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France Villeneuve[1], Jean-Michel Cabot[2], Sabrina Eymard-Duvernay[3], Laurent Visier[4], Vincent Tribout[5], Cyril Perollaz[5], Jacques Reynes[6] and Alain Makinson[6]

(1) Département de Médecine Générale, Faculté de Médecine Université de Montpellier
(2) Cabinet de Médecine Générale, Sète
(3) Institut de recherche et développement, unité TransVIHMI, Inserm U1175, Université de Montpellier
(4) Département de sciences humaines et sociales, Faculté de médecine de Montpellier-Nîmes, Montpellier
(5) Centre gratuit d' information, de dépistage et de diagnostic (CeGIDD), Centre Hospitalier Universitaire de Montpellier, Montpellier
(6) Département des Maladies infectieuses et tropicales, unité Inserm U1175, Université de Montpellier, CHU de Montpellier

Corresponding author: Dr Alain Makinson: a-makinson@chu-montpellier.fr

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Disclosure of interests
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Highlights

We evaluated family physicians' (FP) willingness to integrate pre-exposure prophylaxis into their clinical practice. We performed a random survey with FPs in Montpellier and its surroundings. Our study findings revealed that lack of PrEP knowledge was the main factor of PrEP non-prescription, but most FPs were willing to be trained.

RESUME

***Introduction*.** Évaluation de la volonté des médecins généralistes (MG) de Montpellier Méditerranée Métropole (3M) d'intégrer la PrEP à leur pratique.

***Méthode*.** Nous avons interrogé de façon aléatoire et standardisée 92 MG.

***Résultats*.** De mai à décembre 2018, sur 96 MG, 78 % (IC 95 % [69 ; 86]) voulaient intégrer la PrEP, 65 % être formés, et 52 % être primo-prescripteurs. Des 65 (68 %) qui déclaraient connaître la PrEP, 21 ignoraient les personnes ciblées et 39 n'en parlaient pas à leurs patients. La quasi-totalité des MG considéraient la prévention du VIH comme une mission et se disaient à l'aise pour aborder la sexualité. Considérer la prévention du VIH comme mission était associé à une volonté d'intégrer la PrEP à la pratique (p = 0,015).

***Conclusion*.** Une majorité des MG souhaitaient intégrer et être formés à la PrEP. La faible prescription de PrEP semblait liée à un manque de connaissances.

ABSTRACT

***Introduction*.** We assessed family physicians' (FP) willingness to integrate PrEP into their clinical practice in Montpellier and its surroundings.

***Method*.** We aimed to randomly assess 92 FPs.

***Results*.** 96 FPs were interviewed from May to December 2018: 78% (95% CI [69; 86]) were willing to integrate PrEP, 65% to be trained, and 52% to be the first providers. Of the 65 (6%) with some knowledge of PrEP, 21 were not aware of targeted populations, and 39 never talked about PrEP with their patients. Nearly all FPs declared HIV prevention as part of their job and felt at ease talking about sexuality. Considering HIV prevention as part of their job was associated with increased likelihood to integrate PrEP into their practice (p=0.015).

***Conclusions*.** Most FPs were willing to integrate and be trained on PrEP. Lack of PrEP prescription seemed related to a lack of knowledge.

Introduction

Approximately 6,400 new HIV infections were diagnosed in France in 2017 [1]. This figure has been stable since 2010 in most HIV risk groups despite a large panel of preventive strategies, and has been increasing in men who have sex with men (MSM) born outside of France. Montpellier Méditerranée Metropole (3M) is strongly affected by the HIV epidemic, particularly the gay community. The PREVAGAY study, performed in 2015 and consisting of random interviews and blood sample collections among individuals entering gay social places, reported an HIV prevalence of 16.7%. This is one of the highest prevalence rates in France, alongside Nice and Paris [2]. Unpublished data from the Infectious Diseases Department of Montpellier University Hospital, which centralizes the management of nearly all HIV-infected individuals of the area, showed that two-thirds of new HIV infections reported over the last five years were in MSM.

Use of pre-exposure prophylaxis (PrEP) has proven very effective for the prevention of HIV in compliant patients at high risk of HIV [3-7, 8]. PrEP was authorized in France in 2016 for subjects at high risk of HIV, with integrated counseling for HIV and sexually transmitted disease (STD) combined prevention and a regular follow-up every three months, as in other parts of the world [9].

When we started the present study, PrEP uptake was poor in France and in Montpellier. In June 2018 only 10,405 subjects had started PrEP in France [10], for an estimated need of 32,000 MSM at high risk of HIV [11]. Assessing the reasons of the difficult implementation of PrEP is paramount before corrective measures can be proposed. Several foreign studies reported varied rates of family physicians' (FP) willingness to prescribe PrEP, usually associated with limited experience of PrEP [12-17]. Data on FPs' willingness is lacking in France.

The main objective of our study was to assess the willingness of FPs from Montpellier and its surroundings to integrate PrEP into their clinical practice.

Methods

We performed a cross-sectional observational study assessing the willingness of FPs to integrate PrEP into their clinical practice. FPs had to practice in 3M to be included in the study. Physicians working in a healthcare facility (*i.e.,* private or public hospital) were excluded. 3M is located in the South-East of France in the Hérault Department and comprised 31 municipalities in 2016, with a total of 465,070 inhabitants [18]. A total of 578 FPs practicing in 3M were identified on the French social security website [19].

We included a brief explanation of the study's objective in the survey. The survey explored FPs' sociodemographic characteristics, basic knowledge of sexual health, and willingness to be trained, to integrate PrEP into their clinical practice, and to prescribe it. A total of 20 simple questions were prepared (5-minute questionnaire). Five specific questions were included for FPs with prior knowledge of PrEP. All questions were either answered by telephone, email, mail, or during a face-to-face interview.

Answers to the question "Would you be willing to integrate PrEP into your practice?" was our main outcome. Answers to the question "Who should initiate PrEP prescription?" was a secondary outcome. We analyzed verbatims for the only open-ended question of the questionnaire ("Are you reluctant to PrEP prescription? If so, why?). Results were expressed in absolute numbers and in percentages. Categorical variables were compared using the Chi-square test, whenever appropriate.

As there is no published data evaluating French FPs' willingness to integrate PrEP into their practice, we hypothesized that 60% of FPs would be willing to integrate PrEP into their clinical practice, based on Northern American studies [12-16]. With a 10% margin of error, 5% alpha risk, and 80% power, we calculated that at least 92 FPs were to be surveyed. Estimating that 50% would not respond, we randomly selected 200 FPs from the initial list of 578 FPs.

As per French law, surveys of health professional practices do not require approval from the institutional review board. This study is part of the "3M without AIDS" program to assess FPs' awareness and willingness to integrate PrEP into their clinical practice. "3M without AIDS" is a program led by a transdisciplinary board of HIV specialists, FPs, associations, and

officials from the city of Montpellier. Results of the present survey aimed to determine if a specific FP training program on PrEP should be implemented in Montpellier.

Results

Two hundred FPs were contacted by the primary investigator between May and December 2018; 33 were excluded because they were engaged in practices other than family practice, and 96 physicians answered the questionnaire. The response rate was 57% (Figure 1). Forty of the non-responding FPs practiced in the city of Montpellier, and 31 in the rest of the 3M area. We did not record the other characteristics of non-respondents.

Of participating FPs, 50% were men and 49% were aged 50-65 years. Seventeen per cent received prior training on HIV and/or STDs, 98% thought that HIV prevention was part of the FP's job, 97% felt comfortable talking about sexuality with their patients, 79% regularly asked their patients if they had been exposed to situations at risk of HIV infection, 93% knew their patients' sexual orientation, and 10% reported not prescribing STD screening without symptoms. Three of these physicians were listed as gay-friendly physicians on a validated website [20].

Overall, 78% of respondents (95% CI [69; 86]) indicated that they were ready to integrate PrEP into their practice (Table 1). The univariate analysis showed that physicians considering HIV prevention as part of the FP's job were more likely to adopt PrEP (p=0.015). Fifty-two per cent (95% CI [42; 62]) thought that FPs could be the primary prescribers of PrEP; this proportion was higher in physicians with HIV and/or STD prior training (p=0.044). Most physicians (65%) also wished to be trained on PrEP.

The verbatim analysis showed that 32% of FPs were reluctant to PrEP prescription. Mentioned obstacles related to professional issues (lack of training or interest, need for a specialized lead specialist, prior failures of preventive roles), to the perceived impact of PrEP on patients' sexual behaviors (increase in risky sexual behaviors with decrease of other preventive measures, poor compliance, irregular follow-up), and to apprehensions related to antiretroviral use (cost of PrEP, drug resistance, and tolerability and/or adverse events).

Sixty-eight per cent of respondents (n=65) had prior knowledge of PrEP. Of these 65 physicians, 39 did not or would rather not talk about PrEP to high-risk patients, and 21 declared being unfamiliar with the populations targeted by PrEP. Thirty-five FPs had patients on PrEP, and 31 already had a discussion with one of their patients on PrEP. Seventeen FPs had renewed PrEP at least once.

Discussion

We analyzed the willingness of FPs to integrate PrEP into their clinical practice in a cross-sectional study of randomly selected FPs from 3M. We observed that more than 78% were willing to integrate PrEP into their practice and 65% were willing to be trained on PrEP. Although 68% (n=65) had some knowledge of PrEP, few had actually discussed PrEP with their patients; 21 were not familiar with the populations targeted by PrEP.

Our study is to the best of our knowledge the first performed in France to evaluate FPs' willingness to integrate PrEP into their clinical practice. Strengths of our study lies in the FP sampling − thus ensuring representativeness and power − as well as in the administration of a standardized survey. However, we could not determine whether FPs who refused to answer differed from respondents.

Our results revealed the willingness of most FPs in 3M to integrate PrEP into their clinical practice and to be trained for it. Lack of PrEP knowledge seemed somewhat paradoxical and not related to sexual taboo as nearly all FPs defined HIV prevention as part of their job and talked about sexuality with their patients. Implementing PrEP training programs may increase PrEP prescription, as reported in the literature [12,21,22] and as highlighted by the association between prior training on HIV or STD management and willingness to initiate PrEP in our study.

Our rate of FPs' willingness to integrate PrEP into their clinical practice was higher than most other studies performed in Northern America or Belgium (45%-66%) [12-17]. Our higher rate may be explained by the availability, since these prior studies, of additional publications

showing PrEP effectiveness, and by enhanced media coverage in France in 2018. However, our study only reflects the willingness to integrate PrEP among FPs practicing in Montpellier and its surroundings, known for being one of the most gay-friendly cities in France [20].

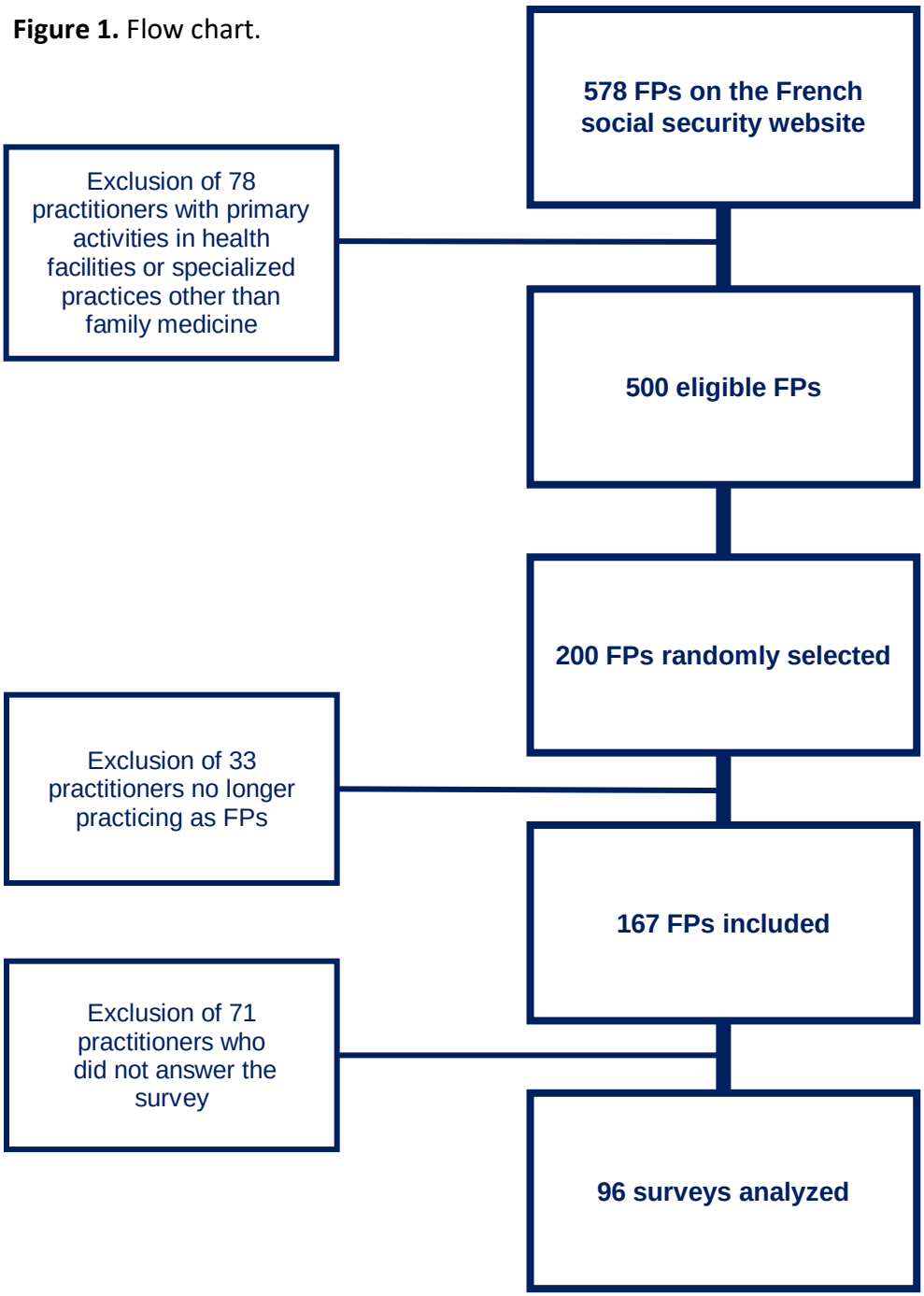
Reasons behind the reluctance to prescribe PrEP in 32% of our FPs are similar to those reported in the literature [12,17,22]. FPs still have doubts about PrEP effectiveness, apprehensions on the risk of resistance, adverse effects, and increase of risky sexual behaviors, despite conflicting results in the literature on this last item [3-8,23-25]. Better training is once again essential to reduce these apprehensions and to stress the need for diversified HIV prevention including condom use. A recent qualitative study reported a "purview paradox" [22]: FPs are in the best position to prescribe PrEP and encounter populations targeted by PrEP, but infectious disease specialists are more competent to prescribe it.

Following publication of the preliminary results from this study, the committee of the “3M without AIDS” program decided to reinforce FP training on PrEP and STD management and prevention in 3M. A network of existing training associations for FPs included PrEP in their learning topics. This network includes approximately 350 practicing FPs, and 15 additional motivated and trained FPs will join the “3M without AIDS” program. Future assessments will help determine the impact of these trainings on FPs’ willingness to integrate PrEP into their clinical practice and on PrEP uptake.

Conclusion

FPs practicing in 3M are willing to be trained on PrEP and to integrate PrEP into their clinical practice. Lack of PrEP uptake in Montpellier seems to be due to the lack of PrEP knowledge. Training programs for most FPs are ongoing, with future studies planned to assess these trainings.

Figure 1. Flow chart.



FP: family physician

Table 1. Main characteristics of family physicians

Total	96
Male	48 (50%)
Age	
25-29 years	3 (3%)
30-39 years	26 (27%)
40-49 years	14 (15%)
50-64 years	47 (49%)
≥65 years	6 (6%)
Years of practice	
<1 year	9 (9%)
1-4 years	16 (17%)
5-9 years	10 (10%)
≥10 years	61 (64%)
HIV and/or STD training	
Yes	16 (17%)
Listed as gay-friendly physicians	
Yes	3 (3%)
Do you think HIV prevention is part of the FP's job?	
Yes	94 (98%)
No	2 (2%)
Do you feel comfortable talking about sexuality with your patients?	
Yes	93 (97%)
No	3 (3%)
Do you often ask patients if they engaged in high-risk behaviors?	
Yes	76 (79%)
No	14 (15%)
Do you know your patients' sexual orientation?	
Yes	89 (93%)
Are you used to prescribe STD screening in patients without	

symptoms?	
Yes	86 (90%)
Would you like to be trained to prescribe PrEP?	
Yes	62 (65%)
Do you have concerns about PrEP?	
Yes	31 (32%)
Had you heard about PrEP before?	
Yes	65 (68%)
Total (FPs who had heard about PrEP before)	65
Do you know PrEP target population?	
Yes	44 (68%)
If yes, do you have patients on PrEP?	
Yes	35 (54%)
If yes, did a patient ever asked you about PrEP?	
Yes	31 (48%)
If yes, do you talk about PrEP to your at-risk patients?	
Yes	26 (40%)
Have you already renewed a PrEP precription?	
Yes	17 (26%)

FP: family physician, HIV: human immunodeficiency virus, STD: sexually transmitted disease, PrEP: pre-exposure prophylaxis

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