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RESEARCH PAPER

The Benzodiazepine Dependence Questionnaire (BDEPQ): Development of a brief version and validation of a French adaptation

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Abstract
Context: Benzodiazepines (BZDs) are the most widely-used pharmaceutical treatment for anxiety and insomnia. While effective for short term protocols, their risk—benefit tradeoff for long-term protocols should be considered with caution. Similar to alcohol, these substances

Abbreviations: AGFI, Adjusted Goodness of Fit Index; ANSM, Agence Nationale de Sécurité du Médicament et des produits de santé; AUC, Area Under the Curve; BDEPQ, Benzodiazepine Dependence Questionnaire; BDEPQ-Fr, French version of Benzodiazepine Dependence Questionnaire; BENDEP-SRQ, Benzodiazepine Dependence Self-Report Questionnaire; BUD, Benzodiazepine Use Disorder; BZDs, Benzodiazepines; CADTH, Canada's Drug Agency; CFA, Confirmatory factor analyses; CFI, Comparative Fit Index; DSM-5, Diagnostic and Statistical Manual of Mental Disorders version 5; ECAB, Benzodiazepine Cognitive Attachment Scale; EFA, Exploratory Factor Analyses; GFI, Goodness of Fit Index; HAS, Haute Autorité de Santé française; IFI, Boellen's Incremental Fit Index; ITC, Item-Total Correlations; KMO, Kaiser-Meyer-Olkin; MAAS, Mindful Attention Awareness Scale; NICE, National Institute for Health and Care Excellence; NNFI, Non-Normed Fit Index; RMSEA, Root Mean Squared Error of Approximation; SDS, Severity of Dependance Scale; SRMR, Standardized Root Mean Square Residual

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act on the GABA system, and are known to result in rapid tolerance, (sometimes intense) withdrawal syndromes, and fast dependence. Long-term consumption aggravates sleep disorders and anxiety, and increases the risk of accidents. Both the French and the Swiss are high users of BZDs. It is estimated that between 2—5% of adults take them for longer than recommended. Commercialized since the 1970s, there is still no freely available French-language questionnaire assessing dependence.

Aim/Purpose: The principal objective of this study was to empirically assess the original Benzodiazepine Dependence Questionnaire (BDEPQ) of 30 items, as well as a herein developed abridged version of 11 items, the BDEPQ-11 specific to sleep use. As the abridged version is of practical length, was found efficient, and likewise does not require the purchase of a license, it is appreciable for clinical applications and research, and serves the interest of public health. These two scales were empirically assessed respective to their adaptation to the French language, currently observed as the 5th most-spoken language in the world.

Method: The process of scale adaptation followed the important norms established by Guillemin et al. (1993): translation, back-translation, committee review, and pre-testing. A large sample of n = 531 participants who have been taking BZDs since at least 12 months were recruited and responded to the questionnaire, along with other scales in order to assess the adaptation's convergent and divergent validity. Clinical diagnoses of BZD dependence were also available for a subset of the sample, n = 165 by which discriminability of the scale for distinguishing severe dependance could also be assessed.

Result: Both the full-length and brief versions of the French-adapted BDEPQ satisfied the confirmatory factor analysis norms, and in which the brief version surpassed the original. The two versions also displayed appropriate convergent and divergent validity results with other scales. However, in regard to the exploratory factor analysis norms and correspondence with clinical diagnoses from professionals, only the brief version excelled, especially with regard to its subscale that quantifies BZD drug tolerance and misuse.

Discussion: French is an official language in more than 25 countries and the availability of this adaptation responds to a growing clinical and research need regarding BZD dependence, as well as for important cross-cultural research. In both English and French, few scales on BZD dependence apart from the BDEPQ are available and freely available to practitioners. Future research may consider innovating a modernized full-length version that is well-grounded in the statistical analyses available today, such as those that were utilized in the current work.

Introduction

Benzodiazepines and related drugs (BZDs) are substances prescribed to reduce sleep disturbances through a sedative action by enhancing γ-aminobutyric acid (GABA), the most important inhibitory neurotransmitter (Buscemi et al., 2007). They are also given to reduce anxiety and stop panic attacks (Slee et al., 2019), to relax muscles, and to interrupt seizures. BZDs have been well-recognized for their efficiency in relieving such symptoms (Nardi & Quagliato, 2022; Silberman et al., 2021) as well as for their rapidity in which they take effect (Edinoff et al., 2021). However, BZDs unfortunately also induce problematic health risks, depending notably on the dosage and duration of use (Baldwin et al., 2013; Department of Health & Human Services, 2014), expressed principally through dependence. Dependence can be embodied psychologically by impaired control over the use of the substance and physically by the development of tolerance and withdrawal symptoms (WHO, 1994).

The use of BZDs can be considered widespread and arguably, problematically excessive, on an international scale. It has been identified that 13% of the adult population has consumed a BZD at least once over the past year in France (Haute Autorité de Santé, 2017); as well as 13% in the United States (Tardelli et al., 2019), and 11% in Switzerland (Landolt et al., 2021). Several researches suggest that between 2 and 5% of the general population misuse BZDs either by exceeding the recommended dosage or the duration of use as longer than 6 months (Kurko et al., 2015; Neutel, 2005; Olfson et al., 2015). For example, in 2012, a proportion of 2.2% of the US population, or more than 7 million people, were identified as abusing BZDs (Votaw et al., 2019). Regrettably, the problem is gaining in size, as different data have demonstrated that the number of BZD prescriptions, as well as prescribed doses, have multiplied over the last 20 years (Sofia et al., 2019). For example, the number of people receiving at least one BZD prescription per year increased by 67% between 1996 and 2013 in the USA, and the average dose of BZDs prescribed tripled during this period (Bachhuber et al., 2016). In line with these findings, it was furthermore observed that deaths from benzodiazepine overdose increased by more than 400%, and visits to emergency centers for benzodiazepine prescriptions increased by more than 300% between 2004 and 2011 (Bachhuber et al.). Moreover, the proportion of drivers involved in accidents who have taken benzodi-

azepines has been increasing over the past 10 years (Orriols et al., 2019). Altogether, these data attest to the urgent need to measure and survey the proportion of the population dependent on BZDs, and not just in English-speaking countries, for which the current paper provides the necessary measurement validation, usable notably in countries such as France, Canada, Switzerland, Nigeria, Congo, and others in Africa. In 2022, a worldwide total of 321 million French speakers was estimated by the Observatoire Démographique et Statistique de l'Espace Francophone.

In light of the aforementioned data, the prescription and use of benzodiazepines have been justifiably criticized for over 30 years (Janhsen et al., 2015). Starting with the short term use risks, the use of hypnotics increases daytime sleepiness and consequently the risk of road accidents (Gustavsen et al., 2008). More completely, adverse effects associated with BZDs include muscle weakness, loss of coordination and balance, dizziness, confusion, slurred speech, problems forming new memories, and even full anterograde amnesia (Pariente et al., 2016). In addition, physiological tolerance to these products develops rapidly, leading to physical and psychological dependence that contributes to chronic use. In this way, long-term use of these drugs can lead to changes in sleep physiology (reduction in deep slow-wave sleep, Winkler et al., 2014), and learning and concentration disorders (particularly at high doses: a reduction in attentional resources and impairment of verbal and visuospatial memory, working memory, and executive functions, Barker et al., 2004). In the elderly, a particularly vulnerable population, prolonged benzodiazepine use is known to increase the risk of falls and hip fractures, road accidents, cognitive decline, and mortality (Marra et al., 2015; Reeve et al., 2017). In view of the prevalence of drug use, side-effects, and recommendations from notable health authorities (Ajayi, 2008; CADTH, 2015; HAS, 2017; NICE, 2007), in the interest of the general population's wellness, we reiterate the essential need to validate tools for assessing BZD dependence with an appropriate diagnostic scale. According to the Agence Nationale de Sécurité du Médicament et des Produits de Santé, in 2015, France ranked third in Europe for hypnotic consumption (46.1 million boxes sold) and second for anxiolytic consumption (64.6 million boxes sold).

Given the prevalence of the matter and the associated concerns, as attested in the previous works cited, clinical psychologists may regularly encounter patients who present a BZD dependency. The therapeutic objective in this case is often two-fold: addressing the affective and/or sleep disorder as well as the BZD dependency. In respect to cognitive and behavioral therapy (CBT), the consideration of Benzodiazepine Use Disorder (BUD) and dependence is well-recognized in the literature. In fact, three principal approaches to reducing BZD dependence can be recognized: brief intervention, substitution medication, and CBT (for review, see Chapoutot et al., under review). CBT has received the highest level of evidence for its efficacy in BZD cessation in general (Chapoutot et al., 2021), as well as in the context of conditions that drive heavy BZD use, such as anxiety (Carpenter et al., 2018) and insomnia (Trauer et al., 2015). Therefore, the validation of a reliable scale for measuring BZD dependence and aiding diagnosis, presents an important development for both CBT practitioners and researchers.

However, despite the evident need for a validated *diagnostic* scale for BZD dependance in French, no such scale is currently available. Rather, only two alternative scales exist: one which measures only the cognitive dimension of dependence, the ECAB (Échelle Cognitive d'Attachement aux Benzodiazépines), a self-administered questionnaire (Pélissolo & Naja, 1996), possessing only 10 items and typically used in outpatient services (Pélissolo et al., 2007). And the other a more general scale not specifically created for BZDs, which focuses on measuring craving, the Severity of Dependence Scale (SDS), a brief 5-item self-administered questionnaire, validated in terms of sensitivity and specificity (Cuevas et al., 2000), and adapted to French by Chapoutot et al. (2014).

In English, the Benzodiazepine Dependence Self-Report Questionnaire (BENDEP-SRQ, Kan et al., 1999) comprises 20 items divided into four subscales: problematic use of BZD, preoccupations related to obtaining BZD, lack of compliance, and withdrawal symptoms. This questionnaire has good psychometric properties, but is not free to use. In contrast, our intent was to validate a scale that is freely accessible to any clinician or researcher. The Benzodiazepine Dependence Questionnaire (BDEPQ, Baillie & Mattick, 1996) was the first diagnostic scale developed to assess BZD dependence and is still the most widely used, as well as free (making it the most natural choice for an adaptation in French). This self-administered questionnaire is composed of 30 items that are organized into 3 subscales: general dependence, pleasant effects, and perceived need. Each item is rated on a 4-point Likert scale from 0 to 3, which allows for a possible total score of 90. A number of studies have found the BDEPQ to exhibit appropriate internal consistency, acceptable construct. Specifically, Baillie and Mattick (1996) identified two optimal threshold scores, 23 and 34, in their capacity to screen for BZD dependence. In addition, it was found that the questionnaire can not only predict dependence but also the severity of withdrawal syndromes (Baillie & Mattick, 1996). So far, the scale has been adapted in Spanish and tested on a Mexican population (Minaya et al., 2011), but no adaptation in French with a psychometric validation has been developed yet.

Therefore, the objective of the current work was to develop a French adaptation of the BDEPQ and rigorously evaluate its psychometric validity. It is worthwhile to note that the original BDEPQ paper only included 170 participants in the confirmatory analyses (Baillie & Mattick, 1996). The present work develops the French adaptation (BDEPQ-Fr) following the norms recounted by Guillemin et al. (1993): translation, back-translation, committee-review and pretesting, and performs rigorous statistical analyses to evaluate its psychometric validity on a larger French sample (n = 531), which also includes n = 165 patients with clinical diagnoses. Secondly, in order to provide a shorter, well-adapted tool for BZDs used as a sleep aid, an abridged version of the BDEPQ-Fr is also developed and assessed in comparison. Thirdly, it is important to note that the diagnosis of BZD dependence has evolved in recent psychiatric nosographies into Benzodiazepine Use Disorder (BUD). In light of the fact that the original BDEPQ cut-off points were

based on the diagnosis of benzodiazepine dependence in the 1990s, this work also sought to explore an appropriate pathological threshold for the herein proposed scale, with regard to the DSM-5 diagnostic criteria.

Methods

Scale adaptation norms

Following modern recommended methods in the scientific literature (Arafat et al., 2016; Guillemin et al., 1993) and taking into account also those by the World Health Organization (2018) accordingly, the present work was conducted in three stages:

Phase 1: Translation, back-translation, and committee review

A first translation was carried out by Ms. Wendy Leslie, psychologist and professional translator, then a back-translation was done by Ms. Francesca Meloni, psychologist. The meaning was adapted to French language cultural and linguistic specificities common in Switzerland and France. Then, in order to approve this version, Dr. Benjamin Putois, PhD in scientific psychology, clinical psychologist and CBT psychotherapist, and Ms. Mélinée Chapoutot, clinical psychologist as well as the author of this work assessed for the strengths, weaknesses and possible issues of the proposed translations.

Phase 2: Pre-testing, assessment of item comprehension and final version development

Participants rated their understanding of the approved French translation for each item of the questionnaire using a Likert scale ranging from 1, corresponding to ''the statement is not at all clear, I barely understand", to 7 as ''the statement is very clear, I fully understand". Then,averages and the quartiles of comprehension scores were calculated for each item. Specifically, the items for which the obtained average or upper quartile scores were less than 4 were modified in order to render them clearer. This process was repeated until all items exhibited comprehension measures of 4 or greater.

Phase 3: Psychometric validation of the BDEPQ-Fr and development of a brief version

The full-length BDEPQ-Fr was validated through examination of the conventional internal consistency scores (Cronbach α, McDonald's ω), confirmatory factor analyses (CFA), and convergent/divergent reliability through significance testing of correlation analyses (corrected for multiple comparisons) with pertinent scales. In the objective to propose a shortened version to facilitate usage in routine care or to provide a control measure in research practices (as 30 questions in the original BDEPQ may be considered too long in some contexts), a data-driven approach with exploratory factor analyses (EFA) and item-response statistics was used on the full BDEPQ-Fr in order to reduce the number of items in an empirically-founded manner. This resulted in a brief BDEQP-Fr version which was also subjected to all the previous analyses as the full-length, 30 item version.

Participants

Concerning *Phase 2: Pre-testing, assessment of item comprehension and final version development*, French, native-speaking participants were recruited from the general population to test the understanding of the questionnaire's translation.

Proceeding to *Phase 3: Psychometric validation*, participants were recruited in France and Switzerland, from May 2021 to July 2022, through the research program initiative BENZOSTOP, backed by the national research association for sleep research (namely, PROSOM: *Association nationale de Promotion des Connaissances sur le Sommeil*). BENZOSTOP is a 5-year research initiative aimed at better understanding how to reduce BZD consumption. The constituent research projects of this program received ethics approval from the research boards of both France and Switzerland, namely the *Comité de protection des personnes EST I* and the *Commission cantonale (VD) d'éthique de la recherche sur l'être humain* on 06/05/2021 and 25/11/2021 respectively. Furthermore, the present study is registered on Clinicaltrials.gov: ''Telepsychology for Benzodiazepines Withdrawal in Adults Suffering From Hypnotic-dependent Insomnia", under the identifier NCT04751851. Registration for the study was open to individuals with sleep difficulties, wishing to stop BZDs and who had completed the BDEPQ-Fr. In addition, they had to be consumers of BZDs for at least 12 months (12 months represents the minimum duration established in the DSM-5 for Benzodiazepine use disorder [BUD]) with a frequency of consumption of more than 4 nights per week. Finally, participants who were taking BZDs for a different reason than sleep difficulties were also excluded.

Measures

Participants filled out four main questionnaires (acronyms BDEPQ, ECAB, SDS, and MAAS) detailed below, each concerning a variable of interest, as well as a questionnaire that allowed for assessing their inclusion eligibility based on their BZD consumption (diazepam equivalent, number of BZDs, reason of consumption). Demographic data (age, gender…) was also collected.

The *Benzodiazepine Dependence Questionnaire (BDEPQ)* has been shown to provide an accurate assessment of BZD dependence (Baillie & Mattick, 1996). The BDEPQ has items numbered from 1 to 25, but 5 of them are two-part questions, which results in 30 items total; and every item is responded to via a 4-point Likert scale from 0 to 3. These 5 two-part items consist of an initial question, followed by a conditional follow-up question (for example, noted as question '*10b*' for question '*10a*'). When the participant responds with a disqualifying response (e.g., not at all concerned), the response on the follow-up question (typically asking, the felt intensity of this concern or worry) is automatically considered the lowest on the scale. In previous research of the English version, the BDEPQ was validated in two samples: 187 BZD users were used to select 30 of the most correlated items and 51 putative items, and 170 BZD users were used to carry out an EFA highlighting three factors of the scale, namely: General dependence, Pleasant

effects, and Perceived need. Cronbach's α measure of internal reliability was high (0.9 total score, >0.8 for the subscales). This scale is a good predictor of the severity of the withdrawal syndrome. Criterion validity was validated on 88 users, the area under the ROC curve (AUC) statistic was 0.74.

The *Benzodiazepine Cognitive Attachment Scale* (*ECAB*) measures the cognitive component of dependence on BZDs using 10 items and a dichotomous true/false response (Pelissolo & Naja, 1996). It has only been validated in French and is therefore not yet available in English.

The *Severity of Dependance Scale (SDS)* was originally developed to assess the degree of dependence on different types of substances and therefore not solely BZDs, but was subsequently validated in terms of sensitivity and specificity as a brief self-administered questionnaire (5 items, 1—3 Likert) for screening for BZD dependence (De Cuevas et al., 2000). The French version has been validated (Chapoutot et al., 2014).

The *Mindful Attention Awareness Scale (MAAS)* consists of 15 items (1 to 6 Likert scale) that assess the ability to focus attention without judgment of the present moment (Brown & Ryan, 2003). This scale was chosen to assess divergent validity, with the assumption that BZD dependence and mindfulness should be negatively or otherwise weakly correlated. The scale has been validated in French (Jermann et al., 2009).

The Diagnostic and statistical manual of mental disorders 5 (DSM-5) p rovides for a clinical assessment of BUD, in which a diagnosis requires at least 2 of 11 criteria satisfied. Specifically, the disorder is considered mild if 2—3 criteria are met, moderate if 4—5 are present, and severe at 6 or more. During the participant interviews for inclusion eligibility in the BENZOSTOP research program, M. Chapoutot and B. Putois evaluated each participant along these DSM-5 criteria, with the standardized interview procedure.

Data analysis

The data were analyzed using Python, version 3.12 (Van Rossum & Drake, 2009), notably with the packages *scipy*, *statsmodels*, *factor-analyzer*, and *pingouin*: versions 1.0 (Virtanen et al., 2020), 0.14 (Seobold & Perktold, 2010), 0.5.1 (Biggs & Madnani, 2022; Persson & Khojasteh, 2021), and 0.5 (Vallat, 2018) respectively, as well as, the *lavaan* package version 0.6 (Rosseel, 2012) in R version 4.3.3 (R Core Team, 2021).

First, the following analyses were performed for the classic BDEPQ-Fr full version that contains 30 items divided into 3 subscales (hereafter BDEPQ-30), which were then used to derive (in a data-driven manner) an abridged version that resulted in 11 items (BDEPQ-11) appropriately organized into 4 subscales.

Construct validity

The conventional exploratory factor analyses (EFA) and confirmatory factor analyses (CFA) for evaluating construct validity were performed for the BDEPQ-30 and BDEPQ-11 as follows.

Exploratory Factor Analyses (EFA)

First, Bartlett's test of sphericity (significance preferred, Tobias & Carlson, 1969) and the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy (KMO $\geq$ 0.60 preferred, Dziuban & Shirkey, 1974) were evaluated to assess the appropriateness of performing factor analysis on the data. For the EFA, scree plot analysis was then used to ascertain the number of factors, based on the two standard rules, namely the Kaiser-Guttman rule (Kaiser, 1991), the number of eigenvalues above 1; and the ''Elbow" rule, identifying at which factor the eigenvalues descend linearly and slowly, suggesting mainly noise being fit thereafter (Hoyle & Duvall, 2004).

Confirmatory Factor Analyses (CFA)

Using the conventional CFA approaches recommended for scale validity evaluation purpose (Bandalos & Finney, 2018), the latent factor structure of the BDEPQ-30 and BDEPQ-11 were analyzed, and notably, with a sizable sample (n = 531) compared to previous studies only possessing 1/3 the amount. The subscales of the BDEPQ-30 and BDEPQ-11 were modeled according to their expected item memberships. The adequation of model fit was evaluated based on the adjustment indices defined by (Kline, 2010): $\chi 2/df$, the Comparative Fit Index CFI (Bentler, 1990); the Root Mean Squared Error of Approximation RMSEA (Steiger et al., 1985); and the Standardized Root Mean Square Residual SRMR (Hooper et al., 2008). The preferred values for these indices are as follows: (a) $\chi 2/df < 5$; (b) CFI > 0.90; (c) RMSEA < 0.10; (d) SRMR < 0.08 (Hu & Bentler, 1999). Finally, a repeated randomized participant 50—50 split procedure for the EFA and CFA was performed in order to verify that similar results would be obtained.

Reliability (internal consistency)

Reliability as per the internal consistency of the scale and subscales in the BDEPQ-30 and BDEPQ-11 were assessed via the Cronbach's alpha (α) and McDonald omega (ω) statistics. Values greater than 0.70 are considered to indicate appropriate internal consistency.

Convergent and divergent validity

The convergent validities of the BDEPQ-30 and BDEPQ-11 were evaluated by the examination of correlations between different measurement tools. Prior to calculating the Pearson's correlation coefficients, which assume normality, the data were normalized via the Yeo-Johnson transformation (Weisberg, 2001). Correlation coefficients $\geq$ 0.4 indicate a moderate correlation, which becomes strong when these coefficients are $\geq$ 0.7. The p-values of these correlations were corrected for multiple comparisons using the Bonferroni-Holm correction, and significance was accepted according to corrected p-values < 0.05.

Clinical validity based on patient diagnoses

The capacity of the BDEPQ-30 and BDEPQ-11 to signal a BZD dependence based on a clinical evaluation through a *DSM-5* interview was tested through the comparison of these scales

total scores (or subscale total scores) with the clinical diagnoses available for n = 165 of the study's participants. Of these 165 participants, 17 received a diagnosis of mild dependency, 49 moderate, and 99 severe. Due to class imbalance, light and moderate were grouped into one category (66 cases) and severe (99 cases). Then, a ROC analysis (Pintea & Moldovan, 2009; Yovanoff & Squires, 2006) was performed to examine which threshold for the BDEPQ-30 and BDEPQ-11 could optimally predict or distinguish between light-moderate and severe BZD dependance, based on the maximal AUC score.

Results

Phase 1: Translation and back-translation

The instructional prompt was adapted with a brief definition of BZDs and examples of those typically available in Swiss and French populations. Furthermore, a mistake in the instruction of the quotation of an item that should have been reversed was identified, corrected, and communicated to the author of the original version of the BDEPQ. In addition, we standardized for each item the term referring to BZDs by ''sedative/tranquilizer/sleeping pill" in order to avoid confusion for the reader. The approved version can be found in Supplementary data 1.

Phase 2: Pre-test

The pre-test sample consisted of 21 participants, mainly women (76.2%) and 28.6% of subjects who had already taken BZDs. The average age was 38.0 (±7.9) years. Each item obtained a mean of more than 6.0, and no item was rated at less than 5 in the first quartile. Consequently, each item in the French version of the BDEPQ demonstrates very good comprehension.

Phase 3: Psychometric validation

Participants

Of the 673 submissions received, 531 met our inclusion and exclusion criteria, including fully completing the BDEPQ-Fr. The average age was 69.5 (SD = 12.6) with an interquartile range of 18 years, and 70.0% of the participants were female. 36% were single, 21% married and the remainder in a common-law relationship. 28.4% had no children, 20.2% had one, 34.3% had two, 16.6% had three or more. The average duration of usage of benzodiazepines in the sample was 14.6 years (SD = 11.2). Only 5% of participants used benzodiazepines during 1.6 years or less, with a minimum at 1 year. 47.6% used BZDs only for sleep, 20.5% only for anxiety, 31.8% for both. 70.2% used one BZDS more than 4 days a week, 26.2% used two different BZDs, 3.5% used three different BZDs. 45.4% were extremely motivated to stop using BZDs, 39.5% very motivated, 12.1% moderately motivated, 2.9% a little motivated. 73.3% reported suffering from a mental disorder other than BUD.

Concerning the scales designated for the convergent and divergent validity analyses, out of the 531 participants who completed the BDEPQ-Fr, 531 also completed the SDS, 278 completed the ECAB and the MAAS and 165 completed the DSM-5 interview which provides the clinical diagnostic. Out of these 165 for which clinical diagnoses were available: 17 suffered from mild BUD, 49 suffered from moderate BUD and 99 suffered from severe BUD.

Exploratory Factor Analysis (EFA) Overview and evidence for a 4-Factor structure

The classic BDEPQ-30 proposes 3 subscales, and as such, one would expect three factors in the scree plot analysis from the responses of our n = 531 participants who filled out the questionnaire. However as shown in the scree plot analysis of the data in Fig. 1, both the Kaiser-Guttman and Elbow rules suggest the adequacy rather of a four-factor solution. This observation, culminated with others from additional factor and by-item analyses, guided our development of an abridged BDEPQ-11 item version. The EFA for both versions were performed using the minimal residual approach with the varimax rotation method (Osborne, 2015), which is known as one of the most orthogonal methods. For the EFA of both questionnaire versions, the factor loadings were examined to verify that the items loaded appropriately onto the expected factors (reflecting the respective subscales, each aimed to measure a common latent factor).

The BDEPQ-11 items version was primarily determined through a data-driven approach with the EFA (e.g., see Mirabelli et al., 2022) specified to a four-factor solution; results which were corroborated with item descriptive analyses (item-total correlations [ITC], floor/ceiling effects, and so forth, detailed later). Specifically, in a stepwise iterative process, the item with the weakest factor loading was removed up until all loadings were greater than or equal to 0.4. This resulted in 2 items in the General Dependence subscale, 3 in Pleasant Effects, 3 in Perceived Need, and 3 in a new subscale Drug Tolerance & Misuse. Details on which items were retained from the BDEPQ-30 and the nature of these questions are provided in Table 1. The EFA results of these items in a four-factor solution are provided in Table 2, and are summarized in the Results.

Confirmatory Factor Analysis (CFA) overview

Using the conventional CFA approaches that are recommended for this purpose (Bandalos & Finney, 2018), the latent factor structure of the BDEPQ-30 and BDEPQ-11 were analyzed, and notably with a robust sample (participants n = 531). The three subscales of the BDEPQ were modeled according to their expected membership. The adequation of model fit was evaluated based on the adjustment indices defined by Kline (2010): χ^2/df, the Comparative Fit Index (CFI, Bentler, 1990); the Root Mean Squared Error of Approximation (RMSEA, Steiger et al., 1985); and the Standardized Root Mean Square Residual (SRMR, Hooper et al., 2008). The preferred values for these indices are as follows: a) χ^2/df < 5; b) CFI > 0.90; c) RMSEA < . 10; d) SRMR < 0.08 (Hu & Bentler, 1999). Then, the item coefficients and the covariance between factors were examined. Item coefficients above 0.5 are considered acceptable, and covariances above 0.4 that are significant (p < 0.01) are considered to make a reasonable contribution to the model (Stevens, 2012). Finally, the R^2 values of each variable were analyzed to determine the reliability index of each observed variable as a measure of its latent variable. These values should be positive and tend toward 1 (Fabrigar & Wegener, 2011).

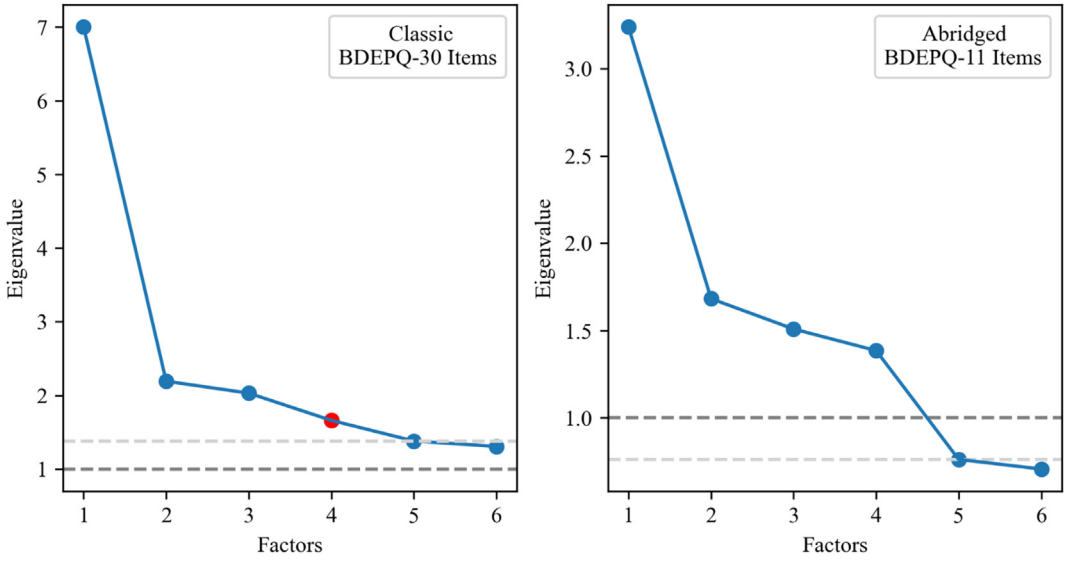

Fig. 1 Scree plot analysis for the latent number of factors in the classic BDEPQ-30 items and the proposed abridged BDEPQ-11 items, *n* = 531 participants. The dotted light gray line depicts the ''elbow" method where the factors begin to decrease linearly near the 5th factor. The dotted gray line depicts the Kaiser rule, for the number of latent factors as eigenvalues above one. According to these rules, the red dot on the left, above both of them, may suggest rather four factors for the classic scale adapted herein.

Table 1 Item Description of the Abridged BDEPQ-11 Item Version.

Items	
	General Dependence
10a	*Concerned doctor might not renew prescription of sedatives* Au cours du mois dernier, craigniez-vous que votre médecin ne continue pas à vous prescrire vos sédatifs/tranquillisants/somnifères?
10b	*Intensity of this concern* Quelle a été l'intensité de cette inquiétude?
Pleasant Effects	
2	*Past month, took sedatives because of how they feel* Avez-vous pris des sédatifs/tranquillisants/somnifères au cours du dernier mois parce que vous aimez l'effet qu'ils vous procurent?
18a	*Finds the effects of sedatives pleasant* Avez-vous trouvé les effets des sédatifs/tranquillisants/somnifères agréables?
18b	*Intensity of this pleasant feeling* Quelle est l'intensité de ce sentiment agréable?
Perceived Need	
3	*Past month, took another sedative because of its support* Au cours du dernier mois, avez-vous eu le sentiment que vous ne pouviez rien affronter qui sorte de l'ordinaire sans prendre un sédatif/tranquillisant/somnifère?
8	*Takes sedatives to better cope with problems in life* Avez-vous besoin de prendre des sédatifs/tranquillisants/somnifères pour faire face aux problèmes dans votre vie?
24	*Difficulty managing problems without sedatives* Je ne serais pas capable de gérer mes problèmes si je ne prends pas un sédatif/tranquillisant/somnifère.
Drug Tolerance & Misuse	
7	*Past month, taking more sedatives due to diminished effects* Au cours du dernier mois, avez-vous constaté que vous deviez prendre davantage de sédatifs/tranquillisants/somnifères pour obtenir le même effet par rapport à la période où vous les avez pris pour la première fois?
15	*Past month, taken sedatives against doctor's advice* Au cours du mois dernier, avez-vous pris des sédatifs/tranquillisants/somnifères contre l'avis de votre médecin ou plus fréquemment que la posologie conseillée?
17	*Took more sedatives than initially intended* Avez-vous pris plus de sédatifs/tranquillisants/somnifères en un jour ou une nuit que ce que vous aviez prévu?

Note: Italic text shows brief description in English, the full question in English is available in the original questionnaire.

Table 2 Retained Items of the BDEPQ-11 and their EFA Statistics.

Subscale	Item	General Dependence	Pleasant Effects	Perceived Need	Drug Tolerance
General Dependence					
	Q10a	0.91			
	Q10b	0.92			
Pleasant Effects					
	Q2		0.41		
	Q13a		0.92		
	Q13b		0.88		
Perceived Need					
	Q3			0.66	
	Q8			0.74	
	Q24			0.66	
Drug Tolerance & Misuse					
	Q7				0.43
	Q15				0.64
	Q17				0.80
SS Loadings		1.73	1.88	1.5	1.32
Explained Variance		14.0%	15.2%	12.4%	10.7%
n = 531 Participants			Total Explained Variance		**52.3**%

Note: n = 531; loadings below 0.35 are not shown. See Table S1 in the Supplementary Materials for the EFA results on the original 30-item BDEPQ.

Table 3 Confirmatory Factor Analysis (CFA) results for the BDEPQ-30 items and BDEPQ-11 items.

Indices	Classic BDEPQ-30 Items **Observed Value**	Abridged BDEPQ-11 Items **Observed Value**	**Acceptable Threshold**
Model χ^2/df	5.22	3.79	<5.0
CFI [1]	0.85	0.96	>0.90
IFI [2]	0.85	0.96	>0.90
NNFI [3]	0.84	0.94	>0.90
RMSEA [4]	0.09	0.07	<0.10
GFI [5]	0.92	0.99	>0.90
AGFI [6]	0.91	0.97	>0.90

Note:
[1] Comparative Fit Index;
[2] Boellen's Incremental Fit Index;
[3] Non-Normed Fit Index (also known as Tucker-Lewis Fit Index);[4] Root Mean Square Error of Approximation;[5] Goodness of Fit Index;
[6] Adjusted Goodness of Fit Index.

The conventional factor analyses for scale validation were performed on the 30-items of the classic BDEPQ (hereafter BDEPQ-30) and the 11 items of the BDEPQ-11, specifically Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA). First, the standard preliminary checks to ascertain the suitability of data for the factor analysis were performed. Specifically, the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) test was satisfied with a KMO = 0.81 for the BDEPQ-30 and KMO = 0.66 for the BDEPQ-11 (values $\geq$ 0.6 preferred) and the Bartlett's Test of Sphericity value was also satisfied for both scales, each with $p < 0.001$ ($p < 0.05$ preferred).

Exploratory Factor Analysis (EFA) results

After the scree plot verification of three principal factors, an EFA limited to a three-factor solution was applied to the BDEPQ-30. The three-factor solution explained 31.3% of the total variance, in which Factor 1, 2, and 3 respectively accounted for 11.6%, 10.0%, and 9.7%. Some inadequate performance could be noted respective to the individual items in the EFA. Specifically, three items in the 'General Dependence' subscale, Items 16, 20b, and 21, cross-loaded as having higher scores in the 'Perceived Need' subscale and vice-versa for Item 19. Items 6, 19, and 22 in 'General Dependence', had maximum factor loadings of only 0.16, 0.29, and 0.22 respectively, and Item 5 in 'Perceived Need' only 0.25. Furthermore, a number of item communalities were arguably too low as < 0.2, these were Items 6, 16, 19, 22, and 5. A detailed view of these EFA results on the BDEPQ-30 is available in Table S1 in the Supplementary Materials. Furthermore these observations, corroborated also by the item descriptive statistics available in Table S2 in the Supplementary Materials (e.g.,

problematic floor/ceiling effects, weak item-total correlations for certain items, Cronbach α improved by its deletion) confirmed the data-driven choices usage of the retained items in the abridged version, the BDEPQ-11.

In respect to the BDEPQ-11, as shown in Table 2, the four-factor solution robustly explained 52.3% of the total variance, in which items belonging to the General Dependence Factor accounted for 14.0% of this variance, Pleasant Effects 15.2%, Perceived Need 12.4%, and Drug Tolerance 10.7%. All items exhibited higher factor loadings in their expected factor (subscale) and all item communalities were ≥ 0.34.

Confirmatory Factor Analysis (CFA) results

As provided in Table 3, the BDEPQ-30 mainly satisfied the GFI and AGFI indices and was slightly below par for the other 5 out of the 7 indices for appropriate model fit. In contrast, the BDEPQ-11 strongly satisfied all 7 indices, which robustly supports appropriate coherence of the latent factor structure. In each of the model fit indices, the BDEPQ-11 outperformed the BDEPQ-30. Furthermore, it was found that for the BDEPQ-11, all of the standardized individual item coefficients were of appropriate magnitude, namely 0.5 or greater.

Scale reliability: Internal consistency

The Cronbach α and MacDonald ω measures for internal consistency were calculated for the BDEPQ-30 and BDEPQ-11. They are provided in the right part of Table 4. As shown, the BDEPQ-30 demonstrated acceptable measures of internal consistency with all α and ω > 0.7. The BDEPQ-11 also demonstrated for the Total score and all subscales, except with a weaker consistency for the fourth subscale, Drug Tolerance/Misuse at α = 0.64 and ω = 0.69. However, as this subscale is found to be associated with drug misuse against doctor's advice and pathological expression, and one's transparency about that, it is understandable that the consistency in responses is less homogeneous. This will be developed in the Discussion.

The left part of Table 4 provides the Pearson correlations between the BDEPQ-30 total score and the subscores for the three scales, General Dependency, Pleasant Effects, and Perceived Need. For the BDEPQ-30, the three subscales are strongly correlated with each other, with all Pearson r > 0.46, which may measure some overlapping qualities. In contrast, the BDEPQ-11 demonstrates for more distinct or orthogonal subscales in which all correlations are significantly lower at r < 0.28.

Scale convergent and divergent validity

The lower lines of Table 4 provide the Pearson correlations of the BDEPQ-30 and BDEPQ-11 with the other scales measured (in which n = 531 for correlations with the SDS, n = 278 for ECAB and MAAS, and n = 165 for the Clinical Diagnostic). In summary, both the BDEPQ-30 and BDEPQ-11 and its subscales were low to moderately positively correlated

Table 4 Pearson correlations between BDEPQ-30 or BDEPQ-11 scales and other variables measured (n = 531), as well as Cronbach α and MacDonald ω consistency measures.

	BDEPQ-30 Items						BDEPQ-11 Items						
Scales	**Total**	**Depend**	**Pleasant**	**Need**	**α**	**ω**	**Total**	**Depend**	**Pleasant**	**Need**	**Tolerance**	**α**	**ω**
Total					0.88	0.89						0.76	0.84
Depend	0.86***				0.78	0.83	0.62***					0.93	0.94
Pleasure	0.76***	0.48***			0.81	0.88	0.72***	0.18***				0.81	0.84
Need	0.79***	0.49***	0.47***		0.79	0.81	0.72***	0.20***	0.27***			0.75	0.76
Tolerance	–	–	–	–	–	–	0.31***	0.24***	0.19***	0.23***		0.64	0.69
SDS	0.48***	0.5***	0.25***	0.39***	0.68	0.73	0.30***	0.20***	0.10	0.30***	0.24***	0.68	0.73
ECAB	0.45***	0.42***	0.29***	0.38***	0.45	0.67	0.38***	0.24***	0.19***	0.34***	0.21***	0.45	0.67
MAAS	−0.26***	−0.26***	−0.07	−0.30**	0.90	0.91	−0.22***	−0.08	0.03	−0.31***	−0.22***	0.90	0.91
Clinical Diagnostic	0.09	0.16	−0.02	0.05	–	–	0.12	0.07	0.02	−0.03	0.34***	–	–

Note: *** $p \leq 0.001$, ** $p < 0.01$, * $p < 0.05$ based on two-tailed tests, all p-values corrected for multiple comparisons by the Holm-Bonferroni correction; n = 531 for all correlations up to the SDS, n = 278 for the ECAB and MAAS, and n = 165 for the clinical diagnostic.

with the Severity of Dependency Scale (SDS) and Cognitive Attachment to Benzodiazepines Scale (ECAB), and lowly negatively correlated with the Mindfulness Attachment Awareness Scale (MAAS). The two contrasts between the BDEPQ-30 and BDEPQ-11 are the following: the Pleasure subscale of the latter was not significantly correlated with the SDS, and only the BDEPQ-11 Tolerance & Misuse subscale was found significantly correlated with the clinical diagnostics with an r = 0.34 (scores leading to mild, moderate or severe BZD dependence) obtained from the *DSM-5* interviews performed by licensed clinicians. This interesting final result led to a ROC modeling to quantify the capacity of this subscale to predict or distinguish between clinically-diagnosed severe vs. moderate cases as per DSM-5 interview criteria, an analysis found in the following section.

Finally, some two-sample t-tests were implemented to examine some other relations in the data for the BDEPQ-30 and BDEPQ-11. The participant group who expressed taking benzodiazepines for reason of anxiety rather than insomnia had higher BDEPQ-30 and BDEPQ-11 than the alternative group (Welch Student $t(173) = -3.60$, $p < 0.001$, Cohen $d = 0.36$, $BF_{10} = 56.7$ and $t(184) = -4.08$, $p < 0.001$, Cohen's $d = 0.41$, $BF_{10} = 318.5$). No significant mean difference, nor correlation was found (all $p > 0.05$) associating years of consumption and BDEPQ scores, though note that in our sample, 90% of participants have been consuming since more than 2 years.

Clinical discriminant validity for severe vs. moderate cases through ROC analysis

Data was available for n = 165 of the participants regarding their clinical diagnosis of pathological benzodiazepine use along three outcomes: light, moderate, and severe, with respectively 17, 49, and 99 participants professionally diagnosed in these categories. Given that only few observations were available for the light diagnosis, the former two categories were combined, in which through a ROC modeling via logistic regression, we aimed to predict light/moderate vs. severe clinical diagnosis using the Tolerance and Misuse subscale of the BDEPQ-11, which was the only scale/subscale significantly correlated with the professional diagnoses.

Note therefore that the clinical validity analyses in this section are used to evaluate the discriminative capacity of the scale to distinguish mainly between severe and moderate dependency cases, and not presence vs. absence of pathological dependence; this is also due in part by the study's inclusion criteria which obliged participants to have at least 12 months of BZD consumption and were therefore already likely to possess a significant degree of BZD dependency. A subsequent study comparing early BZD users (< 3 months) to longer term ($\geq$ 3 months) will be useful to determine the optimal thresholds that correspond to the DSM-5 clinical interview results of absence versus presence of BZD dependency rather than the following medium vs. severe BZD dependency thresholds.

BDEPQ-30

First, it was found that neither the BDEPQ-30 total score (AUC = 0.54) nor its individual subscales (the best, General Dependence: AUC = 0.58) led to satisfactory performance for predicting the clinical diagnosis from the patient DSM-5 interviews. This result was also confirmed by an ANOVA that did not find a significant difference between BDEPQ-30 total scores along the three outcomes mild, moderate, and severe ($F(2, 162) = 1.40$, $p = 0.25$). A follow-up independent samples Welch t-test comparing the mild-moderate group to the severe group likewise did not find a significant difference in the BDEPQ-30 total score ($t(150.16) = 1.22$, $p = 0.23$).

BDEPQ-11

In contrast the BDEPQ-11, as shown in the left plot of Fig. 2, the predictive model resulted in a satisfactory AUC of 0.70, and the optimal threshold that balanced sensitivity and specificity was 0.61 which equated to possessing a Tolerance & Misuse subscale total score of $\geq$ 2. Note that this subscale consists of 3 distinct items responded to on a Likert scale from 0 to 3; therefore at least either 1 item response must be strong ($\geq$2) or two items considered positive by a score of 1. The right plot of Fig. 2 provides the distribution of scores for the Tolerance & Misuse subscale and illustrates the proportion of participants to the left and right of the modeled threshold (red vertical line at x = 2), which indeed the right area appropriately reflects near 60% of sample that benefited from a clinical diagnosis and who were indeed diagnosed with severe pathological use (99/165 participants). This Tolerance & Misuse subscale was significantly more predictive in discriminating between severe versus moderate/mild cases than the total BDEPQ-11 score which resulted in an AUC = 0.57, in which the ideal threshold optimizing sensitivity and specificity was a total score of $\geq$ 13. These results suggest that high scores in the Tolerance subscale may signal a potential pathological usage, that the participant should seek consultation. And that furthermore, predicting pathological usage would be further strengthened by including other variables, especially given the complexity of pathological expression.

These results are corroborated by an ANOVA that found a significant difference between BDEPQ-11 Tolerance & Misuse subscale scores along the three outcomes mild, moderate, and severe ($F(2, 162) = 10.73$, $p < 0.001$) with a moderate to large effect size ($\eta_p^2 = 0.12$). A follow-up independent samples Welch t-test comparing the mild-moderate group to the severe group likewise resulted in a significant difference between the BDEPQ-11 Tolerance & Misuse subscale scores ($t(162.97) = 5.03$, $p < 0.001$, $BF_{10} > 1000$) with a large effect size (Cohen's $d = 0.74$).

Discussion

This work sought to empirically assess the Benzodiazepine Dependence Questionnaire (BDEPQ) originally 30 items, as well as develop an abridged version of 11 items, the

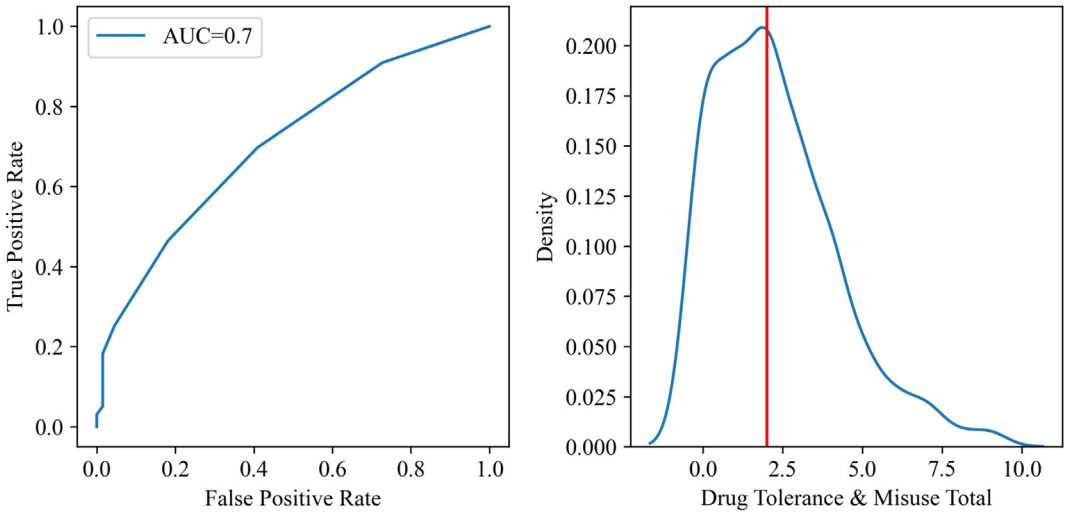

Fig. 2 Left: Receiver Operator Characteristic (ROC) curve for the Tolerance and Misuse scale to predict the professional clinical diagnosis of severe vs. moderate/light benzodiazepine pathological use, without any other variables included; resulting in a satisfactory AUC = 0.70. Right: (blue) the kernel-density distribution of participant total scores in the Tolerance and Misuse scale; (red) the optimal threshold, a score of ≥ 2, for prediction that balanced sensitivity and specificity.

BDEPQ-11, that were adapted in French. Brief scale versions can be especially appreciable for clinical applications and research purposes, notably when participants are to respond to numerous scales.

The process of scale adaptation herein followed the important norms established by Guillemin et al. (1993) that consist of translation, back-translation, committee review, and pre-testing. A large sample of *n* = 531 participants who have been taking BZDs since at least 12 months were recruited and responded to the questionnaire, along with other scales in order to assess the adaptation's convergent and divergent validity. Clinical diagnoses of BZD dependence were also available for a subset of the sample, *n* = 165 by which discriminability of the scale for distinguishing severe dependance could also be assessed.

Both the full-length and brief versions of the French-adapted BDEPQ satisfied the confirmatory factor analysis norms, and in which the brief version surpassed the original. The two versions also displayed appropriate convergent and divergent validity results with other scales. However, in regard to the exploratory factor analysis norms and correspondence with clinical diagnoses from professionals, only the brief version excelled, especially with regard to its subscale that quantifies BZD drug tolerance and misuse.

French is an official language in more than 25 countries and the availability of this adaptation responds to a growing clinical and research need regarding BZD dependence, as well as opens the path for important cross-cultural research and comparisons on the topic previously unavailable. In both English and French, few scales on BZD dependence apart from the BDEPQ are available and freely available to practitioners. Future research may consider innovating a modernized full-length version that is well-grounded in the statistical analyses available today, such as those that were utilized in the current work.

Strength points

This study finally provides a standardized scale in French that measures benzodiazepine dependence. Free of charge, it is available to all researchers and clinicians. The reduction from the 30-item version to an 11-item version has resulted in a notable improvement in psychometric properties and offers a cut-off to distinguish between highly dependent patients and those with low to moderate dependence. However, the AUC is not optimal; it would be better if we had compared a highly dependent sample with a minimally dependent sample. The short version is particularly effective in assessing the Tolerance dimension.

Weak points and recommendations for future work

The full version does not exhibit very good psychometric properties. Baillie and Mattick obtained a better EFA because the participants in his study had been consuming for a short period (from 3 months), which reduces ceiling and floor effects observed in long-term consumers. The bias of our study is that the recruitment of participants was based on an inclusion criteria of a long duration of consumption. This bias forced us to validate threshold scores for BUD intensity (severe vs. moderate) and not for on/off cut-off for the presence or absence of a diagnosis. This could constitute an important endeavor for future work. That is, it would be pertinent to compare a sample of long-term consumers with a sample of short-term consumers (< 3 weeks) to increase the percentage of explained variance and improve the specificity and sensitivity of the scale.

Similarly, our study likely presents a selection bias because our sample is drawn from participants enrolled in a study on benzodiazepine withdrawal for hypnotic pur-

poses. The low percentage of explained variance in the 30-item version could thus be attributed to the fact that many items are specific to the disorder that benzodiazepines aim to treat. It would therefore be interesting to test the 30-item version of this scale among specific consumer groups: those who consume solely for hypnotic purposes, solely for anxiolytic purposes, and solely for recreational use, in order to develop three versions (or different weightings) based on the purpose of consumption.

Withdrawal syndrome is a criterion for the diagnosis of benzodiazepine use disorder (BUD), and the short version only includes one item on this aspect. However, there are numerous scales that specifically measure this dimension: the Physician Withdrawal Checklist (Rickels et al., 2008), the Benzodiazepine Withdrawal Symptom Questionnaire (Tyrer et al., 1990) and the Clinical Institute Withdrawal Assessment-Benzodiazepines (Busto et al., 1989).

Conclusion

Benzodiazepines are highly addictive substances, making their withdrawal symptoms very difficult to overcome (Chapoutot et al., 2021). The prescription and use of benzodiazepines have been criticized for over 40 years (Janhsen et al., 2015) due to their numerous side effects (Baldwin et al., 2013; Federico et al., 2017). Psychological dependence can occur within the first month of use (de las Cuevas et al., 2003), leading the majority of consumers to exceed the legal prescription duration set at 4—12 weeks. Beyond this recommended legal prescription period, the initial psychopathology that led to benzodiazepine use is compounded by a dependence on these substances (Lader, 1999). However, this legal duration is rarely adhered to. The spontaneous discontinuation rate of benzodiazepines is generally estimated at 5% (Chapoutot et al., 2021). Having a standardized tool for assessing dependence is essential and represents a first step in designing reliable studies in French-speaking regions, where benzodiazepines are overused despite health authority warnings (Haute Autorité de Santé, 2017, 2018).

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Author contributions

R. Anders: conceptualization, formal analysis, investigation, methodology, software, supervision, validation, viusalization, writing - original draft, writing review & editing. M. Chapoutot: data curation, methodology, investigation, writing review & editing. F. Meloni: data curation, writing review & editing. L. Peter-Derex: writing review & editing. M.-P. Fustin: data curation, writing review & editing. B. Putois: conceptualization, data curation, funding acquisition, investigation, methodology, project adminsitration, supervision, writing - original draft, writing review & editing.

Declaration of competing interest

None in relation to this article.

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Appendix A. Annexe Full Length BDEPQ-Fr Questionnaire

Questionnaire sur la dépendance aux benzodiazépines (BDEPQ)

Dans les questions qui suivent, vous serez interrogé(e) sur votre expérience de l'utilisation de médicaments connus sous les noms de somnifères, sédatifs, hypnotiques, "benzos" ou calmants. Ces médicaments sont également connus sous les noms commerciaux suivants : "Xanax", "Lexomil", "Temesta", pour n'en citer que quelques-uns parmi les plus vendus. Leur nom chimique finit par « AM » (ex. : Alprazolam, Bromazépam, Lorazépam). Ils concernent aussi des médicaments apparentés (ex. : Zopiclone commercialisé sous le nom "Imovane" ou Zolpidem disponible sous le nom de "Stilnox" ou "Zoldorm"). Tous ces produits seront dénommés **sédatifs, tranquillisants ou somnifères** dans les questions.

Lorsque vous répondez aux questions, veuillez penser à vos expériences **au cours du dernier mois**. Cochez la case en dessous de la réponse qui correspond le mieux à vos expériences du mois dernier.

1. Au cours du dernier mois, avez-vous pris un autre sédatif ou tranquillisant ou somnifère dès que les effets du précédent commençaient à se dissiper ?

☐ Jamais ☐ Parfois ☐ Souvent ☐ Toujours

2. Avez-vous pris des sédatifs/tranquillisants/somnifères au cours du dernier mois parce que vous aimez l'effet qu'ils vous procurent ?

☐ Toujours ☐ Souvent ☐ Parfois ☐ Jamais

3. Au cours du dernier mois, avez-vous eu le sentiment que vous ne pouviez rien affronter qui sorte de l'ordinaire sans prendre un sédatif/tranquillisant/somnifère ?

☐ Jamais ☐ Parfois ☐ Souvent ☐ Tous les jours

4. Avez-vous le sentiment que vous ne pouvez pas passer la journée et/ou la nuit sans l'aide de vos sédatifs/tranquillisants/somnifères ?

☐ Jamais ☐ Parfois ☐ Souvent ☐ Tous les jours

5. Avez-vous besoin d'emporter vos sédatifs/tranquillisants/somnifères avec vous lors de vos déplacements ?

☐ Toujours ☐ Souvent ☐ Parfois ☐ Jamais

6. Avez-vous essayé de réduire le nombre de sédatifs/tranquillisants/somnifères que vous prenez parce qu'ils ont perturbé votre fonctionnement ?

☐ Énormément ☐ Quelque peu ☐ Un peu ☐ Non

7. Au cours du dernier mois, avez-vous constaté que vous deviez prendre davantage de sédatifs/tranquillisants/somnifères pour obtenir le même effet par rapport à la période où vous les avez pris pour la première fois ?

☐ Non ☐ Parfois ☐ Souvent ☐ Toujours

8. Avez-vous besoin de prendre des sédatifs/tranquillisants/somnifères pour faire face aux problèmes dans votre vie ?

☐ Jamais ☐ Parfois ☐ Souvent ☐ Tous les jours

9. Vous sentez-vous mal si vous ne prenez pas de sédatifs/tranquillisants/somnifères ?

☐ Tous les jours ☐ Souvent ☐ Parfois ☐ Jamais

10a. Au cours du mois dernier, craigniez-vous que votre médecin ne continue pas à vous prescrire vos sédatifs/tranquillisants/somnifères ?

☐ Jamais ☐ Parfois ☐ Souvent ☐ Beaucoup

10b. Quelle a été l'intensité de cette inquiétude ?

☐ Légère ☐ Modérée ☐ Forte

11. Pourriez-vous arrêter de prendre des sédatifs/tranquillisants/somnifères demain sans aucune difficulté ?

☐ Non, ce serait impossible

☐ Peut-être, avec beaucoup de difficulté

☐ Oui, avec un peu de difficulté

☐ Oui, sans difficulté

12. Comptez-vous le temps qu'il vous reste avant de pouvoir prendre votre prochain sédatif/tranquillisant/somnifère ?

☐ Toujours ☐ Souvent ☐ Parfois ☐ Jamais

13a. Avez-vous ressenti un soulagement lorsque vous avez pris des sédatifs/tranquillisants/somnifères au cours du dernier mois ?

☐ Jamais ☐ Parfois ☐ Souvent ☐ Beaucoup

13b. Quelle est l'intensité de ce soulagement ?

☐ Légère ☐ Modérée ☐ Forte

14a. Au cours du mois dernier, vous êtes-vous senti(e) mal ou malade parce que les effets des sédatifs/tranquillisants/somnifères se sont dissipés ?

☐ Oui *Répondez à la question suivante*

☐ Non *Passez à la question 15*

14b. Avez-vous pris un autre sédatif/tranquillisant/somnifère pour réduire ces contrecoups ?

☐ Jamais ☐ Parfois ☐ Souvent ☐ Beaucoup

15. Au cours du mois dernier, avez-vous pris des sédatifs/tranquillisants/somnifères contre l'avis de votre médecin ou plus fréquemment que la posologie conseillée ?

☐ Jamais ☐ Occasionnellement ☐ Parfois ☐ Souvent

16. Êtes-vous inquiet du nombre de sédatifs/tranquillisants/somnifères que vous avez pris au cours du dernier mois ?

☐ Énormément ☐ Beaucoup ☐ Un peu ☐ Pas du tout

17. Avez-vous pris plus de sédatifs/tranquillisants/somnifères en un jour ou une nuit que ce que vous aviez prévu ?

☐ Tous les jours ☐ Souvent ☐ Parfois ☐ Jamais

18a. Avez-vous trouvé les effets des sédatifs/tranquillisants/somnifères agréables ?

☐ Jamais ☐ Parfois ☐ Souvent ☐ Toujours

18b. Quelle est l'intensité de ce sentiment agréable ?

☐ Légère ☐ Modérée ☐ Forte

19. Avez-vous pris des sédatifs/tranquillisants/somnifères pendant une période plus longue que celle prévue lorsque vous avez commencé ?

☐ Jamais ☐ Parfois ☐ Souvent ☐ Très souvent

20a. Vous êtes-vous senti(e) tendu(e) ou anxieux/se lorsque votre prescription de sédatifs/tranquillisants/somnifères a commencé à s'épuiser ?

☐ Jamais ☐ Parfois ☐ Souvent ☐ À chaque fois

20b. Quelle a été l'intensité de ces émotions ?

☐ Légère ☐ Modérée ☐ Forte

21a. Avez-vous ressenti une envie irrépréssible ou un désir de prendre des sédatifs/tranquillisants/somnifères au cours du dernier mois ?

☐ Jamais ☐ Parfois ☐ Souvent ☐ Tous les jours

21b. Quelle est l'intensité de cette envie irrépréssible ou de ce désir ?

☐ Légère ☐ Modérée ☐ Forte

22. Au cours du mois dernier, avez-vous pris des sédatifs/tranquillisants/somnifères alors que vous n'en aviez pas vraiment besoin ?

☐ Jamais ☐ Parfois ☐ Souvent ☐ Tous les jours

Instructions: Dans la prochaine série de questions, veuillez cocher la case en dessous de la réponse qui correspond à ce que vous pensez.

23. Je me sens incapable de m'empêcher de prendre un sédatif/tranquillisant/somnifère lorsque je suis anxieux/se, tendu(e) ou malheureux/se.

☐ Pas du tout d'accord ☐ Plutôt pas d'accord ☐ Plutôt d'accord ☐ Tout à fait d'accord

24. Je ne serais pas capable de gérer mes problèmes si je ne prend pas un sédatif/tranquillisant/somnifère.

☐ Tout à fait d'accord ☐ Plutôt d'accord ☐ Plutôt pas d'accord ☐ Pas du tout d'accord

25. Les petites disputes me contrarient tellement que je dois prendre un sédatif/tranquillisant/somnifère.

☐ Tout à fait d'accord ☐ Plutôt d'accord ☐ Plutôt pas d'accord ☐ Pas du tout d'accord

Consignes de notation

La notation du BDEPQ ne requiert pas plus que des compétences administratives de base. Les étapes suivantes décrivent comment calculer un score total et les scores sur les trois sous-échelles.

1. Notez les éléments comme suit (les labels de référence sont omis ci-dessous)

   a. Notez la plupart des items comme suit

   ☐ 0 ☐ 1 ☐ 2 ☐ 3

   b. Sauf les items 2, 5, 6, 9, 12, 16, 17 et 24, lesquels sont inversés. Notez ceux-ci comme suit

   ☐ 3 ☐ 2 ☐ 1 ☐ 0

   c. Notez la deuxième partie (b) des items à deux parties (les items 10a et b, 18a et b, 20a et b, 21a et b) comme 0 si la première partie (a) est noté 0.

   d. Ne tenez pas compte de l'item 14a.

   e. Notez l'item 11 comme suit

   3 ☐ Non, ce serait impossible

   2 ☐ Peut-être, avec beaucoup de difficulté

   1 ☐ Oui, avec un peu de difficulté

   0 ☐ Oui, sans difficulté

2. Additionnez les éléments pour obtenir un score total.

3. Calculer facultativement les notes de sous-échelle comme suit :

   a. Additionnez les items 1, 6, 7, 10a, 10b, 14b, 15, 16, 17, 19, 20a, 20b, 21a, et 22 pour obtenir un score sur la sous-échelle *Dépendance Générale*.

   b. Additionnez les items 2, 13a, 13b, 18a, 18b, et 21b pour obtenir un score sur la sous-échelle *Effets Agréables*.

   c. Additionnez les items 3, 4, 5, 8, 9, 11, 12, 23, 24, et 25 pour obtenir un score sur la sous-échelle *Besoin Perçu*.

Appendix B. Supplementary material

Supplementary data to this article can be found online at https://doi.org/10.1016/j.jbct.2024.100510.

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