents (40/250, 17.2%) indicated high acceptability, with positive responses per TFA construct averaging 32.3/40 (80.7%). Perceived as an ethical, credible, and useful tool, Sleepwell also promoted prescriber–patient BZRA deprescribing engagements (11/19, 58%). Prescribers were accepting of Sleepwell and supported its application as a direct-to-patient intervention.

Introduction

Long-term prescription of benzodiazepine receptor agonists (BZRAs), including benzodiazepines and Z-drugs, for older adults is a public health concern that increases the risk for cognitive and physical health problems (O'Mahony et al., 2015). Their use has been associated with increased risks for acute and chronic conditions (e.g., falls, cognitive impairment and decline,

pneumonia, driver impairment) that impact quality of life; increase health care costs; and potentially decrease life expectancy (Brandt & Leong, 2017; Gray et al., 2016; Nakafero, Sanders, Nguyen-Van-Tam, & Myles, 2016; Panneman, Goettsch, Kramarz, & Herings, 2003; Roth, Eklov, Drake, & Verster, 2014; Smink, Egberts, Lusthof, Uges, & de Gier, 2010; Sun, Zhang, Zhang, Wu, & Hu, 2019; Sylvestre, Abrahamowicz, Capek, & Tamblyn, 2012). When prescribed for insomnia, they should be used for the shortest possible duration, usually 2 weeks or less, given their limited effectiveness and risks (Conn et al., 2020; Qaseem et al., 2016). Cognitive behavioural therapy for insomnia (CBTi) is recommended as the first-line treatment for persistent forms of insomnia owing to its safety and efficacy profile (Conn et al., 2020; Morin et al., 2009; Qaseem et al., 2016). It focuses on behaviour modification and includes a cognitive component required for some patients (Morin, 2020).

Various BZRA deprescribing interventions have targeted prescribers, pharmacists, and patients separately and in various combinations and include a heterogeneous set of procedures, techniques, and tools (Burry et al., 2022; Lynch et al., 2020; Ng, Le Couteur, & Hilmer, 2018; Pollmann, Murphy, Bergman, & Gardner, 2015; Reeve et al., 2017; Shaw et al., 2019). Deprescribing BZRAs can be challenging for reasons that centre on the patient–prescriber relationship, time restraints and other system barriers, and inertia affecting prescriber and patient actions, communications, perceptions, and assumptions (Anderson, Stowasser, Freeman, & Scott, 2014; Burry et al., 2022; Lynch et al., 2020; Sirdifield et al., 2013).

Direct-to-patient approaches for BZRA dose reduction and discontinuation have been researched as an alternative to targeting health care providers. The Eliminating Medications through Patient Ownership of End Results (EMPOWER) cluster, randomized trial demonstrated BZRA discontinuation in 27% of participants at 6 months who received the EMPOWER mailed education package versus 4.5% of controls (Tannenbaum, Martin, Tamblyn, Benedetti, & Ahmed, 2014). Embedded with multiple behaviour change and learning theory principles, the brochures encouraged and enabled BZRA gradual dose reduction and discontinuation (Martin & Tannenbaum, 2017). Adapted EMPOWER brochures were used with U.S. veterans and also showed reduction in BZRA use (Mendes et al., 2018). Examining the patient's perspective, Zhang et al. determined that trust was not diminished in the patient-physician relationship with the unsolicited, direct-to-patient mail-out of EMPOWER brochures (Zhang, Turner, Martin, & Tannenbaum, 2018).

There are very few published data on prescriber experiences with specific BZRA deprescribing interventions, whether targeting prescribers, patients, or both. In Spain, a multicomponent intervention was assessed that included an appropriate prescribing workshop on benzodiazepines, training on how to discontinue the long-term use of benzodiazepines, monthly audit and feedback on their benzodiazepine prescribing, and access to online support and resources that reinforced their training (Vicens et al., 2022). While effective, physicians found the regimen complex and implementation to be challenging and negatively impacting workload. In contrast, a less intensive intervention involving three audit and feedback mail-outs sent to physicians every 2 months along with educational bulletins to improve BZRA prescribing in Ontario, Canada, was well received (Pimlott et al., 2003). Physicians indicated that they would readily participate in a similar program. However, the audit and feedback intervention did not lead to clinically meaningful change in BZRA use. In Japan, the acceptability of a decision aid for stopping BZRAs with and without CBTi was given a favourable review by 20 psychiatrists (range of mean item scores 3.2/5–4.7/5) although they expressed concerns about how it could negatively impact workflow and workload (Aoki et al., 2021).

Measuring user perspective and experience with deprescribing interventions can identify gaps in knowledge and capacity, enable revisions based on target user feedback, and facilitate implementation (Bucyibaruta et al., 2023; Proctor et al., 2011; Sekhon, Cartwright, & Francis, 2017). In this paper, prescriber acceptability of a direct-to-patient BZRA deprescribing and insomnia management behaviour change intervention was assessed as an implementation outcome of the Your Answers When Needing Sleep in New Brunswick (YAWNS NB) randomized controlled trial (RCT) (Murphy et al., 2022).

Methods

Intervention

YAWNS NB was a three-arm, open-label, parallel, RCT that assessed the impact of mailed direct-to-patient information packages (ClinicalTrials.gov registration NCT 04406103) (Murphy et al., 2022). Study measures included BZRA discontinuation, insomnia and related health outcomes, and use of CBTi resources among community-dwelling older adults aged 65 years of age and older. The three arms included Sleepwell (mysleepwell.ca) ("Sleepwell | It's No Dream. Sleep Well without Sleeping Pills," 2023) (two booklets with a cover letter to explain the booklets), EMPOWER (updated versions of booklets used in the EMPOWER study (Tannenbaum et al., 2014)), and treatment-as-usual (TAU). Sleepwell was developed by embedding a combination of behaviour change techniques informed by the theoretical domains framework and behaviour change wheel into the content of the booklets (Murphy et al., 2022). The booklets were created as a print adaptation of the content, interactive tools, resources, and recommendations available publicly on Sleepwell's website. Booklet 1 provided information on BZRAs, including risk information and how to safely stop their use. Booklet 2 introduced participants to the components of CBTi, its advantages over sedatives, and how to access self-directed CBTi resources. Although they share several similarities, Sleepwell differs from EMPOWER in that it identifies all medications and substances commonly used as sleep aids, uses photos to illustrate the dangers of sedatives, illustrates insomnia as a withdrawal symptom of sedative discontinuation, guides BZRA deprescribing using a flexible program, explains each component of CBTi in detail, and specifically recommends a self-guided CBTi book. Prescribers were not directly involved in the YAWNS NB study. However, both Sleepwell and EMPOWER information packages recommended that participants collaborate with their prescribers and pharmacists if they are interested in changing their use of BZRAs.

Sample and data collection methods

Eligible prescribers were those identified by YAWNS study participants as their main BZRA prescriber. Patient participants of the clinical trial were 65 years or older and were long-term users of BZRAs for insomnia (Murphy et al., 2022). A Research Electronic Data Capture (REDCap) report listing the identified prescribers was initially reviewed for duplicates. Physician names and

https://doi.org/10.1017/S0714980824000114 Published online by Cambridge University Press

addresses were verified using the publicly accessible New Brunswick physician directory website. Nurse practitioners were contacted using the location information provided by the study participant.

Prescriber acceptability data were obtained from an online, self-administered, anonymous survey. Repeated survey invitations were sent by mail between May and July 2022 to all 250 prescribers identified by the participants, including 245 physicians and 5 nurse practitioners. Four letters were mailed sequentially to each prescriber at approximately 7 to 10-day intervals. The initial letter was sent in advance of the main package to indicate the forthcoming invitation for providing feedback about the Sleepwell information package. It and all subsequent letters explained how they were selected to participate by invitation. The second letter contained a formal invitation to complete the online survey and included the Sleepwell package. Participants were asked to review the cover letter and two Sleepwell booklets in advance and when completing the online survey. The third and fourth letters thanked participants who had already responded to the survey while encouraging those who had not to complete the survey. As an incentive, participants were given the option to enter the chance to win one of four CA $125 grocery store gift cards. The online survey was available from May to August 2022. In the second, third, and fourth letters, participants were provided with a link to the survey. A consent page explained the survey. Two separate REDCap project folders were created, one for administering the anonymous survey and the other for the incentive draw, which was used for storing contact information of those entering the draw. The two folders were not connected to ensure participant anonymity, and the contents of the draw were permanently erased once completed.

Survey development

A fit-for-purpose, cross-sectional survey was developed that consisted of five sections: (A) demographics (7 items); (B) 29 items assessing attitude towards and experiences with BZRAs, deprescribing BZRAs, and CBTi for older patients, and 2 items assessing BZRA use frequency (31 items); (C) non-pharmacological sleep therapy recommendations (5 items); (D) Sleepwell awareness (4 items); and (E) acceptability perspectives on Sleepwell as a direct-to-patient intervention (34 items). Participants were instructed that the term "behavioural sleep therapy" was being used to indicate a range of behavioural (non-pharmacologic) and cognitive therapies or techniques used to manage insomnia (e.g., stimulus control, time-in-bed restriction therapy, relaxation therapy, cognitive therapy, and behavioural components of sleep hygiene). The seven component constructs of the theoretical framework of acceptability (TFA) (Sekhon et al., 2017) were used to guide survey item development for comprehensively evaluating prescriber acceptability of the mailed Sleepwell package as a direct-to-patient education intervention. The TFA was developed to measure the acceptability of health care interventions prospectively or retrospectively (Sekhon et al., 2017). TFA categories were used to ensure that multiple survey items were initially developed per construct for section E. Once an initial set of items was developed, the items were then organized based on their construct category, modified as needed, and redundant items were reviewed and eliminated through consensus. The survey was pretested by members of the research team. This included repeatedly completing the survey online to ensure that all technical and content accuracy issues were resolved. See the Supplementary File for the prescriber survey and description of the seven TFA component constructs.

A five-point Likert scale (*strongly disagree, disagree, neither agree nor disagree, agree, strongly agree*) was used for scoring 29 of 31 section B items and all 34 section D items. Each of 29 items in section B was categorized as positive (P), indeterminate (I), or negative (N) towards BZRAs, deprescribing, and CBTi. Similarly, items used to assess the acceptability of Sleepwell and its direct-to-patient distribution were categorized as positive (P), indeterminate (I), or negative (N). The study data were managed using REDCap software (Harris et al., 2009; 2019). Reporting is modelled on the Consensus-Based Checklist for Reporting of Survey Studies Guidelines (Sharma et al., 2021).

Ethical considerations

The study was approved by the Health Sciences Research Ethics Board (REB) at Dalhousie University (REB file number 2020–5184).

Statistical analysis

Data were analyzed using SPSS® (IBM® SPSS® Statistics, version 28.0.1.1 [14]) and Microsoft® Excel (Microsoft® Excel for Mac, version 16.70). Descriptive statistics (e.g., mean, SD) were calculated. For Likert scale items, the level of agreement was simplified by combining strongly agree with agree and disagree with strongly disagree. The data analysis was limited to descriptive statistics due to the relatively low response rate and high consistency in responses among participants.

Results

Of the 250 prescribers invited to complete the survey, 17 invitations were returned due to an incorrect address. Forty-eight (20.6%) started the survey and forty completed it for a completion response rate of 17.2%. Table 1 provides a summary of participant characteristics. Most survey respondents had moderate-to-extensive experience deprescribing BZRAs used long-term, with 30% (n=12), 40% (n=16), and 20% (n=8) indicating working with 5–9 patients, 10–40, and >40 patients, respectively. More than half of the participants (52.5%, n=21) were unaware that their patients were part of the YAWNS NB study. Of the 19 that were aware, 11 (57.8%) indicated that the materials encouraged the patient and prescriber to discuss the patient's BZRA use, whereas five were unsure and three indicated that it did not. Eight of nineteen indicated that they directly reviewed the print materials received by their patients.

No respondent rated their use of BZRAs for older adults to be *higher than average* among colleagues in similar practice settings. An equal number of respondents rated their use as *average* (47.5%, n=19) and *lower than average* (47.5%, n=19). The other two (5%) indicated the *lowest* use among colleagues. Participants most often estimated that New Brunswick had a *higher-than-average* rate (62.5%, n=25) or *average* rate (30%, n=12) of long-term BZRA use by older adults compared to the rest of Canada; 7.5% (n=3) correctly indicated that NB has Canada's highest rate. Sleep hygiene was self-reported as the most often recommended behavioural sleep technique, with relaxation techniques often promoted (Table 2). Time-in-bed restriction, cognitive therapy, and use of a sleep diary were recommended less often. Ten participants in the sample were somewhat or quite familiar with Sleepwell, but most (75%, n=30) were not at all familiar.

https://doi.org/10.1017/S0714980824000114 Published online by Cambridge University Press

Table 1. Prescriber respondent characteristics of (N=40)

Characteristics	Categories	Value
Mean age, y (SD)		45 (11)
Gender, n (%)	Men	20 (50%)
	Women	20 (50%)
Practice experience, y (SD)		15 (11)
Prescriber type, n (%)	Physician	37 (92.5)
	Nurse practitioner	3 (7.5)
Location, n (%)	Urban	25 (62.6)
	Rural	15 (37.5)
Practice setting, n (%)	Solo	20 (50%)
	Team (with mostly physicians or multidisciplinary)	20 (50%)
Number of patients worked with to deprescribe long-term BZRAs, n (%)	<5	4 (10%)
	5–9	12 (30%)
	10–40	16 (40%)
	>40	8 (20%)

Table 2. Prescriber (n=40) self-reports of cognitive behavioural therapy for insomnia (CBTi) component recommendations

CBTi component	Rarely or never n (%)	Occasionally n (%)	Often n (%)
Sleep hygiene	–	2 (5)	38 (95)
Relaxation techniques	4 (10)	7 (17.5)	29 (72.5)
Time-in-bed restriction therapy	7 (17.5)	15 (37.5)	18 (45)
Cognitive therapy	8 (20)	20 (50)	12 (30)
Daily recording of sleeping using a sleep diary	19 (47.5)	15 (37.5)	6 (15)

BZRAs, CBTi, and deprescribing

Responses to BZRA items indicated an overall disposition to avoid or limit BZRA use in older adults (Figure 1). Agreement rates were high for most items that were negative towards BZRAs. Between 82.5% (n=33) and 100% (n=40) of participants agreed that longer use makes stopping BZRA treatment more difficult, BZRAs are to be avoided as much as possible due to the risk for serious harms, they regularly remind their patients about BZRA risks, long-term use is usually unnecessary, and chronic use of BZRAs is a public health concern. The rates of agreement were lowest for items that were positive towards BZRAs. Between 5% (n=2) and 15% (n=6) agreed with items stating BZRA benefits outweigh their risks, stopping BZRAs is riskier than continuing them, and sleep quality is significantly improved with BZRAs.

Responses to positive and negative statements about deprescribing BZRAs were more varied. Most have experienced pressure from patients (87.5%, n=35), and to a lesser extent family members (42.5%, n=17), to continue their BZRA use and find it difficult to motivate their older patients to stop BZRAs. Half agreed in the value of collaborating with pharmacists for deprescribing BZRAs. Few indicated mostly positive experiences from deprescribing BZRAs (22.5%, n=9) and there was a high level of agreement that older adults are resistant and difficult to motivate often seeking alternative medications when BZRAs are to be deprescribed, but few agreed (10%, n=4) that deprescribing BZRAs used long-term is riskier than stopping them.

Agreement with the positive statements towards CBTi was relatively high; 90% (n=36) agreed that it was a better option than BZRAs and 70% (n=28) affirmed that supporting patients using behavioural sleep approaches was a good use of their time, with only 5% (n=2) disagreeing. Agreement with negative items about CBTi demonstrated a range of perspectives. Prescribers mostly agreed that older patients prefer BZRAs over CBTi options (65% [n=26] agreed versus 5% [n=2] disagreed). Many also indicated that current billing options are a barrier to them offering CBTi and that they did not know how to get a patient started with it. Fewer agreed that younger patients were better candidates than older ones for CBTi, and a similar proportion agreed and disagreed that CBTi is too time consuming for older patients.

Acceptability of Sleepwell

Acceptability of Sleepwell as a direct-to-patient education and behaviour change intervention was high and relatively even across the seven TFA component constructs (Figure 2). The average number of positive (agree with positive statements or disagree with negative statements), neutral (neither agree nor disagree), and negative (agree with negative statements or disagree with positive statements) responses inclusive of the seven constructs were 32.3/40 (80.7%), 6.4 (15.9%), and 1.4/40 (3.5%). The average number of positive responses per construct ranged from 29.8/40 for burden to 35.4/40 for ethicality. The construct with the highest average number of negative responses was burden (3.3/40 per burden item).

Positive statements about Sleepwell were strongly and consistently supported overall (Figure 3). There was full or nearly full agreement by prescribers (87.5%, n=35 to 100%, n=40) with their older patients receiving Sleepwell materials, using Sleepwell materials with their older patients, and support for the materials' contents including how the dangers of sleeping pills were represented. Most disagreed with negative statements about Sleepwell. Few agreed that sharing Sleepwell materials without their approval was inappropriate (12.5%, n=5) or that it would lead to an excessive strain on their practice as part of a health promotion campaign (2.5%, n=1). There was little concern that Sleepwell would cause more harm than benefit (2.5%, n=1) or distract prescribers from more important health issues (5%, n=2). Some agreed that older patients will choose sleeping pills over discussing Sleepwell materials with them (22.5%, n=9). This was the most strongly supported negative statement about Sleepwell.

Sleepwell was perceived by most to support informed decision making (82.5%, n=33) and agreement also exceeded 80% (n=32) for older adults having access to Sleepwell materials through a regular mail-out to older, chronic users of BZRAs. Prescribers indicated that Sleepwell complemented their approach to treat insomnia in older patients (95%, n=38) and perceived it to be appropriate (85%, n=34) and motivating (77.5%, n=31) for their older patients, and potentially effective. Most anticipated a mailed health promotion campaign with Sleepwell to lead to reduced BZRA use (75%, n=30). The Sleepwell materials were positively rated for supporting BZRA deprescribing (90%, n=36) and were viewed as a credible way to

https://doi.org/10.1017/S0714980824000114 Published online by Cambridge University Press

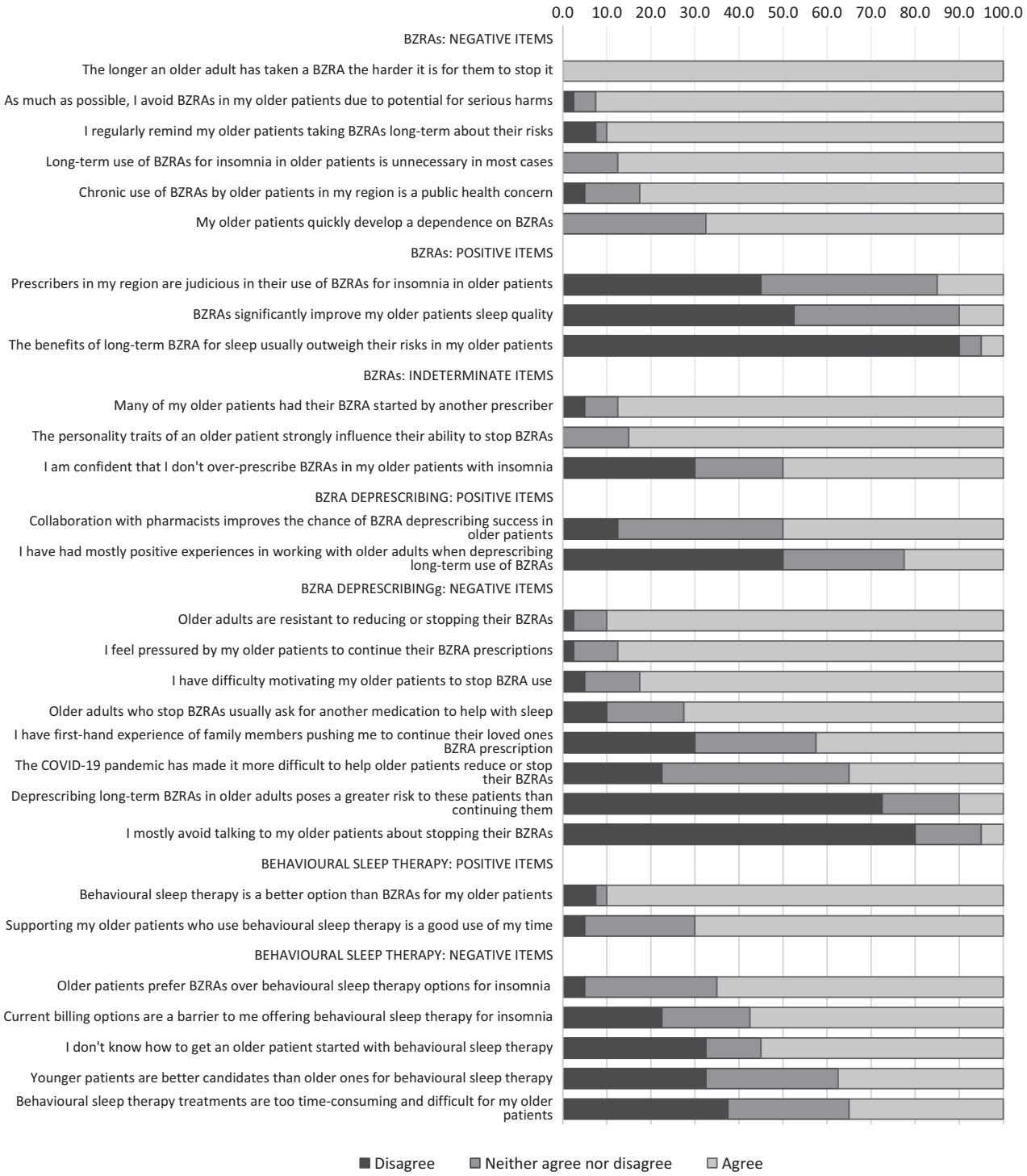

Figure 1. Prescriber agreement (%) with benzodiazepine receptor agonist, behaviour sleep therapy, and deprescribing statements.

promote behavioural approaches to treating insomnia (95%, n=38). Most anticipated that Sleepwell would reduce the effort needed by them when deprescribing BZRAs (75%, n=30) and indicated that their patients would be motivated by content including the Dangers of Sleeping Pills (77.5%, n=31) and easier collaboration with pharmacists (67.5%, n=27). Many agreed that more training in sleep therapy approaches would provide them with greater confidence for using the Sleepwell materials (62.5%, n=25).

Discussion

Sleepwell, as a behaviour change intervention designed to support BZRA reduction and adoption of non-pharmacological methods for treating insomnia, was shown to be acceptable to prescribers. Both aspects of the intervention, including the Sleepwell booklets' content and the direct-to-patient mailed distribution without pre-arranged approval by prescribers, were supported. High levels of acceptance across the seven TFA constructs provide confidence in

https://doi.org/10.1017/S0714980824000114 Published online by Cambridge University Press

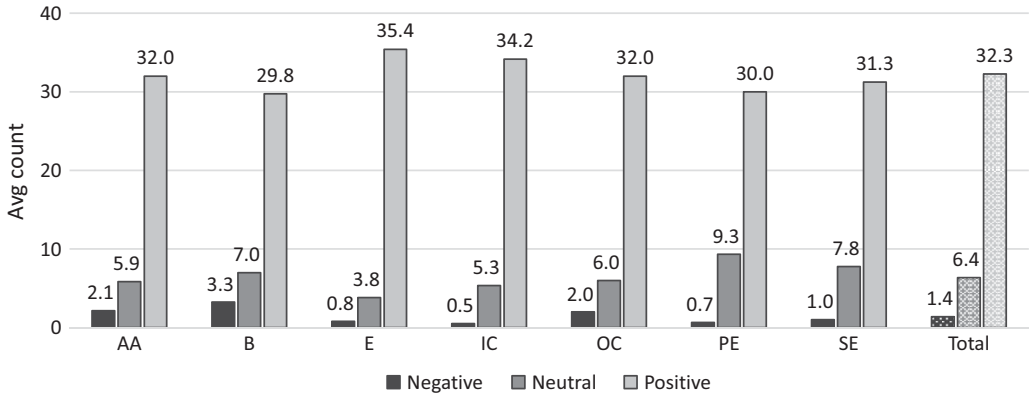

Figure 2. Average number of negative, neutral, and positive responses (n=40) to survey items for the seven theoretical framework of acceptability (TFA; Sekhon et al., 2017) component constructs assessing Sleepwell. Abbreviations: TFA, theoretical framework of acceptability; AA, affective attitude; B, burden; E, ethicality; IC, intervention coherence; OC, opportunity costs; PE, perceived effectiveness; SE: self-efficacy.

these results. Survey respondents demonstrated a negative attitude towards chronic BZRA use by older patients, identified challenges that limit their ability to transition their patients from long-term BZRA use to behavioural treatment of insomnia, and identified Sleepwell as an ethical, credible, and useful tool. Prescriber acceptability is a critical component of the overall evaluation of Sleepwell and its feasibility as a direct-to-patient intervention. The YAWNS NB study results demonstrating the benefits of Sleepwell mail-outs on BZRA deprescribing, sleep outcomes, and CBTi use will be reported separately.

Few examples of BZRA deprescribing initiatives exist that target patients without involving prescribers or other health care providers. A recent review described 20 interventions to reduce sedative–hypnotic use in primary care (Burry et al., 2022). For 10 patients, the intervention was electronic prescriber alerts, audit and feedback, formulary and regulatory changes, and education directed at physicians and other health care providers. These interventions did not reduce sedative–hypnotic use (Burry et al., 2022; Shaw et al., 2019). Nine others involved clinician-initiated patient education interventions. All but one of these studies demonstrated reduced sedative–hypnotic use. In that review, the EMPOWER study (Tannenbaum et al., 2014) was the only study to promote benzodiazepine reduction and discontinuation through direct patient education without also targeting health care providers. The high rate of BZRA cessation with a relatively simple and efficient intervention demonstrated the potential advantage of direct-to-patient mailed behaviour change interventions in which the patient was educated about treatment options, risks associated with sedative–hypnotic use, and how to safely stop treatment. Importantly, the print materials encouraged all patients to meet with their health care providers, assuring that all long-term BZRA users received the same information and messages. The current survey provides additional evidence in support of the direct-to-patient approach and is the first of its kind to assess prescriber acceptability of an intervention directly targeting patients.

Existing research has demonstrated that physicians typically perceive challenges working with older adult patients to deprescribe long-term BZRAs and that initiating conversations regarding deprescribing is difficult. Such conversations have been described as contentious (Hahn et al., 2021), with patient unwillingness cited as a major barrier (van Poelgeest et al., 2022). Deprescribing discomfort has been reported by physicians if patients or caregivers think a medication is necessary, but the prescriber does not (Djatche et al., 2018). However, patients' expectations and motivations may be affected by their physicians' preconceptions of them in the absence of a direct discussion (Sirdifield et al., 2013). Similarly, other research has shown discordant attitudes between patients and prescribers towards deprescribing BZRAs, with patient willingness to engage in deprescribing when prescribers expected resistance (Rasmussen, Poulsen, Oldenburg, & Vermehren, 2021). The results from the current prescriber sample are in keeping with these perceptions of resistance. Only 22.5% (n=9) of prescribers indicated having mostly positive experiences when deprescribing BZRAs with older patients. A high proportion considered their patients to be resistant to stopping, found it hard to motivate them, and felt pressured by their older patients to continue BZRA prescriptions. Nevertheless, prescribers disagreed that they avoid having these conversations. Additionally, prescribers did report that some patients brought the materials to their attention, demonstrating patient interest in deprescribing. Together, these indicate that Sleepwell may help shift deprescribing discussions from being mostly negative to mostly positive.

A perceived lack of alternative approaches has been reported to limit the deprescribing process and prescribers often feel there should be a substitute or alternative as part of the withdrawal strategy (Sirdifield et al., 2013). Most prescribers in this survey agreed that older patients could improve their sleep with Sleepwell while relying less on BZRAs. However, many agreed that older adults would ask for another medication to help with sleep when stopping BZRA treatment and few disagreed with the statement that older patients would choose sleeping pills over discussing the Sleepwell materials. Generally, there is a lack of prescriber awareness and competencies in CBTi as a standalone treatment or as part of a BZRA deprescribing process. In the current sample, this was highlighted by limited breadth and frequency of non-pharmacological insomnia management strategies recommended to patients (i.e., sleep hygiene, relaxation techniques). These findings concur with other studies. For example, sleep hygiene recommendations are commonly provided as a main treatment approach and can be a source of frustration and disappointment to patients (Sirdifield et al., 2013). A qualitative study demonstrated that patients often have found sleep hygiene to be ineffective and feel invalidated when recommended by health care professionals who are seen not to recognize the severity of their sleep issues (Davy, Middlemass, & Siriwardena, 2015). Prescriber knowledge and views about non-pharmacological interventions to manage

https://doi.org/10.1017/S0714980824000114 Published online by Cambridge University Press

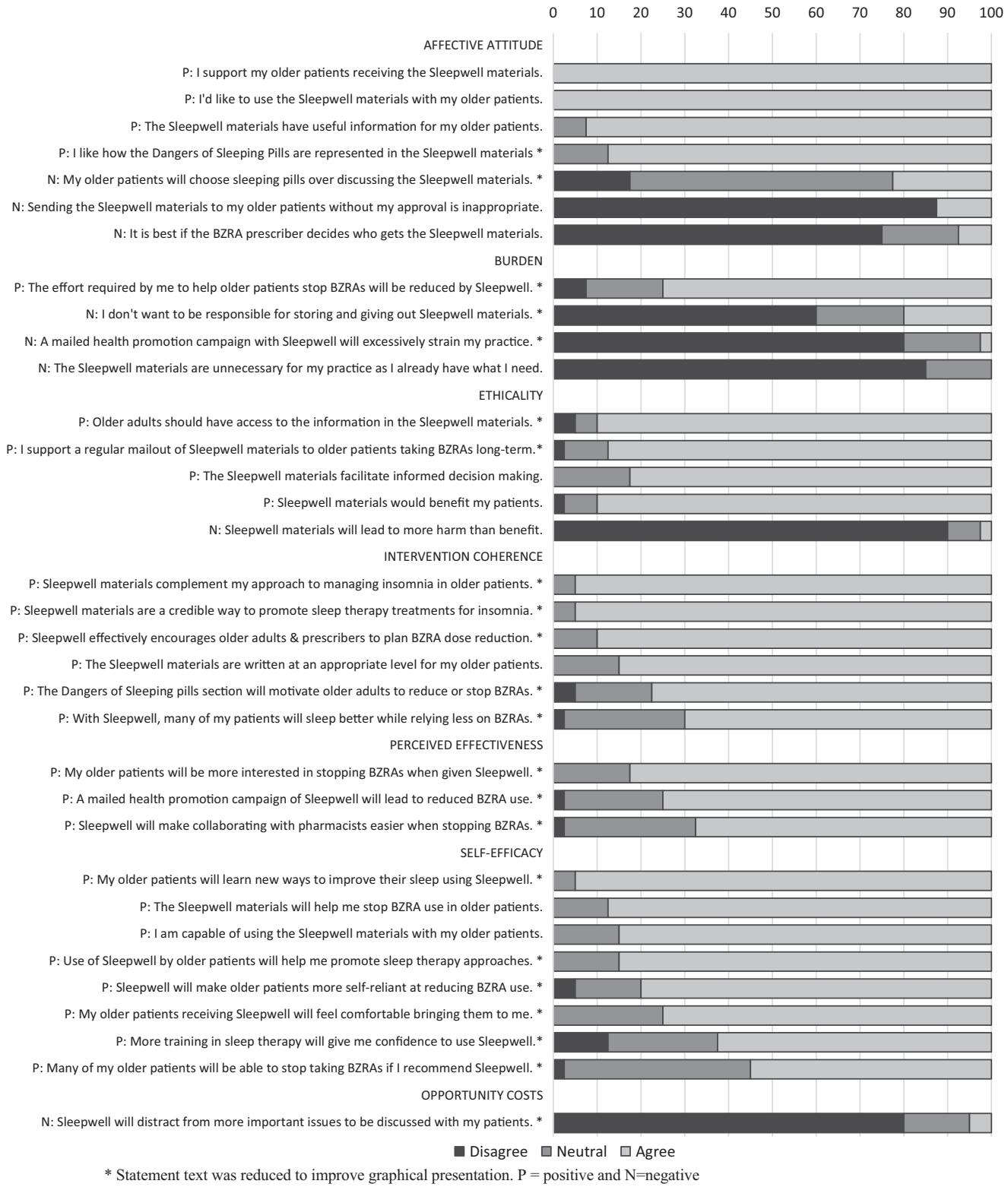

Figure 3. Prescriber agreement (%) regarding the Sleepwell direct-to-patient intervention. * Statement text was reduced to improve graphical presentation. P = positive and N=negative.

insomnia have been shown to influence BZRA prescribing decisions (Sirdifield et al., 2013). The limited breadth and frequency of application of CBTi components by the current sample could reinforce both patients' and prescribers' continued commitment to BZRAs when alternatives such as sleep hygiene and relaxation are ineffective. However, the Sleepwell booklets were endorsed as something prescribers would use with patients to support BZRA discontinuation and the introduction of CBTi.

https://doi.org/10.1017/S0714980824000114 Published online by Cambridge University Press

Finally, burden is another important concept in acceptability. Any new technology that adds to workload or changes practice patterns is unlikely to be adopted (Aoki et al., 2021). Overall, the Sleepwell booklets as an intervention were not characterized as burdensome. A high proportion of prescribers indicated that the Sleepwell materials will help their patients learn new ways to improve their sleep without increasing their practice burden and disagreed that the resources were unnecessary or redundant. This would be worthy of further exploration when scaling this intervention widely and when examining how the intervention is adopted by patients and prescribers in the process of deprescribing.

Limitations

Multiple, best practice techniques were used to enhance responses (e.g., incentive opportunity, provision of the print materials, reminders); however, the number of participants (40) and response rate (17.2%) were low, albeit congruent with other web-based surveys (6.3% and 19%) for general practitioners (Pentzek, Baumgart, & Hegerath, 2022; So et al., 2018). We were not able to use electronic means, such as email, to contact potential participants and elected not to reach out directly by telephone. Physician shortages exacerbated by the COVID-19 pandemic and other demographic factors place prescribers under tremendous pressure, making it difficult to entertain extraneous requests such as our survey, especially considering the ask to view the Sleepwell materials while completing the survey. Also, as the prescriber survey was completed anonymously, it was not possible to link the prescriber responses with the patient participant database. We were unable to compare responding versus non-responding prescribers regarding patient participant demographics, BZRA dosing, and YAWNS NB study outcomes, including BZRA use, CBTi use, and changes in sleep.

Participants were limited to one Canadian province where chronic BZRA use in older adults is nearly three times the national average (Canadian Deprescribing Network, 2017; Canadian Institute for Health Information, 2022a, 2022b). The more permissive prescribing culture may not reflect the views of prescribers elsewhere in Canada or other regions internationally.

Selection bias is a consideration when interpreting the generalizability of the results. The majority indicated having negative experiences when deprescribing BZRAs, and they conveyed a negative attitude towards BZRAs overall. This aligns with the general attitude towards BZRAs by prescribers from other investigations (Neves, Oliveira, Fernandes, Santos, & Maria, 2019; Sirdifield et al., 2013).

Conclusion

Participant perspectives on BZRA use in older adults were negative overall, whereas there was a high and consistent level of acceptability for the Sleepwell intervention across each of the seven constructs. Prescribers indicated that they try to avoid BZRAs in their older patients and that chronic use is usually unnecessary. There was broad agreement that CBTi is a better option than BZRAs and supporting patients using CBTi was a good use of their time. However, pressure from patients to continue long-term use, past negative BZRA deprescribing experiences, the impression that older patients are resistant to stopping BZRAs and prefer them over behavioural approaches, as well as lack of familiarity with engaging patients in CBTi are likely deterrents against prescriber-initiated efforts to transition older patients from BZRA use to behavioural interventions to treat insomnia. Direct mailing of Sleepwell materials to patients was found to be acceptable to prescribers and is predicted to help overcome many deprescribing and insomnia management challenges.

Supplementary material. The supplementary material for this article can be found at http://doi.org/10.1017/S0714980824000114.

References

Anderson, K., Stowasser, D., Freeman, C., & Scott, I. (2014). Prescriber barriers and enablers to minimising potentially inappropriate medications in adults: A systematic review and thematic synthesis. *BMJ Open*, **4**(12), e006544. https://doi.org/10.1136/bmjopen-2014-006544.

Aoki, Y., Takaesu, Y., Suzuki, M., Okajima, I., Takeshima, M., Shimura, A., et al. (2021). Development and acceptability of a decision aid for chronic insomnia considering discontinuation of benzodiazepine hypnotics. *Neuropsychopharmacology Reports*, **42**(1), 10–20. https://doi.org/10.1002/npr2.12219.

Brandt, J., & Leong, C. (2017). Benzodiazepines and Z-Drugs: An updated review of major adverse outcomes reported on in epidemiologic research. *Drugs in R&D*, **17**(4), 493–507. https://doi.org/10.1007/s40268-017-0207-7.

Bucyibaruta, J. B., Doriccah, M., Bamford, L., Elizabeth van der Wath, A., Dyer, T. A., Murphy, A., et al. (2023). Building consensus in defining and conceptualizing acceptability of healthcare: A Delphi study. *Public Health Nursing*, **40**(2), 273–282. https://doi.org/10.1111/phn.13153.

Burry, L., Turner, J., Morgenthaler, T., Tannenbaum, C., Cho, H. J., Gathecha, E., et al. (2022). Addressing barriers to reducing prescribing and implementing deprescribing of sedative-hypnotics in primary care. *Annals of Pharmacotherapy*, **56**(4), 463–474. https://doi.org/10.1177/10600280211033022.

Canadian Deprescribing Network. (2017). *Canadian Deprescribing Network 2017 Annual Report* (pp. 1–19). Retrieved from https://www.deprescribingnetwork.ca/reports.

Canadian Institute for Health Information (2022a). *Overuse of tests and treatments in Canada—Methodology notes*. Ottawa, ON: CIHI.

Canadian Institute for Health Information (2022b). *Overuse of tests and treatments in Canada—Progress report*. Ottawa, ON: CIHI.

Conn, D. K., Hogan, D. B., Amdam, L., Cassidy, K.-L., Cordell, P., Frank, C., et al. (2020). Canadian guidelines on benzodiazepine receptor agonist use disorder among older adults. *Canadian Geriatrics Journal*, **23**(1), 116–122. https://doi.org/10.5770/cgj.23.419.

Davy, Z., Middlemass, J., & Siriwardena, A. N. (2015). Patients' and clinicians' experiences and perceptions of the primary care management of insomnia: Qualitative study. *Health Expectations*, **18**(5), 1371–1383. https://doi.org/10.1111/hex.12119.

Djatche, L., Lee, S., Singer, D., Hegarty, S. E., Lombardi, M., & Maio, V. (2018). How confident are physicians in deprescribing for the elderly and what barriers prevent deprescribing? *Journal of Clinical Pharmacy and Therapeutics*, **43**(4), 550–555. https://doi.org/10.1111/jcpt.12688.

Gray, S. L., Dublin, S., Yu, O., Walker, R., Anderson, M., Hubbard, R. A., et al. (2016). Benzodiazepine use and risk of incident dementia or cognitive decline: Prospective population based study. *BMJ (Clinical Research Ed.)*, **352**, Article i90. https://doi.org/10.1136/bmj.i90

Hahn, E. E., Munoz-Plaza, C. E., Lee, E. A., Luong, T. Q., Mittman, B. S., Kanter, M. H., et al. (2021). Patient and physician perspectives of deprescribing potentially inappropriate medications in older adults with a history of falls: A qualitative study. *Journal of General Internal Medicine*, **36**(10), 3015–3022. https://doi.org/10.1007/s11606-020-06493-8.

Harris, P. A., Taylor, R., Minor, B. L., Elliott, V., Fernandez, M., O'Neal, L., et al. (2019). The REDCap consortium: Building an international community of software platform partners. *Journal of Biomedical Informatics*, **95**, 103208. https://doi.org/10.1016/j.jbi.2019.103208.

Harris, P. A., Taylor, R., Thielke, R., Payne, J., Gonzalez, N., & Conde, J. G. (2009). Research electronic data capture (REDCap) – A metadata-driven methodology and workflow process for providing translational research

informatics support. *Journal of Biomedical Informatics*, **42**(2), 377–381. https://doi.org/10.1016/j.jbi.2008.08.010.

Lynch, T., Ryan, C., Hughes, C. M., Presseau, J., van Allen, Z. M., Bradley, C. P., et al. (2020). Brief interventions targeting long-term benzodiazepine and Z-drug use in primary care: A systematic review and meta-analysis. *Addiction*, **115**(9), 1618–1639. https://doi.org/10.1111/add.14981.

Martin, P., & Tannenbaum, C. (2017). A realist evaluation of patients' decisions to deprescribe in the EMPOWER trial. *BMJ Open*, **7**(4), e015959. https://doi.org/10.1136/bmjopen-2017-015959.

Mendes, M. A., Smith, J. P., Marin, J. K., Bounthavong, M., Lau, M. K., Miranda, J. I., et al. (2018). Reducing benzodiazepine prescribing in older veterans: A direct-to-consumer educational brochure. *Federal Practitioner*, **35**(9), 36–43.

Morin, C. M. (2020). Cognitive behavioural therapy for insomnia (CBTi): From randomized controlled trials to practice guidelines to implementation in clinical practice. *Journal of Sleep Research*, **29**(2), e13017. https://doi.org/10.1111/jsr.13017.

Morin, C. M., Vallières, A., Guay, B., Ivers, H., Savard, J., Mérette, C., et al. (2009). Cognitive behavioral therapy, singly and combined with medication, for persistent insomnia: A randomized controlled trial. *JAMA*, **301**(19), 2005–2015. https://doi.org/10.1001/jama.2009.682.

Murphy, A. L., Turner, J. P., Rajda, M., Magalhaes, S., Allen, K. G., & Gardner, D. M. (2022). A protocol for a randomized controlled trial comparing Sleepwell, EMPOWER, and treatment-as-usual for benzodiazepine receptor agonist discontinuation in older adults: The your answers when needing sleep in New Brunswick (YAWNS NB) study. *Exploratory Research in Clinical and Social Pharmacy*, **7**, 100164. https://doi.org/10.1016/j.rcsop.2022.100164.

Nakafero, G., Sanders, R. D., Nguyen-Van-Tam, J. S., & Myles, P. R. (2016). The association between benzodiazepines and influenza-like illness-related pneumonia and mortality: A survival analysis using UK primary care data. *Pharmacoepidemiology and Drug Safety*, **25**(11), 1263–1273. https://doi.org/10.1002/pds.4028.

Neves, I. T., Oliveira, J. S. S., Fernandes, M. C. C., Santos, O. R., & Maria, V. A. J. (2019). Physicians' beliefs and attitudes about Benzodiazepines: A cross-sectional study. *BMC Family Practice*, **20**(1), 71. https://doi.org/10.1186/s12875-019-0965-0.

Ng, B. J., Le Couteur, D. G., & Hilmer, S. N. (2018). Deprescribing benzodiazepines in older patients: Impact of interventions targeting physicians, pharmacists, and patients. *Drugs & Aging*, **35**(6), 493–521. https://doi.org/10.1007/s40266-018-0544-4.

O'Mahony, D., O'Sullivan, D., Byrne, S., O'Connor, M. N., Ryan, C., & Gallagher, P. (2015). STOPP/START criteria for potentially inappropriate prescribing in older people: Version 2. *Age and Ageing*, **44**(2), 213–218. https://doi.org/10.1093/ageing/afu145.

Panneman, M. J. M., Goettsch, W. G., Kramarz, P., & Herings, R. M. C. (2003). The costs of benzodiazepine-associated hospital-treated fall Injuries in the EU: A Pharmo study. *Drugs & Aging*, **20**(11), 833–839. https://doi.org/10.2165/00002512-200320110-00004.

Pentzek, M., Baumgart, V., & Hegerath, F.-M. (2022). Survey participation among general practitioners: Comparison between teaching physicians and a random sample. *BMC Research Notes*, **15**(1), 9. https://doi.org/10.1186/s13104-021-05895-z.

Pimlott, N. J. G., Hux, J. E., Wilson, L. M., Kahan, M., Li, C., & Rosser, W. W. (2003). Educating physicians to reduce benzodiazepine use by elderly patients: A randomized controlled trial. *CMAJ: Canadian Medical Association Journal*, **168**(7), 835–839.

Pollmann, A. S., Murphy, A. L., Bergman, J. C., & Gardner, D. M. (2015). Deprescribing benzodiazepines and Z-drugs in community-dwelling adults: A scoping review. *BMC Pharmacology & Toxicology*, **16**, 19. https://doi.org/10.1186/s40360-015-0019-8.

Proctor, E., Silmere, H., Raghavan, R., Hovmand, P., Aarons, G., Bunger, A., et al. (2011). Outcomes for implementation research: Conceptual distinctions, measurement challenges, and research agenda. *Administration and Policy in Mental Health*, **38**(2), 65–76. https://doi.org/10.1007/s10488-010-0319-7.

Qaseem, A., Kansagara, D., Forciea, M. A., Cooke, M., Denberg, T. D., & Clinical Guidelines Committee of the American College of Physicians. (2016). Management of chronic insomnia disorder in adults: A clinical practice guideline from the American College of Physicians. *Annals of Internal Medicine*, **165**(2), 125–133. https://doi.org/10.7326/M15-2175

Rasmussen, A. F., Poulsen, S. S., Oldenburg, L. I. K., & Vermehren, C. (2021). The barriers and facilitators of different stakeholders when deprescribing benzodiazepine receptor agonists in older patients—A systematic review. *Metabolites*, **11**(4), 254. https://doi.org/10.3390/metabo11040254.

Reeve, E., Ong, M., Wu, A., Jansen, J., Petrovic, M., & Gnjidic, D. (2017). A systematic review of interventions to deprescribe benzodiazepines and other hypnotics among older people. *European Journal of Clinical Pharmacology*, **73**(8), 927–935. https://doi.org/10.1007/s00228-017-2257-8.

Roth, T., Eklov, S. D., Drake, C. L., & Verster, J. C. (2014). Meta-analysis of on-the-road experimental studies of hypnotics: Effects of time after intake, dose, and half-life. *Traffic Injury Prevention*, **15**(5), 439–445. https://doi.org/10.1080/15389588.2013.830211.

Sekhon, M., Cartwright, M., & Francis, J. J. (2017). Acceptability of healthcare interventions: An overview of reviews and development of a theoretical framework. *BMC Health Services Research*, **17**(1), 88. https://doi.org/10.1186/s12913-017-2031-8.

Sharma, A., Minh Duc, N. T., Luu Lam Thang, T., Nam, N. H., Ng, S. J., Abbas, K. S., et al. (2021). A consensus-based checklist for reporting of survey studies (CROSS). *Journal of General Internal Medicine*, **36**(10), 3179–3187. https://doi.org/10.1007/s11606-021-06737-1.

Shaw, J., Murphy, A. L., Turner, J. P., Gardner, D. M., Silvius, J. L., Bouck, Z., et al. (2019). Policies for deprescribing: An international scan of intended and unintended outcomes of limiting sedative-hypnotic use in community-dwelling older adults. *Healthcare Policy*, **14**(4), 39–51. https://doi.org/10.12927/hcpol.2019.25857.

Sirdifield, C., Anthierens, S., Creupelandt, H., Chipchase, S. Y., Christiaens, T., & Siriwardena, A. N. (2013). General practitioners' experiences and perceptions of benzodiazepine prescribing: Systematic review and meta-synthesis. *BMC Family Practice*, **14**, 191. https://doi.org/10.1186/1471-2296-14-191.

Sleepwell | It's no dream. Sleep well without sleeping pills. (2023). Retrieved April 11, 2023, from Sleepwell website: https://mysleepwell.ca/

Smink, B. E., Egberts, A. C., Lusthof, K. J., Uges, D. R., & de Gier, J. J. (2010). The relationship between benzodiazepine use and traffic accidents: A systematic literature review. *CNS Drugs*, **24**(8), 639–653. https://doi.org/10.2165/11533170-000000000-00000.

So, R., Shinohara, K., Aoki, T., Tsujimoto, Y., Suganuma, A. M., & Furukawa, T. A. (2018). Effect of recruitment methods on response rate in a web-based study for primary care physicians: Factorial randomized controlled trial. *Journal of Medical Internet Research*, **20**(2), e28. https://doi.org/10.2196/jmir.8561.

Sun, G.-Q., Zhang, L., Zhang, L.-N., Wu, Z., & Hu, D.-F. (2019). Benzodiazepines or related drugs and risk of pneumonia: A systematic review and meta-analysis. *International Journal of Geriatric Psychiatry*, **34**(4), 513–521. https://doi.org/10.1002/gps.5048.

Sylvestre, M. P., Abrahamowicz, M., Capek, R., & Tamblyn, R. (2012). Assessing the cumulative effects of exposure to selected benzodiazepines on the risk of fall-related injuries in the elderly. *International Psychogeriatrics/IPA*, **24**(4), 577–586. https://doi.org/10.1017/S1041610211002031.

Tannenbaum, C., Martin, P., Tamblyn, R., Benedetti, A., & Ahmed, S. (2014). Reduction of inappropriate benzodiazepine prescriptions among older adults through direct patient education: The EMPOWER cluster randomized trial. *JAMA Internal Medicine*, **174**(6), 890–898. https://doi.org/10.1001/jamainternmed.2014.949.

van Poelgeest, E. P., Seppala, L. J., Lee, J. M., Bahat, G., Ilhan, B., Lavan, A. H., et al. (2022). Deprescribing practices, habits and attitudes of geriatricians and geriatricians-in-training across Europe: A large web-based survey. *European Geriatric Medicine*, **13**(6), 1455–1466. https://doi.org/10.1007/s41999-022-00702-9.

Vicens, C., Leiva, A., Bejarano, F., Sempere-Verdú, E., Rodríguez-Rincón, R. M., Fiol, F., et al. (2022). Evaluation of a multicomponent intervention consisting of education and feedback to reduce benzodiazepine prescriptions by general practitioners: The BENZORED hybrid type 1 cluster randomized controlled trial. *PLoS Medicine*, **19**(5), e1003983. https://doi.org/10.1371/journal.pmed.1003983.

Zhang, Y. Z., Turner, J. P., Martin, P., & Tannenbaum, C. (2018). Does a consumer-targeted deprescribing intervention compromise patient-healthcare provider trust? *Pharmacy*, **6**(2), 31. https://doi.org/10.3390/pharmacy6020031.