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Older Primary Care Patients' Willingness to Consider Discontinuation of Chronic Benzodiazepines

Joan M. Cook[1,2], **Tatyana Biyanova**[1,2], **Richard Thompson**[3,4], and **James C. Coyne**[5]

1*Columbia University*

2*New York State Psychiatric Institute*

3*Juvenile Protective Association*

4*University of Illinois at Chicago*

5*University of Pennsylvania*

Abstract

Objective—To examine factors related to older primary care patients' willingness to consider tapering/discontinuation of long-term benzodiazepine use.

Method—Forty-six long-term anxiolytic benzodiazepine users, aged 61-95 years, were assessed over the telephone using a semi-structured qualitative interview and standardized self-report questionnaires for anxiety (Beck Anxiety Inventory), sleep quality (Pittsburgh Sleep Quality Index), depression (Center for Epidemiological Studies Depression Scale), psychological dependence on benzodiazepines (Severity of Dependence Scale) and anxiety sensitivity (Anxiety Sensitivity Index).

Results—Frequency of daily benzodiazepine intake and anxiety sensitivity significantly contributed to willingness to attempt taper/discontinue benzodiazepines.

Conclusion—Many older long-term benzodiazepine users and their physicians perceive tapering of use an arduous, low priority, time intensive task. These findings highlight factors that can help identify a subpopulation of patients who may be easier to engage in the discontinuation process.

Keywords

Benzodiazepine; Anxiolytic; Anxiety; Discontinuation

1. Introduction

Benzodiazepine use in older adults has been associated with numerous deleterious side effects including impairment in activities of daily living, motor vehicle crashes, and problems with gait [1-5]. Expert recommendations explicitly caution against prolonged benzodiazepine use by older individuals and advise that use is justified only if it is intermittent, brief and for purposes of symptom relief [6-7]. However the rates of use in community-residing elders remain high, with as many as 20% currently taking a benzodiazepine on a regular basis [8].

Corresponding author: Joan M. Cook, Ph.D., Columbia University, New York State Psychiatric Institute, 1051 Riverside Drive, #69, New York, NY 10032; E-mail: jc2676@columbia.edu; Phone: 212-543-5241; Fax: 212-543-6515

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The most commonly stated reasons for benzodiazepine usage in older adults are anxiety and insomnia [9,10], despite a variety of alternative, efficacious and relatively safe treatments for those conditions being available.

One prominent reason for the persistence of this public health problem is a lack of acceptance from physicians and patients that long-term use of benzodiazepine is potentially problematic or an important clinical focus relative to competing medical issues that are given a higher priority. Many primary care physicians either do not believe that it is necessary to taper/discontinue their older adults from benzodiazepines or are pessimistic about the likelihood of success of this endeavor [11]. Additionally, physicians' limited time, competing demands, overestimation of patients' resistance and misguided empathy for older individuals further mitigate against addressing chronic use or suggesting taper or withdrawal [11].

Examination of recruitment and retention rates for randomized controlled trials examining psychotherapy for benzodiazepine discontinuation, suggest many patients are unlikely to accept taper/discontinuation as an option. For example, in a cognitive-behavioral therapy discontinuation trial among older insomniac adults, 505 patients were assessed for eligibility, and 440 were excluded for various reasons (i.e., 161 did not meet exclusion criteria, 114 refused to participate and 165 were excluded for "other" reasons), resulting in only 65 randomized to treatment in what thus became an underpowered study [12]. Other investigators have also reported that many chronic benzodiazepine users refuse to consider withdrawal programs [13-18]. Older chronic patients' long-term use of benzodiazepines, coupled with their lack of recognition or minimization of side effects and fears of being left suffering without these medications understandably make taper/discontinuation seem an insurmountable task [9].

The objective of this study was to identify patient characteristics of long-term older adult anxiolytic benzodiazepine users which distinguish those who might be suitable candidates for taper or discontinuation versus those who are likely to refuse. Specification of such a target group is especially important, since one of the reasons underlying physicians' resistance to offer taper to their older adult patients is the risk of negatively impacting their therapeutic relationship and having patients leave their practice [11].

In previous studies examining patients' willingness to taper or discontinuation, several predictors of refusal emerged: amount (potency) of daily benzodiazepine intake [16], age [17], lower education and longer benzodiazepine half-life [18]. Additionally, those who refused were viewed by their physicians as more complaining, harder to satisfy, and less co-operative [18].

Pharmacological options for taper/discontinuation from benzodiazepines may involve gradual dose tapering, medication switching and/or medication augmentation. Although these methods have been found to be efficacious in clinical trials, adjuvant psychosocial interventions ranging from support via a brief physician consultation or letter to more comprehensive psychotherapy programs are also often needed. In randomized controlled psychotherapy trials for benzodiazepine discontinuation, one variable, anxiety sensitivity (AS) or the fear of anxiety symptoms, appears to be the best predictor of achieving [19] and maintaining abstinence for up to five years [20]. Indeed, in a review of cognitive-behavioral approaches and supportive medical management for discontinuation of benzodiazepines in panic disordered patients, Spiegel [21] concluded that anxiety sensitivity correctly classified between 79% and 85% of the outcomes in success/failure of benzodiazepine discontinuation. There were no alternative medications used to assist in discontinuation of these studies.

2. Methods

This study was part of larger investigation of the long-term use of benzodiazepines in older adults from the point of view of the patients who use them and their prescribing physicians. Thirty-three primary care physicians were recruited from the Philadelphia, Pennsylvania area through postal mailings, word-of-mouth, and phone solicitations with deliberate efforts to diversify experience level and practice setting. They were interviewed separately regarding their benzodiazepine prescription practices and their perspectives are described elsewhere [11].

Participating physicians were asked to refer their patients for possible study inclusion if the patient was: 1) over the age of 60, and 2) currently taking an anxiolytic benzodiazepine on a regular basis for a minimum of a three-month period. Physicians provided a total of 223 patient referrals, of which, we were able to contact 163. Of these, 67 refused to participate and 46 did not qualify for study inclusion either because they never started taking the benzodiazepine, had stopped using it prior to the study, or did not use it regularly. A total of 50 patients met eligibility criteria. Four individuals choose to decline further participation after completing the qualitative interview; 46 completed the quantitative and qualitative interviews and are reported here. There were no differences in age or gender between the study participants and non-participants. Additionally, there was a modest but not statistically significant age difference, with the refusers slightly older (M = 73, SD = 5.41) than participants (M = 70, SD = 5.63); there were no gender differences between refusers and participants

Interviews were conducted by trained female interviewers using an open-ended semi-structured guide and standardized psychiatric questionnaires in audio-taped telephone contacts. After informed consent was obtained, the *Short Blessed Test* [22], a six-item, highly reliable, widely used screening test of cognitive function, was administered. A score greater than 16 would have been reason for ineligibility, but none of the participants received such as score. Thus, all 46 participants proceeded with interview consisting of demographic data and benzodiazepine usage, followed by the qualitative interview and then the quantitative measures.

Qualitative Measure

A semi-structured open-ended interview was conducted which included lines of questioning concerning patients' explanation for why they were taking the benzodiazepine, circumstances surrounding initial prescription and maintenance, knowledge and experience of potential side effects, psychological relationship to benzodiazepines, thoughts on taper-discontinuation, and interest in finding alternative strategies. Qualitative content analyses of patient perspectives are reported elsewhere [9].

There are a number of strategies for analyzing mixed-methods data including transforming one type of data into the other (i.e., "qualitizing" and "quantitizing") [23]. For study purposes, qualitative data were converted into one quantitative measure, the main variable of interest, a dichotomous "willingness to attempt taper/discontinue" item. If, during the qualitative interview, patients verbally expressed any willingness to attempt taper/discontinuation or if they attempted tapering in the past, patients were classified positive for this variable. Similarly, patients were classified as unwilling if they verbally expressed that they never attempted to taper in the past or verbally expressed or clearly implied their refusal to attempt taper/discontinuation. Two investigators (JMC and TB) independently rated this variable for each patient. In the few instances of disagreements, the scoring of this variable was resolved by consensus. Fifteen patients (33%) were rated as willing to consider taper/discontinuation, while 31 were rated as unwilling.

Quantitative Measures

Standardized questionnaires were selected on the basis of demonstrated reliability and validity, particularly in older adults. The *Center for Epidemiological Studies Depression Scale* (CES-D) [24] was used to assess severity of depressive symptoms. The *Beck Anxiety Inventory* (BAI) [25] assessed severity of anxiety symptoms. The *Pittsburgh Sleep Quality Index* (PSQI) [26] assessed sleep quality and disturbances. Psychological dependence on benzodiazepines was measured with a modification of the *Severity of Dependence Scale* (SDS) [27]. Although this scale was originally developed to assess dependence on illicit drugs, minimal modification of the wording of items provided a reliable and valid screening for benzodiazepine dependence [28]. The *Anxiety Sensitivity Index* (ASI) [29] was used to measure sensitivity to anxiety.

Data Analytic Plan

The bivariate relationships were analyzed using chi-square tests for categorical independent variables, Mann-Whitney tests for ordinal independent variables, and independent samples *t*-tests for continuous independent variables. For multivariate analysis, logistic regression backward stepwise method with likelihood ratio as a removal criterion was used. This method started with the full model, and at each subsequent step excluded predictors least fitting the model. Variables which had significant bivariate relationship with willingness were included in the model. Other measures were entered for exploratory purposes as theoretically meaningful. The measure of severity of depressive symptoms, CES-D, was not included due to its high correlation with BAI and ASI, and the restriction on the number of potential predictors imposed by the limited sample size.

3. Results

The 46 participants produced quantitative data containing 2% missing values, which were imputed using expectation maximization algorithm. This imputed dataset was used for bivariate and multivariate analyses. All descriptive analyses were performed using the unimputed dataset.

Sample characteristics are presented in Table 1. The age of participants ranged from 61 to 95 years (M = 70.80, SD = 7.71). Women comprised the majority of the sample, with only two ethnic groups represented, Caucasians (80%) and African-Americans (20%). Only 9 (20%) used benzodiazepines less than one tablet daily. The rest used either one daily (N = 11; 24%), twice daily (N = 10; 22%), three to five daily (N = 12; 26%) or were unable to recall or unwilling to report their frequency of daily intake (N = 4; 8%). The mean potency of a full daily benzodiazepine intake (i.e., frequency of daily intake multiplied by potency of a single pill expressed in Diazepam units [30]) was 8.58 mg (SD = 7.59), with 22 (65%) using less than 10 mg a day and 13 (35%) using 10 mg or above. Most (N = 35; 75%) were prescribed anxiolytic benzodiazepines with high therapeutic potency.

Bivariate Analyses

Several demographic and psychiatric variables were used in bivariate analyses: Age; gender; educational level (high school or less, above high school); BAI; ASI; SDS; CES-D; and PSQI. Only a few of the variables showed significant associations with willingness to taper/discontinue benzodiazepines, i.e., education, daily frequency of benzodiazepine intake, anxiety symptoms and anxiety sensitivity (Table 2). Patients with higher educational level (above high school) were 3.67 times more likely to be willing to taper/discontinue. The “willing” took benzodiazepine less frequently as compared to those not willing to attempt taper/discontinuation; this group had significantly lower BAI scores compared to those who were not willing to attempt it (M = 4.47, SD = 4.79 compared to M = 10.10, SD = 9.87); and they

had significantly lower anxiety sensitivity scores (M = 9.27, SD= 6.35 compared to M = 15.42, SD = 10.77).

Multivariate Analyses

The final exploratory logistic regression model predicting willingness to taper/discontinue benzodiazepines was achieved in four steps (model $\chi^2 = 11.57$, $p < .01$). It included two variables: Frequency of daily benzodiazepine intake ($b = -.84$, $p < .05$), and ASI ($b = -.08$, $p < .05$). More frequent daily benzodiazepine intake (OR = .43; CI = 0.22-0.86) and higher ASI (OR = .92; CI = 0.85-1.00) were significantly associated with decreased likelihood of willingness to attempt taper/discontinue benzodiazepine use. The overall percentage of correctly classified cases equals 72%. The percentage of correctly classified as willing to attempt is lower (47%) than the percentage of those classified as not willing to attempt (84%). Thus, this model is much better at correctly predicting who will be unwilling to attempt taper/discontinue than who would agree.

4. Discussion

In a group of older long-term anxiolytic users, two variables, frequency of daily benzodiazepine intake and anxiety sensitivity, distinguished between those who were willing to consider taper/discontinuation and those who refused. Those refusing taper/discontinuation were taking benzodiazepines more frequently and had higher anxiety sensitivity than those who stated they might be willing to consider tapering or discontinuing these medications. This model was better at predicting who was reluctant to consider taper/discontinue than who agreed.

Although limited, other data regarding predictors of discontinuation exist [16-18]. Higher daily benzodiazepine dosage was found to predict refusal to attempt withdrawal [17]. This variable is, in fact, a derivative of frequency (i.e., a product of a single dosage potency and frequency of daily intake). Additionally, both frequency and potency of daily intake emerged as the strongest predictor of short- and long-term discontinuation success/failure in several studies [31].

Our finding that higher anxiety sensitivity was associated with higher likelihood of refusal to taper/discontinue is consistent with previous psychotherapy discontinuation trials showing that anxiety sensitivity significantly predicted who was able to discontinue and maintain abstinence from benzodiazepines [19,20]. This model is consistent with “moderator” models, described by Stewart and Kushner [32] in their review of the relationship between anxiety sensitivity and substance misuse, i.e., high anxiety sensitivity individuals being more sensitive to the soothing effect of substances learn to use substances to self-medicate. It is also likely that these individuals would also use substances more frequently to avoid even a minor withdrawal reaction. Thus, the high anxiety sensitivity participants in this study, who also had higher daily benzodiazepine intake, were more motivated to continue their benzodiazepine use.

Perhaps more than a yes/no dichotomy, willingness to taper/discontinue can be a viewed as a continuum from adamant refusal/inability to taper to past difficulty to taper/current refusal to willing to attempt. Future studies might try to elucidate this continuum as well as its potential predictors. Certain personality traits (i.e., neuroticism, dependency, obssessional characteristics), and more severe anxiety and depression have been associated with higher relapse rates and are worthy of future investigation [34-36].

Although higher educational level was associated with willingness to taper/discontinue in bivariate analyses, it was not a significant predictor in multivariate analyses. One area of future investigation and a potential indication of this finding is that the chronic stress exposure in low socioeconomic individuals makes discontinuation problematic.

The main limitation of this investigation is the relative small sample size that was obtained from a larger recruitment effort. In some respects, this problem can be seen as mirroring the larger problem of engaging elderly long-time users of benzodiazepine in discussions of this sensitive topic, as seen also in the difficulty enrolling them in adequate numbers for clinical trials involving tapering or discontinuation. However, this study was part of a mixed-method investigation, where the goal was an in-depth characterization of the patients sampled, not broad statistical generalization to the larger population of long-term users. Other medication use, including antidepressants, was not assessed as part of this investigation. It would be interesting in future studies to examine older patients' use of benzodiazepines in combination with other psychotropic medications.

Due to the small sample size and cross-sectional design, it is possible that anxiety sensitivity may be a consequence of long-term benzodiazepine reliance; in other words, those dependent on benzodiazepines report higher sensitivity due to experience of withdrawal. In a larger sample with more sophisticated structural equation modeling, complex relationships with potential causal inferences could be more clearly elucidated. The findings from this study are likely best generalized to the primary care population of predominately Caucasian female older long-term anxiolytic benzodiazepine users, who were originally treated with benzodiazepines for anxiety and problematic sleep patterns. Findings would need to be replicated on patients taking hypnotic benzodiazepines, those from various ethnic groups and population-based users before more broad based generalizations could be made. Lastly, patients were referred by physicians. Thus this sample may not be comparable to other population-based data on long-term benzodiazepine use.

Of course, not all long-term benzodiazepine use in the elderly is problematic or represents substance misuse. However, there is limited evidence suggesting the long-term efficacy in only two specific diagnostic groups: panic disorder and social phobia [37], and the prevalence of these specific disorders among those who are long-term users is relatively low [38]. In fact, many community-residing older long-term benzodiazepine users do not have any diagnosable mental health problem [38]. Clearly, long-term benzodiazepine use in older adults is a public health priority worthy of further investigation.

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Table 1

Descriptive Characteristics

Categories	N	M (SD) or %
Demographic Variables		
Age in years	46	70.8 (7.71)
Gender	46	100.0%
Female	8	82.6%
Male	38	17.4%
Ethnicity	46	100.0%
Caucasian	37	80.4%
African-American	9	19.6%
Marital status	46	100.0%
Married	20	43.5%
Widowed	16	34.8%
Never married	4	8.7%
Divorced	4	8.7%
Separated	2	4.3%
Household income	39	100.0%
≤$20,000	20	51.3%
$20,001-$50,000	12	30.8%
>$50,000	7	17.9%
Employment	46	100.0%
Retired	37	80.4%
Part-time	7	15.2%
Disabled	2	4.3%
Education	46	100.0%
High School or less	28	60.9%
Above High School	18	39.1%
Outcome Variable		
Willingness to attempt taper/discontinue	46	100.0%
Yes	15	32.6%
No	31	67.4%
Characteristics of Benzodiazepine and Intake		
Frequency of daily benzodiazepine intake	42	100.0%
< 1 daily	9	21.4%
1 daily	11	26.2%
up to 2 daily	10	23.8%
3-5 daily	12	28.6%
Daily benzodiazepine intake (mg)	35	100.0%
Less than 10 mg	22	64.7%
10 mg or more	13	35.3%
Benzodiazepine elimination half-life	45	100.0 %
Short	32	71.1%
Long	11	24.4%
Both	2	4.4%
Benzodiazepine potency	45	100.0%
Low	6	13.3%
High	35	77.8%
Both	4	8.9%
Duration of intake	44	100.0%
8 year or less	20	45.5%
More than 8 year	24	54.5%
Primary reason given for initiating benzodiazepine treatment	46	100.0%
Anxiety	20	43.5%
Insomnia	16	34.7%
Bereavement	5	10.9%
Panic attacks	3	6.5%
Depression	1	2.2%
Pain	1	2.2%

Table 2

Univariate Predictors of Willingness to Taper/Discontinue Benzodiazepine Treatment

Variable	Willing: M (SD) or % (N)	Unwilling: M (SD) or % (N)	Statistical test
Education			
High School or less	13.0	47.8	$\chi^2 = 4.07^*$
Above High School	19.6	19.6	$L\chi^2 = 4.04^*$
Frequency			
Less than one daily	15.2	8.7	$U = 131.00^*$
One daily	6.5	19.6	
Up to two daily	8.7	15.2	
Three to five daily	2.2	23.9	
ASI	9.3 (6.4)	15.4 ((10.8)	$t = 2.43^*$ (42.06)
BAI	4.5 (4.8)	10.1 (9.9)	$t = 2.60^*$ (43.98)
CESD	10.6 (9.7)	13.5 (11.1)	$t = .86$ (44)
PSQI	6.2 (3.9)	6.9 (3.7)	$t = .59$ (44)
SDS	5.6 (1.8)	5.5 (2.5)	$t = -.10$ (44)

Note. Willingness = willingness to attempt taper/discontinue benzodiazepine treatment; Education = level of education; Frequency = frequency of daily benzodiazepine intake; ASI = Anxiety Sensitivity Index; BAI = Beck Anxiety Inventory; CESD = The Center for Epidemiological Studies Depression Scale; PSQI = Pittsburgh Sleep Quality Index; SDS = Severity of Dependence Scale.

* $p < .05$.