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Could more than three million older people in England be at risk of alcohol-related harm? A cross-sectional analysis of proposed age-specific drinking limits

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Abstract

Objective: to determine the impact of recently proposed age-specific alcohol consumption limits on the proportion and number of older people classified at risk of alcohol-related harm.
Design: nationally representative cross-sectional population data from the Health Survey for England (HSE).
Participants: adults with valid alcohol consumption data, comprising 14,718 participants from 2003 and 14,939 from 2008.
Main outcome measure: the prevalence of alcohol consumption in excess of existing and recently proposed consumption limits, plus associated population estimates.
Results: the number of individuals aged 65 or over and drinking in excess of daily recommended limits would have increased 2.5-fold to over 3 million in 2008 under age-specific recommendations proposed in a report from the Royal College of Psychiatrists, equating to an at-risk population 809,000 individuals greater than found within the 16–24 age group during the same year. Suggested revisions to existing binge drinking classifications would have defined almost 1,200,000 people aged 65 or over as hazardous consumers of alcohol in 2008—a 3.6-fold increase over existing definitions.
Conclusion: age-specific drinking recommendations proposed in the Royal College of Psychiatrists Report would increase the number of older drinkers classified as hazardous alcohol consumers to a level greater than found among young adults aged 16–24.

Keywords: *aged, alcohol consumption, adolescent, alcoholism, population, older people*

Introduction

Recent public health policies designed to tackle alcohol misuse have focused their attention upon the behaviours of young people [1–5], constructing problematic alcohol consumption as a phenomenon confined to a specific subset of the population. In doing so, policymakers have lent spurious support to the conclusion that the burden of alcohol-related harm is a minority problem and one that can be rectified through measures targeted toward young people [6].

It is widely acknowledged that consistent alcohol consumption in excess of current recommended limits is associated with a wide range of health conditions, including liver cirrhosis, heart failure and cancer [7]. Unsurprisingly, alcohol misuse and alcohol-related morbidity exert a substantial burden on public resources, accounting for around £2.7 bn of NHS spending per annum [8], with an overall social cost estimated to be as high as £55 bn [9]. Given its stark impact on public resources and population health, there is little doubt that efforts to reduce problematic alcohol consumption is of paramount importance.

With the tendency of public policy to focus almost exclusively upon the behaviours of younger drinkers, the ability of government to attenuate alcohol-related harm is limited by its ignorance of problematic consumption within older populations—an omission in need of urgent amendment given changes to consumption patterns evident over the past decade.

Trend data from the General Lifestyle Survey show that the prevalence of alcohol consumption in excess of daily recommended limits [10] has declined among young people aged 16–24, from 50 to 34% of men and 41 to 31% of women between 1998 and 2010 [11, 12]. Over the same

12-year period, excessive consumption among older people aged 65 and above has been steadily rising, from 17 to 22% of men and from 4 to 11% of women [11, 12]. This trend is apparent across several concurrent population surveys, which consistently reveal a growing level of problematic alcohol consumption within older age groups that remains unrecognised by alcohol policy [13, 14].

This is of particular concern considering the heightened susceptibility of older age groups to alcohol-related harm. With the metabolism of alcohol becoming increasingly impaired with age, older drinkers are understood to be at greater risk to a wider range of alcohol-related harms than younger drinkers, including impairments to physical and cognitive functioning (e.g. falls, accidents and incontinence) [14, 15], poor mental health (e.g. suicide and self-neglect) [14, 15] and adverse drug reactions such as those arising as a consequence of increased polypharmacy [15] and alcohol use for medicinal purposes [16].

It is therefore unsurprising that while excessive episodic alcohol consumption is highest among younger people, it is those aged 65 and above who are subject to the greatest alcohol-related morbidity, with 10 times the number of alcohol-related NHS admissions in England in 2010–11 compared with those aged 16–24 [17]. Meanwhile, alcohol-related mortality in England was 16 times greater among men and 17 times greater among women aged 55–74 compared with those aged 16–34 [18].

Given the above, it is likely that existing recommended daily limits defined for the general population may be unsafe for older drinkers, especially those with pre-existing medical problems or in receipt of certain medications. Accordingly, a recent report from the Royal College of Psychiatrists (RCPsych) [15] has suggested lowering the daily recommended limits for older people. The report recommends an upper limit of 1.5 units a day for persons aged 65 or over and reclassifies binge drinking for older consumers as the consumption in a single session of >4.5 units for men and >3 units for women. This paper sought to examine the effect that these suggested age-specific drinking limits would have upon the proportion and absolute number of individuals classified as being at risk of alcohol-related harm.

Methods

Sampling

The reported analyses drew on data obtained from the HSE, an annual, nationally representative cross-sectional survey of the non-institutionalised English population. Sampling and data collection methods are detailed elsewhere [19]. In brief, the sample was drawn using multistage stratified probability sampling, with the general population disaggregated into postcode sectors using the Postcode Address File. Postcode sectors were selected at random and designated as the primary sampling unit from which household addresses were in turn selected randomly.

Data were extracted from the HSE to cover a 5-year period from 2003 to 2008. The 2003 wave of the HSE comprised 14,718 individuals aged 16 or over, while the 2008 wave comprised 14,939 individuals aged 16 or over.

Measures

Alcohol consumption

Survey participants who consumed alcohol were identified through the following question: 'Do you ever drink alcohol nowadays, including drinks you brew or make at home?'. Those who answered in the negative were asked to confirm that they do not drink even on special occasions or for medicinal purposes: 'Could I just check, does that mean you never have an alcoholic drink nowadays, or do you have an alcoholic drink very occasionally, perhaps for medicinal purposes or on special occasions like Christmas and New Year?'. This supplementary question was asked in order to capture as many current drinkers as possible.

Survey participants that answered 'yes' to either question were determined to be current drinkers and asked 'Did you have an alcoholic drink in the seven days ending yesterday?'. Of those that disclosed having consumed alcohol in the week prior to interview, information was gathered regarding the type and quantity of drinks consumed on the heaviest day during the week. These data were then used to estimate alcohol unit consumption using a method of conversion detailed elsewhere [20]. The applied conversion factors were revised in 2006 and 2007 to account for changes to the drinking environment that rendered earlier assumptions concerning drink strength and standard wine glass sizes invalid [21]. This should be given consideration when comparing consumption estimates over time.

Alcohol units were categorised to represent consumption in excess of existing recommended daily limits (>3 units for women and >4 units for men) and binge drinking (>6 units for women and >8 units for men), as well as the thresholds proposed in the RCPsych report (a recommended daily limit for both sexes of 1.5 units, plus the reclassification of binge drinking as >4.5 units for men and >3 units for women).

Excluded from analyses were individuals with missing data for any of the alcohol-related questions outlined above. These exclusions amounted to 118 individuals from 2003 and 163 from 2008, or around 1% of the total sample.

Statistical analysis

Complex survey design

The multistage sampling design adopted by the HSE produces a more geographically concentrated group of participants than is the case when selecting from a simple random sample; individuals from households in the same postcode sector are likely to exhibit greater homogeneity than would otherwise be the case. Thus, by restricting the sample to a limited number of postcode sectors, the risk of

drawing a sample different from the general population is increased. Such clustering weakens precision and inflates standard errors. Failure to account for this would lead to an underestimation of sample variance and thereby increase the risk of Type II error.

Accordingly, Stata 11 was used to calculate the design effect arising from the sampling structure of the HSE, with standard errors multiplied according to the square root of this design effect so as to inflate standard errors in accordance with the imprecision gained as a consequence of clustering [22].

Weights

Analyses were also adjusted for non-response to provide a sample representative of the general population. In brief, the non-response weight was calculated in two stages. First, by fitting a logistic regression model with interview completion as the outcome and age, sex, household type, geographical area and household social class included as predictors. Non-response weights were calculated as the inverse predicted probability of response. These non-response weights were then adjusted to ensure agreement with national population estimates for age, sex and geographical area. Detailed information concerning the calculation of this weight are published elsewhere [19].

Analyses

Analyses were undertaken using Stata 11. Prevalence estimates were created by dividing by the number of participants in each age group who consumed alcohol in excess of existing and proposed recommended daily limits on their heaviest drinking day in the week prior to interview by the total number of participants in each age group. These prevalence estimates were then used to calculate population estimates and thus determine the number of people potentially at risk of alcohol-related harm. The method by which the population estimates were calculated is detailed elsewhere [23].

Results

Consumption in excess of recommended daily limits

As shown in Table S1 in the Supplementary data in *Age and Ageing* online, reducing the recommended daily limit to 1.5 units for men and women aged 65 or over would have produced 2.8- and 4.3-fold increase in the proportion of older individuals classified as being at risk of alcohol-related harm in 2003. In 2008 the equivalent increases arising from the suggested reclassification of hazardous consumption were 2.3- and 2.7-fold, respectively. As a result, 53.8% of men and 28.3% of women aged 65 or over would have been defined in 2008 as hazardous consumers of alcohol compared with 23.0% of men and 10.6% of women under existing guidelines.

Adopting the 1.5 unit limit suggested in the RCPysch's report, the number of people aged 65 or over and classified as hazardous consumers of alcohol stood at a level far in excess of those aged 16–24. By comparison with existing government guidelines, Table S2 in the Supplementary data available in *Age and Ageing* online shows how the number of older men and women classified as hazardous alcohol consumers would have reached 3,142,000 in 2008—a figure 1,865,000 greater than classified under the current recommended daily limit.

Moreover, with the 1.5 unit threshold applied, the number of older hazardous alcohol consumers would have been 99,000 higher than among men and women aged 16–24 in 2003. By 2008 this figure would have risen to a level 809,000 higher, reflecting falling consumption among younger drinkers and rising consumption within the older population.

Binge drinking

Table S1 in the Supplementary data available in *Age and Ageing* online displays the effect of the RCPsych report's proposed recommendations upon the proportion of older men and women classified as binge drinkers. The data show that, as with the recommended daily limits, increases would have been greatest in relative terms for older women, with a 12.3-fold rise in 2003 and a 5.6-fold rise in 2008 comparative to the existing binge drinking definition.

However, the proportion of older people classified as binge drinkers remained substantially lower than for individuals aged 16–24, at 20.7% of older men and 10.6% of older women in 2008 compared with 32.0% of younger men and 26.5% of younger women under the current thresholds.

As shown in Table S2 in the Supplementary data available in *Age and Ageing* online, applying the RCPsych report's proposed thresholds would have increased the number of older people classified as binge drinkers in 2008 from 251,000 men and 84,000 women to 730,000 and 468,000, respectively, or 863,000 more than currently classified. This total of 1,198,000 older binge drinkers in 2008 falls short of the number of young binge drinkers by half a million.

Discussion

The number of older people classified as being at risk-of alcohol-related harm would increase 2.5-fold under proposals suggested in the RCPsych report. In lowering the recommended daily limit to 1.5 units for men and women aged 65 or over, the resulting figure of 3,142,000 at-risk older drinkers in 2008 was 809,000 more than found in the 16–24 age group and 1,865,000 more than classified at-risk under existing guidelines. Even greater relative increases were identified among those classified as binge drinkers,

with the RCPsych report's recommendations producing a 3.6-fold increase in the number of men and women aged 65 or above defined as harmful consumers of alcohol in 2008.

With the RCPsych report's recommendations applied, the number of older binge drinkers would have increased 1.9-fold (and without by 1.5-fold) in just 5 years (2003–2008), largely as a consequence of rising consumption among older women. If current trends in drinking intensity remain, the issue of alcohol-related harm within older populations looks set to escalate. Projected ageing of the country's demographic profile will serve only to exacerbate this problem, with the number of individuals aged 65 or over growing at a rate far in excess of any younger age group. Within 25 years (2010 to 2035), the number of people in England aged 16–24 years is set to rise by just 8% to 7,826,000, compared with a rise of 64% to 16,485,000 among those aged 65 and over [24].

While it is understood that age-related deteriorations in alcohol tolerance are such that the risk of alcohol-related harm in older populations is greater than in younger populations at equivalent levels of alcohol unit intake, there is insufficient evidence at present to support the specific consumption thresholds recommended in the RCPsych report. The majority of alcohol studies undertaken to date have investigated health outcomes in middle aged cohorts with age commonly adjusted for as a confounder [25], leaving it unclear to what level any consumption threshold should be set for optimal public health improvement among older people. In general terms, however, there is mounting evidence to suggest that a reduction in alcohol consumption may not only reduce the burden of alcohol-related harm, but also confer some protection against a number of circulatory conditions. [26] If real, any public health benefit from a reduction in alcohol consumption may be greatest in older people, where the risk of cardiovascular disease is most pronounced [27].

However, it remains uncertain whether the implementation of age-specific consumption thresholds would prove the most effective means of reducing alcohol intake in older populations, with the concept of alcohol units being unfamiliar to around one-fifth of older adults [17]. Moreover, care should be taken with whatever evidence-based approach comes to be adopted, as to encourage low-level alcohol consumption among older drinkers may have the unintended consequence of inspiring sick former and never drinkers to recommence alcohol consumption against health advice.

What is more certain is that alcohol-related harm is a growing problem in need of resolution. Yet, if the issue of alcohol-related harm in older age is to be tackled effectively, a sea change will be required in the focus of policymakers and the allocation of research funding. With national governments and international agencies directing attention almost exclusively towards the behaviours of young people, the resources available for investigating the determinants and effects of rises in hazardous and harmful alcohol consumption among older people—as well as the suitability of new age-specific consumption thresholds—are limited. Indeed it is perhaps as a consequence of the pervasive construction of alcohol-related harm as a problem of young people that such research now falls beyond the current strategic objectives of at least one leading alcohol-related independent charity [28]. Given the rising levels of alcohol consumption among men and women aged 65 or over, the sidelining of research into its implications for population health and social order is ill-advised and could prove damaging to the health and wellbeing of millions of older people.

While the magnitude of the estimates in this paper are startling in themselves, the true figures may be even higher, with the average volume consumption per individual estimated by survey data equivalent to a fraction of the per capita consumption estimates calculated from national sales statistics [29]. It is likely that this discrepancy is a product of systematic biases arising from survey data being obtained from self-reported sources, with some respondents likely to disclose information unreliably on account of perceived social acceptability [14] or difficulty recalling the amount of alcohol consumed if consumption is heavy [26]. Moreover, with people aged 65 or over more likely than any other age group to consume alcohol at home [30]—a setting in which drinks are dispensed in larger, non-standard volumes than in licensed premises [14]—underestimation of unit consumption among older drinkers may be especially pronounced. These factors suggest that the estimates calculated in this report may underestimate the prevalence of problematic consumption.

In conclusion, the age-specific alcohol consumption thresholds put suggested in the RCPsych report would classify >3 million older drinkers as being at-risk of alcohol-related harm through consumption in excess of recommended daily limits—a level 2.5 times greater than currently recognised. Although insufficient evidence is presently available to determine the suitability of the thresholds proposed, it is clear that alcohol reduction strategies need urgently to begin targeting the consumption behaviours of older populations. With trend data indicating both sizeable increases in the elderly population and alcohol intake among older age groups, the issue of alcohol-related harm is a serious yet widely ignored public health issue. For the burden of alcohol-related harm in later life to be tackled effectively, researchers are advised to explore the drinking thresholds in older cohorts optimal for reduced alcohol-related harm, as well as determine the most effectual modes by which reductions in alcohol consumption can be realised in older adults. While advising older drinkers to reduce their alcohol intake is likely to elicit improvements to cardiovascular and cerebrovascular health, doing so through the implementation of nationwide age-specific thresholds may not be the most appropriate approach.

Limitations

The age-sex distribution estimated from the HSE does not correspond exactly to the age-sex distribution estimated by the ONS, with individuals in the youngest and oldest adult age groups typically underrepresented by the former [27]. In addition, data obtained from the HSE were representative only of individuals resident in private households. Excluded individuals living in institutional settings are more likely to be older and in poorer health than those in private households [19], increasing the potential underrepresentation of older drinkers in the sample.

Key points

- Intensity of alcohol consumption is decreasing among young adults but increasing among older people.
- Older drinkers are at a greater risk of alcohol-related harm than younger drinkers.
- A call for age-specific alcohol consumption thresholds would classify over 3 million older people as being at risk of harm.

Conflicts of interest

None declared.

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Supplementary data

Supplementary data mentioned in the text is available to subscribers in *Age and Ageing* online.

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