



## A STUDY OF KNOWLEDGE, ATTITUDES, AND PRACTICES TOWARDS TOBACCO CESSATION SERVICES (TCS) AMONG CLINICIANS IN A TERTIARY CARE TEACHING HOSPITAL

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### ABSTRACT

Tobacco consumption is a leading cause of death and disability globally. Though legislation and policies have been successful in bringing down the number of new tobacco users, it is the responsibility of health professionals to address the millions of current tobacco users in India by providing Tobacco Cessation Services (TCS). The present study aimed to understand the knowledge, attitudes, barriers, current practices, and motivation to learn about TCS among clinicians of a tertiary care teaching hospital. This was a cross-sectional, questionnaire-based study that included all clinicians who gave their written consent. Of the 90 clinicians who participated in the study, 74.4% did not have formal training in TCS. Doctor's knowledge of the harmful effects and treatment modalities were better than their knowledge of the epidemiology of tobacco use. Most doctors had positive attitudes towards TCS. Common barriers cited were the lack of referral TCS (53.3%), unmotivated patients (40%), lack of skills (35.6%), and time constraints (34.4%). Doctors enquired about tobacco use 31.3% of the time, assessing it routinely only in patients with tobacco-related complications (75%). Anticraving medications (25.6%) and nicotine replacement therapy (37.8%) were prescribed to patients infrequently. 33.3% of the doctors arranged for follow-up visits to inquire about the success of TCS. Only 32.2% of patients were referred to psychiatric services. 41.1% (counseling) and 47.8% (pharmacotherapy) of the doctors were very interested to learn about TCS. There is a dire need to train clinicians to offer brief tobacco cessation interventions and to establish specialized TCS in hospitals for referral of patients.

**KEYWORDS:** *Tobacco cessation, Doctors, Knowledge, Practices, Barriers.*



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## INTRODUCTION

Tobacco consumption and Smoke Exposure can have devastating health, social, economic, and environmental consequences at both individual and global levels.<sup>1</sup> It is one of the leading causes of death throughout the world with 6 million deaths each year, of which 5 million are directly attributable to tobacco use.<sup>2</sup> Moreover, tobacco-related deaths are projected to rise globally from 6.4 million in 2015 to 8.3 million by 2030.<sup>3</sup> Tobacco use is also a barrier to economic development in low and middle-income countries due to morbidity-associated impairment of productivity and health-care costs.<sup>4</sup> The Global Adult Tobacco Survey (GATS-2) in 2017 reports that 28.6% of the Indian population consumes tobacco in any form, 10.7% smoke, and 21.4% use smokeless tobacco (SLT).<sup>5</sup> Studies in developed countries have shown increased taxes as an important factor that can help cessation;<sup>6,7</sup> but in India, the prices and taxation vary widely enabling users to shift to cheaper forms (e.g. beedis and smokeless chewing tobacco).<sup>8</sup> India became a signatory to the WHO Framework Convention on Tobacco Control (FCTC) in 2004 and enacted the National Tobacco Control Programme (NTCP) in 2008 to implement tobacco control laws and to fulfill its commitments. Although limited success has been achieved at the National level, non-prioritization of tobacco control at the sub-national level has impaired effective implementation of tobacco control policies. Interventions at the Government level (Centre and State) through legislation, tobacco industry through responsible advertisement, and the community through non-tolerance of public smoking has been successful in bringing down the number of new tobacco users and reducing the burden. However, the problem of 300 million current tobacco users in the country still remains the same. In the U.S., although more than 70% of smokers want to quit each year and 45% make an attempt to quit, less than 5% in the general population are successful.<sup>9</sup> Though such data is not available for India as a whole, a multi-center study by Jindal et al., on 11,496 ever smokers showed that only 8.1% had quit for more than a year.<sup>10</sup> A recent study in India reported that 83% of tobacco users wanted to quit but did not know that there were evidence-based pharmacological behavior strategies to quit.<sup>11</sup> The government has involved professional bodies of stakeholders in tobacco cessation services (TCS) viz., National Associations of Medicine (IMA),

Dental sciences (IDA), Pediatrics, Psychiatry, Tuberculosis and Chest Diseases, Obstetrics and Gynaecology along with all regional cancer centers, medical, dental, pharmacy and nursing colleges. However, these stakeholders do not routinely inquire about tobacco use in their patients or offer advice to quit. They also are not fully aware of the treatment options, lack motivation, training, and confidence to counsel and have misconceptions regarding nicotine dependence.<sup>12,13</sup> Traditionally, counseling for substance addiction is delegated to psychiatrists or the mental health care team. However, the stigma associated with psychiatry prevents most patients from seeking help from mental health care services for their tobacco use. In this situation, the primary care physician or specialist is in the best place to provide TCS to his/her patient.<sup>14,15</sup>

## METHODOLOGY

The present study aimed to understand tobacco cessation services (TCS) provided by doctors in a tertiary care teaching hospital. Its objectives were to assess the knowledge, attitudes, barriers, current practices and motivation to provide TCS within their fields of specialization. A cross-sectional, questionnaire-based study design was chosen to address the objectives. All clinicians (medical and surgical) of Sikkim Manipal Institute of Medical Sciences who provided their written consent were included. The study was cleared by the Institutional Ethics Committee (SMIMS/IEC/2018-058). The following questionnaires were administered:

1. Demographic data including age, gender, field of specialization, years of experience, and formal training in providing TCS.
2. Questionnaire based on Knowledge of tobacco use and its treatment was assessed by a 18-item questionnaire. It consisted of 16 true/false and 2 MCQ type questions that assessed the areas of epidemiology, harmful effects and treatment issues pertaining to tobacco use. The questions were framed based on the WHO GATS Indian survey report<sup>3</sup> and the National Tobacco Control Program training manual for doctors (Ministry of Health & Family Welfare).<sup>16</sup>
3. Questionnaire on physician's attitudes towards TCS consisted of 12 five-point Likert type items. These items are based on previous studies that have assessed attitudes of health care personnel towards tobacco cessation.<sup>17-22</sup>

4. Barriers that prevent doctors in providing TCS were assessed using commonly cited reasons in previous research in this area.<sup>19-21</sup>
5. Current clinical practice of physicians in providing TCS was assessed by seven questions based on the tobacco dependence treatment guidelines (Ministry of Health & Family Welfare)<sup>16</sup> and previous research.<sup>17-21</sup>
6. Learning motivation for providing TCS was assessed using four questions that could be used to plan and implement tobacco cessation training for doctors in our hospital.

## STATISTICAL ANALYSIS

Statistical Analysis was performed using MINITAB 17 statistical software (Minitab 17 Statistical Software (2010). [Computer software]. State College, PA: Minitab, Inc. [www.minitab.com](http://www.minitab.com)). Responses to the questionnaires were presented in percentages and displayed in tables.

## RESULTS

Out of 137 doctors, 106 participated in the study (77.37%). 16 questionnaires were incomplete and had to be excluded. The mean age of the participant doctors (n=90) was 37.13 (SD 10.16) years, 63.3% were male, and 50% belonged to the medical specialty. The mean years of experience was 9.41 (SD 9.35) years. 74.4% did not have formal training in the provision of TCS. *Knowledge of the epidemiology* of tobacco use (questions 1-7) was less among the doctors as the average score was 38.6% (Table 1). Most doctors correctly identified that chewing tobacco was the commonest form used in India (75.6%). The prevalence of tobacco use in men (64.4%), and the scale of deaths related to tobacco use being greater than that caused by serious infectious diseases (67.8%). However, they overestimated the trend of tobacco use (2010-17) in adults and minors, underestimated the prevalence of smoking versus chewing tobacco in Sikkim and underestimated the deaths attributable to tobacco use. With regard to the *knowledge of health-related risks* of tobacco use (questions 8-12), doctors scored an average of 44.7%. 52.2% attributed tobacco use to pancreatic cancer and 60% correctly identified that second-hand smoke from an extinguished cigarette leads to lung cancer in children. However, 51.1% wrongly believed that nicotine was the most harmful chemical in tobacco products. Most doctors underestimated the knowledge of patients regarding the harmful effects

of tobacco and the harm of second-hand smoke inside homes. Regarding questions about the *knowledge of treatment* for tobacco use (questions 13-18) doctors scored an average of 50.9%. 75.6% knew that there were proven medications for tobacco addiction, 57.8% knew nicotine patches were available in India, and 60% believed that advice should be provided to all patients irrespective of their motivation to quit. However, 50% believed that hypnosis, despite its lack of efficacy, was effective in quitting tobacco and 87.8% believed that patches were better than other forms of nicotine delivery, though this is not supported by evidence. Doctors possessed an overall positive attitude towards TCS (Table 2). Most of them strongly agreed that physicians should set an example by not using tobacco (90%) and that there should be a no-tobacco-use policy in the hospital (91.1%). 31.1% believed that if a patient does not want to quit there is nothing they could do to help. 5.5% of the doctors did not believe that TCS is a part of their professional responsibility. 67.8% believed in providing TCS before a patient develops tobacco-related illness while only 10% believed that such advice would disturb the doctor-patient relationship. 46.7% were not sure if their patients followed their advice to stop using tobacco. 72.2% said that counseling about the harmful effects of tobacco usually helps patients quit and that involves help from the family (71.1%). Most doctors also wished that they received TCS training and that it should be included as a part of the undergraduate and postgraduate medical curriculum (83.3%). Regarding the current practices among doctors in providing TCS, 68.8% doctors did not regularly enquire about tobacco use in their patients, reserving it to those with acute or chronic illnesses related to smoking (75%). 70% were not aware of or read the guidelines on tobacco cessation under the National Tobacco Control Program published by the Ministry of Health & Family Welfare, Govt. of India.<sup>16</sup> Most of the knowledge and skills of TCS came through self-learning (44.8%). Doctors reported giving self-help materials (17.8%), anti-craving medications (25.6%) and nicotine replacement therapy (37.8%) to clients who wanted to quit. For patients who were not ready to quit, doctors reported that they would still try to motivate them (93.3%) by explaining to them the harmful effects of tobacco (78.9%), passive smoking (51.1%), and the benefits of quitting (58.9%). Only 25.6% said that they would try to identify the fears/impediments that are harbored in the minds of patients that might prevent

them from contemplating about quitting. During follow-up visits, only 33.3% of doctors reported that they would inquire about the patient's tobacco use status, quit plan and abstinence. 32.2% preferred referring patients to psychological services. Common barriers cited were lack of specialized TCS in the hospital for referral (53.3%), time constraints (34.4%), unmotivated patients

(40%), and lack of skills in providing TCS (35.6%). Motivation among doctors in providing TCS was generally encouraging. They were very interested in learning counseling (41.1%) and pharmacotherapy (47.8%) for nicotine dependence through workshops (51.1%) and seminars (30%). However, most doctors said that they could allocate less than 10 minutes in providing TCS (69.9%).

**Table 1**  
*Distribution of scores on the tobacco knowledge questionnaire of doctors*

N	Questions on Knowledge of epidemiology, health risks, and treatment of tobacco use	Correct response	Doctors who gave correct response
1	Most consumed form of tobacco in India	Chewing	75.6%
2	Percentage of Indian men using tobacco 2016-17 GATS survey	40%	64.4%
3	Tobacco use in India has increased from 2010 - 2017	False	10%
4	Tobacco use in minors has declined from 2010 - 2017	True	20%
5	The deaths caused by tobacco are more than those caused by malaria, TB, HIV/AIDS combined	True	67.8%
6	In Sikkim, the prevalence of chewing tobacco is greater than smoking	False	33.3%
7	A quarter of all smokers die of a tobacco-related diseases	False	18.8%
8	Tobacco chewing is associated with pancreatic cancer	True	52.2%
9	Most Indians tobacco users do not believe that it causes serious illness	False	26.7%
10	In India, exposure to secondhand smoke occurs more in the workplace than at home	False	35.6%
11	Third hand smoke contamination that remains after the cigarette has been extinguished leads to cancer in children	True	60%
12	Nicotine is the most harmful constituent of tobacco	False	48.9%
13	Relapse is uncommon if patients follow doctor's smoking cessation plan and quit advice	False	40%
14	Nicotine patches have a much higher quit rate than nicotine gums, inhaler, lozenges and nasal spray.	False	22.2%
15	Nicotine replacement patches have to be imported as they are yet to be available in India	False	57.8%
16	Advice and counseling should only be given to patients who are willing and ready to quit tobacco	False	60%
17	Hypnosis is an effective and recommended psychological intervention to quit tobacco	False	50%
18	There are evidence based medications approved for the treatment for tobacco addiction	True	75.6%

Values are in percentages (%).

**Table 2**  
*Distribution of attitudes towards tobacco and its cessation among doctors (in percentage)*

Statements	SA	A	U	D	SD
Physicians should set a non-smoking example to their patients	61.1	28.9	7.8	0	0
Hospital should impose a no-tobacco use policy (both smoking & chewing) in workplace for all healthcare personnel	67.8	23.3	4.4	1.1	0
If a smoker/tobacco chewer does not want to quit there is nothing I can do to help	7.8	23.3	12.2	40	12.2
I do not consider tobacco cessation counseling part of my professional role	3.3	2.2	4.4	55.6	32.2
TCS is ineffective unless patient has tobacco related health problem	2.2	15.6	11.1	42.2	25.6
Giving unwanted advice to stop tobacco may upset the doctor-patient relationship	2.2	7.8	16.7	55.6	11.1
Most of my patients follow my advice if I advise them to stop using tobacco	4.4	24.4	46.7	20	0
Counseling on harms from smoking usually helps patients quitting	14.4	57.8	16.7	10	0
Involving the family of patients who are tobacco users helps in tobacco cessation	18.9	52.2	14.4	11.1	0
I wish to receive education on tobacco dependence and treatment	27	59.6	9	3.4	0
Tobacco control & cessation training should be included in the U.G curriculum	41.1	47.8	7.8	2.2	0
TCS training should be included in P.G curriculum (all specialties)	44.4	38.9	10	4.1	1.1

Values are in percentages (%). SA=strongly agree, A=agree, U=unsure, D=disagree, SD=strongly disagree.

**Table 3**  
**Comparison of \*Indian studies on TCS among doctors.**

Variables	Sinha & Gupta <sup>17</sup> 2004	Thankappan et al <sup>18</sup> 2009	Saud et al <sup>19</sup> 2014	Aggarwal et al <sup>20</sup> 2015	Sumana et al <sup>21</sup> 2017	Present study
Sample size	521	339	147	422	58	90
Place	Bihar	Kerala	Karnataka	Rajasthan	Karnataka	Sikkim
Form of tobacco use	Chewing and smoking	Smoking	Smoking	Chewing and smoking	Smoking	Chewing and smoking
Knowledge	Not assessed	Single item. How many cigarettes can harm health?	Treatment aspects (5 questions)	Health risks (9 questions) and Treatment (4 questions)	Not assessed	Epidemiology (8), Health risks (5), Treatment (6) questions
Attitudes	Physicians role in TCS (5 questions)	Who should play a key role & where TCS be located? (2 questions)	Physicians role in TCS (9 questions)	Physicians role (4 questions) & stakeholders role (3 questions)	Physicians role in TCS (8 questions)	Physicians role (12 questions)
Current TCS practices	Ask, assess, advice	Ask, assess, advice, assist	Ask, assess, advice, assist, arrange	Ask, assess, advice, assist	Ask, assess, advice, assist, arrange	Ask, assess, advice, assist, arrange
Barriers for providing TCS	Not assessed	Not assessed	8 barriers	6 barriers	9 barriers	15 barriers
Learning motivation	Not assessed	Do you need TCS training (1 question)	Not assessed	Not assessed	Not assessed	4 questions

*\*Studies done exclusively on dental practitioners were excluded.*

### **Survey questionnaire**

#### **A. Demographic profile**

1. Age:
2. Gender: Male Female
3. Specialty:
4. Years of experience in the field of specialization:
5. Have you received formal training on tobacco cessation? Yes No

#### **B. Questionnaire on knowledge of tobacco and tobacco cessation services**

1. In India which of the following tobacco products is consumed most?
  - a. Smokeless tobacco chewing (khaini)
  - b. Beedi
  - c. Cigarette
  - d. Nasal snuff
2. What percentage of Indian men use tobacco according to GATS 2016-17 survey?
  - a. 30%
  - b. 40%
  - c. 50%
  - d. 60%

N	STATEMENTS	True	False
E1*	The Global Adult Tobacco Survey (GATS) in India, showed an increase in tobacco use from 2010-2017		
E2	The prevalence of tobacco use in minors (15-17yrs) has decreased from 2010 to 2017 (GATS survey)		
E3	The deaths caused by tobacco are more than those caused by malaria, TB, HIV/AIDS combined		
E4	In Sikkim, the prevalence of smokeless tobacco use (chewing) is greater than smoking		
H1*	A quarter of all smokers die of a tobacco related disease		
H2	Tobacco chewing is associated with pancreatic cancer		
H3	Most Indians who use tobacco do not believe that it causes serious illness		
H4	In India, exposure to second hand smoke occurs more in the workplace than at home		
H5	Third hand smoke (smoke that remains after extinguishing cigarette) leads to cancers in children		
H6	Nicotine is the most harmful constituent of tobacco		
T1*	Relapse is uncommon if patients follow doctor's smoking cessation plan and quit advice		
T2	Nicotine patches have a much higher quit rate than nicotine gum, inhaler, lozenges and nasal spray.		
T3	Nicotine replacement patches have to be imported as they are yet to be available in India		
T4	Advice and counseling should only be given to patients who are willing and ready to quit tobacco		
T5	Hypnosis is an effective and recommended psychological intervention to quit tobacco		
T6	There are evidence based medications approved for the treatment for tobacco addiction		

*E=epidemiology of tobacco use. H=Harmful effects of tobacco. T=Treatment of tobacco addiction.*

**C. Questionnaire on attitudes towards tobacco cessation services**

N	STATEMENTS	SA	A	U	D	SD
1	Physicians should set a non-smoking example to their patients					
2	If a smoker/tobacco chewer does not want to quit there is nothing I can do to help					
3	I do not consider tobacco cessation counseling part of my professional role					
4	Tobacco cessation treatment is ineffective unless patient has tobacco related health problem					
5	Giving unwanted advice to stop tobacco may upset the doctor-patient relationship					
6	Most of my patients follow my advice if I advise them to stop using tobacco					
7	Counseling on direct & indirect harms from smoking usually helps patient quitting					
8	Involving the family of patients who are tobacco users helps in tobacco cessation					
9	This hospital should impose a no-tobacco use policy (both smoking & chewing) in workplace for all health care personnel					
10	I wish to receive education on tobacco dependence and treatment					
11	Tobacco control & cessation training should be included in the U.G curriculum					
12	Tobacco control & cessation training should be included in P.G curriculum (all specialties)					

SA=Strongly Agree, A=Agree, U=Unsure, D=Disagree, SD=Strongly Disagree.

**D. Questionnaire on barriers towards providing tobacco cessation services**

The following are some barriers that prevents me from providing tobacco cessation treatment to my patients? (you may circle more than one option)

- A. Uncomfortable about suggesting patients to alter their lifestyle
- B. Low priority in my field of specialty
- C. Lack of knowledge about how to help patients quit tobacco
- D. Lack of training in providing tobacco cessation services
- E. Lack of confidence in providing counseling
- F. Lack of knowledge about tobacco and health
- G. Lack of support from colleagues/management
- H. No tobacco cessation clinic/centre in hospital to refer patients
- I. Unsuccessful past experience
- J. Believe that smoking is a kind of coping mechanism for patients under stress
- K. Unmotivated patient
- L. Lack of resources, e.g., staff
- M. Lack of time
- N. Heavy workload
- O. Not interested

**E. Questionnaire on current tobacco cessation services provided by the doctors**

1. What is your experience with the guidelines on tobacco cessation under the National Tobacco Control Program published by the Ministry of Health & Family Welfare, Govt. Of India ?
  - A. Not heard of it
  - B. Heard of it but not read it
  - C. Read it but have not used it
  - D. Have used it in my practice

**2. Do you routinely assess the level of addiction in patients who use tobacco**

- A. Always
- B. Most of the time
- C. Sometimes
- D. Rarely
- E. Never

**3. In your routine clinical practice, for what group of patients do you ask if he/she takes tobacco (you can circle more than one choice)**

- A. To patients who have an acute illness directly related to their tobacco use
- B. To patients who have a chronic illness related to tobacco use
- C. To all adult patients irrespective of their presenting problem
- D. None of the above
- 4. How often do you advise your patients to stop using tobacco
  - A. Always
  - B. Most of the time
  - C. Sometimes
  - D. Rarely

**5. Your current level of knowledge & skills for offering tobacco cessation service to your patients has come from (you may select more than one option)**

- A. Training I received during my MBBS
- B. Training I received during my post graduation
- C. Self Learning after my degree
- D. Formal training (workshops, CME) after my degree
- E. Received information from medical representatives
- F. None of the above

**6. In your clinical practice, if a patient is ready to quit tobacco, how do you proceed further (you may circle more than one response)**

- A. Refer to counselor/psychological services
- B. Ask the patient to set a quit date
- C. Ask the patient to tell the family, friends, coworkers and ask for support/help to quit
- D. Ask patient to anticipate challenges during quitting and plan ahead
- E. Remove tobacco products from home and avoid company of tobacco users
- F. Provide self help materials, printouts, handouts
- G. Advise relaxation, meditation, exercise
- H. Use medications to reduce craving
- I. Use Nicotine replacement therapy
- J. Arrange for follow up to discuss the success of quitting
- K. None of the above

**7. How do you advise your patients if they are not ready to quit tobacco (you may circle more than one response)**

- A. It is futile to offer advice/counseling to an unmotivated patient
- B. Explain the dangers of tobacco
- C. Explain the dangers of passive smoking
- D. Explain the benefits of stopping tobacco
- E. Identify fears/impediments in patient that might prevent him/her to quit
- F. Discuss patient's tobacco use with family members and involve them
- G. Discuss during the next visit to see if the patient is motivated to quit this time.
- H. Refer patients to appropriate health care professional

**F. Questionnaire regarding motivation to learn and practice tobacco cessation services among doctors**

1. How much time are you willing to spend with your patient to provide tobacco cessation medications
  - A. Too busy to allocate time and energy
  - B. Less than 5 minutes
  - C. 5-10 minutes
  - D. More than 10 minutes
2. Do you wish to receive training in counseling skills on tobacco cessation?
  - A. Not interested
  - B. Somewhat interested
  - C. Very interested
3. Do you wish to receive training on medications for tobacco cessation?

- A. Not interested
- B. Somewhat interested
- C. Very interested
- 4. How do you want this training to be?
  - A. Self learning materials/printouts
  - B. Seminars
  - C. Workshops
  - D. None of the above

## DISCUSSION

Doctors are exemplars of health delivery and are expected to play a crucial role in the success of medical services in India. They can play a pivotal role in tobacco control, having the opportunity for helping tobacco users to quit and also prevent initiation. A Cochrane systematic review has shown that tobacco cessation advice provided by health professionals enhances the quit rates among their patients.<sup>23</sup> The Directorate General of Health Services, Ministry of Health & Family Welfare, Government of India has come up with a tobacco dependence guidelines for doctors under the National tobacco control program.<sup>16</sup> However, most doctors are unaware of or have not read the guidelines (70% in our study). This is indeed worrying as these guidelines are evidence-based, practical, and brief that can be administered in busy clinical settings. Doctor's level of knowledge was average regarding the epidemiology (38.6%), health risks (44.7%), and treatment modalities (50.9%). Previous Indian studies that have assessed doctor's knowledge of tobacco use were not comprehensive enough to encompass all the domains of knowledge regarding tobacco use (Table 3). Aggarwal et al.<sup>20</sup> reported a 78.1% score in knowledge regarding the harmful effects of tobacco and 70.9% in treatment modalities. However, the questions were relatively easy to answer. Attitude towards tobacco use and cessation was overall positive among doctors in our study as reported in other Indian studies. Compared to other Indian studies, our assessment of attitudes was more comprehensive (Table 3).<sup>17-21</sup> Most doctors felt that they should set a non-tobacco use example 77.3%<sup>17</sup> (90% in our study) and believed that there should a non-tobacco use policy in the workplace (91.1% in our study) compared to 82.3%<sup>20</sup> and 94.4%<sup>21</sup> in other Indian studies. Aggarwal et al.<sup>20</sup> reported that 23.2% the doctors smoked in front of patients, which is worrying. Current TCS practices among doctors varied among the studies. While the strategies listed in the tobacco control guidelines<sup>16</sup> list five steps (Ask, Assess, Advice, Assist and Arrange), only 2

previous Indian studies have assessed all the domains.<sup>19,21</sup> In the Ask domain, doctors inquired patients about tobacco use 40.4%<sup>17</sup> - 95.2%<sup>19</sup> of the time (31.3% in our study). In the Assessment for motivation to quit domain, doctor's assessments ranged from 50.9%<sup>21</sup> -70%<sup>18</sup> (compared to 75% in our study). In the Advice domain, doctor's ranged from 53.5%<sup>20</sup> – 93.9%<sup>19</sup> (compared to 93.3% in our study). In the Assist domain, doctors provided assistance 13%<sup>18</sup> - 50.3%<sup>19</sup> of the time (compared to 37.8% in our study). In the Arrange domain, doctors followed up patients 27.9%<sup>19</sup> – 29.8%<sup>21</sup> of the time (compared to 33.3% in our study). Referral to TCS/psychological services was done 36.8%<sup>21</sup> - 49.7%<sup>19</sup> of the time (compared to 32.2% in our study). The most common barriers cited while providing TCS services were limited time, unmotivated patient, lack of training, no financial incentives, and other professional priorities<sup>19-21</sup> which were echoed by doctors in our study. 49.2%<sup>18</sup> of the doctors reported that they were very interested to learn about TCS compared to 41.1% (counseling) and 47.8% (pharmacotherapy) in our study. One important lacuna that emerged during this discussion is the lack of uniform and standardized assessment tools to evaluate a doctor's knowledge, attitudes, current practices, and barriers towards TCS. This greatly hinders comparison and hence an accurate estimation of these key indicators. There is an urgent need to develop questionnaires that comprehensively assess these domains in the Indian context. Another limitation of this study is its reliance on the doctor's version of current tobacco practices which could not be verified and could have biased by social desirability. As mentioned above, lack of standardized assessment meant that we used questionnaires that we developed based on

guidelines and previous research which lack validity.

## CONCLUSION

Despite its small sample size compared to previous Indian studies we comprehensively assessed all the domains we set out to study. In spite of lack of training and barriers, doctors demonstrated a favorable attitude and motivation to provide TCS. There is a dire need for training and specialized TCS referral centers in hospitals for patients who use tobacco.

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## AUTHORS CONTRIBUTION STATEMENT

Dr.H.S. directed the project. Dr.H.S. was also responsible for study conception and design, questionnaire development, analysis and interpretation of data. Mr.D.S. was responsible for acquisition of data responses to the questionnaires from the doctors. Dr.G.S. was responsible for drafting the manuscript and was involved in the critical revision of the draft.

## CONFLICT OF INTEREST

Conflict of interest declared none.

## REFERENCES

- Organization WH. WHO Global Report: Mortality Attributable to Tobacco. World Health Organization; Geneva, Switzerland. 2012. p. 395. Available from: [https://www.who.int/tobacco/publications/surveillance/rep\\_mortality\\_attributable/en/](https://www.who.int/tobacco/publications/surveillance/rep_mortality_attributable/en/)
- World Health Organization Tobacco: Fact Sheet No. 339. 2015. Available online: <http://www.who.int/mediacentre/factsheets/fs339/en/>
- Mathers CD, Loncar D. Projections of Global Mortality and Burden of Disease from 2002 to 2030. PLoS Med 2006;3(11):e442. DOI:10.1371/journal.pmed.0030442
- Anderson C, Becher H, Winkler V. Tobacco Control Progress in Low and Middle Income Countries in Comparison to High Income Countries. Int J Environ Res Public Health 2016;13(10):1039. DOI:10.3390/ijerph13101039
- IIPS. Global Adult Tobacco Survey India. New Delhi, India: Ministry of Health and Family Welfare, Government of India; 2010. Available online: <http://www.searo.who.int/tobacco/documents/2010-pub2.pdf>

6. GATS. Global Adult Tobacco Survey: fact sheet, India 2016-17; 2017. [http://www.who.int/tobacco/surveillance/survey/gats/GATS\\_India\\_2016-17\\_FactSheet.pdf](http://www.who.int/tobacco/surveillance/survey/gats/GATS_India_2016-17_FactSheet.pdf)

7. Chaloupka FJ, Straif K, Leon ME. Effectiveness of tax and price policies in tobacco control. *Tob Control* 2010;20(3):235-8. DOI:10.1136/tc.2010.039982

8. Pawar PS, Pednekar MS, Gupta PC, Shang C, Quah ACK, Fong GT. The relation between price and daily consumption of cigarettes and bidis: findings from the Tobacco Control Policy Evaluation Wave 1 Survey. *Indian J Cancer* 2014 Dec;51 Suppl 1:S83-7. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/25526256>

9. Centers for Disease Control and Prevention (CDC). Cigarette smoking among adults--United States, 2000. *MMWR Morb Mortal Wkly Rep* 2002 Jul 26;51(29):642-5. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/12186222>

10. Jindal SK, Aggarwal AN, Chaudhry K, Chhabra SK, D'Souza GA, Gupta D. Tobacco smoking in India: prevalence, quit-rates and respiratory morbidity. *Indian J Chest Dis Allied Sci* 2005;48(1):37-42. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/16482950>

11. Pradeepkumar AS, Mohan S, Gopalakrishnan P, Sarma PS, Thankappan KR, Nicther M. Tobacco use in Kerala: Findings from three recent studies. *Natl Med J India* 2005;18:148-53. Available from: <http://www.indiaenvironmentportal.org.in/files/The%20Nation%20medic%20jou%20of%20in.pdf>

12. McKay AJ, Patel RKK, Majeed A. Strategies for Tobacco Control in India: A Systematic Review. *PLoS One* 2015;10(4):e0122610. DOI:10.1371/journal.pone.0122610

13. Panda R. Examining physicians' preparedness for tobacco cessation services in India: Findings from primary care public health facilities in two Indian states. *Australas Med J* 2013 Apr 2;6(3):115-21. Available from: <http://www.amj.net.au/index.php?journal=AMJ&page=article&op=viewFile&path%5B%5D=1617&path%5B%5D=1044>

14. Saud M, Madhu B, Srinath KM, Ashok NC, Renuka M. Physician's practices and perspectives regarding tobacco cessation in a teaching hospital in Mysore City, Karnataka. *Indian J Psychiatry* 2014;56(1):24. DOI:10.4103/0019-5545.124710

15. Aggarwal V, Mathur A, Dileep CL, Batra M, Makkar D. Health professional's perception toward tobacco cessation: A cross-sectional study. *J Indian Assoc Public Heal Dent* 2015;13(4):438. DOI:10.4103/2319-5932.171161

16. M. S, C. Y. S, M. S, Das N. Clinician's practices and perspectives regarding tobacco cessation in a teaching Hospital, Karnataka, India. *Int J Community Med Public Heal* 2017;4(3):634. DOI:10.18203/2394-6040.ijcmph20170509

17. Panda R. Examining physicians' preparedness for tobacco cessation services in India: Findings from primary care public health facilities in two Indian states. *Australas Med J* 2013 Apr 2;6(3):115-21. Available from: <http://www.amj.net.au/index.php?journal=AMJ&page=article&op=viewFile&path%5B%5D=1617&path%5B%5D=1044>

18. National Institute for Health and Clinical Excellence. Brief interventions and referral for smoking cessation in primary care and other settings. PH001, 1-36. London: National Institute for Health and Clinical Excellence; 2006. Available online: <https://www.ncsct.co.uk/usr/pub/guidance-on-brief-interventions-and-referral-for-smoking.pdf>

19. Fiore MC, Bailey WC, Cohen SJ. Treating tobacco use and dependence: Clinical Practice Guideline, Rockville, MD: US Department of Health and Human Services; 2000. [http://health.state.tn.us/Downloads/TQL\\_Quick%20Reference.pdf](http://health.state.tn.us/Downloads/TQL_Quick%20Reference.pdf)

20. Government of India. Ministry of Health & Family Welfare. Directorate General of Health Services. Tobacco Dependence Treatment Guidelines. 2011. Available online: <http://ntcp.nhp.gov.in/assets/document/Guideline-manuals/Tobacco-Dependence-Treatment-Guidelines.pdf>

21. Sinha DN, Gupta PC. Tobacco control practices by medical doctors in developing

world; a questionnaire study. Indian J Public Health 2004;48:144-6

22. Thankappan KR, Pradeepkumar AS, Nicther M. Doctors' behaviour & skills for tobacco cessation in Kerala. Indian J Med Res. 2009 Mar;129:249-55.

23. Lancaster T, Stead L, Silagy C, Sowden A. Effectiveness of interventions to help people stop smoking: findings from the Cochrane Library. BMJ 2000;321(Suppl S3):9323. DOI:10.1136/sbmj.0009323