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Patient and doctor perspectives on incorporating smoking cessation into tuberculosis care in Beijing, China

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SUMMARY

SETTING : Tuberculosis (TB) hospital in Beijing, China.

OBJECTIVE : To describe perspectives of patients and physicians regarding the incorporation of smoking cessation interventions as part of TB treatment.

DESIGN : Seven focus groups were conducted with 39 patients and 17 physicians.

RESULTS : Patients were more receptive to physicians' advice to quit smoking due to increased concerns about their health after becoming ill with TB. However, patients indicated that they might start smoking again after they recovered from TB. Patients' attempts to quit smoking may have been inhibited by exposure to smoking at the TB facility. Physicians had low levels of knowledge regarding the effect of smoking on TB. Many doctors, particularly those who smoked, did not view smoking cessation as an integral part of TB treatment.

CONCLUSION : Despite the presence of a 'teachable moment', TB patients experience significant barriers to quitting smoking. Patient education in TB treatment programs should address the specific effects of smoking on TB and the general health benefits of cessation. Smoke-free policies should be strictly enforced in TB facilities. Successful integration of smoking cessation interventions within TB treatment regimens may require that providers adopt smoking cessation as an essential part of TB treatment.

RÉSUMÉ

Un hôpital pour tuberculose (TB) à Beijing, Chine.

Décrire les perspectives des patients et des médecins concernant l'incorporation d'une intervention d'arrêt du tabagisme au sein d'un traitement TB.

On a mené sept groupes focalisés comportant 39 patients et 17 médecins.

Les patients sont plus réceptifs à l'égard des conseils d'arrêt du tabagisme donnés par les médecins en raison de leur souci accru concernant leur santé après la découverte de la TB. Toutefois, les patients ont signalé qu'ils pourraient recommencer à fumer après leur guérison de la TB. Les tentatives des patients pour arriver à cesser de fumer peuvent avoir été inhibées par l'exposition au tabagisme au sein du service de TB. Les médecins n'ont que de faibles niveaux de connaissance concernant les effets du tabagisme sur la TB. De nombreux médecins, et particulièrement ceux qui fument, ne considèrent pas que l'arrêt du tabagisme fait partie intégrante du traitement de la TB.

En dépit de l'existence d'un « moment favorable » des barrières significatives persistent pour l'arrêt du tabagisme chez les patients TB. L'éducation des patients dans les programmes de traitement de la TB devrait porter sur les effets spécifiques du tabagisme sur la TB et sur les avantages généraux de santé liés à l'arrêt. Des politiques sans tabac devraient être appliquées de manière stricte dans les services TB. Une intégration couronnée de succès de l'arrêt du tabagisme au sein des régimes de traitement de la TB pourrait exiger que les pourvoyeurs de soins considèrent que l'arrêt du tabagisme est une partie essentielle du traitement de la TB.

RESUMEN

Un hospital de atención de la tuberculosis (TB) en Pekín, China.

Describir los puntos de vista de los pacientes y de los médicos sobre la incorporación al tratamiento antituberculoso de las intervenciones en favor del abandono del tabaquismo.

Se llevaron a cabo siete grupos de discusión, en los cuales participaron 39 pacientes y 17 médicos.

Los pacientes fueron más receptivos al consejo de los médicos de abandonar el tabaquismo, debido a una mayor preocupación por su salud después de haber contraído la TB; sin embargo, señalaron también la posibilidad de reiniciar el consumo de tabaco, una vez recuperados de la enfermedad. Un obstáculo a los intentos de abandono del hábito por parte de los pacientes pudo ser su exposición al tabaco en la institución de tratamiento de la TB. Los conocimientos de los médicos sobre los efectos del tabaquismo en la TB eran deficientes y muchos de ellos, sobre todo los que fumaban, no consideraban la intervención en favor del abandono del hábito como parte integrante del tratamiento antituberculoso.

Pese a la oportunidad de impartir una educación durante el tratamiento antituberculoso, existen aun obstáculos considerables al abandono del tabaquismo por parte de los pacientes. La educación del paciente en los programas de tratamiento de la TB debe abordar los efectos específicos del tabaco sobre la TB y las ventajas generales que aporta a la salud el abandono de su consumo. Es primordial implementar firmemente las políticas de ambientes sin humo en los establecimientos de tratamiento antituberculoso. La integración eficaz del abandono del tabaquismo a los programas de tratamiento de la TB exige que los profesionales adopten estas intervenciones como una parte central del tratamiento de la enfermedad.

Keywords

smoking cessation; tuberculosis; qualitative research; tobacco control; China

IN RESPONSE to the growing evidence of the association between smoking and adverse tuberculosis (TB) outcomes, smoking cessation has been recommended for integration into TB treatment programs.^{1–5} According to Slama et al., effective delivery of smoking cessation interventions by TB treatment providers requires the following conditions: 1) the provider regards smoking cessation as an essential part of treatment for TB, and not merely a peripheral activity; 2) the provider believes that the intervention can successfully help patients quit; and 3) the provider feels adequately trained and supported with sufficient resources to deliver the intervention effectively.⁶ However, there has been little research into whether these conditions exist in TB treatment facilities and whether smoking cessation interventions can be effectively implemented among TB patients.

The objective of this qualitative study was to compare perceptions about smoking cessation among TB patients and their physicians within a large TB hospital in Beijing, China. We also broadly applied the Stages of Change Model to explore the extent to which illness with TB causes patients to be more inclined to cessation.⁷ Based on this model, the quitting process can be measured by categorizing smokers into stages of readiness to quit: precontemplation, contemplation, preparation, action, and maintenance.⁷ The Stages of Change Model has previously been applied in China to characterize population-level readiness to quit.^{8–10}

STUDY POPULATION AND METHODS

Study population

We recruited physicians and patients at the Beijing Chest Hospital in Beijing, China, from July to August 2010 to participate in focus group discussions (FGDs). Given the sex differences in the epidemiology and social context of smoking and TB, we purposively sampled from a list of attending TB physicians to enroll approximately equal numbers by sex and smoking status to allow for comparison by physician subgroup.^{11,12} However, to ensure confidentiality, we have not reported the sex of the participant with the responses, particularly as we enrolled only one female doctor who smoked (the national prevalence of smoking among women in China is only 2.4%).¹³

For TB patients, we first randomly selected hospitalized patients from the in-patient registration list and conveniently selected patients attending the out-patient clinic for screening. Next, we purposively sampled eligible hospitalized and clinic patients based on operational construct sampling to include approximately equal sample sizes of patients who continued to smoke (precontemplation, contemplation, and preparation stages), and those who quit smoking after TB diagnosis (action and maintenance stages).^{7,14} Eligible patients were aged ≥ 18 years, had begun treatment for TB in the past 6 months, and had smoked any time during the 30 days prior to diagnosis with TB.

We sought to assemble homogeneous FGDs composed of similar social and demographic characteristics to facilitate information-rich discussions.¹⁴ However, due to the busy schedule of the TB physicians, we were unable to arrange separate FGDs by sex and smoking status. We conducted separate patient FGDs for younger (age <45 years) and older (age ≥ 45 years) patients to minimize the likelihood that the strong age-based social hierarchy prevalent in Chinese culture would stifle open discussion. Due to the low prevalence of smoking among Chinese women, we were unsuccessful in identifying and recruiting female TB patients who smoked. Furthermore, we did not have sufficient resources to conduct separate patient FGDs by smoking status, which would have required conducting additional FGDs. Two FGDs of 17 TB physicians and five focus groups of 39 patients were conducted (Table 1). Given the difference in average income between physicians and typical patients, we sought to provide adequate compensation for study participation while minimizing the risk of coercion by providing participants with different amounts: US\$15 for patients and US\$30 for physicians.

Data collection

FGDs were conducted by trained moderators at a quiet location in the Beijing Chest Hospital (a conference room and an empty cafeteria). At the start of each focus group discussion, the moderator explained the research project rationale, methods, and the voluntary nature of participation. Written informed consent was obtained from all participants. Consenting participants were asked to complete a baseline questionnaire that included items on demographic characteristics and smoking behavior.

Separate semi-structured moderator guides were developed for doctor and patient focus groups to facilitate in-depth discussions of relevant themes. The moderator guides included questions to elicit discussions on the acceptability of integrating smoking cessation and TB treatment, perceived effectiveness of physician-provided smoking cessation counseling, factors that motivate attempts at quitting, barriers to attempting and achieving cessation, and knowledge regarding the effect of smoking on TB disease. The development of the moderator guide was informed by prior qualitative research on TB treatment and physician's advice to quit smoking.^{15–17}

The FGDs were conducted in Chinese and took about 45 min for physicians and 1.5 h for patients. Each discussion was audio recorded, transcribed by a hospital researcher, and translated into English by a bilingual medical student. In addition, field notes and memos were recorded by a physician trained in focus group methodology.

Data analysis

We used qualitative methods described by Miles and Huberman to analyze the study data.¹⁸ After reading the English version of the transcripts multiple times, the first author generated codes representing broad themes. Next, the data were coded with the previously identified themes and entered into a spreadsheet. We then grouped the data into the following participant categories: patients who currently smoked, patients who had quit, physicians who smoked, and physicians who did not smoke, to compare the content of the discussions by participant categories. We did not separate the data from doctors by sex because no sex

differences were observed. We also collapsed the patient data into one category, as the data were indistinguishable by smoking status. We reduced the data by constructing a matrix consisting of summaries of the previously defined themes by participant categories. Finally, the authors who moderated the focus groups (DX and MC) reviewed the Chinese transcripts and confirmed the results and interpretation of the translated data.

Ethical considerations

The protocol and study instruments were reviewed and approved by the Institutional Review Boards of San Diego State University and the Beijing Chao-Yang Hospital.

RESULTS

Typical remarks from participants are listed in Table 2.

Knowledge of the effect of smoking on TB

Patients and physicians were generally aware that smoking adversely affects the outcome of TB disease. However, neither patients nor physicians were familiar with the mechanisms by which smoking affects TB and the extent to which smoking might harm TB patients. Some physicians doubted that smoking affected TB and believed that smoking may be beneficial to some patients. Many doctors expressed interest in obtaining information about the current state of knowledge regarding the TB-smoking relationship. The following were typical remarks shared during the FGDs.

I had smoked for over 40 years. If I suddenly stopped smoking, I'm not sure whether that would adversely affect my health.

(Older patient, smoker)

I don't know for sure how TB is related to smoking. How strongly are they related? ... Maybe smoking affects treatment. What is the relationship?

(Physician, smoker)

Illness with TB as a 'teachable moment'

For most patients, being ill with TB was the primary reason for attempting to quit smoking. Specifically, patients quit smoking because it exacerbated their immediate TB symptoms and due to increased concerns about their long-term health after becoming ill with TB. Many had never attempted to quit prior to their illness with TB. Patients also indicated that, because of their TB illness, they were more inclined to follow their physician's advice to quit smoking. However, participants who quit smoking felt that they might return to smoking after they had recovered from their illness. Physicians acknowledged that patients were more likely to accept smoking cessation advice because of their illness, but were concerned that smoking relapse would be common once patients recovered from TB. The following are typical remarks shared by patients and physicians.

I wanted to quit (before becoming ill with TB), but I couldn't. After I became sick, I finally quit.

(Older patient, former smoker)

This is my first time. I had never tried to quit before.

(Younger patient, former smoker)

Doctors had advised me to quit before. But after I felt better, I started to smoke again.

(Older patient, smoker)

When patients are sick, they will quit smoking. When they get better, they will restart smoking.

(Physician, non-smoker)

Exposure to smoking in TB treatment facilities

Patients frequently reported cigarette smoke odor at the hospital and seeing other people smoke, including other patients, nurses and visiting family members. Many patients expressed irritation at such exposure, which made their attempt to quit smoking more difficult. One patient reported that he was only able to successfully quit after he had been hospitalized at another hospital that had a smoke-free policy. Most physicians supported a government-mandated smoke-free hospital policy, but many felt that such a policy would be difficult to enforce. Remarks expressed by patients and physicians about smoking in TB treatment facilities included:

If you stay in the hospital for 1 month and always smell cigarette smoke, it is the same as if you had continued smoking. If you had quit for 2 to 3 months, you will try to avoid the smoke.

(Older patient, smoker)

There are smokers among patients, hospital workers and patient's family members. Who can really control this?

(Physician, non-smoker)

Effectiveness of TB physician's advice on smoking cessation

Patients reported trusting a physician's recommendations regarding their health overall, but were not able to follow their physician's advice to quit smoking until they became ill with TB. Patients did not feel that physicians provided sufficient information regarding the health effects of smoking. Patients requested more in-depth smoking-related health education from physicians, including the use of pictures and other concrete examples of the health effects of smoking. Physicians who smoked were concerned that patients would not accept their smoking cessation advice, as patients were at the hospital for TB treatment, and not for smoking cessation treatment.

The patients think that they need to receive treatment for TB, but the doctor wants to treat smoking as well. Will the patient accept this? I think it is hard.

(Physician, smoker)

Both smoker and non-smoker physicians believed that smoking cessation advice from physicians who smoked would be ineffective, and proposed that smoking cessation interventions should first be offered to those physicians who smoke.

Physicians' attitudes towards introducing smoking cessation interventions in TB treatment centers

Many doctors were resistant to incorporating smoking cessation as part of their routine treatment for TB due to the difficulty of adding another task during their already limited time with their patients. Doctors who smoked were particularly opposed to considering smoking cessation as part of their job, and did not feel that additional training in smoking and TB was necessary. In contrast, non-smoker physicians did not feel adequately trained to deliver effective smoking cessation counseling, and expressed interest in receiving training to develop their skills in evidence-based methods for smoking cessation. Sample quotations include:

I think your training should provide us with clear and convincing ways to tell our patient to quit smoking, and ways to assess patients (to provide appropriate intervention).

(Physician, non-smoker)

I am very busy in the clinic. I don't even have the time to drink water or go to the bathroom. I don't have time to talk about smoking cessation.

(Physician, smoker)

Is it legal for TB doctors to help patients quit smoking? I think it is beyond our job description.

(Physician, smoker)

DISCUSSION

To our knowledge, the present study is the first to describe the perspectives of TB patients and providers regarding the provision of a smoking cessation intervention as part of TB treatment. By utilizing focus group-based qualitative methods to facilitate in-depth, interactive discussions, we were able to gain new insights into a topic that has not been adequately studied in the past. For example, we found evidence that patients receiving treatment for TB are indeed at a 'teachable moment' for smoking cessation advice.⁶ Patients who were advised to quit smoking by their physicians after diagnosis with TB were likely to progress in their stage membership and attempt to quit smoking. However, patients and physicians were concerned about the likelihood of smoking relapse after patients recovered from TB. This finding is consistent with studies that show a high rate of smoking relapse among recovered TB patients who had quit during their illness.^{19,20} Educational messages for smoking cessation counseling should therefore focus on cessation maintenance and address the full range of harms caused by smoking, including those not related to TB, as well as the possibility of increased susceptibility to relapse or re-infection with TB after initial recovery.²¹⁻²³

We also found that many physicians, particularly those who were smokers, did not view smoking cessation as an integral part of TB treatment and did not believe that their patients would accept smoking cessation counseling. In contrast, patients expected to receive smoking cessation advice from their TB physicians and readily accepted the notion that smoking cessation should be part of their treatment for TB. Successful integration of smoking cessation with TB treatment may first require changing TB doctors' perceptions about their role in the delivery of smoking cessation interventions. Particular attention should be given to engaging and securing support for smoking cessation from TB physicians who are smokers. TB physicians should also be engaged to jointly address concerns about the additional workload associated with instituting formal smoking cessation interventions as part of TB treatment programs.

One unexpected finding from both physicians and patients was the importance placed on the health care environment in helping or hindering patients' attempts to quit smoking. China recently enacted a law that requires all hospitals to be smoke-free by the end of 2011.²⁴ While there are still significant barriers to full implementation of this policy, the institution and enforcement of smoke-free policies in TB treatment facilities is likely to contribute to successful implementation of smoking cessation programs.²⁴

An important limitation to the study findings is that the focus groups were conducted in one TB hospital in Beijing, China. While we attempted to enroll a diverse study population, including participants receiving in-patient and out-patient care and varying age groups, our findings may not be generalizable to TB patients and providers in other TB facilities. In addition, we were not able to conduct FGDs separately for smokers and non-smokers. Conducting separate FGDs by smoking status might elicit deeper group interaction and more information-rich results. We were also unsuccessful in recruiting female smokers with TB. Additional research should be conducted among female smokers with TB to ensure that their perspectives are incorporated into the design of smoking cessation programs.

Our study provides timely information to guide the development of smoking cessation interventions for implementation in TB treatment facilities. In the light of the enormous burden of disease posed by smoking and TB and the evidence of their synergy, randomized controlled trials to evaluate the effectiveness of well-designed interventions are urgently needed. Stronger partnerships between TB and tobacco control programs should also be forged to ensure optimal use of resources in combating the dual epidemics.

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Table 1

Characteristics of focus group participants, Beijing, China, July–August 2010

Characteristic	Patients (n = 39) n (%)	Physicians (n = 17) n (%)
Age, years, mean [range]	46.1 [18–73]	39.4 [30–50]
Male	39 (100)	8 (47)
Current smoker	15 (39)	5 (29)
Occupation		
Manual laborer	17 (44)	
Farmer	5 (13)	
Driver	5 (13)	
Student	2 (5)	
Other	10 (26)	
Number of persons in the household, mean [range]	3.6 [1–12]	
Rural residence	19 (49)	

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Table 2

Sample quotes regarding smoking cessation from patients and doctors at a TB hospital in Beijing, China, July–August 2010*

Theme	Patients	Physicians
Knowledge of the health effects of smoking	<i>I know too little about smoking. I know smoking is harmful and it can cause TB and cardiovascular disease. But how does smoking cause these diseases and how serious is the harm? I don't know.</i> (Older smoker)	<i>Regarding smoking, we only have partial knowledge about it.</i> (Non-smoker)
	<i>I had smoked for over 40 years. If I suddenly stopped smoking, I'm not sure whether that would adversely affect my health.</i> (Older smoker)	<i>I don't know much about smoking because I am not a smoker. As for TB's relationship with smoking, I see none.</i> (Non-smoker)
	<i>I wanted to quit (before becoming ill with TB), but I couldn't. After I became sick, I finally quit.</i> (Older former smoker)	<i>I don't know for sure how TB is related to smoking. How strong are they related? ... Maybe smoking affects treatment. What is the relationship?</i> (Smoker)
	<i>I would still be smoking if I was not diagnosed with TB.</i> (Older former smoker)	<i>When patients are sick, they will quit smoking. When they get better, they will restart smoking.</i> (Non-smoker)
	<i>I only have two lungs. With one damaged, how can I not protect the other one?</i> (Older former smoker)	<i>But the environment will lead him to smoking again when he feels better.</i> (Non-smoker)
	<i>Doctors had advised me to quit before. But after I felt better, I started to smoke again.</i> (Older smoker)	<i>Unless he feels very bad after smoking, if he cannot breathe, then he may quit smoking. So it is definitely true that more people quit smoking when they are sick, and it is likely that they quit by themselves.</i> (Smoker)
	<i>This is my first time. Never tried to quit before.</i> (Younger former smoker)	<i>I think if I had TB, I would be able to quit smoking. But now I do not have TB, and it is hard for me to quit.</i> (Smoker)
	<i>I think I will start smoking again after my disease is cured.</i> (Younger former smoker)	
	<i>If you stay in the hospital for 1 month and always smell cigarette smoke, it is the same as if you had continued smoking. If you had quit for 2 to 3 months, you will try to avoid the smoke.</i> (Older smoker)	<i>We all know that it is not permitted to smoke inside the hospital. But whether in our hospital or other hospitals, there are cigarette butts everywhere in the ward. They don't obey the regulation. There are smokers among patients, hospital workers and patient's family members. Who can really control this? The hospital cannot do this.</i> (Non-smoker)
	<i>One day I was in the restroom at the hospital and saw a patient with even more severe disease than mine. He was smoking heavily more than I ever had.</i> (Older former smoker)	<i>The government should pass legislation to clearly require hospitals to be smoke-free.</i> (Smoker)
Exposure to smoking in TB treatment facilities	<i>The government should pay attention to this problem. I saw some people smoking in the hospital. It should be banned by the government.</i> (Older former smoker)	

Theme	Patients	Physicians
TB doctor's advice on smoking cessation	<i>I like to hear doctors' advice. I feel that doctors care about my life when they give advice.</i>	<i>It is impossible to make them stop smoking completely.</i>
	<i>More information about smoking and quitting should be offered to the patients.</i>	<i>Very few patients will quit.</i>
	<i>Hospitals should show patients real cases or specimens or pictures to educate them about smoking cessation. For example, how will your lungs look after certain years of smoking? If real pictures are shown, it will have better effect.</i>	<i>The patients think that they need to receive treatment for TB, but the doctor wants to treat smoking as well. Will the patient accept this? I think it is hard.</i>
Doctors' attitude towards introducing smoking cessation intervention in TB treatment centers	<i>I trust doctors. They can help me quit smoking.</i>	<i>Doctors should quit smoking first. I used to smoke. You can't talk about quitting smoking with confidence to patients when you yourself are a smoker.</i>
	<i>I trust doctors. They can help me quit smoking.</i>	<i>We already know the harms of smoking. We should have training about smoking cessation methods.</i>
	<i>I trust doctors. They can help me quit smoking.</i>	<i>I think your training should provide us clear and convincing ways to tell our patient to quit smoking, and ways to assess patients (to provide appropriate interventions).</i>
	<i>I am very busy in the clinic. I don't even have time to drink water or go to the bathroom. I don't have time to talk about smoking cessation.</i>	<i>I am very busy in the clinic. I don't even have time to drink water or go to the bathroom. I don't have time to talk about smoking cessation.</i>
		<i>Is it legal for TB doctors to help patients quit smoking? I think it is beyond our job description.</i>
		<i>I think it is useless to train the doctors. Doctors all know that smoking is bad for your health. Who doesn't know this?</i>

* Younger patients were aged 18–44 years, while older patients were aged ≥ 45 years. TB = tuberculosis.