

Managing Alcohol Problems in General Practice in Europe: Results from the European ODHIN Survey of General Practitioners

Peter Anderson^{1,2}, Marcin Wojnar³, Andrzej Jakubczyk^{3,*}, Antoni Gual⁴, Jillian Reynolds⁴, Lidia Segura⁵, Hana Sovinova⁶, Ladislav Csemy⁶, Eileen Kaner¹, Dorothy Newbury-Birch¹, Alessio Fornasin⁷, Pierluigi Struzzo⁸, Gaby Ronda², Ben van Steenkiste², Myrna Keurhorst⁹, Miranda Laurant^{9,10}, Cristina Ribeiro¹¹, Frederico do Rosário¹¹, Isabel Alves¹¹, Emanuele Scafato¹², Claudia Gandin¹² and Marko Kolsek¹³

¹University of Newcastle-Upon-Tyne, Newcastle, UK, ²Maastricht University, Maastricht, The Netherlands, ³Department of Psychiatry, Medical University of Warsaw, Warsaw, Poland, ⁴Fundacio Privada Clinic per a la Recerca Biomèdica/Hospital Clinic i Provincial de Barcelona, Barcelona, Spain, ⁵Generalitat De Catalunya, Barcelona, Spain, ⁶The National Institute of Public Health, Prague, Czech Republic, ⁷Dipartimento di Scienze Economiche e Statistiche, Università degli Studi di Udine, Udine, Italy, ⁸Centro Regionale di Formazione per l'Area delle Cure Primarie, Monfalcone, Italy, ⁹Radboud University Medical Centre, Nijmegen, The Netherlands, ¹⁰HAN University of Applied Sciences, Nijmegen, The Netherlands, ¹¹General-Diretorate for Intervention on Addictive Behaviours and Dependencies, Lisbon, Portugal, ¹²Istituto Superiore di Sanita, Rome, Italy and ¹³Department of Family Medicine, Medical Faculty, University of Ljubljana, Ljubljana, Slovenia

*Corresponding author: Department of Psychiatry, Medical University of Warsaw, Nowowiejska 27, 00-665 Warsaw, Poland. Tel.: +48-506-647-114; Fax: +48-22-825-13-15; E-mail: ajakubczyk@wum.edu.pl

(Received 28 April 2014; first review notified 5 June 2014; in revised form 19 June 2014; accepted 19 June 2014)

Abstract — **Aims:** To document the attitudes of general practitioners (GPs) from eight European countries to alcohol and alcohol problems and how these attitudes are associated with self-reported activity in managing patients with alcohol and alcohol problems. **Methods:** A total of 2345 GPs were surveyed. The questionnaire included questions on the GP's demographics, reported education and training on alcohol, attitudes towards managing alcohol problems and self-reported estimates of numbers of patients managed for alcohol and alcohol problems during the previous year. **Results:** The estimated mean number of patients managed for alcohol and alcohol problems during the previous year ranged from 5 to 21 across the eight countries. GPs who reported higher levels of education for alcohol problems and GPs who felt more secure in managing patients with such problems reported managing a higher number of patients. GPs who reported that doctors tended to have a disease model of alcohol problems and those who felt that drinking was a personal rather than a medical responsibility reported managing a lower number of patients. **Conclusion:** The extent of alcohol education and GPs' attitudes towards alcohol were associated with the reported number of patients managed. Thus, it is worth exploring the extent to which improved education, using pharmacotherapy in primary health care and a shift to personalized health care in which individual patients are facilitated to undertake their own assessment and management (individual responsibility) might increase the number of heavy drinkers who receive feedback on their drinking and support to reduce their drinking.

INTRODUCTION

Alcohol use is one of the most important factors contributing to the global health burden and costs to society (Rehm *et al.*, 2009; Lim *et al.*, 2012). In the European Union, where alcohol consumption is among the highest in the world, ~14% of all deaths in men and ~8% of all deaths in women aged between 15 and 64 years are due to alcohol, with deaths from cancers, liver cirrhosis and intentional and unintentional injuries being the most common causes (Rehm *et al.*, 2012). About one-quarter of the European Union 15–64-year-old population drinks at least heavily, defined as consuming at least 40 g of alcohol per day for men and at least 20 g for women with such consumption being responsible for two-thirds of all alcohol-attributable deaths (Rehm *et al.*, 2012). Identification and brief advice conducted in primary health care is a highly effective and cost-effective method to reduce alcohol consumption (O'Donnell *et al.*, 2014) and has been shown to be even cost saving (Purshouse *et al.*, 2013). Any reduction in alcohol consumption decreases the annual and lifetime risk of an alcohol-related death, more so when heavy drinkers reduce their consumption (Rehm *et al.*, 2012).

Although general practitioners (GPs) declare strong support for preventive medicine in general, and for early intervention for alcohol problems in particular (McAvoy *et al.*, 2001), in general, the extent of implementation of identification and brief advice programmes in primary health care remains poor with <1 in 10 of heavy drinkers being identified and offered brief advice (Drummond *et al.*, 2013). There are several reasons for this, reflected in the fact that alcohol is commonly considered

by GPs to be the most difficult topic to discuss with their patients (McAvoy *et al.*, 2001). Lack of motivation, being too busy and lack of adequate training and support materials (Wilson *et al.*, 2011; Drummond *et al.*, 2013) are expressed as important barriers to the delivery of identification and brief advice programmes. Having more time, additional financial reimbursement and having more active patients asking for alcohol advice have been expressed as facilitators for implementing identification and brief advice (McAvoy *et al.*, 2001).

With strong government support for alcohol brief interventions, reinforced by financial and performance management arrangements, guidance and strategic leadership, as well as training (Health Scotland, 2011a, 2013), it is possible to increase alcohol screening and brief interventions. In Scotland, population 5.2 million, Health Service Boards were required to deliver 271,611 alcohol brief interventions cumulatively over the period 2008/2009 to 2012/2013 (Health Scotland, 2008, 2011b). To calculate the target, a primary care presentation rate of 190 potentially alcohol-related presentations per 1000 population was estimated (presentations for mental disorders, injuries and gastrointestinal problems). It was estimated that 25% of these presentations would screen positive, and a cumulative target was set at 75% of those identified as requiring a brief intervention receiving one by 2012–2013. The number of alcohol brief interventions carried out between 2008/2009 and 2012/2013 was 366,184, exceeding the cumulative target of 271,611 by 94,573 interventions (Health Scotland, 2013). Sixty-nine percentage of alcohol brief interventions delivered in 2012/2013 were delivered in Primary Care.

The Scottish situation is a case where both Governmental support and financial incentives have been used to stimulate delivery. Nevertheless, it is still important to understand practitioners' underlying attitudes because there is concern that focusing only on extrinsic motivational factors (e.g. payment for performance) may risk crowding out intrinsic reasons for delivering care (e.g. personal prioritization or wishing to help patients) and that the former behaviour may cease once payments end (Marshall and Harrison, 2005).

In this paper, we report the results of a cross-sectional survey of GPs undertaken in eight European countries and regions (Catalonia, Czech Republic, England, Italy, the Netherlands, Poland, Portugal and Slovenia) as part of optimizing delivery of health care interventions (ODHIN), a 4-year project co-financed by the seventh Framework Research Programme of the European Union (www.odhinproject.eu). The survey aimed to provide further information to help improve increased screening and brief advice activity to reduce heavy drinking in primary health care settings throughout Europe by

- (1) Documenting GPs' attitudes to working with people with hazardous or harmful alcohol use, their views of potential barriers and facilitators to working with people with hazardous or harmful alcohol use and their views of a range of alcohol policy issues.
- (2) Describing associations between GP's demographics, self-reported levels of education on alcohol, views on barriers and facilitators to working with people with hazardous or harmful alcohol use and views on alcohol policy issues with attitudes to working with people with hazardous or harmful alcohol use.
- (3) Describing associations between GP's demographics, self-reported levels of education on alcohol, views on barriers and facilitators to working with people with hazardous or harmful alcohol use and views on alcohol policy issues with self-reported numbers of patients managed with hazardous drinking or alcohol problems.

METHODS

Construction of the survey instrument

The survey instrument was based on questionnaires used in the WHO Phase III strand I study conducted in 1999 (Anderson *et al.*, 2003) and later in the survey of GP's attitudes to primary health care alcohol intervention undertaken in England in 2009 (Wilson *et al.*, 2011). The instrument, which was anonymous, included questions on demographic information of the respondents, the extent of their academic education and postgraduate training on alcohol and a self-reported estimate of the number of patients managed for their hazardous drinking or alcohol-related problems during the previous year. Hazardous drinking and alcohol-related problems were not defined in the questionnaire, but left to the doctors' own practice. However, the respondents were asked what they would consider the upper limit for alcohol consumption before they would advise a healthy man or non-pregnant healthy woman to cut down.

The Shortened Alcohol and Alcohol Problems Perception Questionnaire (SAAPPQ), a validated 10-item instrument covering domains of adequacy, task-specific self-esteem, motivation,

legitimacy and satisfaction of physicians was used to measure GPs' attitudes towards working with heavy drinkers (Anderson and Clement, 1987; Anderson *et al.*, 2004).

Respondents were invited to indicate their agreement on a four-point scale with 11 suggested incentives that would encourage them personally to do more early intervention for hazardous alcohol consumption and 18 suggested barriers as to why doctors in general practice spend very little or no time at all on early intervention for alcohol. In addition, to gauge the influence of policy change on attitudes and behaviours, GPs were invited to give their views on a range of 10 European public policies on alcohol on a five-point scale, and their opinions on the effectiveness of 12 alcohol policy measures on a four-point scale. All the scales had been used and validated in the WHO Phase III strand I study conducted in 1999 (Anderson *et al.*, 2003). The survey instrument is available at http://www.odhinproject.eu/resources/documents/cat_view/3-odhin-project-documents/6-technical-reports-and-deliverables.html.

Adaptation of the instrument

The final English version of the instrument was translated in each country to the native language and validated by back translation into English and confirmed by an English native speaker (first author) in terms of language accuracy and appropriateness for primary health care.

Ethical review

Depending on country law and regional regulations, ethical approval by the Bioethics Committees (Institutional Review Boards) was received before the study started in England, Poland and Slovenia.

Sampling

In each country, an accessible database of GPs was sought and used to draw a sample. In most countries, these databases were used to obtain the information on sex, age, address, type and location of practices. According to these data, a representative sample of minimum 250 physicians per country was drawn randomly after stratification for sex, age and geographic location. In all countries, except England, where it was restricted to the East Midlands region, the sample represented the different regions of the country as a whole and was representative of the age and sex profile of GPs practising in each country or region. If a group practice was drawn, only one GP per practice was selected. The sample size was adjusted accordingly to the response rate, so that a final number of returned questionnaires fitted the minimum sample size of 250.

Data collection

The survey was carried out in seven regions and countries in 2012 (Catalonia, Czech Republic, Italy, Netherlands, Poland, Portugal and Slovenia) and in England in 2009 as an independent survey by a group of in-country researchers or a survey company. The questionnaires were mailed by post (Slovenia, Netherlands and England), e-mailed or made accessible online through a specifically designed website that GPs could access (Catalonia, Poland, Italy and Portugal); in such cases, electronic mail was sent containing the relevant information about the study, encouragement to take part in the survey and the link to

the website. In the Czech Republic, a paper version was used and research assistants interviewed the GPs face to face.

Data management

The number of patients managed for their hazardous drinking or alcohol-related problems in the previous year was recoded from a self-reported ordinal scale (Anderson, 1985) into none, 3, 9, 18, 37 and 60, based on the mid-points of the ordinal scale. Education and training were recoded from a self-reported ordinal scale (Anderson, 1985) into none, 2, 7, 25 and 50 h, based on the mid-points of the ordinal scale. Role security and therapeutic commitment were measured by responses to the short form of the Alcohol and Alcohol Problems Perception Questionnaire (Anderson and Clement, 1987). The 10 items were summed into two scales, one of role security (four items) and one of therapeutic commitment (six items) (for details of the individual items and how they map to the two scales, see Anderson and Clement, 1987). Missing values for any of the 10 items were assigned the mean score of the remaining items in the scale. Neutral scores were defined for role security as 16 and for therapeutic commitment as 24. This means that any score below the neutral score implied role insecurity or lack of therapeutic commitment, while any score above the neutral score implied role security or presence of therapeutic commitment.

The 11 items that measured facilitators and the 18 items that measured barriers to managing patients with heavy alcohol consumption were each subject to factor analysis to achieve a smaller number of domains (Anderson *et al.*, 2004). The correlation matrices produced were examined and those statements which inter-correlated with a coefficient of >0.7 were extracted. The variable that was judged more meaningful was returned and the analysis repeated with the smaller number of items (6 for facilitators and 12 for barriers). The factor analysis was repeated with a varimax rotation, choosing factors with an eigenvalue of >1.00 . This resulted in two domains for facilitators (termed 'availability of support materials and training' and 'availability of financial incentives') and two domains for barriers (termed 'doctors have a disease rather than a prevention model' and 'do not regard prevention as a medical responsibility'). The items within each domain were summed. The 10 items measuring views on alcohol policies and the 12 items measuring views on effective policies were managed in the same way, resulting in three domains for views on alcohol policies (termed 'should restrict advertising and place warning labels'; 'price influences consumption' and 'individuals should be responsible for managing their own drinking') and two domains on effective policies (termed 'regulatory policies work' and 'youth oriented policies work'). For all domains, missing values for any items in the domain were assigned the mean score of the remaining items in the domain.

Statistical analyses

The whole dataset was combined and analysed at the level of the individual GP. Mixed models were used to estimate coefficients, their 95% confidence intervals (CIs) and statistical significance of a range of independent variables on a range of dependent variables, using different models, explained in the 'Results' section (procedure mixed in SPSS, version 21, using subcommand RANDOM intercept | subject (country) to account for the clustered nature of the data within country).

RESULTS

Sample characteristics and views

The sample sizes ranged from 234 (Portugal) to 360 (Catalonia) (Table 1). The mean age ranged from 43.4 years (Catalonia) to 56.2 years (Italy), and the proportion of females from 27.2% (Italy) to 74.2% (Catalonia). The estimated mean total number of patients seen in a week ranged from 103 (Czech Republic) to 156 (Slovenia), and the estimated mean number of patients managed for heavy drinking during the previous year ranged from 5.2 (Italy) to 21.2 (Portugal). The reported received hours of postgraduate education on alcohol ranged from 7.2 (Czech Republic) to 14.8 (Slovenia). The sample as a whole was secure in their role in managing heavy drinking patients; in all countries, the mean score for role security was above the neutral score of 16, ranging from 19.8 (Catalonia) to 21.8 (Slovenia). In contrast, the sample was neutral in being therapeutically committed to manage heavy drinking patients, ranging from 22.9 in Slovenia to 26.4 in Catalonia, the neutral score being 24. What the providers considered as an upper limit for alcohol consumption before advising to cut down ranged from 20 g alcohol/day (Poland) to 40 g/day (Catalonia) for men and from 12 g/day (Poland and Slovenia) to 26 g/day (Catalonia and England) for women.

Providers considered providing materials and training would encourage more intervention (range: 11.1–13.2, compared with a neutral score of 10.0), but were less certain about the impact of providing financial incentives (range: 6.9–8.7, around a neutral score of 7.5; Table 2). There was not a clear picture that providers considered doctors having a disease rather than a prevention model or not regarding prevention as a medical responsibility were important reasons for low identification and brief advice rates, with views on both issues ranging from 6.5 to 9.1 and 6.1 to 8.4, respectively, around a neutral score of 7.5. Providers generally agreed that advertising should be restricted and warning labels placed (range: 7.8–9.2, around a neutral score of 6.0), that price influences consumption (range: 6.6–7.2, around a neutral score of 6.0), but mixed as to whether or not individuals are responsible for their own consumption (range 2.3–4.7, around a neutral score of 3.0). Providers did not generally agree that regulatory policies were effective policies (range: 6.7–7.8, around a neutral score of 7.5), although they did consider that policies focusing on youth were effective (range 5.6–7.1 around a neutral score of 5). Reported numbers of hours of postgraduate education on alcohol were not related to the views on barriers and facilitators nor to alcohol policy issues.

Relationships with role security and therapeutic commitment

GP demographics

Controlling for country, neither age nor sex of the GP was related to role security. However, male GPs were more therapeutically committed than female GPs ($B = 0.73$; 95% CI: 0.28–1.18; $P < 0.001$) and younger GPs were marginally more therapeutically committed than older GPs ($B = 0.04$; 95% CI: 0.02–0.06; $P < 0.001$).

Education on alcohol

Providers reporting having received more postgraduate education on alcohol reported marginally higher role security

Table 1. Sample characteristics

| | Number of GPs sampled | Number of responses (response rate, %) | Mean age (SD) of participants | Proportion female (%) | Mean number (SD) of patients seen in week | Mean number (SD) patients managed for heavy drinking last year | Hours (SD) of postgraduate education on alcohol | Role security mean (SD) Per cent role secure (above neutral score) ^a | Therapeutic commitment mean (SD) Per cent therapeutically committed (above neutral score) ^b | Upper limit for alcohol consumption before advising man to cut down (g/day) (SD) | Upper limit for alcohol consumption before advising woman to cut down (g/day) (SD) |
|----------------|-----------------------|--|-------------------------------|-----------------------|---|--|---|---|--|--|--|
| Catalonia | 3457 | 360 (10.4) | 43.4 (9.0) | 74.2 | 130 (36.3) | 6.7 (2.9) | 12.8 (4.6) | 19.8 (3.1) 85.8 | 26.4 (4.3) 68.3 | 40 (36) | 26 (21) |
| England | 385 | 282 (73.2) | 47.0 (9.3) | 42.9 | 116 (30.9) | 11.5 (4.4) | 7.9 (3.6) | 21.2 (2.8) 96.8 | 24.3 (5.2) 51.8 | 37 (12) | 26 (7) |
| Czech Republic | 361 | 294 (81.4) | 47.4 (11.4) | 54.4 | 103 (34.7) | 8.8 (4.3) | 7.2 (3.9) | 20.8 (3.3) 88.8 | 23.8 (3.7) 40.8 | 29 (24) | 21 (19) |
| Italy | 647 | 250 (38.6) | 56.2 (6.1) | 27.2 | 141 (32.4) | 5.2 (2.2) | 9.6 (5.0) | 20.8 (3.3) 91.2 | 23.5 (4.3) 39.2 | 21 (11) | 14 (9) |
| Netherlands | 1600 | 312 (19.5) | 51.2 (8.1) | 35.7 | 119 (31.1) | 8.0 (3.0) | 10.6 (3.9) | 21.0 (2.2) 99.0 | 24.4 (3.7) 52.1 | 27 (13) | 19 (15) |
| Poland | 552 | 276 (50) | 48.5 (10.0) | 72.0 | 132 (42.3) | 11.6 (5.7) | 9.3 (4.9) | 20.3 (3.3) 87.3 | 23.1 (5.1) 35.6 | 20 (13) | 12 (8) |
| Portugal | 850 | 234 (27.5) | 52.2 (8.7) | 64.1 | 114 (29.4) | 21.2 (8.6) | 7.7 (4.6) | 21.0 (3.0) 93.2 | 23.2 (4.8) 34.6 | 22 (12) | 14 (11) |
| Slovenia | 820 | 337 (41.1) | 50.6 (7.8) | 72.1 | 156 (34.5) | 14.8 (6.1) | 14.8 (5.2) | 21.8 (2.7) 95.5 | 22.9 (5.0) 37.2 | 21 (14) | 12 (9) |
| Total sample | 8672 | 2345 (27.0) | 51.4 (10.8) | 56.3 | 127 (44.2) | 10.7 (4.9) | 10.2 (4.7) | 20.8 (3.0) 92.1 | 24.0 (4.7) 45.9 | 28 (21) | 18 (15) |

^aNeutral score = 16.
^bNeutral score = 24.

($B = 0.05$; 95% CI: 0.03–0.06; $P < 0.001$) and higher therapeutic commitment ($B = 0.07$; 95% CI: 0.05–0.08; $P < 0.001$).

Views on barriers and facilitators

Controlling for providers' age, sex, consultation rate and country, providers who agreed that doctors having a disease model would impede brief advice activity had lower values of role security and therapeutic commitment (Table 3). Providers who regarded prevention as not a medical responsibility had lower therapeutic commitment, but not role security. Providers who agreed that providing support would encourage their own brief advice activity had higher role security and therapeutic commitment, and providers who agreed that providing financial incentives would encourage their own brief advice activity had higher role security, but lower therapeutic commitment.

Alcohol policy issues

Controlling for providers' age, sex, consultation rate and country, providers who agreed that price influences alcohol consumption, that regulatory policies are effective and that policies should focus on youth tended to have higher role security, but not therapeutic commitment (Table 4). Providers who believed that individuals should be responsible for managing their own drinking had lower therapeutic commitment, but not role security.

Relationships with reported number of patients managed for heavy drinking

GP demographics

Neither age nor sex of the GP was related to the reported number of patients managed for heavy drinking.

Education

Controlling for providers' age, sex, consultation rate and country, providers reporting having received more postgraduate education on alcohol reported managing a higher number of patients with heavy alcohol use ($B = 0.243$; 95% CI: 0.201–0.2850; $P < 0.001$).

Role security and therapeutic commitment

Providers with higher values of role security ($B = 0.683$; 95% CI: 0.498–0.867; $P < 0.001$) and higher values of therapeutic commitment ($B = 0.616$; 95% CI: 0.492–0.739; $P < 0.001$) reported managing a higher number of patients with heavy alcohol use. When controlling for providers' age, sex, consultation rate and country, both education on alcohol ($B = 0.222$; 95% CI 0.180–0.265; $P < 0.001$) and role security ($B = 0.506$; 95% CI 0.324–0.689; $P < 0.001$) had independent relationships with reported number of patients managed, when included in the same model, with part of the impact of role security being mediated by education, but the impact of education not mediated by role security. Likewise, both education on alcohol ($B = 0.209$ 95% CI: 0.167–0.251; $P < 0.001$) and therapeutic commitment ($B = 0.500$; 95% CI: 0.366–0.613; $P < 0.001$) had independent relationships with reported number of patients managed, when included in the same model, with part of the impact of therapeutic commitment being mediated by education, but the impact of education not mediated by therapeutic commitment.

Table 2. Respondents views on barriers and facilitators to early intervention on alcohol and on alcohol policy issues

| | Barriers and facilitators | | | | Alcohol policy issues | | | | |
|----------------|---|--|---|--|--|---|--|---|---|
| | Degree to which respondents agree to reasons of what would encourage them personally to do more early intervention for alcohol. The higher the score the more the respondents agreed with the statement | | Degree to which respondents agree to reasons why doctors in general practice spend very little or no time at all on early intervention for alcohol. The higher the score the more the respondents agreed with the statement | | Degree of agreement/disagreement of public policies to reduce alcohol-related harm in Europe. The lower the score the more the disagreement; the higher the score, the more the agreement ^a | | | Views of effectiveness of policy measures in reducing alcohol-related harm in respondent's own country. The higher the score the more effective | |
| | Screening and advice materials and training were provided. Scale ranged from 4 to 16; neutral 10 | Financial incentives were provided. Scale ranged from 3 to 12; neutral 7.5 | Doctors have a disease rather than prevention model. Scale ranged from 3 to 12; neutral 7.5 | Doctors do not regard prevention as medical responsibility. Scale ranged from 3 to 12; neutral 7.5 | Advertising should be restricted and warning labels placed on beverage containers. Scale ranged from 2 (strongly disagree) to 10 (strongly agree); neutral 6 | Price influences alcohol consumption. Scale ranged from 2 (strongly disagree) to 10 (strongly agree); neutral 6 | Individuals are responsible enough to protect themselves from harm. Scale ranged from 1 (strongly disagree) to 5 (strongly agree); neutral 3 | Regulatory policies. Scale ranged from 3 (ineffective) to 12 (very effective); mid-point 7.5 | Policies that focus on youth. Scale ranged from 3 (ineffective) to 12 (very effective); mid-point 7.5 |
| Catalonia | 12.8 (1.9) | 6.9 (2.3) | 7.1 (1.8) | 6.1 (1.7) | 8.5 (1.3) | 7.1 (1.7) | 2.6 (0.98) | 6.9 (2.3) | 6.1 (1.3) |
| England | 12.2 (2.6) | 6.9 (3.2) | 7.2 (2.0) | 6.2 (1.8) | Na | Na | Na | 7.8 (3.1) | 5.6 (1.6) |
| Czech Republic | 11.6 (2.6) | 8.2 (2.2) | 7.3 (2.2) | 7.5 (1.9) | 7.8 (1.7) | 6.6 (2.0) | 3.9 (0.9) | 6.7 (2.6) | 5.6 (1.5) |
| Italy | 13.2 (2.0) | 7.7 (2.3) | 8.2 (2.1) | 6.5 (2.1) | 8.8 (1.4) | 6.6 (1.9) | 4.7 (0.5) | 7.8 (2.4) | 7.1 (1.0) |
| Netherlands | 11.1 (2.0) | 7.4 (2.1) | 6.5 (2.0) | 7.0 (1.7) | 8.3 (1.6) | 6.6 (1.7) | 2.7 (0.9) | 6.3 (2.4) | 6.2 (1.4) |
| Poland | 13.2 (2.2) | 8.7 (1.9) | 9.1 (1.8) | 7.1 (1.7) | 8.9 (1.3) | 6.8 (1.9) | 2.3 (0.96) | 6.8 (2.5) | 6.5 (1.4) |
| Portugal | 13.0 (2.0) | 8.4 (2.9) | 7.5 (1.9) | 8.4 (2.9) | Na | Na | Na | 6.8 (2.7) | 6.6 (1.3) |
| Slovenia | 11.9 (2.2) | 7.7 (2.2) | 7.3 (2.1) | 7.7 (2.2) | 9.2 (1.2) | 7.2 (1.8) | 2.5 (1.0) | 7.4 (2.5) | 6.3 (1.4) |
| Total | 12.4 (2.3) | 7.7 (2.5) | 7.5 (2.1) | 6.6 (1.9) | 8.6 (1.5) | 6.8 (1.8) | 3.0 (1.2) | 7.0 (2.6) | 6.2 (1.4) |

^aQuestions not asked in England and Portugal.

Table 3. Predictors of role security and therapeutic commitment

| Predictor variable | Role security | | | Therapeutic commitment | | |
|---|---------------|-------------|--------|------------------------|-------------|--------|
| | <i>B</i> | 95% Wald CI | | <i>B</i> | 95% Wald CI | |
| | | Lower | Upper | | Lower | Upper |
| Doctors have a disease rather than a prevention model | -0.169*** | -0.235 | -0.103 | -0.350*** | -0.451 | -0.249 |
| Do not regard prevention as a medical responsibility' | -0.078 | -0.147 | 0.009 | -0.462*** | -0.574 | -0.350 |
| Availability of support materials and training | 0.113** | 0.054 | 0.172 | 0.133** | -0.36 | 0.231 |
| Availability of financial incentives | 0.076** | 0.022 | 0.130 | -0.078* | -0.157 | -0.000 |

Separate models for each predictor variable, controlling for providers' age, sex, consultation rate and country.

*** $P < 0.001$; ** $P < 0.01$; * $P < 0.05$.

Table 4. Predictors of role security and therapeutic commitment

| Predictor variable | Role security | | | Therapeutic commitment | | |
|---|---------------|-------------|-------|------------------------|-------------|--------|
| | <i>B</i> | 95% Wald CI | | <i>B</i> | 95% Wald CI | |
| | | Lower | Upper | | Lower | Upper |
| Restrict advertising and place warning labels | 0.003 | -0.104 | 0.109 | -0.086 | -0.060 | 0.231 |
| Price influences consumption | 0.036 | -0.047 | 0.128 | 0.078 | -0.035 | 0.192 |
| Individuals are responsible | -0.002 | -1.478 | 0.145 | -0.390*** | -0.609 | -0.172 |
| Regulatory policies effective | 0.092* | 0.033 | 0.152 | 0.037 | -0.047 | 0.120 |
| Policies should focus on youth | 0.087 | -0.021 | 0.196 | 0.094 | -0.060 | 0.248 |

Separate models for each predictor variable, controlling for providers' age, sex, consultation rate and country.

*** $P < 0.001$; * $P < 0.05$.

Views on barriers and facilitators

Controlling for providers' age, sex, consultation rate and country, only providers who agreed that doctors having a disease model would impede brief advice activity was related to reported number of patients managed for heavy drinking in a negative direction ($B = -0.509$; 95% CI: -0.784 to -0.233 ; $P < 0.001$), a relationship that was reduced when including role security and therapeutic commitment in the model. The more hours of postgraduate education received on alcohol, the less likely were providers to agree that doctors having a disease model would impede brief advice activity ($B = -0.018$; 95% CI: -0.025 to -0.011 ; $P < 0.001$).

Alcohol policy issues

Controlling for providers' age, sex, consultation rate and country, providers who agreed that individuals are responsible enough to protect themselves from alcohol-related harm was related to reported number of patients managed for heavy drinking in a negative direction ($B = -0.949$; 95% CI: -1.544 to -0.354 ; $P < 0.01$). The degree to which providers agreed that individuals are responsible enough to protect themselves from alcohol-related harm was not related to education on alcohol.

DISCUSSION

Even though this group of European GPs reported what might be considered relatively little postgraduate education on alcohol and alcohol problems (average of 10 h in total), overall they felt secure in their role in managing patients with

hazardous and harmful alcohol use, but were neutral in being therapeutically committed to do so. On average, they reported managing a relatively small number of patients (11) for alcohol and alcohol problems during the previous year.

Doctors who reported receiving more education on alcohol and doctors who were both more secure in their role and more therapeutically committed reported managing a higher number of patients for alcohol and alcohol problems. Education on alcohol was weakly associated with increased role security and therapeutic commitment.

These findings are similar to those of a previous study of GPs from seven European countries plus Canada and New Zealand, in which education, role security and therapeutic commitment were all independently associated with managing a greater number of patients for alcohol and alcohol problems (Anderson *et al.*, 2003), and in which education on alcohol was associated with increased role security and therapeutic commitment.

When considering potential impediments and facilitators to implementing brief advice programmes, the only significant findings were impediments. GPs who agreed that doctors having a disease model would impede brief advice activity, reported a lower number of patients managed for alcohol and alcohol problems (such GPs also had lower role security and therapeutic commitment). This factor, which was a suggested barrier as to why doctors in general practice spend very little or no time at all on early intervention for alcohol, included items that doctors are trained in a disease model; are too busy dealing with medical problems and are not organized to undertake prevention. It seems that doctors who agreed with this barrier were also doctors more aligned to a disease rather than a preventive model of work, applying this view to themselves.

Such doctors reported managing fewer patients for their hazardous drinking or alcohol-related problems and had lower role security and therapeutic commitment. Interestingly, the more hours of postgraduate education received on alcohol the doctors reported as receiving, the less likely were they to agree that doctors having a disease model would impede brief advice activity, although the coefficients were very small.

Similarly, GPs who agreed that individuals are responsible enough to protect themselves from alcohol-related harm reported a lower number of patients managed for alcohol and alcohol problems (such GPs had lower therapeutic commitment, although not role security).

There are an important number of caveats to be borne in mind when interpreting the results. The most important is the low overall response rate. With the exceptions of England, Czech Republic and Poland, response rates were <50%. In all countries, except England, where it was restricted to the East Midlands region, the sample represented the different regions of the country as a whole and was representative of the age and sex profile of GPs practising in each country or region. It is possible that the respondents included doctors with a higher interest in alcohol issues than non-responders, although the extent to which this is the case is not known. Across the eight countries, although role security increased in relation to the response rate, and therapeutic commitment decreased, due to the small number of countries, neither relationship was statistically significant. Thus, the extent to which the sample is representative of the views, attitudes and practices of the whole population of GPs in each country is not fully known. The low response rate will not affect the results found, only the potential representativeness of the views of GPs as a whole.

Second, the questionnaire provides self-report data, with no external means of validation. Thus, the extent to which the number of patients managed for heavy drinking, a key dependent variable in the analyses, is a true reflection of the number of patients actually managed is not known. Third, the design is a cross-sectional survey and the analyses rely on correlational relationships between different items in the survey, making the inference of causal pathways problematic. For example, there is a strong association between role security and the reported number of patients managed for heavy drinking. We do not know if it is role security that predicts a higher number of patients reported as managed, or if it is that providers who report that they have managed a higher number of patients score higher on role security. It is probably a bit of both. Nevertheless, the findings are internally consistent, similar to previous research on this issue (Anderson *et al.*, 2004; ScHARR Public Health Collaborating Centre, 2009), and give leads for policy development and future research.

Three important conclusions for new approaches to screening and advice in primary health care and future research seem to derive from these data. First, education seems to be related to increased role security, and each of education and role security were associated with a reported increase in the number of patients managed for heavy drinking. This would suggest the importance of scaled-up education and training for managing heavy drinking patients in primary health care settings. Unfortunately, there is very little information available on the extent, uptake and quality of education on alcohol throughout Europe. A survey of European Union countries undertaken at the end of the year 2010 found that in 14 of the 29 countries, training programmes were available for health professionals in

screening and brief interventions for alcohol problems. No information was given on the type or length of training, or its uptake (Anderson *et al.*, 2012). Across 23 European countries, on a scale from 0 (not included) to 10 (fully included), education on managing hazardous and harmful alcohol consumption in the curriculum of professional training at undergraduate, postgraduate and continuing professional education levels scored 5 in 2012. Again, no information was given on the type or length of training, or its uptake (Gandin and Scafato, 2013).

Training sessions could address knowledge, skills, attitudes and perceived barriers and facilitators for implementing screening and brief advice (Keurhorst *et al.*, 2013). Knowledge should include information on the harm done by alcohol and on the evidence base for screening and brief advice programmes; skills should include the use of screening instruments and brief intervention methods; discussion of attitudes could be based on the role security and therapeutic commitment scales of the short alcohol and alcohol problems perceptions questionnaire and be embedded in practice-based situations; training should include an open discussion of experienced barriers and facilitators, and how barriers can be overcome. Such brief training could be delivered in two 1 h face-to-face events.

Second, doctors believing that having a disease model would impede brief advice activity seemed to impair the respondents own role security and therapeutic commitment, and management activity. This might suggest alternative approaches to engaging GPs in advising patients with hazardous and harmful alcohol consumption to reduce their alcohol consumption. One option would be to study the extent to which screening and brief advice targeted at comorbid conditions improves delivery. A candidate example here would be high blood pressure (Ornstein *et al.*, 2013). For example, in Europe, over two-fifths of 35- to 74-year-old Europeans are hypertensive (threshold 140/90 mm Hg) (Wolf-Maier *et al.*, 2003), whereas one in eight 15- to 64-year-old Europeans drink heavily (threshold of alcohol per day 60 g men; 40 g women) (Rehm *et al.*, 2012). Among 13,000 primary health care patients across six European countries, 42% of male and 49% of female patients aged 18–64 years with heavy drinking also had hypertension (J. Rehm, submitted for publication), and alcohol is itself a risk factor for hypertension (Taylor *et al.*, 2009). The attributable fraction of alcohol as a cause of hypertension in those diagnosed with hypertension increases from ~13% at 10 g per day upwards to 76% at 100 g/day (NHMRC, 2009). They are also both seriously undertreated. In Europe, ~88% of all hypertensive patients based on a threshold of 140/90 were inadequately treated (Pereira *et al.*, 2009) and only 1 in 10 patients with alcohol use disorders are offered any kind of treatment (Alonso *et al.*, 2004). Lifestyle reductions in alcohol consumption are found to lead to clinically significant reductions in blood pressure among normotensive and hypertensive drinkers in studies that evaluated the impact of brief advice to heavy drinkers and that, incidentally, measured blood pressure (Xin *et al.*, 2001). Thus all patients with a documented diagnosis of hypertension, or a clinic blood pressure of >160/100, could be screened for their alcohol consumption and offered brief advice in the case of a screen positive.

Alternatively, pharmacotherapies could be considered for greater use in primary health care settings. For example, two efficacy studies have evaluated as-needed nalmefene versus placebo in reducing alcohol consumption in out-patients settings with a high-risk drinking level (men: >60 g/day;

women: >40 g/day) at both screening and randomization (Gual *et al.*, 2013; Mann *et al.*, 2013; Van den Brink *et al.*, 2013). The efficacy analyses found significantly superior effects of nalmefene compared with placebo in reducing the number of heavy drinking days [treatment difference: -3.2 days (95% CI: -4.8; -1.6); $P < 0.0001$] and the total alcohol consumption [treatment difference: -14.3 g/day (-20.8; -7.8); $P < 0.0001$] 6 months after starting treatment. Nalmefene constitutes a new pharmacological treatment paradigm in terms of treatment goal (reduced drinking, rather than abstinence) and dosing regimen (as-needed, rather than at defined intervals); its use has not yet been evaluated in primary health care settings.

Third, a belief in individual patient responsibility seemed to impair management activity. This would suggest that patient owned identification and brief advice technologies, which could be explored and developed, might broaden the number of heavy drinkers exposed to actions to reduce their drinking. For example, the widespread use of computers, the Internet and smartphones has led to the development of electronic systems to deliver screening and brief advice that can potentially address some of the barriers to implementation of traditional face-to-face screening and brief advice. Electronic screening and brief advice have the potential to offer greater flexibility and anonymity for the individual and reach a larger proportion of the in-need population. A systematic review and meta-analysis of 23 studies of the effectiveness of electronic screening and brief intervention (eSBI) over time in non-treatment-seeking hazardous and harmful drinkers found a statistically significant mean difference in grams of ethanol consumed per week between those receiving an eSBI versus controls at up to 3-month (mean difference -32.74, 95% CI: -56.80 to -8.68), 3- to <6-month (mean difference -17.33, 95% CI: -31.82 to -2.84) and from 6-to <12-month follow-up (mean difference -14.91, 95% CI: -25.56 to -4.26). No statistically significant difference was found at a follow-up period of 12 months or greater (Donoghue *et al.*, 2014).

AUTHORS' CONTRIBUTIONS

All authors, except P.A., undertook the surveys in their countries. P.A. undertook the analyses and wrote the first draft of the manuscript. All other authors revised the manuscript critically. All authors read and approved the final manuscript.

Funding — The research leading to these results or outcomes has received funding from the European Union's Seventh Framework Programme for research, technological development and demonstration under grant agreement no. 259268—Optimizing delivery of health care intervention (ODHIN). Participant organisations in ODHIN can be seen at www.odhinproject.eu. Radboud University Nijmegen Medical Centre received co-funding from The Netherlands Organisation for Health Research and Development (ZonMW, Prevention Program), under grant agreement no. 200310017—ODHIN—Optimizing delivery of healthcare interventions in the Netherlands, according Art.II.17 of the FP7 EC Grant Agreement. The England survey was funded by a grant from the Alcohol Education and Research Council (R 04/2008) now called Alcohol Research UK.

Conflict of interest statement. None declared.

REFERENCES

Alonso J, Angermeyer M, Bernert S. (2004) Use of mental health services in Europe: results from the ESEMeD project. *Psychiatr Scand Suppl* **420**:47–54.

- Anderson P. (1985) Management of alcohol problems in general practice. *BMJ* **290**:1873–5.
- Anderson P, Clement S. (1987) The AAPPQ revisited. Measurement of general practitioners' attitudes to alcohol problems. *Br J Addict* **82**:753–9.
- Anderson P, Kaner E, Wutzke S *et al.* (2003) Attitudes and management of alcohol problems in general practice: descriptive analysis based on findings of a World Health Organization international collaborative survey. *Alcohol Alcohol* **38**:597–601.
- Anderson P, Kaner E, Wutzke S *et al.* (2004) Attitudes and managing alcohol problems in general practice: an interaction analysis based on findings from a WHO collaborative study. *Alcohol Alcohol* **39**:351–6.
- Anderson P, Møller L, Galea G (eds). (2012) *Alcohol in the European Union*. Copenhagen, Denmark: World Health Organization.
- Donoghue K, Patton R, Phillips T *et al.* (2014) The effectiveness of electronic screening and brief intervention for reducing levels of alcohol consumption: a systematic review and meta-analysis. *J Med Internet Res* **16**:e142.
- Drummond C, Wolstenholme A, Deluca P *et al.* (2013) Alcohol interventions and treatment in Europe. In Anderson P, Braddick F, Reynolds J, Gual A (eds). *Alcohol Policy in Europe: Evidence from AMPHORA*. 2nd edn. The AMPHORA Project. http://amphoraproject.net/w2box/data/e-book/Chapter%209%20-%20AM_E-BOOK_2nd%20edition%20-%20July%202013.pdf (16 June 2014, date last accessed).
- Gandin C, Scafato E. (2013) ODHIN Assessment Tool. A Description of the Available Services for the Management of Hazardous and Harmful Alcohol Consumption. www.odhinproject.eu (16 June 2014, date last accessed).
- Gual A, He Y, Torup L *et al.* (2013) Randomised, double-blind, placebo controlled efficacy study of nalmefene. *Eur Neuropsychopharmacol* **23**:1432–42.
- Health Scotland (2008) H4 ABI: Target and Background Information. <http://www.healthscotland.com/documents/3201.aspx> (16 June 2014, date last accessed).
- Health Scotland (2011a) An evaluation to assess the implementation of NHS delivered Alcohol Brief Interventions: Final Report September 2011. <http://www.healthscotland.com/documents/5438.aspx> (16 June 2014, date last accessed).
- Health Scotland (2011b). HEAT Standard: Alcohol Brief Interventions. National Guidance: 2012–2013. <http://www.healthscotland.com/uploads/documents/17579-ABI%20HEAT%20Standard%20National%20Guidance%202012%20-13%20-%20PDF.pdf> (16 June 2014, date last accessed).
- Health Scotland (2013). Alcohol Brief Interventions 2012–2013. <https://isdscotland.scot.nhs.uk/Health-Topics/Drugs-and-Alcohol-Misuse/Publications/2013-06-25/2013-06-25-ABI-Report.pdf?89017885924> (16 June 2014, date last accessed).
- Keurhorst M, Anderson P, Spak F *et al.* (2013) Implementing training and support, financial reimbursement, and referral to an internet-based brief advice program to improve the early identification of hazardous and harmful alcohol consumption in primary care (ODHIN): study protocol for a cluster randomized factorial trial. *Implement Sci* **8**:11.
- Lim SS, Vos T, Flaxman AD *et al.* (2012) A comparative risk assessment of burden of disease and injury attributable to 67 risk factors and risk factor clusters in 21 regions, 1990–2010: a systematic analysis for the Global Burden of Disease Study 2010. *Lancet* **380**:2224–60.
- Mann K, Bladstrom A, Torup L *et al.* (2013) Extending the treatment options: a randomized controlled study of as-needed nalmefene. *Biol Psychiatry* **73**:706–13.
- Marshall M, Harrison S. (2005) It's about more than money: financial incentives and internal motivation. *Qual Saf Health Care* **14**:4–5.
- McAvoy BR, Donovan RJ, Jalleh G *et al.* (2001) General practitioners, prevention and alcohol—a powerful cocktail? Facilitators and inhibitors of practising preventive medicine in general and early intervention for alcohol in particular: a twelve nation key informant and general practitioner study. *Drugs Educ Prev Pol* **8**:103–17.
- National Health and Medical Research Council (NHMRC). (2009) *Australian Guidelines to Reduce Health Risks from Drinking Alcohol*. Canberra: National Health and Medical Research Council.

- O'Donnell A, Anderson P, Newburn-Birch D *et al.* (2014) The impact of brief alcohol interventions in primary healthcare: a systematic review of reviews. *Alcohol Alcohol* **49**:66–78.
- Ornstein SM, Miller PM, Wessell AM *et al.* (2013) Integration and sustainability of alcohol screening, brief intervention, and pharmacotherapy in primary care settings. *J Stud Alcohol Drugs* **74**:598–604.
- Pereira M, Lunet N, Azevedo A *et al.* (2009) Differences in prevalence, awareness, treatment and control of hypertension. *J Hypertens* **7**:963–75.
- Purshouse R, Brennan A, Rafia R *et al.* (2013) Modelling the cost-effectiveness of alcohol screening and brief interventions in primary care in England. *Alcohol Alcohol* **48**:180–8.
- Rehm J, Mathers C, Popova S *et al.* (2009) Global burden of disease and injury and economic cost attributable to alcohol use and alcohol-use disorders. *Lancet* **373**:2223–33.
- Rehm J, Shield KD, Rehm MX *et al.* (2012) *Alcohol Consumption, Alcohol Dependence and Attributable Burden of Disease in Europe: Potential Gains From Effective Interventions for Alcohol Dependence*. Toronto, ON: Centre for Addiction and Mental Health.
- ScHARR Public Health Collaborating Centre. (2009) Screening and Brief Interventions for Prevention and Early Identification of Alcohol Use Disorders in Adults and Young People. <http://www.nice.org.uk/nicemedia/live/11828/45665/45665.pdf> (16 June 2014, date last accessed).
- Taylor B, Irving HM, Baliunas D *et al.* (2009) Alcohol and hypertension: gender differences in dose-response relationships. *Addiction* **104**:1981–90.
- Van den Brink W, Aubin HJ, Bladstrom A *et al.* (2013) Efficacy of as-needed nalmefene in alcohol-dependent patients with at least a high drinking risk level: results from a subgroup analysis of two randomized controlled 6-month studies. *Alcohol Alcohol* **48**:570–8.
- Wilson GB, Lock CA, Heather N *et al.* (2011) Intervention against excessive alcohol consumption in primary health care: a survey of GPs' attitudes and practices in England 10 years on. *Alcohol Alcohol* **46**:570–7.
- Wolf-Maier K, Cooper RS, Banegas JR *et al.* (2003) Hypertension prevalence and BP levels in 6 European countries, Canada and US. *JAMA* **289**:2362–9.
- Xin X, He Y, Frontini MG *et al.* (2001) Effects of alcohol reduction on blood pressure: a meta-analysis of randomized controlled trials. *Hypertension* **38**:1112–7.