Validation of the alcohol use disorders identification test (AUDIT) – Bahasa Malaysia version among a group of alcohol users

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Abstract

Background: The Alcohol Use Disorder Identification Test (AUDIT) developed by the WHO is designed to identify individuals along the full spectrum of alcohol misuse. This study aimed to develop and validate a Bahasa Malaysia language version (AUDIT-M) of the AUDIT.

Methods: AUDIT was translated to Bahasa and back translated to English. The first version was pilot tested. The final version was administered to all the patients who were identified as alcohol users from the outpatient psychiatric clinic, or were admitted to the psychiatric ward of the University Malaya Medical Centre. Patients completed a demographic questionnaire, English and Bahasa Malaysia versions of AUDIT, M.I.N.I., CAGE, and the Bahasa Malaysia version of the WHOQoL-Bref-M.

Results: Factor analysis of AUDIT-M yielded two factors similar to the factor structure of the English version. The Cronbach α coefficients for the total AUDIT-M was 0.823; and 0.816 and 0.68 for the two AUDIT-M factors. There was a significant correlation between the AUDIT and AUDIT-M scores (Spearman's ρ = 0.979, p < 0.01). The test–retest reliability coefficient was also high (Spearman's ρ = 0.955, p < 0.01). The total AUDIT-M had a significant positive correlated with the CAGE (p < 0.01) and inversely correlated with the four subscales of WHOQoL-Bref-M.

Conclusion: The AUDIT-M questionnaire has acceptable psychometric properties and is suitable for the assessment and identification of AUD in Malaysia.

Introduction

The World Health Organization (WHO) has recognized alcohol abuse as an important health problem. Alcohol abuse has detrimental consequences for individual health as well as to the society at large. According to the most recent estimates, alcohol abuse is responsible for 1.4% of the total world burden of morbidity and 50% increase to mortality risk. According to the WHO, Malaysia is the 10th largest consumer of alcoholic beverages in the world. Each year the nation spends over $US500 million on alcohol. For a country with a population of 28 million, a relatively small population compared to the rest of the world, these figures are alarming (WHO, 2004).

In Malaysia, alcohol influences most crimes and contributes to sexual and violent assaults, suicide, and road traffic accidents leading to mortality and serious injuries. Research conducted in Malaysia has reported high underage drinking and driving under the influence. This is partly explained by the easy availability of cheap alcohol which is affordable by all regardless of socio-economic status or age (Yahaya, 2006).

One of the unique features of alcohol use in Malaysia is the availability of inexpensive local drinks called “toddy” and “samsu”. “Toddy” with 4–6% alcohol content is made from fermenting the sap of coconut palm; “Samsu”, on the other hand, is a locally distilled spirit with a high alcohol content of 37–70%. These two types of drinks are usually used by the poor rural people. In West Malaysia (Borneo), the indigenous people of Sabah and Sarawak consume homemade rice wines called “tuak” or “tapai”, with potent alcohol contents. These drinks are popular especially during tribal festivals and community gatherings. Refusal to drink when offered by hosts is regarded as a breach of etiquette, hence indirectly contributing to the incidence of Alcohol Use Disorders (AUD) among the indigenous tribes (WHO, 2004).

Mental health services in Malaysia are provided at the primary care level and provides a good opportunity to detect patients who may suffer from AUD. ZamZam et al. (2009) used the Patient Health Questionnaire and reported that 2.3% of patients who attended primary care facilities had problems associated with alcohol abuse. This may reflect the “tip of the iceberg” as the actual number of patients with alcohol-related problems is likely to be much higher. It has been reported that primary care practitioners miss about one-third of the psychiatrically ill people. Early detection of patients with excessive drinking habits and AUD allows early intervention...
and increases chances of immediate referral to the relevant discipline and specialist services. Screening for AUD can improve detection rate and help prevent grave consequences of alcohol-related problems. Pillay et al. (2011) found that the waiting time in a Malaysian public hospital, from registration to getting a prescription, is more than 2 h. The average contact with the medical personnel is only 15 min. Availability of a valid, brief, and easy to administer questionnaire makes it easier to elicit history and symptoms and assess AUD among patients.

The Alcohol Use Disorders Identification Test (AUDIT) is an English language self-administered questionnaire developed by the WHO as a screening tool to pick up early signs of harmful drinking and to identify mild alcohol dependence (Babor et al., 2001; Saunders et al., 1993). The AUDIT has proven to be an effective diagnostic instrument comparable to other well-known alcohol screening tools such as the CAGE Assessment for Alcohol Abuse (CAGE) and the Michigan Alcoholism Screening Test (MAST). Nevertheless, both have their limitations. The CAGE cannot differentiate between alcohol abuse and dependence, whereas, the MAST is lengthy with 24 questions which is a challenge to administer in a busy clinical setting (Pradhan et al., 2012).

The AUDIT consists of 10 questions rated on a 5-point scale (0 = never to 4 = daily). Scores between 8 and 15 is an indication of being at risk and a score more than 20 indicates serious alcohol abuse (Babor et al., 2001). The AUDIT has been validated and shown to be effective in different languages and different ethnicities across the world. The aim of this study was to validate the AUDIT for use in Malaysia in the Bahasa Malaysia language. Malaysia is a unique multi-ethnic country with Bahasa Malaysia as the official national language. Hence once validated, the questionnaire would be a valuable tool for early detection of alcohol abuse among the Bahasa language-speaking population.

Methods

The Medical Ethical Committee approved the study. Permission to translate and use the AUDIT questionnaire was obtained from the WHO. The study was conducted in three stages.

Stage 1: Two bilingual physicians translated the English version (source language) of AUDIT into Bahasa Malaysia language (target language). The first author and another physician assessed the semantic equivalence between the English and the Bahasa Malaysia (AUDIT-M) versions for each item. The AUDIT-M was then translated back to English by two bilingual consultant psychiatrists with proficiency in both languages. The original and back translated English versions were compared to identity medical, linguistic and cultural issues in translation.

Stage 2: After minor corrections, the revised version of the AUDIT-M was pilot tested with 10 native speakers of Bahasa Malaysia from the medical staff of the psychiatric ward in the University Malaya Medical Center (UMMC). Any unsuitable words or language flaws identified by the respondents were noted and corrected.

Stage 3: The final version of AUDIT-M was administered to 52 patients who were identified as alcohol consumers and either were admitted to the outpatient psychiatric clinic or the psychiatric ward of the UMMC during a 3-month period from September to November of 2012. The targeted sample size was 50 patients (5 patients to 1 item in the AUDIT-M). Patients were approached by the research team to take part in the study and provided written informed consent for participation.

Inclusion criteria:
- More than 18 years of age.
- Alcohol consumers.
- Willing to participate in the study.
- Able to read and converse fluently in both Bahasa and English languages.

Exclusion criteria:
- Patients with acute medical or psychiatric conditions (e.g., acute liver failure, withdrawal or intoxicated states).
- Using psychotrophic medications other than alcohol.
- Patients with cognitive disorders that could prevent them from properly answering the questionnaire.

Fifty-two patients who met the selection criteria and had given consent to participate in the study completed the demographic questionnaire, the English and the Bahasa Malaysia versions of AUDIT, the alcohol dependence subscale of the Mini-International Neuropsychiatric Interview (M.I.N.I.), CAGE Assessment for Alcohol Abuse (CAGE), and the Bahasa Malaysia version of the WHO Quality of Life-Brief scale (WHOQoL-Brief-M). The AUDIT-M was administered 1 week later to assess test–retest reliability of AUDIT-M.

Instruments

A brief questionnaire was used to record relevant background information including age, gender, ethnicity, citizenship, marital status, education level, religion, employment status, present occupation, and alcohol use. Participants were instructed to complete the questionnaires by filling in the blanks and selecting one response that best described them.

The mini international neuropsychiatric interview (M.I.N.I.), version 5.0.0

The M.I.N.I. is a short structured diagnostic interview designed to obtain DSM-IV-TR lifetime and current diagnoses covering 10 psychiatric disorders. The M.I.N.I. has good validity and reliability, and can be administered in a short period of time. This Alcohol Dependence subscale of the instrument was used to confirm alcohol dependence among the participants.

CAGE assessment for alcohol abuse (CAGE)

The CAGE is a screening instrument for the detection of alcoholism. It consists of only four easy to understand items and takes less than 1 min to complete. Two or more affirmative responses suggest that the patient has a drinking problem (Bush et al., 1987).

WHOQoL-Brief-M
The WHOQoL-Bref-M is the Bahasa language validated version of the WHO quality of life scale (WHOQoL-Brief). The scale is used to assess individual’s subjective perception of quality of life for the past 2 weeks. It consists of 26 questions and covers four domains (physical, psychological, social relationships and environment), with higher scores reflecting a higher quality of life (Hasanah et al., 2003).

Statistical analyses

All analyses were conducted using the Statistical Package for the Social Sciences version 21.0 (SPSS, Chicago, IL). Principle axis factor analysis with oblique rotation was used to explore the factor structure of AUDIT-M. The Cronbach’s \( \alpha \) was used to assess the internal consistency of AUDIT-M and its subscales. The Spearman correlation was used to assess the relationship between AUDIT-M and the AUDIT, CAGE, WHOQoL-Bref-M.

Results

Table 1 presents the demographic characteristics of the sample. The sample included 51 males and 1 female patient, with a mean age of 40.1 (\( \pm \) 11.0 SD). Fifty-one percent (\( n = 27 \)) were married. Hinduism was the most prevalent religion.

Factor analysis

Table 2 shows the results of the factor analysis. Inspection of the correlation matrix revealed the presence of coefficients of 0.3 and above. The Barlett’s test of sphericity was significant \( (p < 0.01) \) and the Kaiser–Mayer–Olkin measure of sampling adequacy for the AUDIT-M was 0.777 indicating acceptable sampling (Kaiser, 1974). Principal axis factor analysis produced two factors which corresponded to the AUDIT subscales referred to as “consumption factor” and “alcohol-related problems” (Kelly & Donovan, 2001). The two factors accounted for 57.3% of total variance. The correlation coefficients for the total AUDIT-M with the consumption and alcohol-related problems factors were 0.88 \( (p < 0.01) \) and 82 \( (p < 0.01) \), respectively.

Internal reliability

Cronbach \( \alpha \) coefficients was 0.82 for the total AUDIT-M indicating high internal consistency. The reliability coefficient for the AUDIT-M English and Bahasa Malaysia versions was fairly high (Spearman’s \( \rho = 0.979, p < 0.01 \)). The test–retest reliability of AUDIT-M was also high (Spearman’s \( \rho = 0.955, p < 0.01 \)).
Table 3. Spearman correlation coefficients of AUDIT-M with AUDIT, CAGE, WHOQoL-Bref-M.

<table>
<thead>
<tr>
<th></th>
<th>AUDIT-M</th>
<th>AUDIT</th>
<th>CAGE</th>
<th>M.I.N.I. alcohol dependence subscale</th>
<th>WHOQoL-Bref-M</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>D1</td>
<td>D2</td>
</tr>
<tr>
<td>AUDIT</td>
<td>0.979**</td>
<td>0.979**</td>
<td>0.470**</td>
<td>0.531**</td>
<td>−0.164</td>
</tr>
<tr>
<td>CAGE</td>
<td>0.470**</td>
<td>0.538**</td>
<td>0.531**</td>
<td>0.563**</td>
<td>−0.213</td>
</tr>
<tr>
<td>M.I.N.I. alcohol</td>
<td>0.531**</td>
<td>0.563**</td>
<td>0.524**</td>
<td>0.574**</td>
<td>0.275</td>
</tr>
<tr>
<td>dependence subscale</td>
<td></td>
<td></td>
<td></td>
<td>D1</td>
<td>D2</td>
</tr>
<tr>
<td>D1</td>
<td>−0.164</td>
<td>−0.089</td>
<td>−0.227</td>
<td>−0.298</td>
<td></td>
</tr>
<tr>
<td>D2</td>
<td>−0.140</td>
<td>−0.116</td>
<td>−0.213</td>
<td>−0.204</td>
<td>0.435**</td>
</tr>
<tr>
<td>D3</td>
<td>−0.270</td>
<td>−0.199</td>
<td>−0.239</td>
<td>−0.253</td>
<td>0.702**</td>
</tr>
<tr>
<td>D4</td>
<td>−0.165</td>
<td>−0.050</td>
<td>−0.219</td>
<td>0.275</td>
<td>0.523**</td>
</tr>
</tbody>
</table>

D1–D4 refer to the four subscales of the WHOQoL-Bref-M, namely Physical, Psychological, social relationships, and environment, respectively. *p<0.05, **p<0.01.

Concurrent validity

Table 3 shows the Spearman’s correlations between the AUDIT-M and the participants’ respective scores on the AUDIT (English version), CAGE, M.I.N.I. alcohol dependence subscale, and WHOQoL-Bref-M. The AUDIT-M was positively correlated with the CAGE (r = 0.47, p<0.01), the English version of AUDIT (r = 0.98, p<0.01), and the M.I.N.I. alcohol dependence scale (r = 0.531, p<0.01) AUDIT-M score showed a negative but statistically insignificant relationship with the four subscales of the WHOQoL-Bref-M.

Discussion

The AUDIT was developed by the WHO to detect harmful alcohol use. This study validated the AUDIT for use in Malaysia. Findings from the study indicate that the Bahasa Malaysia version (AUDIT-M) is a reliable and valid instrument for screening AUD among the Bahasa Malaysia-speaking population. This conclusion is based on translation and back translation of the AUDIT to ensure linguistic equivalence and extensive statistical analyses to assess reliability and validity of the AUDIT-M.

Factor analysis of AUDIT-M yielded two independent factors labelled as consumption and alcohol-related problems which. These factors closely correspond to the factor structure of the AUDIT and is consistent with the factorial models suggested by other studies (Karno et al., 2000; Kelly & Donovan, 2001). As far as reliability is concerned, the AUDIT-M showed high internal consistency. The test–retest reliability coefficient with a 1 week interval also is high. Validity was assessed by correlating AUDIT-M with scores of other instruments which have demonstrated high validity for measuring alcohol abuse. The AUDIT-M showed significant positive correlations with the English version of AUDIT, CAGE and the M.I.N.I. alcohol dependence subscale indicating a high degree of concurrent validity.

AUDIT-M had a negative but insignificant correlations with the four subscales of WHOQoL-Bref-M. This is not surprising since the study was based on a group of psychiatric patients who consume alcohol as opposed to a group with alcohol dependence where one would expect a low level of quality of life. Previous research has shown that decreasing alcohol consumption in outpatient users of alcohol is associated with improving quality of life (Kraemer et al., 2002).

The cut-off score indicating a potential diagnosis of AUD for the original AUDIT is eight. Using the M.I.N.I. alcohol dependence subscale as a benchmark, the cut-off point for potential alcohol abuse for the AUDIT-M is a score of five. Previous studies have shown that cultural differences can influence the cut-off points of AUDIT. Meneses-Gaya et al. (2009) reported the same cut-off score (≥5) for diagnosing alcohol dependence among hospitalized patients in Belgium. Therefore, it appears that the cut-off point of five is appropriate for adoption in Malaysia.

Overall, the AUDIT-M displayed promising performance in measuring alcohol use among psychiatric patients. The study has a few limitations. First, we were unable to define the causal relationship between alcohol use and quality of life. Second, the use of psychiatric patients in a university medical center clinic may not be representative of all the psychiatric patients in Malaysia.

Conclusion

The study findings confirm that the AUDIT-M is a psychometrically sound instrument with good internal consistency and concurrent validity. AUDIT-M is a sound instrument for assessing and detecting alcohol abuse in Malaysia.

Declaration of interest

The authors declare no conflict of interest.

References


drinkers is associated with improved quality of life and fewer alcohol-related consequences. *Journal of General Internal Medicine*, 17, 382–386.


