

# Smoking-Related Stigma Expressed by Physiotherapists toward Individuals with Lung Disease

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## ABSTRACT

**Purpose:** We determined the extent and nature of stigma exhibited by a sample of Canadian cardiorespiratory physiotherapists toward people with lung disease who had a smoking history. **Method:** A quantitative online survey was distributed to Canadian cardiorespiratory physiotherapists, and an anti-smoking attitudes questionnaire was used to measure explicit stigma. We used two case studies with questions to measure implicit stigma. The first involved a patient with chronic obstructive pulmonary disease (COPD) and a smoking history, and the second described a patient with COPD with no smoking history. **Results:** Of the respondents ( $n = 50$ ), 56% demonstrated mild explicit stigma and 44% demonstrated moderate to severe explicit stigma. The extent of explicit stigma was not associated with respondents' age, area of practice, personal smoking history, or family history of lung disease resulting from smoking. The results indicated no evidence of implicit stigma, and no significant differences were found between the participants' prospective treatments and their professional attitudes toward patient cases. **Conclusions:** Canadian cardiorespiratory physiotherapists demonstrated explicit stigma toward people with lung disease with a significant smoking history, but there was no evidence of implicit stigma. These findings suggest that further research is needed to investigate how stigma held by cardiorespiratory physiotherapists may affect the quality of care provided for patients with a smoking history.

**Key Words:** cardiorespiratory physiotherapy; lung diseases; smoking; stigmatization; survey.

## RÉSUMÉ

**Objectif :** déterminer l'étendue et la nature de la réprobation dont fait preuve un échantillon de physiothérapeutes cardiorespiratoires canadiens envers les fumeurs atteints d'une maladie pulmonaire. **Méthodologie :** les physiothérapeutes cardiorespiratoires canadiens ont reçu un sondage quantitatif en ligne. Ils ont répondu à un questionnaire sur les attitudes négatives envers le tabagisme pour mesurer leur réprobation explicite. Deux études de cas accompagnées de questions mesuraient leur réprobation implicite. La première portait sur un patient fumeur atteint d'une maladie pulmonaire obstructive chronique (MPOC) et la deuxième, sur un patient non-fumeur atteint d'une MPOC. **Résultats :** au total, 56 % des 50 répondants ont démontré une légère réprobation explicite et 44 %, une réprobation explicite modérée à importante. L'étendue de leur réprobation explicite n'était pas associée à leur âge, à leur région de pratique, à leur propre tabagisme, ni à une histoire familiale de maladie pulmonaire causée par le tabagisme. Les résultats ne faisaient état d'aucune réprobation implicite, et il n'y avait pas de différence significative entre les traitements prospectifs des répondants et leur attitude professionnelle envers les cas des patients. **Conclusions :** les physiothérapeutes cardiorespiratoires canadiens faisaient preuve d'une réprobation explicite envers les fumeurs atteints d'une maladie pulmonaire, sans toutefois démontrer de réprobation implicite. Selon ces résultats, d'autres recherches s'imposent pour évaluer si la réprobation des physiothérapeutes cardiorespiratoires nuit à la qualité des soins aux patients fumeurs.

Smoking is the leading cause of chronic obstructive pulmonary disease (COPD)<sup>1</sup> and lung cancer in Canada.<sup>2</sup> The prevalence of smoking in Canada has decreased more than 50% since 1980,<sup>3</sup> contributing to the development of societal stigmatization of smokers.<sup>4</sup> *Stigma* is defined as a label placed on a member of society on the

basis of a trait or behaviour that is seen as atypical and undesirable.<sup>5</sup> Others may perceive this deviation from societal norms negatively, leading to stigmatization and discrimination.<sup>5</sup> Now that smoking is considered a deviation from societal norms, it is increasingly viewed as being less acceptable.<sup>5</sup>

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Health professionals express two types of stigma: explicit and implicit. *Explicit stigma* is described as overt, or conscious, controllable attitudes toward an individual or group.<sup>6</sup> *Implicit stigma* is described as subtle or unconscious attitudes.<sup>7,8</sup> As a result, individuals may harbour negative attitudes that can affect their actions without their being aware of it.<sup>7</sup> Whether health care professionals are or are not aware of the stigma they possess, either type can influence the quality of care they deliver.<sup>9,10</sup>

Individuals living with lung disease face stigmatization because of the close relationship between lung disease and smoking.<sup>11</sup> An interview-based study demonstrated that society often places blame on individuals with lung cancer because of the assumed self-inflicted nature of the disease.<sup>12</sup> This blame induces a feeling of shame in individuals with lung disease because they feel judged by society. They also feel that this perceived societal judgment is in stark contrast to the emotional support that individuals with other types of cancer experience.<sup>13</sup> As a result of societal stigma, individuals with COPD also feel a sense of shame for the physical manifestations of their disease.<sup>13,14</sup> They often avoid social engagements because they are embarrassed by their physical symptoms,<sup>14</sup> and this apparent loss of social support may significantly exacerbate their perception of isolation.<sup>15</sup>

Evidence has shown that medical professionals display explicit stigma toward individuals with COPD.<sup>16–18</sup> For example, doctors in the United Kingdom ranked smokers with COPD as most “at fault” for their diagnosis compared with patient groups with other afflictions.<sup>18</sup> A survey completed by members of the U.S. National Emphysema/COPD Association found that 88% of the physicians agreed that COPD is self-inflicted, and more than one-third of the physicians expressed pessimism concerning the treatment of patients with COPD who did not quit smoking.<sup>16</sup>

Explicit stigma displayed by health care workers toward smokers with COPD may negatively affect the quality of care provided. Health care providers’ interactions with patients that are perceived as stigmatizing reinforce patients’ feeling of guilt, which has been reported to discourage individuals from accessing health care.<sup>17</sup> People living with COPD have also reported feeling that their referral to pulmonary rehabilitation was delayed.<sup>19</sup> Reports of negative interactions with health care professionals by individuals with lung cancer, regardless of the presence or absence of a smoking history,<sup>20</sup> suggest the presence of stigma toward individuals with lung disease.

Currently, there is no literature regarding physiotherapists’ attitudes toward people with lung disease or those who smoke. However, stigma exhibited by physiotherapists in other contexts has been identified. For instance, the results of an Australian study indicated that physiotherapists held more positive attitudes toward people with disabilities than did the general population, and this finding correlated with the amount of time spent

working with these individuals.<sup>21</sup> More recently, a survey examined explicit and implicit stigma expressed by physiotherapists concerning individuals who were obese,<sup>22</sup> and physiotherapists were found to exhibit explicit obesity-related stigma. Although less evidence was shown for implicit stigma, the majority of physiotherapists indicated that weight was controlled by an individual’s lifestyle choices.<sup>22</sup>

The aim of this study was to identify the presence of explicit and implicit stigma toward individuals with lung disease and a smoking history in a sample of Canadian cardiorespiratory physiotherapists.

## METHODS

### Study design

We developed a cross-sectional, open, online survey to examine physiotherapists’ bias toward people with lung disease and a history of smoking. We based this study on the theoretical framework established by Setchell and colleagues,<sup>22</sup> which was used to examine bias in physiotherapists with respect to individuals who were obese. The University of Toronto Research Ethics Board provided ethics approval for this study.

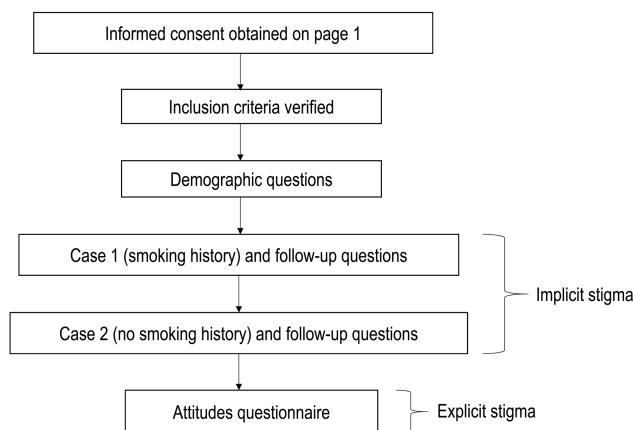
### Participants and recruitment

We used FluidSurveys (Fluidware, Ottawa, ON) to distribute the survey to registered physiotherapists across Canada who either had experience working in or had an interest in cardiorespiratory health. To recruit participants, we sent an email to the administrative representatives of our target cardiorespiratory physiotherapy organizations, including the cardiorespiratory division of the Canadian Physiotherapy Association, Canadian Respiratory Health Professionals, provincial lung associations within the Lung Association, and national pulmonary rehabilitation programmes. In the email, we provided information about our study and requested consent to distribute the survey to members of their organization on February 15, 2016, using a modified Dillman method thereafter.<sup>23</sup> The survey was sent to the therapists either directly or as a bulk email sent by the organizations to their members. The survey was closed on June 1, 2016.

The first page of the online survey described the purpose of the study, its length, how the survey data would be stored, and the investigators. Participants were required to click on a check box on this page to indicate their informed consent before beginning the survey.

### Procedure

We pilot tested the survey, which included two case studies, with a convenience sample of two cardiorespiratory physiotherapists to assess it for errors and blinding and to confirm the relevance of all the survey questions. Minor adjustments were made in accordance with feedback from the pilot test. To ensure that implicit stigma was accurately measured, participants were blinded to



**Figure 1** Flow of survey.

the fact that smoking history was the main variable of interest; instead, they were told that the aim of the study was to measure physiotherapists' general attitudes.

The final version of the survey contained 52 items across nine pages, and it was divided into three subsections: (1) participants' demographic characteristics; (2) two COPD patient case studies (one of a patient with a smoking history and one of a patient without a smoking history), with subsequent questions concerning prospective treatment choices and professional attitudes, to examine implicit stigma; and (3) a questionnaire concerning overt attitudes toward individuals with lung disease who smoke, to examine explicit stigma. (For a graphical representation of the survey flow, see Figure 1.)

The participants were required to complete all items on a page before advancing to the next page. The first three demographic questions delineated our inclusion criteria: Participants were required to be registered physi-

otherapists (not students or retirees) who were employed in, or interested in, the cardiorespiratory field of physiotherapy. If participants' responses indicated otherwise, they were unable to continue taking the survey.

#### Data management and analysis

Data from the questionnaires were exported from FluidSurveys to a spreadsheet, then transferred to IBM SPSS Statistics, version 22.0 (IBM Corporation, Armonk, NY) for analysis. Only completed questionnaires were analyzed. We used descriptive statistics to obtain frequencies and to assess data normality.

To measure explicit stigma, we adapted a 13-item Likert scale questionnaire from the Anti-Fat Attitudes questionnaire.<sup>22,24</sup> Keywords in the questions were altered to make the questions relevant to smoking (see Box 1). For example, "I tend to think that people who are overweight are a little untrustworthy" was changed to "I tend to think that people who have lung disease and who are current or past smokers are a little untrustworthy." The responses to these questions ranged from 1 (*very strongly disagree*) to 9 (*very strongly agree*). The average scores were calculated and divided into two stigma categories: mild stigma, corresponding to Likert scale responses ranging from 1 (*very strongly disagree*) to 4 (*somewhat disagree*) and moderate to severe stigma, corresponding to responses ranging from 5 (*unsure*) to 9 (*very strongly agree*).<sup>25</sup>

The results were collapsed into two categories (mild and moderate to severe) rather than three (mild, moderate, and severe) because of low frequency in the severe category ( $n = 1$ ); this gave the results sufficient power for statistical analysis. This approach differs from that of Setchell and colleagues,<sup>22</sup> in which questionnaire scores were divided into two categories: no stigma (questionnaires with responses of *very strongly disagree* across

#### Box 1 Questions Included in the Anti-Smoking Attitudes Questionnaire

##### Dislike

1. I dislike people who have lung disease and are smokers or who have previously smoked.
2. Few of my friends have lung disease and smoke, or have previously smoked.
3. I tend to think that people who have lung disease and who are current smokers or past smokers are a little untrustworthy.
4. Although some people with lung disease who smoke or previously smoked must be intelligent, generally I think they tend not to be.
5. I have a hard time taking people with lung disease who smoke or previously smoked too seriously.
6. People who have lung disease and smoke or previously smoked make me somewhat uncomfortable.
7. If I were an employer, I might avoid hiring someone with lung disease who is a smoker or previous smoker.

##### Fear of developing lung disease secondary to smoking

8. I feel disgusted with myself when I smoke or when I see someone who is smoking next to me.
9. One of the worst things that could happen to me would be if I developed a lung disease secondary to smoking/passive smoking.
10. I worry about developing a lung disease secondary to smoking/passive smoking.

##### Willpower

- 11a. People with lung disease who smoke can quit if they tried.
- 11b. People with lung disease due to smoking could have quit earlier if they tried.
12. Some people with lung disease smoke or have previously smoked because they have/had no willpower.
13. For people with lung disease, it is their own fault if they smoke or previously smoked.

**Table 1** Demographic Characteristics of Survey Respondents ( $n = 50^*$ )

Characteristic	No. (%) of respondents
Age, y	
25–34	17 (34)
35–44	9 (18)
45–54	17 (34)
55–64	7 (14)
Area of practice	
Cardiorespiratory <sup>†</sup>	44 (88)
Other <sup>‡</sup>	6 (12)
No. of years working ( $n = 49$ )	
1–10	14 (29)
11–20	13 (26)
21–30	15 (30)
31–40	7 (14)

Note: Percentages may not total 100 because of rounding.

\*Except where otherwise indicated.

<sup>†</sup>Working only with cardiorespiratory patients in acute care or pulmonary rehabilitation.

<sup>‡</sup>Gerontology, working with cardiorespiratory as well as musculoskeletal and neurological populations.

each item) and stigma (questionnaires including any response except *very strongly disagree*). Because our questionnaire results revealed no participant responses that corresponded with the no-stigma category, more information was gained from examining the levels of explicit stigma exhibited.

We used non-parametric tests to compare the demographic characteristics of the participants: age; current area of practice, collapsed into two categories (cardiorespiratory—working in acute care and pulmonary rehabilitation with cardiorespiratory patients only—and other—working in gerontology with cardiorespiratory, musculoskeletal, and neurological populations); and personal smoking history or family history of lung disease resulting from smoking. These tests enabled us to compare the extent of explicit stigma demonstrated. Specifically, we used a Mann–Whitney  $U$  test to compare levels of explicit stigma in terms of the participants' age and  $\chi^2$  tests to examine explicit stigma levels in relation to the participants' age, area of practice, personal smoking history, and family history of lung disease resulting from smoking.

We analyzed the responses to both sets of case study follow-up questions to assess implicit stigma, and we applied paired non-parametric tests to assess any potential differences in the responses between them. In performing these analyses, we used McNemar's test for dichotomous categories and the Wilcoxon rank–sum test for continuous variables. To account for multiple comparisons,  $\alpha$  was set at  $<0.01$ .

## RESULTS

We estimated a maximum of 300 eligible participants and received 81 responses, for an overall response rate of

**Table 2** Explicit Stigma with Respect to Demographic Characteristics ( $n = 50$ )

Characteristic	No. (%) of respondents		
	Mild*	Moderate to severe <sup>†</sup>	$p$ -value
Age, y			0.081
25–34	7 (25)	10 (45)	
35–44	4 (14)	5 (23)	
45–54	12 (43)	5 (23)	
55–64	5 (18)	2 (9)	
Personal smoking history	3 (43)	4 (57)	0.450
Family history of lung disease resulting from smoking	3 (37)	5 (63)	0.250
Area of practice			0.575
Cardiorespiratory <sup>‡</sup>	24 (55)	20 (45)	
Other <sup>§</sup>	4 (67)	2 (33)	

Note: Percentages for age were calculated on the basis of total  $n$  per column; percentages for personal smoking history, family history of lung disease, and area of practice were calculated on the basis of total  $n$  per row.

\*Scores range from 1 (*very strongly disagree*) to 4 (*somewhat disagree*).

<sup>†</sup>Scores range from 5 (*unsure*) to 9 (*very strongly agree*).

<sup>‡</sup>Working only with cardiorespiratory patients in acute care or pulmonary rehabilitation.

<sup>§</sup>Gerontology, working with cardiorespiratory as well as musculoskeletal and neurological populations.

27%. Of these 81 respondents, 50 consented to participate in, and completed, the online survey, resulting in a 62% completion rate. Of the remaining respondents, 10 did not meet the inclusion criteria, and 21 started but did not complete the survey.

## Sample demographics

Selected demographic characteristics of the respondents are provided in Table 1. Women made up most of the participants (90%), and the majority were from Ontario (60%), followed by British Columbia (10%). Provinces and territories not represented in the sample were Yukon, Northwest Territories, Nova Scotia, Nunavut, and Prince Edward Island. Most of the participants worked in an urban area (90%) and in a public hospital (80%), and a smaller proportion worked in a community health centre (12%) or private practice (8%). A total of 88% of respondents worked only with cardiorespiratory patients in acute care or pulmonary rehabilitation. The remaining 12% worked in gerontology, with cardiorespiratory patients in addition to musculoskeletal and neurological patients. A small portion of respondents reported a personal smoking history (14%) or a family history of lung disease (24%); of the latter, 16% was attributed to smoking.

## Explicit stigma

The results of the anti-smoking attitudes questionnaire demonstrated that all physiotherapists exhibited some degree of explicit stigma; the majority demonstrated mild explicit stigma (56%), and the remainder demonstrated moderate to severe explicit stigma. The

**Table 3** Case Studies: Implicit Stigma ( $n = 50$ )

Practice item	Median (25th–75th %ile)		<i>p</i> -value
	Case 1	Case 2	
Initial assessment time, min	45 (39–60)	45 (35–60)	0.725
Hands-on treatment time during initial assessment, min	20 (10–30)	20 (10–30)	0.190
Total no. of sessions	5 (4–6)	5 (4–6)	0.046
No. of exercises prescribed outside sessions	3.5 (3–5)	4 (3–5)	0.057

demographic characteristics of age, personal smoking history, family history of lung disease resulting from smoking, and area of practice did not have a significant influence on explicit stigma (see Table 2).

### Implicit stigma

The results of the case studies evaluating implicit stigma did not demonstrate any significant differences in responses between Cases 1 and 2 when comparing initial assessment time, hands-on treatment time, number of sessions, and number of exercises prescribed (see Table 3). Most respondents reported that they would include exercises, health advice, self-management, and education as part of treatment for both cases. Almost all of the respondents reported that the patient in Case 1 ( $n = 46$ ) and the patient in Case 2 ( $n = 45$ ) would be professionally satisfying to treat. Most respondents also reported that these patients would be enjoyable to treat and that they were optimistic about their progress (Case 1,  $n = 42$ ; Case 2,  $n = 39$ ; all  $ps > 0.05$ ).

### DISCUSSION

This is the first study to examine the extent of cardiorespiratory physiotherapists' explicit stigma toward individuals with lung disease and implicit stigma toward individuals with COPD who have a smoking history. More than half of the respondents (56%) demonstrated mild levels of explicit stigma toward individuals with lung disease who smoked. Our study showed that no specific factors (physiotherapists' age, personal smoking history, family history of lung disease resulting from smoking, or area of practice) influenced the presence of explicit stigma. In addition, there was no evidence of physiotherapists exhibiting implicit stigma toward individuals with COPD who smoked.

Explicit stigma in physiotherapists has been identified before. For example, Setchell and colleagues<sup>22</sup> demonstrated the presence of explicit weight stigma and unfavourable attitudes toward patients with obesity in Australian physiotherapists across a spectrum of practices. Our findings are comparable, with physiotherapists demonstrating explicit stigma toward a specific population of patients. Other studies have also indicated the

presence of smoking-related stigma in other health care practitioners. Winstanley and colleagues<sup>18</sup> showed that the majority of doctors either agreed or strongly agreed that patients with COPD who smoked were most at fault for their condition. In addition, a survey of physicians revealed that 90% believed COPD to be a self-inflicted disease, and 45% believed that patients with COPD who continued to smoke could not be helped.<sup>16</sup>

As with the explicit stigma expressed by the physiotherapists in our study, these findings indicated negative biases toward patients with COPD who had a smoking history. This explicit stigma may be due to the education that health care practitioners receive with respect to smoking and its potentially devastating consequences. Physiotherapists and other health care providers understand smoking to be a modifiable health factor,<sup>26</sup> and the stigma associated with modifiable factors is often greater than that associated with non-modifiable factors.<sup>27</sup> Explicit stigma related to obesity has been associated with patients' lower adherence to treatment, poor physical activity level, and high rate of depression.<sup>28,29</sup>

Irrespective of stigma, these factors of lower adherence, poor physical activity, and depression are clinically significant in individuals with smoking-related lung disease.<sup>30,31</sup> For this reason, understanding the added contribution of explicit smoking-related stigma held by physiotherapists warrants further study. Another area of investigation would be the effect of health care professionals' biases on their communication with and delivery of care to their patients: Patients are less likely to pursue care if they feel stigmatized by health care professionals.<sup>17</sup> Thus, exploring patients' perspectives on the quality of care they receive from cardiorespiratory physiotherapists, as well as their perceptions of stigma, would also be useful.

Age did not affect the degree of explicit smoking-related stigma in this study, despite the fact that the literature has suggested that stigmatization of the smoking population is correlated with older age.<sup>4</sup> In addition, neither physiotherapists' area of practice nor the number of years they had worked influenced the extent of explicit smoking-related stigma they held; this finding contrasts with those of previous research, which suggested that more exposure to a stigmatized population resulted in less stigma.<sup>21,32</sup> Our results likely contrast with the literature because our entire sample, being cardiorespiratory physiotherapists, likely had ample exposure to smokers with lung disease.

Studies have shown that individuals who never smoked are more likely to stigmatize smokers and that individuals who have a smoking history are less likely to stigmatize smokers.<sup>4,33</sup> The lack of impact of personal or family smoking history on explicit stigma may be the result of our small sample size because only 15 out of 50 respondents had this demographic characteristic. A study with a larger

sample size might reveal a greater representation of physiotherapists with a smoking history and, consequently, clarify their attitudes.

Because participants can exhibit a potential for bias when answering questions regarding explicit stigma, it is important to also measure implicit stigma.<sup>34</sup> The fact that we found no significant differences between physiotherapists' prospective treatment of, and professional attitude toward, the two patients in the case studies may indicate an absence of implicit smoking-related stigma. This finding contrasts with that of the survey of Australian physiotherapists regarding anti-obesity attitudes: that the participants gave general health advice more frequently to the case study patient who was obese than to the case study patient who was not obese.<sup>22</sup> This discrepancy may result from the format of our general health advice question, which required a yes-or-no response; an open-ended question may have revealed more information concerning the participants' concepts of general health advice.

Our study has several limitations. First, the relatively small sample size ( $n = 50$ ) and the majority of respondents being from Ontario limit generalization of our results because they do not accurately represent the entire population of Canadian cardiorespiratory physiotherapists. The majority of participants worked in an urban setting, so further study comparing responses between urban- and rural-based physiotherapists would identify any difference in stigma based on region of work. Second, measures to determine explicit stigma can be prone to bias because participants may form their responses on the basis of notions of social acceptability.<sup>34</sup> This may have influenced the responses to the anti-smoking questionnaire, and our explicit stigma findings could underrepresent the actual level of explicit stigma among cardiorespiratory physiotherapists. A third limitation is that we measured implicit stigma specifically with respect to individuals with COPD, not lung disease in general. However, this is a population to whom physiotherapists frequently provide care, and COPD has a strong connection with a history of smoking.<sup>1</sup>

Finally, using the case study format to measure implicit stigma<sup>22</sup> may have been a limitation in that differences between the cases may have produced confounding factors that affected the results. For example, the patient in Case 2 had an alpha-1 antitrypsin deficiency resulting in COPD and was described as thin. This description may have drawn the focus away from the presence and absence of a smoking history in the two cases. Alternative methods exist to measure implicit stigma, such as the Implicit Association Test, which is used to investigate associations between target groups and beliefs and has been used to assess associations among race, gender, and weight.<sup>35</sup> That method may have provided additional insight into physiotherapists' subconscious attitudes through automatic associations.

## CONCLUSION

Our findings suggest that a proportion of Canadian cardiorespiratory physiotherapists appear to demonstrate a mild degree of explicit stigma toward individuals with lung disease and a significant smoking history. There is no evidence that Canadian cardiorespiratory physiotherapists demonstrate implicit stigma toward individuals with lung disease who smoke or that implicit stigma has any effect on prospective treatment choices or professional attitudes toward patients. Together, these findings indicate that physiotherapists provide equivalent treatment to hypothetical patients with and without a smoking history, despite the varying degrees of explicit smoking-related stigma expressed.

Future studies with larger sample sizes and alternative methods of measuring implicit stigma are needed to determine whether Canadian physiotherapists demonstrate implicit stigma in other aspects of general health care when treating patients with lung disease resulting from smoking. In addition, patients' perceptions of stigma on the part of cardiorespiratory physiotherapists require further exploration.

## KEY MESSAGES

### What is already known on this topic

Previous research has demonstrated that health care professionals demonstrate stigma toward patients, such as toward individuals with obesity, illicit substance addiction, or HIV and toward those who smoke. Multiple studies have shown the presence of both explicit and implicit smoking-related stigma in the health care field (e.g., on the part of physicians); however, limited evidence exists regarding stigma exhibited by physiotherapists, and no evidence exists regarding smoking-related stigma expressed by physiotherapists.

### What this study adds

This is the first study to investigate physiotherapists' attitudes toward smokers with lung disease. This study begins to address the gap in the literature by measuring the stigma expressed by physiotherapists toward patients with lung disease who smoke (explicit stigma) and examining the impact of this attitude on the hypothetical treatment of patients (implicit stigma). This is the first study to identify that Canadian cardiorespiratory physiotherapists demonstrate explicit stigma toward smokers; however, we found no evidence of implicit stigma. This study may help to promote future research into how stigma affects treatment by physiotherapists and how this, in turn, affects patients.

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