Single episode of alcohol use resulting in injury: a cross-sectional study in 21 countries
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Objective To examine the empirical basis for including the diagnostic category of “a single episode of harmful substance use” in the 11th revision of the International statistical classification of diseases and related health problems (ICD-11).

Methods We used data on patients admitted to emergency departments in 21 countries with alcohol-related injuries (i.e. with drinking within the preceding six hours) who had no sign of alcohol intoxication or withdrawal, no alcohol in blood and no sign of alcohol dependence or harmful drinking as described in the ICD-10. We obtained data on alcohol-related injuries, the patient’s causal attribution of injury to drinking, the alcohol amount consumed, blood alcohol concentration and usual drinking pattern. Patients with and without alcohol dependence or harmful drinking were compared.

Findings We included a representative sample of 18 369 patients. After adjustment for unequal sampling, 18.8% reported drinking in the six hours before injury and 47.1% of these attributed their injury to drinking. 16.3% of those reporting drinking and 10.3% of those attributing their injury to drinking were not alcohol dependent or harmful drinkers. The majority of these last two groups reported never having had five or more drinks on one occasion during the last year and had a blood alcohol concentration less than 0.05%.

Conclusion Some individuals attending emergency departments had alcohol-attributable injuries due to a single episode of drinking but had no history of harmful use or dependence. These findings highlight the public health relevance of including the new diagnostic category in the ICD-11.

Abstract in العربية, 中文, Français, Русский и Español at the end of each article.

Introduction
Alcohol use is among the top 10 risk factors for ill health globally and is one of the five leading risk factors among men, such use accounts for 3.9% to 5.1% of the global disease burden. Injury constitutes a major part of this burden: 24.4% to 25.8% of all deaths attributable to alcohol and 30.7% to 33.2% of all alcohol-attributable disability-adjusted life years lost are due to injuries. One public health strategy for reducing the disease burden is to ensure that effective interventions targeting alcohol use are provided by health services, especially by emergency departments and trauma centres, because many health conditions presented at admission are associated with alcohol. However, the casual role of alcohol use in injuries is often unrecognized, particularly when there is no marked alcohol intoxication. Moreover, health professionals in busy emergency departments may have little time to assess a patient's history of alcohol use or to diagnose alcohol use disorders.

The International statistical classification of diseases and related health problems, 10th revision (ICD-10) includes codes for alcohol use disorders that are commonly used for alcohol-focused interventions: acute alcohol intoxication (F10.0), harmful use of alcohol (F10.1) and alcohol dependence (F10.2). However, episodes of alcohol use that cause harm (e.g. alcohol-related injury) but cannot be described using these codes can neither be diagnosed nor classified using the ICD-10. During the development of the 11th revision of the ICD (ICD-11), a primary objective was to improve the clinical utility of the classification of mental and behavioural disorders. One proposed innovation is the inclusion of a new diagnostic category for a “single episode of harmful use” of psychoactive substances, which would help identify and document episodes of substance use that result in harm in the absence of a sustained harmful pattern of use or of substance dependence. Inclusion of this new category in the draft ICD-11 has two objectives. First, to facilitate the identification of patients in whom substance use has caused a health condition but who have no clear clinical manifestations of substance intoxication or substance dependence. Second, to encourage the provision of substance-focused interventions for these patients, such as brief interventions, in diverse health-care settings, including emergency departments.

The association between alcohol use and injury has most often been studied in patients attending emergency departments. One difficulty has been identifying those with alcohol-related injuries. Self-reported drinking in the six hours before the event that caused the injury has typically been used as indicator of alcohol-related injury and has been found to be valid when compared with objective measures such as the blood alcohol concentration. A more stringent criterion in patients who report drinking in the preceding six hours is their attribution of a causal association between drinking and the injury event. However, attribution is influenced by both the volume of alcohol consumed before the injury and by how much and how often the individual usually drinks. An individual’s usual drinking pattern is a good predictor of harmful outcomes – episodic, heavy consumption is considered the most detrimental pattern for health. An analysis of patients presenting with injuries to emergency departments across 19 countries found that, although the volume consumed predicted alcohol-related injury, both episodic, heavy drinking and frequent, heavy drinking were better predictors than other drinking patterns.

The aim of this study was to examine the empirical basis for including the diagnostic category of a “single episode of harmful substance use” in the ICD-11 by examining data from a large international data set on injuries involving alcohol. We determined the proportion of patients presenting to...
emergency departments with alcohol-related injuries who had no sign of alcohol intoxication or withdrawal, a low or zero blood alcohol concentration and no sign of alcohol dependence or harmful drinking as described in the ICD-10. We report how alcohol-related injury and the causal attribution of injury to drinking were associated with the amount consumed before the injury, the blood alcohol concentration and the usual drinking pattern in patients with and without alcohol dependence or harmful drinking.

Methods

Our analysis included data on a representative sample of 18 369 injured patients who attended 50 emergency departments in 21 countries (Table 1) that took part in the International Collaborative Alcohol and Injury Study, which comprised four international, collaborative research projects on alcohol and injury: the Emergency Room Collaborative Alcohol Analysis Project (ERCAAP) and three studies conducted by the World Health Organization (WHO), the Pan American Health Organization (PAHO) and the National Institute on Alcohol Abuse and Alcoholism (NIAAA) in the United States of America. All used similar methods. 20 The studies involved probability samples of consecutive injured patients aged 18 years or older who arrived in emergency departments within six hours of an event that caused injury. Each time of day (i.e. shift) and each day of the week was equally represented.

After giving informed consent, patients were interviewed by trained interviewers and their blood alcohol concentration was assessed using a breath

| Region and country | Study city and reference | Year of study | Emergency departments | Injured patients | Patients who drank before injury | Patients who attributed their injury to drinking |
|--------------------|--------------------------|---------------|-----------------------|------------------|-------------------------------|-----------------------------------------------|
|                    |                          |               | No.                   | No.              | %                            | %                              |
| Africa             |                          |               |                       |                  |                              |                                               |
| Mozambique         | Maputo                   | 2001          | 1                     | 459              | 16.7                         | 29.2                           |
| South Africa       | Cape Town                | 2001          | 1                     | 464              | 45.3                         | 51.7                           |
| United Republic of Tanzania | Moshi (unpublished data, 2018) | 2013–2014 | 1                     | 516              | 27.9                         | 22.4                           |
| Americas           |                          |               |                       |                  |                              |                                               |
| Argentina          | Mar del Plata            | 2001          | 1                     | 452              | 21.1                         | 41.8                           |
| Brazil             | Sao Paulo                | 2001          | 1                     | 496              | 12.6                         | 36.4                           |
| Canada             | Orangeville              | 2002          | 1                     | 222              | 6.3                          | 33.3                           |
| Canada             | Vancouver                | 2009          | 2                     | 249              | 22.2                         | 23.4                           |
| Canada             | Vancouver and Victoria   | 2014          | 3                     | 1191             | 14.7                         | 25.2                           |
| Costa Rica         | San Jose                 | 2012–2013     | 2                     | 1013             | 8.7                          | 54.0                           |
| Dominican Republic | Santo Domingo            | 2010          | 1                     | 501              | 19.1                         | 44.3                           |
| Guatemala          | Guatemala City           | 2011          | 1                     | 513              | 20.7                         | 79.3                           |
| Guyana             | Georgetown               | 2010          | 1                     | 485              | 20.9                         | 43.3                           |
| Mexico             | Mexico City              | 2002          | 1                     | 456              | 17.0                         | 36.4                           |
| Nicaragua          | Managua                  | 2010          | 2                     | 518              | 21.5                         | 53.3                           |
| Panama             | La Chorrera, Colon and Veraguas | 2010 | 3                     | 490              | 20.5                         | 45.2                           |
| Trinidad and Tobago | Mount Hope, San Fernando, Port-of-Spain and Scarborough | 2015 | 4                     | 252              | 20.5                         | 38.6                           |
| Europe             |                          |               |                       |                  |                              |                                               |
| Belarus            | Minsk                    | 2001          | 1                     | 457              | 30.0                         | 30.9                           |
| Czechia            | Prague                   | 2001          | 1                     | 510              | 7.7                          | 23.1                           |
| Ireland            | Dublin, Galway, Letterkenny, Sligo and Waterford | 2003–2004 | 6                     | 2088             | 22.9                         | 64.6                           |
| Sweden             | Malmö                    | 2001          | 1                     | 497              | 15.1                         | 32.3                           |
| Switzerland        | Lausanne                 | 2006          | 1                     | 325              | 25.4                         | 39.0                           |
| Western Pacific    |                          |               |                       |                  |                              |                                               |
| China              | Changsha                 | 2001          | 1                     | 533              | 18.8                         | 43.3                           |
| China              | Beijing, Hangzhou, Chengdu, Hengyang and Changsha | 2008 | 5                     | 2540             | 15.3                         | 40.6                           |
| China              | Taipei (unpublished data, 2018) | 2009 | 2                     | 1035             | 6.4                          | 34.9                           |
| Republic of Korea  | Bucheon and Uijeongbu    | 2007          | 2                     | 118              | 37.3                         | 61.0                           |
| Republic of Korea  | Seoul, Suwon, Chuncheon and Dong-gu | 2008–2009 | 4                     | 1989             | 23.6                         | 63.0                           |
| Total              | NA                       | NA            | 50                    | 18 369           | 18.8                         | 47.1                           |

NA: not applicable.

a Patients who reported drinking alcohol in the six hours before injury.
b The percentage of patients who drank before injury.
c In this study, patients were oversampled at some times of the day and data were weighted before inclusion in the analysis.
d This figure was calculated after data were weighted to adjust for unequal probability sampling in some studies.
analyser, which gives estimates that are highly correlated with chemical blood analyses.27 Across all studies, 82% of patients approached agreed to be interviewed; reasons for not completing the interview included refusal, incapacitation, being in police custody, language barriers and leaving before the end of the interview. Patients who were too severely injured to be interviewed in the emergency department were approached later in hospital after their condition had stabilized. Patients also completed a 25-minute questionnaire that included items on: (i) drinking before injury; (ii) the causal association between their drinking and injury; (iii) the usual quantity and frequency of their drinking and symptoms of alcohol dependence and harmful drinking in the last year; and (iv) demographic characteristics.

We regarded an injury as alcohol-related if the patient reported consuming alcohol in the preceding six hours, this definition has a high validity when compared with the blood alcohol concentration.19 Interviewers asked patients who reported drinking during this time, the number and size of the drinks consumed, individually for each beverage type (including local beverages). The total alcohol volume consumed was calculated and converted into several standard drinks, where we defined a standard drink as containing 16 mL, or 12.8 g., of pure ethanol. Interviewers also asked patients who reported drinking during the six hours whether they believed the event would still have happened had they not been drinking (i.e. causal attribution of injury to drinking).

To identify each patient’s usual drinking pattern in the previous 12 months, interviewers were asking a series of questions on how often they drank alcoholic beverages, on a range from every day or nearly every day to one to five times a year. The graduated-frequency approach was used to determine how frequently they consumed 5 to 11 drinks or 12 or more drinks on one occasion,22 this information was used to derive the number of occasions on which they had five or more drinks in the last year. Their usual drinking pattern was based on the frequency of alcohol consumption (i.e. less than weekly, weekly or more often) and the frequency of having five or more drinks on one occasion (i.e. never, less than weekly, weekly or more often). Although the size of each drink could not be determined using the graduated-frequency questions, we estimated the ethanol content of each drink to be 15.2 to 17.8 mL (i.e. 12 to 14 g) once the size of local beverages had been taken into account.

To assess alcohol dependence, interviewers asked patients the four questions in the Rapid Alcohol Problems Screen (hereafter referred to as RAPS4):27 (i) Have you had a feeling of guilt or remorse after drinking? (ii) Has a friend or a family member ever told you about things you said or did while you were drinking that you could not remember? (iii) Have you failed to do what was normally expected of you because of drinking? and (iv) Do you sometimes take a drink in the morning when you first get up? A positive response to one or more items indicates alcohol dependence. This instrument was developed and tested in emergency departments by comparison with the alcohol section of the core version of the Composite International Diagnostic Interview,24 which was adapted to include criteria for alcohol dependence and harmful drinking or alcohol abuse from both the ICD-10 and the Diagnostic and Statistical Manual of Mental Disorders, fourth edition.25-27 The RAPS4 was found to perform as well or better than other screening instruments for alcohol dependence in both emergency departments and in the general population.28-32 In addition, it was also found to have good sensitivity and specificity for identifying alcohol tolerance in 13 countries.24 However, as the RAPS4 did not perform as well for harmful drinking or alcohol abuse as for alcohol dependence, two questions on drinking quantity and frequency were added: (i) Have you had five or more drinks on at least one occasion in the last year? and (ii) Do you drink at least once a month? A patient who answered yes to both questions was regarded as drinking harmfully. This new instrument, called the RAPS4-QF, performed well for identifying harmful drinking or alcohol abuse in both emergency departments and in the general population in Argentina,33 Poland30 and the United States.34-36 The RAPS4-QF also had good sensitivity and specificity for identifying heavy drinking (i.e. five or more drinks on one occasion at least monthly) across 13 countries and was not affected by regular drinking patterns in those countries.34-36 We regarded a positive result on the RAPS4 or positive responses to both the quantity and frequency questions as indicating alcohol abuse or harmful drinking, respectively.

Data analysis
We divided patients who reported drinking in the six hours before injury and those who causally attributed their injury to drinking into three groups: (i) those who had a positive result on the RAPS4 (i.e. RAPS4-positive); (ii) those who had a negative result on the RAPS4 (i.e. RAPS4-negative) but positive responses to both the quantity and frequency questions (i.e. QF-positive); and (iii) those who were RAPS4-negative and had a negative response to one or both of the quantity and frequency questions (i.e. RAPS4-QF-negative). We compared these three groups to identify differences in the amount of alcohol consumed before injury, blood alcohol concentrations, usual drinking patterns, sex and age (i.e. 18–29 years, 30–49 years or older than 49 years). In four studies, researchers oversampled patients at some times of the day for logistical reasons associated with shift patterns. Consequently, we weighted the data to adjust for unequal probability sampling (Table 1).

Results
After adjustment for unequal sampling, it was estimated that 18.8% of the 18 369 patients reported drinking in the six hours before the event that caused injury and therefore had an alcohol-related injury. Table 1 shows, for each country, the proportion who reported drinking before injury and, of those, the proportion who causally attributed their injury to drinking. The proportion who reported drinking before injury varied widely, from 45.3% in South Africa to 6.3% in Canada. Among those who reported drinking, 47.1% attributed their injury to drinking, with a large variation across countries: from 22.4% in the United Republic of Tanzania to 79.3% in Guatemala.

Table 2 shows the number of drinks consumed before injury, the blood alcohol concentration, drinking pattern in the preceding year, sex and age for patients who reported drinking before injury and for those who attributed their injury to drinking, categorized according to whether they were RAPS4-positive, RAPS4-negative but QF-positive or RAPS4-QF-negative. Among those who reported drinking before injury, 45.6% were RAPS4-positive and 38.1% were RAPS4-negative but QF-positive. Among those who attributed their injury to drinking, 52.4% were RAPS4-positive and 37.3% were RAPS4-negative but QF-positive. Among both patients who reported drinking before injury and patients who causally attributed their injury to drinking, those who were RAPS4-positive or
RAPS4-negative, but QF-positive were significantly more likely than those who were RAPS4-QF-negative to have reported a large number of drinks before injury, to have a high blood alcohol concentration and to have had five or more drinks frequently in the preceding year. Over 80% of patients who were RAPS4-positive or RAPS4-negative, but QF-positive were male compared to less than 70% of those who were RAPS4-QF-negative (Table 2).

Overall, 16.3% of patients who reported drinking before injury showed no evidence of alcohol dependence or harmful drinking. In this group, 82.8% reported never having had five or more drinks on one occasion during the last year and 42.9% reported two or fewer drinks before the injury (Table 2). In addition, 36.9% had a blood alcohol concentration less than 0.01% and 24.5% had a concentration between 0.01% and 0.05%. About two thirds were male and the majority were younger than 50 years. Furthermore, 10.3% of patients who attributed their injury to drinking showed no evidence of alcohol dependence or harmful drinking. In this group, 78.6% reported never having had five or more drinks on one occasion during the last year. In addition, 81.3% reported having had five or fewer drinks before their injury (39.8% reported two or fewer drinks) and 40.8% had a blood alcohol concentration less than 0.01% (18.3% had a concentration between 0.01 and 0.05%). Again, about two thirds were male and the majority were younger than 50 years.

**Discussion**

The main diagnostic categories covering alcohol-related harm in the ICD-10 include alcohol dependence, harmful drinking, alcohol intoxication and alcohol withdrawal; no classification is available for individuals not covered by one of these four categories who may have experienced harm due to a single episode of drinking. Health professional might therefore not identify these individuals as eligible for alcohol-focused interventions.

Here we show that a substantial proportion of patients (including females) were admitted to emergency departments with alcohol-related injuries after drinking relatively small amounts and had no sign of acute alcohol intoxication. These patients also had no history of heavy episodic drinking or of any other pattern of alcohol use that would qualify as an alcohol use disorder. Hence, these patients do not fall into one of the four ICD-10 diagnostic categories but who would have met diagnostic requirements for a single episode of harmful use of alcohol as described in the draft ICD-11. This draft includes a proposed diagnostic category for a single episode of harmful use of alcohol, with the definition:

A single episode of use of alcohol that has caused damage to a person’s physical or mental health or has resulted in a behaviour leading to harm to the health of others. The episode of harmful use of alcohol typically involves acute harm to health, which is not limited to symptoms of acute intoxication or withdrawal and may include substance-induced mental disorders. This diagnosis should not be made if the harm is attributed to a known pattern of alcohol use.38

This definition excludes three diagnostic categories already in effect: harmful pattern of use of alcohol (6B81), alcohol withdrawal (6B83) and alcohol dependence (6B82).

Our analysis did not take into account harm to others resulting from the patient's drinking before injury, as included in the proposed definition. A previous analysis of data from emergency departments in 14 countries found that the number of patients who believed an injury due to violence could be attributed to alcohol increased by 62% if they were able to include the other person's drinking when attributing the cause.37 Consequently, our data may give a conservative estimate of the proportion whose injury could have been attributed to a single episode of harmful drinking.

Our findings underscore the importance of including the new diagnostic category of a single episode of harmful drinking in the ICD-11. Its inclusion would help identify patients who could benefit from a brief intervention for harmful drinking in the emergency department and would provide support for alcohol policies aimed at reducing alcohol-related harm. At present, interventions focused on alcohol use are not routinely implemented in emergency departments despite the expectation that an alcohol-related emergency admission could provide an effective learning moment for the patient to consider reducing his drinking or stopping altogether.38

One strength of our study is the inclusion of data from 21 countries that used identical protocols in representative samples of emergency department patients. There are some caveats, however. Patients themselves provided information on drinking before injury, on causal attribution of the injury and on usual alcohol consumption. However, previous emergency department studies found that only a very small percentage (ranging from 0.5% to 3.3%) of patients denied drinking but had a substantial blood alcohol concentration.39 In addition, the proportion of patients who reported having fewer than five drinks before injury and the proportion who had a blood alcohol concentration under 0.05% were similar, indicating that the patients' reports were valid. Another consideration is that the definition of a standard drink varied considerably both within and between countries. Heavy episodic drinking is defined by WHO as the consumption of at least 60 g of ethanol on one occasion, which is slightly lower than our definition of five or more drinks on one occasion (i.e. 60 to 70 g of ethanol).40 Using WHO's definition would have resulted in a slightly higher prevalence.

In conclusion, current ICD-10 codes do not cover all alcohol-related injury, although the harmful consequence of alcohol use affects the global burden of disease. Here we show that some individuals attending emergency departments had alcohol-attributable injuries but no history of harmful use or dependence. This is just one setting in which a single episode of harmful alcohol use can be identified and recognizing such episodes can have clinical and public health implications. The findings highlight the importance of including the new diagnostic category of a single episode of the harmful use of alcohol in the ICD-11.

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Table 2. Characteristics of injured patients in emergency departments who drank before injury and who attributed their injury to drinking, by alcohol dependence and harmful drinking worldwide, 2001–2015

| Characteristic | % of patients who drank before injury (n = 3521) | % of patients who attributed their injury to drinking (n = 1606) |
|---------------|-----------------------------------------------|---------------------------------------------------------------|
|               | RAPS4-positive\(^a\) (n = 1641) | RAPS4-negative, QF-positive\(^b\) (n = 1311) | RAPS4-negative\(^a\) (n = 569) | RAPS4-positive\(^b\) (n = 862) | RAPS4-negative, QF-positive\(^b\) (n = 582) | RAPS4-QF-negative\(^b\) (n = 162) |
| No. drinks before injury\(^c\) |                               |                                                               |                               |                               |                                                               |                               |
| 0 to 2        | 9.7                             | 17.6                                                          | 42.9                           | 7.0                             | 13.6                                                          | 39.8                           |
| 3 to 5        | 22.7                           | 28.6                                                          | 37.5                           | 18.4                            | 23.9                                                          | 41.5                           |
| 6 to 10       | 30.0                           | 32.7                                                          | 13.1                           | 31.9                            | 36.3                                                          | 13.6                           |
| > 10          | 37.6                           | 21.1                                                          | 6.5                            | 42.7                            | 26.2                                                          | 5.1                            |
| Blood alcohol concentration, %\(^d\) |                               |                                                               |                               |                               |                                                               |                               |
| < 0.01        | 15.2                           | 25.2                                                          | 36.9                           | 10.3                            | 22.6                                                          | 40.8                           |
| 0.01 to < 0.05| 25.6                           | 23.5                                                          | 24.5                           | 23.4                            | 24.0                                                          | 18.3                           |
| 0.05 to < 0.10| 18.8                           | 19.8                                                          | 17.3                           | 19.8                            | 19.9                                                          | 15.4                           |
| ≥ 0.10        | 43.4                           | 31.6                                                          | 21.3                           | 46.5                            | 33.5                                                          | 25.5                           |
| Drinking pattern in last year\(^e\) |                               |                                                               |                               |                               |                                                               |                               |
| Drank less than weekly, never had ≥ 5 drinks | 3.5                             | 0.0                                                            | 37.9                           | 3.8                             | 0.0                                                            | 40.6                           |
| Drank weekly or more often, never had ≥ 5 drinks | 4.6                             | 0.0                                                            | 44.9                           | 2.5                             | 0.0                                                            | 38.0                           |
| Drank less than weekly, had ≥ 5 drinks less than weekly | 15.2                            | 24.0                                                          | 17.2                           | 15.5                            | 22.2                                                          | 21.4                           |
| Drank weekly or more often, had ≥ 5 drinks less than weekly | 13.5                            | 26.0                                                          | 0.0                            | 9.1                             | 20.6                                                          | 0.0                            |
| Drank weekly or more often, had ≥ 5 drinks weekly or more often | 63.2                            | 50.0                                                          | 0.0                            | 69.1                            | 57.2                                                          | 0.0                            |
| Sex\(^f\) |                               |                                                               |                               |                               |                                                               |                               |
| Female        | 15.3                           | 18.5                                                          | 31.4                           | 15.8                            | 17.9                                                          | 30.7                           |
| Male          | 84.7                           | 81.5                                                          | 68.6                           | 84.2                            | 82.1                                                          | 69.3                           |
| Age, years\(^g\) |                               |                                                               |                               |                               |                                                               |                               |
| 18 to 29      | 41.6                           | 47.8                                                          | 40.1                           | 38.8                            | 46.6                                                          | 46.4                           |
| 30 to 49      | 43.9                           | 29.0                                                          | 38.5                           | 45.6                            | 39.6                                                          | 36.3                           |
| ≥ 50          | 14.6                           | 13.2                                                          | 21.4                           | 15.5                            | 13.8                                                          | 17.3                           |

QF: two questions on drinking quantity and frequency; RAPS4: four-item rapid alcohol problems screen.
\(^a\) Patients were regarded as alcohol dependent if they had a positive result on the four-item rapid alcohol problems screen (i.e. were RAPS4-positive).
\(^b\) Harmful drinking was assessed using two questions on drinking quantity and frequency (see main text for details); patients who gave positive responses to both were regarded as drinking harmfully and were designated QF-positive. Otherwise, they were QF-negative.
\(^c\) Patients who reported drinking alcohol in the six hours before injury.
\(^d\) All percentages were calculated after data were weighted to adjust for unequal probability sampling in some studies.
\(^e\) Patients who were RAPS4-negative and QF-negative were designated RAPS4-QF-negative.
\(^f\) A standard drink was defined as containing 16 mL (i.e. 12.8 g) of pure ethanol.
\(^g\) Patients who were RAPS4-positive or RAPS4-negative but QF-positive were significantly more likely than those who were RAPS4-QF-negative to report a large number of drinks before injury: \(P < 0.001\) (\(\chi^2\) test) for both those who drank before injury and those who attributed their injury to drinking.
\(^h\) Patients who were RAPS4-positive or RAPS4-negative but QF-positive had significantly higher blood alcohol concentrations than those who were RAPS4-QF-negative: \(P < 0.001\) (\(\chi^2\) test) for both those who drank before injury and those who attributed their injury to drinking.
\(^i\) Drinking pattern was determined from drinking frequency and how often the patient had five or more drinks on one occasion in the last year, where the volume of a drink ranged from 15.2 to 17.8 mL (i.e. 12 to 14 g) of pure ethanol across study sites.
\(^j\) Patients who were RAPS4-positive or RAPS4-negative but QF-positive were significantly more likely than those who were RAPS4-QF-negative to have had five or more drinks frequently in the last year: \(P < 0.001\) (\(\chi^2\) test) for both those who drank before injury and those who attributed their injury to drinking.
\(^k\) Patients who were RAPS4-positive or RAPS4-negative but QF-positive were significantly more likely than those who were RAPS4-QF-negative to be male: \(P < 0.001\) (\(\chi^2\) test) for both those who drank before injury and those who attributed their injury to drinking.
\(^l\) Patients who were RAPS4-positive or RAPS4-negative but QF-positive were significantly more likely than those who were RAPS4-QF-negative to be young: \(P < 0.001\) (\(\chi^2\) test) for those who drank before injury and \(P = 0.029\) those who attributed their injury to drinking.
The objective was to examine the conditions empirically of the inclusion of the category of diagnostic “episodic harmful use of substances” in the 11th revision of the International Classification of Diseases and Related Health Problems (ICD-11) and to determine the characteristics of the patients involved in a study of traumatic injuries associated with receipt of alcohol treatment in 21 countries.

**Methods**

We used data from 18,369 patients admitted to hospital within 6 hours of a traumatic injury due to alcohol consumption, and compared them with a group of patients who did not report alcohol consumption. The torrential data were assessed through the construction of 16 logistic regression models, and we used the ICD-11 classification criteria for harm, alcohol dependence, and evidence of alcohol consumption, as well as the characteristics of the patients and the nature of the injuries.

**Results**

We found that 18.8% of the patients had consumed alcohol within 6 hours of the injury, and that 47.1% of these patients did not have a history of alcohol dependence. The percentage of patients with alcohol dependence was 16.3%. The rate of alcohol dependence was higher in patients who consumed alcohol than in those who did not. The rate of alcohol dependence was also higher in patients who consumed alcohol to excess.

**Conclusion**

The results of this study suggest that the ICD-11 classification criteria for harm, alcohol dependence, and evidence of alcohol consumption are appropriate for use in hospital emergency departments. Further research is needed to determine the effectiveness of these criteria in clinical practice.

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**Competing interests**

None declared.
ces deux derniers groupes ont signalé n’auront jamais consommé cinq verres ou plus lors d’une même occasion au cours de l’année écoulée et présentaient une concentration d'alcool dans le sang inférieure à 0,05%.

**Conclusion**

Certains patients pris en charge par des services d'urgence avaient des traumatismes attribuables à l'alcool en raison d'un épisode isolé de consommation, mais ne présentaient pas d'antécédents de consommation nocive ou de dépendance. Ces conclusions soulignent l'intérêt pour la santé publique d'inclure une nouvelle catégorie de diagnostic dans la CIM-11.

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