



Obesity bias and stigma, attitudes and beliefs among entry-level physiotherapy students in the Republic of Ireland: a cross sectional study

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Abstract

Objective To explore entry-level physiotherapy students' attitudes and beliefs relating to weight bias and stigmatisation in healthcare.

Design Cross sectional survey of physiotherapy students.

Methods All final year physiotherapy students ($n = 215$) enrolled in entry-level physiotherapy programmes in the Republic of Ireland were invited to participate. Each received a questionnaire, consisting of 72 questions, within four key sections. Descriptive statistics and frequencies were used to analyse the data.

Results A response rate of 83% (179/215) was achieved. Whilst physiotherapy students, overall, had a positive attitude towards people with obesity, 29% had a negative attitude towards people with obesity, 24% had a negative attitude towards managing this population and most (74%) believed obesity was caused by behavioural and individual factors. Over one third of students (35%) reported that they would not be confident in managing patients with obesity and more than half (54%) felt treating patients with obesity was not worthwhile.

Conclusion This study provides preliminary findings to suggest that weight stigma-reduction efforts are warranted for physiotherapy students. Helping students to understand that obesity is a complex, chronic condition with multiple aspects requiring a multi-faceted approach to its management might be the first step towards dispelling these negative attitudes towards patients living with obesity. Inclusion of a formal obesity curriculum should perhaps now be part of the contemporary physiotherapy students' education.

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Keywords: Obesity; Bias and stigmatisation; Physiotherapy students

Background

Despite scientific evidence to the contrary, the prevailing view of healthcare professionals appears to be that obesity is a choice that can be reversed by voluntary decisions to eat less and exercise more [1,2]. Existing literature reports that

physicians and other healthcare professionals perceive people with obesity as undisciplined, lazy, weak-willed and unlikely to comply with treatment or make lifestyle changes [3–5]. These assumptions have been shown to result in multiple negative encounters for patients living with obesity, one of which is experiencing weight bias and stigma at the hands of their healthcare providers [2].

Weight bias is defined as negative attitudes towards, and beliefs about others because of their weight [6]. Weight bias can lead to obesity stigma, which is the social sign or label affixed to an individual who is the victim of prejudice [7]. Current data indicates up to 70% of adults with obesity report experiencing stigmatisation in the healthcare setting [8]. This is problematic because it has been shown to result in people

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with obesity not seeking healthcare [9], having reduced confidence in healthcare professionals [10] and poorer treatment outcomes than does presenting with a healthy weight [9,10].

Physiotherapists treat patients with obesity daily. Previous studies have demonstrated that weight bias and stigmatisation are present in physiotherapy practice [11–13]. A recent systematic review exploring weight stigmatisation in physiotherapy reported explicit weight stigma in six of the seven included studies, with the majority of physiotherapists describing people with increased weight as ‘noncompliant’ and ‘unmotivated’ [14]. Yet, in terms of beliefs about obesity, most physiotherapists agree that obesity is a legitimate health issue and that physiotherapy can play a central role in its management through exercise interventions, mobility training and cardiorespiratory programmes for associated impairments [15,16].

Given that physiotherapists and other practising healthcare professionals have been shown to display weight bias and stigma, efforts to address this bias among students training in these professions is warranted. Studies exploring this topic among medical students revealed, that like physicians, they hold strong negative biases against obesity and towards people living with obesity [17–21]. Furthermore, the majority of medical students have been shown to be unaware of their weight bias [18]. Similarly, studies exploring weight bias in nursing students report that although students may believe themselves to be free of weight bias, implicit weight bias does exist in a large percentage of them [22]. This bias may subconsciously affect treatment and patient experiences.

To date, there has been limited research into physiotherapy students and weight stigmatisation. One study conducted in South Africa, over 10 years ago, reported physiotherapy students had negative attitudes towards adults living with obesity [23]. The main focus of the study, however, was knowledge and health related risk associated with obesity. A recent study conducted in Asia compared weight stigmatisation between practising physiotherapists and physiotherapy students and found both groups demonstrated average levels of stigmatisation with students believing more strongly that obesity can be controlled by the individual [16].

While general attitudes and beliefs about the causes of obesity have previously been assessed in physiotherapy students, no study has explored attitudes and beliefs with an emphasis on obesity management and patient care or physiotherapy students’ perceptions of weight bias expressed by their peers and educators in the clinical environment. Furthermore, there have been no previous studies conducted in the UK or Ireland focusing on entry-level physiotherapy students and obesity bias and stigma. With the UK and Ireland coming close to the top of the European ranking for obesity prevalence [24], inevitably there will be an increase in patients attending for healthcare that live with obesity. Hence physiotherapists and physiotherapy students in these countries will likely encounter obesity and its associated morbidities on a daily basis in their clinical practice.

The aim of this research was to explore entry-level physiotherapy students’ knowledge, attitudes and beliefs relating to weight management, weight bias and stigmatisation in healthcare. A prerequisite to combating prejudice is first acknowledging, understanding and gaining an insight into its existence. To find that physiotherapy students possess significant anti-obesity biases would have important implications for educators developing curricula to equip students with the skills they need to curtail the negative implications of weight stigmatization and optimally manage obesity, a condition that now affects over a quarter of the population in both the Republic of Ireland and the United Kingdom [24].

Methods

Physiotherapy education (Republic of Ireland)

There are currently four higher education institutions (HEIs) offering seven entry-level physiotherapy programmes (BSc; $n=4$ MSc; $n=3$) in the Republic of Ireland, with approximately 220 graduating per year from these programmes. Academic student education takes place, for the most part, in the HEIs and is provided by academic members of university staff, expert clinicians, clinical tutors and post-graduate research students. Clinical education (1000 hours of supervised clinical practice) takes place under the supervision of placement educators (expert clinicians on-site) and practice tutors (specifically employed to coordinate and provide clinical education). A variety of settings are utilised, including public and private hospitals, primary care and community services. Upon completion of the four year undergraduate BSc or two-year accelerated MSc programme and registration with the professional accrediting body (CORU), physiotherapists in Ireland are autonomous practitioners. In consideration with the curriculum and obesity content, although not taught as an independent module thus far, it is integrated to varying degrees in allied modules, across the different programmes, the focus being theory driven, mostly related to its management as a comorbidity (e.g., musculoskeletal module; knee osteoarthritis and the impact of obesity).

Sample

A purposeful sample of final year physiotherapy students ($n=215$) enrolled in entry-level physiotherapy programmes (BSc; $n=4$ and MSc; $n=3$) in the Republic of Ireland, academic year 2019/20, were invited to participate. Programme Heads were contacted via email explaining the purpose of the study and permission was requested to contact their final year students. All but one programme agreed to participate (BSc; $n=3$ and MSc; $n=3$). Once permission was granted, gatekeepers (administrative staff member from each university) were nominated, to act as intermediaries between the students and researchers. Only final year students were included

as they had completed between 50–75% (500–750 hours) of their clinical education. Hence, they would have had ample opportunity to interact with and observe healthcare practitioners' interactions with patients living with obesity. Ethical approval for the study was obtained from University College Dublin's Human Research Ethics Committee (LS-19-70-ODonoghue) and students provided written informed consent to participate.

Procedure

Gatekeepers distributed the questionnaire packs to the physiotherapy students. Each pack contained an information leaflet detailing the study background, a consent form, the study questionnaire and a stamped addressed envelope for questionnaire return. Respondents were assured that any data collected would be confidential and that no study participants would be identified. Two weeks after distribution, a reminder was sent to complete/return the questionnaire.

Questionnaire

The questionnaire included four measures previously used to assess obesity bias in healthcare students and practicing professionals. It included questions on general attitudes towards obese persons [25], beliefs about the causes of obesity [20], attitudes and beliefs relating to the management of obesity [26] and the students' perceptions or observations of weight bias in the clinical setting [27]. Prior to distribution, the questionnaire was piloted on two physiotherapy educators and five students who provided feedback on its readability and formatting. Following amendment to the questionnaire completion guidelines, the final questionnaire consisted of a demographics section (age, gender, BMI, ethnicity) and four sub-sections with a total of 72 questions.

Attitudes Towards Obese Person Scale

General attitudes and perceptions towards obesity was assessed using the Attitudes Towards Obese Persons Scale (ATOP). This scale has been previously used with health professional students and has been shown have both high reliability and validity [25]. It is a 20-item measure that includes positive and negative attitudes towards obese persons. Each statement uses a six-point Likert-scale to indicate the extent to which the respondent agrees (+3) or disagrees (−3) with a statement. An overall score is generated by summing the item responses and adding an additional 60 points. Overall scores range from 0 to 120 with higher scores indicating more positive attitudes to persons with obesity. A score between 61 and 120 on the ATOP scale indicates a positive attitude whilst a score between 0 and 60 indicates a negative attitude towards persons' living with obesity [25].

Causes of obesity

Beliefs about the causes of obesity were assessed using a measure developed for primary care physicians [28] and

subsequently modified, for medical and clinical psychology students [20,27]. This measure describes 14 factors commonly believed to contribute to obesity. Six factors are classified as behavioural (e.g., overeating, physical inactivity) and seven as non-behavioural (endocrine disorder, advertising of unhealthy foods). Students were asked to rate each factor on a five-point Likert scale ranging from 1 (not at all important) to 5 (extremely important).

NEW (Nutrition, Exercise and Weight management) Attitudes Scale

Attitudes and beliefs regarding the management of patients with obesity was assessed using the NEW Attitudes Scale. It comprises of 31 items that are rated on a five-point Thurstone scale, with differential weights allocated to each item. Seven items pertain to nutrition, six to exercise, 11 to weight management and seven to non-specific domains. This scale has demonstrated good validity and reliability in measuring medical students' attitudes towards the management of obesity [26]. An overall score between −118 and +118 is given, a higher score indicating more positive attitude towards patients with obesity.

Perceived weight Bias in healthcare

This measure was devised to gather healthcare students' perceptions of weight bias expressed by peers, educators and healthcare professionals in a clinical environment [27]. Seven statements scored on a five-point Likert scale, ranging from 'strongly disagree' to 'strongly agree' are included. There are two sub-scales; one includes five items assessing perceived acceptability of weight bias among peers, educators and healthcare professionals; the other includes two items assessing personal opinions towards patients with obesity.

Data analysis

The results were analysed using Statistical Package for the Social Science Version 24 (IBM Corporation, New York, USA). Descriptive statistics and frequencies were used to analyse the quantitative data.

Results

Student demographics

215 physiotherapy students were invited to participate and 179 (83%) completed the questionnaire. Of these, 125 (70%) were female, and all but 12 (7%) were Caucasian. Seven students identified as Asian, three as African American and two as Hispanic. Mean age was 22.7 (2.8) years, with one-third ($n = 64$) being registered as graduate ($n = 64$) and two-thirds ($n = 115$) undergraduate students. All returned questionnaires were completed in their entirety ($n = 179$). Findings are presented below under the four sub-sections of the questionnaire.

Table 1
Causes of obesity (questionnaire scores).

	Median	'Not at all important' n (%)	'Somewhat important' n (%)	'Moderately important' n (%)	'Very important' n (%)	'Extremely important' n (%)
Non-behavioural causes						
Genetic factors	3	10 (6)	50 (28)	65 (36)	39 (22)	15 (8)
Psychological problems	4	0 (0)	9 (5)	32 (18)	75 (42)	63 (35)
Marketing of unhealthy food	4	6 (3)	32 (18)	48 (27)	65 (36)	28 (16)
Endocrine disorder	3	6 (3)	32 (18)	56 (31)	64 (36)	21 (12)
Prices of food ^a	3	17 (9)	30 (17)	46 (26)	51 (29)	35 (20)
Food addiction	4	1 (1)	13 (7)	25 (14)	66 (37)	74 (41)
Metabolic defect	3	4 (2)	29 (16)	63 (35)	59 (33)	24 (14)
Behavioural causes						
Overeating	5	0 (0)	7 (3)	20 (11)	52 (29)	100 (57)
Physical inactivity	5	0 (0)	5 (3)	14 (8)	33 (18)	127 (71)
Poor nutrition knowledge	4	0 (0)	8 (5)	30 (17)	58 (32)	83 (46)
High fat diet ^a	4	10 (6)	20 (11)	27 (15)	53 (30)	69 (39)
Restaurant eating	3	28 (16)	58 (32)	49 (28)	29 (16)	15 (8)
Lack of willpower	3	3 (2)	38 (21)	58 (32)	50 (28)	30 (17)
Repeated dieting	3	11 (6)	63 (35)	60 (34)	31 (17)	14 (8)

A median score closer to five indicates a higher belief in that specific cause of obesity.

^a Total equals 101% due to rounding errors.

(i) Attitudes towards Obese Persons Scale (ATOP)

The overall mean score for the ATOP was positive at 69.4 (14.3), however, 29% ($n = 51$) of students scored below 60, indicating a negative attitude towards people living with obesity.

(ii) Causes of Obesity

Of the non-behavioural causes of obesity in the scale, psychological problems and food addiction were scored the highest by physiotherapy students. Three-quarters of students ($n = 132$) believed they were either 'very important' or 'extremely important' causes of obesity. Genetic factors and metabolic defect were deemed the least likely causes in the non-behavioural category. In the behavioural category, physical inactivity was identified as most important (71%), followed by overeating (56%) and poor nutritional knowledge (46%). Restaurant eating and repeated dieting were considered the least important causes in this category. Table 1 provides further detail relating to the individual category scores.

(iii) NEW (Nutrition, Exercise and Weight management) Attitudes Scale

The overall mean score (20; SD = 20.5) for the NEW Attitudes Scale was positive, with 76% of students expressing a positive attitude (0–118) and 24% a negative attitude (–118 to 0) towards managing people with obesity. In relation to items pertaining to nutrition, 71% of students felt that nutritional counselling changes behaviour, with 35% reporting they had a personal desire to provide this counselling. Almost half (46%) did not believe they could be an effective role model by eating healthily. From an exercise perspective, the majority of students (84%) reported a desire to counsel patients

about exercise, yet over half felt that that overweight individuals tended to be lazy about exercise (58%) and 35% believed there would be no change in their overweight patients' exercise habits even if there was counselling and an agreed upon exercise plan. As with nutrition, almost all students (87%) were unsure as to whether patients understood the association between physical inactivity and health. In terms of treating patients living with overweight and obesity, one third of students (35%) reported that they would not be confident and over half (54%) felt treating these patients was not worth the time. Table 2 illustrates the individual scores for each of the 31 items included.

(iv) Perceived Weight Bias in Healthcare

Fig. 1 illustrates the findings in relation to physiotherapy students' perceptions of weight bias expressed by peers, educators and healthcare professionals in the clinical environment. In consideration with the two items assessing personal opinion, almost all students (96%) felt it was unacceptable to make jokes about patients living with obesity. In terms of the items assessing perceived acceptability of weight bias, 40% of students perceived their peers as having negative attitudes towards obesity, with 45% having witnessed other students making jokes about patients with obesity. Concerning educators and healthcare professionals, more than a third of students (36%) observed or heard derogatory humour and negative comments directed towards patients with obesity in the healthcare setting compared to a quarter (25%) in the university setting.

Table 2

NEW (Nutrition, Exercise and Weight Management) Attitudes Scale: *n* (%).

Nutrition, Exercise and Weight Management (NEW) Scale	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Missing data
There is no excuse for a patient to be overweight/obese	33 (19)	74 (41)	36 (20)	31 (17)	2 (1)	3 (2)
It is usually sufficient to give a person brief, clear advice about weight management	57 (32)	73 (41)	16 (9)	25 (14)	6 (3)	2 (1)
People can eat a healthy diet if they choose to do so	109 (61)	1 (1)	28 (16)	13 (7)	26 (14)	2 (1)
Counselling about nutrition does not change behaviour ^a	120 (67)	7 (4)	24 (13)	6 (3)	20 (11)	2 (1)
I believe if I eat a healthy diet it would make me an effective role model	76 (42)	4 (2)	36 (20)	12 (7)	49 (28)	2 (1)
I find it rewarding to talk to someone about nutrition ^a	21 (12)	3 (2)	44 (25)	11 (6)	98 (55)	1 (1)
I have a personal desire to counsel patients about nutrition	57 (32)	6 (3)	55 (31)	7 (4)	52 (29)	2 (1)
Patients understand the connection between nutrition and cancer	4 (2)	16 (9)	155 (87)	2 (1)	0 (0)	2 (1)
The American food culture contributes to the overweight/obese problem ^a	5 (3)	4 (2)	17 (10)	85 (48)	66 (37)	2 (1)
Patients are likely to follow an agreed upon plan to increase their exercise	10 (6)	52 (29)	54 (30)	57 (32)	4 (2)	2 (1)
Even if I counsel them, patients will continue their poor exercise habits	0 (0)	45 (25)	66 (37)	56 (31)	10 (6)	2 (1)
I have a personal desire to counsel patients about exercise	12 (7)	1 (1)	17 (10)	14 (8)	133 (74)	2 (1)
Overweight individuals tend to be lazy about exercise	5 (3)	31 (17)	38 (21)	84 (47)	19 (11)	2 (1)
Patients understand the connection between exercise and cancer	4 (2)	17 (10)	154 (86)	2 (1)	0 (0)	2 (1)
Patients think lack of exercise can be a serious health risk ^a	3 (2)	9 (5)	154 (86)	10 (6)	1 (1)	2 (1)
I believe patients can maintain weight loss	10 (6)	1 (1)	31 (17)	13 (7)	122 (68)	2 (1)
I think obese patients are motivated to change their lifestyle	46 (26)	7 (4)	66 (37)	7 (4)	51 (28)	2 (1)
I feel effective in helping overweight/obese patients manage their weight	39 (22)	4 (2)	52 (29)	12 (7)	70 (39)	2 (1)
I believe that my patients will follow through with a weight management program	37 (21)	4 (2)	73 (41)	9 (5)	54 (30)	2 (1)
I feel confident treating overweight/obese patients	52 (29)	9 (5)	31 (17)	12 (7)	73 (41)	2 (1)
I think treating overweight/obese patients is not worth the time	15 (9)	57 (32)	9 (5)	2 (1)	94 (53)	2 (1)
Weight management counselling takes too much time	71 (40)	74 (41)	25 (14)	6 (3)	1 (1)	2 (1)
I do feel a bit disgusted when treating a patient who is obese	98 (55)	46 (26)	18 (10)	15 (8)	0 (0)	2 (1)
If a patient is overweight/obese, I feel awkward discussing his/her weight	81 (45)	2 (1)	33 (18)	10 (6)	51 (29)	2 (1)
The person and not the weight is the focus of weight management counselling ^a	13 (7)	2 (1)	15 (8)	13 (7)	134 (75)	2 (1)
Patients know the health risks related to their weight ^a	1 (1)	14 (8)	157 (88)	4 (2)	1 (1)	2 (1)
Patients take their weight seriously	7 (4)	61 (34)	59 (33)	44 (25)	6 (3)	2 (1)
Patients understand the connection between weight and cancer	5 (3)	16 (9)	154 (86)	2 (1)	0 (0)	2 (1)
I have a personal desire to counsel patients about weight management	44 (25)	3 (2)	51 (28)	9 (5)	70 (39)	2 (1)
Overweight/obese individuals lack will power	11 (6)	57 (32)	50 (28)	56 (31)	3 (2)	2 (1)
Patients think being overweight/obese is a serious health risk	2 (1)	9 (5)	160 (90)	4 (2)	4 (2)	0 (0)

^a Total equals either 99% or 101% due to rounding errors.

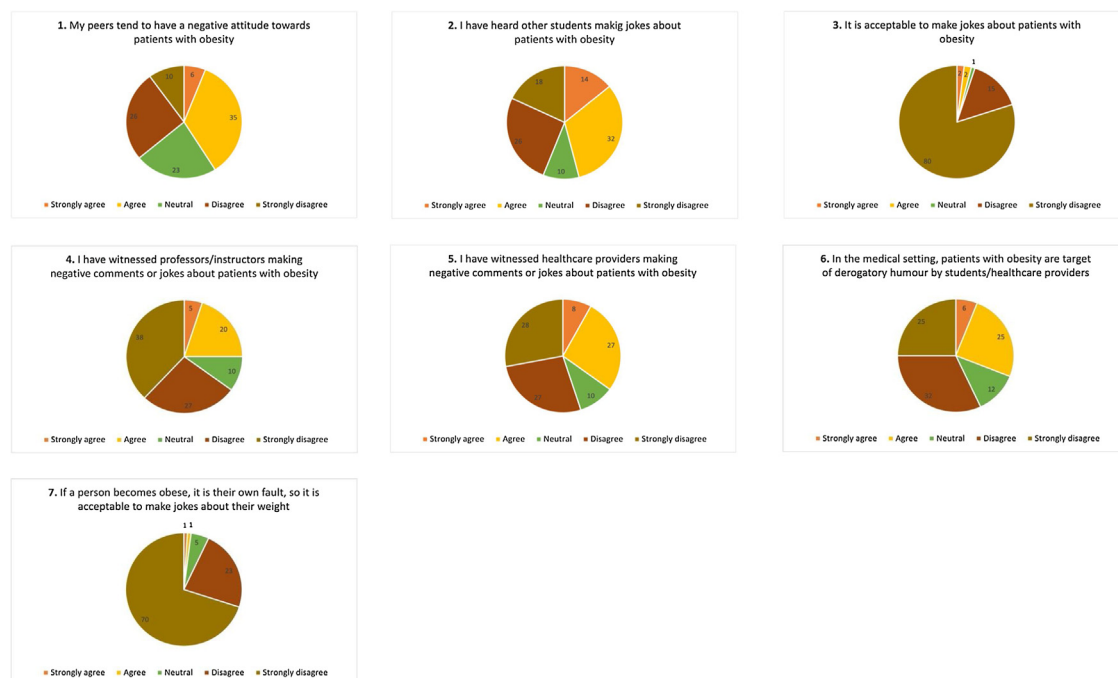


Fig. 1. Perceived weight bias in healthcare.

Discussion

This national cross-sectional survey conducted in the Republic of Ireland found that obesity bias and stigmatisation are significant issues amongst physiotherapy students. Almost one third had a negative attitude towards people with obesity, a quarter had a negative attitude towards managing people with obesity and the majority believed obesity was caused by behavioural and individual factors. Alarmingly, more than half of the students felt treating patients with obesity was not worth their time.

The level of weight bias observed in the present study is comparable to that reported in previous studies of students in other health disciplines, including medicine [18], nursing [22], dietetics [29] and psychology [27]. Of particular concern, in all of these studies is the percentage of students that expressed negative attitudes. Almost one third of healthcare students across disciplines, including physiotherapy, expressed negativity towards patients with obesity. And with convincing evidence [30] that supports the correlation between clinicians' weight bias and inferior treatment choices and care decisions, not only in diagnostic testing but also in health promotion and weight management strategies [31], the presence of obesity bias at such a high level among future health care providers is concerning.

While it should be taken more seriously, and efforts made by academic and clinical educators to dispel these negative attitudes at the earliest possible opportunity, experimental research to date exploring interventions to reduce obesity bias in health professional students is limited. Participation in interactive discussion to share experiences with encountering

obese patients [30], the use of brief anti-stigma films [32] and role play activities [33] have been shown to be partially successful at reducing pre-professionals' obesity bias, but studies have been small, highlighting the need for further research to identify the optimal educational approach.

Like students in Asia [16], most of the physiotherapy students in this study were aware of multiple causes of obesity, but they overwhelmingly believed that obesity was due to behavioural factors that could be controlled by the individual. They almost universally agreed that physical inactivity, followed by overeating and poor nutrition were the most important causes of obesity. Non-behavioural causes were not perceived to be as influential. These findings highlight the disparity between physiotherapy students' knowledge and beliefs relating to causes of obesity and current scientific knowledge regarding mechanisms of body-weight regulation. A recent review of the literature relating to exercise and obesity [34] revealed physical activity or exercise, irrespective of its prescription parameters, does not induce weight loss in this population. Furthermore, the assumption by the students that voluntarily eating less and exercising more is enough to induce weight loss [2] is at odds with a definitive body of biological, clinical and social evidence developed over the last few decades [2]. Educating students about the broad causes of obesity and its complex aetiology, to dispel oversimplified assumptions, could perhaps, be a first positive step towards altering their beliefs and biases relating to obesity, and ultimately improve the management of people with obesity [27,35].

The NEW Attitudes Scale was used to explore physiotherapy students' attitudes within the context of clinician

interaction with patients. This scale focuses on nutrition, exercise and behavioural change as weight management approaches. While medical students' attitudes towards weight management [26] has been explored previously, this is the first study to do so in physiotherapy students. Overall, physiotherapy students expressed a positive attitude towards managing people with obesity. Most students felt brief advice about weight management was insufficient, with half expressing a personal desire to counsel patients about exercise and a third about nutrition. Yet, simultaneously, over one third of students reported low self-efficacy when it came to providing such interventions. This finding could partially explain why a high percentage didn't believe patients would follow through with an agreed weight management plan and more than half felt treating patients living with obesity was not worthwhile. Interestingly, previous research exploring physiotherapist students' self-efficacy has revealed it to be domain specific [36,37]. In the clinical phase of their study, physiotherapy students in Ireland are pre-dominantly confronted with cardiorespiratory, musculoskeletal, and neurological caseloads. To improve self-efficacy towards other clinical areas, such as obesity management, physiotherapy students should be exposed to obesity clinical cases in order to develop a sense of self-efficacy in this clinical area [36]. Increasing the students self-efficacy, specifically, around obesity management will make it much more likely that they will engage appropriately with this population as newly qualified practising clinicians [38,39].

Not surprisingly, due to the already established high prevalence of weight bias in clinical settings [2], the physiotherapy students reported witnessing it on a regular basis. Despite the fact that almost all students (96%) felt it was unacceptable to make jokes about patients with obesity, nearly half of them had witnessed their peers doing so, an almost identical finding to that reported by Puhl *et al.* [27] in their study in graduate healthcare students. In our study, almost one third of students also reported observing or hearing derogatory behaviour and humour directed towards patients with obesity from their educators. While this is an unacceptable level, it is substantially lower than that reported in a recent study of medical students [40] where over 75% reported hearing negative comments from professors and over one quarter witnessed overt discrimination against patients with obesity. It is essential, going forward, that clinical educators make an intentional effort to be positive role models when it comes to the management of patients with obesity. They need to articulate clearly against weight bias and stigmatisation, as research indicates that clinical supervisors' personal opinions, attitudes, behaviours and values have a profound effect on the students who follow and observe them [41].

Despite its limitations, namely, the cross-sectional design, the purposeful sample, possibly not being representative of physiotherapy students globally, some heterogeneity in terms of the amount of clinical education completed (ranging from 50 to 75%) and the sole use of self-report to explore attitudes and beliefs, this study provides preliminary findings to sug-

gest that obesity stigma-reduction efforts are warranted for physiotherapy students.

Clearly, more needs to be done within Irish physiotherapy programmes to dispel the negative attitudes towards patients living with obesity and ensure that entry-level students possess the confidence and skills to educate and communicate effectively around obesity. A first step towards this might be to help students understand that obesity is a complex, chronic condition with multiple aspects requiring a multifaceted approach to its management. Inclusion of a formal obesity curriculum that is co-designed with patients living with obesity, who have first-hand experience of healthcare weight bias and stigmatisation [42], should perhaps now be part of the contemporary physiotherapy students' education to reduce weight bias and stigma and improve the management of people with obesity.

However, it must be noted that changing the curriculum is only one important step towards changing the student physiotherapist and indeed, the physiotherapy professions attitudes and beliefs towards patients living with obesity. A multi-pronged approach to implementing this change, demands commitment on a professional, clinical, research and educational level. As obesity is predicted to become one of the most common chronic conditions facing contemporary physiotherapy healthcare, it is time to support the emergence and development of specialist bariatric physiotherapy positions in hospitals and communities, that employ interventions underpinned by a strong body of scientific evidence, supported by robust infrastructure and regulations.

Key messages

- Weight stigma-reduction efforts are warranted for physiotherapy students in the Republic of Ireland. One third were found to have negative attitudes towards people living with obesity and half felt treating patients with obesity was not worthwhile.
- Behavioural factors such as physical inactivity and overeating were reported to be the main causes of obesity. This highlights the disparity between physiotherapy students' knowledge and beliefs and current scientific evidence, that indicates societal and environmental factors have a critical contribution to the epidemic of obesity.
- Students felt brief advice about weight management was insufficient, reporting a personal desire to counsel patients about exercise and nutrition. Yet, simultaneously, over a third reported low self-efficacy when it came to providing such interventions.
- Inclusion of a formal obesity curriculum should perhaps, now, be part of the contemporary physiotherapy students' education to reduce weight bias and stigma and improve the management of people with obesity.

Ethical approval: The study was approved by the Human Research Ethics Committee in University College Dublin, reference number: LS-19-70-O'Donoghue.

Conflict of interest: None declared.

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