

ASTHMA AND SMOKING

Asthma and smoking – healthcare needs and preferences of adults with asthma who smokeMaya Saba, PharmD, PhD candidate¹, Emil Dan, BPharm², Renee Bittoun, PhD³, and Bandana Saini, PhD¹¹Faculty of Pharmacy, The University of Sydney, Sydney, NSW, Australia, ²Faculty of Pharmacy Alumni, The University of Sydney, Sydney, NSW, Australia and ³Brain and Mind Research Institute, The University of Sydney, Sydney, NSW, Australia**Abstract**

Objective: People with asthma smoke at least as much as, if not more than, people without asthma. The aim of this study was to explore the unique healthcare needs and preferences of smokers with asthma, in terms of smoking topography and initiation, perceived interplay between asthma and smoking, motivation and readiness to quit, and proposed smoking cessation techniques. **Methods:** Qualitative, semi-structured, in-depth telephone interviews with adult smokers who have concurrent asthma were conducted. Participants were recruited through flyers displayed at community pharmacies, general practice surgeries, university campuses, and respiratory clinics of tertiary hospitals and through an advertisement on the “Asthma Foundation” website. Recorded interviews were transcribed verbatim and analysed using NVivo®10 software (QSR International, Melbourne, Victoria, Australia). Obtained data were content-analysed for emergent themes using the ‘framework approach’. **Results:** Twenty-four semi-structured interviews were conducted. Most participants believed that smoking often worsens their asthma and increases the frequency and severity of their symptoms. Fear of asthma-related exacerbations and poor self-control appeared to be the major triggers for quitting smoking. Most patients reported being motivated to quit smoking; however, in many cases, determination and strong will power need to be coupled with public, social, professional, and therapeutic support to achieve and maintain success. **Conclusions:** Given the unique needs of people with asthma who smoke, it is imperative that evidence-based smoking cessation programs be designed and tailored to assist them in effectively quitting smoking.

Keywords

Asthma, dependence, healthcare professional, needs, preferences, smoking, smoking cessation

History

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Introduction

The effect of tobacco smoking on respiratory health continues to be a major concern [1]. Smoking represents the single most preventable risk factor for chronic respiratory diseases [2]. Despite the known adverse effects, smoking is quite common among people with respiratory conditions. For instance, people with asthma smoke at least as much as, if not more than, people without asthma [3]. In Australia, a country with a high asthma burden, latest data from the 2007 to 2008 National Health Survey indicated that the prevalence of smoking at least once a week in people aged 18 years and over was 22.9% among those with current asthma and 20.4% among those without asthma [3]. The situation seems to be the same globally, where it is estimated that, in most developed countries, around 25% of adults with asthma are current cigarette smokers [4].

The complex interplay between asthma and smoking remains unclear. It is well known that smoking or exposure

to tobacco smoke places an individual at a significantly increased risk of developing asthma [5]. Interestingly, a few studies suggest the reverse, i.e. having an asthma diagnosis places one at a higher risk of taking up smoking [6,7]. In other words, while smoking is a key risk factor for asthma onset, asthma may be a contributory factor for future smoking in some instances. These findings, thus, indicate a bidirectional association between asthma-smoking co-occurrence [5]. Additionally, the combination of smoking and asthma is known to substantiate altered pathogenic mechanisms [8]. It appears to be associated with increased bronchial hyper-responsiveness, elevated inflammatory cell phenotypes, and greater small airway remodelling, which, in turn, lead to increased airflow obstruction and accelerated decline in lung function [9]. The latter are manifested as more frequent asthma attacks and exacerbations, more severe asthma symptoms, decreased levels of asthma control, and higher mortality and morbidity rates reported among smokers with asthma [5]. From an asthma management viewpoint, smoking also results in impaired response to corticosteroid therapy, a mainstay treatment for asthma patients [10].

People with asthma who smoke represent a distinct disease entity [11]. They may have different risk factors for smoking

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initiation, as well as different smoking patterns, motives, and outcome expectancies [5]. For example, one of the reasons that such patients continue to smoke may be the acute bronchodilatory effect caused partially by the binding of nicotine to nicotinic receptors within the airways, following the acute intake of cigarettes [12]. Similarly, acute hormonal changes after smoking, such as cortisol release through the activation of the hypothalamic–pituitary–adrenal (HPA) axis, can cause a sensation of bronchodilation [13]. These effects may falsely delude asthma patients into feeling that smoking does not affect them. Another noteworthy finding suggests that smokers with asthma may have lower perception of airway obstruction, and thus may be under-perceiving the severity of their symptoms and smoking more [14].

Research on smoking in asthma has been geared for decades towards the physiological effects rather than exploring issues that affect smoking initiation, maintenance, or cessation from the perspective of those with asthma who smoke. Although evidence suggests that smoking cessation can significantly improve asthma symptoms and lung function [15], current smoking cessation research does not specifically address the ‘niche’ requirements of smokers who have concurrent asthma. With the scarcity of research in this field and the established epidemiological and physiological evidence of the interaction between asthma and smoking, an in-depth understanding of the smoking behaviours of this population is crucial. Accordingly, the aim of this study was to explore the healthcare needs, perceptions, and preferences of people with asthma who smoke, in terms of their asthma and smoking history and topography, perception of how smoking affects their asthma, motivation to continue or quit smoking, readiness to quit, smoking cessation technique preferences, and opinions about possible roles of healthcare professionals in providing smoking cessation services. Shedding light on the needs of this ‘special’ population could generate and disseminate targeted consumer-centric information and assist healthcare professionals in facilitating smoking cessation interventions for asthma patients.

Methods

Qualitative inductive approaches are gaining increased recognition in exploratory respiratory medicine research [16–20]. Given the anticipated uniqueness of the individual needs and preferences of smokers with asthma, in-depth, semi-structured interviews were employed in this study.

Participant recruitment

Participants were purposively recruited through flyers displayed at community pharmacies, general practice surgeries, university campuses, and respiratory clinics of tertiary hospitals located within Sydney Central Business District and South-Western suburbs in New South Wales, Australia. The geographical area was selected based on the convenience sampling. Recruitment was also sought via the display of the project flyer on the ‘Asthma Australia’ website. The flyers highlighted the overall aim of the study, participants’ eligibility criteria and contact details of the research team. Participants, who were at least 18 years of age, English speaking, current smokers and have a medical diagnosis of

asthma or any other medical condition alongside asthma, were eligible to take part in the study. Interested candidates were required to contact the research team to schedule a suitable interview time. A consent form and confidentiality agreement was sought from each participant prior to the interview, and participants were reimbursed with a \$50 gift voucher after the interview for their time and contribution to the research. Recruitment was carried on until data saturation was obtained, i.e. until the conducted interviews yielded no new thematic categories related to the participants’ smoking cessation needs and preferences [21]. The study was approved by the Human Research Ethics Committee at the University of Sydney (protocol number 2012/2845).

Interviews

All in-depth, semi-structured interviews were conducted by the first author over the phone. This method of conducting the interviews provided participants with a degree of anonymity, especially as it is well known that patients who smoke are less willing to engage with health professionals in discussions about their smoking status [22,23]. Key anticipated topics were explored using a semi-structured interview guide. A number of possible prompts were also included in the interview guide to assist in questing more detailed information from participants. Figure 1 illustrates the key areas explored within the interview guide. The interview was strategically structured to first probe straightforward general smoking- and asthma-related questions, before proceeding to more specific questions related to asthma-smoking interplay and individual healthcare needs and preferences. Asthma status questions that covered current symptoms and level of control were adapted from the Asthma Control Questionnaire [24], and smoking pattern-related questions were based on the Fagerström Test for Nicotine Dependence [25]. The interview guide was developed in consultation with experienced respiratory clinicians and researchers. All interviews were digitally recorded using Olin® OVR100 digital stereo voice recorder (Westwell Australia Pty Ltd, Haymarket, Sydney, NSW, Australia) and then transcribed verbatim, by an independent professional transcriber, for analysis.

Data analysis

Transcribed data were systematically coded and analysed using NVivo®10 software (QSR International, Melbourne, Victoria, Australia). Thematic content analysis was conducted in line with the ‘framework approach’ that is commonly used for the management and analysis of qualitative data in health research [26]. The framework approach involves ‘familiarisation’ of the emerging themes, ‘identifying a thematic framework’, ‘indexing’, ‘charting’, and ‘mapping and interpretation’ of the dataset to find associations and conceptualise themes [27]. Validation of themes was established through comparison of randomly selected interviews by two independent researchers. Every participant was assigned a code, consisting of the letter ‘P’ followed by a number. Where participant quotes have been included in the results to illustrate theme content, this code is assigned between parentheses to indicate the participant from which the quote was extracted.

Figure 1. Semi-structured interview guide.

GENERAL DEMOGRAPHICS Gender, age, occupation, postcode, smoking household members, health-related conditions
ASTHMA STATUS Age at diagnosis, triggers, current asthma symptoms, overall asthma control status and quality of life, asthma medications, adherence to therapy
SMOKING STATUS Duration of smoking, number of cigarettes smoked per day, reasons for taking up smoking, daily smoking patterns, triggers, previous quit attempts, previous smoking cessation product use, previous smoking cessation counselling/support from healthcare professionals, overall quitting experience if any
ASTHMA/SMOKING RELATIONSHIP Effects of smoking on personal asthma status, perceived health detriments of ongoing smoking on lung function and general health
SMOKING CESSATION PREFERENCES Perceived factors contributing to considering quitting smoking, extent/type of healthcare professional involvement, possible pharmacotherapies vs. cold turkey technique preferences, perceived resources/models of care that could be helpful for smokers with asthma

Results

Twenty-five potential participants responded to the call for volunteers and were screened for inclusion criteria. One volunteer though, failed to meet the age criteria and could not be enrolled in the study. Accordingly, 24 semi-structured telephone interviews were conducted between June 2013 and March 2014. The duration of the interviews ranged between 30 and 45 min, depending on the issues raised by the participants. Table 1 summarises the general demographic characteristics of the participants. The majority of participants (~80%) reported being diagnosed with asthma during early childhood. Many reported having other associated atopic conditions such as hay fever, eczema, and allergic rhinitis. Most participants indicated taking up smoking during adolescence secondary to social/peer pressure or being influenced by other smoking family members. Twenty-one participants (87.5%) reported having attempted to quit smoking unsuccessfully. Fifteen participants (62.5%) reported that a healthcare professional advised them to quit or recommended a smoking cessation product at some stage, but none received life-style advice, counselling on the use/side effects of the suggested product(s), follow-up, or ongoing monitoring. Eleven participants (46%) described using nicotine replacement therapy, mainly gums and patches, and two (8%) reported trying varenicline and bupropion tablets. Additionally, three participants (12.5%) mentioned using electronic cigarettes to quit smoking. The major reported reasons for failure to quit included the intolerable side effects and costs of the available smoking cessation

Table 1. General demographic characteristics of participants.

Participant characteristics	Proportions (N = 24)
Gender	
Females	12
Males	12
Age	
18–34 years	19
35–54 years	4
55 years and over	1
Other smoking household members	
Yes	14
No	10
Other medical conditions (besides asthma)	
Yes	13
No	11
Asthma control level	
Poorly controlled	5
Average control	9
Well controlled	10
Daily cigarettes smoked	
<10 cigarettes	13
10–20 cigarettes	6
>20 cigarettes	5
Previous quit attempts	
Yes	21
No	3

products, the encountered ‘temptations’, and the inevitable ‘cravings’ for cigarettes, especially when around other smokers.

Content analysis of the interview scripts revealed five main themes summarised in Table 2 and described below.

Table 2. Emergent themes.

Theme
Perception of how smoking affects asthma
Readiness and motivation to quit smoking
Smoking cessation technique preferences
Perceived roles of healthcare professionals in smoking cessation
Avenues/resources needed to support smokers with asthma

Perception of how smoking affects asthma

Most participants (66.7%) believed that smoking often exacerbated their asthma and increased the frequency and severity of their symptoms.

“Smoking makes it worse. I stay breathless. It makes me cough. I know I will die earlier and my lungs will collapse”. (P1)

“Usually during the night, I can find myself waking up coughing, even wheezing, with the wheezing chest. I’d probably say that’s from the smoking mixed with the asthma, which is not a good combination...My asthma will never be fully controlled, not as long as I am smoking”. (P9)

“With my asthma, smoking is making it harder to breathe, and I can really feel the tightness in my lungs”. (P10)

“Some days I can feel like my lungs can’t take smoking. They feel really tired, and I can’t work out that much. I can’t walk. I can’t overdue myself as much as I would want to. I don’t have that much energy, and I get really tired. It’s all from the smoking because, with the asthma and the smoking, I lose my breath. I have really short breath”. (P14)

Few participants reported no relationship between smoking and their level of asthma control. They contributed that to having well-controlled asthma, smoking few (<5) cigarettes per day or smoking ‘light’ cigarette brands.

“I do not think it does affect my asthma because when I did quit smoking before, I didn’t notice that I was having asthma attacks less often. Even when I do smoke, it’s not that often that I have asthma attacks anyway, so it’s not that different”. (P13)

“I wouldn’t say there is effect on me because I don’t think I smoke that much that it actually affects my activities”. (P16)

“It has minimum effect I think because I smoke normal cigarettes, but if I smoke like very hard ones or something like that, I may trigger an asthma attack. I know it because I have tried it before. I have experimented with the brands and I know which one is actually lighter, so yeah I would say my cigarettes have minimal effect”. (P23)

All participants believed that smoking did not affect the efficacy of asthma medications; however, the majority reported refraining from smoking for around an hour after administering their medications.

“I try to limit my smoking after I take my inhaler”. (P7)

“The times that I use it (Ventolin®), I don’t go out to have a smoke then”. (P12)

“Yes, because I only have them (asthma medications) in the morning and at night, so I would not really have a cigarette after I take them”. (P15)

Readiness and motivation to quit smoking

Twelve participants (50%) reported being ready to quit smoking. They viewed themselves as being determined and having a strong will power to overcome the difficult task of quitting. Most of them stated that poor asthma control was the main catalytic factor in deciding to quit. Concerns about general well-being, the dangers of exposing family members to second-hand smoke, and obtaining support from beloved ones were other commonly reported motivators.

“I am concerned about my health, and my children have just had a scare with their father having a major heart attack. My youngest one, you know, she’s always like ‘Mum you need to give up, you can’t die, you can’t leave me’... I know that I am the only one that is there for my daughters and yeah I want to give up. I really do”. (P3)

“I would rather quit. I am actually ready to quit. My asthma and my kids are my biggest motivation. When you are a mum, you do not want to expose your kids to smoking”. (P11)

“I think I want to quit because me and my fiancé were speaking about quitting together. He actually wants to quit. We will do it together; it is easier. Honestly, my poor asthma control is the major reason for taking the decision”. (P14)

“My partner is pregnant, so we are expecting our first child in September. That’s the trigger, and the sooner I can give up smoking, the better my asthma would be. In my estimate, the individual must be determined to quit smoking, and I sure am”. (P21)

“To be honest I am quite a health fanatic, so I guess smoking is the only really bad thing that I do; that’s why I want to quit. It’s like my health conscience”. (P24)

Despite being aware of the consequences of smoking, the remaining participants did not indicate an interest in attempting to quit smoking. The main attributed reason is having well-controlled asthma and no/minor exacerbations. However, they all reported considering quitting if their asthma deteriorates at some stage and if they are provided with support and assistance.

“I wish I never did try a cigarette in the first place, honestly. Now that I have, I wouldn’t say it’s hard to quit; but it opened up a different experience for me. If my asthma had been as bad as it used to be in the past, then I’d have probably seriously considered quitting smoking. But now that I’ve learned to control it, now I can control my asthma and enjoy smoking. Let’s say if one day I have a crazy asthma attack and I wake up in hospital or something, I’ll probably quit smoking then”. (P12)

“If I ended up in hospital again or if something really bad happens, I will decrease and eventually quit...um, I think if my mum quits, I would quit too”. (P15)

“Well I guess if my asthma escalates to such a bad point, I would try to cut down first. If it gets worse though, then I would cut it all out”. (P16)

“I would quit if I have an asthma attack. I don’t even want to remember the experience I had with my asthma, it was really bad when I was younger, and the feeling that you get makes you feel that you are almost dying. I definitely don’t want the attack anymore, so I would quit”. (P23)

Smoking cessation technique preferences

Cold turkey vs. professional support

Majority of participants (70.8%) reported that quitting cold turkey would be the ideal method for them. They considered that strong will power and persistence are the only prerequisites to quitting successfully. Most of them, however, confirmed their willingness to seek healthcare advice and consider possible pharmacotherapies, if they fail to achieve abstinence on their own.

“I’d rather quit on my own. It’s definitely your fault. In the end, you have to really want to quit. You can’t just say you’re going to do it and just get half way. You have to understand that you have to really want it. That’s probably the biggest thing” (P2)

“I would just do it on my own cold turkey. I think most of it is in your head. You basically need to make the decision and really stick to it. My last resort would be medications because I believe that you don’t need them if you have determination”. (P7)

“I would rather quit on my own. I think you can either do it on your own or you can’t do it at all, because even if people show you, if you are going to do it, you are just going to do it. I think with quitting smoking, you need to have your will power to be able to quit because there is no chance that people could show you what to do, if you aren’t doable”. (P11)

“If I were to quit, I would probably go cold turkey. I could do it by myself. I know it would be pretty tough though...If I fail, then I may approach a doctor or pharmacist. I would be happy to try that stuff on the market, but I would rather just try on my own first”. (P16)

Seven participants preferred seeking professional support to quit smoking. They believed that quitting cold turkey is hard and could end up in failure.

“I would rather do it properly. I would just go straight to my general practitioner. I would try any medicines he suggests”. (P14)

“I cannot stop myself. I want to see someone. A doctor needs to give me something to stop. I wish to stop by myself and take nothing, but it’s very hard, very hard”. (P18)

“I would probably just go see the doctor. Doctors could set off your mind just differently. This time I am happy trying patches or gums or anything”. (P22)

Setting a quit date versus gradually cutting down

Seventeen participants (70.8%) believed that, by gradually cutting down cigarettes, they would increase their chances of

success. They viewed the quit date as unnecessary extra pressure.

“No no. Setting a quit date just adds tension and pressure”. (P1)

“I believe cutting down is definitely the way to go. Week by week you are just reducing your intake, and apparently you are not really craving nicotine as much”. (P7)

Some participants, on the other hand, viewed the quit date as a good way of attaining their goal.

“When I stop, I’ll just stop. I don’t delay it by having one less and less. No, it doesn’t work like that”. (P6)

“I think a quit date is better. I think cutting down is avoiding the truth; that is the problem that needs to be stopped”. (P9)

Perceived roles of healthcare professionals in smoking cessation

Most participants believed that healthcare professionals are capable of providing helpful smoking cessation advice, counselling, and support, which could contribute to increasing a smoker’s success in achieving and maintaining abstinence. However, their advice is of greater value, if it compliments an individual’s desire, will power and determination to quit. While healthcare professionals can play a significant role in smoking cessation, most participants reported that neither doctors nor pharmacists, nowadays, are being proactive in asking about smoking and genuinely advising smokers to quit by providing an action plan rather than just suggesting quitting.

“Counselling and support from healthcare professionals could make a difference, but the first thing is that they have to try. They do not try anything. Maybe if they are trained in smoking cessation, then they can provide better information to patients”. (P1)

“I’ve been to a lot of pharmacies and no one has ever offered me any kind of help. Well, pharmacists have to ask the question ‘Do you smoke?’, when you have asthma. I don’t know if pharmacists think that it’s too personal to ask that question because it’s not. I suppose if you’re buying a stop smoking product, they should probably mention if there are any side effects or what to expect. I think that would be helpful...Doctors have got so much to do. I don’t know if they have time to ask every patient. I don’t know. Probably if they do, then they would be great too”. (P6)

“If doctors were more, I guess, proactive with helping people, they could be really useful. I think they can recommend that you do things, like try this or try that, and educate you on how bad smoking is and how it affects your asthma and your life. What you see on TV is just images of people and it’s all doing its job properly, but what doctors can do is more personalised advice to you and your problem...Education from professionals is very important. When people get sick and go to a doctor; the doctor should ask them ‘Do you smoke?’” (P17)

“It would be good to talk to a pharmacist, ask for their opinion and get extra advice from them on how to use

products properly or what are the other steps to help you to quit smoking. Pharmacists are very important because you can see them and it's easier to talk to them. You can go to a counter and ask to speak to a pharmacist there''. (P19)

Avenues/resources needed to support smokers with asthma

All participants were enthusiastic and concerned about suggesting possible avenues to support the needs of smokers with asthma. Most participants suggested the need for increased awareness about the consequences of smoking on asthma in particular. Half of the participants suggested decreasing the prices of nicotine replacement products. Increasing the prices and the taxes on cigarettes and controlling their sales were also suggested solutions.

''I think that shops should stop selling cigarettes to kids. I think that's one of the main targets of the smoking society; the generations start very young. I started when I was very young. I was purchasing them from a corner store at the age of 14 in full school uniform. I think the government needs to really do something about it''. (P9)

''I guess we need more public awareness in terms of smoking and asthma specifically. I guess that there are a lot of general advertisements or public health announcements that most of us see, but we are not quitting''. (P13)

''We all know that there is awareness in terms of, like it does cancer, it does that... but, probably, there is no enough awareness of what it does to asthma''. (P16)

''If there are subsidies from the Government, this could probably help. Sometimes it's very expensive, the patches, the gums, and people who want to quit probably just cannot afford to do so. Sometimes cigarettes are cheaper than patches''. (P19)

''I would also like to see more education on the effects of smoking on asthma, not just the effects in general, like we have on TV and everywhere... Most people, I know, would prefer to smoke because actually that's the cheaper alternative, so if the prices of medicines were cheaper, it would be definitely a lot more effective''. (P24)

Discussion

This study represents the *first* qualitative study assessing the perceptions, preferences, and healthcare needs of adults with asthma who smoke. Although smoking is more prevalent among individuals with asthma and is linked to poor asthma control and quality of life [28], little is known about the relationship between having an asthma diagnosis and the actual smoking behaviours and patterns or perceived motivations to continue or quit smoking among this unique population. The results of this study clearly indicate that the majority of smokers with asthma, irrespective of the number of cigarettes they smoke per day, believe that smoking often worsens their asthma and increases the frequency and severity of their symptoms. Fear of asthma-related exacerbations and poor control appear to be the major triggers for quitting smoking. Most patients are motivated to quit smoking; however, in many cases, determination and

strong will power need to be coupled with public, social, professional, and therapeutic support to achieve and maintain success.

In terms of smoking initiation and history, most participants reported having had childhood asthma and taking up smoking during adolescence, i.e. after being diagnosed with asthma. Exposure to smoking from peers and family members was the major reported reason for trying cigarettes, after which most participants found it hard to stop. It was noticeable though, that most of them stated experiencing several unsuccessful quit attempts throughout their lives. These observations, when examined in light of other research, provide an important insight into the asthma and smoking phenomena. A recent quantitative study, investigating the relationship between asthma and smoking behaviours, reported that an asthma diagnosis was predictive of an earlier age of smoking onset and more frequent failed quit attempts [29]. Further, in another study assessing the effects of asthma on smoking and smoking cessation attempts in adolescent smokers, nicotine dependence was shown to develop quicker in young individuals with asthma and was correlated with an increased number of cessation attempts [30]. A possible explanation for this suggested in the literature is that individuals with asthma may utilise smoking as a maladaptive coping strategy to hide asthma-related severity and poor quality of life [31]. Subsequently, they may lack effective strategies to deal with the demands of having a chronic medical condition and, thus, may continue to smoke and later experience difficulties in quitting due to higher dependence [29]. Research also indicates a high rate of substance abuse among asthma patients [32]. This, undoubtedly, suggests an underlying psychological/behavioural association between asthma and smoking that should further be investigated in future studies. The early onset of smoking behaviour represents a challenge, as the earlier the person starts smoking the longer the exposure time becomes. Therefore, from both public health and therapeutic perspectives, these findings evidently suggest the presence of substantial 'nudging' opportunities targeted at screening and preventing young children and adolescents from taking up smoking in the first place, as well as converting current smokers into non-smokers.

Despite their active smoking behaviours, it was apparent that most participants perceived smoking as the main predictor for increased frequency and severity of asthma symptoms and poorer quality of life. This phenomenon of risking smoking, despite the known health effects, has also been observed previously. Smoking was also identified as a major contributor to decreased quality of life among asthma patients in a recent case-control study [33]. Despite this risk-taking tendency, our findings suggest some promising aspects as compared with previous findings. For instance, in an Australian study conducted in 1995 to determine the smoking-related beliefs and behaviours among adults with asthma, most patients perceived not being personally at risk from their smoking [34]. This shift in awareness could be attributed to the myriad interventions that are being implemented by health agencies, local governments, and mass media campaigns to combat smoking [35-37]. As discussed ahead, this shift in awareness may also be linked to higher

levels of motivation to quit, and, therefore, it may be suggested that health education drives to enhance such awareness should be maintained.

Another remarkable finding was the considerably high rate of reported motivation and readiness to quit among participants. In another study, examining the characteristics and predictors of readiness to quit in patients presenting with respiratory symptoms, asthma patients perceived higher risks from smoking and reported greater willingness to quit [38]. Readiness to quit smoking among adolescent regular daily smokers was also shown to be higher among asthma patients as compared with non-asthma patients [39]. Smokers with asthma were found to endorse that their primary reason for quitting was gaining greater degrees of asthma self-control [29]. This pattern was explained by drawing associations from the fact that smokers with asthma rely on smoking to adapt with life stresses and, hence, believe that quitting could help them achieve more self-control or regulation over their behaviour [29]. Personality may be a predictor in such cases, where those with more autonomy initially choose to commence smoking but are also willing or motivated to quit because of a keen desire to self-manage their condition. Future research opportunities here should point towards exploring the relationship among smoking commencement, willingness to quit, and personality types in people with asthma who smoke, especially given that similar research has provided fruitful results in other patient populations [40-42].

While a majority of participants valued the potential role of healthcare professionals in smoking cessation, it was perceptible that personalised professional support was not being provided to this population. 'Intensive' smoking cessation advice and support with 'regular and long-term follow-up' comprise the most imperative intervention and should be an integral part of every service provided for patients with a chronic lung condition [43]. For instance, in the most recent version of the Australian asthma management guidelines, smoking cessation was highlighted as key a management goal [44]. One of the goals of the European Respiratory Society Task Force on guidelines for smoking cessation in patients with respiratory diseases is to ensure that healthcare professionals act to ensure that patients with respiratory diseases quit smoking [45]. Patients with respiratory diseases are at higher risk of further damage and worsening symptoms as compared with other populations and, thus, should be encouraged to quit. Additionally, the roles of healthcare professionals, such as pharmacists and physicians, in implementing smoking cessation services have been well-established to significantly increase quit rates [46,47]. As a result, healthcare practitioners must take a proactive role and grasp the opportunity to motivate smokers with asthma to quit, provide treatment to achieve smoking cessation, irrespective of how long this might take, and deal with relapses when they occur [45]. This systematic support, when coupled with strong will power, determination, and awareness of the risk of smoking with asthma, can increase the odds of success [48]. Smoking cessation strategies though, need to be individualised and tailored to meet the needs and preferences of different smokers.

Besides their perceived lack of professional support, it was evident that most participants believed that public awareness

and the massive anti-smoking mass media campaigns are not addressing the unique needs of smokers with asthma. This suggests that national respiratory bodies and local governments may need to specifically focus on smokers with asthma, when addressing needs and proposing strategies to overcome general smoking behaviours. It may be the case that organisations, which focus on public respiratory health or asthma, delegate smoking cessation education to general helpline and education channels. However, people with asthma who smoke may be more likely to explore targeted asthma/respiratory channels of information; this is where support should be specifically offered.

It should also be noted that no major differences in overall smoking cessation perceptions, needs, and preferences were demonstrated across the age groups of participants recruited in this study. Gender did not dictate any particular smoking behaviour as well, contrary to the results of a recent article on the gender-specific associations between asthma and smoking in adolescents, which indicated that females exhibit higher tobacco dependence and require more intensive smoking cessation support [49]. Additionally, no differences existed between participants recruited from respiratory clinics and those recruited from community venues in our sample.

Finally, as with other qualitative descriptive studies, this study had a number of limitations. The aim was to gain insight into the experiences, perceptions, and healthcare needs and preferences of adult smokers with asthma. As such, we identified and reported the emerging themes of the interviewed participants who were recruited using convenience sampling, and this may have resulted in sampling bias in that smokers willing to be interviewed may have different views and may be more willing to engage with health professionals than other smokers. Despite recruiting a good sample size ($n=24$) for a qualitative study, majority of participants were under 35 years of age and reported having average to well-controlled asthma. Therefore, we cannot extrapolate whether these results relate to every asthma patient who smokes. To add, the interview questions were used to retrospectively gauge patients' experiences and needs; therefore, accuracy of information recall issues should be considered, as there may have been recall bias. Since all interviews were conducted over the phone, visual cues, such as participants' body language and facial expressions, and potential surrounding distracters, could not be accounted for. It should also be noted that other more inductive, analytical approaches, such as grounded theory, may have generated different thematic categories compared with those generated by the framework approach that we utilised for analysis.

Conclusions

Smokers with asthma characterise a unique population that should not be clustered with all other smokers. The commencement of smoking in this population is often early and in response to social pressures or as a coping mechanism for managing life with a chronic condition. Smokers with asthma are keenly aware of the need to quit smoking; however, they often find it hard to quit without support. Whilst readiness to quit and strong will power and determination are essential, it is imperative that evidence-based

smoking cessation programs be designed and tailored to assist this population in effectively quitting smoking. Consumer-centric information, which aims at increasing the general awareness about the consequences of continued smoking on asthma and clearly highlights avenues of professional support, needs to be disseminated publicly to reach various subsets of people with asthma who smoke in order to increase their chances in achieving and maintaining success and enjoying a better quality of life.

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Declaration of interest

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the paper.

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