

# A Phenomenological Study of Barriers to Smoking Cessation among Patients with Chronic Obstructive Pulmonary Disease in Malaysia

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## Abstract

**Introduction:** Smoking cessation is an essential intervention for chronic obstructive pulmonary disease (COPD) patients who still smoke. However, many patients struggle to quit successfully. Understanding the barriers they face is crucial to improving cessation strategies. **Objectives:** This study aimed to explore the real, often overlooked challenges COPD patients face when trying to quit smoking. **Methods:** A phenomenological study was conducted with a purposive sample of 11 male participants (GOLD 2, FEV<sub>1</sub> 46–75%) recruited from the Respiratory Clinic of Hospital Sultanah Nur Zahirah, Kuala Terengganu, Terengganu. Patients who were unable to stop smoking despite receiving treatment for COPD were included. The interviews were audio-recorded, transcribed verbatim, and thematically analysed using the Atlas.ti 23 software. Trustworthiness was ensured through member checking, reflexivity, and audit trails. **Results:** Three themes emerged: (1) Engagement with assisted smoking cessation, hindered by systemic referral gaps and misconceptions; (2) Requiring support while maintaining autonomy, where fear of mockery led to social isolation; and (3) Motivational factors, characterised by unstable motivation and a complacency window where low symptom burden diluted the urgency to quit despite objective lung function decline. **Conclusion:** COPD patients face unique barriers where clinical severity and subjective discomfort intersect. Factors like disconnect from formal healthcare services, fatalistic resignation (*redha*), and social policing by families force patients into a solitary, unsustainable struggle. Cessation strategies must bridge these clinical and cultural gaps by aligning with the patient's specific disease stage and sociocultural context.

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## Introduction

Chronic obstructive pulmonary disease (COPD) is an increasingly alarming health issue worldwide. In 2021, COPD was the fourth leading cause of death globally, causing 3.5 million deaths, which accounted for 5% of all deaths worldwide (WHO, 2024b). COPD impacts patients' quality of life and leads to substantial financial burdens for both individuals and healthcare systems, particularly in patients with severe disease (May & Li, 2015).

Cigarette smoking is the most important risk factor for COPD development and progression. Smokers with COPD are at a higher risk of frequent respiratory symptoms, a faster decline in lung function, and a higher rate of COPD-related death compared to non-smokers (Adeloye et al., 2022). Evidence-based guidelines including the Global Initiative for Chronic Obstructive Lung Disease (GOLD) suggest smoking cessation as the key intervention for all COPD patients who still smoke, as it is the most cost-effective and effective approach to managing COPD (GOLD, 2024). After smoking cessation, forced expiratory volume in 1 second (FEV<sub>1</sub>) improves, and individuals who quit are more likely to have a better response to COPD inhalers, including bronchodilators and inhaled corticosteroids (Jiménez-Ruiz et al., 2015). A systematic review has shown that a combination of behavioural therapy and pharmacological interventions is effective in supporting smokers with COPD (van Eerd et al., 2016).

In 2011, the Malaysia Ministry of Health (MOH) launched Quit Smoking Services (mQuit) to support smoking cessation within the community (MOH, 2021). The program, which is integrated into existing government health facilities, provides pharmacological and psychological (motivational interviewing and health behavioural model) interventions. Smokers with COPD, like the general smoking population, require referrals or may voluntarily enroll in the program (Zamzuri et al., 2021).

A targeted approach to smoking cessation programs for smokers with COPD is needed, ideally structured through prior gain of their views on

smoking and quitting. To date, several studies have examined factors associated with continued smoking among COPD patients, with some providing valuable clinical insights. A cross-sectional study conducted in Turkey identified clinical and demographic predictors of ongoing smoking in this population. The study intended to quantify the relationship between continued smoking and clinical variables; however, it did not explore patients' underlying reasons for these behaviours (Karadogan et al., 2018). In contrast, a qualitative study by Eklund et al. (2012) explored patients' perspectives on continued smoking; however, it was conducted within a developed healthcare system in the Western context, limiting its applicability to resource-constrained settings. Therefore, our study extends this evidence base by offering contextual and experiential explanations for continued smoking among COPD patients within a developing country's healthcare context. There remains a need for research on smoking cessation behaviours among COPD patients within the cultural and socioeconomic contexts of developing countries. Malaysia, as an upper-middle income country with unique population dynamics, faces distinctive challenges in implementing smoking cessation strategies (Fischer & Nisa, 2025).

The present study was triggered by the findings of one of our local COPD-related studies by Md Khairi et al. (2023), which found a high prevalence (15.7%) of patients who received a COPD diagnosis and pharmacotherapy but still continued smoking. In addition, according to data from several large population-based studies in Spain and China, the prevalence of current smokers among COPD patients varied from 34% to 48% (Fang et al., 2018; Soriano et al., 2021). Thus, the research question that was triggered is: What challenges prevented smoking cessation from taking place in the local context?

This study aimed to explore the often overlooked subjective and sociocultural challenges faced by COPD patients in Malaysia when attempting to quit smoking. While previous research has identified general barriers, the specific essence of the quitting struggle, as experienced by patients at different stages of clinical severity,

remains poorly understood. While routine respiratory care typically focuses on objective measures such as nicotine dependence assessed using the Fagerström Test (FTND), smoking history (pack-years), and symptom severity, these metrics do not capture the underlying psychological struggles, cultural tensions, and internal cognitive processes that are rarely documented in clinical settings but substantially influence smoking cessation success. By utilising a phenomenological approach and linking findings to specific clinical markers (Forced expiratory volume in one second, FEV<sub>1</sub> and Modified Medical Research Council dyspnea scale, mMRC), this study seeks to uncover nuanced dimensions that are rarely documented but substantially influence cessation success.

## Methods

### *Study design*

A phenomenological study method was chosen to uncover the specific barriers COPD patients encounter, using in-depth interviews and open-ended questions (Alhazmi & Kaufmann, 2022). The approach could reveal the essence of smoking cessation barriers in a population where routine clinical metrics often fail to explain persistent smoking behaviour.

### *Study setting and population*

The qualitative study was conducted among smokers with COPD attending follow-up appointments at the Respiratory Clinic of Hospital Sultanah Nur Zahirah (HSNZ) in Terengganu, Malaysia. This respiratory clinic specialises in treating respiratory conditions, including COPD, and receives referrals from all levels of healthcare across the state. The study took place from January to December 2023. Participants were selected from the clinic's registry using purposive sampling. Smokers who received a COPD diagnosis and pharmacotherapy with at least one previous failed attempt to quit smoking were recruited into the study.

Eligible participants were approached face-to-face during their clinic follow-up to explain the purpose and details of the study. Participants had

the option to meet the researcher for an interview during their clinic follow-ups or on an alternative date. Informed consent was obtained before the interview sessions. The sample size was determined based on the concept of data saturation (Hennink & Kaiser, 2022). All interviews were conducted in a private room in the clinic, with only the participant and the interviewer present. Each participant completed one face-to-face semi-structured interview; repeat interviews were not conducted. A focus group discussion was not conducted due to prior findings by Chean et al. (2019), which indicated that smokers tend to feel uncomfortable speaking in a group setting. The electronic medical records (EMR) of participants were retrieved from the hospital information system (HIS), which includes their demographic profile, clinical information, and smoking histories.

### *Data Collection*

In-depth interviews were conducted using a semi-structured interview guide, which was developed based on previous qualitative studies. Questions in the guide aimed to explore the participants' experiences of quitting smoking and relapsing after a failed attempt. The interview guide began with broad, mostly open-ended questions (Table 1). Follow-up questions arose spontaneously during the conversation, based on participants' responses, in a free-flowing conversation, allowing for an in-depth interview.

Three of the authors—namely, a respiratory physician (AS, MMed (Internal Medicine)), a pharmacy academician (SG, PhD), and a senior pharmacist (MM, MPharm (Practice)) were involved in evaluating the feasibility of the interview guide. The interview guide was translated into Malay by an English teacher from a higher education institution who has a good command of the language. The translated guide was pre-tested on three participants, who were then excluded from the study data set. Interviews were performed by a single investigator, i.e., a male pharmacist researcher (LNHMK, MPharm (Practice)), to ensure consistency of the interview process. The researcher underwent intensive training in qualitative interview techniques and

**Table 1:** Interview guide for semi-structured interviews about challenges to smoking cessation among patients with chronic obstructive pulmonary disease

| Topic                       | Primary Questions & Follow-up Questions  | Rationale and Researcher Directions  |
|-----------------------------|--|--|
| Habit & COPD Context        | <p>Tell me about your smoking habit.</p> <ul style="list-style-type: none"> <li>• How long have you been smoking?</li> <li>• How much do you usually smoke in a day?</li> <li>• COPD Link: How does your breathing difficulty affect your desire to smoke?</li> <li>• Do you perceive a link between your current lung symptoms and your smoking habit?</li> </ul> | <i>Direction:</i> Establish rapport and assess the participant's awareness of the causal link between smoking and their COPD symptoms. |
| Quitting History            | <p>How many times have you tried to quit smoking?</p> <p>Have you ever tried to quit smoking <b>before</b> or <b>after</b> you were diagnosed with COPD?</p> <p>What made you decide to try quitting at those times?</p>   | <i>Direction:</i> Identify if the COPD diagnosis served as a teachable moment or if barriers remained unchanged post-diagnosis.        |
| Knowledge & Referral        | <p>What information did you receive about quitting when diagnosed with COPD?</p> <p>Tell me about your experience with the Quit Smoking Clinics (mQuit)?</p> <ul style="list-style-type: none"> <li>• Was your attendance with the clinic voluntary, or were you referred?</li> <li>• If never attended, what made you decide not to attend?</li> </ul>            | <i>Direction:</i> Explore potential "systemic failures" in the referral process from the respiratory clinic to the mQuit program.      |
| Therapy & Physical Barriers | <p>Can you describe your experience with nicotine replacement therapy (NRT)?</p> <ul style="list-style-type: none"> <li>• What type of NRT did you use?</li> <li>• In what ways was it helpful or not?</li> <li>• Did you experience any side effects?</li> </ul>  | <i>Direction:</i> Probe for specific physical barriers, such as the effectiveness of NRT in managing COPD-related withdrawal distress. |
| Relapse & Reflection        | <p>Tell me about any time when you stopped smoking for a while but then started again.</p> <ul style="list-style-type: none"> <li>• What was happening in your life at that time?</li> <li>• How do you feel about smoking again, especially knowing you have COPD?</li> <li>• What is your reflection on this experience?</li> </ul>                              | <i>Direction:</i> Use open-ended prompts to uncover overlooked psychological barriers.   |

analysis, led by an expert in the field. He also serves as a clinical pharmacist in the respiratory clinic and has a pre-existing professional clinician-patient relationship with most participants. Patients were informed that participation was voluntary and would not influence their ongoing care. The interviews were conducted in either Malay or the local Terengganu dialect, based on participants' preferences, with an average duration of 30 minutes. Field notes were taken during the interviews. To enhance rigour, every session was recorded using a voice recorder and transcribed verbatim. Data collection began in January 2023 and concluded upon reaching data saturation in December 2023.

### *Data Analysis*

After the first semi-structured interview was completed, the data were analysed using ATLAS.ti 23 software. The data analysis process involved three steps: (i) organizing the data, (ii) comprehending the data, and (iii) interpreting the data.

### *Organising the Data*

The first step involved transcribing the audio recording of the interview verbatim. Each transcript was labelled and anonymised to ensure the privacy and confidentiality of the study participants. This process was conducted by authors WAWZ and MFS (both BPharm), who cross-checked each other's transcripts against the original recordings to ensure linguistic accuracy.

### *Comprehending and Interpreting the Data*

Three authors (LNHMK, MM, and SG) were involved in the coding and thematic development. To ensure rigor, these authors initially worked independently to review the transcripts and generate preliminary codes. Subsequently, the team discussed concomitantly to compare their findings using a constant comparison method. In instances where conflicts or discrepancies arose regarding the classification of subthemes, the team engaged in iterative discussions until a consensus was reached. The final thematic framework was then reviewed by a fourth author (AS, a respiratory physician) to ensure the clinical relevance of the findings to the

COPD population.

The data were coded using thematic analysis, with ATLAS.ti 23 software employed for the process (Braun & Clarke, 2006). Initial codes were generated from the verbatim transcripts, followed by the identification of subthemes and themes. The software's thematic maps were reviewed to identify the relationships among the themes.

A constant comparison method was used to saturate the coded subthemes and themes. Data saturation was monitored throughout the data collection and analysis processes. No new themes emerged from subsequent interviews after conducting and analysing the first nine interviews. Two additional participants (participants 10 and 11) were interviewed to ensure no new responses would be obtained.

### *Evaluation and trustworthiness*

To establish trustworthiness, this study was conducted in accordance with Lincoln and Guba's Four-Dimension Criteria (FDC): credibility, confirmability, dependability, and transferability (Ahmed, 2024).

- *Credibility*: Member checking was performed by returning selected transcripts to participants to verify that they accurately reflected their perceptions expressed during interviews. To ensure credibility, the authors conducted verbatim transcription, iterative reading of the data to preserve context, and regular discussion of emerging codes through investigator triangulation.
- *Confirmability*: This was established by maintaining an audit trail and practising reflexivity, where the lead researcher, acting as a clinical pharmacist, documented field notes to minimise personal bias. While all themes are illustrated by participant quotations, confirmability was primarily achieved by verifying interpretations against raw data.
- *Dependability*: Ensured through the systematic documentation of all research procedures, from purposive sampling to the final thematic analysis.

- *Transferability*: To address the limitation of an all-male sample, we provided thick descriptions of the clinical setting and participant demographics (e.g., mMRC and FEV<sub>1</sub> scores) to allow readers to determine findings' applicability to similar cultural context.

These strategies were employed to enhance the data accuracy and the robustness of the study findings (Creswell, 2018).

## Results

We interviewed 11 participants, with a mean age of 55.3 ( $\pm$  9.8) years old. Two smokers with COPD who were invited to participate refused, citing that they were too busy. All participants were male, and the majority had a primary or secondary level of education, low symptom severity (Modified Medical Research Council, mMRC 0–1), and mild-to-moderate disease (FEV<sub>1</sub>  $\geq$ 50% predicted). The participants were chronic heavy smokers, with an average smoking history of 23 pack-years. Half of the participants (6/11, 54.5%) exhibited low nicotine dependence, as indicated by a Fagerström Test for Nicotine Dependence (FTND) score of 0–2. Participants were also managed for other chronic conditions including hepatitis, HIV, and opioid dependence, which added complexity to their cessation attempts. Table 2a and 2b present the detailed characteristics of the participants.

Using the data analysis, three themes and nine subthemes emerged (Table 3). In this section, quotations from the participants' transcripts are integrated into the text below to emphasize the content of each theme and subtheme.

### Theme 1: Engagement with assisted smoking cessation

This theme encompasses the availability, awareness, and utilisation of structured smoking cessation support, including counselling, pharmacotherapy, and healthcare provider guidance. Challenges such as limited knowledge, insufficient healthcare engagement, and difficulties with cessation therapy may hinder participation in smoking cessation efforts.

### *Misconception about the cessation program*

Several participants demonstrated a misunderstanding regarding the structure and availability of smoking cessation programs. Some questioned whether educational talks alone were effective, and others associate smoking cessation solely with pharmacological treatment.

*"But can it be effective if it only involves listening to talks in the smoking cessation program?" (P1, mMRC 1, FEV<sub>1</sub> 64%)*

*"I was never aware of the Quit Smoking Clinic. I only know about the medication for quitting smoking." (P7, mMRC 2, FEV<sub>1</sub> 47%)*

### *Barriers to access and referrals*

Participants reported difficulties in accessing smoking cessation treatment, often due to a lack of guidance from healthcare providers. Some stated that no doctor had ever referred them for smoking cessation treatment, leaving them unaware of available support. Others mentioned being advised to purchase cessation medication from pharmacies without receiving further instructions or proper counseling.

*"No doctor has ever offered smoking cessation treatment to me." (P5, mMRC 1, FEV<sub>1</sub> 60%)*

*"The doctor said the medication is available in pharmacies and told me to buy and use it. I don't know or remember the name, but I recall it was some kind of gum." (P2, mMRC 2, FEV<sub>1</sub> 51%)*

A lack of knowledge about effective cessation strategies and the absence of structured support led some participants to rely solely on willpower to resist cravings, an approach that proved unsustainable. Many attempted to substitute smoking with sweets, but these alternatives were ineffective in addressing nicotine dependence, often resulting in relapse.

*"Usually, when I tried to quit, I just fought the urge. Yes, I just resisted it. If the craving became too strong, I would buy sweets instead." (P4, mMRC 1, FEV<sub>1</sub> 46%)*

**Table 2a:** Characteristics of the study participants ( $n=11$ )

| Participant | Gender | Age (years) | Age at time of COPD diagnosis (years) | Age when started smoking (years) | Marital status | Level of education | Employment status | mMRC dyspnea scale (0–4) <sup>a</sup> | FEV <sub>1</sub> (% predicted) | Pack-year | Cigarettes per day | FTND <sup>b</sup> |
|-------------|--------|-------------|---------------------------------------|----------------------------------|----------------|--------------------|-------------------|---------------------------------------|--------------------------------|-----------|--------------------|-------------------|
| P1          | Male   | 54          | 49                                    | 15                               | Married        | Secondary          | Retired           | 1                                     | 64                             | 39        | 20                 | 3                 |
| P2          | Male   | 62          | 55                                    | 15                               | Married        | Secondary          | Retired           | 2                                     | 51                             | 24        | 10                 | 1                 |
| P3          | Male   | 54          | 47                                    | 15                               | Married        | Secondary          | Employed          | 0                                     | 53                             | 20        | 10                 | 0                 |
| P4          | Male   | 57          | 54                                    | 20                               | Married        | Secondary          | Employed          | 1                                     | 46                             | 9         | 5                  | 0                 |
| P5          | Male   | 61          | 53                                    | 10                               | Married        | Secondary          | Employed          | 1                                     | 60                             | 26        | 10                 | 4                 |
| P6          | Male   | 45          | 40                                    | 13                               | Married        | Secondary          | Employed          | 1                                     | 60                             | 12        | 7                  | 4                 |
| P7          | Male   | 40          | 40                                    | 15                               | Married        | Secondary          | Employed          | 2                                     | 47                             | 13        | 10                 | 1                 |
| P8          | Male   | 66          | 66                                    | 16                               | Single         | Secondary          | Employed          | 1                                     | 51                             | 25        | 10                 | 4                 |
| P9          | Male   | 40          | 40                                    | 9                                | Married        | Secondary          | Employed          | 2                                     | 75                             | 60        | 40                 | 3                 |
| P10         | Male   | 62          | 62                                    | 13                               | Married        | Tertiary           | Employed          | 1                                     | 68                             | 12        | 5                  | 0                 |
| P11         | Male   | 67          | 56                                    | 15                               | Married        | Primary            | Retired           | 2                                     | 50                             | 13        | 5                  | 0                 |

mMRC, Modified Medical Research Council; FEV<sub>1</sub>, Forced expiratory volume in one second; FTND, Fagerström test for nicotine dependence.

<sup>a</sup>mMRC dyspnea scale refers to a measure of breathlessness in COPD to quantify the symptom burden; an mMRC of  $\geq 2$  indicates high symptoms (more breathlessness) and 0–1 indicates low symptoms (less breathlessness).

<sup>b</sup>FTND score is a measure to assess the level of physical dependence on nicotine in individuals who smoke; an FTND score of 0–2 indicates low dependence, 3–4 represents low-to-moderate dependence, 5–7 indicates moderate dependence and 8–10 signifies high dependence.

**Table 2b:** Characteristics of the study participants ( $n=11$ )

| Participant | Comorbidities  |
|-------------|--|
| P1          | Chronic hepatitis C  |
| P2          | Post dual valve replacement in 2006 (Atrial valve and mitral valve); Chronic atrial fibrillation; Gout |
| P3          | -  |
| P4          | Hepatitis B with Hepatitis C co-infection; Opioid dependence   |
| P5          | HIV positive   |
| P6          | HIV positive; Hepatitis C co-infection   |
| P7          | Hyperthyroidism  |
| P8          | Calcified granuloma; Opioid dependence   |
| P9          | -  |
| P10         | Dyslipidaemia; Post tuberculosis bronchiectasis; Plaque psoriasis                                      |
| P11         | -  |

*"What I do now, not exactly to quit, but to cut down on smoking, is eat sweets whenever I feel the urge to smoke. Any sweets will do, as long as they can sweeten my mouth." (P6, mMRC 1, FEV<sub>1</sub> 60%)*

### ***Negative experiences with cessation therapy***

Participants expressed dissatisfaction with smoking cessation therapies, particularly nicotine replacement products. Some perceived the nicotine patch and gum as ineffective or unsuitable to their personal preferences, while others experienced adverse effects, such as skin irritation from the nicotine patch, which discouraged continued use.

*"The nicotine patch was not very helpful. I was still smoking even when I was on the patch." (P3, mMRC 0, FEV<sub>1</sub> 53%)*

*"I couldn't chew it anymore. It didn't work for me. I just don't like chewing the gum." (P2, mMRC 2, FEV<sub>1</sub> 51%)*

*"I found that the patch caused skin irritation." (P9, mMRC 2, FEV<sub>1</sub> 75%)*

### **Theme 2: Requiring support while maintaining autonomy**

This theme referred to the struggle of individuals who sought control over their smoking cessation while facing challenges from insufficient support. Many attempted to quit independently; however, the lack of family encouragement, withdrawal difficulties, and misleading guidance created additional barriers.

#### ***Balancing autonomy and lack of family support***

Participants described a complex relationship with family members that often hindered rather than helped their cessation efforts. This 'lack of meaningful support' manifested in two ways: passive indifference or anticipated negative judgment. Some noted that his children never asked him to quit, leading to a perception that his efforts were unsupported. For others, the decision to hide their quitting attempt was a proactive defense mechanism against perceived intrusive or non-constructive family dynamics. Thus, the lack of support was often a pre-existing condition that forced participants to prioritise independent decision-making as a means of maintaining their role and dignity within the household.

*"Family support? I don't think it works that much. My children never asked me to quit smoking. Even if someone advises me, I'm the head of the family, so it's hard for me to accept their advice." (P1, mMRC 1,*

*FEV<sub>1</sub> 64%)*

*"I didn't even tell my wife yet. I didn't say I was going to quit. I'll tell her once I already quit. If I say it now, I'm afraid she'll mock me." (P9, mMRC 2, FEV<sub>1</sub> 75%)*

### ***Struggles with withdrawal symptoms***

Participants reported experiencing various withdrawal symptoms that significantly hindered their ability to maintain smoking cessation, including respiratory discomfort and physical distress. Difficulty breathing led some to perceive smoking as necessary for relief, while symptoms such as hypersalivation, fever, and a runny nose reinforced the discomfort of quitting.

*"It felt like I had difficulty breathing. Even though I was trying to quit smoking, the discomfort persisted, so I started smoking again." (P3, mMRC 0, FEV<sub>1</sub> 53%)*

*"When trying to quit smoking, I had excessive saliva, fever, and a runny nose." (P11, mMRC 2, FEV<sub>1</sub> 50%)*

### ***Gaps in information and guidance***

Participants reported a lack of structured, professional guidance on effective smoking cessation, often leading them to rely on informal advice or anecdotal strategies. Some participants noted that former smokers frequently attributed their success to willpower alone, which created a false sense of security for those who eventually relapsed. Furthermore, participants received unverified suggestions from their social circles, such as substituting cigarettes with sweets or using vaping as a cessation tool. They were left to navigate these suggestions without professional medical oversight or local clinical validation.

*"When I asked those who had already quit, they would say, 'I just stopped when I didn't feel like smoking anymore.' However, they eventually started smoking again." (P1, mMRC 1, FEV<sub>1</sub> 64%)*

*"They told me that to quit smoking, I should try vaping." (P2, mMRC 2, FEV<sub>1</sub> 51%)*

### **Theme 3: Motivational factors**

This theme described the complex interplay of personal and external factors influencing the participants' decisions and ability to quit smoking. Various circumstances shaped the balance between intrinsic motivation and external influences throughout the participants' smoking cessation journey.

### ***Difficulty stopping a lifelong habit***

Participants started smoking at an early age, some as young as 9 years old. Most of them associated smoking with pleasure, often linked to specific routines, such as after meals and upon waking. This positive experience became deeply ingrained in their lives, making the decision to quit smoking particularly challenging.

*“I’m trying to resist the addiction, but I can’t hold back. Especially after eating rice.”* (P1, mMRC 1, FEV<sub>1</sub> 64%)

*“In the morning when I wake up, my hands feel like they need to hold something.”* (P10, mMRC 1, FEV<sub>1</sub> 68%)

### ***Health-driven motivation***

Participants’ motivation to quit smoking was also influenced by their perceived health status. Many continued smoking because they did not experience immediate or noticeable health deterioration. The decision to quit was often prompted only when physical symptoms became apparent or when healthcare professionals explicitly advised them to stop smoking.

*“One of the reasons I still smoked was because I felt like I wasn’t sick. But when I started feeling more tired, the doctor advised me to quit, and that’s when I realised it made sense to stop. Otherwise, the fatigue might get worse. After that, I tried to quit.”* (P8, mMRC 1, FEV<sub>1</sub> 51%)

### ***Lack of readiness to quit smoking***

The participants cited life events as reasons for their lack of readiness to quit smoking. Family-related stress intensified their dependence on smoking as a coping strategy.

*“I started smoking again. I was dealing with family problems... my children. I became really ‘down’. My youngest child was sick, and it affected me a lot. Within six to seven months, I spent nearly RM15,000 on her medical treatment. I was under so much stress that I was almost admitted to the psychiatry ward.”* (P6, mMRC 1, FEV<sub>1</sub> 60%)

Participants’ motivation to quit smoking was also undermined by observing others, including close family members’ attempts and failures to quit. They might feel that if others could not successfully quit, their own attempts would also likely fail.

*“I’ve seen many who quit smoking, perhaps some have successfully stopped for good. Like my brother-in-law, who quit for nearly a year but then started smoking again. That’s why I feel it’s hard for smokers to quit.”*

(P1, mMRC 1, FEV<sub>1</sub> 64%)

Many participants struggled to allocate time for smoking cessation programs, citing competing responsibilities.

*“But for now, I have to postpone going to the smoking cessation clinic. I’ll try using my methods first because I’m busy with work.”* (P6, mMRC 1, FEV<sub>1</sub> 60%)

## **Discussion**

The present study found that Malaysian COPD patients face a double burden i.e., the physiological addiction to nicotine and the cultural burden of forced autonomy caused by dysfunctional social support. Three primary thematic pillars were identified; the complexities of engagement with assisted cessation programs, the delicate tension between patient autonomy and social support, and the unstable nature of motivation.

Our findings provide a qualitative depth to the cross-sectional data reported by Karadogan et al. (2018), which indicated that COPD patients with better exercise capacity and lower disease stages are more likely to continue smoking. The participants in this study exhibited FEV<sub>1</sub> values ranging from 46% to 75% of predicted, placing the majority in the GOLD 2 (Moderate) category. Interestingly, despite this objective lung function impairment, their subjective symptom burden remained relatively low, with mMRC dyspnea scores primarily between 1 and 2. This clinical profile, where the patient is physiologically impaired but not yet severely symptomatic in daily life creates a unique complacency window. Unlike the general population, these COPD patients may rationalise continued smoking because they have not yet reached the ultimatum stage of constant breathlessness (mMRC 3–4). By linking our themes to these specific FEV<sub>1</sub> and mMRC markers, we demonstrate that cessation barriers in COPD are highly dependent on the intersection of objective disease severity and the patient’s subjective threshold for physical discomfort.

Despite the availability of mQuit program, engagement by COPD patients remains low, which may indicate systemic limitations in service integration. In developed healthcare systems, such as the United Kingdom, smoking cessation is often incentivised and integrated into structured frameworks such as the Quality and Outcomes Framework (QOF), with referrals often automated or formally embedded within routine care pathways

(Van Eerd et al., 2017). In contrast, despite the existence of the mQuit program, the present study identified a clear gap in referral practices (Ismail et al., 2023). Participants described an absence of linkage between respiratory clinics and mQuit program, with some being advised to purchase NRTs independently, without structured referral, prescription, or counselling support. The data reveals a critical failure in the 'Assist' and 'Arrange' steps of the 5As model. These findings highlight the vulnerability of fragmented, siloed healthcare systems, particularly in resource-constrained settings. Importantly, the findings suggest that limited engagement with cessation services may reflect provider-level barriers rather than patient non-compliance. This observation carries important policy implications, indicating that the availability of a national cessation program may be insufficient if referral pathways are poorly integrated or remain inaccessible from the patient's perspective.

Another key finding of the study is the theme: "Requiring support while maintaining autonomy". In Western settings, such as the Swedish cohort in Eklund et al. (2012), autonomy is asserted to avoid being patronised by healthcare providers or family members. It is an expression of the individual asserting rights against the collective. In contrast, the Malaysian participants in the current study described family support as "nagging", "ineffective", or "intrusive". In a culture deeply rooted in collectivism and filial piety, family involvement is typically anticipated; therefore, its absence suggests potential constraints or complexities within the patient's social context (Ali et al., 2025).

In Malaysia, illness is often experienced and managed within a collective family framework. However, behaviours such as smoking, particularly when they cause a burden to the family, can invite mocking or intense scrutiny (Martin et al., 2025). The participant's statement, "I didn't even tell my wife... I'm afraid she'll mock me", may therefore be understood not as an expression of personal autonomy, but as a response to anticipated social evaluation. This shame-induced isolation cuts the patient off from the primary resource (the family) that acts as the scaffold for health behaviour in collectivist societies (Nghah et al., 2019). The findings suggest that, within the Malaysian context, collective norms may paradoxically become a barrier to care, forcing patients into a solitary struggle, a strategy that is often difficult to sustain. This nuances the global understanding of social support, showing that in certain cultural configurations, it can metastasise

into "social policing", driving the behaviour underground.

Previous studies on smoking cessation behaviours have similarly identified a lack of readiness as a key barrier to quitting (Chean et al., 2019). However, the present study extends this understanding by revealing a culturally specific cognitive orientation characterised by fatalistic acceptance, commonly articulated as *redha*. Research on chronic illness management in Malaysia consistently highlights the role of religious fatalism, whereby health outcomes are perceived as predestined by divine will (Saidi et al., 2018). Participants' statement indicating reliance on willpower or intentions to quit only "when the symptoms get worse" may reflect not mere procrastination, as commonly described in the Western contexts, but a form of theological resignation. When the progression of COPD is viewed as inevitable or divinely ordained, the sense of personal agency required to actively engage in cessation programs may be attenuated. The Swedish participants delayed quitting because "it is never the right time" due to life stressors (Eklund et al., 2012). In comparison, the Malaysian participants appeared to postpone quitting in anticipation of further health deterioration, reflecting a more passive orientation shaped by fatalistic beliefs. This distinction underscores a context-specific pattern of health behaviour that may be more prevalent in settings where preventive medicine is less culturally embedded than curative care (van Eerd et al., 2015).

Difficulties in engaging with the smoking cessation programs were linked to a lack of awareness and misconceptions. Prior studies have indicated that smoking is more prevalent among individuals with a lower education level (Abdulrahim & Jawad, 2018; Wang et al., 2018). These individuals may have limited opportunities to acquire knowledge about smoking, its associated health risks and the available cessation methods (Tomioka et al., 2020). A local qualitative study conducted among the general smoking population similarly identified misconceptions about smoking cessation programs and inadequate handling of withdrawal symptoms as significant barriers to quitting (Chean et al., 2019). Additionally, our participants expressed concerns regarding the safety and efficacy of treatment options. Therefore, interventions should be tailored to this population by addressing knowledge gaps, beginning with assessing and correcting relevant false beliefs during counselling sessions.

The findings regarding vaping highlight a critical tension between informal patient practices and official health guidelines. While participants encountered suggestions to use vaping as a cessation tool, this advice often conflicts with both local and certain international clinical protocols. For example, while the UK National Health Service (NHS) recommends vaping for harm reduction, the World Health Organization (WHO) maintains that there is insufficient evidence to support e-cigarettes as effective cessation aids and raises concerns regarding their safety profile (NHS, 2025; WHO, 2024a). These safety concerns are bolstered by recent longitudinal data showing that exclusive e-cigarette use is associated with a significantly higher risk of myocardial infarction and the development of new-onset respiratory conditions (Gupta et al., 2025; Shabil et al., 2025). In Malaysia, the Ministry of Health (MOH) aligns more closely with the WHO's cautious position, focusing instead on pharmacological and psychological interventions through the mQuit program (MOH, 2021). This caution is supported by emerging toxicological evidence showing that modern disposable devices often release hazardous levels of heavy metals, such as lead and nickel, during aerosolization (Salazar et al., 2025). For a COPD patient, navigating these global disparities without professional guidance can lead to the gaps in information identified in this study, where patients may adopt unverified strategies that are not clinically validated in their local setting.

### Study limitations

While this study offers an in-depth exploration of the phenomenon, several methodological limitations must be acknowledged. First, the use of a phenomenological design prioritizes the depth of lived experience over statistical breadth; therefore, the findings are not intended to be generalised to the wider population, but rather to offer potential transferability to similar contexts. Although phenomenology is traditionally reserved for under-researched topics, we employed it here to uncover nuanced, subjective dimensions of the topic that existing literature has yet to fully capture. To address the inherent subjectivity of this approach and ensure trustworthiness, we utilised specific rigor techniques, including thick description and the maintenance of an audit trail to ensure transparency in theme development. Furthermore, we employed reflexive bracketing to mitigate researcher bias, ensuring that the interpretations remained grounded in the participants' voices rather than preconceived

theoretical frameworks. These measures were taken to overcome the limits of a small sample size and to provide a credible foundation for the study's conclusions.

Additionally, as the sample consisted entirely of male participants, the findings reflect a gender-specific perspective of the quitting struggle; however, we addressed this by providing thick descriptions of the clinical setting and participant demographics to help readers assess the findings' applicability to other populations. Also, the interviews were conducted at a healthcare centre during participants' clinic follow-ups, which might have caused some discomfort. However, all participants were offered the option to schedule interviews on alternative dates, but none chose to do so. Also, emotional discomfort during interviews was used to uncover the essence of the quitting struggle, rather than being a limitation.

### Conclusion

Smoking cessation among Malaysian COPD patients is hindered by a complex interplay of systemic referral gaps, misconceptions regarding therapy, and a cultural tension between personal autonomy and social support. This study identifies a unique complacency window where patients with objective lung function decline fail to perceive a quitting urgency due to their relatively low daily symptom burden. Furthermore, the findings highlight that cultural factors, specifically fatalistic resignation (*redha*) and fear of social mockery, paradoxically force patients into a solitary, unsustainable struggle that drives smoking behaviour underground. These results suggest that current cessation efforts may be ineffective if they do not align with the patient's specific disease stage and sociocultural context. Future strategies must move beyond generic advice and focus on bridging these clinical and cultural gaps by providing autonomy-sensitive guidance and specific support for managing COPD-related withdrawal symptoms.

### Authors contributions

Conceptualization, L.N.H.M.K., S.G. and A.S.; methodology, L.N.H.M.K. and S.G.; software, L.N.H.M.K.; data collection and analysis, L.N.H.M.K., W.A.W.Z., M.F.S., M.M., S.G.; writing—original draft preparation, L.N.H.M.K.; writing—review and editing, M.M., S.G., and A.S. All authors have read and agreed to the published version of the manuscript.

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## Ethical approval statement

The study was approved by the Medical Review and Ethics Committee of the Ministry of Health Malaysia (NMRR ID-22-01429-2ET (IIR)).

## Informed consent statement

Informed consent was obtained from all subjects involved in the study.

## Conflict of interest

The authors declare that they have no conflicts of interest.

## Declaration of generative AI and AI-assisted technologies in the writing process

The authors declare that GPT-4o was used to enhance readability and language, particularly in the discussion section. After using the tool, they reviewed and edited the publication content as needed.

## References

- Abdulrahim, S., & Jawad, M. (2018). Socioeconomic differences in smoking in Jordan, Lebanon, Syria, and Palestine: A cross-sectional analysis of national surveys. *PLOS ONE*, *13*(1), e0189829. <https://doi.org/10.1371/JOURNAL.PONE.0189829>
- Adeloye, D., Song, P., Zhu, Y., Campbell, H., Sheikh, A., & Rudan, I. (2022). Global, regional, and national prevalence of, and risk factors for, chronic obstructive pulmonary disease (COPD) in 2019: a systematic review and modelling analysis. *The Lancet Respiratory Medicine*, *10*(5), 447–458. [https://doi.org/10.1016/S2213-2600\(21\)00511-7](https://doi.org/10.1016/S2213-2600(21)00511-7)
- Ahmed, S. K. (2024). The pillars of trustworthiness in qualitative research. *Journal of Medicine, Surgery, and Public Health*, *2*, 1–4. <https://doi.org/10.1016/J.GLMEDI.2024.100051>
- Alhazmi, A. A., & Kaufmann, A. (2022).

Phenomenological Qualitative Methods Applied to the Analysis of Cross-Cultural Experience in Novel Educational Social Contexts. *Frontiers in Psychology*, *13*(April). <https://doi.org/10.3389/fpsyg.2022.785134>

- Ali, L., Jones, L., Mei, E. O. Z., Ezamuddeen, M. B. N., Nantha, Y. S., & Occhipinti, S. (2025). Lung cancer through patients' lived experiences: A sociocultural perspective. *British Journal of Health Psychology*, *30*(4), e70030. <https://doi.org/10.1111/BJHP.70030>;ISSUE:ISSUE:DOI
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, *3*(2), 77–101. <https://doi.org/10.1191/1478088706qp0630a>
- Chean, K. Y., Goh, L. G., Liew, K. W., Tan, C. C., Choi, X. L., Tan, K. C., & Ooi, S. T. (2019). Barriers to smoking cessation: A qualitative study from the perspective of primary care in Malaysia. *BMJ Open*, *9*(7), 1–8. <https://doi.org/10.1136/bmjopen-2018-025491>
- Creswell, J. (2018). *Qualitative methods: validity and reliability*. In: *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. SAGE Publications Inc.
- Eklund, B. M., Nilsson, S., Hedman, L., & Lindberg, I. (2012). Why do smokers diagnosed with COPD not quit smoking? - A qualitative study. *Tobacco Induced Diseases*, *10*(1), 1–7. <https://doi.org/10.1186/1617-9625-10-17>/TABLES/2
- Fang, L., Gao, P., Bao, H., Tang, X., Wang, B., Feng, Y., Cong, S., Juan, J., Fan, J., Lu, K., Wang, N., Hu, Y., & Wang, L. (2018). Chronic obstructive pulmonary disease in China: a nationwide prevalence study. *The Lancet Respiratory Medicine*, *6*(6), 421–430. [https://doi.org/10.1016/S2213-2600\(18\)30103-6](https://doi.org/10.1016/S2213-2600(18)30103-6)
- Fischer, J., & Nisa, E. F. (2025). Emerging middles: Class, development and the halal economy in Indonesia and Malaysia. *Research in Globalization*, *10*, 100276. <https://doi.org/10.1016/J.RESGLO.2025.100276>
- GOLD. (2024). *Global Strategy for the Diagnosis, Management, and Prevention of Chronic Obstructive Pulmonary Disease: 2024 Report*.

[https://doi.org/10.1016/S2213-2600\(23\)00461-7](https://doi.org/10.1016/S2213-2600(23)00461-7)

- Gupta, R., Singh, P. K., Rout, S., Mariano, L. C., Yadav, C. P., & Singh, S. (2025). Are electronic cigarettes associated with the risk of myocardial infarction and stroke? A systematic review and meta-analysis. *BMC Public Health*. <https://doi.org/10.1186/S12889-025-25161-2>
- Hennink, M., & Kaiser, B. N. (2022). Sample sizes for saturation in qualitative research: A systematic review of empirical tests. *Social Science & Medicine*, 292. <https://doi.org/10.1016/J.SOCSCIMED.2021.114523>
- Huimin, T., Zheng, T., Jingchun, H., Dajun, L., Zhijun, Z., Yuan, L., Nan, Z., & Lan, W. (2024). A Scoping Review of Factors Influencing Smoking Cessation in Patients with Chronic Obstructive Pulmonary Disease. *COPD: Journal of Chronic Obstructive Pulmonary Disease*, 21(1), 2390988. <https://doi.org/10.1080/15412555.2024.2390988>
- Ismail, Fathulzhafran, M., Hanan, M., Pillai, A. B., & Mohd, H. (2023). Factors associated with failure to quit smoking among smoking cessation clinic attendees in Malaysia. *Malaysian Journal of Public Health Medicine*, 23(1), 1–10. <https://doi.org/https://doi.org/10.37268/mjphm/vol.23/no.1/art.844>
- Jiménez-Ruiz, C. A., Andreas, S., Lewis, K. E., Tonnesen, P., Van Schayck, C. P., Hajek, P., Tonstad, S., Dautzenberg, B., Fletcher, M., Masefield, S., Powell, P., Hering, T., Nardini, S., Tonia, T., & Gratziou, C. (2015). Statement on smoking cessation in COPD and other pulmonary diseases and in smokers with comorbidities who find it difficult to quit. *European Respiratory Journal*, 46(1), 61–79. <https://doi.org/10.1183/09031936.00092614>
- Karadogan, D., Onal, O., Sahin, D. S., & Kanbay, Y. (2018). Factors associated with current smoking in COPD patients: A cross-sectional study from the Eastern Black Sea region of Turkey. *Tobacco Induced Diseases*, 16(May), 22. <https://doi.org/10.18332/TID/90665>
- Martin, F., Kalisa, J., Isingizwe, B. B., Gashugi, Y., Cheonga, F., Ishimwe, E., Uwizeye, P., Wicker, S., Ong, S. Y., Gishoma, D., & Sezibera, V. (2025). Culturally and structurally embedded pathways to youth self-harm in Rwanda: perspectives from young people, parents, and healthcare providers. *BMC Psychology*, 13, 1394. <https://doi.org/10.1186/S40359-025-03676-Y>
- May, S. M., & Li, J. T. C. (2015). Burden of chronic obstructive pulmonary disease: Healthcare costs and beyond. *Allergy and Asthma Proceedings*, 36(1), 4. <https://doi.org/10.2500/AAP.2015.36.3812>
- Md Khairi, L. N. H., Abd Wahab, M. S., Ibrahim, N., Razali, N. M., & Zulkifli, N. W. (2023). Prescribing of inhaled corticosteroids-containing and non-inhaled corticosteroids therapy in patients with chronic obstructive pulmonary disease at a Malaysian tertiary care center. *Journal of Applied Pharmaceutical Science*, 13(02), 69–77. <https://doi.org/10.7324/japs.2023.130208>
- MOH. (2021). National Strategic Plan for the Control of Tobacco & Smoking Products 2021-2030. In *Ministry of Health Malaysia (MOH)*. <https://www.moh.gov.my/moh/resources/Penerbitan/Rujukan/NCD/NationalStrategicPlan/NCDTembakau20212030.pdf>
- Ngah, A. C., Yusof, Y., Zainudin, T. N. A. T., Mohamed, M. A. S., & Ramlan, W. N. F. (2019). Patient autonomy in medical treatment: the Malaysian perspective. *Droit, Santé et Société*, 3(3), 16–24. <https://doi.org/10.3917/DSSO.064.0016>
- NHS. (2025). *Vaping to quit smoking*. <https://www.nhs.uk/better-health/quit-smoking/ready-to-quit-smoking/vaping-to-quit-smoking/>
- Saidi, S., Milnes, L. J., & Griffiths, J. (2018). Fatalism, faith and fear: A case study of self-care practice among adults with Type 2 diabetes in urban Malaysia. *Journal of Clinical Nursing*, 27(19–20), 3758–3767. <https://doi.org/10.1111/JOCN.14559>
- Salazar, M. R., Saini, L., Nguyen, T. B., Pinkerton, K. E., Madl, A. K., Cole, A. M., & Poulin, B. A. (2025). Elevated Toxic Element Emissions from Popular Disposable E-Cigarettes: Sources, Life Cycle, and Health Risks. *ACS Central Science*, 11(8), 1345–1354. <https://doi.org/10.1021/ACSCENTSCI.5C00641>
- Shabil, M., Malvi, A., Khatib, M. N., Ganesan, S.,

- Kaur, M., Srivastava, M., Prasad, G. V. S., Rajput, P., Mohan, B., Jena, D., Bushi, G., Sah, S., Satapathy, P., Samal, S. K., & Mawejje, E. (2025). Association of electronic cigarette use and risk of COPD: a systematic review and meta-analysis. *NPJ Primary Care Respiratory Medicine*, 35(1), 31. <https://doi.org/10.1038/S41533-025-00438-6>
- Sigurgeirsdottir, J., Halldorsdottir, S., Arnardottir, R. H., Gudmundsson, G., & Bjornsson, E. H. (2020). Frustrated Caring: Family Members' Experience of Motivating COPD Patients Towards Self-Management. *International Journal of Chronic Obstructive Pulmonary Disease*, 15, 2953. <https://doi.org/10.2147/COPD.S273903>
- Soriano, J. B., Inmaculada Alfageme, Marc Miravittles, Pilar de Lucas, Juan José Soler-Cataluña, Francisco García-Río, Ciro Casanova, José Miguel Rodríguez González-Moro, Borja G. Cosío, Guadalupe Sánchez, & Julio Ancochea. (2021). Prevalence and Determinants of COPD in Spain: EPISCAN II. *Archivos de Bronconeumología*, 57(1), 61–69. [10.1016/j.arbres.2020.07.024](https://doi.org/10.1016/j.arbres.2020.07.024)
- Tomioka, K., Kurumatani, N., & Saeki, K. (2020). The Association Between Education and Smoking Prevalence, Independent of Occupation: A Nationally Representative Survey in Japan. *Journal of Epidemiology*, 30(3), 136. <https://doi.org/10.2188/JEA.JE20180195>
- Van Eerd, E. A. M., Risør, M. B., Spigt, M., Godycki-Cwirko, M., Andreeva, E., Francis, N., Wollny, A., Melbye, H., Van Schayck, O., & Kotz, D. (2017). Why do physicians lack engagement with smoking cessation treatment in their COPD patients? A multinational qualitative study. *NPJ Primary Care Respiratory Medicine*, 27(1). <https://doi.org/10.1038/S41533-017-0038-6>
- van Eerd, E. A. M., Risør, M. B., Van Rossem, C. R., Van Schayck, O. C. P., & Kotz, D. (2015). Experiences of tobacco smoking and quitting in smokers with and without chronic obstructive pulmonary disease—a qualitative analysis. Knowledge, attitudes, behaviors, education, and communication. *BMC Family Practice*, 16(1), 1–8. <https://doi.org/10.1186/s12875-015-0382-y>
- van Eerd, E. A. M., van der Meer, R. M., van Schayck, O. C. P., & Kotz, D. (2016). Smoking cessation for people with chronic obstructive pulmonary disease. *Cochrane Database of Systematic Reviews*, 2016(8). <https://doi.org/10.1002/14651858.CD010744.pub2>
- Wang, Q., Shen, J. J., Sotero, M., Li, C. A., & Hou, Z. (2018). Income, occupation and education: Are they related to smoking behaviors in China? *PLOS ONE*, 13(2), e0192571. <https://doi.org/10.1371/JOURNAL.PONE.0192571>
- WHO. (2024a, January 19). *Tobacco: E-cigarettes*. <https://www.who.int/news-room/questions-and-answers/item/tobacco-e-cigarettes>
- WHO. (2024b, November 6). *Chronic obstructive pulmonary disease (COPD)*. [https://www.who.int/news-room/factsheets/detail/chronic-obstructive-pulmonary-disease-\(copd\)](https://www.who.int/news-room/factsheets/detail/chronic-obstructive-pulmonary-disease-(copd))
- Wilson, J. S., Elborn, J. S., & Fitzsimons, D. (2011). “It’s not worth stopping now”: Why do smokers with chronic obstructive pulmonary disease continue to smoke? A qualitative study. *Journal of Clinical Nursing*, 20(5–6), 819–827. <https://doi.org/10.1111/j.1365-2702.2010.03319.x>
- Wu, J., Meng, W., Ma, Y., Zhao, Z., Xiong, R., Wang, J., Zhao, R., Zeng, H., & Chen, Y. (2024). Early smoking lead to worse prognosis of COPD patients: a real world study. *Respiratory Research*, 25(1), 140. <https://doi.org/10.1186/S12931-024-02760-Y>
- Zamzuri, M. A. I. A., Kamarudin, S. A. A., Ariffin, A. H., Ibrahim, A. A., Othman, M. H., Johari, A., Ali, N. K. M., Jetly, K., Abd Rashid, M. F., Hassan, M. R., Ming, S. S., & Pang, N. T. P. (2021). Rate of smoking cessation and factors associated with successful quit smoking in Seremban District of Malaysia. *Clinical Epidemiology and Global Health*, 12, 100862. <https://doi.org/10.1016/j.cegh.2021.100862>