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Twelve barriers to COPD diagnosis in France: a comparative qualitative study

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ABSTRACT

Background Chronic obstructive pulmonary disease (COPD) is a common treatable disease often diagnosed in patients with risk factors after a prolonged period with suggestive symptoms. Our qualitative study aimed to identify barriers to establishing diagnosis in the natural history of this condition.

Methods An inductive thematic analysis was performed on structured interviews with patients, general practitioners (GPs) and pulmonologists in France. Inclusion depended on criteria to generate two purposive samples (patients and physicians). Recruitment occurred online. Data collection proceeded until 15 patients and 15 physicians (eight pulmonologists, seven GPs) were interviewed. Data saturation was checked and achieved. The interviews were transcribed and coded in NVivo and triangulated between two researchers. The article respects the consolidated criteria for reporting qualitative research guidelines.

Results Three phases in the patients' clinical pathway to diagnosis and 12 barriers were found: Phase 1 (symptoms before consultation; n=4), lack of COPD knowledge, symptom denial, fear of lung cancer, and delayed general practice consultations; Phase 2 (primary care; n=3), letting bronchitis become chronic, priority to diseases with similar symptoms and/or more serious diseases, lack of COPD screening devices, time and curative treatments; Phase 3 (specialised medicine; n=5), treatment before diagnosis, late referral to pulmonologists, difficulty in accessing specialists and examination results, patient's reluctance to undergo further examinations, and need for additional tests to confirm a diagnosis.

Conclusion People unaware of their COPD condition can encounter up to 12 barriers, which may combine before obtaining a formal diagnosis. Patients, GPs, pulmonologists and the state health authorities share responsibility for addressing these barriers and enhancing the care pathway.

INTRODUCTION

Chronic obstructive pulmonary disease (COPD) is a heterogeneous lung condition characterised by chronic respiratory symptoms and persistent airflow limitation.¹ In France, between 3 and 3.5 million people are affected by COPD, representing 7.5% of the adult population over 45 years old, with

KEY MESSAGES

WHAT IS ALREADY KNOWN ON THIS TOPIC

⇒ COPD is a common treatable disease that is often diagnosed in patients after a long period of suggestive symptoms and a long time between the first medical visit and formal diagnosis.

WHAT THIS STUDY ADDS

⇒ Our qualitative study identified 12 barriers to diagnosis, grouped into three periods: (1) before consultations, (2) during general practice consultations and (3) in specialised medicine.

HOW THIS STUDY MIGHT AFFECT RESEARCH, PRACTICE AND/OR POLICY

⇒ This study raises awareness among patients, GPs, pulmonologists and state health authorities of their role in the slow progression of the patient's diagnostic pathway, to encourage them to remove these barriers.

an increasing number of hospitalisations.² COPD underdiagnosis is common among adults in many countries, including France.^{3–5} In the UK, in 2022, almost 25% of people waited 5 years or more for a diagnosis, and 12.4% more than 10 years.⁶ Several factors may explain it. Respiratory symptoms may be absent, underreported to primary care professionals and/or poorly recognised as suggestive of COPD by these professionals.⁴ Differentiating COPD from other diseases with similar symptoms such as asthma or heart disease may be difficult.^{7,8} Finally, spirometry is underused.^{9,10} Delays in the diagnostic pathway lead to suboptimal management of COPD: a late implementation of appropriate treatment and interventions, incorrect treatments and poor identification of patients at higher risk of exacerbations or COPD-related hospitalisations.^{5,11} All of them are detrimental to both patients and the healthcare system.



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An essential step to improve COPD diagnosis, notably in symptomatic or at-risk patients, is to explore and manage its barriers (ie, any factor that delays, restrains or obstructs access to COPD diagnosis). Nonetheless, most studies in this area deal with specific COPD or cardiovascular cohorts.^{12 13} Therefore, asymptomatic patients living with COPD are excluded from these analyses. Besides, highlighting the obstacles to diagnosis, thanks to a cross-view between patients and health providers without *a priori* cannot be carried out by these studies. Hence, qualitative studies are essential to understand the barriers to COPD diagnosis.

Our project, known as Analysis of Barriers in COPD Diagnosis, aimed at identifying the challenges and unmet needs from the perspective of patients and clinicians, which could be transformed into clear opportunities to improve the management of COPD. To achieve this objective, data from patients and physicians have been collected through interviews or questionnaires and analysed using different qualitative and quantitative methods. The present article reports exclusively the results of the qualitative analysis of patients and physicians' interviews. It aims to retrospectively characterise the barriers to COPD diagnosis in real life and to generate new shared expertise on the patient's care pathway by combining the views of patients and physicians, that is, general practitioners (GPs) or pulmonologists.

METHODS

Study design

This qualitative study was exploratory and comparative between patients and physicians. The study was implemented by a service provider (IPSOS, Paris) and supervised by a group of experts composed of two expert patients and representatives for patients' organisations, one GP, seven pulmonologists, one physiotherapist, one psychologist, one sociologist and one expert in methodology. The service provider set up the study and collected the data in compliance with the local legislation. The method and results are reported following the consolidated criteria for reporting qualitative research guidelines.¹⁴ As participants' contact details were not requested, no feedback on the analysis could be sent to the participants.

Population and settings

The study was carried out in France and included 15 patients with COPD and 15 physicians (GPs and pulmonologists). A similar number of pulmonologists and GPs were included to eventually identify differences in the views of the two subsets of physicians. Patients' inclusion criteria were (1) to be diagnosed with COPD no more than 2 years by a spirometry performed by a trained physician; (2) to be at least 40 years old; (3) to present persistent cough, sputum retention or shortness of breath; and (4) to report smoking exposure. Participating patients were diversified according to gender, region (North,

South, East, West), area of residence (urban, periurban or rural) and COPD stage (I mild, II moderate, III severe, IV very severe). Physicians' inclusion criteria were (1) to be a GP or pulmonologist; (2) to have at least 2 years of professional experience; and (3) to see per month at least 4 patients with COPD for GPs and 10 for pulmonologists, for minimal experience to report. Participating physicians were diversified according to region, area of residence, professional seniority, diversity of COPD stages of their patients and the use of respiratory rehabilitation in their practice (yes/no). For feasibility reasons, any individual who declared a low level of comfort with the internet or an inability to use a computer was excluded from the study. Sampling was purposive (ie, aimed at including specific profiles).

The service provider and the expert group had set a target of 15 patients and 15 physicians (seven GPs and eight pulmonologists). Recruitment was carried out online by a panellist. An incentive was offered to participate. Participants signed a participation agreement before answering a screening questionnaire and being interviewed. Participants were informed that the researchers were employees of IPSOS conducting a study on the diagnosis of COPD. No relationship existed between the participants and the interviewers before the study began.

Data collection

Data were collected anonymously from patients and physicians. The screening questionnaire was developed by the service provider and discussed by the expert committee until it reached a general agreement. The screening questionnaire included items about the socio-demographic profile of the patients or physicians, COPD status (for patients), COPD-related professional practice (for physicians) and internet and computer use. It was posted online and delivered on social media. Respondents completed the screening questionnaire directly. A panellist with access to the results put participants in touch with two trained interviewers (two females, with MSc in business engineering, international health policy, semiology and communication) from the service provider.

The interview was structured (ie, closed questions, ordered and asked almost identically from one interview to the next) and facilitated by a topic guide. Patient single interviews focused on COPD current status (symptoms, hospitalisation for bronchitis, stage, treatment), COPD risk factors and comorbidities, the impact of COPD on daily life, information search, knowledge of COPD, exposure to risk factors, COPD diagnosis and COPD management. Physician interviews focused on their profile; current place of COPD in their work; knowledge of COPD; profiles of the patients (diagnosed and followed-up); the patient pathway; the COPD diagnosis, management and follow-up; and their opinion of the

current COPD patients' pathways. The guide was neither pilot-tested nor modified during data collection.

Interviews were performed in French during video-conference and audio-recorded, and verbatim were transcribed by the service provider. On average, they lasted 52 min with patients (range: 15–68) and 47 min with physicians (range: 40–65). The transcriptions were randomly checked by a third party (Abelia Science). The original transcripts were translated into English. A bilingual French-English researcher checked that the translation of the English verbatim was consistent with the meaning of the French source texts.

Data analysis

Data were analysed by a sociologist (GR, male, PhDc) and a psychologist (ES, female, PhD) for investigator triangulation.¹⁵ GR coded all interviews descriptively. This coding method showed the structure of the corpus and verified the process of data saturation. Data saturation was observed using a saturation table at the 13th patient and 13th physician (online supplemental table S1).¹⁶ GR then turned these codes into a pattern for inductive thematic analysis (ie, themes were derived from the data and not from the literature or guides). ES independently coded ten randomly selected interviews (five patients' and five physicians' interviews). GR and ES codes were compared in NVivo (version 14.23.2, QSR International), and the coding results were discussed until an agreement was reached.

Patient and public involvement

Two expert patients contributed to the study before the writing of the protocol. They participated in discussions with experts on unmet medical needs. They examined both the interview guide and the analysis report to obtain their perspectives and feedback to ensure that the findings were presented in the most effective way beyond the research community to general populations. They both additionally serve as representatives for patients' organisations. Patients and their families will be intimately involved in the dissemination of the results of the study. They will use the information to communicate on the need to diagnose early the disease and the barriers to remove (social media). They were not involved in the recruitment of the present study nor asked to assess the burden of the intervention and time required to participate in the research.

RESULTS

Of 42 patients who completed the screening questionnaire, 28 were excluded due to a COPD diagnosis of >24 months. However, to meet the target of 15 patients, one individual whose diagnosis was >24 months was ultimately included. Among the 23 physicians who completed the screening questionnaire, one GP opted out and one pulmonologist lacked the necessary equipment for the

videoconference, and finally, eight pulmonologists and seven GPs were included to meet the target quota. Interviews took place from November 2022 to February 2023.

Patients were predominantly women (12/15), from urban areas (8/15) and currently working (8/15). Their median age was 62 (range: 41–72). All were active or former heavy smokers. Ten patients considered that their COPD could have been diagnosed sooner, and eight patients reported comorbidities (table 1).

Physicians were predominantly male (13/15), from urban areas (13/15) and working in private practices (11/15). Their median age was 49 (range: 33–61), and their median professional seniority was 20 years (range: 5–31). The median number of patients with COPD per month seen by physicians per month was 50 (range: 30–100), most often with a clinical severity of GOLD stage I or II. Eleven physicians reported having patients with an unknown COPD stage.

Three chronologically appearing themes of the patient's clinical pathway to COPD diagnosis, and 12 barriers, were found in the data analysis (figure 1).

Phase 1: Symptoms before consultation(s)

This preconsultation and symptomatic phase brought together four barriers, including *lack of COPD knowledge*. Some patients reported being unaware of COPD. At symptom onset, patients tended to associate them with another cause (eg, bronchitis, cardiac disease, allergy or smoking). Physicians of all professions, ages and genders confirmed that COPD was not well known by patients. GPs and pulmonologists added that they frequently encountered '*limits*' in the ability of their patients to understand COPD, particularly patients from poorer backgrounds and/or due to the complexity of information for that matter.

[I didn't know] what (were) the early symptoms of COPD [...] I (thought), is this or isn't this (the consequences of lung cancer treatment)? [...] I don't know which file to put my breathlessness in (Male [M], 72 years old (yo), stage IV).

They don't know what it is (COPD). (GP, M, 55 yo)

The second barrier was *symptom denial*. Some patients reported having avoided paying attention to the symptoms and their meaning. Physicians were more likely to talk about denial related to the guilt of smoking. Some patients mentioned having health fragilities, particularly of a psychological nature. The prevalence of psychiatric comorbidities was confirmed by one GP. Another GP and two pulmonologists stressed that patients '*find it difficult to talk*'.

If I'm honest with myself, I was already short of breath before I had bronchitis. (Woman [W], 57 yo, stage III)

They deny it a little [...] they know it's due to smoking. (GP, M, 55 yo)

Table 1 Participants' sociodemographic characteristics

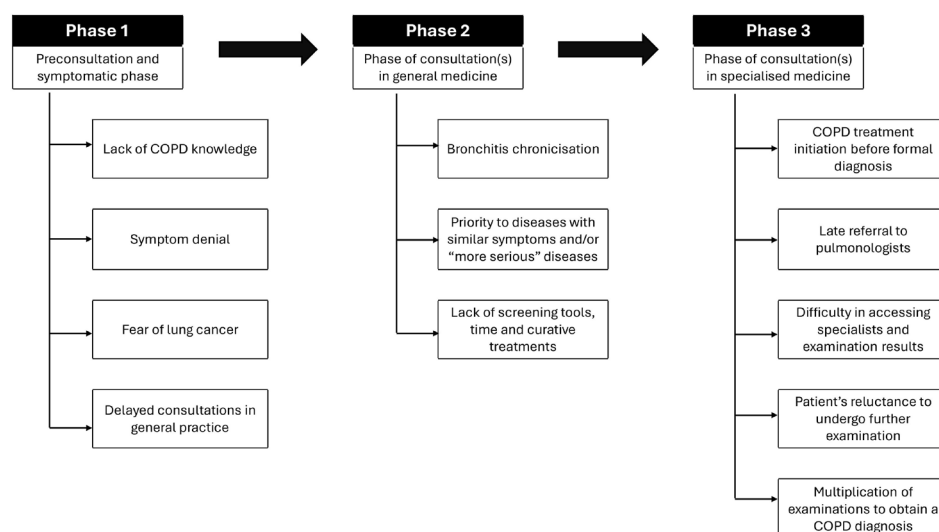
Characteristics	Total	Patients	Physicians	General practitioners	Pulmonologists
n=	30	15	15	7	8
Gender					
Men	16	3	13	6	7
Women	14	12	2	1	1
Age					
30–39 years old	3		3		3
40–49 years old	7	2	5	2	3
50–59 years old	10	4	6	4	2
60–69 years old	7	6	1	1	
70–79 years old	3	3			
Region					
Paris	8	5	3	1	2
South-East	8	6	2	1	1
South-West	5		5	2	3
West	2	2			
North	2		2	2	
North-East	1		1		1
North-West	4	2	2	1	1
Living environment					
Urban	15	5	10	2	8
Suburban	6	3	3	3	
Rural	9	7	2	2	

Lung cancer fear was the barrier that dominated all sub-themes, with 10/15 patients and 7/15 physicians mentioning it. GPs, pulmonologists and patients mentioned the fear of lung cancer in symptomatic smokers.

There's a kind of latent fear called lung cancer. (W, 41 yo, stage I)

It's the risk of lung cancer that's common knowledge. (Pulmonologist, M, 35 yo)

Finally, the fourth barrier of this category was the *delayed general practice consultations*. This barrier could be divided into three categories. First, some patients preferred to observe the symptoms evolve. They had in common to be either in full-time employment or disabled, that is,

**Figure 1** Thematic diagram.

prevented from finding the time or means to consult a GP. The physicians corroborated this patient's tendency to observe the symptom (hoping that it would get weaker on its own) until becoming acute. GPs interpreted this as patients neglecting their health. Only one pulmonologist perceived the influence of the contemporary pace of life as an obstacle to medical consultations.

When it continued to suffocate me, I said to myself, 'Maybe I should consult a physician!' [...] it took me 6 months. (W, 62 yo, stage II)

It can also be the patient who let it drag before coming to consult [...] they've generally been symptomatic for 4 to 6 months. (Pulmonologist, M, 50 yo)

Then, consultation with a GP could have been delayed by the desire of the patients to resolve the symptom, particularly breathlessness, on one's own, for example, by quitting smoking. Three physicians confirmed the tendency among smokers to consider that quitting smoking would be enough to resolve their breathlessness and recover.

For me, the solution (to breathlessness) was to (stop) smoking. (M, 70 yo, stage IV)
(the smoker) thinks he'll get better by quitting smoking. (GP, M, 55 yo)

Finally, patients, including two women who also reported having had difficulties with their GP, were slow to consult their GP unless pushed to do so. One of the women indicated that she did not want to 'go to the physician every month'. Physicians reported having noticed the strong influence of relatives in triggering the patient's referral to the GP.

People around me used to say: 'Go and see a physician, it's not normal (shortness of breath)'. (W, 53 yo, stage III)

It (coughing) bothers the people around them [...] there's always the spouse or a child or someone who says: 'you need treatment, I can hear you cough all night long!' (GP, M, 60 yo).

Phase 2: Primary care

Three barriers were related to primary care, including *letting bronchitis reiterate or become chronic*. Some patients were surprised at how long it took their GP to diagnose COPD. These patients reported a long-standing relationship with their GP, potentially explaining their incomprehension at not getting an earlier diagnosis from them. GPs and pulmonologists confirmed the idea that COPD diagnosis was based on the observation of 'frequent exacerbations' and therefore required several follow-up consultations.

After a year, a year and a half, she (GP) told me there was something wrong (with repeated bronchitis). (W, 62 yo, stage I)

But when I see a patient come back three or four times for bronchitis in 6 months, it's a warning signal [...] If the bronchitis is unique and he has no others (not COPD). (GP, M, 60 yo)

The second barrier was the *priority given to diseases with similar symptoms and/or 'more serious' diseases*. Some patients reported that their GP had been more concerned about other clinical criteria they had such as asthma, COVID-19, stress or overweight (before searching for COPD). Two mentioned a 'misdiagnosis'. The participating GPs stressed the need to rule out other pathologies that they considered more serious and that could be the cause of reported symptoms before diagnosing COPD. Participating pulmonologists indicated that GPs might not immediately think of COPD. The GPs claimed that their priority was to treat the patient's complaints, which were not always related to COPD.

As it (shortness of breath and cough) lasted, we thought of a long Covid [...] she (GP) didn't go any further than bronchitis or Covid [...] she could have dug further [...] She (GP) knew I smoked. (W, 64 yo, stage II)

There are things to eliminate first, basically our thinking process goes from the most serious thing to the least (Pulmonologist, M, 45 yo)

The third barrier was the *lack of COPD screening devices, time and curative treatments*. Patients were prescribed tests to diagnose COPD in the absence of screening tools in general practice. Only one patient had consulted a GP who had specialised in respiratory diseases and who had 'the equipment [...] where you blow'. The participating GPs stated that they did not perform spirometry. Most did not own any device. One considered that his 'equipment [...] (was) not powerful enough'. Pulmonologists confirmed the absence of spirometry among GPs. GPs and pulmonologists justified this by the high cost and the skills that the equipment requires (which were not always acquired by GPs according to pulmonologists). GPs also mentioned the lack of time and heavy workloads as obstacles to COPD diagnosis. A few spoke about the relentless decline, calling into question the relevance of the diagnosis as they thought that there were no curative treatments.

(The GP sent me) to hospital for the X-ray [...] he (the GP) had said that as he wasn't sure it was possible it was COPD. (W, 57 yo, stage III)

They (GP) don't have the equipment for the vast majority [...] they're not necessarily comfortable with interpreting curves, etc. (Pulmonologist, W, 50 yo)

Phase 3: Specialised medicine

Five barriers were related to specialised medicine, including *treatment initiation before diagnosis*. GPs and pulmonologists disagreed on the priority to be given to the treatment and diagnosis of COPD. GPs argued for the

need to resolve the situation as quickly as possible while reducing the risk of complications or at least ‘*doing something*’ for the patient. Pulmonologists argued that treatment could ‘*interfere*’ with the diagnosis, by impacting the results of clinical examinations.

(To treat right away) even if it means going for the spirometry afterwards [...] the diagnosis we’ll see later. (GP, M, 55 yo)

It would be more rigorous to refer them (patients) to us without initiating treatment [...] it can distort our spirometry if the patient is already on treatment. (Pulmonologist, W, 50 yo)

The second barrier was the *late referral to pulmonologists*. Pulmonologists mentioned it by indicating that GPs wanted to ‘*solve everything*’ themselves. GPs confirmed this, saying lung specialists were increasingly rare, and patients did not necessarily wish to meet them. One patient said that she would not approach a pulmonologist until she was told to do so.

GPs who hold back [...] are patients who are not necessarily going to be referred to us [...] 12 to 15 year-holdbacks [...] with old-school GP. (Pulmonologist, M, 45 yo)

If I’m not told to go and see a pulmonologist, I don’t go. (W, 61 yo, stage I)

The third barrier was the *difficulty in accessing specialists and examination results*. Patients reported several difficulties in their pathway: need for examinations to see a specialist, strikes distance from health services, and interpretation of examination results. All contributed to increased time to COPD diagnosis. These patients showed signs of isolation (rurality, singlehood, disability, retirement and feelings of loneliness) and the need for help or a ‘*breather*’ from the pathway. Participating GPs and pulmonologists agreed on the difficulties in accessing pulmonologists (in particular, due to their scarcity) and examinations, except X-rays.

The problem in rural areas like mine is that it’s complicated to get specialists quickly [...] there was a 1 year wait (to consult a pulmonologist). (W, 59 yo, stage II)

Patients can’t get appointments easily. (Pulmonologist, M, 35 yo)

The fourth barrier was the *patient’s reluctance to undergo further examinations* including spirometry and scanners. Some patients reported not having had the necessary tests carried out or not having been able to do them properly. These patients also spoke of their relational difficulties with physicians in general. They criticised their lack of empathy and solution. They also wanted to be in control of their treatment, not ‘*guinea pigs*’. Participating GPs mentioned patient’s reluctance to undergo examinations, justifying the lack of referrals to specialists.

I don’t know if I’ll do it, it depends on my mood. (W, 64 yo, stage III)

Going for respiratory explorations can be a hindrance. [...] because they don’t want to go any further [...] (they) refuse any exploration. (GP, M, 55 yo)

The last barrier was the *need for more tests to confirm a COPD diagnosis*. Patients described the list of tests they had to undergo. Pulmonologists confirmed the need for several examinations, which contributed to increased time to diagnosis when not performed in one unique consultation.

I did both [CT scan, MRI for COPD] [...] I did lots of them (examinations)! Everyone wanted them! (M, 66 yo, stage II)

I do spirometry. And for some I’ll ask for a CT scan too, possibly blood gas. I’ll do a plethysmography. I want to confirm the diagnosis. I do all the tests at the time of consultation. (Pulmonologist, F, 50 yo)

DISCUSSION

The study highlighted that up to 12 barriers could be encountered before obtaining a formal diagnosis in patients with suggestive symptoms of COPD. To the best of our knowledge, this was the first qualitative study focusing on COPD diagnosis in France, and its results should be seen as an opportunity to improve patients’ pathways.

The barriers appeared chronologically in three phases. During the preconsultation and symptomatic phase, barriers were lack of COPD knowledge, symptom denial, fear of lung cancer and delayed general practice consultations. Then, during the primary care phase, they were letting bronchitis become chronic, giving priority to diseases with similar symptoms and/or ‘*more serious*’ diseases, and lacking COPD screening devices, time and curative treatments. Then, the initiation of treatments before diagnosis, late referral to pulmonologists, difficulty in accessing specialists and examination results, patient’s reluctance to undergo further examinations and the need for more tests to confirm a COPD diagnosis. These barriers showed shared responsibilities between patients, GPs, pulmonologists and the state health authorities.

It should be noted that COPD remains unknown to the general public almost 15 years after the end of the COPD 2005–2010 plan in France as in other countries.¹⁷ There has never been a massive information campaign in France. This lack of awareness probably contributes to the inability to recognise the symptoms and early signs of the disease, as noted elsewhere.¹⁸ Despite recommendations on when to suspect and how to diagnose COPD,¹⁹ a substantial proportion of individuals with respiratory symptoms have undiagnosed COPD.²⁰ In its 2016 and 2022 updated recommendations, the US Preventive Services Task Force encourages the pursuit of active case

finding in symptomatic patients with relevant risk factors such as smoking.^{21 22}

In contrast to COPD, cancer is omnipresent in public consciousness. Lung cancer is the leading cause of death by cancer among men (www.e-cancer.fr/). As we have shown, the fear of cancer constituted a barrier to the diagnosis of COPD (and potentially other respiratory diseases). The fear of cancer in smokers (without a cancer diagnosis) and its psychosocial consequences are surprisingly understudied. The priority given to cancer in public health seems to affect the primary care diagnostic process. GPs tended to consider other conditions more severe than COPD. Unfortunately, prioritising symptoms with over risk factors allows bronchitis to become chronic. Compared with patients with diagnosed COPD, patients with undiagnosed COPD have more debilitating respiratory symptoms: their health status and quality of life are poorer, their productivity at work is lower and their consumption of healthcare is higher; all of these effects exceed the minimal clinically important difference.^{23 24} Other studies indicate a lack of training for GPs regarding COPD,^{25–27} highlighting the need to help them recognise risk factors: smoking, ageing, air pollution and smoking (indoors and outdoors), abnormal lung development and genetic aetiologies.¹

Furthermore, diagnosis of mild diseases will likely create a greater potential for the treatment and lead to a lower disease burden by improving long-term prognosis. Primary healthcare professionals play a key role in the diagnosis of COPD.^{28 29} Spirometry remains the gold standard for screening but remains underused,³⁰ for various reasons,^{10 31–33} despite small improvements.³⁴ Other more accessible and cost-effective tools should be offered, such as validated questionnaires.¹⁰ Interestingly, the CAPTURE (COPD Assessment in Primary Care to Identify Undiagnosed Respiratory Disease and Exacerbation Risk) tool was validated to screen and stratify patients in primary care: physicians can use the results of five questions and the peak expiratory flow to differentiate patients who require treatment from those who can ‘denied treatment’.³⁵ In France, the questionnaire promoted by the *Haute Autorité de Santé*, improved by Lorenzo *et al*, could be made available in pulmonologists’ or GPs’ waiting rooms, with an educational leaflet.³⁶

The GPs’ inclination to treat their undiagnosed patients is not unique to France.³⁷ However, treating undiagnosed individuals complicates the diagnosis and may lead to potential COPD overdiagnosis. It also echoes the shortage of pulmonologists and patients’ reluctance to consult for diagnosis confirmation.³⁸ Our results showed that collaborative efforts between GPs and pulmonologists are needed on the optimal pathway to diagnosis, considering the challenges faced by both professions. It is difficult to envision solutions to renew pulmonology in France. Therefore, other faster diagnostic avenues should be promoted. The involvement of other healthcare professionals (eg, self-employed nurses and pharmacists) seems feasible,³⁹ as already demanded.³³ Indeed, health

authorities recently authorised a pilot study in the north of France that leads GPs to invite high-risk patients to undergo confirmatory spirometry performed by trained nurses in a pulmonary function laboratory. Developing screening opportunities (eg, at work, at French Health Prevention Centres or through health insurance) is also recommended.⁴⁰

As other studies show,^{28 41 42} patients in our study tended to deny, misinterpret or self-manage their symptoms. They delay the first consultation.^{10 38} In addition to the fear of lung cancer that could explain these attitudes, low health literacy is probably associated with the low level of education observed in different countries.^{43 44} Our study also suggested exploring the detrimental influence on the diagnostic search for prevalent psychiatric comorbidities in this population.^{45 46} Finally, patients’ delay in consulting raises questions about their compliance with medical authorities (ie, physicians and the Ministry of Health) and the patient-physician relationship, as the COVID-19 crisis ends after reviving tensions between citizens and these authorities. Some people increasingly want to be autonomous or even independent in their healthcare decisions, challenging the physician’s advice at the risk of compromising their health. This requires additional efforts to reassure the at-risk population, especially as this compliance issue reappears with COPD treatment.

Our study has limitations. Its objective did not consider a specific definition of COPD diagnosis.⁴⁷ The resources used by participants to accelerate their pathway pace and the levers used to overcome the barriers encountered up to formal diagnosis were not considered in the analysis. The diversification of the sample did not take into account the patients’ country of birth nor their socioeconomic background and situation, which could have constituted factors of cultural differentiation and deepened the analysis. The sampling strategy did not consider deviant cases, such as non-smokers or those under 40, and was limited to 15 participants per sample. The diversity of the samples was quite good, despite the absence of a mix of physicians concerning respiratory rehabilitation practice, a few male patients and female physicians. Gender might be another barrier to COPD diagnosis that we did not explore. Often, women tend to manage their household healthcare needs before their own.⁴⁸ Patients without a computer or with limited internet access were excluded, which may have impacted the sample in terms of socioeconomic factors or capability. The interview followed a guide set before data collection, was limited to 1 hour and was structured *a priori*, preventing the exploration of emerging themes. However, as the development of the questionnaire and interview guide benefited from the presence of patients, pulmonologists and a GP in the expert committee, this limitation of a non-iterative approach was reduced, especially as the achieved data saturation was verified *a posteriori*.

This study highlights the need for a large-scale COPD campaign and alternative ways to screen people at risk,

educate the general population to recognise risk factors and symptoms and deconstruct the public perception of cancer as the only smoking-related lung risk. Rapid diagnostic devices for use in general practice, curative treatments and an increased number of pulmonologists seem necessary in France. Finally, healthcare professionals' training to develop a 'reflex-like' COPD diagnosis when facing patients with compatible symptoms merits further investigation, particularly with GPs.

Our study continues with a self-administered questionnaire for patients, GPs and pulmonologists aiming to assess the frequency of these barriers and the suggested solutions to avoid exhaustion and dispersion.

Conclusion

Our study showed that before being aware of their COPD condition, patients were likely to lack COPD knowledge, deny symptoms, fear lung cancer and delay general practice consultations. GPs could let bronchitis become chronic, prioritise diseases with similar symptoms and/or 'more serious' diseases, lack COPD screening devices and time and regret missing curative treatments. Concerning specialised medicine, pulmonologists considered that patients were treated before being diagnosed, were referred late to pulmonologists, faced difficulty in accessing specialists and examination results and were reluctant to undergo further examinations, and that their physicians needed more tests to confirm COPD diagnosis. All barriers could combine before obtaining a diagnosis. Patients, GPs, pulmonologists and the state health authorities share responsibility for addressing these barriers and enhancing the care pathway. All stakeholders should be aware of them and contribute to improving COPD diagnosis and management in France.

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REFERENCES

- 1 Global Initiative for Chronic Obstructive Lung Disease - GOLD. 2024 GOLD report, 2023. Available: <https://goldcopd.org/2024-gold-report/>
- 2 Inserm. Bronchopneumopathie chronique obstructive (BPCO), 2020. Available: <https://www.inserm.fr/dossier/bronchopneumopathie-chronique-obstructive-bpco/>
- 3 Adeloze D, Song P, Zhu Y, *et al*. Global, regional, and national prevalence of, and risk factors for, chronic obstructive pulmonary disease (COPD) in 2019: a systematic review and modelling analysis. *Lancet Respir Med* 2022;10:447–58.
- 4 Delmas M-C, Bénézet L, Ribet C, *et al*. Underdiagnosis of obstructive lung disease: findings from the French CONSTANCES cohort. *BMC Pulm Med* 2021;21:319.

- 5 Kostikas K, Price D, Gutzwiller FS, *et al.* Clinical Impact and Healthcare Resource Utilization Associated with Early versus Late COPD Diagnosis in Patients from UK CPRD Database. *Int J Chron Obstruct Pulmon Dis* 2020;15:1729–38.
- 6 Asthma and Lung UK. Delayed Diagnosis and Unequal Care, 2022. Available: <https://www.asthmaandlung.org.uk/conditions/copd-chronic-obstructive-pulmonary-disease/world-copd-day/delayed-diagnosis-unequal-care>
- 7 Asamoah-Boaheng M, Acheampong L, Tenkorang EY, *et al.* Association between early history of asthma and COPD diagnosis in later life: a systematic review and meta-analysis. *Int J Epidemiol* 2018;47:1865–76.
- 8 Almagro P, Lapuente A, Pareja J, *et al.* Underdiagnosis and prognosis of chronic obstructive pulmonary disease after percutaneous coronary intervention: a prospective study. *COPD* 2015;10:1353.
- 9 Halpin DMG, Dickens AP, Skinner D, *et al.* Identification of key opportunities for optimising the management of high-risk COPD patients in the UK using the CONQUEST quality standards: an observational longitudinal study. *Lancet Reg Health Eur* 2023;29:100619.
- 10 Lim R, Smith T, Usherwood T. Barriers to spirometry in Australian general practice: A systematic review. *Aust J Gen Pract* 2023;52:585–93.
- 11 Halpin DMG. Clinical Management of COPD in the Real World: Can Studies Reveal Errors in Management and Pathways to Improve Patient Care? *Pragmat Obs Res* 2023;14:51–61.
- 12 Tran TV, Kinney GL, Comellas A, *et al.* Prevalence of abnormal spirometry in individuals with a smoking history and no known obstructive lung disease. *Respir Med* 2023;208:S0954-6111(23)00014-8.
- 13 Bradley C, Alexandris P, Baldwin DR, *et al.* Measuring spirometry in a lung cancer screening cohort highlights possible underdiagnosis and misdiagnosis of COPD. *ERJ Open Res* 2023;9:00203-2023.
- 14 Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *Int J Qual Health Care* 2007;19:349–57.
- 15 Carter N, Bryant-Lukosius D, DiCenso A, *et al.* The use of triangulation in qualitative research. *Oncol Nurs Forum* 2014;41:545–7.
- 16 Kerr C, Nixon A, Wild D. Assessing and demonstrating data saturation in qualitative inquiry supporting patient-reported outcomes research. *Expert Rev Pharmacoecon Outcomes Res* 2010;10:269–81.
- 17 Mannino DM. Underdiagnosed chronic obstructive pulmonary disease in England: new country, same story. *Thorax* 2006;61:1032–4.
- 18 Street RLJ, Gordon HS, Ward MM, *et al.* Patient Participation in Medical Consultations: Why Some Patients are More Involved Than Others. *Med Care* 2005;43.
- 19 Haute Autorité de Santé. Détecter et diagnostiquer la BPCO même sans symptôme apparent, 2020. Available: https://www.has-sante.fr/jcms/p_3118475/fr/detecter-et-diagnostiquer-la-bpco-meme-sans-symptome-apparent
- 20 Preteroti M, Whitmore GA, Vandemheen KL, *et al.* Population-based case-finding to identify subjects with undiagnosed asthma or COPD. *Eur Respir J* 2020;55:2000024.
- 21 US Preventive Services Task Force, Mangione CM, Barry MJ, *et al.* Screening for Chronic Obstructive Pulmonary Disease: US Preventive Services Task Force Reaffirmation Recommendation Statement. *JAMA* 2022;327:1806–11.
- 22 Siu AL, Bibbins-Domingo K, Grossman DC, *et al.* Screening for Chronic Obstructive Pulmonary Disease: US Preventive Services Task Force Recommendation Statement. *JAMA* 2016;315:1372–7.
- 23 Cherian M, Magner KMA, Whitmore GA, *et al.* Patient and physician factors associated with symptomatic undiagnosed asthma or COPD. *Eur Respir J* 2023;61:2201721.
- 24 Gerstein E, Bierbrier J, Whitmore GA, *et al.* Impact of Undiagnosed Chronic Obstructive Pulmonary Disease and Asthma on Symptoms, Quality of Life, Healthcare Use, and Work Productivity. *Am J Respir Crit Care Med* 2023;208:1271–82.
- 25 Foster JA, Yawn BP, Maziar A, *et al.* Enhancing COPD management in primary care settings. *MedGenMed* 2007;9:24.
- 26 Yawn BP, Wollan PC. Knowledge and attitudes of family physicians coming to COPD continuing medical education. *Int J Chron Obstruct Pulmon Dis* 2008;3:311–7.
- 27 Salinas GD, Williamson JC, Kalhan R, *et al.* Barriers to adherence to chronic obstructive pulmonary disease guidelines by primary care physicians. *Int J Chron Obstruct Pulmon Dis* 2011;6:171–9.
- 28 Bellamy D, Smith J. Role of primary care in early diagnosis and effective management of COPD. *Int J Clin Pract* 2007;61:1380–9.
- 29 Casaburi R, Duvall K. Improving Early-Stage Diagnosis and Management of COPD in Primary Care. *Postgrad Med* 2014;126:141–54.
- 30 Jones RCM, Price D, Ryan D, *et al.* Opportunities to diagnose chronic obstructive pulmonary disease in routine care in the UK: a retrospective study of a clinical cohort. *Lancet Respir Med* 2014;2:267–76.
- 31 Bolton CE, Ionescu AA, Edwards PH, *et al.* Attaining a correct diagnosis of COPD in general practice. *Respir Med* 2005;99:493–500.
- 32 Price D, Crockett A, Arne M, *et al.* Spirometry in primary care case-identification, diagnosis and management of COPD. *Prim Care Respir J* 2009;18:216–23.
- 33 Chambellan A, Housset B. Dépistage et diagnostic précoce de la BPCO en médecine générale. *Rev Mal Respir* 2014;31:391–3.
- 34 Chapron A, Lemée T, Pau G, *et al.* Spirometry practice by French general practitioners between 2010 and 2018 in adults aged 40 to 75 years. *NPJ Prim Care Respir Med* 2023;33:33.
- 35 Martinez FJ, Han MK, Lopez C, *et al.* Discriminative Accuracy of the CAPTURE Tool for Identifying Chronic Obstructive Pulmonary Disease in US Primary Care Settings. *JAMA* 2023;329:490–501.
- 36 Lorenzo M, Delpeyroux S, Dupre V. Seuil de paquets-années et auto-questionnaire HAS pour la recherche de bronchopneumopathie chronique obstructive. *Rev Mal Respir* 2020;37:624–32.
- 37 Stållberg B, Janson C, Johansson G, *et al.* Management, morbidity and mortality of COPD during an 11-year period: an observational retrospective epidemiological register study in Sweden (PATHOS). *Prim Care Respir J* 2014;23:38–45.
- 38 Guerin J-C, Roche N, Vicaut É, *et al.* Sujets à risque de BPCO en médecine générale : comment favoriser la réalisation de spirométries et la détection précoce de l'obstruction bronchique ? *Rev Mal Respir* 2012;29:889–97.
- 39 Vrijhoef HJM, Diederiks JPM, Wesseling GJ, *et al.* Undiagnosed patients and patients at risk for COPD in primary health care: early detection with the support of non-physicians. *J Clin Nurs* 2003;12:366–73.
- 40 Roche N, Dalmay F, Perez T, *et al.* Impact of chronic airflow obstruction in a working population. *Eur Respir J* 2008;31:1227–33.
- 41 Calverley PM. COPD: early detection and intervention. *Chest* 2000;117:365S–71S.
- 42 Qaseem A. Diagnosis and Management of Stable Chronic Obstructive Pulmonary Disease: A Clinical Practice Guideline Update from the American College of Physicians, American College of Chest Physicians, American Thoracic Society, and European Respiratory Society. *Ann Intern Med* 2011;155:179.
- 43 KalagoudaMahishale V, Angadi N, Metgudmath V, *et al.* The Prevalence of Chronic Obstructive Pulmonary Disease and the Determinants of Underdiagnosis in Women Exposed to Biomass Fuel in India- a Cross Section Study. *Chonnam Med J* 2016;52:117–22.
- 44 Denguezli M, Daldouli H, Harrabi I, *et al.* Prevalence and Characteristics of Undiagnosed COPD in Adults 40 Years and Older - Reports from the Tunisian Population-Based Burden of Obstructive Lung Disease Study. *COPD* 2020;17:515–22.
- 45 Yohannes AM, Alexopoulos GS. Depression and anxiety in patients with COPD. *Eur Respir Rev* 2014;23:345–9.
- 46 Fuentes-Alonso M, Lopez-Herranz M, López-de-Andrés A, *et al.* Prevalence and Determinants of Mental Health among COPD Patients in a Population-Based Sample in Spain. *J Clin Med* 2021;10:2786.
- 47 Laucho-Contreras ME, Cohen-Todd M. Early diagnosis of COPD: myth or a true perspective. *Eur Respir Rev* 2020;29:200131.
- 48 Matoff-Stepp S, Applebaum B, Pooler J, *et al.* Women as health care decision-makers: implications for health care coverage in the United States. *J Health Care Poor Underserved* 2014;25:1507–13.