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► To cite this version:

Tangui Barré, Vincent Di Beo, Abbas Mourad, Patrizia Carrieri, Gwenaëlle Maradan, et al.. Screening for tobacco and cannabis use by general practitioners: a French nationwide representative survey. *International Journal of Mental Health and Addiction*, 2024, 10.1007/s11469-024-01299-9. hal-04588762

HAL Id: hal-04588762

<https://hal.science/hal-04588762v1>

Submitted on 27 May 2024

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Screening for tobacco and cannabis use by general practitioners: a French nationwide representative survey

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Running title : Tobacco screening by general practitioners

Declarations

Conflict of Interest

All authors declare they have no conflict of interest.

Informed consent

The survey was conducted in accordance with the Declaration of Helsinki. In line with French law, no written consent was required as the survey was anonymous.

Role of Funding Source

The study was funded by Direction de la Recherche, des Etudes, de l'Evaluation et des Statistiques (DREES)/Ministere des solidarites et de la santé; Caisse Nationale d'Assurance Maladie; Haute Autorite de santé. These funding sources had no role in the writing of the manuscript or in the decision to submit it for publication.

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Acknowledgements

We would like to thank the study participants. Thank you also to Jude Sweeney (Milan, Italy) for the English revision and copyediting of our manuscript.

Data availability statement

Data are not publicly available due to privacy/ethical restrictions.

Abstract

Screening is a crucial step in the cascade of care for people who smoke tobacco or cannabis. In France, general practitioners (GPs) are considered a pillar of tobacco control, and under National Authority of Health guidelines, they are expected to systematically screen their patients for tobacco use. We aimed to assess the frequency of tobacco and cannabis use screening by French GPs and to identify characteristics associated with more frequent screening.

From a nationwide random sample of GPs, we estimated the prevalence of self-reported systematic tobacco and cannabis screening. Using logistic regression models, we identified characteristics of GPs associated with systematic screening.

Our study sample comprised 2412 GPs, 74.6% of whom systematically screened their patients for tobacco use, and 34.7% for cannabis use. Systematic tobacco screening was associated with being under 50 years of age, working in a group practice, and using the ‘early identification and brief intervention’ approach. Systematic cannabis screening was associated with being 50-59 years old, and using the ‘early identification and brief intervention’ approach.

This study highlighted improvements in tobacco and cannabis screening frequencies in comparison to previous French data. Better GP training is an essential lever to ensure these positive trends continue.

Keywords: tobacco; cannabis; screening; general practitioner; France.

Introduction

In 2015, tobacco smoking accounted for 11.5% of global deaths (GBD 2015 Tobacco Collaborators, 2017). In Europe, the smoking-attributable mortality rate in men and women has been forecast to reach 11% and 10%, respectively, by 2040 (Janssen, El Gewily, & Bardoutsos, 2021). In France, the proportion of people aged 18-75 years old who were daily tobacco smokers remained stable at 24.5% between 2019 and 2022 (Pasquereau et al., 2023). These figures highlight the need for interventions to lower this prevalence in order to reduce the overall health burden of tobacco smoking. As part of its 2018-2022 national tobacco control program, France set the target of a smoke-free (<5% prevalence) generation by 2032 (Ministère des Solidarités et de la Santé & Ministère de l'Action et des Comptes publics, 2018).

Article 14 of the World Health Organization (WHO) Framework Convention on Tobacco Control stipulates that “each Party [...] shall take effective measures to promote cessation of tobacco use and adequate treatment for tobacco dependence” (World Health Organization, 2013, p. 14). The 5A’s model (Ask, Advise, Assess, Assist, Arrange) summarize the activities which primary care providers can implement to facilitate tobacco smoking cessation within 3 to 5 minutes in a primary care setting (World Health Organization, 2014). Screening (i.e., ‘Ask’) is the first of these activities, and may lead to a brief intervention. Such interventions are cost-effective and recommended (Barbosa et al., 2022; Haute Autorité de Santé, 2021; Solberg, Maciosek, Edwards, Khanchandani, & Goodman, 2006).

Primary care physicians are in a unique position to help smokers. In a systematic review, Bartsch et al. found that 65% of primary care physicians applied the ‘Ask’ step of the 5A’s model (Bartsch, Härter, Niedrich, Brütt, & Buchholz, 2016); this step constitutes screening. In its 2014 guidelines (Haute Autorité de Santé, 2014a) (updated in 2023 (Haute Autorité de Santé, 2023)) for primary care healthcare professionals, the French National Authority for Health stated that “individual tobacco smoking screening should be systematic”.

In general populations, cannabis use is associated with an increased risk of psychosis onset, and with poorer health outcomes in people who already present psychosis. It is also associated with higher risks of psychiatric symptoms such as depression and mania (Solmi et al., 2023); younger users are particularly vulnerable to these risks. Cannabis use is also associated with motor vehicle accidents (Solmi et al., 2023). Approximately 30% of cannabis

users may develop cannabis use disorder (CUD) (Feingold, Livne, Rehm, & Lev-Ran, 2020; van der Pol et al., 2013). Recent trends in Europe and the US point to an increase in the prevalence of cannabis use disorder (CUD) (Manthey, 2019; United Nations Office on Drugs and Crime, 2020). In France, the estimated age-standardized prevalence rate per 100,000 persons in 2019 was 705.2 (versus 303.4 globally) (Shao et al., 2023). According to the Global Burden of Disease 2019, cannabis use disorders were associated with 690 000 disability-adjusted life years globally, with younger adults being the most impacted (Shao et al., 2023). In 2021, an estimated 10.6% of 18-64 year-olds in France had used cannabis in the previous year, unchanged since 2017. Specifically, this rate was 23.5% in 18-24 year-old individuals (Le Nézet, Spilka, Lahaie, & Andler, 2022). Increasing cannabis use screening in primary care is therefore likely to yield significant public health benefits, especially regarding mental health outcomes among younger users (Degenhardt et al., 2013; Laporte et al., 2017; Richards et al., 2019).

In France, every patient is expected to choose his/her primary care physician (generally a general practitioner, GP) and to declare this choice to the Social Security system. This physician is the main entry point for general care and is expected to know the medical history of his/her patients, and to refer patients to specialists if needed. Patients must go through their primary care physician to see a specialist if they wish to optimize their healthcare reimbursement. The frequency of visits to GP and the established patient-GP relationship make these professionals excellent candidates for the detection of at-risk behaviors (Zwar & Richmond, 2006). However, in 2008-2009, only 63.2% of French GPs systematically screened their patients at least once for tobacco use (Beck, Guignard, Obradovic, Gautier, & Karila, 2011) and only 7.8% for cannabis use (Beck et al., 2011).

Tobacco screening frequency varies according to patient and GP characteristics (Andler, Cogordan, Pasquereau, Buyck, & Nguyen-Thanh, 2018; Delpech et al., 2020; Nelson et al., 2015; Rosell-Murphy et al., 2015). In order to improve the cascade of primary care, there is a need to identify a) which GP characteristics are associated with better (i.e., more systematic) screening practices, not only of tobacco use but also cannabis use, and b) GP-perceived barriers to implementing screening (van Rossem et al., 2015; Vogt, Hall, & Marteau, 2005). GP characteristics previously associated with tobacco screening and preventive practices include personal characteristics such as gender (Delpech et al., 2020), professional characteristics such as training (Andler et al., 2018), and practice-related characteristics such as the number of GP patients with alcohol use disorder (Costa et al.,

2019). Tobacco screening is one preventive activity which GPs may not have enough time to implement (Coindard et al., 2022; Yarnall, Pollak, Østbye, Krause, & Michener, 2003). One possible reason for this is a heavy workload. On the contrary, having a greater interest in preventative activities in general may favor tobacco screening; indeed, some GPs choose to adapt their practice by allocating dedicated time to prevention activities (Holmberg et al., 2014).

In this context, we aimed to assess the frequency of tobacco and cannabis use screening by GPs in France, and to identify GP characteristics associated with more frequent screening. We also sought to explore the reasons for patient-GP communication difficulties concerning tobacco use reduction and cessation.

Materials and methods

Study participants

We used data 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*) (David, Buyck, & Metten, 2021; Direction de la recherche, des études, de l'évaluation et des statistiques, 2020). 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 which is not officially recognized by the Social Security system (e.g. acupuncture, homeopathy, addiction medicine, psychotherapy), and iv) working as a primary care 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 here 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 consultations per year per inhabitant (Vergier, Chaput, & Lefebvre-Hoang, 2017)), and region of practice.

The survey was conducted in accordance with the Declaration of Helsinki. In line with French law, no written consent was required as the survey was anonymous.

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 participants 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.

Gender and age class were the two sociodemographic characteristics collected. GPs were asked if they had a university diploma in addiction medicine or tobacco care (Yes/No), and if they 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 implement it for patients using at least one of these three substances / Yes, but you do not use it / No, you are not familiar with it). The RPIB is recommended by the National Authority for Health (Haute Autorité de Santé, 2014b). In addition to volume of activity category and GP supply density, the questionnaire collected data on whether the GP worked in an individual or group practice. Involvement in prevention activities was assessed using two items: ‘In the last two years, have you contributed to the organization of collective preventative activities as part of your professional activity?’, and ‘Do you display prevention messages and associated material in your office in the form of flyers, booklets, self-administered questionnaires, or videos?’ (Yes/No).

GPs were also asked if they personally felt comfortable discussing tobacco reduction or cessation with patients (Yes, absolutely/Yes, somewhat /No, not really/No, absolutely not). A similar question was asked for alcohol use. Those who answered ‘No’ (either of the two related modalities) to *either* question were then asked to indicate the difficulties they felt in those discussions - *without distinction* between alcohol and tobacco - from a list of ten possibilities (several choices possible). GPs were also asked if they considered that it is part of the physician’s role to *initiate* discussions with patients identified as tobacco smokers in order to help them quit (Yes, absolutely/Yes, somewhat /No, not really/No, absolutely not). In addition, they were asked whether existing monetary incentives based on public health objectives (*rémunération sur objectifs de santé publique*, called ROSP in French) had

encouraged them to propose the RPIB to tobacco users and at-risk drinking patients more often (Yes/No/Not aware this incentive existed).

Study outcome definitions

The two study outcomes for the present analysis were based on the following questions: i) “How often do you screen your patients for tobacco use?”, and ii) “How often do you screen your patients for cannabis use?”. Possible answers were: 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 consumption of this substance/I don’t know/I refuse to answer. The two first modalities were merged into a ‘systematic screening’ modality for the regression models.

Statistical analyses

Respondents’ data were weighted using calibration on margins (Vanheuverzwyn & Roy, 2001) for non-return (i.e., GP contacted but not reached) and non-response (GP solicited but declined participation). Data were adjusted for stratification variables (age, volume of activity category, gender, region of practice, and GP supply density in area of practice). Weighting these data ensured that the sample was representative of the target population with respect to these variables. We described the study sample characteristics according to the answers given for the two outcome questions using the Chi-square test on weighted data.

Participants who answered ‘I don’t know’ and ‘I refuse to answer’ were excluded from the logistic regressions, which we performed on weighted data to identify factors associated with systematic screening (once or repeatedly) of tobacco and cannabis use, separately. The reference answer was therefore non-systematic screening (i.e., ‘only for certain patients’ or ‘I never screen for consumption of this substance’).

In line with previous findings in the literature, we considered personal and professional GPs’ characteristics, practice-related characteristics, and prevention-related characteristics in our models. The following variables were tested as explanatory variables: age, gender, diploma in addiction medicine or tobacco care, familiarity with the RPIB, volume of activity, GP supply density, individual or group practice, and involvement in prevention activities. 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 < 0.05) was used to define the variables to retain in the final models.

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

Results

Study sample characteristics

The response rate was 73%. The study sample comprised 2412 GPs, 61.2% of whom were men, and 39.6% were in the 50-59 age class (**Table 1**). In the whole study sample, 1.1% and 8.8% of respondents declared never screening for tobacco or cannabis use, respectively. By contrast, 23.0% and 54.8% screened only certain patients, 9.4% and 11.3% screened each patient once, and 65.2% and 23.3% systematically and repeatedly screened their patients for tobacco and cannabis use, respectively.

Of the 1884 GPs who screened their patients systematically (once or repeatedly) for tobacco use, 1766 also screened their patients for cannabis use (972 only certain patients, and 794 systematically).

Factors associated with screening frequency

The study sample for the tobacco screening frequency regression comprised 2382 GPs, of whom 75.5% screened their patients systematically (once or repeatedly). After multiple adjustment, systematic tobacco screening was associated with being < 50 years old, working in a group practice, and being familiar with and using the RPIB approach (**Table 2**).

The study sample for the cannabis screening frequency regression comprised 2365 GPs, of whom 35.3% screened their patients systematically (once or repeatedly). After multiple adjustment, systematic cannabis screening was associated with being 50-59 (as compared to <50) years old, and being familiar with and using the RPIB approach (**Table 2**).

Self-reported barriers and levers to screening

With regard to the question on how comfortable they felt discussing tobacco reduction or cessation with patients, 79.9% of the sample answered ‘Yes, absolutely’, and 17.9% answered ‘Yes, somewhat’ (**Table 3**). Participants feeling absolutely comfortable were more likely to screen systematically for both substances. **Figure 1** shows the reasons (from the list of 10) given by the 48 GPs who responded with a ‘No’ modality to this question. The three most cited reasons were not feeling sufficiently trained, patient denial about having at-risk use, and lack of self-efficacy to change patients’ behavior.

With regard to the question on whether they considered that it is part of the physician's role to *initiate* discussions with patients identified as tobacco smokers in order to help them reduce or quit their consumption, 80.7% of the sample answered 'Yes, absolutely', and 17.2% answered 'Yes, somewhat'. Participants who replied 'Yes, absolutely' were more likely to systematically screen for both substances (**Table 3**).

In terms of the self-reported effects of state monetary incentives to screen patients more often for tobacco or alcohol use, 34.8% of participants responded 'Yes', while 1.5% responded that they were not aware this incentive existed. Participants who answered 'Yes' were more likely to systematically screen for tobacco use (**Table 3**).

Discussion

In this nationwide French study, three-quarters (74.6%) of our sample of French GPs declared they systematically screened their patients for tobacco use, but only one-third (34.6%) did so for cannabis use. Using the RPIB approach was associated with systematic screening for both substances.

The systematic tobacco screening rate (i.e., at least once) was higher than that observed in the 2008-2009 edition of another French representative survey, the GP Health Barometer, which showed that 63.2% of GPs systematically screened (i.e., at least once) their patients for tobacco use (Beck et al., 2011). This reflects our findings that the overwhelming majority of GPs felt comfortable discussing tobacco consumption, and endorsed the role of GPs in initiating discussion about consumption. These results are also in line with previous findings in the French context which highlighted that GPs i) felt they were able to manage their patients' tobacco use (Rouillon et al., 2021), ii) easily approached the question of tobacco use (Teoli, Haller, Ingrand, & Binder, 2016), and iii) considered they had a prominent role in tobacco reduction (Coindard et al., 2022). Given that tobacco screening could constitute an entry point in care to address alcohol use disorder (Costa et al., 2020), these high screening rates may have implications for the management of other addictive behaviors. Note that this trend reflected that observed for alcohol screening (Barré, Di Beo, Roux, et al., 2023).

The increase in tobacco screening rates in our study in comparison with the 2008-2009 data may be at least partly related to national campaigns. At a societal level, the fight against tobacco in France has been the subject of targeted plans, and has been included in successive national cancer plans. Legislative changes to French healthcare implemented in 2004

(Paraponaris, 2007; The French Parliament, 2004a, p. 806, 2004b) placed GPs at the center of public health care and health prevention. The National Authority of Health guidelines (Haute Autorité de Santé, 2014a, 2023) and the 2014-2019 national tobacco reduction program (Ministère des Affaires sociales, de la Santé et des Droits des femmes, 2014), recognized GPs as a pillar in the fight against tobacco use - as it may be the case in other countries (Zwar & Richmond, 2006). Moreover, in 2012, the ROSP was established. Through the national health insurance system (*Assurance maladie*), the ROSP grants GPs financial bonuses based on self-reported indicators of public health objectives (Assurance Maladie, 2023). GPs who provide RPIB to at least 60% of their tobacco user patients earn ROSP points, which are later translated into money. Although the effectiveness of this incentive remains to be demonstrated (Coleman, 2010), in our study, a third of participating GPs reported that these incentives motivated them to screen more often for tobacco or alcohol use.

Despite the temporal increase in screening rates we observed between the 2008-2009 and 2019-2020 data, another study, conducted in 2017 on a representative sample of French adults, found that only 36.7% of participants who had visited their GP in the previous 12 months reported discussing tobacco use with him/her (Cogordan et al., 2020). It would seem therefore, that while three quarters of GPs in our study applied the National Authority of Health guidelines on systematic screening (Haute Autorité de Santé, 2014a), there remains room for improvement to reach systematic tobacco screening.

The improving trend in tobacco screening frequency we observed in GPs between 2008-2009 and 2019-2020 cannot easily be compared to data from studies in other countries, because of different methodologies, targeted participants, and study periods. Nevertheless, available data from various studies in the U.S. can serve as indicators. Dai & Clements found that the prevalence of tobacco screening in adolescents increased between 2011 to 2013, and then plateaued in 2015 (Dai & Clements, 2018). Elsewhere, Jamal et al. reported that the proportion of tobacco screening by physicians in 11-21 year-old was quite stable between 2004 and 2010 (Jamal, Dube, Babb, & Malarcher, 2014). They also reported no significant trend from 2005 to 2010 in outpatient hospital patients (Jamal, Dube, & King, 2015). Nelson et al. found no time trend for the level of tobacco screening of smokers with chronic diseases by primary care physicians between 2001 and 2009 (Nelson et al., 2015). Huo et al. found an increase in the percentage of smokers who discussed the topic with a healthcare professional between 2011 to 2015 (from 51.3 to 55.4 %) (Huo et al., 2020). Finally, Tibuakau et al. found that the proportion of smokers who reported receiving physician advice to quit modestly

increased between 2006-2007 and 2014-2015 (Tibuakuu et al., 2019). However, to our knowledge, no published study to date has provided data on recent trends in tobacco screening rates by GP.

In our study, systematic tobacco screening was associated with younger GP age. This was also highlighted in the 2008-2009 edition of the GP Health Barometer (Beck et al., 2011). However, these findings contrast with work by Andler et al. based on a 2015 dataset. Those authors found no relationship between French GP age and systematic tobacco screening practices for pregnant women (Andler et al., 2018). Moreover, in the US, Kruger et al. found no difference in screening prevalence according to primary care physician age group (Kruger, O'Halloran, & Rosenthal, 2015). In contrast, in Italy, Nobile et al. found that younger primary care physicians were more likely to self-report conducting smoking cessation activities for their patients (Nobile et al., 2014).

Our result regarding GP age and screening may be related to a lower perception of the tobacco-related risk of cancer observed in older adults in the French general population. (Institut National du Cancer, 2023). This perception may be especially prevalent prior to 2007, the year when the ban on smoking in public places came into effect in France. Accordingly, older GPs in our study may have faced repeated reluctance to screening from patients before this era, despite the importance of such screening being underlined during their training. This reluctance may have led to them to choose not to screen, and this practice may have continued until the present day. We can also suppose that more recent medical training included more communications skills related to this topic, and therefore increased younger GPs' ease and confidence in addressing this issue with patients.

Systematic tobacco screening was associated with working in a group practice in the present study. Group practices may foster knowledge exchange between healthcare professionals, as shown in an Australian study which highlighted that early-career GPs were likely to seek advice regarding substance use management from senior colleagues (Wilson, Norris, Tapley, Magin, & Klein, 2021). Elsewhere, inter-physician collaboration in hospital settings improved clinical outcomes (Braam, Buljac-Samardzic, Hilders, & van Wijngaarden, 2022). Previous studies have documented that GP knowledge exchange practices reduce variability in their clinical practices and thereby enhance their performance (Armeni, Compagni, & Longo, 2014; Mascia, Dandi, & Di Vincenzo, 2014; Rodriguez, Chen, Martinez, & Friedberg, 2016). In a French qualitative study, primary care physicians

identified other healthcare professionals as their main resources when considering how to manage tobacco smoking in their patients (Coindard et al., 2022).

In our analysis, using the RPIB approach was associated with systematic screening for both tobacco and cannabis. This result may imply that GPs who feel insufficiently trained to screen and/or to help patients quit, were less likely to screen for these two substances. Indeed, a lack of training was the most cited reason for not feeling comfortable talking about tobacco or alcohol with patients. Therefore, one can suppose that promoting the RPIB approach and the use of existing validated screening tools to GPs, would improve screening rates. Very few (<2%) GPs in our sample had a university diploma in addiction medicine. Shorter GP training sessions in this area have yielded positive results regarding tobacco screening and treatment in other contexts (Girvalaki et al., 2018; Verbiest et al., 2014). A similar association between familiarity with the RPIB approach and screening practices was shown for alcohol in the same survey (Barré, Di Beo, Mourad, et al., 2023).

In our study, a lack of training, a lack of self-efficacy, and facing patient **denial** about having at-risk use, were the three main reasons GP did not feel comfortable discussing tobacco or alcohol use with patients. These same barriers were previously reported in other studies on tobacco (Manolios et al., 2021; Zwar & Richmond, 2006), on alcohol (Aira, Kauhanen, Larivaara, & Rautio, 2003; Costa et al., 2019; Hyland, Hammarberg, Andreasson, & Jirwe, 2021; Johnson, Jackson, Guillaume, Meier, & Goyder, 2011; Lid & Malterud, 2012; Mules et al., 2012), and on the implementation of clinical practice guidelines more generally (Cabana et al., 1999; Lugtenberg, Zegers-van Schaick, Westert, & Burgers, 2009). Training, broadly speaking, may help to overcome the other two barriers cited. For instance, motivational interviewing skills may help GPs to increase patients' awareness about at-risk behaviors and motivate them to make behavioral changes (Brett, Chavarria, Liu, Hedeker, & King, 2021; Rubak, Sandbæk, Lauritzen, & Christensen, 2005; Samet, Rollnick, & Barnes, 1996; Substance Abuse and Mental Health Services Administration (US), 2019).

In our study, 34.6% of GPs systematically screened for cannabis use, which is a significant improvement on the 7.8% reported in the 2008-2009 edition of the GP Health Barometer (Beck et al., 2011). Nevertheless, it highlights a large gap with the proportion observed for systematic tobacco screening in our study (74.6%). A few elements can explain this relatively low rate. First, the prevalence of cannabis use is much lower than for tobacco in France. Specifically, in 2021, 10.6% of 18-64 year-olds had used cannabis in the previous year, and 1.7% were daily users (Le Nézet et al., 2022). This compares with a quarter of

adults who daily used tobacco. Moreover, cannabis use is heterogeneous; in 2021, men were two times more likely to have used in the previous year than women, and 18-24 year-olds were more than twice as likely to use than individuals over 35 years (Le Nézet et al., 2022). Cannabis-related risks are also strongly related to age at first use (Gorey, Kuhns, Smaragdi, Kroon, & Cousijn, 2019; Schoeler et al., 2018), older adults having a lower risk than adolescents and young adults (Hosseini & Oremus, 2019). As tobacco use is common among cannabis users (Agrawal, Budney, & Lynskey, 2012), and especially in Europe (Hindocha, Freeman, Ferris, Lynskey, & Winstock, 2016), tobacco users are also more likely to be cannabis users. In our study, a majority (54.8%) of French GPs only screened certain patients for cannabis use. Accordingly, this targeted screening may be partly justified.

Another barrier to cannabis screening may be the lack of a consensual threshold regarding ‘at-risk’ levels of use. Despite the fact that the risk of cannabis use disorder increases with the frequency of use (Robinson et al., 2022), and despite the existence of validated screening tools (Artigaud et al., 2020; López-Pelayo, Batalla, Balcells, Colom, & Gual, 2015), there is no national French guideline regarding at-risk or low-risk levels of use (unlike in Canada for instance) (Fischer et al., 2017; Government of Canada, 2019). Furthermore, in terms of assessing risk levels, cannabis use is criminalized in France. This situation may lead to a degree of stigmatization by GPs, resulting in their feeling less comfortable about discussing cannabis use (Barrett, Mellor, Ritter, McLauchlan, & Kearnes, 2022; Reid, 2020; Skliamis, Benschop, & Korf, 2022; Young-Wolff et al., 2022). Moreover, assessing cannabis exposure to determine the risk level is difficult, as the materials used and user practices vary greatly (Freeman & Lorenzetti, 2020). Given that the detrimental effect of cannabis use on tobacco cessation outcomes has been shown (Barré et al., 2021; Voci, Zawertailo, Baliunas, Masood, & Selby, 2020) – as has the reciprocal effect (Lemyre, Poliakova, & Bélanger, 2019) – the systematic screening of tobacco users for cannabis use may be beneficial.

Contrary to our findings for tobacco, systematic screening of cannabis use was associated with older GP age. This finding reflects studies in the US, where older age was correlated with higher risk perception in terms of cannabis use (Okaneku, Vearrier, McKeever, LaSala, & Greenberg, 2015; Pacek, Mauro, & Martins, 2015; Waddell, 2022). Higher risk perception can subsequently encourage screening for use among older GPs.

One of the strengths of the present study is the recruitment design, which ensured that our study sample was representative of French GPs. We also collected both objective (e.g.,

working conditions) and subjective (e.g., role legitimacy) data, which provided a more comprehensive picture of the factors influencing screening practices. Yet another strength is that we involved GPs in the survey design; this ensured that the questions asked were pertinent.

The study has a number of limitations. First, we did not collect data on GPs' personal tobacco use. Previous studies in France showed that GPs who smoked tobacco were less likely to ask their patients whether they smoked (De Col, Baron, Guillaumin, Bouquet, & Fanello, 2010; M. Underner et al., 2006; Michel Underner, Laforgue, Chabaud, & Meurice, 2004). According to another study, GPs who smoke may be less confident in their ability to help patients quit (Josseran, King, Guilbert, Davis, & Brücker, 2005). In contrast, Andler et al. found no effect of GP tobacco smoking status on the likelihood of screening pregnant women (Andler et al., 2018). Elsewhere, an Austrian study found that physicians who smoked asked patients about their tobacco use less frequently than their non-smoking counterparts (Kössler, Lanzenberger, & Zwick, 2002), and similar results were found in Finland (Barengo, Sandström, Jormanainen, & Myllykangas, 2005). These various findings suggest that had we collected data on GPs' smoking status, our analyses and therefore our results could have been more comprehensive. Tobacco smoking has been associated with male gender in GPs (Besson et al., 2021), but this variable was not associated with our outcome. Furthermore, while it is possible that tobacco smoking status would have confounded the effect of familiarity with RPIB approach, to our knowledge no such evidence exists.

A second study limitation is that we based our analyses on self-reported data, given that it is difficult to obtain an objective measurement of the screening rate (Conroy et al., 2005). Self-reported data may lead to social desirability. Indeed, we can see a discrepancy between the high reported screening rates in our study, and the above-cited patient-based figures (Cogordan et al., 2020). We can also suppose that some of the GPs solicited but who did not respond chose not to do so because they did not want it to be known that their practice did not follow official guidelines. This suggests the frequency of systematic screening was overestimated. Having said that, the study response rate was relatively high and weights applied in the analyses took into account non-response.

Finally, the questions regarding incentive-related higher screening frequency and the reasons for not feeling comfortable discussing substance use reduction/cessation included both tobacco and alcohol in their wordings, which prevented us from drawing tobacco-specific results on these elements.

To conclude, three quarters of the French GPs in our study sample reported that they systematically screened their patients for tobacco use. This proportion fell to one-third for cannabis use. These rates indicate an improvement in GP screening practices in the last two decades, and better GP training could be a major lever to ensure this trend remains.

Compliance with Ethical Standards

Conflict of Interest

All authors declare they have no conflict of interest.

Informed consent

The survey was conducted in accordance with the Declaration of Helsinki. In line with French law, no written consent was required as the survey was anonymous.

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Table 1. Study sample characteristics (n=2412)

	n (%)	% weighted ¹	How often do you screen your patients for tobacco use?					How often do you screen your patients for cannabis use?					p-value ²	
			Don't know/refuse to answer (1.2%)	Never (1.1%)	Only certain patients (23.0%)	Systematically, once (9.4%)	Systematically, repeatedly (65.2%)	Don't know/refuse to answer 1.8%	Never 8.8%	Only certain patients 54.8%	Systematically, once 11.3%	Systematically, repeatedly 23.3%		
Gender			% weighted column					% weighted column						
Men	1353 (56.1)	61.2	55.5	97.4	69.5	62.3	57.6	<0.001	47.7	80.2	59.1	56.9	62.1	0.289
Women	1059 (43.9)	38.8	44.6	2.6	30.5	37.7	42.4		52.3	19.8	40.9	43.1	37.9	
Age (years)			% weighted column					% weighted column						
< 50	1040 (43.1)	32.7	27.9	12.7	20.8	37.0	36.7	<0.001	55.4	13.3	38.5	34.3	23.9	<0.001
50-59	752 (31.2)	39.6	44.9	48.3	41.8	39.8	38.5		27.9	44.7	35.4	40.9	47.7	
≥60	620 (25.7)	27.7	27.3	39.0	37.4	23.2	24.8		16.8	42.1	26.1	24.9	28.4	
GP supply density³			% weighted column					% weighted column						
Practice located in an area with 2.8 or more consultations per year per inhabitant	1788 (74.1)	89.6	87.1	92.3	89.1	90.2	89.7	0.869	82.0	89.0	89.9	88.5	90.1	0.747
Practice located in an area with fewer than 2.8 consultations per year per inhabitant	624 (25.9)	10.4	12.9	7.7	11.0	9.8	10.3		18.0	11.0	10.1	11.5	9.9	
Activity volume⁴			% weighted column					% weighted column						
< first quartile	664 (27.5)	23.4	30.5	9.2	24.1	22.9	23.3	<0.001	17.4	22.3	22.8	25.3	24.6	0.105
≥ first and ≤ third quartile	1249 (51.8)	51.0	51.6	36.2	42.1	46.8	54.9		65.0	43.9	51.5	56.0	49.0	

> third quartile	499 (20.7)	25.7	17.9	54.6	33.8	30.3	21.8		17.6	33.8	25.8	18.8	26.4
Currently, with regard to your main private activity, you work:								<0.001					<0.001
Alone	750 (31.2)	41.8	16.8	58.8	56.2	41.0	37.0		47.5	64.1	37.1	32.2	48.8
In a group practice	1655 (68.8)	58.2	83.2	41.2	43.8	59.0	63.0		52.5	35.9	62.9	67.8	51.2
In the last two years, have you contributed to the organization of collective prevention actions as part of your professional activity?								0.429					0.976
No	1791 (74.3)	79.3	85.6	81.7	79.8	82.1	78.5		84.8	77.0	79.2	79.8	79.5
Yes	621 (25.8)	20.7	14.4	18.3	20.2	17.9	21.5		15.2	23.0	20.8	20.2	20.5
Do you have prevention messages and/or tools available for patients in your consultation room (at least one of the following: flyers, booklets, self-administered questionnaires, videos)?								0.022					0.154
No	329 (13.7)	14.9	11.9	37.4	18.2	12.1	13.8		22.3	22.9	13.7	11.3	16.0
Yes	2077 (86.3)	85.1	88.1	62.6	81.8	87.9	86.2		77.7	77.1	86.3	88.7	84.0
Are you familiar with the ‘early identification and brief intervention’ approach? ⁵								<0.001					0.026
No	1506 (63.4)	66.8	58.7	96.9	78.3	70.8	61.7		58.7	82.9	68.1	60.4	61.4
Yes, but you do not use it	269 (11.3)	10.8	16.4	1.0	10.3	7.9	11.5		14.5	6.9	10.3	13.0	12.2
Yes and you use it	599 (25.2)	22.4	24.8	2.1	11.4	21.4	26.8		26.8	10.2	21.7	26.6	26.4
Do you have a university diploma in addiction medicine or tobacco care ?								0.049					0.069
No	2371 (98.3)	98.4	100	97.9	99.0	99.8	97.9		100	99.8	98.3	99.6	97.3

Yes	41 (1.7)	1.6	0	2.1	1.0	0.2	2.1	0	0.2	1.7	0.5	2.7
How often do you screen your patients for tobacco use?												
Don't know/refuse to answer	30 (1.3)	1.2						25.7	0.7	0.9	1.0	0.2
Never	20 (0.8)	1.1						0	8.7	0.7	0.2	0
Only certain patients	478 (19.8)	23.0						10.3	50.4	28.2	9.5	8.1
Systematically, once	259 (10.7)	9.4						11.8	3.8	9.5	26.1	3.2
Systematically, repeatedly	1625 (67.4)	65.2						52.3	36.5	60.7	63.3	88.5
How often do you screen your patients for cannabis use?												
Don't know/refuse to answer	47 (2.0)	1.8	39.4	0	0.8	2.3	1.4					
Never	192 (8.0)	8.8	5.3	66.2	19.1	3.5	4.9					
Only certain patients	1307 (54.2)	54.8	42.1	32.1	67.2	55.0	51.0					
Systematically, once	318 (13.2)	11.3	9.6	1.6	4.7	31.3	11.0					
Systematically, repeatedly	548 (22.)	23.3	3.6	0	8.2	8.0	31.7					

<0.001

<0.001

¹ Respondents' data were weighted for non-return (GP not reached) and non-response (GP declined participation), and for stratification variables (age, volume of activity category, gender, region of practice, and GP supply density).

² Chi-square test. Participants who refused to answer or who answered that they did not know or never performed this type of screening were excluded from the tests, in order to be able to perform the Chi-square test (i.e., to be able to meet the minimal number of observations condition in each cell)

³ Density calculated based on GPs under 65 years of age (Vergier et al., 2017)

⁴ Number of consultations in 2017

⁵ 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, 2014b).

Table 2: Factors associated with systematic screening for tobacco and cannabis use (logistic regression)

	Systematic tobacco use screening (n=2382)				Systematic cannabis use screening (n=2365)			
	Univariable		Multivariable		Univariable		Multivariable	
	OR [95% CI]	P-value	aOR [95% CI]	P-value	OR [95% CI]	P-value	aOR [95% CI]	P-value
Gender								
Men	ref				ref			
Women	1.74 [1.28-2.37]	<0.001			1.07 [0.82-1.38]	0.626		
Age (years)								
< 50	ref		ref		ref		ref	
50-59	0.51 [0.35-0.75]	0.001	0.65 [0.44-0.96]	0.030	1.59 [1.17-2.15]	0.003	1.69 [1.24-2.30]	0.001
≥60	0.36 [0.25-0.53]	<0.001	0.50 [0.34-0.76]	0.001	1.23 [0.90-1.69]	0.194	1.35 [0.97-1.87]	0.072
Area density¹								
Practice in an area with 2.8 or more consultations per year per inhabitant	ref				ref			
Practice in an area with fewer than 2.8 consultations per year per inhabitant	0.94 [0.73-1.22]	0.658			1.02 [0.82-1.28]	0.849		
Activity volume²								
< first quartile	ref				ref			
≥ first and ≤ third quartile	1.30 [0.90-1.87]	0.163			0.93 [0.68-1.27]	0.642		
> third quartile	0.66 [0.44-1.00]	0.049			0.81 [0.56-1.18]	0.279		
Currently, with regard to your main private activity, you work :								
Alone	ref		ref		ref			
In a group practice	2.15 [1.59-2.90]	<0.001	1.68 [1.21-2.31]	0.002	0.90 [0.69-1.18]	0.434		

In the last two years, have you contributed to the organization of collective prevention actions as part of your professional activity?									
No	ref				ref				
Yes	1.06 [0.74-1.51]	0.762			0.96 [0.71-1.29]			0.787	
Do you have prevention messages and tools available for patients in your consultation room (at least one of the following: flyers, booklets, self-administered questionnaires, videos)?									
No	ref				ref				
Yes	1.50 [1.00-2.25]	0.049			1.04 [0.71-1.52]			0.857	
Are you familiar with the ‘early identification and brief intervention’ approach? ³									
No (ref.)	ref		ref		ref			ref	
Yes, but you do not use it	1.42 [0.87-2.31]	0.160	1.31 [0.80-2.12]	0.283	1.46 [0.96-2.21]	0.076	1.47 [0.97-2.23]	0.068	
Yes and you use it	3.00 [1.95-4.63]	<0.001	2.49 [1.60-3.86]	<0.001	1.51 [1.11-2.04]	0.008	1.60 [1.18-2.18]	0.002	
Do you have a university diploma in addiction medicine or tobacco care ?									
No	ref				ref				
Yes	1.73 [0.48-6.30]	0.403			1.30 [0.52-3.26]			0.570	

¹ Density calculated based on GPs under 65 years of age (Vergier et al., 2017)

² Number of consultations in 2017

³ 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, 2014b).

aOR, adjusted odds ratio; CI, confidence interval

Table 3. Self-reported barriers and levers to screening according to study outcomes

	How often do you screen your patients for tobacco use?					How often do you screen your patients for cannabis use?		
	n (%)	% weighted ¹	Not syste- matically (% weighted)	Syste- matically (% weighted)	P- value ²	Not syste- matically (% weighted)	Syste- matically (% weighted)	P- value ²
Do you personally feel comfortable talking with patients about reducing or stopping their tobacco use?					<0.001			<0.001
Yes, absolutely	1931 (80.2)	80.1	71.3	82.9		77.4	85.1	
Yes, somewhat	430 (17.9)	17.9	24.0	16.0		20.2	13.6	
No, not really / no, absolutely not	48 (2.0)	2.0	4.7	1.1		2.4	1.3	
Would you say that it is part of the physician's role to initiate discussions with tobacco smoking patients in order to offer help in stopping their tobacco use?					<0.001			<0.001
Yes, absolutely	1998 (83.6)	81.7	68.2	86.2		78.6	87.5	
Yes, somewhat	363 (15.2)	17.4	30.9	12.9		20.7	11.2	
No, not really / no, absolutely not	29 (1.2)	0.9	0.9	0.9		0.7	1.2	

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?³

0.006

0.493

No	833 (35.0)	35.3	39.1	34.1	33.5	34.4
Yes	1416 (59.4)	58.2	52.8	60.0	57.5	59.7
Not aware of such remuneration	135 (5.7)	6.5	8.1	5.9	6.9	6.0

¹ Respondent data were weighted for non-return (GP not reached) and non-response (GP who declined participation), and for stratification variables (age, volume of activity category, gender, region of practice, and GP supply density).

² Chi-square test

³ The *Repérage Précoce et Intervention Brève* (RPIB in French) is recommended by the French National Authority for Health (*Haute Autorité de Santé*)

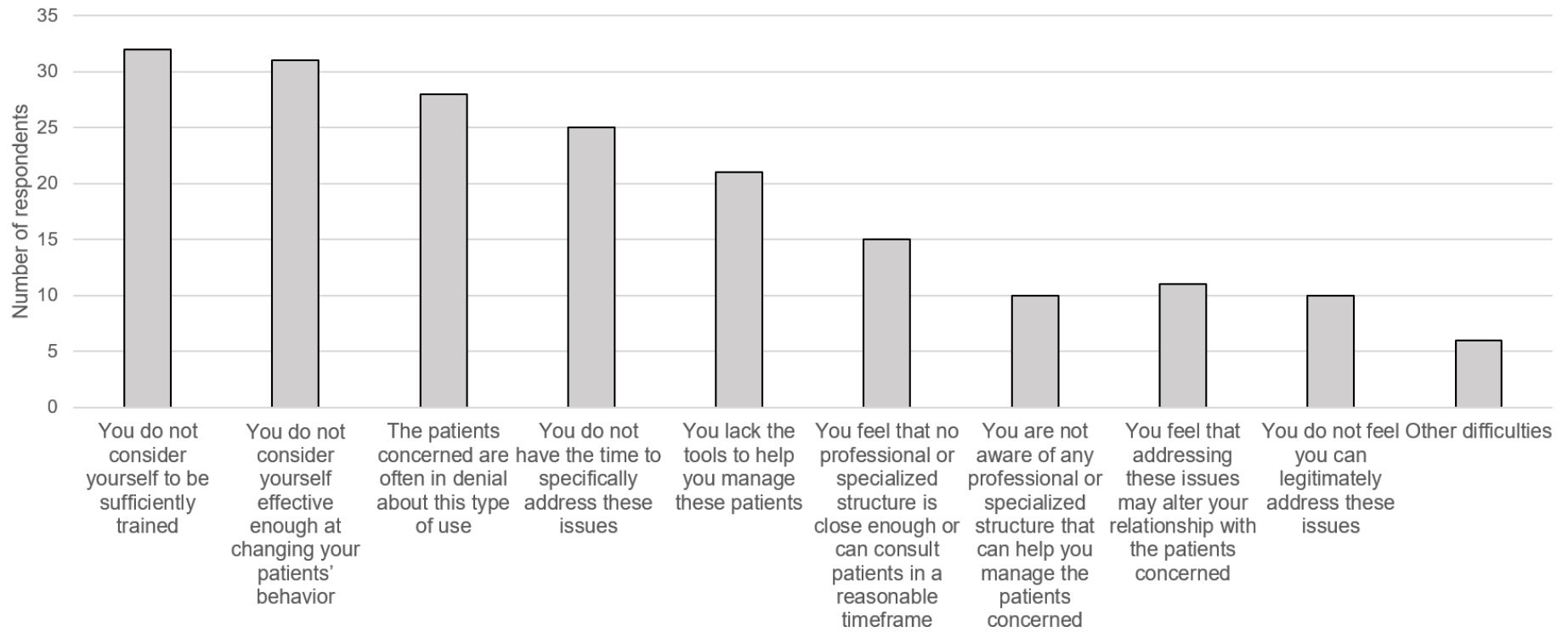


Figure 1. Reasons for not feeling comfortable talking about tobacco or alcohol consumption with patients identified as having high-risk consumption (n=48)