Addictive Behaviors 35 (2010) 706–713

Contents lists available at ScienceDirect

Addictive Behaviors

Alcohol intake and its correlates in a transitional predominantly Muslim population in southeastern Europe

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ARTICLE INFO

Keywords:
Albania
Alcohol
Country in transition
Muslims
Psychosocial determinants

ABSTRACT

Objective: Our aim was to assess alcohol consumption and its correlates in Albania, a predominantly Muslim though largely secular Southeast European republic in transition from rigidly structured socialism to a market-oriented system.
Methods: A population-based sample of Tirana residents aged 35–74 years was interviewed and examined in 2003–2006 (450 men and 235 women with data on alcohol intake, 65.5% response). Multivariable-adjusted logistic regression was used to assess the association of drinking frequency, quantity and type of drink with socioeconomic, psychosocial and coronary risk characteristics.
Results: 30.6% (95%CI = 26.3%–34.9%) of men, age-standardized to the 2005 census, and 5.6% (95%CI = 2.6%–8.6%) of women reported almost daily intake of alcohol, whereas 17.0% (95%CI = 13.4%–20.5%) of men and 46.6% (95%CI = 40.2%–53.1%) of women abstained. In men, frequent drinking was positively associated with age and not receiving financial support from close family emigrants, and was strongly inversely related to religious observance in both Muslims and Christians. In women it was associated with smoking and upward social mobility. Alcohol intake was not associated with religious affiliation in either sex. In men, intake of spirits (predominantly *raki*) and beer were associated with lower socioeconomic indices, smoking and obesity (beer only), whereas wine intake was associated with financial security, being secular, and not smoking. Among men, 11.3% (95%CI = 8.3%–14.3%) reported high intakes (≥210 g of pure alcohol/week) and 6.0% (95%CI = 3.8%–8.3%) very high intakes (≥420 g/week). High intakes were associated with frequent, rather than episodic, drinking.
Conclusions: Our study may be the first to provide information on alcohol intake and its characteristics in an Albanian population sample, one of the few predominantly Muslim countries in Europe. Alcohol consumption in women was extremely low. However, consistent very heavy intake of alcohol appears to be more frequent among Albanian men than in many former communist countries in Europe, and is cause for concern.

1. Introduction

The health effects of alcohol intake are well-documented (Norström & Ramstedt, 2005; Rehm, Room, Graham, et al., 2003; Rehm, Room, & Monteiro, 2004; Rehm, Room, Monteiro, et al., 2003). Excessive consumption is related to increased risk of liver cirrhosis, cardiovascular disease (CVD), injuries and some malignancies (Rehm, Room, Graham, et al., 2003; Rehm, Room, Monteiro et al., 2003; Rehm et al., 2004). Moderate consumption has consistently been associated with a cardio-protective effect (Klatsky, 1994; Maclure, 1993; Marmot, 1984; Rimm, Williams, Fosher, Criqui, & Stampfer, 1999), which, however, appears to be by far exceeded by alcohol's detrimental effects (Tolstrup et al., 2006). A beneficial effect may be confined to middle aged or older people (Fuchs et al., 1995). Countries of central and eastern Europe (CEE) have reported the highest per capita alcohol consumption (14–25 l of pure alcohol annually) (Popova, Rehm, Patra, & Zatonski, 2007). Such levels of alcohol consumption in CEE countries have been linked to excessive premature mortality attributed to CVD, external causes and alcohol-related liver disease (Popova et al., 2007; Rehm et al., 2007).

Albania, a secular though predominantly Muslim country in Southeast Europe, emerged in 1990 from the most isolated and xenophobic communist regime (Nuri & Tragakes, 2002; Rechel & McKee, 2003). In parallel with increased personal freedom (including freedom of worship (Burazeri, Goda, & Kark, 2008a; Nuri & Tragakes, 2002)), the transition towards the new system was accompanied by a decade of massive unemployment, poverty, and emigration (Burazeri, Goda, Tavanxhi et al., 2007) and an increase in unhealthy behaviors (Nuri & Tragakes, 2002; Rechel & McKee, 2003). According to official

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doi:10.1016/j.addbeh.2010.03.015

statistics, alcohol consumption is among the very lowest in the WHO European region (World Health Organization, 2009), and consists mainly of *raki* (the traditional Albanian drink, which is a vodka-like liquor made from grapes, plums, mulberries, or cranberries, usually not consumed with meals). This is thought, however, to be a substantial underestimate due to high levels of unrecorded production in Albania (Ministry of Health of Republic of Albania, 2004), as it is the case in many other CEE countries (Popova et al., 2007). Alcohol use is believed to have risen sharply in Albania in the last decade, especially in Tirana, in line with the transition towards an open-market economy (Ministry of Health of Republic of Albania, 2004; Nuri & Tragakes, 2002; Rechel & McKee, 2003). An increase in the alcohol-related external causes of death (road accidents and homicides) suggests that Albania is experiencing harmful consequences related to the heavier use of alcohol, notwithstanding the overall standardized mortality data which do not indicate that there is a major alcohol abuse problem (Ministry of Health of Republic of Albania, 2004) in contrast, say, with Russia.

In this transitional context, we assessed measures of alcohol consumption and its sociodemographic, psychosocial and coronary risk factor characteristics among adults of Tirana, the capital. Of interest in this regard is the predominantly Muslim affiliation of the population, as data on alcohol intake in Muslim populations are scant (Koenig, McCullough, & Larson, 2001; Michalak, Trocki, & Bond, 2007).

2. Methods

2.1. Study population

We studied 35–74 year-old residents of Tirana in 2003–2006 as part of a case–control study of acute coronary syndrome (Burazeri, Goda, Sulo et al., 2007). The population sample comprised an age-and-sex-stratified random sample drawn from the adult population of the Tirana municipality, as registered in the Albanian census of April 2001. We sampled 180 men and 120 women in each of 4 age-groups: 35–44, 45–54, 55–64 and 65–74 years, yielding a total of 1200 individuals. Of the estimated 1046 eligible individuals, 737 individuals (469 men and 268 women), who were recruited by home visits, participated in the study; 685 (450 men, 235 women) provided data on alcohol consumption (65.5% response). Male and female non-respondents were slightly older than respondents, were similar to participants with regard to religion and educational level, but (among men) were substantially more likely to be retired.

2.2. Data collection

A structured questionnaire was administered to all participants by trained interviewers, and anthropometric measurements were made (Burazeri, Goda, Sulo et al., 2007). The questionnaire, requiring on average 1 h for completion, included information on sociodemographic characteristics (including religious affiliation) and socioeconomic factors, behavioral/lifestyle factors (including alcohol intake, smoking and exercise), conventional coronary heart disease (CHD) risk factors and psychosocial characteristics. Subsequent administration of a dietary questionnaire took an additional 30–45 min.

Measures of alcohol consumption included the frequency of alcohol use in the past 12 months (never, <1/month, 1–2 times/month, 1–2 times/week, almost daily and ≥2 times/day (Britton, Singh-Manoux, & Marmot, 2004)); the number of units each of spirits, wine and beer consumed in a usual week (Kark et al., 2000) [standard units of intake in Albania are 50 ml, 200 ml and 500 ml, respectively, almost double that elsewhere]; and assessment of drinking patterns [units of each beverage consumed in a single drinking session (adapted from Britton et al., 2004), average drinking session duration and frequency of drunkenness and hangovers (Burazeri & Kark, 2010a)].

Covariates consisted of pre-existing CHD [based on a 12-lead electrocardiogram and self-reported Rose angina and previous coronary events (Rose, 1962; Rose, McCartney, & Reid, 1977)], current smoking, self-reported hypertension and diabetes, family history of CHD, measured body mass index (BMI) and waist-to-hip ratio (W/H) (Burazeri, Goda, Sulo et al., 2007), leisure-time exercise calculated as kcal/day of energy expenditure (Burazeri, Goda, & Kark, 2008b; Taylor et al., 1978), years of formal education, employment status, relative income compared to the Albanian average of $150/month (Burazeri, Goda, Tavanxhi, et al., 2007), subjective social position in Albanian society on a 5-point scale regrouped into 3 categories (Adler, Epel, Castellazzo, & Ickovics, 2000; Burazeri, Goda, Sulo et al., 2008), social mobility [change in subjective social position over, on average, a 7–8 year period of economic distress (Burazeri, Goda, Sulo et al., 2008)], relative financial loss in the pyramid scheme collapse of 1997 [3 items, Cronbach's alpha: 0.92 and 0.95 for men and women, respectively (Burazeri, Goda, Sulo et al., 2008)], emigration and financial remittance (Burazeri, Goda, Tavanxhi, et al., 2007), religious affiliation [Albania being one of the very few European countries with a largely Muslim population (Burazeri, Goda, Roshi, Kark, 2008)], religiosity [3 items, Cronbach's alpha: 0.88 in men and 0.94 in women (Burazeri, Goda, & Kark, 2008a)], attitudes to socioeconomic aspects of transition [3 items, Cronbach's alpha: 0.97 (Burazeri & Kark, 2009)], and hostility [8-item Cynical Distrust Scale (Everson et al., 1997), Cronbach's alpha: 0.51 in men and 0.61 in women (Burazeri & Kark, 2010b)] (see variable categories in Table 4).

Participants gave written consent after being informed about the aims and procedures of the study. The Albanian Committee of Medical Ethics approved the study. Participants were provided with a special 3-year health card granting to them and their close family members free-of-charge access to examination in cardiology clinics in Tirana.

2.3. Statistical analysis

The sex-specific prevalence of the frequency of alcohol consumption and the mean number of units/week of alcoholic beverages in Tirana were age-standardized to the Albanian population distribution for ages 35–74 years based on the national census of 2005 by the direct method using WINPEPI (Abramson, 2004).

Binary logistic regression (SPSS for windows, version 15.0, Chicago, Illinois) was used to assess the associations of drinking frequency and types of alcoholic beverages (each introduced separately as a dependent variable) with sociodemographic, socioeconomic, psychosocial and conventional CHD risk characteristics (the predictor variables). In order to highlight the comparison of the characteristics of frequent alcohol drinkers vs abstainers/very infrequent intake, drinking frequency in men was dichotomized into ≥almost daily vs ≤1–2 times/month (excluding 1–2/week). In women, however, drinking frequency was dichotomized into ≥1/week vs ≤1–2 times/month due to the small number of frequent alcohol users. In men, in order to compare larger quantities of intake of each type of alcoholic beverage (*raki*, wine and beer) with smaller quantities or no intake, these were dichotomized into 4+ units/week vs 0–3 units/week. Age-adjusted odds ratios (ORs) and their 95% confidence intervals (CIs) were calculated. Subsequently, all covariates were entered into logistic models and removed in a backward stepwise procedure if their p-value exceeded 0.10. Multivariable-adjusted ORs and their 95%CIs were calculated.

To assess associations in the full data set in men, analyses were repeated with introduction of drinking frequency as a 3-category outcome variable without exclusions (≤1–2 times/month, 1–2 times/week and ≥almost daily) in multinomial logistic regression models.

To assess the appropriateness of the logistic regression models, the Hosmer–Lemeshow goodness-of-fit test was applied. All our analyses appraised by this test met the minimal criterion ($p>0.05$), and all the key analyses met the criterion of suitability of the model ($p\geq0.20$) (Hosmer & Lemeshow, 1989).