Message formats and their influence on perceived risks of tobacco use: a pilot formative research project in India

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Abstract

In India, tobacco kills 900 000 people every year though the burden of tobacco is faced disproportionately in poorer states such as Bihar. Teachers may be a particularly influential group in setting norms around tobacco use in the Indian context. However, tobacco use among teachers remains high and perceptions of tobacco-related health risks are unexplored. To qualitatively explore perceptions about tobacco use among teachers in Bihar and to examine how risk information may be communicated through a variety of message formats, 12 messages on tobacco health risks varying in formats were tested in focus groups with teachers from Bihar. Participants stated that teachers were already aware of tobacco-related health risks. To further increase awareness of these risks, the inclusion of evidence-based facts in messages was recommended. Communicating risk information using negative emotions had a great appeal to teachers and was deemed most effective for increasing risk perception. Messages using narratives of teachers' personal accounts of quitting tobacco were deemed effective for increasing knowledge about the benefits of quitting. To conclude, messages using evidence-based information, possibly with negative emotions, testimonials with role models and those messages emphasizing self-efficacy in the format of narratives appear to appeal to teachers in Bihar.

Introduction

Tobacco use is one of the major preventable causes of death and disability worldwide with an estimated toll of about 5 million deaths every year with most of the deaths occurring in low and middle-income countries [1]. In India alone, tobacco use kills about 900 000 people every year and tobacco use is projected to account for 20% of all deaths in Indian men and 5% in Indian women between the ages of 30 and 69 [2]. In some Indian states, early initiation of tobacco use (as early as by the age of 10) is reported by 65% of tobacco users [3]. Early initiation is associated with a recent increase in prevalence rates of oral submucous fibrosis in younger individuals, which is caused by industrially manufactured smokeless tobacco products [4,5].

Multiple factors are responsible for early initiation of tobacco use in India. For example, media campaigns funded by the tobacco industry target the younger population [3], portraying tobacco as a symbol for women's emancipation and glamorizing tobacco use [6]. In addition, there are few (if any) barriers to access to tobacco products by children in India [7] and the implementation of policies banning

tobacco in public institutions varies by geographic region [8].

For example, in the state of Bihar, despite a law passed in 2003 banning the sale of tobacco products within a distance of 100 m of all educational institutions, access to tobacco products is still easy for students as well as teachers because of lack of enforcement of this law [9]. In addition, Bihar State government schools do little to regulate tobacco use on school premises neither for students nor for school personnel compared with federal schools that have specific rules and regulations prohibiting the use of tobacco by students and school personnel [9]. Strategies and interventions to reduce tobacco initiation in children and adolescents are needed to prevent addiction and tobacco-related morbidity in early stages of life.

Teachers are highly regarded members of the society and are considered as role models. Therefore, they are best suited to educate the community on the harmful consequences of tobacco use. Messages on health practices coming from them may potentially help counteract the promotion of tobacco by the tobacco industry as well as help undermine the influence of tobacco vendors in local communities, thereby preventing early tobacco initiation among children and adolescents. However, this assumes that the teachers are non-users themselves. This is not the case in the State of Bihar where 78% of teachers reported being tobacco users in the year 2000 [8].

Despite heavy tobacco use among teachers, little is known about perceptions of health risks related to tobacco use and still less on how teachers' risk perceptions are shaped by tobacco-related messages presented to them in the media and other related information channels. A growing body of literature indicates that variations in formats, features and content of messages produce variations in effects on cognitive, attitudinal and behavioral outcomes in health [10]. Some major message formats include narratives (i.e. using stories to present a health message), exemplars (i.e. using real-life examples) and fear or guilt appeals (i.e. invoking fear or guilt to motivate the person to change health behaviors). It is also known that the framing of anti-tobacco

messages can be of importance [11, 12]. Negative or loss frame messages emphasize negative consequences of not adopting a certain behavior while positive frame messages emphasize the positive consequences of adopting a certain behavior, sometimes referred to as gain-frames. Previous research indicates that negative frames or loss-frames may be more efficient in regard to illness-detecting behaviors such as getting a health check done for possible tobacco-related illnesses. Positive frames, on the other hand, may work better for illness-preventing behaviors such as smoking cessation [13]. Further, the persuasiveness of positive and negative message frames is influenced by message recipient characteristics (e.g. a smoker's intentions to quit and their level of nicotine dependence, the depth of information processing, etc.) [13]. In sum, various message formats with varying frames have been shown to be efficient in preventing tobacco use and in influencing tobacco cessation among youth and adults in Western countries [14, 15].

However, we are not aware of any studies, to date, investigating perceptions of different message formats in relation to tobacco use in India. Testing different message formats on the health risks of tobacco in the population of teachers in Bihar, India, and identifying messages that effectively communicate these health risks to this population may help inform future interventions for tobacco use cessation targeting teachers in this region.

The aims of this study were 2-fold: (i) to examine the tobacco-use risk perceptions among teachers in India in response to viewing 12 anti-tobacco messages and (ii) to study what kind of message appeals to 'stop-tobacco-use' may resonate with them. Hence, in this study, we probed teachers who were both tobacco users and non-users from the state of Bihar, reactions to the content, format and structure of 12 messages regarding tobacco-related themes through focus groups. The tobacco-related message formats examined in this study included appeal to guilt, gain and loss framing, narrative and mixture of narrative and exemplar with themes of modeling and self-efficacy. These messages were developed based on prior formative research with school teachers in Bihar.

Materials and methods

The formative research process reported in this article included focus groups with 33 school teachers from Bihar in Northeastern India (mean age: 41 ± 10 years) in June 2008. Teachers taught grade levels 8–10 and represented a broad cross-section of urban and rural state schools (55% vs. 45%), men and women (76% vs. 24%) and tobacco-users and non-users (smoking: 0% vs. 100%; smokeless use: 18% vs. 82%).

Findings from these focus groups subsequently informed the development of culturally appropriate intervention materials and messages for a tobacco use cessation intervention, which was pre-tested in the pilot intervention study in October 2008 to January 2009. The Bihar School Teacher's Study (BSTS), a collaboration between the Healis-Sekhsaria Institute for Public Health in Mumbai and Patna, the Dana-Farber Cancer Institute and the Harvard School of Public Health [16], is a large-scale cluster-randomized trial implementing a tobacco use cessation intervention at 72 schools in Bihar, India, and was subsequently conducted from July 2009 to January 2011 but is not the focus of the current article. Teachers selected to the June 2008 focus groups were not part of the subsequent BSTS.

Message development

About 6 months before the Teachers' Conference, in January 2008, focus groups with 44 teachers were conducted to better understand the social context of tobacco use from their perspective. Focus group participants taught grade levels 8–10 at two rural and two urban Bihar government schools.

The information from these January 2008 focus groups was used to develop a 'Creative Brief' that outlined key themes to be addressed in the intervention messages, such as the harmful effects of tobacco, teachers as role models for quitting tobacco and skills for quitting. It also outlined potential channels and information sources for future intervention delivery. Based on the themes identified in the 'Creative Brief', the research team at the Dana-Farber Cancer Institute in collaboration with the team in India developed 12 messages in different message formats, which included negative emotions, framing, social modeling and narratives. Some of the messages included graphics, such as line drawings, for example of a little girl holding her nose while standing in front of a male adult sitting in an armchair lighting up a cigar. Others included photographs, for example, of a cancerous jaw and yet others contained only text. The purpose of including graphics in the messages was to determine which types of image formats appealed to teachers; it was not to test the actual images shown. All messages were translated into Hindi.

Data collection

In June 2008, 33 Bihar teachers were invited to attend a one-day Tobacco Control Teachers' Conference in Patna, Bihar. The purpose of the conference was to: (i) provide participants with an overview of the problem of tobacco use and the role that teachers can play in prevention; (ii) pre-test draft intervention messages and message formats; (iii) explore in-depth, the feasibility and acceptance of intervention messages and delivery mechanisms.

As a first step, participants completed a Demographic Intake Form. Once completed, participants were shown the 12 tobacco-related messages (Tables I–III) on screen. After each message was shown, participants were asked to complete a 6-item survey in Hindi related to that message assessing participants' reactions to the messages shown, thoughts about the content of the message and who they believed the target audience for this message was. Results of these 6-item surveys are reported elsewhere (C. R. Pischke *et al.*, manuscript under review). Approximately 5–10 min were spent on each message before moving to the next one.

Afterwards, participants were divided into three groups to discuss the 12 messages in-depth using a focus group guide (Table IV). Messages were randomly assigned to the three focus groups. Group 1 discussed messages 1, 5, 6, 9 and 12; group 2 discussed messages 2, 6, 8, 10 and 12 and group 3 discussed messages 3, 4, 7, 11 and 12. During the

Table I. *Loss-framed messages communicating health risks using fear or guilt appeals—main themes raised in the focus groups*

Message format—fear or guilt appeals	Reactions to message content and format	Example quote
Message 1: You know that tobacco may hurt you in the future. But do you know how it's hurting you and your family now? She worries about her dad chewing tobacco. She saw what happened to her grandfather, and she is scared. He loves his dad, but he hates the way he smells. Yuck! A visitor came to the school today and explained that tobacco is bad for health. Does his dad know, he wonders? She wishes she had more money to fix some things around the house. She could do those things if he didn't buy tobacco every day. Learn to quit tobacco with our program. Picture showing a man in an armchair lighting up a cigar and a little girl next to the armchair holding her nose	The general opinion voiced in the focus groups was that teachers were already educated about the harmful effects of tobacco and were aware of the risks of using it. Participants suggested including more specific evidence-based information in tobacco-related messages (e.g. information on short- and long-term effects of tobacco and chemicals contained in tobacco on both, tobacco users and passive smokers' health). The message format was deemed effective in making both teachers and students want to quit. Inclusion of more visual material to enhance the message requested.	Since teachers are intellectuals, they want to be informed about the logic of everything. If they understand the logic in these chemicals, they'll collect more and more information regarding the health effects of these chemicals. They will discuss the impact of these chemicals, which will affect them to some extent. All messages are written in the same size. It should be written in different font. The place where it is written that smoking increases the heart beat and blood pressure should be bold and underlined to make it effective.
Message 2: You know that tobacco is bad for your health. But we would like to tell you something else about tobacco. Using tobacco is an addiction, not a habit. This means that your body feels like it needs tobacco, not just wants it. It is the reason why people say they can't stop, even when they know it's bad for them. It's why it can be hard for some people to quit. When you use tobacco, it hurts your body, even though you can't see it. It increases your heart rate and your blood pressure. It gives you bad breath and puts you at risk for mouth sores. When you are addicted to tobacco long enough, the increased heart rate and blood pressure can lead to heart attack and stroke. The mouth sores can develop into oral cancer. Learn how to quit tobacco with our program. Picture showing a person with a mouth ulcer.		
Message 3: If it can happen to him, it can happen to you. Tobacco can hurt anyone. It doesn't matter who you are, what you do or where you live. Tobacco doesn't care if you have a family to support, or if you have lots of friends. It only wants to hurt you. You would never guess it, but Mahesh is already developing ulcers and sores in his mouth. He looks fine. He feels fine. He doesn't even know they are there yet. But he is addicted to tobacco, and they will get worse. Learn to quit tobacco with our program.		
Message 4: Sometimes things aren't what they seem. If you use tobacco, everything may look fine from the outside. But everything is not fine on the inside. Even if you only use tobacco a few time a week, you are still taking a risk. You are putting dangerous chemicals into your body. And you make it more likely that you will become addicted in the future. Learn to quit tobacco with our program.		

focus groups, moderators showed each message and facilitated a discussion about it.

All focus groups were conducted in Hindi, the official language in India. Trained Indian staff took careful notes in Hindi during each group's discussion. In addition, the discussions were audio-recorded. Immediately after the focus groups, there was a debriefing and notes were transcribed and compared with the audio-recordings for completeness and subsequently translated into English.

Format and content of messages related to tobacco health risks

Messages 1–4 (Table I) were aimed at increasing the risk perception of the audience and at eliciting negative emotions associated with tobacco-related

Table II. *Messages using social modeling—main themes raised in the focus groups*

Message format—narrative with social modeling theme	Reactions to message content and format	Example quote
Message 5: Lessons don't only come from books. Your students don't learn from your lessons alone. They learn from your words and actions. Show them that good health is important by quitting tobacco. Let them see that you take good care of yourself, so they learn to take good care of themselves. Aren't you worth it? Aren't they worth it? Learn to quit tobacco with our program.	Participants felt that messages based on social modeling communicated the benefits of quitting tobacco, and subsequent decreases in disease risk, well.	Merely providing bookish knowledge to children is not sufficient. A teacher needs to provide [information]. . .differentiating between good and bad habits. That is why we need to correct ourselves and become a role model.
First picture in the Indian context: Female teacher teaching a group of students (4th graders) sitting on the floor	The format worked for teachers as they pointed out that it was important for teachers ("as highly dignified persons in society") to lead by demonstration.	It is our duty to beautify their future. So, we shouldn't use tobacco. We should make them learn and teach them the right lesson. This will improve their future and make a non-tobacco society.
Second picture in the American context: American teacher teaching a group of students		
Message 6: Lessons don't only come from books. Your students learn from your actions—the good ones and the bad ones. If you use tobacco, they will think that tobacco is OK. You have so much power to influence your students. Send a positive message instead. Quit tobacco—show them that you take good care of yourself, so they learn to take good care of themselves. Aren't you worth it? Aren't they worth it? Learn to quit tobacco with our program.		
Picture showing Indian teacher smoking a cigarette		
Message 7: 'We talk about a lot of things in the common room at school, like what we did over the weekend. Since I'm quitting tobacco, I had a chance to tell everyone what happened to me at a function on Saturday. A lot of people at the gathering were using tobacco, of course. In the past I might have felt strange saying no, but this time I said, 'No thanks, I'm quitting tobacco'. I had to say it a lot! Suneeta was in the common room, too, and she said, 'I know how hard that is to do! My husband had to say "no" many times when he was quitting'. It made me feel better to know that others went through the same thing. Before I could answer her, Rajeev added, 'It's good to hear these stories. I think about quitting sometimes, and this makes me feel more like I can do it. Also, the more people say "No, thanks!" at gatherings, the less I'll feel like I have to use it to fit in.' Learn to quit tobacco with our program.		
Picture of teachers and students sitting in a circle		
Message 8: Be a leader. Don't use tobacco. 'Over the years, I have known many teachers who use tobacco. I always wish they wouldn't, for a lot of reasons. I worry about my best teachers getting sick and suffering from the health problems that we know tobacco can cause. I knew one who did have problems, and I saw how hard it was on his students. Just as importantly, I worry about the example the teachers are setting. I see the students watch their teachers and pay attention to what they do—both inside and outside the classroom. We teachers know that kids don't miss a thing! As a teacher, you are in a position of respect and prestige—kids look up to you and listen to you. Teach your students about tobacco with your words and actions. Quit tobacco, and show that good health is important. Be the role model they expect you to be.' Learn to quit tobacco with our program.		

Table III. *Messages promoting self-efficacy and strategy to quit using narratives—main themes raised in the focus groups*

Message format—narrative promoting a planned approach to quitting tobacco	Reactions to Message Content and Format	Example quotes
Message 9: 'I needed to learn a new equation to quit tobacco. I thought I knew everything I needed to teach math to my students. But I needed to learn a new equation to quit tobacco: Willpower + Skills = Success. Willpower can help you quit, but it isn't the only thing you need. Wanting to quit isn't always enough. To be successful, you also need skills and a plan for quitting. When I was quitting tobacco, there were challenges every day. But I had ways to beat them. You can learn them, too.' Learn to quit tobacco with our program.	Reactions were mixed in regard to the content of the message. There was a consensual view that one can quit tobacco if one has will power and focus group participants were skeptical of a need for a quit plan. Also, participants seemed confused about the idea of making a plan to quit tobacco on their own and suggested ready-made quit plans by doctors.	There is no need of any equation in front of strong willpower. It is suggested to make plans but it can take years to make plans. So why don't we introduce ready-made plans made by a doctor to the public.
Message 10: Everyone believes in you! [child one] 'I really want my mother to quit tobacco—and I know she has the willpower to do it.' [father] 'She has something more than willpower: She also has a plan. Now that she knows what triggers her to use tobacco, it will be easier for her to quit.' [child two] 'I'm so proud of my mom! I know she can do it!' Learn to quit tobacco with our program. Picture of parents with two daughters (everybody is smiling)		
Message 11: 'I don't treat a patient without a plan. You don't teach your students without a plan. So, why try to quit tobacco without a plan?' 'Many people tell me that they want to quit tobacco. But wanting to quit isn't always enough. You need a plan. Researchers and doctors have learned a lot about 'triggers'. These are the things that make you want to use tobacco. We've studied how to beat these triggers. If you have a plan for dealing with them ahead of time, you will be able to beat tobacco.' Learn to quit tobacco with our program. Picture of a smiling female physician	Discussions revolved around the content and not the format of these messages.	
Message 12: 'I started using tobacco when I was at university—when I was with friends or out at gatherings. Soon I was using it a lot more; it just seemed to fit into my life. By the time I graduated, it had become a habit I couldn't break. When I started teaching, it was really stressful—so many things to do during the day, so many tasks to get used to. Tobacco helped me deal with those feelings. But eventually, I really didn't like what tobacco was doing to me. I hated having bad breath, and I had mouth sores. I wanted to stop, but I didn't know how. The habit just seemed too much to deal with. Luckily, I learned about triggers. A trigger is something that makes you want to use tobacco. I had a lot of different triggers. For example, I always used tobacco for my morning bowel motion. Now I take churan when I go to bed instead. My tea breaks were also triggers. Now that I don't use tobacco while I drink my tea, it tastes so much better! My biggest trigger was stress. I would use tobacco to unwind and calm down during the day. Now that I'm quitting, I take walks instead. When I walk, I have time to think. I don't miss the tobacco very much now—and walking is much healthier for me.' Learn to quit tobacco with our program.		

Table IV. *Focus group guide*

Message-specific questions:

(Moderator – show this specific message/advertisement
   again).
Overall, what do you think about this advertisement?
What do you think are the main messages of this ad? What
   is this ad saying to you?
What do you like about this ad?
What do you dislike about this ad?
What do you think of the visual that accompanies this ad?
   Do you think it's appropriate, or would you rather see
   something else there?
What else would you like to see in this ad?
Who do you believe this ad is directing its message to?
Do you believe that teachers will pay attention to this ad?
   Why/why not?
If time:
Did any of the other seven ads stick out to you?
Which ones?
Why?

morbidity and mortality. The message format of appeal of 'guilt' was used in the construction of these messages. Given that the evidence on the effectiveness of fear or guilt appeals is mixed, research has shown that strong negative emotion accompanied by high efficacy on how to address fear are likely to produce greater behavior change compared with strong fear appeals combined with low efficacy messages which produce defensive or negative responses [17]. Our goal here was not to use negative emotions but to use them in combination with other formats that also include efficacy.

Messages 5–8 (Table II) were narratives focusing on the benefits of teachers as role models for quitting tobacco. These messages emphasized that teachers are powerful role models in society, especially if they chose to commit themselves to this role. The gain for the teacher is to feel respected and to contribute to his or her students' health by being a strong role model. Gain-framed messages revolve around benefits of adopting a health behavior, whereas loss-framed messages focus on the costs of not adopting a certain behavior [18]. Gain-framed as well as loss-framed messages have been shown to be effective in influencing cognitions,

affect and behaviors related to both cancer prevention and treatment [19].

Messages 9–12 (Table III) used a mixture of narratives and exemplars and dealt with skills necessary for quitting such as willpower and a plan to quit and how to handle triggers for tobacco use and manage relapse. Similar to fear appeals and gain-framed messages, narratives and exemplars are effective in shaping health behaviors and in increasing knowledge about health-related issues [20, 21].

Data analysis

Our analytical procedures took a methodical approach to analyse the data. Specifically, the thematic coding followed a 'grounded theory' approach [22], meaning no assumptions about the data were made beforehand, rather the thematic codes emerged from our analysis of the structural code reports.

First, the transcripts of all focus groups were translated from Hindi into English and the translation was double-checked by the investigators who were bilingual. The transcribed data were supplemented by notes taken by several observers from the study team. These notes were used to correct any discrepancies in transcribed notes which improved the reliability of the trans-scripted notes.

The transcribed data were analysed according to a two-stage coding process: Level 1, structural coding and Level 2, thematic coding. Structural coding followed the structure of the focus group guide (Table IV); hence, every question received a structural code that was applied to the appropriate text. Thematic coding was based on themes that arose from the structural coding and was applied in a second pass analysis. Thematic coding followed an emergent, grounded theoretical approach. These methods were enhanced by the use of a state-of-the-art ethnographic data management software program, NVivo (QSR International, version 8). The program uses an organizer indexing system for coding, categorizing, searching, retrieving, attaching analytical memos and creating conceptual relationship networks in textual data that have been taxonomically coded. After the 2-stage coding

process was completed, a comprehensive thematic analysis summary report was written and delivered by an experienced qualitative researcher.

To ensure reliability of coding themes, the primary author re-read the original transcripts in relation to the thematic coding. This allowed for further immersion into data and crystallization of themes, an approach that is recommended in qualitative research [22]. In summary, we adopted a multi-step, immersive process to extract and validate the themes from the focus group transcripts.

A document of themes was created based on our earlier work and literature review and our analysis of the focus group data. We organized the results with the key findings reported first followed by more ancillary findings, which we chose to include in the article because they may be of interest to readers designing health behavior change interventions in the socio-cultural context of India (e.g. the cultural relevance of tobacco use in religious ceremonies).

The majority of quotations of focus group participants are reported verbatim. To improve understanding, some minor corrections to the quotations have been made by the authors.

Results

Key findings are summarized in Tables I–III.

Focus group participants' reactions to loss-framed messages communicating health risks using fear/guilt appeals

When asked whether the first four messages would increase teachers' perception of risk of using tobacco, the general opinion voiced in the focus groups was that teachers were already educated about the harmful effects of tobacco and were aware of the risks of using it. To further increase teachers' risk perception and to inform them beyond their existing knowledge on tobacco-related risks, participants suggested including more *specific* evidence-based information in tobacco-related messages. For example, participants recommended that messages contain information on short- and long-term effects of tobacco and chemicals contained in tobacco on both tobacco users and passive smokers' health. One teacher stated:

> Since teachers are intellectuals, they want to be informed about the logic of everything. If they understand the logic in these chemicals, they'll collect more and more information regarding the health effects of these chemicals. They will discuss the impact of these chemicals, which will affect them to some extent.

In regard to the second aim, participants thought that fear appeal was effective in making both teachers and students want to quit but that any type of visual material either in the form of 'gory' photographs or bolded written warnings would enhance these messages and would have a more lasting effect on the intended audience. Accordingly, one participant commented on font size of the messages shown:

> All messages are written in the same size. It should be written in different font. The place, where it is written that smoking increases the heart beat and blood pressure should be bold and underlined to make it effective.

Addressing the question how these messages could be improved and modified to better fit the context of Bihar, the use of exemplars was repeatedly raised by focus group participants. Teachers thought that using someone of a higher social status like a doctor, engineer or university professor in the messages talking about how he or she had been affected by cancer would be effective in both teachers and in the general public. Suggestions included:

> Show a picture of a university professor with text that says, 'nothing can happen to me' then show a picture of him using tobacco then show a picture of his dead body. When a process is described it makes more sense for us.

> Taking the names of 50 high profile people who have died due to tobacco or are facing some acute health problem (due to tobacco) [and incorporating this information into the message.]

According to participants, these types of messages would also counter the misperception in the general public that people from higher social strata were not affected by the harmful consequences of tobacco use. Teachers also raised the concern that messages not including exemplars and/or pictures would not reach the 'lower classes' with high illiteracy rates. One suggestion was to incorporate cultural icons such as Bollywood movie actors, to reach people in the villages.

Focus group participants' reactions to gain-framed messages using social modeling

Addressing the first aim of the study, focus group participants thought that these messages based on social modeling communicated the benefits of quitting tobacco, and subsequent decreases in disease risk, well. Furthermore, participants agreed that it was important for teachers ('as highly dignified persons in society') to lead by demonstration and not just with words. The general theme of messages 5–8 identified by teachers was that students copy their teacher's behavior and that it was therefore the teacher's duty to not use tobacco. One participant said:

> It is our duty to beautify their future. So, we shouldn't use tobacco. We should make them learn and teach them the right lesson. This will improve their future and make a non-tobacco society.

Another participant stated:

> Merely providing bookish knowledge to children is not sufficient. A teacher needs to provide   [information] . . . differentiating between good and bad habits. That is why we need to correct ourselves and become a role model.

Teachers' reactions to the format of the narratives used in messages 5–8 varied. For example, some teachers thought that the narrative of a teacher refusing an offer of tobacco at a social ceremony (in message 7) should be more about the challenge of

saying no to tobacco and that it should be kept brief and powerful. One participant said:

> Sir, today people don't have time to read big things, but there is a big message in this small text. The picture [accompanying such a message] should be such that it attracts people's eye. Then there is a weight to the challenge of saying 'no'. There are no guts in saying 'yes' that our brother has told us.

Two other participants stated:

> If you have the guts, then say 'no to the offer' [of tobacco].

> Do you have the courage, if you have, then say no to tobacco.

Asked about how messages 5–8 could be improved, focus group participants pointed out that messages would only be culturally accurate if they described teachers applying or chewing tobacco inside or outside the classroom instead of smoking. Hence, to make the messages more effective, teachers advised to include other forms of tobacco, such as khaini (rubbed tobacco), gutka (chewed) and beetle leaf/paan in the messages.

Focus group participants' reactions to messages promoting self-efficacy and strategy to quit using narratives

Because messages 9–12 focused on strategies for quitting and dealing with triggers for using tobacco (Table III), the question of whether these messages helped teachers to realize the risk of tobacco use in Bihar or whether they increased risk perceptions was not discussed in the focus groups. The messages 9–12 promoted a planned approach to quitting tobacco and received mixed reactions from the participants. There was a more consensual view that one can quit tobacco if one has will power and they were skeptical of a need for a plan. One participant stated:

> There is no need of any equation in front of strong willpower.

Participants also believed that willpower comes from the dedication to quitting and that children can provide a strong motivation for parents to quit tobacco. In other words, participants suggested that having a parent who quits would also steer children away from using tobacco. Participants also seemed confused about the idea of making a plan to quit tobacco on their own. Some felt that it may be unrealistic for teachers to make up their own plan for quitting tobacco. Instead, they suggested that ready-made plans should be introduced by a doctor. One participant pointed out:

> It is suggested to make plans but it can take years to make plans. So why don't we introduce ready-made plans made by a doctor to the public.

Regarding teachers' thoughts on how messages 9–12 could be improved, discussions revolved around healthy substitutes for tobacco and alternative behaviors to tobacco consumption that would work in the context of Bihar. Alternative behaviors to tobacco consumption proposed by teachers included changes in diet, such as drinking water/juices, eating vegetarian and other easily digestible foods; exercise, such as walking and swimming; and yoga and meditation. Participants' ideas for messages and pictures surrounding the theme of substituting tobacco and alternative behaviors to tobacco consumption included the following:

> We can give stepwise messages along with graphics. It should be written below the pictures that instead of tobacco it is better to swim, drink juices, do yoga, walk, jog, sing, etc.

> The first picture can show that firstly he was in tension and he is taking tobacco to de-stress himself. Then the next picture can show that he is out of stress temporarily and so the next picture can show that now he is even more stressed. He is addicted to tobacco. Then someone gave him advice and he started taking a walk or doing yoga instead. Now he is feeling better. If we show all these pictures then it will be more effective.

Other alternative behaviors brought up in the focus groups included staying occupied in general, and at work, singing, reading religious books and visiting places. For example, one participant stated:

> Firstly, the main thing is that I used tobacco for 35–40 years. I have experienced that when I am busy I don't use tobacco so much but when I don't have any work that day I use tobacco more. If someone uses tobacco then we should advise him to do something or to make himself busy doing something or the other. If he will be busy he will not have time to think about tobacco.

However, participants felt that none of these substitutes and alternative behaviors would replace sufficient willpower for quitting and staying quit. In addition, participants advocated for including suggestions regarding healthy substitutes for tobacco and alternative behaviors to tobacco consumption in a quit plan tailored to the individual. Specifically, participants recommended that these alternatives should be based on the reason why a person is using tobacco. Hence, a person using tobacco to reduce stress would get a different suggestion from their doctor compared with a person using it to improve their digestive system.

Discussion

The two main goals of this article were to examine risk perceptions of tobacco use among teachers in India and to find out how perceptions about the risks of using tobacco, building self-efficacy and using a planned approach to quit may be promoted through different message formats that include negative emotions, framing, social modeling and narratives in the Indian context. In sum, focus group participants stated that teachers, as educated people in Indian society, were already aware of the risks associated with tobacco use. However, teachers advised including more specific evidence-based information in tobacco-related messages to reach the intended audience of teachers. The format of loss-framed fear or guilt appeal was deemed effective and

appropriate by teachers even while they asked for messages that include evidence. In line with findings from the literature, suggesting that messages using negative emotions such as fear and guilt produce high levels of perceived severity and susceptibility [17, 23], and have a great appeal, focus group participants advocated for the use of photographs or posters depicting harmful effects of tobacco that would enhance the fear appeal. The fact that this is an audience that has high formal education may have something to do with their desire for an analytical approach instead of just an emotional one.

However, it is also known that fear appeal is only effective in promoting actual health behavior change when combined with a concrete action plan on how to change behavior and when a person has high perceived self-efficacy to change and maintain health behavior [24]. Accordingly, teachers, when shown messages 5–8, which emphasized the importance of teachers as role models, suggested that these messages should be accompanied by pictures that show teachers demonstrating high self-efficacy to change behavior by 'saying no' to tobacco in various situations of everyday life. Further support for this standpoint comes from teachers' reactions to messages 9–12 (themes: how to handle and cope with triggers for tobacco use, self-made quit plans).When shown these messages, teachers recommended that the messages needed a greater emphasis on willpower and on the necessity of a ready-made quit plan by the doctor outlining steps for quitting and healthy alternative actions to tobacco use in the context of Bihar. Consequently, teachers called for messages and pictures showing teachers exuding their willpower when facing triggers for tobacco use, obtaining a ready-made quit plan from their doctor and practicing alternative behaviors to smoking and chewing tobacco. These messages were deemed most effective in promoting tobacco use cessation in Bihar.

Findings of these focus groups also informed the development of culturally appropriate education materials for the BSTS. For example, in response to teachers' need for more detailed and specific information about chemicals in the tobacco and how its use may affect different body parts, intervention material including an information sheet on short- and long-term effects of tobacco, a list of chemicals in tobacco and how they were harmful for the body, and a 'Tobacco Body Poster', which depicted a body and how chemicals contained in tobacco harm certain parts of the body, was created.

Based on teachers' sentiments about being role models, discussion guides for teachers' fortnightly meetings (used during the intervention of the BSTS) were developed that revolved around the theme of teachers as role models. These guides were designed to target teachers at the intervention schools who were both users as well as non-users and to deal with issues around smoking as well as the consumption of smokeless tobacco-products. Following teachers' suggestions to use exemplars in tobacco-related messages, narratives of famous Indian movie actors who successfully quit tobacco were included in the intervention materials. Additional materials inspired by the focus groups included a 'how to say no' poster and instructions in the discussion guides for role play at the fortnightly meetings on how to say no to tobacco in various situations of everyday life (for further detail see [16]).

Upon teachers' request for a ready-made quit plan including alternatives to using tobacco, a cessation self-help brochure was developed which was handed out to every teacher participating in the intervention group of the BSTS. This cessation brochure included information on positive health effects of quitting, an action plan for quitting including instructions on how to pick a quit date, steps for quitting and information on how to deal with triggers and relapse. Furthermore, following teachers' suggestions to include materials that were visual and colorful, a calendar with pictures for each monthly theme of the intervention (e.g. motivation to quit, relapse prevention), and several other posters (e.g. showing alternative actions to tobacco use) were developed and put up on a notice board next to the principal's office at each intervention school. Following the teachers' concern about implementation of legislation banning tobacco from schools, tobacco policy groups were formed at intervention schools that evaluated the

implementation of tobacco policies at each intervention school.

One limitation of our study is that due to the low rate of tobacco users among our focus group participants, our study population may not have been representative for Bihar teachers. Alternatively, it is conceivable from a social-desirability perspective that teachers under-reported their personal tobacco use. Also, this formative research was exploratory as an approach not used in India before. The quotes used in the article are examples and were stated once by each respective person. Response patterns were not analysed in this study. A second limitation is that not all 12 messages were discussed in each focus group although all messages were viewed prior to focus group discussions. Participants may have discussed the selection of messages in reference of all messages shown. However, this may reflect an individual's reality. People are frequently exposed to multiple messages from multiple media at the same time. Our focus here was not to formally test hypotheses in experimental conditions as much as to make an in-depth exploration of participants' reactions to messages. A third limitation of our study is that messages were randomly assigned to focus groups but not order randomized to avoid message order effects. The selection of messages for each group was defined during the development of the focus group guide. A fourth limitation is that, for ethical reasons, it was impossible to determine whether tobacco use status affected the endorsement or non-endorsement of certain message formats.

To conclude, this study's findings offer a viable approach to testing the reactions to and effects of specific messages and message formats around tobacco use in India. Much of the work on message formats has been done in developed countries such as the United States of America and Australia among others. Very little work has been done in the developing countries. The findings here suggest that formats such as framing, negative emotions and narratives are also viable in India but the messages within those formats will have to account for local, social and cultural contexts. Accordingly, the respondents asked for and found messages using evidence-based information, negative emotions such as guilt, role models and self-efficacy in the form of narratives more appealing. Testing of the socio-cultural relevance of these messages helped inform a culturally appropriate intervention for tobacco use cessation targeting teachers in Bihar, India, and this study offers viable methodology for message development as a part of a larger intervention on tobacco use cessation.

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Conflict of interest statement

None declared.

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