Short communication

Psychometric properties of the Spanish version of the Cannabis Use Problems Identification Test among Chilean university students: A validation study

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ABSTRACT

Background: In Chile, concerns mount about escalating cannabis use. Thus, it is important to have tools for early identification of at-risk users. The Cannabis Use Problems Identification Test (CUPIT) is a useful screening tool, and the aim of this study was to examine the psychometric properties of its Spanish version among Chilean university students.
Methods: The CUPIT was translated into Spanish, pre-tested in a focus group (n = 8), and then tested through an online survey (n = 3798, 28% response rate). Of the 1061 respondents, 578 reported 12-month cannabis use. Internal reliability, internal structure, and concurrent validity (using the Cannabis Abuse Screening Test [CAST]) were obtained. Test–retest reliability was calculated (n = 150) at 3–4 weeks (30% of attrition rate). Discriminative validity was evaluated comparing CUPIT subscales and four DSM-IV diagnostic groups. Receiving operator characteristic (ROC) curve analysis assessed sensitivity and specificity.
Results: Test–retest Pearson correlation between total CUPIT scores of 0.90 (p < 0.001), and highly significant Kendall Tau-b coefficients for individual items (p < 0.001) indicated excellent reliability. Concordance between the CUPIT and CAST (Pearson correlation 0.73, p < 0.001) indicated good concurrent validity. ANOVA revealed significant differences in CUPIT scores between the four DSM-IV diagnostic groups (p < 0.001), indicative of good discriminative validity. ROC analysis (gold standard: DSM-IV abuse/dependence) yielded an AUC value of 0.72, indicating acceptable discriminative capability.
Conclusions: The Spanish CUPIT is reliable, valid, and accepted by the university population studied, and, thus, a potentially useful tool for identifying both problematic and at-risk users.

1. Introduction

In Europe last year, 16.6 million (13.3%) young adults aged 15–34 years reported cannabis use (EMCDDA, 2016). Recent Chilean surveys show consistently dramatic increases in 12-month cannabis use from 19.5% in 2011 to 30.6% in 2013 by secondary students (SENDA, 2013). Last year, cannabis use also increased in the general population, from 5.3% in 2010 to 13.5% in 2014 among 12–18-year-olds, and from 12.3% in 2010 to 24% in 2014 for 19–25-year-olds (SENDA, 2015).

Surveys among students of Pontificia Universidad Católica de Chile (UC) showed that past-year cannabis use increased from 28% in 2011 to 46% in 2013. Perception of risks involved simultaneously decreased from 53.5% to 39.5% during that period (DAE, 2011, 2013)

There is much scientific evidence of the negative effects of cannabis use (Meier et al., 2012; Volkow et al., 2014, 2016; Hall, 2015; Hall and Lynskey, 2016; Arria et al., 2016; Auer et al., 2016), especially in young people, who presented low risk perception (SENDA, 2013; DAE, 2013) and a low rate of seeking help (Caldeira et al., 2009). However, if not all users run the same risk, a screening instrument can facilitate timely targeted interventions to arrest progression to more serious physical and mental harm.

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A small assortment of cannabis-specific screening instruments has been developed worldwide. These include the Cannabis Use Disorders Identification Test (CUDIT; Annaheim et al., 2008; Piontek et al., 2008) and its revised version, CUDIT-R (Adamson et al., 2010); the Cannabis Screening Inventory (MSI-X; Alexander and Leung, 2004) in the United States; the Problematic Cannabis Use Test (PUM; Piontek et al., 2008) in Poland; and the Adolescent Cannabis Problems Questionnaire (CPQ-A; Martin et al., 2006) and its version validated in Spain (Fernández-Artamendi et al., 2012). In Chile, the CAST (Legleye et al., 2015) has been used successfully to screen secondary students with past-year cannabis use for the risk of meeting criteria for cannabis use disorder (SENDA, 2013).

The CUPIT is a screening tool empirically developed by researchers from New Zealand (Bashford et al., 2010) for testing among users aged from 13 years. It identifies the frequency and intensity of cannabis use in the past year and in the past 3 months, cannabis-induced problems, the current risk of harm within the next 12 months, and a current disorder (Bashford et al., 2010). What distinguishes this instrument from other cannabis screening tests is its capability to classify both currently diagnosable and potentially problematic cannabis use (Bashford et al., 2010).

This instrument can be used as part of prevalence studies of drug use in university populations, where the identification of level of risk would enable preventive institutional interventions (Yap et al., 2012), such as: social norms campaigns (Dejong et al., 2006), aiming to reduce misperceptions about cannabis use and its associated risks (Turner et al., 2008), for targeted preventive interventions, using the instrument via online websites along with the delivery of personalized feedback (Larimer and Cronce, 2007; Palfai et al., 2014; Cronce and Larimer, 2011), and for the screening of non-consultant students, using brief motivational interventions (McCambridge et al., 2011) by trained professionals (Larimer and Cronce, 2007; Cronce and Larimer, 2011).

The validated CUPIT can make a valuable contribution because, besides CAST, no other cannabis screening instruments are validated nor available for use in Chile.

To have a Spanish version of this rapid and reliable tool for the identification of problematic and risky cannabis use, a validation project for the CUPIT was developed in 2013 at UC.

2. Methods

2.1. Procedure

First, permission to use the CUPIT was sought and given by the principal CUPIT developer (Dr. Bashford), who also agreed to collaborate.

The CUPIT comprises 16 questions in a Likert-type response format measure to identify three dimensions according to DSM-IV questions (APA, 2010) and ICD-10 (WHO, 2010) classifications: hazardous use (questions 1 and 2), using behavior/compulsive use/dependence (questions 3–10), and health and social problems (questions 11–16) (Bashford et al., 2010). Possible scores range from 1 (non-problematic use) to 82 (severely dependent/problematic use).

The CUPIT was adapted to the Chilean population by translating it from English to Spanish and then reversely translated by a native English speaker. The translated version of CUPIT was pre-tested among eight students who voluntarily participated in a focus group. The questions that were not clearly drafted were discussed. Small adjustments were then made to the instrument to ensure clarity.

Ethical approval for this study was granted by the Ethics Committee, Institute of Sociology, UC. The validation of the CUPIT Spanish version was conducted entirely online. Volunteer students consented to take part in the study through an online form.

2.2. Participants

Sample size was determined using feasibility criteria, with 10 subjects for each survey question (Streiner and Norman, 1995a,b); hence, the minimum sample size was 160. Participants were volunteer students from 13 academic units of UC with higher prevalence of cannabis use (DAE, 2011). Thirty percent of this universe was randomly selected to receive an electronic invitation to participate ($n = 3798$), using the Survey Analytics tool (https://www.surveyanalytics.com/); the response rate was 28% (1061 students).

To validate the CUPIT, we considered a subsample of 578 students who reported past-year cannabis use. All of them completed the survey, which included demographic information; cannabis use (past 30 days, past year); onset age; cannabis risk perception; perceived availability of cannabis; and Spanish CUPIT, CAST, and DSM-IV questions. The power of the sample was 99.5% with a confidence level of 99% and Cronbach's alpha of 0.7 (Donner and Eliasziw, 1987; Kirkwood and Sterne, 2003).

2.3. Validation analysis

The CUPIT factorial structure, internal reliability, and concurrent validity, using the CAST scale (Legleye et al., 2007, 2015), were examined. Discriminative validity using four diagnostic DSM-IV groups, as described by Caldeira (Caldeira et al., 2008), was also evaluated. ROC curve analysis assessed the sensitivity and specificity of the Spanish CUPIT. The Stata 12 statistical package was used for all analyses. A level of statistical significance was assumed at $p < 0.05$.

A random subsample of 125 (confidence level of 99%, correlation of 0.2, and power of 80%; Donner and Eliasziw, 1987; Kirkwood and Sterne, 2003) past-year cannabis users received the re-test survey 3–4 weeks after the initial survey, of whom 90 (72%) responded. The Kendall Tau-b statistic, recommended for measuring correlation between ordinal data (Kirkwood and Sterne, 2003), was used to assess concordance between responses to each of the 16 CUPIT items; the percentage of agreement between responses to the first and second surveys was calculated.

The Pearson correlation used to assess the CUPIT reliability for the total score (Kirkwood and Sterne, 2003) for the two measurement periods was 0.90 ($p < 0.001$), indicating high test–retest reliability of total scores.

3. Results

3.1. Participants

The response rate for the survey was 28% ($n = 1061$), an acceptable rate for web surveys (Cook et al., 2000). Respondents reporting past-year cannabis use ($n = 578$) represented 54.5% of the total sample; 68.8% ($n = 398$) of these past-year cannabis users reported using in the past month. All participants were older than 17 years old (mean age = 21.3 years); 57.4% were males. The prevalence of 12-month cannabis use in this population is 46% (DAE, 2013).

3.2. Psychometric properties of the spanish version of CUPIT

3.2.1. Factor structure and internal consistency/reliability. The factorial structure of CUPIT was analyzed using Principal Component Analysis (PCA). Varimax rotation was performed. Cronbach's alpha coefficient was used to measure the internal consistency of the dimensions (see Table S1 in Supplementary material). A benchmark of 0.80 (Nunnally, 1978) is commonly recommended.

Cronbach's alpha for the total CUPIT score was 0.80, indicating high reliability of the scale. An analysis for the two subscales defined by the original authors (Bashford et al., 2010)