



Research

Physiotherapists demonstrate weight stigma: a cross-sectional survey of Australian physiotherapists

Jenny Setchell^a, Bernadette Watson^a, Liz Jones^b, Michael Gard^c, Kathy Briffa^d

^aSchool of Psychology, The University of Queensland, Australia; ^bSchool of Applied Psychology, Griffith University, Australia; ^cSchool of Education, Southern Cross University and School of Human Movement Studies, The University of Queensland, Australia; ^dSchool of Physiotherapy and Exercise Science, Curtin University, Australia

KEY WORDS

Body weight
Ethics
Obesity
Physical therapists
Social stigma
Stereotyping



ABSTRACT

Question: Do physiotherapists demonstrate explicit and implicit weight stigma? **Design:** Cross-sectional survey with partial blinding of participants. Participants responded to the Anti-Fat Attitudes questionnaire and physiotherapy case studies with body mass index (BMI) manipulated (normal or overweight/obese). The Anti-Fat Attitudes questionnaire included 13 items scored on a Likert-type scale from 0 to 8. Any score greater than zero indicated explicit weight stigma. Implicit weight stigma was determined by comparing responses to case studies with people of different BMI categories (where responses were quantitative) and by thematic and count analysis for free-text responses. **Participants:** Australian physiotherapists (n = 265) recruited via industry networks. **Results:** The mean item score for the Anti-Fat Attitudes questionnaire was 3.2 (SD 1.1), which indicated explicit weight stigma. The Dislike (2.1, SD 1.2) subscale had a lower mean item score than the Fear (3.9, SD 1.8) and Willpower (4.9, SD 1.5) subscales. There was minimal indication from the case studies that people who are overweight receive different treatment from physiotherapists in clinical parameters such as length of treatment time (p = 0.73) or amount of hands-on treatment (p = 0.88). However, there were indications of implicit weight stigma in the way participants discussed weight in free-text responses about patient management. **Conclusion:** Physiotherapists demonstrate weight stigma. This finding is likely to affect the way they communicate with patients about their weight, which may negatively impact their patients. It is recommended that physiotherapists reflect on their own attitudes towards people who are overweight and whether weight stigma influences treatment focus. [Setchell J, Watson B, Jones L, Gard M, Briffa K (2014) Physiotherapists demonstrate weight stigma: a cross-sectional survey of Australian physiotherapists. *Journal of Physiotherapy* 60: 157–162]

© 2014 Australian Physiotherapy Association. Published by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/3.0/>).

Introduction

Weight stigma has been defined as negative attitudes towards people who are overweight or obese, and frequently involves stereotyping people as lazy, sloppy, less intelligent and unattractive.¹ Weight stigma has considerable negative health effects² and is common in healthcare.¹ In a recent study, 81% of physiotherapists believed that weight management is part of their scope of practice and 85% reported that they used weight management strategies with their patients.³ Considering the prevalence of weight stigma in healthcare, and the focus by physiotherapists on weight management, physiotherapists require an understanding of their own attitudes towards people who are overweight and, if they are negative, to ensure that they do not harm their patients with these attitudes. Therefore, the aim of this study was to identify whether physiotherapists demonstrate weight stigma and the potential effects of this on patient treatment. For the purposes of this article behaviour that is stigmatising or biased is termed 'discriminatory behaviour' or 'discrimination'.

The causes, and health outcomes, of being overweight or obese are complex and less well understood than commonly thought. Gard and Wright⁴ demonstrated the limitations of a simplistic

energy-in versus energy-out (diet and exercise) approach to weight management. Cochrane reviews have also shown that exercise⁵ and diet⁶ have, at best, only small effects on weight. Multiple factors other than diet and exercise may determine adiposity.^{7,8} The relationship of body weight to health is also not as clear as often thought, as shown in a large systematic review (n = 2.88 million) demonstrating that people of 'normal' weight (by body mass index, BMI) have the same mortality rate as people who are 'moderately obese' and a higher mortality rate than people classified as 'overweight'.⁹ The commonly held beliefs that weight is primarily under individual control through diet and exercise, and that high BMI necessarily means ill-health, are considered by some authors to be a consequence of weight stigma and perhaps a factor that perpetuates it.¹⁰

Weight stigma is prevalent, with levels similar to those of racism and sexism.¹¹ Moreover, it is increasingly prevalent, with levels of perceived discrimination having almost doubled in the past decade or so.¹¹ Discrimination has been demonstrated in areas such as employment, education and health,¹ is more common in women,¹² and increases with the level of obesity.¹³ Both explicit (overt) and implicit (more subtle) weight stigma has been shown to predict discriminating behaviours.^{14,15} Puhl and

King¹⁶ summarised the potential harmful effects of weight stigma to include: depression, anxiety, low self esteem, suicidal ideation, body dissatisfaction and maladaptive eating behaviours.

Weight stigma has sometimes been thought to be helpful in motivating weight loss behaviours.¹⁷ This perspective has been shown to be unfounded,¹⁸ as weight stigma negatively influences motivation to exercise,¹⁹ reduces the healthcare seeking behaviours of people who are obese,²⁰ and is positively correlated with increased disordered eating.²¹

Much of the study of weight stigma has focused on health professionals, with the topic receiving considerable media and research attention over the past 10 years.¹ People who are overweight state that they are treated differently by health care providers.²² A study of 2284 doctors showed both explicit and implicit weight stigma,²³ and other health professions perform similarly when tested on weight stigma, including: nurses,²⁴ exercise scientists,²⁵ and dietitians.²⁶ Despite the size and impact of the physiotherapy profession,²⁷ there has been little investigation of physiotherapists' attitudes towards weight. Sack and colleagues²⁸ reported that physiotherapists had neutral attitudes to people who are obese, despite finding that over 50% of the physiotherapists who were studied believing that people who are obese are weak-willed, non-compliant and unattractive. These results suggest that physiotherapists do possess negative stereotypes of overweight people and may exhibit weight stigma. To the authors' knowledge no study more specific to weight stigma in physiotherapists has been conducted. This research addressed this gap in the literature. The research questions were:

1. Do physiotherapists demonstrate explicit weight stigma?
2. Do physiotherapists demonstrate implicit weight stigma?

Method

Design

This cross-sectional study used an online survey formatted in Qualtrics software. A pilot study was completed by a convenience sample of 13 physiotherapists (age range 23 to 55 years; from musculoskeletal, paediatric, women's health and neurology specialty areas) to confirm blinding, assess for errors and to gauge physiotherapists' thoughts about undertaking the survey. Minor changes were made in response. Participants consented to completing the survey after reading an information sheet. The survey is presented in Appendix 1 (see eAddenda). The survey consisted of demographic questions, the pre-existing Anti-Fat Attitudes questionnaire developed by Crandall,²⁹ and three custom-built case studies (see Figure 1). Completion of all sections of the survey was not compulsory. Blinding of respondents to the fact that BMI was the main variable of interest was necessary for the case study section of the survey because it aimed to measure

implicit (more hidden/subtle) stigma. To ensure blinding, information given to participants before the study mentioned only attitudes generally, not weight. The case studies were presented before the Anti-Fat Attitudes questionnaire with no option to review retrospectively. Furthermore, the case studies presented a number of patient characteristics including weight, so that the participants were unaware of the variable of interest. Blinding was confirmed in the pilot study.

Explicit weight stigma was measured by the total score of the Anti-Fat Attitudes questionnaire, as well as the score on each of the three subscales: Dislike, Fear and Willpower. The Anti-Fat Attitudes questionnaire was chosen for its psychometric rigor,³⁰ its use in other studies investigating health professionals,^{31–33} and the suitability of the questions. The Dislike subscale measures aversion towards overweight people, the Fear subscale measures fear of one's own body weight increasing, and the Willpower subscale measures the level of personal control ascribed to body weight. Cronbach's alphas were: Dislike (0.81), Fear (0.78) and Willpower (0.73). The Anti-Fat Attitudes questionnaire has 13 questions scored on a Likert-type scale from 0 to 8, with any score greater than zero indicating weight stigma. Wording was adapted slightly without altering meaning to make the questions suitable for professional Australian participants. For example, 'If I were an employer looking to hire, I might avoid hiring a fat person' was changed to 'If I were an employer, I might avoid hiring an overweight person'. All Anti-Fat Attitudes questionnaire items are presented in Appendix 1 (see the eAddenda).

Implicit weight stigma was measured using participants' responses to three case studies, which are presented in Appendix 1 (see the eAddenda). Comparisons were made between cases, which were identical apart from BMI category (normal or overweight/obese), and free-text responses were analysed thematically. Case studies were chosen because they have clinical relevance and can investigate implicit attitudes. Other measures such as implicit attitudes tests are available, but their ability to predict behaviours is contested.³⁴ The case studies were designed to be typical presentations of various physiotherapy patients from a number of clinical areas, so that most physiotherapists would feel qualified to comment on them and no one clinical discipline was given preference. The clinical cases were designed by a physiotherapist with 18 years of clinical experience (the primary author). Feedback from the pilot study confirmed similarity of the cases to real physiotherapy patients. Questions were designed to detect differences in treatment of people of different BMI categories with dependent variables such as (hypothetical) length of initial treatment and amount of hands-on treatment time. These clinical parameters were based on dimensions outlined by Stone and Werner,²⁶ who identified that treatment of people who are overweight varied from those of normal weight in three areas: instrumental avoidance (eg, shorter sessions), professional avoidance (eg, less energy/effort) or interpersonal avoidance (eg, negative tone, evasive verbal and body language).

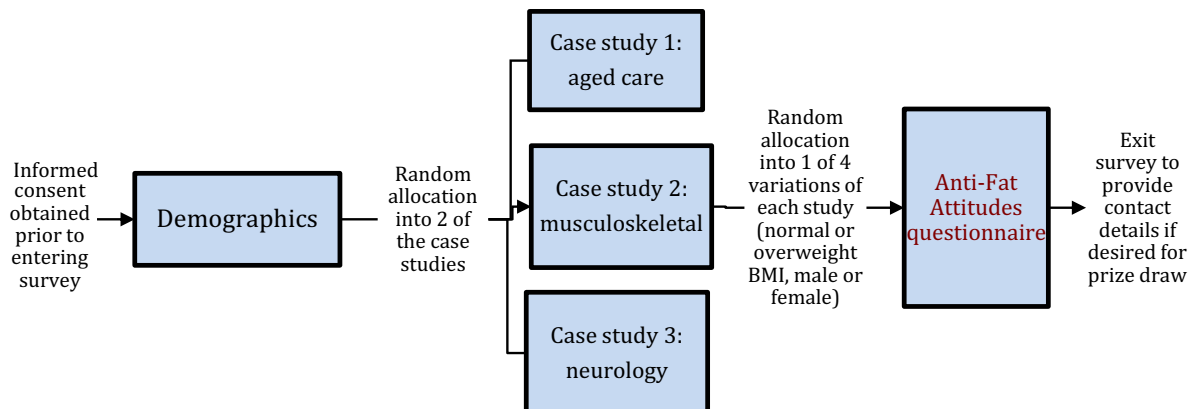


Figure 1. Survey flow and system of random allocation (by survey software) into case study presentations.

Participants, therapists, centres

Qualified Australian physiotherapists were recruited via the Australian Physiotherapy Association eBulletins and twitter posts, and through the primary author's professional networks. A number of measures were employed to ensure a good response rate: snowballing was encouraged, an incentive prize was offered for participation and the survey was kept as brief as possible. The exclusion criteria were: not being a qualified physiotherapist, not identifying as Australian and prior knowledge of the research topic.

Data analysis

A *priori* calculations estimated that 180 participants were required for sufficient power for the case study comparisons. Power was set at 95%. Descriptive statistics were calculated for the Anti-Fat Attitudes questionnaire and its subscales. For the case studies, after assessing assumptions of normality, comparisons were made using independent sample t-tests to determine the effect of the independent variable (normal or overweight/obese BMI) on parametric dependent variables. Mann-Whitney and chi-squared tests were used for comparisons where data were not normally distributed. Demographic data were used to control for confounding factors such as years of experience or area of clinical expertise. Analysis of the free-text responses used a theoretical thematic and count approach.³⁵ After all of the data were analysed using manual coding, responses that had comments relevant to the research topic were selected as a subset (these were all responses to case studies of patients who were overweight). Three of the authors, including two psychologists (BW, LJ) and one physiotherapist (JS), identified common themes relevant to the research topic in this subset. These themes were subsequently explored in the context of current literature on weight stigma.

Results

Flow of participants through the study

A random sample was not taken for this study, but the demographic data presented in Table 1 show that the participants represented a broad range of physiotherapists similar to national statistics.^{36,37} The sample was similar to national statistics in age, gender and area of specialty distribution, but had slightly more rural participants, more years of experience and some differences in employment sector distribution. A total of 324 surveys were commenced and 265 remained after removing responses with insufficient demographic information ($n = 1$), countries other than Australia ($n = 13$) or without any responses to at least one case study ($n = 45$). A total of 520 case studies were completed. Although responding to all questions was not mandatory, there were less than 3% incomplete responses to quantitative questions (including the Anti-Fat Attitudes questionnaire) and 31% for free-text responses, which was sufficient for all power calculations.

Do physiotherapists demonstrate explicit weight stigma?

Anti-Fat Attitudes questionnaire results, presented in Figure 2, indicated negative attitudes by the participants towards people who are overweight, with a mean item score of 3.2 (SD 1.1), where results greater than zero indicate weight stigma.²⁹ These results are considerably higher than other Australian and international Anti-Fat Attitudes questionnaire findings from 2001,³⁸ and similar to Australians tested in 2007.³² The Willpower subscale had a mean item score of 4.9 (SD 1.5) and the Fear subscale a mean item score of 3.9 (SD 1.8), which were relatively higher mean scores than the Dislike subscale of 2.1 (SD 1.2). This finding of overtly negative attitudes towards people who are overweight or obese indicates that physiotherapists demonstrate explicit weight stigma.

Table 1

Participant demographics. Mean (SD) or number (percentage) and comparisons with national data^{36,37} for each characteristic.

| Characteristic | Participants | National data |
|---|--------------|---------------|
| Age ^a (yr), mean (SD) | 42 (11) | 39 (N/A) |
| Time in practice ^a (yr), mean (SD) | 18 (11) | 13 (N/A) |
| Gender ^b (female), n (%) | 194 (73) | 16 474 (70) |
| Specialty ^a , n (%) | | |
| neurology | 19 (7) | 1227 (7) |
| cardiorespiratory | 16 (6) | 1170 (7) |
| sports | 8 (3) | 603 (3) |
| musculoskeletal | 123 (46) | 9 534 (53) |
| paediatrics | 31 (12) | 1004 (6) |
| women's health | 10 (3) | 433 (2) |
| other | 56 (20) | 3 429 (19) |
| missing/inadequately described | 2 (1) | 580 (3) |
| Total | 256 (100) | 17 980 (100) |
| Main employment location ^a , n (%) | | |
| urban | 190 (72) | 16 129 (80) |
| rural | 73 (27) | 3 952 (20) |
| missing | 2 (1) | N/A |
| Total | 256 (100) | 20 081 (100) |
| Main employment sector ^a , n (%) | | |
| private practice | 96 (36) | 7825 (39) |
| hospital | 98 (37) | 5788 (28) |
| community | 20 (8) | 2893 (14) |
| education facility | 30 (11) | 610 (3) |
| other | 20 (8) | 2393 (12) |
| not working as physiotherapist | 1 (0) | 0 (0) |
| not stated/inadequately stated | 0 (0) | 572 (3) |
| Total | 256 (100) | 20 081 (100) |

^a National data from Health Workforce Australia³⁷ in 2014.

^b National data from Physiotherapy Board of Australia³⁶ in 2013.

N/A = not available.

Do physiotherapists demonstrate implicit weight stigma?

There was minimal indication in the clinical parameters tested in the case studies, such as the total treatment time or the hands-on treatment time, that patients in different BMI categories would be treated differently. These data are presented in Tables 2, 3 and 4. The only differences that reached significance were three (6%) of the answers to questions about types of treatment likely to be given. This indicates a minimal difference in (hypothetical) treatment of patients due to the BMI. Of note, however, for case study 2, general health advice was prescribed in 46% of the obese patients, which was significantly greater than 24% in the normal weight case study presentation ($p < 0.01$). This could indicate implicit weight stigma, in that physiotherapists may assume patients who are obese are less well informed about general health

Table 2

Mean (SD) for continuous outcomes compared between normal BMI and overweight BMI case studies.

| Outcome | BMI | | Significance |
|-------------------------------|-----------|------------|-----------------------------------|
| | Normal | Overweight | <i>p</i> -value (df) ^a |
| Initial treatment time (min) | 46 (15) | 45 (16) | 0.66 (515) |
| Hands-on treatment time (min) | 19 (10) | 19 (11) | 0.84 (508) |
| Total treatment time (min) | 252 (175) | 244 (178) | 0.62 (505) |
| Exercises given (n) | 3.7 (1.6) | 3.8 (1.4) | 0.29 (514) |

^a from independent sample t-tests with $p < 0.05$ as significant.

Table 3

Mode for categorical study outcomes compared between normal BMI and overweight BMI case studies.

| Outcome | BMI | | Significance |
|---------------------------|-------------|-------------|------------------------------|
| | Normal | Overweight | <i>p</i> -value ^a |
| Similarity to patient | not similar | not similar | 0.05* |
| Enjoyment treating | enjoyable | enjoyable | 0.98 |
| Professional satisfaction | enjoyable | enjoyable | 0.45 |

^a from Mann-Whitney tests with $p < 0.05$ as significant.

* significant at $p < 0.05$, indicating a difference in perception of similarity.

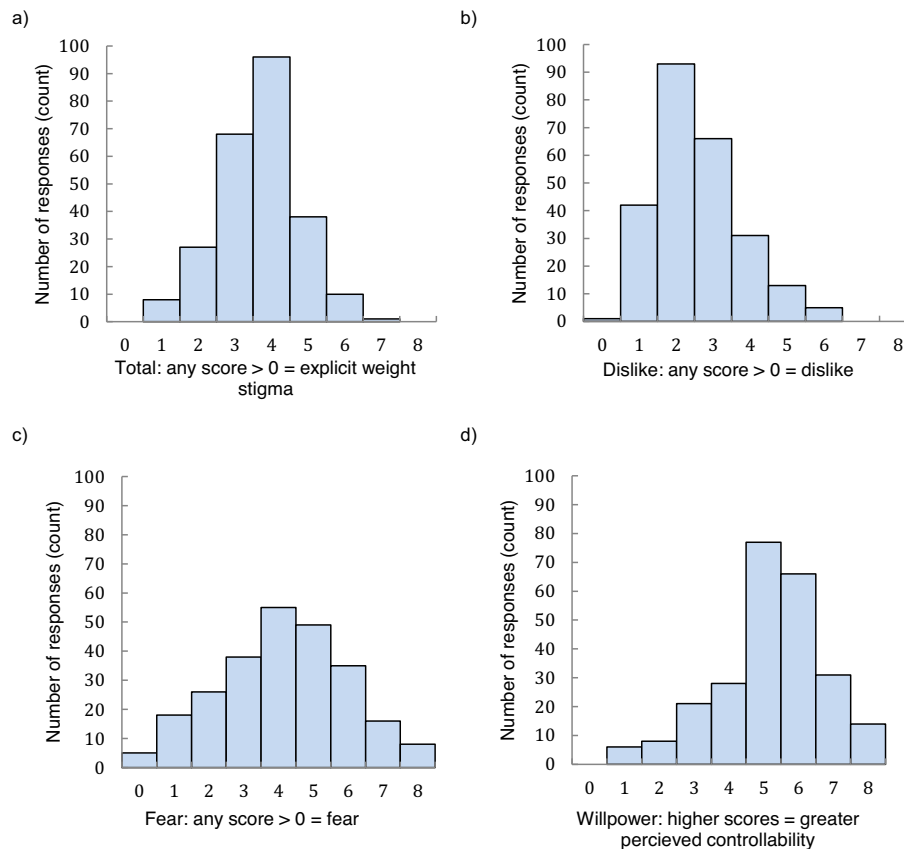


Figure 2. Anti-Fat Attitudes questionnaire²⁹ results shown as mean item scores for the a) total questionnaire (13 items) and its subscales; b) Dislike (7 items); c) Fear (3 items); and d) Willpower (3 items). All items were scored on a Likert-type scale from 0 to 8 with 0 indicating no anti-fat attitudes.

than their normal weight counterparts. There was no indication of implicit weight stigma in findings from participants' responses to questions (for wording see Appendix 1) about their level of professional satisfaction ($p = 0.45$) or enjoyment ($p = 0.98$) when treating patients in the case studies, with no difference found between normal and overweight patients. However, when participants were asked to rate how similar they felt to case study patients, participants felt more similar ($p = 0.05$) to patients who are overweight (mode 'not similar') in comparison to normal weight (mode 'not similar'). Feeling similar to someone has been correlated with liking them,³⁹ so this finding on its own would not indicate negative attitudes, although this may fit with the 'jolly fat' stereotype,⁴⁰ so may indicate weight stigma.

Analysis of the two questions requiring free-text responses identified that conversations about weight are likely to occur. One hundred and eighteen (59%) of free-text responses to case studies for patients who were overweight mentioned weight management as part of their treatment or referral strategies. From this subset of

118 responses, five themes were identified that indicated implicit weight stigma: negative language when speaking about weight in overweight patients ($n = 41, 35\%$); focus on weight management to the detriment of other important considerations ($n = 12, 10\%$); weight assumed to be individually controllable ($n = 69, 58\%$); directive or prescriptive responses rather than collaborative ($n = 96, 81\%$); and complexity of weight management not recognised ($n = 98, 83\%$). The first theme was illustrated by negative terms used about body weight: a patient who was overweight had a 'weight issue/weight problem' that 'needed to be/must be/should be' 'managed/addressed'. The second theme was most evident in the case study of the patient in an aged care setting. Weight management was often mentioned for this patient with a reduced focus (in comparison to the normal weight presentation) on other important factors such as social support. The third theme (assumed controllability of weight) was evident in that diet and/or exercise were almost the only weight management strategies mentioned. The fourth theme of directive communication was demonstrated in the choice of language such as 'speak to them about weight management' or 'he should lose weight'. Finally, the fifth theme identified a lack of recognition of the complexity of weight management. Specifically, only three (3%) responses questioned BMI as a measurement of adiposity or health, three (3%) mentioned weight management strategies other than diet or exercise (referral to GP, referral to naturopath, mood), and six (5%) responses considered the psychological sensitivity of weight.

Discussion

This paper explored whether physiotherapists demonstrate weight stigma and whether this might negatively influence patient treatment. The total Anti-Fat Attitudes questionnaire scores indicated that physiotherapists, in line with studies on many other health professionals,¹ demonstrate explicit weight stigma.

Table 4

P-values from chi-squared tests comparing normal and overweight BMI categories by treatment modality in case studies.

| Treatment modality | Case study | | |
|----------------------------|------------|-------------------|-------------------|
| | 1 | 2 | 3 |
| Joint mobilisations | 0.24 | 0.57 | 0.31 |
| Soft tissue massage | 0.29 | 0.23 | 0.03 ^a |
| Neuromuscular facilitation | 0.21 | 0.29 | 0.31 |
| Passive stretching | 0.09 | 0.57 | 0.36 |
| Acupuncture | 0.21 | 0.39 | 0.31 |
| Electrotherapies | 0.57 | 0.40 | 0.03 ^a |
| Heat | 0.51 | 0.52 | 0.11 |
| Aerobic exercise | 0.12 | 0.14 | 0.09 |
| Strength exercises | 0.27 | 0.50 | 0.61 |
| Stretching exercises | 0.40 | 0.32 | 0.41 |
| General health advice | 0.39 | 0.00 ^a | 0.10 |
| Balance | 0.57 | 1.00 | 0.22 |

^a significant at $p < 0.05$, indicating a difference in treatment modality chosen.

The scores on the subscales provided more insight into the nature of this stigma and its likely implications for behaviour towards patients who are overweight. The Dislike subscale had a relatively low score, however responses were notably high in answer to the question 'If I were an employer, I might avoid hiring an overweight person', suggesting that physiotherapists' negative attitudes may result in discriminatory behaviours. In contrast, the quantitative responses to the case studies showed little evidence of discriminatory behaviours. In fact, responses to one question (feeling similar to a patient) indicated a greater liking of patients who were overweight. A similar effect is noticeable elsewhere in physiotherapists' attitudes.²⁸ This apparent contradiction is possibly explained by the 'jolly fat stereotype',⁴⁰ which fits with the stereotype content model.⁴¹ Participants also scored relatively highly on the Fear subscale, which measures negative attitudes towards one's own body weight. Importantly, these attitudes have previously been correlated with discriminatory behaviour⁴² and thus have become a recent focus of intervention studies.⁴³ Participants scored most highly on the Willpower subscale, indicating that physiotherapists are likely to blame people for their body size.²⁹ This is a common component of weight stigma and, as a result, a number of intervention studies have attempted to address this issue.^{44,45} Whilst these intervention studies generally showed that these beliefs are modifiable, weight stigmatising attitudes overall are not reduced.⁴⁵ For this reason intervention studies are now beginning to focus elsewhere.⁴⁶

The free-text responses to the case studies provided insight into physiotherapists' attitudes towards weight in a clinical context, giving further indication of whether physiotherapists were likely to demonstrate discriminatory behaviours. The questions did not directly address weight, and thus the participants were likely to have discussed weight relatively uninfluenced by the researchers' expectations. A total of 113 participants (96% of the subset with references to weight) demonstrated some element of the five identified weight stigma themes. These forms of weight stigma align with stigmatising experiences reported by overweight patients.^{24,47}

Generally, most participants' responses were prescriptive or directive and it was rarely acknowledged that a two-way conversation with patients was needed. Broader discussions that considered the complexity and/or sensitivity of the subject of weight were evident in only rare responses that considered patients' prior knowledge, for example: 'her weight issues ... the patient could already be addressing those issues'. Although explicitly negative responses were unusual, they provide insight into some of the attitudes that may underlie the more subtle stigma expressed more commonly. These explicit responses included stereotyping of laziness, for example: 'less likely to be compliant due to BMI' and assumptions of necessary ill health, for example: 'she is way too heavy ... on a one-way train to a poor quality of life and a short one at that'.

Overall, the analysis of the free-text responses shows that physiotherapists have a number of ways of responding to a patient who is overweight or obese. Nevertheless, the most common responses were simplistic, implicitly negative and prescriptive advice. It was rare for responses to indicate a more complex consideration of weight or explicitly negative/stereotyping attitudes. These findings align with literature about other health professionals.¹ Further study is needed to clarify the nature of these attitudes and how they play out in clinical settings.

There were a number of limitations to this study. Bias may have been introduced due to recruitment through professional contacts. However, this is likely to have had a minimal effect due to the small number of people recruited in this way ($n = 10$, if all participated this represents 3.8%) and to the primary author ensuring that these contacts had no prior knowledge of the nature of the research topic. Whilst responses could have been made mandatory to progress through the survey, this may have reduced the sample size by discouraging some participants from completion. The incomplete surveys were unlikely to have had a strong effect, as most participants completed all questions and there was a

relatively large sample size. Although the Anti-Fat Attitudes questionnaire and case studies are both commonly used and standard methods of looking at attitudes, they are inexact measures of attitudes and have limits in application to actual discriminatory behaviours. The case study format may have lacked sensitivity in examining the more subtle forms of discrimination that are likely to be the clinical manifestations of weight stigma.²⁶ The uniformity of the responses suggests that physiotherapists may have very set answers to these types of questions, which may not reflect actual clinical behaviour. Future studies could test the variables in a more direct way (such as conducting focus groups or direct observation of clinical encounters).

This research begins a critical conversation about physiotherapists and weight stigma. The findings show that Australian physiotherapists demonstrate weight stigma, especially in the explicit form, and that this has the potential to negatively affect physiotherapy treatment in patients who are overweight or obese. This conversation is not new to health as it has been the focus of considerable popular and academic discourse in the past decade or so. When examining the physiotherapy profession reflexively there are intrinsic elements that may mean that physiotherapists are not currently well equipped to consider the psychological aspects of being involved in discussions about body weight. Firstly, physiotherapists tend to use a 'treater' or educator approach rather than a collaborative or empowering approach.⁴⁸ In relation to body weight this means that physiotherapists may give advice to the patient that is not relevant or may inadvertently cause offence because the patient already knows. Furthermore, physiotherapy has been criticised from within the profession for lacking self-reflection.^{49,50} With regards to weight, this means that physiotherapists may not detect whether their attitudes affect their patients.

Clinically, it is suggested that physiotherapists consider implementing the following evidence-based strategies to minimise the negative effects of weight stigma on their patients. There may be value in physiotherapists reflecting on their own attitudes towards patients who are overweight.⁴⁹ Stereotyping of patients who are overweight or obese should be avoided, including making assumptions about patients' healthcare practices and knowledge.⁵¹ Fostering a collaborative environment that moves beyond patient education may reduce the effects of stigma on patients.⁵² Support or advice could be sought if physiotherapists have difficulty understanding how their attitudes may affect patients.

What is already known on this topic: Healthcare clinicians often ascribe overweight or obese people with negative characteristics, such as laziness or low intelligence. Such weight stigma has considerable negative health effects. The prevalence of weight stigma among physiotherapists has not been extensively investigated.

What this study adds: Many physiotherapists demonstrate weight stigma, both explicitly but also implicitly in their treatment choices. Physiotherapists could reflect on their own attitudes towards people who are overweight.

Note: Readers who are interested in assessing their own attitudes towards people who are overweight can complete the Anti-Fat Attitudes questionnaire online and receive a calculated score at the following web address: <http://weightstigma.info/>

eAddenda: Appendix 1 can be found online at [doi:10.1016/j.jphys.2014.06.020](https://doi.org/10.1016/j.jphys.2014.06.020)

Ethics approval: The University of Queensland (UQ) and Curtin University (Curtin) Ethics Committees approved this study. All participants gave informed consent before data collection began.

Competing interests: None declared.

Source(s) of support: None declared.

Acknowledgements: Thank you to the physiotherapists who participated in the study and its pilot, and for the advice and support of a number of others. This study was conducted by the primary author as part of the requirements for a MClinPty (Curtin) and contributes to her PhD (Psychology, UQ). Thank you to C Crandall for approving the Anti-Fat Attitudes questionnaire to be included as an appendix.

Correspondence: Jenny Setchell, Psychology, The University of Queensland, Australia. Email: jennysetchell@gmail.com

References

- Puhl RM, Heuer CA. The stigma of obesity: A review and update. *Obesity*. 2009;17(5):941–964. <http://dx.doi.org/10.1038/oby.2008.636>.
- Puhl RM, Heuer CA. Obesity stigma: Important considerations for public health. *Am J Public Health*. 2010;100(6):1019–1028. <http://dx.doi.org/10.2105/AJPH.2009.159491>.
- Carter A, Snodgrass S, Guest M, Collins C, James C, Ashby S, et al. The provision of weight management and healthy lifestyle advice provided by physiotherapists. In: *Paper presented at the APA Conference 'New Moves'*. 2013.
- Gard M, Wright J. *The obesity epidemic: Science, morality and ideology*. London, UK: Routledge; 2005.
- Shaw K, Gennat H, O'Rourke P, Del Mar C. Exercise for overweight or obesity. *Cochrane Database Syst Rev*. 2006;CD003817.
- Norris SL, Zhang X, Avenell A, Gregg E, Brown T, Schmid CH, et al. Long-term non-pharmacological weight loss interventions for adults with type 2 diabetes mellitus. *Cochrane Database Syst Rev*. 2005;CD004095.
- Eisenmann JC. Insight into the causes of the recent secular trend in pediatric obesity: Common sense does not always prevail for complex, multi-factorial phenotypes. *Prev Med*. 2006;42(5):329–335. <http://dx.doi.org/10.1016/j.ypmed.2006.02.002>.
- McAllister EJ, Dhurandhar NV, Keith SW, Aronne LJ, Barger J, Baskin M, et al. Ten putative contributors to the obesity epidemic. *Crit Rev Food Sci Nutr*. 2009;49(10):868–913. <http://dx.doi.org/10.1080/10408390903372599>.
- Flegal RM, Kit BK, Orpana H, Graubard BI. Association of all-cause mortality with overweight and obesity using standard body mass index categories: A systematic review and meta-analysis. *JAMA*. 2013;309(1):71–82. <http://dx.doi.org/10.1001/jama.2012.113905>.
- Lupton D. *Fat*. New York, NY: Routledge; 2012.
- Puhl RM, Andreyeva T, Brownell KD. Perceptions of weight discrimination: Prevalence and comparison to race and gender discrimination in America. *Int J Obes*. 2008;32(6):992–1000. <http://dx.doi.org/10.1038/ijo.2008.22>.
- Rothblum E, Miller C, Garbutt B. Stereotypes of obese female job applicants. *Int J Eating Disord*. 1988;7(2):277–283.
- Roehling MV, Roehling P, Pichler S. The relationship between body weight and perceived weight-related employment discrimination: The role of sex and race. *J Vocat Behav*. 2007;71(2):300–318. <http://dx.doi.org/10.1016/j.jvb.2007.04.008>.
- O'Brien KS, Latner JD, Ebneter D, Hunter JA. Obesity discrimination: The role of physical appearance, personal ideology, and anti-fat prejudice. *Int J Obes*. 2013;37(3):455–460. <http://dx.doi.org/10.1038/ijo.2012.52>.
- Bessenoff G, Sherman J. Automatic and controlled components of prejudice toward fat people: Evaluation versus stereotype activation. *Social Cognition*. 2000;18(4):329–353. <http://dx.doi.org/10.1521/soco.2000.18.4.329>.
- Drury C, King KM. Weight discrimination and bullying. *Best Pract Res Cl En*. 2013;27(2):117–127. <http://dx.doi.org/10.1016/j.beem.2012.12.002>.
- Ogden J. In: *The possible positive consequences of obesity stigma*. 2013.
- Carels RA, Young KM, Wott CB, Harper J, Gumble A, Oehlof MW, et al. Weight bias and weight loss treatment outcomes in treatment-seeking adults. *Ann Behav Med*. 2009;37(3):350–355. <http://dx.doi.org/10.1007/s12160-009-9109-4>.
- Vartanian LR, Novak SA. Internalized societal attitudes moderate the impact of weight stigma on avoidance of exercise. *Obesity*. 2011;19(4):757–762. <http://dx.doi.org/10.1038/oby.2010.234>.
- Drury C, Louis M. Exploring the association between body weight, stigma of obesity, and health care avoidance. *J Am Acad Nurse Pract*. 2002;14(12):554–561. <http://dx.doi.org/10.1111/j.1745-7599.2002.tb00089.x>.
- Ashmore JA, Friedman KE, Reichmann SK, Musante GJ. Weight-based stigmatization, psychological distress, & binge eating behavior among obese treatment-seeking adults. *Eat Behav*. 2008;9(2):203–209. <http://dx.doi.org/10.1016/j.eatbeh.2007.09.006>.
- Hebl MR, Xu J, Mason MF. Weighing the care: Patients' perceptions of physician care as a function of gender and weight. *Int J Obes*. 2003;27(2):269–275. <http://dx.doi.org/10.1038/sj.ijo.802231>.
- Sabin JA, Marini M, Nosek BA. Implicit and explicit anti-fat bias among a large sample of medical doctors by BMI, race/ethnicity and gender. *PLoS ONE*. 2012;7(11):e48448. <http://dx.doi.org/10.1371/journal.pone.0048448>.
- Mulherin K, Miller Y, Barlow FK, Diedrichs PC, Thompson R. Weight stigma in maternity care: Women's experiences and care providers' attitudes. *BMC Pregnancy Childbirth*. 2013;13(19). <http://dx.doi.org/10.1186/1471-2393-13-19>.
- Chambliss H, Finley C, Blair S. Attitudes toward obese individuals among exercise science students. *Med Sci Sport Exer*. 2004;36(3):468–474. <http://dx.doi.org/10.1249/01.mss.0000117115.94062.e4>.
- Stone O, Werner P. Israeli dietitians' professional stigma attached to obese patients. *Qual Health Res*. 2012;22(6):768–776. <http://dx.doi.org/10.1177/1049732311431942>.
- Higgs J, Refshauge K, Ellis E. Portrait of the physiotherapy profession. *J Interprof Care*. 2001;15(1):79–89. <http://dx.doi.org/10.1080/13561820020022891>.
- Sack S, Radler D, Mairella K, Touger-Decker R, Khan H. Physical therapists' attitudes, knowledge, and practice approaches regarding people who are obese. *Phys Ther*. 2009;89(8):804–815.
- Crandall CS. Prejudice against fat people: Ideology and self-interest. *J Pers Soc Psychol*. 1994;66(5):882–894.
- Allison DB, Baskin ML. *Handbook of assessment methods for eating behaviors and weight-related problems: Measures, theory and research*. 2nd ed. Los Angeles, CA: Sage; 2009.
- Edward H, Marshall S, Vitolsins M, Crandall S, Davis S, Miller D, et al. Measuring medical student attitudes and beliefs regarding patients who are obese. *Acad Med*. 2013;88(2):282–289. <http://dx.doi.org/10.1097/ACM.0b013e31827c028d>.
- O'Brien KS, Hunter JA, Banks M. Implicit anti-fat bias in physical educators: Physical attributes, ideology and socialization. *Int J Obes*. 2007;31(2):308–314. <http://dx.doi.org/10.1038/sj.ijo.0803398>.
- Puhl RM, Latner JD, King KM, Luedicke J. Weight bias among professionals treating eating disorders: Attitudes about treatment and perceived patient outcomes. *Int J Eat Disord*. 2014;47(1):65–75. <http://dx.doi.org/10.1002/eat.22186>.
- Oswald FL, Mitchell G, Blanton H, Jaccard J, Tetlock PE. Predicting ethnic and racial discrimination: A meta-analysis of IAT criterion studies. *J Pers Soc Psychol*. 2013;105(2):179–192. <http://dx.doi.org/10.1037/a0032734>.
- Braun V, Clarke V. Using thematic analysis in psychology. *Qual Res Psychol*. 2006;3(2):77–101.
- Physiotherapy Board of Australia. *Physiotherapy Registrant Data: October 2013*. 2013.
- Health Workforce Australia. *Australia's health workforce series: Physiotherapists in focus*. 2014.
- Crandall CS, D'Anello S, Sakalli N, Lazarus E, Nejtardt G, Feather N, et al. An attribution-value model of prejudice: Anti-fat attitudes in six nations. *Pers Soc Psychol B*. 2001;27(1):30–37.
- Byrne D. An overview (and underview) of research and theory within the attraction paradigm. *J Soc Pers Relat*. 1997;14(3):417–431.
- Tiggemann M, Rothblum E. Gender differences in social consequences of perceived overweight in the United States and Australia. *Sex Roles*. 1988;18(1–2):75–86. <http://dx.doi.org/10.1007/BF00288018>.
- Fiske S, Cuddy A, Glick P, Xu J. A model of (often mixed) stereotype content: Competence and warmth respectively follow from perceived status and competition. *J Pers Soc Psychol*. 2002;82(6):878–902. <http://dx.doi.org/10.1037/0022-3514.82.6.878>.
- Swami V, Pietschnig J, Stieger S, Tovée MJ, Voracek M. An investigation of weight bias against women and its associations with individual difference factors. *Body Image*. 2010;7(3):194–199. <http://dx.doi.org/10.1016/j.bodyim.2010.03.003>.
- Anesbury T, Tiggemann M. An attempt to reduce negative stereotyping of obesity in children by changing controllability beliefs. *Health Educ Res*. 2000;15(2):145–152. <http://dx.doi.org/10.1093/her/15.2.145>.
- Diedrichs PC, Barlow FK. How to lose weight bias fast! Evaluating a brief anti-weight bias intervention. *Brit J Health Psychol*. 2011;16(4):846–861. <http://dx.doi.org/10.1111/j.2044-8287.2011.02022.x>.
- Danielsdóttir S, O'Brien K, Ciao A. Anti-fat prejudice reduction: A review of published studies. *Obesity facts*. 2010;3(1):47–58. <http://dx.doi.org/10.1159/0002770674>.
- Vartanian LR. Disgust and perceived control in attitudes toward obese people. *Int J Obes*. 2010;34(8):1302–1307. <http://dx.doi.org/10.1038/ijo.2010.45>.
- Cossrow NH, Jeffery RW, McGuire MT. Understanding weight stigmatization: A focus group study. *J Nutr Educ Behav*. 2001;33(4):208–214. [http://dx.doi.org/10.1016/S1499-4046\(06\)60033-X](http://dx.doi.org/10.1016/S1499-4046(06)60033-X).
- Trede F. *A critical practice model for physiotherapy*. (Doctoral Dissertation, The University of Sydney, Sydney, Australia). 2006. Retrieved from http://eresearch.qmu.ac.uk/1722/1/eResearch_1722.pdf Accessed 28 June 2014
- Clouder L. *Reflective practice in physiotherapy education: A critical conversation*. *Stud High Educ*. 2000;25(2):211–223.
- Praestegaard J, Gard G. Ethical issues in physiotherapy: Reflected from the perspective of physiotherapists in private practice. *Physiother Theory Pract*. 2013;29(2):96–112. <http://dx.doi.org/10.3109/09593985.2012.700388>.
- Teal C, Street R. Critical elements of culturally competent communication in the medical encounter: A review and model. *Soc Sci Med*. 2009;68(3):533–543. <http://dx.doi.org/10.1016/j.socscimed.2008.10.015>.
- Trede F. Emancipatory physiotherapy practice. *Physiother Theory Pract*. 2012;28(6):466–473. <http://dx.doi.org/10.3109/09593985.2012.676942>.

Further reading

www.qualtrics.com