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Impact of the post-2008 economic crisis on harmful drinking in the Dutch working-age population

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ABSTRACT

Background: Studies on the impact of economic crises on alcohol consumption have yielded ambiguous results. Therefore, we studied changes in trends in harmful drinking among Dutch working-age men and women after the post-2008 economic crisis started. We also assessed whether these trend changes differed across age and socioeconomic groups.

Methods: We used repeated cross-sectional data from the Dutch Health Interview Survey conducted by Statistics Netherlands. Representative samples were independently drawn each month (January, 2004–December, 2013). Our working-age study population consisted of 20,140 men and 22,394 women aged 25–64. For men and women, episodic drinking was defined as drinking ≥6 glasses on one day at least once a week. Chronic drinking was defined as consuming ≥14 glasses/week for women and ≥21 for men. Segmented logistic regression was used to model trend changes separately in men and women.

Results: A downward trend in episodic and chronic drinking before the crisis slowed down after the crisis started. For episodic drinking, we observed a ceasing-of-decline among men aged 35-44/45-54/55-64, compared to a start-of-decline among those aged 25-34 (p-interaction = 0.042/0.020/0.047). For chronic drinking, we observed a ceasing-of-decline among women (p = 0.023) but not among men in general (p = 0.238). Among men, a ceasing-of-decline did occur in those with a high income, but a start-of-decline was found among those with a low income (p-interaction = 0.049).

Conclusion: In some subgroups of the Dutch working-age population, the downward trend in episodic and chronic drinking ceased after the crisis started. This suggests that the crisis had an upward effect on harmful drinking, but only in specific populations.

1. Introduction

The post-2008 economic crisis affected many countries in Europe (Karanikolos et al., 2013). The crisis led to decreased economic activity, more people living in poverty, and higher unemployment rates (Eurostat European commission, 2015). Due to growing national debts, the governments of most European countries were forced to implement austerity measures, such as increasing user charges for health services and increasing taxes (Karanikolos et al., 2013). As a consequence, an increasing number experienced economic stressors such as job insecurities, job loss, and financial problems. This increase may contribute to a higher prevalence of psychological distress and poor mental health (Hauksdottir et al., 2013; Meltzer et al., 2010; Turunen and Hiilamo, 2014; Urbanos-Garrido and Lopez-Valcarcel, 2015).

A realist systematic review described how economic crises might be related to harmful drinking across population groups (de Goeij et al., 2015). According to the self-medication theory, some people may increase their drinking to cope with feelings of distress due to economic stressors (e.g., job loss; Bolton et al., 2009; Khantzian, 1997). Conversely, according to the income-effect theory, other people may decrease their drinking as a consequence of lower purchasing power (Catalano, 1997; Ruhm, 1995). The impact of economic changes on drinking can be influenced by social support (i.e., provision of benefits when someone's welfare is affected) and active labor market programs (i.e., programs aimed at improving prospects of finding gainful employment or increasing earnings capacity) (Stuckler et al., 2010, 2009). Depending on which mech-

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anisms and modifiers are more important, the impact of economic crises on alcohol consumption might vary between population groups and countries.

Alcohol-related mortality increased during previous crises in Eastern-Europe (Baker et al., 2011; Men et al., 2003; Wojtyniak et al., 2005) and Sweden (Garcy and Vagero, 2012) (both in the early 1990s). This increase in mortality supports the self-medication theory. In contrast, alcohol-related mortality decreased in some population groups during the early 1990s crisis in Finland (Herttua et al., 2007; Makela, 1999; Valkonen et al., 2000). This may be explained by the high Finnish taxes on alcoholic beverages. In Europe as a whole, mass job loss, defined by a more than 3% rise in unemployment in a fiscal year, was associated with a 28% increase in deaths from alcohol abuse (1,550–5,490 potential excess deaths) between 1970 and 2007 (Stuckler et al., 2009). The various mechanisms that may play a role and the contrasting impacts of previous crises call for a better understanding of whether, how much, and among whom harmful drinking increased during the post-2008 economic crisis.

Only a few studies investigated the impact of the post-2008 economic crisis on trends in harmful drinking. Most of these studies estimated the change between two fixed time points, one before and one during the crisis, and obtained mixed results. In Iceland, episodic drinking (≥5 glasses of alcohol on one day at least once a month) among working-age men (25–64 years) decreased between 2007 and 2009, which is possibly explained by the increasing Consumer Price Index (Asgeirsdottir et al., 2014). A study from the US (Nandi et al., 2013) showed that a one percentage-point increase in unemployment rate between 2003 and 2010 was associated with less chronic drinking (>2 glasses/day for men and >1 for women). On the contrary, two other studies, one from the US (Bor et al., 2013) and one from Spain (Gili et al., 2013), suggest that harmful drinking increased during the post-2008 economic crisis.

Because trend studies are scarce and the results of these studies are inconsistent, we investigated whether the trend in harmful drinking (measured in months) changed during the post-2008 economic crisis in The Netherlands. This crisis can be characterized by three major key trends: a gradual increase in unemployment since January, 2009, a decrease in gross domestic product since October 2008, and a loss of purchasing power of Dutch households between 2010 and 2013 (StatLine Statistics Netherlands, 2015). We expect the prevalence of harmful drinking to gradually change over time, instead of changing suddenly because (1) more and more people became unemployed or experienced income reductions as the economic crisis further progressed, and (2) the number and strength of economic stressors affecting people increased over time since late 2008.

Data from previous crises and the post-2008 economic crisis indicate that the impact on harmful drinking could differ between sex, age, and socioeconomic groups. Psychological distress (Brown and Richman, 2012; Cockerham et al., 2006), physical health problems (Bobak et al., 1999; Vijayasiri et al., 2012), and economic stressors (Garcy and Vagero, 2012; Jukkala et al., 2008; Luoto et al., 1998; Mulia et al., 2014; Richman et al., 2012) were more strongly related to harmful drinking (i.e., heavy drinking, alcohol dependence, and problem drinking) among men than among women. These findings imply that drinking as a strategy to cope with feelings of distress is more often used by men. We would expect that people with a low socioeconomic status (i.e., educational level, income, and job status) experience more distress or a greater decrease in purchasing power than people with a high socioeconomic status during most economic crises. Moreover, they might experience greater economic uncertainties. According to the self-medication theory, economic uncertainties and distress could lead to more drinking. Therefore, we performed our analyses separately for men and women and we assessed whether the changes in trends differ across age categories and socioeconomic groups.

2. Methods

2.1. Data and study population

We used repeated cross-sectional data, from 2004 to 2013, obtained from the Dutch Health Interview Survey conducted by Statistics Netherlands. Each month, a random sample of the adult population living in non-institutionalized households was drawn from the Dutch Population Administration. The survey consisted of two parts. At the end of the first survey part respondents were asked to also fill in the second part. Until 2009 the first part consisted of a face-to-face interview after which the second part, which contained questions on alcohol consumption, was filled in on paper. From 2010 to 2013 the survey was carried out with a mixed-mode design. The first part was filled in via internet, and in case of non-response a telephone or face-to-face interview (if the phone number was unknown) was used, while the second part was filled in via internet or on paper.

Between 2004 and 2013, almost 200,000 respondents were approached to participate in the Dutch Health Interview Survey. The yearly response rate for the first survey part was approximately 60%. Some respondents stopped participating after this part, resulting in a yearly response rate for the second part of approximately 50% before 2010 and 35% from 2010 onwards. This resulted in a total of 85,248 respondents completing part two of the survey between 2004 and 2013, of which 48,128 had the working-age (25–64 years). Weighting factors were used to compensate for the (selective) non-response (Bruggink and van Herten, 2014), making the respondent sample representative for the Dutch population. Weighting factors were based on age, sex, household size, marital status, region, and (ethnic) origin.

Information on standardized disposable household income was derived from the Dutch tax authorities and linked to the survey data at the level of individual respondents and their household. This linkage was possible thanks to the use of personal identification numbers in both data sources.

2.2. Variables

We used two dichotomous outcome variables to characterize harmful drinking. For men and women, episodic drinking was defined as the consumption of ≥6 glasses of alcohol on one day at least once a week (Garretsen, 1983). We additionally analyzed episodic drinking with the following distinction in the weekly frequency of drinking ≥6 glasses of alcohol on one day: less than 1 day, 1–2 days, 3–4 days, 5–6 days, and 7 days per week. Chronic drinking was defined as the consumption of ≥14 glasses of alcohol/week for women and ≥21 glasses of alcohol/week for men (BMA, 2008). Drinking variables were based on the number of glasses of alcoholic beverages without a specification on the size in grams of ethanol. The survey questions on which episodic and chronic drinking were based changed slightly from 2012 onwards.

Other variables used were calendar time, age, and country of birth of the respondent. Country of birth was taken into account as drinking patterns vary between countries (Shield et al., 2011). Calendar time was measured per month, but transformed into years (with two decimals) for an easier interpretation of the results. According to the Dutch government (Staten-Generaal, 2009), the economic crisis officially started in the fourth quarter of 2008 (October 1) as gross domestic product decreased for the third consecutive quarter (StatLine Statistics Netherlands, 2015). Age was classified into four categories: 25–34, 35–44, 45–54, and