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Screening for alcohol use in primary care: assessing French general practitioner practices

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Abstract

Background

Alcohol use is a leading risk factor for premature death and disability. To tackle this issue, more systematic and accurate screening for at-risk consumption is needed in healthcare systems, especially by general practitioners (GPs). We assessed the frequency of at-risk consumption screening by GPs in France. We also identified characteristics associated with more frequent screening and greater use of validated screening tools by these healthcare providers.

Methods

A cross-sectional survey was conducted among a representative sample of French GPs. Multinomial logistic regressions were used to identify factors associated with more frequent screening and greater use of validated screening tools.

Results

Response rate was of 73%. Of the 2412 participants, 42.8% screened all their patients systematically and repeatedly, while 48.0% never used standardized tools to screen potentially at-risk patients. Among other characteristics, being aware of and using the 'early identification and brief intervention' screening strategy, and feeling absolutely comfortable talking with patients about reducing or stopping their alcohol use, were both associated with more frequent screening and use of standardized tools.

Conclusion

Our results on at-risk alcohol use screening highlight an improvement over data from previous studies. Nevertheless, better training of French GPs in good alcohol screening practices - specifically, increased screening frequency and greater use of standardized tools - may improve identification of at-risk patients.

Short summary

General practitioners (GPs) are a cornerstone of alcohol use screening. From a representative sample of GPs in France, we showed that despite recent improvements in screening frequency by these healthcare providers, issues regarding training and perceptions remain which hinder systematic and accurate screening.

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Data availability statement

The data from this article can be shared on reasonable request to the corresponding author.

Conflict of interest

The authors declare no conflict of interest.

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Introduction

In 2016, alcohol use was the leading risk factor for premature death and disability among people aged 15-49 years globally (Griswold *et al.*, 2018). The relationship between alcohol use and morbi-mortality is dose-response (Rehm *et al.*, 2021). If we consider a mortality risk of 1 in 1000 as acceptable, then low-risk alcohol guidelines for Europe can be set at 8–20 g/day (Shield *et al.*, 2017). In 2020, age-standardized alcohol-attributable mortality (per 100,000 persons) in France was estimated at approximately 31.3 in men and 7.5 in women, with a declining trend being observed (Trias-Llimós, Bardoutsos, and Janssen, 2021). Efforts should be made to maintain and strengthen this trend. It has been forecast that by 2050, this specific mortality rate in France will be between 10.5 and 17.6 for men and between 1.1 and 1.8 for women (Trias-Llimós *et al.*, 2021). In the UK, the age-standardized alcohol-specific death rate per 100,000 persons for 2021 was estimated at 20.1 and 9.9 for men and women in 2021, respectively (Office for National Statistics, 2022).

Hazardous drinking is defined as a quantity or pattern of alcohol consumption that places patients at risk of negative alcohol-related outcomes which can be acute or chronic (MacKillop *et al.*, 2022). This term is therefore interchangeable with ‘at-risk’ drinking. However, it is important to note that the threshold defining the quantity or pattern varies between countries (Whitlock *et al.*, 2004; Kalinowski and Humphreys, 2016). Some individuals with hazardous drinking have alcohol use disorder (AUD), defined as clusters of clinically important signs and symptoms that produce harm or distress (American Psychiatric Association, 2013). AUD is the most prevalent of all substance use disorders worldwide (GBD 2016 Alcohol and Drug Use Collaborators, 2018), and is responsible for the largest proportion of the alcohol-attributable mortality burden in 15-49 year old females in countries with a high or middle socio-demographic index (Griswold *et al.*, 2018). The estimated AUD prevalence among people aged 15 years and over in France in 2016 was 7% (World Health Organization, 2018). However, fewer than half the people with AUD in France receive appropriate treatment (Constant, Sherlaw, and Kovess-Masfety, 2017; Font *et al.*, 2018). This illustrates the large treatment gap generally observed for this condition in France (Malet *et al.*, 2003; Hoertel *et al.*, 2014) (and elsewhere (Carvalho *et al.*, 2019)).

From the perspective of people with AUD, common barriers to seeking treatment in France, and in Europe generally, are a lack of awareness about living with AUD, fear of stigmatization, and apprehension about total abstinence (Probst *et al.*, 2015; Costa *et al.*, 2020). To overcome the first of these barriers, more systematic screening for AUD should be implemented within healthcare systems. With regard to hazardous drinking, a previous study found that screening and brief interventions were cost-effective in terms of morbidity and

mortality reduction in 24 out of the 28 countries studied. In the same study, cost-savings were found in 24 countries, including France (Angus *et al.*, 2017).

In France, every patient is expected to choose a referring physician (generally a GP) and to declare this choice to the Social Security system. This physician is the main entry point for general care; he/she is expected to know the medical history of his/her patients, and to refer patients to specialists if needed. By consulting the referring physician first, reimbursement for healthcare is optimized for the patient. Therefore, the frequency of visits to the GP and the established patient-GP relationship would make GPs an excellent candidate for more streamlined detection of behavioral changes, including increased alcohol use.

The 2015 French guidelines on alcohol use (Société Française d'Alcoologie, 2015), issued by the French Alcohol Society, emphasized the pivotal role of GPs in the detection, prevention, and treatment of AUD (Rolland *et al.*, 2017), a role also highlighted by France's National Authority of Health (Haute Autorité de Santé, 2021). Using validated and reliable tools for AUD screening (Moehring *et al.*, 2019) and detecting hazardous consumption (Bohn, Babor, and Kranzler, 1995, p. 95; Bush *et al.*, 1998; Foxcroft *et al.*, 2015) are also recommended measures because they increase screening efficiency, as shown in the French context (Crawford *et al.*, 2004; Gache *et al.*, 2005; Dewost *et al.*, 2006).

With regards to the frequency of alcohol use screening, various differences in GP practices are likely to occur depending on the patient and on the GP him/herself (Denny *et al.*, 2016; Thebault *et al.*, 2017). For instance, screening may be more frequent for people with chronic diseases (Rosell-Murphy *et al.*, 2015; Chatterton *et al.*, 2022). Moreover, it has been shown that GPs with better training may be more likely to implement alcohol-related interventions (Kaner *et al.*, 2001). The same can be expected for screening. Practices may also differ in terms of the use or non-use of validated screening tools (Liu *et al.*, 2019; Mansfield *et al.*, 2019), which can greatly impact the screening result (Fiellin, Reid, and O'Connor, 2000; Larsson and Nehlin, 2016) and subsequent referral to specialized care. Some GPs may only use blood-derived markers to screen for AUD (Wilson *et al.*, 2011), which is not adequate. Indeed, the usefulness of these markers in the clinical setting is a matter for debate (Neumann and Spies, 2003; Bertholet *et al.*, 2014; Baggio *et al.*, 2020). However, they can provide valuable additional data in combination with validated tools such as the Alcohol Use Disorders Identification Test (AUDIT) (Neumann and Spies, 2003; Dolman and Hawkes, 2005).

In the French context, there are few data documenting alcohol use screening practices by GPs (Cogordan *et al.*, 2020). In 2011, an extensive study of GP perspectives

regarding screening practices suggested that i) most GPs only screened patients who they believed were likely to be at-risk, ii) the likelihood of screening depended on the easiness of broaching this subject, and iii) few GPs used standardized questionnaires (Beck *et al.*, 2011).

We aimed to assess the frequency of alcohol use screening by GPs in France and to identify GPs characteristics associated with more frequent screening and greater use of validated screening tools. We also sought to explore the reasons for patient-GP communication difficulties concerning alcohol use.

Material and methods

Study participants

The data used in the present study came from the third wave (December 2019 to March 2020) of the 4th edition (2018-2022) of the multi-year French Observational Panel on Practices and Conditions of General medicine (*Le panel d'observation des pratiques et des conditions d'exercice en médecine générale*) (Direction de la recherche, des études, de l'évaluation et des statistiques, 2020; David, Buyck, and Metten, 2021). Data collection targeted GPs who met all the following criteria: i) derived all or part of their income from private practice, ii) professionally active on 1 January 2018, iii) not exclusively practicing a specialty not recognized by the Social Security system (e.g. acupuncture, homeopathy, addiction, psychotherapy), and iv) chosen referring physician for at least 200 patients on 1 January 2018.

Physicians were drawn at random from the national directory of health professionals (*Répertoire Partagé des Professions de Santé*), with stratification by gender, age class (under 50, 50 to 59, and 60 or older), volume of activity category (understood as the number of consultations made in 2017 (below the first quartile, between the first and third quartile, and above the third quartile)), GP supply density (in consultation/year/inhabitant (Vergier, Chaput, and Lefebvre-Hoang, 2017)), and region of practice.

The survey was conducted in accordance with the Declaration of Helsinki. In line with French law, no consent was required as the survey was anonymous. Accordingly, we did not apply for permission.

Data collection and survey content

Data collection occurred in two phases. First, 83.3% of the expected study sample were solicited over the internet. Approximately one month later, the 16.7% not initially solicited over the internet were solicited by phone to participate using computer assisted telephone interviewing, as were those previously solicited who had not responded online. Overall, 62% of respondents responded online (David *et al.*, 2021).

The third wave of the 4th edition of the panel asked GPs about their opinions and practices in terms of prevention, first globally, and then in terms of preventing addictive behaviors. The survey content was based on a previous survey (Beck *et al.*, 2011) and approved by scientific collaborators including GPs. They were asked whether they had an individual or group practice. Moreover, their involvement in preventative activities in the two previous years was assessed using two questions. The first asked whether they had contributed to any collective preventative activities for a specific population group (i.e., the elderly, school children, residents of vulnerable areas, etc.) (Yes/No); the second question asked whether they displayed prevention messages and associated material in their office in the form of flyers, booklets, self-administered questionnaires, or videos (Yes/No). They were also asked if they had a university diploma in addictive behaviors management (Yes/No).

Another question asked whether GPs were familiar with the 'early identification and brief intervention' (*Repérage Précoce et Intervention Brève*, called RPIB in French) for the screening and care of persons using tobacco, alcohol or cannabis (Yes and you use it for patients with at least one of these three risks/Yes, but you do not use it/No you are not familiar with it). The RPIB is recommended by the French National Authority for Health (Haute Autorité de Santé, 2014). In addition, they were asked whether existing monetary incentives based on public health objectives (*remunération sur objectifs de santé publique*, called ROSP in French) had encouraged them to propose the RPIB to at-risk patients more often (Yes/No/Not aware this remuneration existed).

They were also asked whether, before the survey, they knew what the recommended low-risk alcohol consumption guidelines were; the latter were then listed in the online questionnaire and over the phone (Answer modalities: Yes, the new ones/Yes, the previous ones/No, none). Issued in 2017, the new guidelines are i) not to exceed 10 standard drinks per week, ii) not to consume more than 2 drinks per day, and iii) have abstinent days in the week (Institut National du Cancer and Santé Publique France, 2017). The previous guideline was not to exceed 2 or 3 drinks per day for women and men, respectively. Participants were asked whether, in the previous 12 months, they had contacted a structure specialized in addiction to refer a patient or to seek advice on patient treatment (Yes/No). Specialized structures referred to addiction care, support and prevention centers (CSAPA in French, they are multidisciplinary structure whose mission is to provide prevention and care for people suffering from substance use disorders) and to hospital services specialized in addictive behaviors.

GPs were asked whether in their opinion it is part of the physician's role to initiate discussions with at-risk patients in order to offer help in reducing or stopping alcohol consumption (Yes, absolutely/Yes, somewhat /No, not really/No, absolutely not). They were

also asked if they personally felt comfortable discussing how to reduce or stop alcohol consumption with at-risk patients (Yes, absolutely/Yes, somewhat /No, not really/No, absolutely not). Those who answered 'No' (any modality) were then asked to indicate the difficulties they felt from a list of ten possibilities designed by scientific collaborators including GPs (several choices were possible).

Study outcome definitions

The two study outcomes were screening frequency for at-risk alcohol consumption and the use of standardized tools when screening. To build the first outcome, we asked the following question: "How often do you screen your patients for at-risk alcohol consumption?" (Systematically and repeatedly for all patients/Systematically but only once per patient/Only for certain patients that I consider to be at risk (warning signs, life events, etc.)/I never screen for alcohol consumption/I don't know/I refuse to answer). Participants who answered 'I refuse to answer' were excluded from all analyses. Those who answered 'I do not know' were coded as 'never'. Participants were therefore classified according to their answer as 'Screening systematically, repeatedly per patient', 'Screening systematically, once per patient', 'never screening', and 'screening only certain patients'.

To build the second outcome we asked the following question: "In the past year, for patients who you suspected had at-risk alcohol consumption, how often did you ask them about their alcohol consumption using tools such as questionnaires or standardized scales to assess the level of consumption or dependence (e.g., AUDIT or FACE questionnaires)?" (Most of the time/ Sometimes/ Never). FACE stands for Fast Alcohol Consumption Evaluation (Dewost *et al.*, 2006).

Statistical analyses

Respondent data were weighted using calibration on margins (Vanheuverzwyn and Roy, 2001) for non-return (i.e., GP contacted but not reached) and non-response (GP solicited but declined participation) and adjusted for stratification variables (age, volume of activity category, gender, region of practice, and GP density). Weighting these data ensured that the sample was representative of the target population with respect to these variables. All statistical analyses were conducted on these weighted data, including the descriptive comparisons using the Chi-square test.

We performed multinomial logistic regressions to identify the correlates of frequent screening for at-risk alcohol consumption and of frequent use of standardized tools. We chose multinomial models to identify potential differences between factors associated with different levels of frequency. Only variables with a liberal p-value < 0.20 (Wald test) in the univariable analyses were considered eligible for the multivariable models. The final

multivariable models were built using a backward procedure, and the likelihood ratio test (p-value < .05) was used to define the variables to keep in the final models.

Analyses were performed with Stata software version 17.0 (StataCorp LP, College Station, TX, USA).

Results

Study sample characteristics

Response rate was of 73%. The weighted characteristics of the study sample are provided in **Table 1**. Most of the sample (n=2412) were men (61.2%), 32.7% were under 50 years old, and 27.7% were 60 or over. Of the whole sample, 54.8% of participating French GPs systematically screened their patients for at-risk alcohol consumption (42.8% screened their patients systematically and repeatedly, and 12.0% screened them only once), while 0.9% never did. Half (48.0%) never used standardized tools to screen suspected at-risk patients, while 14.4% did so most of the time.

For the screening frequency outcome, because of the very low occurrence of 'never' answers, we merged the modalities 'never' with 'only in certain patients', to make a 'never screening or screening only certain patients' modality.

Factors associated with screening frequency

Factors associated with screening frequency are provided in **Table 2**.

As compared with the response 'never screening or screening only certain patients' (reference answer), the following factors were associated with systematic and repeated screening after multiple adjustment: i) being familiar with and using the RPIB (vs. no familiarity), ii) being familiar with the new recommended thresholds for at-risk alcohol consumption (vs. no familiarity), iii) fully agreeing (modality 'absolutely') that it is part of the physician's role to initiate discussions with patients identified with at-risk consumption in order to offer them help in reducing or stopping their alcohol consumption, and iv) feeling absolutely comfortable talking with patients identified with at-risk consumption about reducing or stopping their alcohol consumption. As compared with the response 'screening systematically, once per patient' (reference answer), three of these four factors (i.e., except familiarity with new thresholds) were associated with systematic and repeated screening after multiple adjustment (**Table 2**).

Factors associated with using standardized tools

The factors associated with using standardized tools (i.e., second outcome) are provided in **Table 3**. More frequent use of standardized tools was associated with: i) having been encouraged by the ROSP to screen more frequently, ii) having contributed to the

organization of collective preventative activities, iii) displaying prevention messages and associated tools in their office, iv) being familiar with and using RPIB, v) familiarity with the recommended thresholds for alcohol use, vi) feeling absolutely comfortable talking with identified high-risk patients about reducing or stopping their alcohol consumption, and vii) having a university diploma in addictive behaviors management.

Post-hoc sensitivity analyses showed that removing those who answered 'I do not know' or 'never' (screening frequency outcome) from the study sample led to similar results (data not shown).

Reasons for not feeling comfortable talking with patients about alcohol consumption

The two most cited reasons for not feeling comfortable discussing how to reduce or stop alcohol with a patient (i.e., answering 'No, not really' or 'No, absolutely not' to the relevant question), were patients' denial that they had a problem, and a lack of self-efficacy to change patients' behavior (**Table 4**).

Discussion

In this study, 54.8% of participating French GPs systematically screened their patients for at-risk alcohol consumption, and 49.9 % used standardized screening tools at least sometimes. The most common barriers to screening and using standardized tools were a lack of knowledge about screening practices and feeling uncomfortable discussing alcohol reduction/abstinence with patients.

The screening frequency in our study was higher than that reported in previous studies. In 2017, in a representative sample of French adults, less than 20% of participants reported having discussed their alcohol consumption with their GP (Cogordan *et al.*, 2020). Similar proportions were reported in the US (Denny *et al.*, 2016). In a previous French study, people with AUD considered that the lack of systematic screening was a lost opportunity to discuss the issue of alcohol consumption (Coste *et al.*, 2020).

A French study in 2008-2009 found that 23.0% of GPs systematically screened their patients at least once (Beck *et al.*, 2011), a much lower percentage than in our study (54.8%). That same study found that 13% of GPs used standardized tools (Beck *et al.*, 2011), which was higher than the 8.1% found in a French-Swiss 2015 study (Sebo *et al.*, 2017), but still much lower than the 49.9% in our present study. Accordingly, although wording differences and other possible biases limit the comparability of these studies, it would appear there has been an increasing trend in alcohol consumption screening by GPs during the last decade. A few factors may explain this improvement.

First, there may have been a gradual shift toward recognizing AUD as an illness. A recent meta-analysis suggested that in the past people with AUD were less likely to be considered ill by the public as compared to other substance users (Kilian *et al.*, 2021); GPs may be at the front edge of this change in perception. Rouillon *et al.* showed that among a sample of French residents either working as GPs and teaching GPs, people with AUD were considered less responsible (on a scale from “fully victim” to “fully responsible”) for their substance use disorder than tobacco users with a tobacco use disorder (Rouillon *et al.*, 2021).

Second, legislative changes to French healthcare were implemented in 2004 (The French Parliament, 2004a, p. 806, 2004b; Paraponaris, 2007) whereby GPs were placed at the core of public health care and health prevention. A decade later, GPs were officially recognized as a cornerstone in substance use disorder detection and care, as illustrated by the 2015 guidelines of the French Alcohol Society (Rolland *et al.*, 2017). In 2012, the ROSP was established. Through the national health insurance system (*Assurance maladie*), the ROSP granted GPs financial bonuses based on self-reported indicators of public health objectives (Assurance Maladie, 2023). By providing RPIB to at least 60% of their patients with at-risk drinking, GPs earned ROSP points, which were later translated into money. This incentive was associated with the use of standardized tools in our analyses.

Third, in recent years the French national public health agency (Santé Publique France, 2019) and the now dissolved National institute of prevention and health education (*Institut national de prévention et d'éducation pour la santé*) implemented national communication plans on addictive behaviors targeting GPs (Bourdillon, 2015, 2016).

The increase in the frequency of alcohol consumption screening which we found reflects developments in Sweden (Lundin, Hallgren, and Danielsson, 2019), where GPs also constitute the gateway to the health system (Sánchez-Sagrado, 2016).

In our study, systematic screening was associated with the belief that it is part of the GP's role to initiate discussion about alcohol consumption. Specifically, 80.3% of our sample replied ‘absolutely’ when asked about this; this percentage is likely to rise in the future for the three above-mentioned reasons. A recent study in Switzerland also reported strong agreement by GPs that initiating discussion was part of their role (Cohidon *et al.*, 2019). The likelihood of frequent screening was also associated with feeling comfortable about discussing alcohol consumption with patients. However, although approximately 60% replied ‘absolutely (comfortable)’, 7.4% reported that they were “not really” or “not at all” comfortable with it. The most cited reasons given for not feeling comfortable were patients' denial that they had a problem, lack of self-efficacy to change patient behavior, and feeling insufficiently

trained to discuss this issue. The combined figure of 92.2% for those who felt somewhat of absolutely comfortable reflects results from a study of GPs in Australia (Wilson *et al.*, 2021). These results suggest that most French GPs now feel comfortable with having such discussions.

Our findings on patient denial also reflect previous work (Probst *et al.*, 2015). Asking more specific questions about alcohol use, for example questions included in standardized tools, would most likely improve the identification of individuals with AUD (Paul *et al.*, 2014; Manthey *et al.*, 2015; Schuckit *et al.*, 2020). However, there is also a need to identify ways of initiating discussion on alcohol use with people that are reluctant to do so (O'Donnell *et al.*, 2018; Rosário *et al.*, 2021), including outside the screening framework. Indeed, screening questions may be considered at first glance as intrusive (Brady *et al.*, 2002; Mackridge *et al.*, 2016; Walmsley *et al.*, 2021).

In terms of GP lack of self-efficacy to change patient behavior, our results echo those in a study of Irish GPs, where almost half of the study sample did not believe they could help patients to reduce their alcohol consumption (Collins, Finegan, and O'Riordan, 2018). One might expect that this feeling will become less prevalent over time through better training.

The issue of a lack of GP training in screening for hazardous drinking has been previously reported and documented in France and Europe: the better GPs are trained, the more easily they can accurately screen for hazardous drinking and/or manage hazardous drinking (including AUD) care (Geirsson, Bendtsen, and Spak, 2005; Anderson *et al.*, 2014; Thebault *et al.*, 2015; Amler *et al.*, 2018; Romero-Rodríguez *et al.*, 2020). In our analyses, the impact of training was revealed through three different factors: knowledge of RPIB, knowledge of alcohol thresholds, and having a university diploma in addictive behaviors management. Similarly, a German study highlighted that knowledge of the country's official alcohol care guideline was associated with screening (Frischknecht *et al.*, 2022). Training is key to involve GPs in more frequent screening (Babor *et al.*, 2004); further research should identify the most effective training formats (van Beurden *et al.*, 2012; Stoner, Mikko, and Carpenter, 2014).

In addition to training-related factors and feeling comfortable discussing the issue of alcohol with patients, another correlate of more frequent use of standardized tools was an interest in prevention. One can therefore expect that continued emphasis on the key role of GPs in prevention will facilitate the adoption of good screening reflexes by these same professionals. Furthermore, GPs with previous experience in prevention practices may be more receptive to recommendations which encourage the use of standardized tools.

Our results on financial incentives also suggest that some GPs were encouraged to provide RPIB by the financial attractiveness of ROSP. Incentives for GPs may be acceptable for patients under some circumstances (Jelovac and Polomé, 2017), but not all GPs have sufficient resources (e.g. administrative support) or time to follow the required procedures in order to benefit from them (Kecmanovic and Hall, 2015). While financial incentives to encourage at-risk alcohol consumption screening may indeed lead to better screening rates (O'Donnell *et al.*, 2016), this positive effect may be time-limited and fade after the incentive is withdrawn (Meier *et al.*, 2021). One way to maintain this effect would be to maintain the incentive. Others may also be implemented after withdrawal, such as providing GP feedback on their screening rates, (Hocking *et al.*, 2022). Further studies should be conducted on the cost-effectiveness and long-term effectiveness of financial incentives in order to explore in detail the extent to which they and other strategies, such as training and support, are beneficial for screening practices (Angus *et al.*, 2019).

One of the strengths of the present study is the recruitment design, which ensured representativeness of French GPs. Another is that instead of only focusing on objective data or measurements, we also collected data on personal representations. Having the latter ensured a more in-depth interpretation of data, as major behavioral mechanisms were highlighted. For instance, the impact of role legitimacy, which cannot be derived from an objective measurement, was highlighted. This provided perspectives on how to improve the outcome in the future. Moreover, these factors may differentially influence real-world practices. Another strength is that GPs were involved in the survey design; this ensured that the questions asked were pertinent.

In terms of study limitations, we did not assess the effects of GP alcohol consumption on screening practices. These effects were previously highlighted in the French context, with the frequency of consumption by GP being inversely associated with the likelihood of screening and of recommending pregnant women to quit drinking (Andler *et al.*, 2018). Moreover, we based our analyses on self-reported data, given that it is difficult to obtain an objective measurement of the screening rate. Data on post-screening actions taken by GPs (i.e., treatment or referral), which was outside the scope of this study, would be informative in future work to assess public health impact of such practices.

Conclusion

To conclude, we found higher rates of screening for hazardous alcohol use and higher rates of the use of standardized tools by French GPs than in previous studies. The barriers to screening and use of standardized tools which we identified highlight the major

role of training in increasing screening frequency and the use of standardized tools by GPs.
The role of financial incentives in this context warrants further exploration.

Table 1. Study sample characteristics according to screening frequency for at-risk alcohol consumption (n=2412)

| | N | Column % | Column % (weighted) † | Systematically and repeatedly for each of your patients % | Systematically but only once per patient % | Only in certain patients that you consider to be at risk (warning signs, life events, etc.) % | You never do this type of screening % | p-value‡ |
|--|------|----------|-----------------------|---|--|---|---------------------------------------|----------|
| Gender | | | | | | | | 0.116 |
| Men | 1353 | 56.1 | 61.2 | 59.5 | 61.6 | 61.9 | 76.2 | |
| Women | 1059 | 43.9 | 38.8 | 40.5 | 38.4 | 38.1 | 23.8 | |
| Age (years) | | | | | | | | <0.001 |
| < 50 | 1040 | 43.1 | 32.7 | 29.5 | 45.1 | 32.9 | 24.2 | |
| 50-59 | 752 | 31.2 | 39.6 | 42.8 | 30.4 | 38.4 | 49.1 | |
| >60 | 620 | 25.7 | 27.7 | 27.7 | 24.5 | 28.7 | 26.8 | |
| GP density§ | | | | | | | | 0.889 |
| Practice in an area with 2.8 or more consultations per year per inhabitant | 1788 | 74.1 | 89.6 | 89.2 | 90.0 | 89.7 | 92.5 | |
| Practice in an area with less than 2.8 consultations per year per inhabitant | 624 | 25.9 | 10.4 | 10.8 | 10.0 | 10.3 | 7.5 | |
| Volume of activity category¶ | | | | | | | | 0.171 |
| < first quartile | 664 | 27.5 | 23.3 | 23.9 | 21.0 | 23.3 | 29.3 | |
| ≥ first and ≤ third quartile | 1249 | 51.8 | 51.0 | 51.1 | 57.2 | 49.0 | 51.8 | |
| > third quartile | 499 | 20.7 | 25.7 | 25.1 | 21.7 | 27.7 | 18.9 | |
| Have you a university diploma in addictive behaviors management? | | | | | | | | 0.003§ |
| No | 2371 | 98.3 | 98.4 | 97.3 | 99.3 | 99.1 | 100 | § |
| Yes | 41 | 1.7 | 1.6 | 2.7 | 0.7 | 0.9 | 0 | |
| Current practice: | | | | | | | | 0.001 |
| Individual | 750 | 31.2 | 41.8 | 45.0 | 35.0 | 39.9 | 59.4 | |
| Group | 1655 | 68.8 | 58.2 | 55.0 | 65.0 | 60.1 | 40.6 | |

| | | | | | | | | |
|--|------|------|------|------|------|------|------|--------|
| In the last two years, have you contributed to the organization of collective preventative activities as part of your professional activity? | | | | | | | | 0.317§ |
| No | 1895 | 78.6 | 83.8 | 82.5 | 84.9 | 84.7 | 93.5 | |
| Yes | 517 | 21.4 | 16.2 | 17.5 | 15.1 | 15.3 | 6.5 | |
| Do you display prevention messages and associated material in your office in the form of flyers, booklets, self-administered questionnaires, or videos? | | | | | | | | 0.046 |
| No | 329 | 13.7 | 14.9 | 13.4 | 14.0 | 16.0 | 27.0 | |
| Yes | 2077 | 86.3 | 85.1 | 86.6 | 86.0 | 84.0 | 73.0 | |
| In the last 12 months, have you contacted a structure specialized in addiction to refer a patient or to seek advice on patient treatment? | | | | | | | | <0.001 |
| No | 223 | 9.3 | 9.9 | 8.2 | 12.4 | 10.1 | 27.8 | |
| Yes | 2189 | 90.8 | 90.1 | 91.9 | 87.6 | 89.9 | 72.2 | |
| Are you familiar with the 'early identification and brief intervention' approach? ++ | | | | | | | | <0.001 |
| Yes, and you use it | 599 | 25.2 | 22.4 | 26.5 | 23.0 | 18.8 | 11.3 | |
| Yes, but you do not use it | 269 | 11.3 | 10.8 | 12.3 | 6.4 | 10.5 | 11.3 | |
| No, you are not familiar with it | 1506 | 63.4 | 66.8 | 61.2 | 70.6 | 70.7 | 77.4 | |
| Before this survey, did you know the new or old recommended thresholds for alcohol use in France? | | | | | | | | <0.001 |
| No, none | 362 | 15.1 | 15.9 | 12.6 | 13.5 | 18.6 | 44.9 | |
| Only the old ones | 555 | 23.1 | 23.4 | 21.2 | 23.6 | 26.3 | 11.3 | |
| New ones | 1489 | 61.9 | 60.7 | 66.2 | 62.9 | 55.1 | 43.8 | |

| | | | | | | | | |
|--|------|------|------|------|------|------|------|--------|
| Would you say that it is part of the physician's role to <u>initiate</u> discussions with patients identified as having high-risk consumption in order to offer help in reducing or stopping their alcohol use? | | | | | | | | <0.001 |
| Yes, absolutely | 1985 | 82.5 | 80.3 | 88.4 | 74.0 | 74.8 | 58.6 | |
| Yes, somewhat | 399 | 16.6 | 19.0 | 11.2 | 25.5 | 24.7 | 24.9 | |
| No, not really / no, absolutely not | 21 | 0.9 | 0.8 | 0.5 | 0.5 | 0.5 | 16.5 | |
| Do you personally feel comfortable talking with patients identified as having high-risk consumption about reducing or stopping their alcohol use? | | | | | | | | <0.001 |
| Yes, absolutely | 1444 | 59.9 | 60.5 | 74.1 | 54.6 | 48.8 | 53.8 | |
| Yes, somewhat | 777 | 32.2 | 32.1 | 23.4 | 40.2 | 38.5 | 31.0 | |
| No, not really / no, absolutely not | 189 | 7.8 | 7.4 | 2.4 | 5.2 | 12.7 | 15.2 | |
| Do you think that the 'Remuneration on Public Health Objectives' has enticed you to propose the brief intervention approach to patients who smoke or drink alcohol? †† | | | | | | | | <0.001 |
| No | 1416 | 59.4 | 58.2 | 34.4 | 36.8 | 36.8 | 14.0 | |
| Yes | 833 | 34.9 | 35.3 | 60.0 | 59.8 | 55.6 | 65.9 | |
| Not aware of such remuneration | 135 | 5.7 | 6.5 | 5.6 | 3.5 | 7.6 | 20.1 | |
| How often do you screen your patients for at-risk alcohol consumption? | | | | | | | | - |
| Systematically and repeatedly for each of your patients | 1051 | 43.6 | 42.8 | - | - | - | - | |
| Systematically but only once per patient | 319 | 13.2 | 12.0 | - | - | - | - | |

| | | | | | | | |
|--|------|------|------|------|------|------|--------|
| Only for patients that you consider to be at risk (warning signs, life events, etc.) | 991 | 41.1 | 43.1 | - | - | - | - |
| You never do this type of screening | 20 | 0.8 | 0.9 | - | - | - | - |
| I refuse to answer | 5 | 0.2 | 0.2 | - | - | - | - |
| I do not know | 26 | 1.1 | 1.1 | - | - | - | - |
| Of the patients who you suspected had at-risk alcohol consumption in the past year, how often did you ask them about their drinking using standardized tools? | | | | | | | <0.001 |
| Most of the time | 348 | 14.4 | 14.3 | 19.0 | 12.2 | 10.0 | 18.1 |
| Sometimes | 907 | 37.6 | 35.6 | 35.2 | 30.8 | 38.5 | 12.8 |
| Never | 1157 | 48.0 | 50.1 | 45.8 | 57.0 | 51.5 | 69.1 |

† Respondent data were weighted for non-return (GP not reached) and non-response (GP solicited but who declined participation), and for stratification variables (age, volume of activity category, gender, region of practice, and GP density).

‡Chi-square test

§ Density calculated based on GPs under 65 years of age (Vergier *et al.*, 2017)

¶ Number of consultations in 2017

††The *Repérage Précoce et Intervention Brève* (RPIB in French) is recommended by the French National Authority for Health (*Haute Autorité de Santé*) (Haute Autorité de Santé, 2014).

‡‡*Rémunération sur Objectifs de Santé Publique* (ROSP in French) are monetary incentives provided to physicians by the Social Security system if they reach certain medical and economic targets.

§§ For these two variables, participants who answered that they never performed this type of screening were excluded, in order to be able to then perform the Chi-square test (i.e., to be able to meet the minimal number of observations condition in each cell).

Table 2. Factors associated with screening frequency for alcohol consumption (multinomial regression, n=2,358)

| | Screening systematically, once per patient (ref: never screening or screening only certain patients) | | Screening systematically, repeatedly per patient (ref: never screening or screening only certain patients) § | | Screening systematically, repeatedly per patient (ref: screening systematically, once per patient) § | |
|--|--|----------|--|----------|--|----------|
| | aOR [95% CI] | p-value† | aOR [95% CI] | p-value† | aOR [95% CI] | p-value† |
| Are you familiar with the 'early identification and brief intervention' approach?‡ | | | | | | |
| Yes, and you use it | 1.15 [0.72-1.85] | 0.548 | 1.50 [1.08-2.10] | 0.017 | 1.30 [0.83-2.05] | 0.257 |
| Yes, but you do not use it | 0.54 [0.27-1.07] | 0.078 | 1.22 [0.78-1.92] | 0.386 | 2.25 [1.13-4.49] | 0.022 |
| No, you are not familiar with it (ref.) | 1 | | 1 | | 1 | |
| Before this survey, did you know the new or old recommended thresholds for alcohol use in France? | | | | | | |
| No, none (ref.) | 1 | | 1 | | 1 | |
| Only the old ones | 1.38 [0.70-2.72] | 0.352 | 1.29 [0.82-2.03] | 0.278 | 0.93 [0.46-1.88] | 0.847 |
| New ones | 1.63 [0.88-3.03] | 0.119 | 1.64 [1.11-2.41] | 0.013 | 1.00 [0.53-1.90] | 0.994 |
| Would you say that it is part of the physician's role to <u>initiate</u> discussions with patients identified as having high-risk consumption in order to offer help in reducing or stopping their alcohol use? | | | | | | |
| Yes, absolutely | 0.83 [0.51-1.37] | 0.473 | 1.68 [1.14-2.49] | 0.009 | 2.02 [1.19-3.43] | 0.009 |
| Yes, somewhat/ no, not really/ no, absolutely not (ref.) | 1 | | 1 | | 1 | |
| Do you personally feel comfortable talking with patients identified as having high-risk consumption about reducing or stopping their alcohol use? | | | | | | |
| Yes, absolutely | 1.32 [0.88-1.99] | 0.176 | 2.63 [1.96-3.52] | <0.001 | 1.98 [1.31-3.00] | 0.001 |

| | | | |
|--|---|---|---|
| Yes, somewhat/ no, not really/ no, absolutely not (ref.) | 1 | 1 | 1 |
|--|---|---|---|

† Respondent data were weighted for non-return (GP not reached) and non-response (GP solicited but who declined participation), and for stratification variables (age, volume of activity category, gender, region of practice, and GP density).

‡ The *Repérage Précoce et Intervention Brève* (RPIB in French) is recommended by the French National Authority for Health (*Haute Autorité de Santé*) (Haute Autorité de Santé, 2014).

§ Only the reference group differs between those two regressions.

Table 3. Factors associated with frequency of use of standardized tools to screen for at-risk alcohol consumption (multinomial regression, multivariable analysis)

| | Sometimes (ref: never) | | | Most of the time (ref: never) | | |
|---|------------------------|-----------|---------|-------------------------------|------------|---------|
| | aOR [†] | 95% CI | p-value | aOR [†] | 95% CI | p-value |
| Have you a university diploma in addictive behaviors management | | | | | | |
| No (ref.) | 1 | | | 1 | | |
| Yes | 1.34 | 0.51-3.53 | 0.555 | 7.14 | 2.42-21.04 | <0.001 |
| In the last two years, have you contributed to the organization of collective preventative activities as part of your professional activity? | | | | | | |
| No (ref.) | 1 | | | 1 | | |
| Yes | 1.48 | 1.04-2.12 | 0.031 | 1.49 | 0.95-2.33 | 0.080 |
| Do you display prevention messages and associated material in their office in the form of flyers, booklets, self-administered questionnaires, or videos? | | | | | | |
| No (ref.) | 1 | | | 1 | | |
| Yes | 2.55 | 1.60-4.07 | <0.001 | 2.18 | 1.22-3.91 | 0.009 |
| Are you familiar with the 'early identification and brief intervention' approach?‡ | | | | | | |
| Yes and you use it | 1.63 | 1.15-2.30 | 0.006 | 2.37 | 1.52-3.69 | <0.001 |
| Yes, but you do not use it | 1.25 | 0.81-1.94 | 0.316 | 0.97 | 0.51-1.84 | 0.915 |
| No, you are not familiar with it (ref.) | 1 | | | 1 | | |

Before this survey, did you know the new or old recommended thresholds for alcohol use in France?

| | | | | | | |
|-------------------|------|-----------|-------|------|-----------|-------|
| No, none (ref.) | 1 | | | 1 | | |
| Only the old ones | 1.66 | 1.02-2.70 | 0.040 | 0.99 | 0.49-2.02 | 0.983 |
| New ones | 1.76 | 1.15-2.71 | 0.009 | 1.58 | 0.86-2.93 | 0.142 |

Do you personally feel comfortable talking with patients identified as having high-risk consumption about reducing or stopping their alcohol use?

| | | | | | | |
|--|------|-----------|-------|------|-----------|-------|
| Yes, absolutely | 1.02 | 0.77-1.36 | 0.887 | 1.89 | 1.25-2.85 | 0.002 |
| Yes, somewhat / no, not really / no, absolutely not (ref.) | 1 | | | 1 | | |

Do you think that the 'Remuneration on Public Health Objectives' has enticed you to propose the 'early identification and brief intervention approach' to your patients who smoke or drink alcohol? §

| | | | | | | |
|--|------|-----------|-------|------|-----------|-------|
| No (ref.) | 1 | | | 1 | | |
| Yes | 1.41 | 1.05-1.90 | 0.022 | 1.83 | 1.23-2.71 | 0.003 |
| Did not know there was any such remuneration | 0.95 | 0.51-1.80 | 0.886 | 1.67 | 0.73-3.83 | 0.225 |

† Respondent data were weighted for non-return (GP not reached) and non-response (GP solicited but who declined participation), and for stratification variables (age, volume of activity category, gender, region of practice, and GP density). For the outcome, 'never' is taken as reference.

‡ The *Repérage Précoce et Intervention Brève* (RPIB in French) is recommended by the French National Authority for Health (*Haute Autorité de Santé*) (Haute Autorité de Santé, 2014).

§ *Rémunération sur Objectifs de Santé Publique* – ROSP in French - are monetary incentives delivered by Social Security to physicians according to the fulfilment of certain medical or economic targets.

Table 4. Reasons for not feeling comfortable talking about alcohol consumption with patients identified as having high-risk consumption (n=189)

| | N | % | % (weighted) † |
|--|----------|----------|-----------------------|
| The patients concerned are often in denial about this type of use | 144 | 76.2 | 81.3 |
| You do not consider yourself effective enough at changing your patients' behavior | 116 | 61.4 | 57.4 |
| You do not consider yourself to be sufficiently trained | 104 | 55.0 | 48.2 |
| You feel that no professional or specialized structure is close enough or can consult patients in a reasonable timeframe | 85 | 45.0 | 36.8 |
| You do not have the time to specifically address these issues | 81 | 42.9 | 47.8 |
| You lack the tools to help you manage these patients | 63 | 33.3 | 34.9 |
| You feel that addressing these issues may alter your relationship with the patients concerned | 42 | 22.2 | 26.1 |
| You are not aware of any professional or specialized structure that can help you manage the patients concerned | 28 | 14.8 | 14.1 |
| You do not feel you can legitimately address these issues | 20 | 10.6 | 9.9 |
| Other difficulties | 20 | 10.6 | 9.8 |

† Respondent data were weighted for non-return (GP not reached) and non-response (GP solicited but who declined participation), and for stratification variables (age, volume of activity category, gender, region of practice, and GP density).

References

- American Psychiatric Association. (2013) *Diagnostic and Statistical Manual of Mental Disorders (DSM-5®)*. In. American Psychiatric Pub.
- Anderson P, Wojnar M, Jakubczyk A, et al. (2014) Managing alcohol problems in general practice in Europe: results from the European ODHIN survey of general practitioners. *Alcohol Alcohol* **49**: 531–539.
- Andler R, Cogordan C, Pasquereau A, Buyck J-F, Nguyen-Thanh V. (2018) The practices of French general practitioners regarding screening and counselling pregnant women for tobacco smoking and alcohol drinking. *Int J Public Health* **63**: 631–640.
- Angus C, Li J, Romero-Rodriguez E, Anderson P, Parrott S, Brennan A. (2019) Cost-effectiveness of strategies to improve delivery of brief interventions for heavy drinking in primary care: results from the ODHIN trial. *Eur J Public Health* **29**: 219–225.
- Angus C, Thomas C, Anderson P, Meier PS, Brennan A. (2017) Estimating the cost-effectiveness of brief interventions for heavy drinking in primary health care across Europe. *Eur J Public Health* **27**: 345–351.
- Assurance Maladie. (2023) Rosp médecin traitant de l'adulte. <https://www.ameli.fr/medecin/exercice-liberal/facturation-remuneration/remuneration-objectifs/medecin-traitant-adulte> [accessed 17 March 2023].
- Babor TF, Higgins-Biddle JC, Higgins PS, Gassman RA, Gould BE. (2004) Training medical providers to conduct alcohol screening and brief interventions. *Subst Abus* **25**: 17–26.
- Baggio S, Trächsel B, Rousson V, et al. (2020) Identifying an accurate self-reported screening tool for alcohol use disorder: evidence from a Swiss, male population-based assessment. *Addiction* **115**: 426–436.
- Beck F, Guignard R, Obradovic I, Gautier A, Karila L. (2011) [Increasing trends in screening for addictive behaviors among general practitioners in France]. *Rev Epidemiol Sante Publique* **59**: 285–294.
- Bertholet N, Winter MR, Cheng DM, Samet JH, Saitz R. (2014) How Accurate Are Blood (or Breath) Tests for Identifying Self-Reported Heavy Drinking Among People with Alcohol Dependence? *Alcohol Alcohol* **49**: 423–429.
- van Beurden I, Anderson P, Akkermans RP, Grol RPTM, Wensing M, Laurant MGH. (2012) Involvement of general practitioners in managing alcohol problems: a randomized controlled trial of a tailored improvement programme. *Addiction* **107**: 1601–1611.
- Bohn MJ, Babor TF, Kranzler HR. (1995) The Alcohol Use Disorders Identification Test (AUDIT): validation of a screening instrument for use in medical settings. *J Stud Alcohol* **56**: 423–432.
- Bourdillon F. (2015) Rapport de préfiguration, Agence nationale de santé publique. In. Santé Publique France.
- Bourdillon F. (2016) La France se dote d'une agence nationale de santé publique. Illustrations de ses principales missions et enjeux. *Bull Acad Natl Med* **200**: 639–650.

- Brady M, Sibthorpe B, Bailie R, Ball S, Sumnerdodd P. (2002) The feasibility and acceptability of introducing brief intervention for alcohol misuse in an urban aboriginal medical service. *Drug Alcohol Rev* **21**: 375–380.
- Bush K, Kivlahan DR, McDonell MB, Fihn SD, Bradley KA. (1998) The AUDIT alcohol consumption questions (AUDIT-C): an effective brief screening test for problem drinking. Ambulatory Care Quality Improvement Project (ACQUIP). Alcohol Use Disorders Identification Test. *Arch Intern Med* **158**: 1789–1795.
- Carvalho AF, Heilig M, Perez A, Probst C, Rehm J. (2019) Alcohol use disorders. *The Lancet* **394**: 781–792. Elsevier.
- Chatterton B, Agnoli A, Schwarz EB, Fenton JJ. (2022) Alcohol Screening During US Primary Care Visits, 2014-2016. *J Gen Intern Med*.
- Cogordan C, Quatremère G, Andler R, Guignard R, Richard JB, Nguyen-Thanh V. (2020) [Dialogue between general practitioner and patient regarding tobacco and alcohol consumption, from the patient's standpoint]. *Rev Epidemiol Sante Publique* **68**: 319–326.
- Cohidon C, Imhof F, Bovy L, Birrer P, Cornuz J, Senn N. (2019) Patients' and General Practitioners' Views About Preventive Care in Family Medicine in Switzerland: A Cross-sectional Study. *J Prev Med Public Health* **52**: 323–332.
- Collins C, Finegan P, O'Riordan M. (2018) An online survey of Irish general practitioner experience of and attitude toward managing problem alcohol use. *BMC Fam Pract* **19**: 200.
- Constant A, Sherlaw W, Kovess-Masfety V. (2017) Seeking mental health care from private health practitioners among individuals with alcohol dependence/abuse; results from a study in the French general population. *Alcohol* **59**: 1–6.
- Costa M, Barré T, Coste M, et al. (2020) Screening and care for alcohol use disorder in France: expectations, barriers and levers using a mixed-methods approach. *BMC Public Health* **20**: 358.
- Coste S, Gimenez L, Comes A, Abdelnour X, Dupouy J, Escourrou E. (2020) Discussing alcohol use with the GP: a qualitative study. *BJGP Open* **4**: bjgpopen20X101029.
- Crawford MJ, Patton R, Touquet R, et al. (2004) Screening and referral for brief intervention of alcohol-misusing patients in an emergency department: a pragmatic randomised controlled trial. *Lancet* **364**: 1334–1339.
- David S, Buyck J-F, Metten M-A. (2021) Les médecins généralistes face aux conduites addictives de leurs patients. In. Les dossiers de la DREES, DREES.
- Denny CH, Hungerford DW, McKnight-Eily LR, et al. (2016) Self-Reported Prevalence of Alcohol Screening Among U.S. Adults. *Am J Prev Med* **50**: 380–383.
- Dewost A-V, Michaud P, Arfaoui S, Gache P, Lancrenon S. (2006) Fast alcohol consumption evaluation: a screening instrument adapted for French general practitioners. *Alcohol Clin Exp Res* **30**: 1889–1895.
- Direction de la recherche, des études, de l'évaluation et des statistiques. (2020) Le panel d'observation des pratiques et des conditions d'exercice en médecine générale.

<https://drees.solidarites-sante.gouv.fr/sources-outils-et-enquetes/00-le-panel-dobservation-des-pratiques-et-des-conditions-dexercice-en#toc-m-thodologie> [accessed 18 January 2023].

- Dolman JM, Hawkes ND. (2005) Combining the audit questionnaire and biochemical markers to assess alcohol use and risk of alcohol withdrawal in medical inpatients. *Alcohol Alcohol* **40**: 515–519.
- Fiellin DA, Reid MC, O'Connor PG. (2000) Screening for alcohol problems in primary care: a systematic review. *Arch Intern Med* **160**: 1977–1989.
- Font H, Roelandt J-L, Behal H, et al. (2018) Prevalence and predictors of no lifetime utilization of mental health treatment among people with mental disorders in France: findings from the 'Mental Health in General Population' (MHGP) survey. *Soc Psychiatry Psychiatr Epidemiol* **53**: 567–576.
- Foxcroft DR, Smith LA, Thomas H, Howcutt S. (2015) Accuracy of Alcohol Use Disorders Identification Test for detecting problem drinking in 18-35 year-olds in England: method comparison study. *Alcohol Alcohol* **50**: 244–250.
- Frischknecht U, Hoffmann S, Steinhäuser A, et al. (2022) [Screening for Problematic Alcohol Consumption - A Survey on Guideline Implementation in Transdisciplinary Health Care of a Model Region]. *Gesundheitswesen* **84**: 43–51.
- Gache P, Michaud P, Landry U, et al. (2005) The Alcohol Use Disorders Identification Test (AUDIT) as a Screening Tool for Excessive Drinking in Primary Care: Reliability and Validity of a French Version. *Alcoholism: Clinical and Experimental Research* **29**: 2001–2007.
- GBD 2016 Alcohol and Drug Use Collaborators. (2018) The global burden of disease attributable to alcohol and drug use in 195 countries and territories, 1990–2016: a systematic analysis for the Global Burden of Disease Study 2016. *Lancet Psychiatry* **5**: 987–1012.
- Geirsson M, Bendtsen P, Spak F. (2005) ATTITUDES OF SWEDISH GENERAL PRACTITIONERS AND NURSES TO WORKING WITH LIFESTYLE CHANGE, WITH SPECIAL REFERENCE TO ALCOHOL CONSUMPTION. *Alcohol and Alcoholism* **40**: 388–393.
- Griswold MG, Fullman N, Hawley C, et al. (2018) Alcohol use and burden for 195 countries and territories, 1990–2016: a systematic analysis for the Global Burden of Disease Study 2016. *The Lancet* **392**: 1015–1035.
- Haute Autorité de Santé. (2014) Repérage précoce et intervention brève en alcoologie en premier recours. In. Note de cadrage, .
- Haute Autorité de Santé. (2021) Outil d'aide au repérage précoce et intervention brève : alcool, cannabis, tabac chez l'adulte (Screening tool for early detection and brief intervention). In. HAS.
- Hocking JS, Wood A, Temple-Smith M, et al. (2022) The impact of removing financial incentives and/or audit and feedback on chlamydia testing in general practice: A cluster randomised controlled trial (ACCEPT-able). *PLoS Med* **19**: e1003858.
- Hoertel N, Crochard A, Rouillon F, Limosin F. (2014) [Patterns of alcohol consumption in France and their medical and social consequences as seen through the family circle and friends and general practitioners]. *Encephale* **40 Suppl 1**: S11-31.

- Institut National du Cancer, Santé Publique France. (2017) Avis d'experts relatif à l'évolution du discours public en matière de consommation d'alcool en France. In. Expert Report, .
- Jelovac I, Polomé P. (2017) Incentives to patients versus incentives to health care providers: The users' perspective. *Health Econ* **26**: e319–e331.
- Kalinowski A, Humphreys K. (2016) Governmental standard drink definitions and low-risk alcohol consumption guidelines in 37 countries. *Addiction* **111**: 1293–1298.
- Kaner EF, Heather N, Brodie J, Lock CA, McAvoy BR. (2001) Patient and practitioner characteristics predict brief alcohol intervention in primary care. *Br J Gen Pract* **51**: 822–827.
- Kecmanovic M, Hall JP. (2015) The use of financial incentives in Australian general practice. *Med J Aust* **202**: 488–491.
- Kilian C, Manthey J, Carr S, et al. (2021) Stigmatization of people with alcohol use disorders: An updated systematic review of population studies. *Alcohol Clin Exp Res* **45**: 899–911.
- Larsson K, Nehlin C. (2016) Screening accuracy of brief alcohol screening instruments in a general hospital setting. *Scand J Public Health* **44**: 599–603.
- Liu J, McCree F, Kanovsky D, et al. (2019) Low screening and follow-up for unhealthy alcohol use among health plan beneficiaries. *Am J Manag Care* **25**: e316–e319.
- Lundin A, Hallgren M, Danielsson A-K. (2019) Screening in Primary Care for Alcohol Use Compared With Smoking, Diet, and Physical Activity: A Repeated Population Survey in Sweden. *J Stud Alcohol Drugs* **80**: 109–113.
- MacKillop J, Agabio R, Feldstein Ewing SW, et al. (2022) Hazardous drinking and alcohol use disorders. *Nat Rev Dis Primers* **8**: 80.
- Mackridge AJ, Krska J, Stokes EC, Heim D. (2016) Towards improving service delivery in screening and intervention services in community pharmacies: a case study of an alcohol IBA service. *Journal of Public Health* **38**: 92–98.
- Malet L, Llorca P-M, Boussiron D, Schwan R, Facy F, Reynaud M. (2003) General practitioners and alcohol use disorders: quantity without quality. *Alcohol Clin Exp Res* **27**: 61–66.
- Mansfield K, Crellin E, Denholm R, et al. (2019) Completeness and validity of alcohol recording in general practice within the UK: a cross-sectional study. *BMJ Open* **9**: e031537.
- Manthey J, Probst C, Hanschmidt F, Rehm J. (2015) Identification of smokers, drinkers and risky drinkers by general practitioners. *Drug Alcohol Depend* **154**: 93–99.
- Meier R, Chmiel C, Valeri F, Muheim L, Senn O, Rosemann T. (2021) Long-Term Effects of Financial Incentives for General Practitioners on Quality Indicators in the Treatment of Patients With Diabetes Mellitus in Primary Care-A Follow-Up Analysis of a Cluster Randomized Parallel Controlled Trial. *Front Med (Lausanne)* **8**: 664510.
- Moehring A, Rumpf H-J, Hapke U, Bischof G, John U, Meyer C. (2019) Diagnostic performance of the Alcohol Use Disorders Identification Test (AUDIT) in detecting DSM-5 alcohol use disorders in the General population. *Drug Alcohol Depend* **204**: 107530.

- Neumann T, Spies C. (2003) Use of biomarkers for alcohol use disorders in clinical practice. *Addiction* **98 Suppl 2**: 81–91.
- O'Donnell A, Abidi L, Brown J, et al. (2018) Beliefs and attitudes about addressing alcohol consumption in health care: a population survey in England. *BMC Public Health* **18**: 391.
- O'Donnell A, Haighton C, Chappel D, Shevills C, Kaner E. (2016) Impact of financial incentives on alcohol intervention delivery in primary care: a mixed-methods study. *BMC Fam Pract* **17**: 165.
- Office for National Statistics. (2022) Alcohol-specific deaths in the UK: registered in 2021. In. Statistical bulletin, ONS.
- Paraponaris A. (2007) La médecine générale face à ses nouvelles missions de santé publique. Rennes: Ecole Nationale de la Santé Publique.
- Paul C, Yoong SL, Sanson-Fisher R, Carey M, Russell G, Makeham M. (2014) Under the radar: a cross-sectional study of the challenge of identifying at-risk alcohol consumption in the general practice setting. *BMC Fam Pract* **15**: 74.
- Probst C, Manthey J, Martinez A, Rehm J. (2015) Alcohol use disorder severity and reported reasons not to seek treatment: a cross-sectional study in European primary care practices. *Substance Abuse Treatment, Prevention, and Policy* **10**: 32.
- Rehm J, Rovira P, Llamosas-Falcón L, Shield KD. (2021) Dose-Response Relationships between Levels of Alcohol Use and Risks of Mortality or Disease, for All People, by Age, Sex, and Specific Risk Factors. *Nutrients* **13**: 2652.
- Rolland B, Naassila M, Paille F, Aubin H-J, Société Française d'Alcoologie. (2017) The Role of General Practitioners in the 2015 French Guidelines on Alcohol Misuse. *Alcohol Alcohol* **52**: 747–748.
- Romero-Rodríguez E, Pérula de Torres LÁ, Ruiz Moral R, et al. (2020) Training health providers to address unhealthy alcohol use in primary care: a cross-sectional, multicenter study. *BMC Health Serv Res* **20**: 877.
- Rosário F, Santos MI, Angus K, Pas L, Ribeiro C, Fitzgerald N. (2021) Factors influencing the implementation of screening and brief interventions for alcohol use in primary care practices: a systematic review using the COM-B system and Theoretical Domains Framework. *Implement Sci* **16**: 6.
- Rosell-Murphy M, Rodriguez-Blanco T, Morán J, et al. (2015) Variability in screening prevention activities in primary care in Spain: a multilevel analysis. *BMC Public Health* **15**: 473.
- Rouillon M, Laporte C, Ingrand P, et al. (2021) Perceptions, professional responsibility and management experiences of patients with alcohol, tobacco and opioid use disorder by residents in general practice and teaching general practitioners. *Eur J Gen Pract* **27**: 77–82.
- Sánchez-Sagrado T. (2016) [Primary care in Sweden]. *Semergen* **42**: 408–411.
- Santé Publique France. (2019) Alcool et santé : Santé publique France s'engage dans une stratégie de réduction des risques. <https://www.santepubliquefrance.fr/presse/2019/alcool-et-sante-sante-publique-france-s-engage-dans-une-strategie-de-reduction-des-risques> [accessed 2 May 2023].

- Schuckit MA, Clarke DF, Smith TL, Mendoza LA. (2020) Characteristics associated with denial of problem drinking among two generations of individuals with alcohol use disorders. *Drug Alcohol Depend* **217**: 108274.
- Sebo P, Cerutti B, Fournier J-P, et al. (2017) How do general practitioners put preventive care recommendations into practice? A cross-sectional study in Switzerland and France. *BMJ Open* **7**: e017958.
- Shield KD, Gmel G, Gmel G, et al. (2017) Life-time risk of mortality due to different levels of alcohol consumption in seven European countries: implications for low-risk drinking guidelines. *Addiction* **112**: 1535–1544.
- Société Française d'Alcoologie. (2015) Alcohol misuse: screening, diagnosis and treatment. In.
- Stoner SA, Mikko AT, Carpenter KM. (2014) Web-based training for primary care providers on screening, brief intervention, and referral to treatment (SBIRT) for alcohol, tobacco, and other drugs. *J Subst Abuse Treat* **47**: 362–370.
- The French Parliament. (2004a) Loi n° 2004-806 du 9 août 2004 relative à la politique de santé publique (1). In.
- The French Parliament. (2004b) Loi n° 2004-810 du 13 août 2004 relative à l'assurance maladie (1). In.
- Thebault J-L, Falcoff H, Favre M, Noël F, Rigal L. (2015) Patient-physician agreement on tobacco and alcohol consumption: a multilevel analysis of GPs' characteristics. *BMC Health Serv Res* **15**: 110.
- Thebault J-L, Ringa V, Bloy G, et al. (2017) Are primary-care physician practices related to health behaviors likely to reduce social inequalities in health? *Prev Med* **99**: 21–28.
- Trias-Llimós S, Bardoutsos A, Janssen F. (2021) Future Alcohol-Attributable Mortality in France Using a Novel Generalizable Age-Period-Cohort Projection Methodology. *Alcohol Alcohol* **56**: 325–333.
- Vanheuverzwyn A, Roy G. (2001) Redressement par la macro CALMAR : applications et pistes d'amélioration.
- Vergier N, Chaput H, Lefebvre-Hoang I. (2017) Déserts médicaux : comment les définir ? Comment les mesurer ? In. Les dossiers de la DREES, Paris: DREES.
- Walmsley E, Steel L, Farmbrough A, Smith E, Swabe J, Sinclair J. (2021) Improving identification and brief advice for alcohol in hospital patients: a new sustainable model using medicine management technicians. *Future Healthc J* **8**: e314–e316. Royal College of Physicians.
- Whitlock EP, Green CA, Polen MR, et al. (2004) Background. In, *Behavioral Counseling Interventions in Primary Care to Reduce Risky/Harmful Alcohol Use [Internet]*. Agency for Healthcare Research and Quality (US).
- Wilson GB, Lock CA, Heather N, Cassidy P, Christie MM, Kaner EFS. (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**: 570–577.

Wilson HHK, Norris R, Tapley A, Magin P, Klein L. (2021) Role legitimacy, comfort and confidence providing tobacco, alcohol and other drug care: a cross-sectional study of Australian early-career general practitioners. *Educ Prim Care* **32**: 19–26.

World Health Organization. (2018) Global status report on alcohol and health 2018. In, p. 369. WHO.