The Chinese Version of the Severity of Alcohol Dependence Questionnaire: Reliability and Factor Structure

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Objective: The Severity of Alcohol Dependence Questionnaire (SADQ) is a self-report questionnaire to evaluate the severity of alcohol dependence. In this study, we analyzed internal consistency and factor structure of the Chinese-version of the SADQ (SADQ-C) in patients with alcohol dependence. Methods: We recruited 113 male patients with alcohol dependence to complete the SADQ-C. Internal consistency was expressed by Chronbach’s α. We did factor analysis using principal component analysis (PCA) with varimax rotation for the SADQ-C excluding the alcohol consumption section. Results: The internal consistency was very high with Chronbach’s α of 0.92. PCA shows four principal components, i.e. withdrawal relief drinking, affective withdrawal signs, physical withdrawal signs, and reinstatement of withdrawal symptoms following abstinence. Conclusion: The SADQ-C is a reliable instrument for alcohol dependence severity assessment in Taiwan and it can be used to monitor the treatment outcome in male patients with alcohol dependence.

Key words: alcohol dependence, SADQ, internal consistency, factor structure

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Introduction

Alcohol dependence is a well-recognized diagnosis in psychiatry. Some criteria have been used to define the diagnosis, such as in the 10th revision of International Classification of Diseases (ICD-10) [1] or in the fourth edition of Diagnostic and Statistical Manual of Mental Disorders, the Fourth Edition Text Revision (DSM-IV-TR) [2]. However, neither of the above-mentioned criteria assesses the severity of alcohol dependence, and it is important to assess the severity and changes in alcohol dependence in clinical practice.

The Severity of Alcohol Dependence Questionnaire (SADQ) was designed as a measure of the degree to which problem drinkers were experiencing the syndrome of alcohol dependence.

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SADQ is focused exclusively on the quantifiable elements of the syndrome but ignores the diversity of alcohol-related problems [4] such as the consequences of drinking and reasons for drinking. Although SADQ has been criticized for emphasizing the physiological aspects rather than the psychosocial and behavioral features, it is a relatively easy-to-administer questionnaire and compares favorably with other measures of dependence [5]. The SADQ’s validity and reliability were confirmed by the developers [4], and Meehan et al. [6] replicated the validation procedures in an Irish sample. Therefore, the SADQ is a useful and valid instrument to investigate patients with alcohol dependence and has been commonly used in clinical practice and in research [7,8].

The prevalence of alcoholism in the Taiwanese population has markedly increased [9], nevertheless the instrument to evaluate the alcohol dependence severity is lacking. In this study, we translated SADQ into Chinese, and analyzed the internal consistency and factor structure of the Chinese-version SADQ (SADQ-C) in patients with alcohol dependence in Taiwan.

Methods

The study was conducted in the Taipei City Psychiatric Center (TCPC) and was approved by its institutional review board. We recruited male patients, who were diagnosed as having alcohol dependence by DSM-IV criteria, from outpatient and inpatient services.

The SADQ is a 20-item questionnaire composed of five sections. There are 4 items in each section including physical withdrawal signs, affective withdrawal signs, withdrawal relief drinking, alcohol consumption and reinstatement of withdrawal symptoms following abstinence in sequence. A senior psychiatrist (MCH) translated the SADQ into Chinese. Back-translation was done by an experienced psychologist, and was compared with the original SADQ. Conceptual equivalence of the original English and final Chinese versions was confirmed.

Patients’ responses to the SADQ-C (Appendix I) were scored with the help of trained researchers and their demographic data were collected at the same time.

The internal consistency was assessed by calculating Chronbach’s $\alpha$. Because 4 typical daily alcohol consumption items formed a simple prior scale of its own, they were excluded from the factor analysis in previous studies [3,6]. Therefore, factor analysis was performed on the remaining 16 of the 20 questions in the SADQ-C. We used principal component analysis (PCA) with varimax rotation to analyze the factor structure of SADQ-C. Items with a loading higher than 0.5 were considered as significant.

Results

A total of 113 male patients with alcohol dependence were recruited. The mean age (SD) was 42.1 (8.5) years old, ranging from 27-67 years old, and the mean SADQ score (SD) was 23.8 (13.1), ranging from 2-60.

Internal consistency of SADQ-C was high with Chronbach’s $\alpha$ of 0.92. Table 1 shows the PCA with varimax rotation of SADQ-C. Only four eigenvalues were greater than one, and they accounted for 75.6% of the variance. According to the four sections of the SADQ, the four components could be interpreted as (A) withdrawal relief drinking, (B) affective withdrawal signs, (C) physical withdrawal signs (sweating and tremor), and (D) reinstatement of withdrawal symptoms following a period of abstinence (Table 2).
Discussion

Although differences in statistical analyses made the comparison with previous studies impossible, our results show that the SADQ-C was a reliable instrument with a Chronbach’s $\alpha$ of 0.92. SADQ-C had a four-factor solution by PCA. In our study, the first factor, which contained withdrawal relief drinking (items 2, 9-12 and 20), accounted for 47% of the total variance (Table 1). This value is similar to the result in Meehan’s study, in which the first factor accounted for 45% of variance [6]. The second factor containing affective withdrawal signs (items 5-8) (Table 2) was the same as that in Meehan’s study. The third factor, containing items 1, 3, 4, and 17, was physical withdrawal signs. Although question 2 (During a
heavy drinking period, my hands shake first thing in the morning) was in the first factor but not in the third factor (physical withdrawal signs), its factor loading was as high as 0.43. We suggest that question 2 might be a general item to measure the severity of alcohol dependence because its item loading was moderate, ranging from 0.32 to 0.50 in all four major components. The fourth factor containing items 17-19 was reinstatement of withdrawal symptoms following a period of abstinence. During the interview, we found that the questions about reinstatement withdrawal symptoms section were more difficult for patients to understand and needed the researcher’s explanation.

This study has four limitations: First, this study did not have test-retest reliability and validation against clinical ratings. Since no golden standard exists for assessing alcohol dependence severity, previous studies introduced clinical ratings of the dependence severity by psychiatrists [3,6]. Nevertheless, we failed to define the dependence severity by an external validator. Second, our study patients completed the SADQ-C under the researcher’s assistance rather than by self-report as in the original design. We did not know the reliability of self-reporting SADQ-C. Third, we did not evaluate patient’s comorbid disorders such as mood disorder or other substance use disorder. Fourth, we did not analyze the responses of female patients in this study because there were few female patients visiting psychiatric services for alcohol drinking problems. Due to those four limitations, we should be cautious about generalizing the results. In the future, we can compare the score of SADQ-C by self-report and by interview, and introduce an external validator to test SADQ-C’s validity in a larger sample size including both male and female patients.

In summary, this study shows that the SADQ-C is a reliable instrument to assess the severity of alcohol dependence in Taiwan and it can be used to monitor the treatment outcome in male patients with alcohol dependence.

References

Appendix I

The Chinese Version of Severity of Alcohol Dependence Questionnaire

( SADQ-C, 中文酒精依賴嚴重度問卷 )

姓名：
年齡：
性別：

首先，我們想請你回想你離目前最近的一個月有出現大量喝酒時的情形，就如同你以往酗酒的時期。
請填上時間 年 月

接下來，我們想知道更多關於你最近這段時間及過去類似酗酒時期裡的喝酒狀況，並想知道你多常體驗到這樣的感覺。請回答以下的問題，並圈選以下四種選項中的一個：「幾乎沒有」、「有時」、「常常」、「幾乎都是」

首先，我們想知道在你這次酗酒時期，當你早上剛起床時的身體狀況如何？

請逐一回答以下問題

1. 在酗酒期間，我醒來時會有流汗的情形。
   (1) 幾乎沒有 (2) 有時 (3) 常常 (4) 幾乎都是
2. 在酗酒期間，我一早醒來時會有手抖的情形。
   (1) 幾乎沒有 (2) 有時 (3) 常常 (4) 幾乎都是
3. 在酗酒期間，假如早上起床不喝酒時，我全身會顫抖的很厲害。
   (1) 幾乎沒有 (2) 有時 (3) 常常 (4) 幾乎都是
4. 在酗酒期間，當我醒來時常因流汗而全身溼透。
   (1) 幾乎沒有 (2) 有時 (3) 常常 (4) 幾乎都是

接下來的問題是要有關你在酗酒期間一早起床時的心情及情緒態度

5. 當我大量喝酒時，我害怕（討厭）在早上醒來。（對睡醒的害怕）
   (1) 幾乎沒有 (2) 有時 (3) 常常 (4) 幾乎都是
6. 在酗酒期間，我害怕（討厭）早上醒來就會遇到人。（對睡醒的害怕）
   (1) 幾乎沒有 (2) 有時 (3) 常常 (4) 幾乎都是
7. 在酗酒期間，當我醒來時會覺得瀕臨絕望（難受或沮喪）的邊緣。（ 醒來時的感覺）
   (1) 幾乎沒有 (2) 有時 (3) 常常 (4) 幾乎都是
8. 在酗酒期間，當我醒來時會覺得很害怕、驚恐（十分焦慮不安）。（ 醒來時的感覺）
   (1) 幾乎沒有 (2) 有時 (3) 常常 (4) 幾乎都是
接下來的問題是有關最近你有酗酒情形的一段期間，及過去可能有類似情形的期間。

9. 在酗酒期間，我喜歡在早上時喝點酒。
   (1) 幾乎沒有  (2) 有時  (3) 常常  (4) 幾乎都是

10. 在酗酒期間，我醒來後會趕快喝點酒。
    (1) 幾乎沒有  (2) 有時  (3) 常常  (4) 幾乎都是

11. 在酗酒期間，我會在早上喝點酒來去除顫抖的情形。
    (1) 幾乎沒有  (2) 有時  (3) 常常  (4) 幾乎都是

12. 在酗酒期間，我醒來時會有很想喝酒的慾望。
    (1) 幾乎沒有  (2) 有時  (3) 常常  (4) 幾乎都是

以下問題仍舊是關於最近你有酗酒情形及以前可能有類似情形的期間

13. 在酗酒期間，我一天的飲酒量超過 1/4 瓶的烈酒（相當於一瓶葡萄酒或 4 品脫啤酒，
    約 5 個單位）。 (1 品脫 = 0.55 公升，4 品脫 = 2.2 公升)
    (1) 幾乎沒有  (2) 有時  (3) 常常  (4) 幾乎都是

14. 在酗酒期間，我一天的飲酒量超過 1/2 瓶的烈酒（相當於 2 瓶葡萄酒或 8 品脫啤酒，
    約 10 個單位）。 (8 品脫 = 4.4 公升)
    (1) 幾乎沒有  (2) 有時  (3) 常常  (4) 幾乎都是

15. 在酗酒期間，我一天的飲酒量超過 1 瓶的烈酒（相當於 4 瓶葡萄酒或 15 品脫啤酒，
    約 20 個單位）。 (15 品脫 = 8.25 公升)
    (1) 幾乎沒有  (2) 有時  (3) 常常  (4) 幾乎都是

16. 在酗酒期間，我一天的飲酒量超過 2 瓶的烈酒（相當於 8 瓶葡萄酒或 30 品脫啤酒，
    約 40 個單位）。 (30 品脫 = 16.5 公升)
    (1) 幾乎沒有  (2) 有時  (3) 常常  (4) 幾乎都是

* 每瓶之酒精單位數（單位／瓶）：
  罐裝啤酒：1  瓶裝啤酒：2.3  保力達、維士比：4.0  紹興酒：8.0
  米酒：11  米酒頭：17.5  陳年紹興酒：9.0  參茸酒：7.5
  葡萄酒、紅酒：4.2  威士忌、白蘭地 (600cc)：20.5  高粱酒 (300cc)：14.5
最後，請想像以下兩個狀況：

(1) 你有好幾個禮拜完全沒有喝酒。
(2) 接下來你狠狠喝上幾天酒。（追酒）

在你大喝幾天後的早上感覺如何？

17. 我會開始流汗。
   (1) 幾乎沒有 (2) 有時 (3) 常常 (4) 幾乎都是

18. 我會手抖。
   (1) 幾乎沒有 (2) 有時 (3) 常常 (4) 幾乎都是

19. 我身體會顫抖
   (1) 幾乎沒有 (2) 有時 (3) 常常 (4) 幾乎都是

20. 我渴望能喝酒。
    (1) 幾乎沒有 (2) 有時 (3) 常常 (4) 幾乎都是
中文版「酒精依賴嚴重度問卷」：
在男性酒精依賴者的信度研究及因素分析
鄭婉汝1 黃名琪1,2 黃珮珊1 高玉芬1 陳俊興2,3

目的：酒精依賴嚴重度問卷是評估酒精依賴嚴重程度之問卷，本研究的目的是對中文版酒精依賴嚴重度問卷作內在一致性及因素分析。方法：共113位診斷為酒精依賴的男性病患完成中文版酒精依賴嚴重度問卷並評分。內在一致性以Chronbach’s α表示；以主成分分析就除了酒精使用問題以外之中文版酒精依賴嚴重度問卷進行因素分析。結果：中文版酒精依賴嚴重度問卷的Chronbach’s α為0.92代表內在一致性很高。因素分析產生四個主要因素，分別是緩解戒斷症狀的飲酒、情緒戒斷症狀、身體戒斷症狀及戒斷後復飲的戒斷症狀。結論：中文版酒精依賴嚴重度問卷是可信的工具，可做為男性酒精依賴者嚴重度及治療成效之評估。

關鍵詞：酒精依賴，酒精依賴嚴重度問卷，內在一致性，因素分析
（台灣精神醫學 2009;23:159-66）