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▶ A comparison of two single-item screeners for hazardous drinking and alcohol use disorder.

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Can you get away with asking just a single question to identify risky drinkers and even dependent drinkers? When the thresholds are suitably adjusted, asking either about frequency of heavy drinking or maximum single-occasion consumption worked remarkably well in the US general population.

Summary Financial pressure on primary care providers to minimise the length of appointments and obtain necessary medical information as economically as possible has increased interest in ways to screen patients for alcohol problems which consist of a single question. Generally this question has been about how often or whether in a given period the patient has consumed over a certain amount of alcohol, in the USA generally five standard drinks for men and four for women, equivalent to about nine and seven UK units respectively. Depending on the precise criteria, these can identify a large proportion (around 8 in 10) of people which more extended tests show have alcohol use disorders (abuse or dependence) or who drink at hazardous levels, while also correctly identifying most who do not – measures known respectively as sensitivity and specificity.

An alternative approach tried to date only once is not to how *often* someone as drunk heavily, but how *much* as a maximum they drank in standard drinks or some other unit of alcohol, and then to find a quantity which most acceptably identifies problem drinkers while not falsely identifying non-problem drinkers.

In both cases it is important to test whether the performance of the tests is as good for men as for women and whether criteria need to be adjusted. Similarly for different age

groups, especially since young people often 'binge' drink yet do not meet criteria for alcohol use disorder, while older people may not and yet still be problem drinkers.

This study tested these two approaches as screening methods in a representative sample of 43,093 US adults. Its two questions were:

- **Frequency** "During the last 12 months, about how often did you drink [five for men, four for women] or more drinks in a single day?"
- **Maximum** "During the last 12 months, what was the largest number of drinks that you drank in a single day?"

The questions were embedded in a survey which included other questions about drinking in the last 12 months, plus a 33-item interview which enabled a diagnosis of alcohol dependence or abuse according to US criteria. Also identified was past-year hazardous drinking was defined as in excess of national US low-risk drinking guidelines. At issue was how well at various thresholds the single questions identified any problem drinking (hazardous, abuse or dependence), alcohol use disorder (abuse or dependence), or specifically dependence. Optimal thresholds were defined as those resulting in the best combination of sensitivity (identifying problem drinkers) and specificity (identifying non-problem drinkers).

Main findings

Across the entire sample, the best frequency thresholds for dependence were heavy drinking at least three times (but seven for men and once for women) a year, and for any abuse/dependence disorder or any problem drinking, at least once a year (but three times for disorders among men). For the maximum drinks question, the best thresholds were for dependence at least five drinks (but seven for men and four for women), and for any disorder or any problem drinking, at least four drinks (but five for men). In all but one case these thresholds correctly identified over 80% of the relevant category of drinkers and over 80% of people not in this category.

At these thresholds, in respect of dependence the two questions performed equally well. But the maximum drinks question identified more of the disorder/problem drinkers (sensitivity) while the frequency question was better at correctly identifying people without these drinking problems and not falsely identifying them as disorder/problem drinkers (specificity).

Optimal thresholds varied for different population subgroups. Variations for men and women are displayed in the previous paragraph. As age increased (the categories were 18 to 34, 35 to 64, and 65 and older), in respect of both questions and all three categories of problem drinkers, optimal thresholds got lower. Other than in the most elderly, given optimal thresholds, both questions performed well. Among the elderly the frequency question did not at whatever threshold identify an acceptable proportion (in each case below 80%) of the three categories of drinkers. In contrast, on this criterion the maximum drinks question performed well, as it did (though not as well as the frequency question) in correctly identifying elderly people without these drinking problems. Optimal thresholds were generally higher for native Americans, white people and Hispanics, than for Asians and black people. They were also slightly higher among people who had drunk at all in the past year or visited an emergency department, due to higher thresholds correctly identifying more non-problem drinkers.

The authors' conclusions

The study provided clear support for single-question screening instruments for problem drinking, and demonstrated that the maximum drinks question is a worthy alternative to the frequency or recency of heavy drinking. Both performed very well in predicting problem drinking.

Rather than favouring one type of screening question over the other, the results highlight the value of an arsenal of screening tools which contains an alternative single-item screening test, and the importance of using one which yields a wide range of responses. This not only facilitates the selection of different screening thresholds for different subgroups, but also gives room for flexibility in the relative importance assigned to sensitivity and specificity in the selection of optimal thresholds. This decision should reflect the expected prevalence of the drinking problems being identified and the costs associated with a positive screen in terms of further action such as brief interventions, counselling or treatment.

Optimal screening thresholds varied substantially across population subgroups and should be matched to these subgroups to maximise screening performance. These results provided strong support for the common gender-specific definitions of risky drinking. Similarly, they also support a lower risk drinking threshold for people aged 65 and older and for black people, the latter possibly because they consume more alcohol per drink than other racially or ethnically defined groups.

Notably this study did not find a single instance where a frequency threshold defined in terms of exceeding this at least once a month was optimal, strongly suggesting that such questions should ask about the number of heavy drinking occasions over the past year.

The same dataset has been used to test the AUDIT-C screening questionnaire to identify dependence and dependence/abuse. This tool confined to questions about drinking provides an alternative to brief screening instruments which ask about alcohol-related problems. It consist of the first three questions of the ten-item AUDIT questionnaire, a widely accepted and researched screening tool. In respect of identifying (or not) dependence and dependence/abuse, at optimal thresholds the single questions in the featured study were of comparable power. However, among past-year drinkers they identified a slightly higher proportion of dependent drinkers but a slightly lower one of non-dependent drinkers.

FINDINGS For busy primary care and other staff tasked with screening patients for risky drinking, these results will come as good news, offering a rapid and relatively non-intrusive way to sift patients for further testing and/or intervention.

The findings can be compared with those from the SIPS project in England, which tested screening (and brief interventions) in primary care, emergency departments, and probation offices. Screening results from SIPS have been amalgamated in conference presentations (1 2).

One of the screening methods was a variation on the frequency question in the featured study, a single question asking: "How often do you have [eight for men, six for women] or more standard drinks on one occasion?" Monthly or more was considered a positive screen. The main alternative was the FAST Alcohol Screening Test. It began with the

single frequency question and registered a positive screen if the response was weekly or more often. Otherwise three further questions about drink-related problems were asked. Scores in response to the four questions were summed to determine whether to proceed with intervention.

Except in emergency departments, generally the FAST test was best in terms of identifying (it spotted over 8 out of 10) risky drinkers who would have been picked up by the longer AUDIT questionnaire. In primary care in particular, FAST was preferable, identifying 89% of risky drinking patients compared to 81% for the single question. It was also significantly better at identifying people whose AUDIT scores indicated a medium severity of alcohol problems, the range thought appropriate for brief interventions. Though it consists of four questions, generally only the first (about frequency of excessive drinking) had to be asked, offering perhaps an acceptable compromise between speed and accuracy.

This draft entry is currently subject to consultation and correction by the study authors and other experts.

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