

# A Qualitative Study to Explore the Role of Health Workers in Reducing Smokeless Tobacco Consumption in India

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## ABSTRACT

India is one of the largest smokeless tobacco consumers globally, leading to devastating health consequences. However, smokeless tobacco (SLT) still remains poorly understood. Health workers (HWs) have an essential role in curbing this rise in consumption by offering smokeless tobacco prevention advice. A better understanding of health workers knowledge and practice at offering preventative advice will help strengthen tobacco policies. This study aims to explore the role of HWs offering SLT prevention advice by identifying facilitators for and barriers against implementation of this opportunistic strategy.

Health workers were recruited through purposive sampling and sixteen participants took part in semi-structured online interviews. Data was transcribed verbatim and analysed through thematic analysis. Health workers stated that training was the greatest facilitator but also greatest barrier to providing smokeless tobacco prevention advice. They also thought that training during university was inadequate and external training sources were more beneficial to providing prevention advice.

Smokeless tobacco training of a high standard is a major facilitator and needs providing during university and post-graduation. Smokeless tobacco needs prioritisation over smoking tobacco policies in India and stakeholders need to come together to tackle this multi-factorial problem.

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## 1. Introduction

India is one of the largest consumers of smokeless tobacco (SLT) globally, with around 21.4% of the population using SLT products, resulting in approximately 290 million users ([World Health Organisation., 2017](#)). This habit causes devastating consequences including increased risk of cancers which makes India contribute to one-third of the global burden of oral cancer ([Brose et al., 2020](#)). Effective strategies are needed to reduce these health and cost burdens, as the Indian economy loses 816 Rupees for every 100 Rupees gained in tobacco taxation ([World Health Organisation, 2021](#)).

The WHO's 2017 Global Adult Tobacco Survey (GATS) in India found that 21.4% of the population used SLT compared to 10.7% of smokers. SLT is more popular in India for reasons including the greater affordability, accessibility and acceptance ([Suliankatchi et al., 2017](#)). Despite its higher consumption, SLT still remains less regulated and a less understood type of tobacco ([Sinha et al., 2018](#)). Even global agendas such as the WHO's Framework Convention for Tobacco Control (FCTC), of which India is a signatory, does not focus on SLT. In this way further research and a greater emphasis on SLT is required to tackle this epidemic.

Health workers (HWs) are essential to provide education, support, and tobacco prevention advice to patients ([Siddiqi et al., 2013](#)). Article 12 and 14 of the WHO FCTC also emphasise the importance of HWs in tobacco control, stressing the importance of providing thorough training and developing services in collaboration with HWs found that prevention advice provided by HWs increased

abstinence rates, however, according to the GATS only 43% of SLT users were given prevention advice by HWs. This is significant as only 1% of SLT users spontaneously quit (Panda et al., 2013).

This considered, a better understanding of the current SLT knowledge of HWs and current SLT prevention advice HWs deliver, will aid strengthening of strategies. Furthermore, identifying facilitators and barriers HWs face when offering preventative advice will help India strengthen their tobacco control policies. This study aims to explore the role of HWs offering SLT prevention advice by identifying facilitators for and barriers against implementation of this opportunistic strategy, including exploring HWs knowledge on SLT, evaluating whether HWs provide opportunistic SLT prevention advice, identifying facilitators for HWs providing prevention advice, identifying barriers against HWs providing prevention advice and recommendations to improve the role of HWs in reducing SLT consumption.

## 2. Methods

Based on the study aim and objectives, qualitative research design was chosen to further explore and understand more about the role of HWs (Green & Thorogood, 2013). This design also allows for new information to emerge during research and allows for account of first-hand experiences, it was therefore chosen (Bryman, 2012).

As a HW in India, the project host acted as the primary gatekeeper to recruit HWs through a purposive technique. There was variation in HWs and gatekeeper was able to act as an intermediary between researcher and participants and identify information-rich participants who were able to participate in this study (Palinkas et al., 2015).

Recruitment, communication and interviews were undertaken by the female lead researcher. Relationships with participants were established prior to interviews. An information sheet and consent form were emailed outlining the research goals and participants had two weeks to confirm participation. Further recruitment took place through purposive snowball sampling via a second gatekeeper. The inclusion and exclusion criteria are found in Table 1.

**Table 1.** Participant Recruitment Inclusion and Exclusion Criteria

| Inclusion Criteria                          | Exclusion Criteria                                    |
|---|---|
| Adult including and above 18 years          | Does not live in India as their primary home          |
| Is a qualified HW                           | Participant not able to give consent                  |
| Is currently practicing HW                  | Participant not able to speak English                 |
| Has a strong and stable internet connection | Does not have access to a device compatible with Zoom |

Based on the research design and aim, it was decided the best research tools would be semi-structured interviews (SSIs) as they provide structure whilst allow for emerging themes and flexibility of discussions (Stanton et al., 2020). Due to the COVID-19 pandemic, online SSIs were selected as they allow flexibility for participants to choose their own study setting where they feel most comfortable. Focus groups were not undertaken due to evidence suggesting internet speed differences results in communication lags and therefore more difficult communication between members. The platform Zoom was used as (Archibald et al., 2019) found high satisfactory rates from participants and found the end-to-end encryption safely stores data. Full ethical approval from the University of Leeds was granted before interviews commenced.

Throughout May and June 2021, 16 participants agreed to participate, and SSIs were undertaken by the lead researcher, each lasting 20-30 minutes. 3 HWs did not participate due to language constraints. Saturation was achieved after 16 interviews as no new information emerged (Cahil et al., 2010). All interviews were video recorded with consent and were safely stored behind the university's firewall. Videos were partially anonymised by removing participant names and subsequently deleted once transcripts were written, to uphold confidentiality. A pilot interview was conducted to test appropriateness of questions and provide an insight into the viability of research (Majid et al., 2017). The question guide, constructed from previous studies and literature, was subsequently altered following the pilot interview.

All video recordings were transcribed verbatim before analysis to allow full representation of participant accounts and provide context during analysis (Biswas et al., 2020). Thematic analysis used

as it provides flexibility and a rich, detailed interpretation of data. A-priori codes were developed from the research objectives and literature and emerging codes were developed from the interview transcripts (Appendix 4). Analysis was iterative; transcripts were read then re-read for familiarisation, sections were 'cut and paste' into specific codes, emerging codes were added, the coding framework re-assessed and then the process repeated (Green & Thorogood, 2013). The lead researcher ensured continuous referencing back to the transcripts to retain context.

Data source triangulation, through focus groups as well as interviews, or investigator triangulation, through use of multiple researchers, was not carried out, reducing the reliability of results. Respondent validation whereby participants assess the accuracy of data was also not conducted, yet would have increased credibility (Geldsetzer, 2020).

### 3. Findings

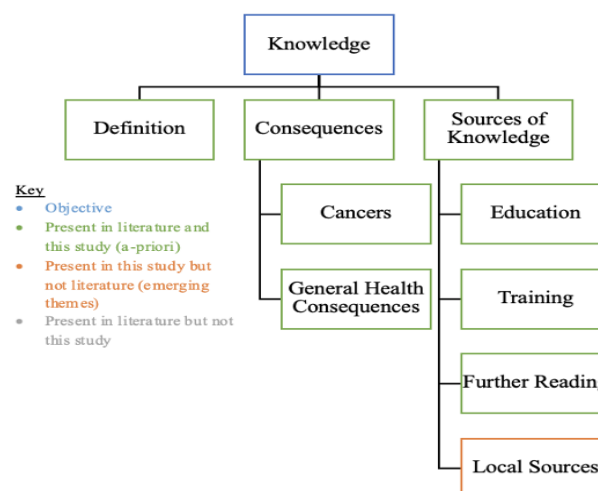
Findings are presented using thematic headings derived from research objectives. Verbatim quotations are stated throughout, with participant demographics found in Table 2.

**Table 2.** Participant Demographic Information

| Participant Code | Type of Health Worker    | Location in India |
|------------------|--------------------------|-------------------|
| P1               | Cardiologist             | Mumbai            |
| P2               | Tobacco Counsellor       | Hyderabad         |
| P3               | Mental Health Counsellor | Mumbai            |
| P4               | Dentist                  | Uttar Pradesh     |
| P5               | Cardiologist             | Mumbai            |
| P6               | Dentist                  | Mumbai            |
| P7               | Physiotherapist          | Delhi             |
| P8               | Dentist                  | Delhi             |
| P9               | Dentist                  | Uttar Pradesh     |
| P10              | Dentist                  | Mumbai            |
| P11              | Dentist                  | Maharashtra       |
| P12              | Public Health Dentist    | Uttar Pradesh     |
| P13              | Tobacco Counsellor       | Gujarat           |
| P14              | Dentist                  | Haryana           |
| P15              | Dentist                  | Uttar Pradesh     |
| P16              | Holistic Doctor          | Mumbai            |

#### 3.1. Knowledge

SLT knowledge is presented under sub-theme headings to demonstrate all aspects of knowledge including *Definition*, *Consequences* and *Sources of Knowledge*. These themes are also highlighted in Fig 1.



**Fig. 1.** Theme of SLT knowledge and acquisition of knowledge

## Definition

Almost all participants correctly defined SLT and responses drew parallels with literature (Institutes., 2021). The key terms used in the definition such as tobacco used without combustion or tobacco that is chewed or sniffed, were stated by participants. Most participants then spoke about SLT in the context of India, listing various forms of SLT.

*“Colloquially smokeless tobacco is known as gutkha, paan, tambakoo; there are many different forms here.” – P8*

*“So smokeless tobacco in India is madhu chhap, miraj, which patient chews, not smokes.” – P14*

The examples varied depending on the participants location in India; in accordance with study concluding that SLT products vary by region.

## Consequences

Identification of cancer due to SLT, in particular oral cancer, was the most common answer particularly amongst dentists. Many participants went on to describe general health consequences such as cardiovascular problems, however, one health worker described the psychological effects SLT can cause, highlighting the widespread nature of SLT consequences.

*“The use of tobacco gives you that dopamine high, but only for a short duration and to get a similar kind of high you need the same, if not more tobacco. This can have detrimental effects on a patient’s mental health.” – P7*

## Sources of Knowledge

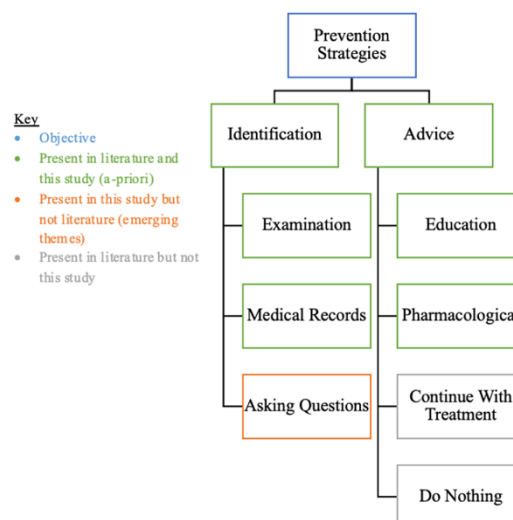
Majority of participants stated that they obtained knowledge of SLT through education; some enrolled in additional courses and acquired knowledge through this training. Four participants expressed the knowledge they received on their courses was more helpful than the information taught during university.

A few participants said they obtained knowledge from local sources which sparked their interest in SLT.

*“My grandfather was operated on for oral cancer, he had to go for a mandibular surgery and now he cannot chew and has been on a liquid diet since 8 years. He used to chew paan and that is how I got interested.” – P4*

## 3.2. Prevention Strategies

These findings were split into *Identification* of patients that use SLT and *Advice* given to these patients. The *Advice* theme was interpreted to include sub-themes stated below and in Fig 2.



**Fig. 2.** Theme of identifying SLT users and providing preventative advice

## Identification

Almost all participants described ways in which they identified a SLT user (Windriyani et al., 2013). This included upon examination, looking in the previous medical history or, most commonly, asking the patient direct questions.

*“The best way to identify is to ask them whether they smoke or not.” – P16*

This emerging theme of directly asking patients was generally considered the most effective method, as participants expressed the unreliability of medical records in India. This was noted by who found smaller clinics and larger hospitals in India had separate medical records.

## Advice

### Education

Patient education and counselling was the most common preventative strategy given, with eleven participants describing this process. Different education themes were noted; five participants opted for a scaremongering approach in which patients were told the realities of SLT.

*“We calculate per month amount spent on tobacco and use that to scare that patient, like this is how much money you’re losing.” – P12*

*“I show them videos of what tobacco can do so that helps the person have visualisation. They may then get scared and say, ‘Ok I won’t do this’.” – P7*

Two participants stressed the importance of an empathetic approach and trying to understand the mindset of patients.

*“A lot of practitioners go with ‘you’ll probably end up with cancer’ however I think empathy works best around patients, trying to make them realise without scaring them.” – P8*

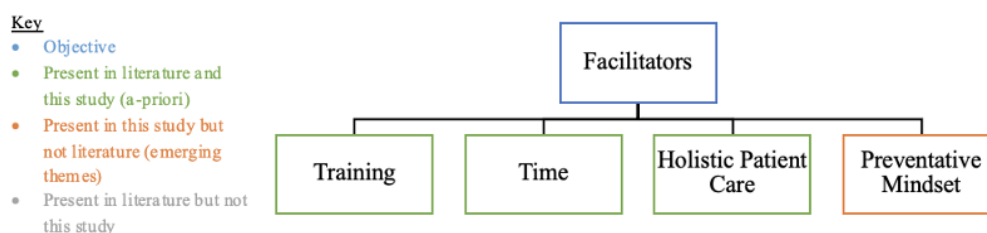
### Pharmacological

A few participants mentioned using nicotine replacement therapy (NRT) as a pharmacological means of SLT prevention. One participant described how some HWs may be hesitant to prescribe these therapies.

*“Tobacco cessation is looked upon as something that you need willpower and not as an addiction. So HWs are very reluctant to give NRT’s, they would just do counselling which reaches a point where it comes from a place of judgment.” – P10*

### 3.3. Facilitators

The facilitating factors that allow HWs to offer preventative strategies are stated under themes of *Training, Time, Holistic Care* and *Preventative Mindset*, depicted in Fig 3.



**Fig. 3.** Theme of facilitating factors for providing SLT prevention advice

### Training

Sufficient training was a widely reported theme that enabled HWs to offer SLT preventative strategies. Training was deemed highly important to recognise SLT users and give HWs confidence in offering prevention strategies. Some participants stated their prevention skills were acquired through sufficient university training. Others indicated that the additional training they received was more beneficial than their undergraduate or postgraduate training. Many made wider recommendations of medical curriculum reform to include more thorough tobacco training or compulsory tobacco courses.

*“When I joined I Can Care (an NGO) I learnt how to deal with withdrawal symptoms and cravings patient gets. Then I realised I had not learnt these things in my medical education but through this additional course. I think people need to have additional training.” – P13*

With P13 in particular, their viewpoint developed as the interview went on. At the start of the interview, P13 mentioned their basic medical training and spoke highly of their additional course, but it wasn't until further into the interview when they admitted that their medical training was insufficient.

### **Time**

Two participants mentioned the importance of having enough time with patients to counsel them and take a full habit history. One participant also mentioned referring the patient on and made a link with a previous theme of *Knowledge* as HWs need to be aware of various tobacco referral pathways.

*“The first consultation with the patient we spend a good amount of time and generally try to counsel them and send them to a psychiatrist or counsellor or addiction centre. I am aware on where to refer them but many doctors are not.” – P1*

### **Holistic Care**

(Jasemi et al., 2017) defines holistic patient care as the physical, psychological, social and spiritual consideration of the whole person. Ten participants demonstrated a holistic mindset which considered wider factors and provided preventative care to patients. Taking an in-depth case history was mentioned by three participants as it gives a complete picture of the patient and therefore a better idea about management and treatment planning.

Two participants stressed the importance of building a rapport with patients to make them feel at ease and taking their psychological state into consideration. This would be through an empathetic approach which links to the previous education theme.

*“One of the important factors is allowing patients to be themselves. If they feel like they will be encouraged to quit when they don't want to, they will step back. Acceptance is so important as patients realise they have the option to quit or not” – P3*

*“Empathy is something that most of us are ingrained with, we've chosen these professions because of that. If you end up judging everyone in the chair you will not get the treatment done. You need to understand that you're not just a skilled clinician but you're a doctor, that the prefix means a lot.” – P8*

### **Preventative Mindset**

This theme emerged during interviews and was an important factor in enabling HWs to give preventative strategies. It was agreed that prevention is better than cure and that HWs need to be attentive to identify SLT users. The idea of opportunistic advice was alluded to where patients come in for a separate health problem but are opportunistically counselled about SLT, if they are a user.

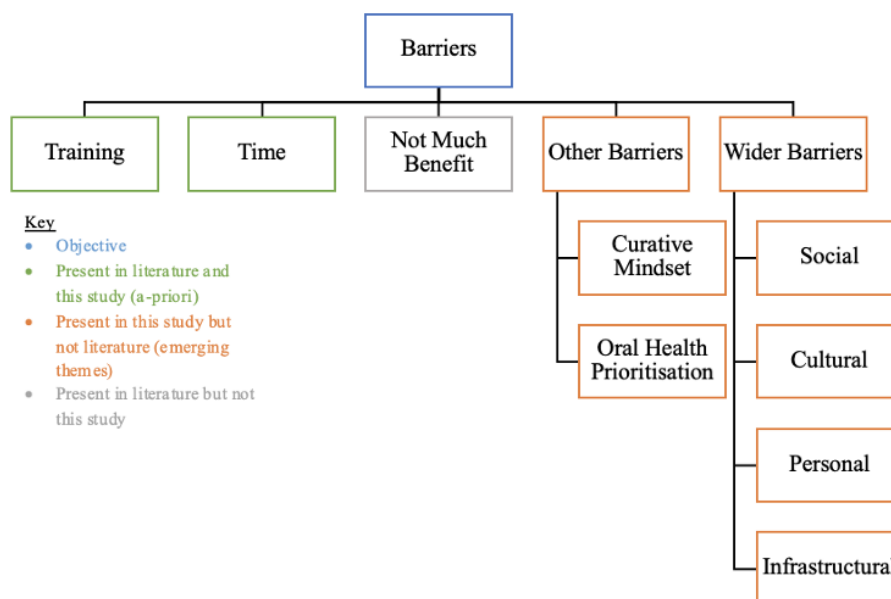
Two participants expressed ease of offering strategies to hospital patients as they are not allowed to consume SLT in the hospital and therefore rates of quitting are more successful.

*“When they end up in the hospital with a major incident, then the success rate of quitting is quite high as they have already suffered a massive attack and don't have any choice.” – P1*

*“The people who are admitted to hospital are not allowed to consume SLT so are forced to go cold turkey, so we just have to push them and counsel them.” – P16*

### 3.4. Barriers

These barriers that prevent HWs from offering preventative advice have been categorised into the themes of *Time*, *Training*, *Other Barriers* and *Wider Barriers* and are presented below. Fig 4 also highlights these themes.



**Fig. 4.** Theme of barriers against providing SLT prevention advice

#### Time

Many participants noted that time constraints hindered offering preventative advice and time was essential for effective counselling. Four stated they had personally struggled with offering advice during busy hospital or clinic times and that the follow up time commitment was a major barrier. However, six participants admitted time was not a barrier they faced personally. This was due to many of the participants working in private clinics and not government hospitals.

*“If you go to a government hospital there are around 100 patients in a day and in my clinic we have 2-3 patients normally or 7 patients max.” – P4*

This conversation gave rise to a link between the barrier of *Time* and *Wider Factors* as participants stated their private clinics attracted more wealthy individuals that did not consume SLT as frequently. This caused them to make assumptions about time pressures in hospitals as some had not personally experienced these time barriers.

*“People who are using SLT are the ones who cannot afford treatment at a private practice like mine. They’ll probably end up going to a dental college or government dispensary and people that work there have 70-75 patients, they cannot devote that time to them.” – P8*

#### Training

The lack of knowledge on SLT and training to counsel patients was another barrier expressed by participants, however, they all admitted it was something they had not personally experienced but recounted through a secondary source.

P2 expressed concerns regarding HWs overprescribing nicotine gums with a lack of pharmacological training, leading to addiction.

#### Other Barriers

These barriers emerged from the interviews and described barriers that affect HWs. They were divided into the sub-themes of *Curative Mindset* and *Oral Health Prioritisation*.

### Curative Mindset

This theme describes the curative mindset of HWs, treating the problem at present, rather than being preventative and stopping the SLT induced comorbidity progressing. Two participants expressed concerns about this mindset of some HWs and stressed SLT consumption could be reduced if a preventative mindset was adopted.

*“Those with oral cancers are addressed but not those with hypertension or ulcers and then sometimes it becomes too late. We want to have this message that all doctors should ask their patient about tobacco use. We want to create an environment for quitting so that other chronic diseases do not crop up later on.” – P2*

### Oral Health Prioritisation

This theme describes how there is no incentivisation for HWs to promote oral health and offer tobacco prevention as well as a lack of prioritisation on a national level. Two participants stated that HWs who own practices are profit orientated, pressure employees to produce revenue and do not operate in the best interest of patients. The business of prevention was described as not being lucrative and that it didn't make fiscal sense for HWs to spend time counselling patients.

P10 stated this is a systemic problem due to oral health not being prioritised nationally, leading to a lack of oral health budgets, public awareness and therefore early recognition and prevention.

### Wider Barriers

This emerging theme describes any wider barriers that are beyond the control of HWs. The responses convey the complex multifactorial nature of the tobacco epidemic in India. Table 3 illustrates the four sub-themes that emerged with participant responses.

**Table 3.** Wider Barriers Affecting Effectiveness of Prevention Advice

| Sub-theme                | Participant Quotation  |
|--------------------------|--|
| Social Barriers          | <i>“The patient might be convinced in the clinic they want to quit but when they go into their group and surround themselves with friends using SLT, it is hard to resist” – P1</i>  |
|                          | <i>“In some rural areas it is hard to convince them as they have this habit since childhood, it is part of their meal, their whole family consumes.” – P11</i>                       |
| Cultural Barriers        | <i>“The problem is way too deep as tobacco is part of Indian culture. If you are not offered paan supari (a type of SLT) at someone's house, they will think you are rude.” – P9</i> |
|                          | <i>“Convincing women in rural areas is hard as she doesn't have authority to make her decisions, it's her mother-in-law or husband.” – P6</i>  |
| Personal Barriers        | <i>“A lot of people do hard work and tobacco gives them that high to help them carry on these tough jobs.” – P15</i>   |
|                          | <i>“They're not properly educated, they don't know what the tobacco is or what SLT can do with their health.” – P13</i>  |
| Infrastructural Barriers | <i>“The tobacco cessation facilities are lacking in India.” – P12</i>  |

## 4. Discussion

The theme of training arose when discussing both barriers and facilitators, as shown in Fig 3 and 4. This theme appeared frequently in both the literature and during interviews (Khan et al., 2014; McKay et al., 2015; Panda et al., 2013). Participants reported receiving insufficient training during university, in accordance with Khan et al.'s (2014) study where only 29.1% of medical students received prevention training in 2009. However, the comparability of Khan et al.'s study and this research is limited, as Khan et al.'s research tool was a self-administered questionnaire and, although it elicited qualitative data, the differing research tools affect the comparability to this research (Allen, 2017).



Furthermore, (McKay et al., 2015) reported HWs felt post-graduate prevention training was insufficient, with 54.6% of dentists and 82% of doctors feeling unsure how to correctly counsel patients. This is despite the implementation of the FCTC in India, which commits to improved tobacco training for HWs (World Health Organisation, 2016). However, McKay et al.'s (2015) findings are also contradictory to this research, as no HW personally admitted to having insufficient knowledge, but recounted colleagues who had. Furthermore, Figure 2 shows the themes '*Continue with Treatment*' and '*Do Nothing*' did not emerge during interviews but were noted in the literature (Panda et al., 2013; Siddiqi et al., 2020; Singh et al., 2020; Yadav et al., 2020).

These contradictions and findings could be due to many of the participants being part of a tobacco prevention organisation, meaning they may have already been knowledgeable in tobacco prevention. The questions may have also been leading, causing participants to describe prevention protocols even if they do not do this routinely or due to the interview setting not providing anonymity, participants may have felt embarrassed with true answers and so provide textbook answers (Sim & Waterfield, 2019). These limitations lower the reliability and validity of results. Interviews should be conducted with public HWs, to create a more representative sample, the lead researcher should have adopted a technique for asking open questions and further rapport with participants should have been built to make participants feel at ease.

Different education strategies to counsel patients were noted in the findings, either the scaremongering or empathetic approach. Siddiqi et al. (2020) reported a 23% quit rate after tobacco counselling with a HW, however, it is unclear what approach was adopted. Furthermore, Siddiqi et al.'s (2020) study is based in South Asia, reducing the comparability to India. Further research into which education strategy is most effective in India is needed, to inform and improve tobacco training programmes.

Further barriers emerged during the interviews which were not noted in the literature. The participants spoke about barriers beyond the control of HWs that affect SLT users directly and impact on the effectiveness of prevention strategies. This included social barriers such as the community that users live in and literature suggests the illiterate, poorer and rural population are more likely (Shaik & Maddu's, 2019; Siddiqi et al., 2020; World Health Organisation., 2017) to consume SLT reported that it was more difficult for these populations to quit as they are less aware of the consequences and most of their community and family consume it. Yadav et al. (2020) also reported that due to the tough laborious jobs, SLT is consumed to suppress hunger and energise them; factors also reported by participants.

The inexperience of the lead researcher was a limitation as some questions became leading, resulting in respondents answering in a biased way. Participants were occasionally prompted with themes derived from literature, leading to responses aligning with the researcher's goals. This may have limited the appearance of emerging themes and affected the coding of transcripts, causing researcher bias and reducing reliability. The lead researcher did adapt their questioning style as interviews progressed, however, bias may have been introduced in earlier interviews.

Another limitation is the sampling method chosen. Due to the additional COVID-19 constraints, availability of participants was low and purposive snowball sampling was chosen to recruit valid HWs (Table 1). The project host was interested in tobacco prevention and identified colleagues with such interests, thereby reducing the sample's representativeness. This was partially minimised by recruitment through a second gatekeeper, however, the true distribution and representativeness of the sample is still unknown (Kassaw & Pandey, 2020).

Conducting interviews online was another limitation as rapport was not built as effectively and analysis of body language was not undertaken. Building rapport is essential to make participants feel at ease and therefore answer questions honestly and analysis of body language gives the researcher contextual information to consider during analysis (Irani, 2019). Although online interviews allow for more flexibility as the HWs had busy schedules, poor connection meant that sometimes responses were missed. Questions were repeated in these situations, however, there is no guarantee responses were fully captured.

A limitation of the barriers affecting SLT users is that the information is from a third-person narrative, as HWs recounted their interpretation of barriers users face (Braun & Clarke, 2016; Ramos-Morcillo et al., 2020). Therefore, the accuracy of responses is questioned as information is not through

the primary source and participants may generalise these barriers. found information obtained from secondary sources to be valuable, however, emphasises caution when giving a voice to a population who have not been consulted. Therefore, to overcome this limitation, interviews with SLT users should be conducted and facilitators and barriers they face for giving up SLT should be explored.

## 5. Conclusion

SLT prevention training needs to be conducted during university and provided for qualified HWs to reduce the burden of SLT and its' consequences. Participants reported insufficient training to equip them with skills and stressed importance of thorough tobacco prevention training. Most effective education methods to counsel patients need identifying and facilitators and barriers faced by SLT users need to be explored to strengthen future SLT policy.

SLT prevention needs prioritisation over cigarettes in India, as incidence is far greater, and requires adoption of a multifactorial response, as the problem is prevalent at many societal levels. Stakeholders need to co-operate to tackle this significant issue and HWs need supporting to adequately deliver information and counsel patients.

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