

# BMJ Open Primary care patient and practitioner views of weight and weight-related discussion: a mixed-methods study

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## ABSTRACT

**Objective** To understand the beliefs that primary care practitioners (PCPs) and patients with overweight and obesity have about obesity and primary care weight management in Scotland.

**Setting** Seven National Health Service (NHS) Scotland primary care centres.

**Participants** A total of 305 patients and 14 PCPs (12 general practitioners; two practice nurses) participated.

**Design and methodology** A cross-sectional mixed-methods study. PCPs and patients completed questionnaires assessing beliefs about obesity and primary care weight communication and management. Semi-structured interviews were conducted with PCPs to elaborate on questionnaire topics. Quantitative and qualitative data were synthesised to address study objectives.

**Results** (1) Many patients with overweight and obesity did not accurately perceive their weight or risk of developing weight-related health issues; (2) PCPs and patients reported behavioural factors as the most important cause of obesity, and medical factors as the most important consequence; (3) PCPs perceive their role in weight management as awareness raising and signposting, not prevention or weight monitoring; (4) PCPs identify structural and patient-related factors as barriers to weight communication and management, but not PCP factors.

**Conclusions** Incongruent and/or inaccurate beliefs held by PCPs and patient may present barriers to effective weight discussion and management in primary care. There is a need to review, standardise and clarify primary care weight management processes in Scotland. Acknowledging a shared responsibility for obesity as a disease may improve outcomes for patients with overweight and obesity.

## INTRODUCTION

Excess body weight is among the most serious global public health challenges of the 21st century.<sup>1</sup> Currently, 39% (1.9 billion) of the global adult population have overweight and 13% (650 million) have obesity.<sup>2</sup> The UK has among the highest prevalence of overweight and obesity in the world,<sup>3</sup> and in Scotland, 65% of the adult Scottish population have overweight and 29% have obesity.<sup>4</sup>

Approximately, 24.2 million National Health Service (NHS) primary care

## Strengths and limitations of this study

- This study addresses an important knowledge gap regarding the weight-related beliefs of primary care practitioners (PCPs) and patients in Scotland.
- All participating patients were consulted by one of the participating PCPs, allowing more meaningful interpretations of the data.
- The patient sample was representative in terms of prevalence of overweight and obesity in the Scottish population.
- Practice nurses were challenging to engage and therefore under-represented in this sample.

consultations occur annually in Scotland<sup>5</sup> and patients with obesity consult primary care more frequently than healthy weight patients.<sup>6</sup> UK clinical guidelines state that primary care has a key role in identifying and monitoring overweight and obesity in the patient population and providing weight management if necessary.<sup>7 8</sup> Thus, primary care has the potential to support patients with overweight and obesity to manage their weight. Despite this, observational and self-report evidence conclude that weight issues are seldom discussed with patients with overweight and obesity in primary care consultations, and weight management is not routinely offered to patients with overweight and obesity.<sup>9–11</sup>

Primary care practitioners (PCPs) often perceive patient weight as challenging to manage and cite multiple weight management barriers, including time/resource constraints, poor patient motivation, concerns about upsetting patients and lack of weight-related training.<sup>12–14</sup> Self-report research suggests that many PCPs and patients hold negative, biased and incongruent views about the aetiology of obesity, about people with overweight and obesity and about the role of primary care in weight management.<sup>15–17</sup> Evidence shows that many individuals who have clinical overweight or obesity often



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underestimate their weight<sup>18–20</sup> and the risk that excessive weight has for their health.<sup>21</sup> Beliefs about health issues play a key role in health behaviour change models (eg, Health Action Process Approach<sup>22</sup>): for example inaccurate weight perceptions can reduce the willingness of people with overweight and obesity to engage in weight management.<sup>23</sup> Research investigating medical practitioner (including PCP) weight-related beliefs and care outcomes for patient with obesity concluded that biased and stigmatising practitioner views may result in poor quality care for patients with obesity.<sup>24</sup> Thus, beliefs and perceptions from both PCPs and patients may present barriers to effective weight management in primary care.

Much of the existing research examining the beliefs of PCPs and patients about weight management in primary care is non-UK based. One study examining PCPs beliefs about weight management in Scotland found PCPs were unenthusiastic about delivering weight management to patients with overweight and obesity.<sup>25</sup> Recent survey research with 107 PCPs working in Scotland reported that PCPs believe limited resources, poor patient motivation and lack of previous success presented significant barriers.<sup>26</sup> To our knowledge, no research has examined both PCPs' and their patients' weight-related beliefs in Scotland. Given the extent of the overweight problem in Scotland and the potential primary care has to facilitate weight management, it is important to investigate weight-related beliefs and perceptions of PCPs and patients and consider what implications these have for weight management in primary care. This study investigates the beliefs of PCPs and patients with overweight and obesity about weight and weight management.

Specifically, we sought to understand the following:

1. How do patients with overweight and obesity perceive their weight and their risk of weight-related health issues?
2. Do PCPs and patients share the same beliefs about the causes and consequences of obesity?
3. How do PCPs perceive their role in the management of overweight and obesity?
4. What do PCPs believe are the barriers to weight discussion and management in primary care consultation?

## METHODS

### Study design and procedure

This study was part of a larger PhD research programme investigating weight-related communication during routine primary healthcare communication, that collected data via video capture, questionnaires and interviews. This paper reports on the questionnaire and interview data. See McHale *et al*<sup>11</sup> for analysis of video capture data. The research focus on weight-related communication was not disclosed to any participants (PCP or patient) until all video recording was completed in each practice and each participant had completed the questionnaire. During recruitment, participants were initially told that the study was investigating general primary care

communication practices. This approach was adopted to avoid biasing routine consultation discussions towards weight-related issues. All participants received a debrief after their participation was completed, which disclosed the research focus on weight and explained that they could withdraw considering this disclosure.

Questionnaires assessing beliefs about obesity and primary care weight management were completed by a convenience sample of PCPs and patients in seven primary care practices across three NHS Scotland health boards (Fife, Lothian and Tayside). PCPs (general practitioners (GPs) and practice nurses (PNs)) also completed semi-structured interviews exploring their weight-related views in greater detail. All participating patients were consulted by one of the participating PCPs.

A convergent mixed-methods design was employed, whereby questionnaire and interview data were concurrently collected, analysed and merged to comprehensively interpret the results.<sup>27</sup> Patient questionnaires were completed immediately following a routine consultation with one of the participating PCPs. PCP questionnaires were completed following the conclusion of all patient data collection per practice. Patient body mass index (BMI) was calculated from measured height (m) and weight (kg), assessed by the researcher before completing the questionnaire. PCP BMI was calculated from self-reported height and weight in the PCP questionnaire. The decision to collect self-reported height and weight from PCPs (as opposed to direct measurement) was taken to minimise the salience of weight issues as part of the overall approach to avoid biasing routine consultation discussion towards weight-related issues.

The main purpose in conducting semi-structured interviews with PCPs was to provide further understanding and depth to PCPs beliefs measured in questionnaires. Consistent with a concurrent triangulation mixed-methods approach, qualitative and quantitative data were collected during the same research phase, and subsequently analysed and interpreted together to develop a greater understanding of PCP beliefs.<sup>27 28</sup> Semi-structured interviews were selected for this study because they maintain a guiding structure for participants, yet offer the flexibility to meaningfully diverge or pursue a discussion topic in greater detail.<sup>29</sup>

### Data collection

Patients' gender, age, weight perceptions,<sup>30</sup> weight-related disease risk perceptions<sup>31</sup> and beliefs about the causes and consequences of overweight and obesity<sup>32</sup> were assessed by questionnaire. Patients' medical notes and histories were not accessed for this study. The PCP questionnaire assessed gender, age and beliefs about the causes, consequences and treatments of overweight and obesity.<sup>32</sup> The PCP questionnaire also included the Communication on Overweight and Obesity Project (CO-OP) questionnaire,<sup>26</sup> which assessed PCPs' attitudes towards individuals with overweight and obesity, perceptions of responsibility to manage patient weight, current

weight management practices and perceived barriers to weight management.

The PCP interview schedule was designed to expand on topics covered in the PCP questionnaire; perceptions of overweight and obesity as a problem in Scotland, the role of primary care in weight management, their current weight management practice, weight-related communication and barriers to weight-related communication in primary care. All interviews occurred face-to-face in PCP's offices immediately following questionnaire completion and were audio recorded. Interviews lasted an average of 22 min and ranged from 12 min to 32 min. Due to the format of data collection within primary care practices, it would have been difficult to interview patients without risking disclosure of the research focus on weight-related discussion to practice staff, PCPs and/or other patients. Therefore, patients were not interviewed during this study.

### Data analysis

Descriptive analysis of questionnaire data included calculation of means and SD. Chi-square analysis tested relationships between the weight perceptions and risk perceptions of patients with overweight and obesity. T-tests assessed differences in beliefs about causes and consequences of obesity within patient and PCP groups. Patient BMI classification (healthy weight, overweight and obesity as defined by the WHO)<sup>33</sup> was included as a between-groups variable to assess whether perceptions differed according to patient BMI classification. Less than 3% of patient questionnaire data were missing; an Missing Completely At Random (MCAR) test<sup>34</sup> indicated that these data were missing completely at random ( $\chi^2=3307.68$  (3192),  $p>0.05$ ). Multiple imputation (MI) was conducted to replace missing responses from patient questionnaires. Descriptive statistics were calculated before MI and all inferential statistics were calculated after MI. MI was not conducted with PCP questionnaire data as only one response was missing in the entire data set. Questionnaire data analysis was conducted using SPSS V.24.

Semi-structured interviews were transcribed and thematic analysis was conducted. The interview schedule was organised into a thematic framework. The five discussion topics within the interview schedule included (1) practitioners' perceptions of overweight and obesity as a problem in Scotland; (2) perceptions about the role of primary care in weight management; (3) current weight management practices; (4) thoughts about weight-related communication with patients with overweight and obesity; (5) thoughts about barriers to weight-related communication in primary care. A semantic essentialist/realist approach was taken when interpreting the dialogue in the interview transcripts, in which themes were constructed based on the explicit surface meaning of the data.<sup>35</sup> Furthermore, themes and subthemes were deductively coded and were not constructed purely on the basis of prevalence within the

data. For example, focus was sometimes given to opinions that differed significantly from other PCPs, and PNs' dialogue was sometimes concentrated on to determine their potentially different perspectives on weight discussion and management. NVivo V.11.4 was used to manage this analysis.<sup>36</sup>

### Patient and public involvement (PPI)

There was no patient or public involvement in this research.

## RESULTS

### Sample characteristics

In total, 305 primary care patients and 14 PCPs (12 GPs; two PNs) participated in this study (table 1). Of these, 218 patients (71.5%) and seven PCPs (50%) had overweight (BMI  $\geq 25$  kg/m<sup>2</sup>).

### How do patients with overweight and obesity perceive their weight and risk of weight-related health issues?

Approximately, 20% of patients with an obesity BMI classification described their weight as obese, and 54% of patients with an overweight BMI classification described their weight as overweight (table 2). Comparably, 84% of patients with a healthy weight BMI classification perceived their weight as healthy. Most patients with overweight (61%) and obesity (88.2%) perceived their weight to be at least a *slight problem*, compared with 26.4% of patients with a healthy weight (table 2).

The perceived risk of developing type 2 diabetes, cardiovascular/heart disease and joint/back pain was lower in patients with an overweight BMI classification who perceived their weight to be a healthy weight, compared with patients with an overweight BMI classification who perceived their weight to be overweight (table 3).

### Do PCPs and patients share the same beliefs about the causes and consequences of obesity?

Concordance was observed between PCP and patient self-reported beliefs about the causes and consequences of obesity. Patients scored behavioural factors (eg, overeating, poor diet, lack of exercise) as significantly more important for *causing* obesity than medical ( $t(304)=21.18$ ,  $p<0.001$ ), psychological ( $t(304)=14.70$ ,  $p<0.001$ ) or social ( $t(304)=15.71$ ,  $p<0.001$ ) factors. PCPs also scored behavioural factors as significantly more important than medical ( $t(13)=9.28$ ,  $p<0.001$ ), psychological ( $t(13)=8.27$ ,  $p<0.001$ ) or social ( $t(14)=4.76$ ,  $p<0.001$ ) factors for causing obesity.

Patients scored medical factors (eg, hypertension, diabetes, rheumatism) as significantly more important *consequences* of obesity than psychological ( $t(304)=5.75$ ,  $p<0.001$ ) and social ( $t(304)=20.61$ ,  $p<0.001$ ) factors. Mean PCP scores for medical consequences were significantly higher than social scores ( $t(13)=4.95$ ,  $p<0.001$ ).

**Table 1** Sample characteristics

	Patients (n=305)	GPs (n=12)	Practice nurses (n=2)
Gender, n(%)			
Female	166(54.4)	4(33.3)	2(100)
Male	139(45.6)	8(66.7)	0
Age, n(%)			
18–34	70(23)	1(9)	0
35–54	67(22)	11(91)	2(100)
55–74	137(45)	0	0
75+	31(10)	0	0
BMI (kg/m <sup>2</sup> )			
mean (range)	28.75(18.9; 61.9)*	24.66(22.6; 26.7)†	26.56(23.2; 29.9)†
BMI classification, n(%)‡			
Healthy weight (18.5–24.9)	87(28.5)	6(50)	1(50)
Overweight (25–29.9)	124(40.8)	6(50)	1(50)
Obesity (≥30)	94(30.7)	0	0
Class 1 (30–34.9)	55(58.5)		
Class 2 (35–39.9)	23(24.5)		
Class 3 (≥40)	16(17.0)		

\*Calculated from measured height and weight.

†Calculated from self-reported height and weight

‡BMI classification taken from WHO definitions.<sup>33</sup>

BMI, body mass index; GPs, general practitioners.

### How do PCPs perceive their role in the management of overweight and obesity?

Most PCPs agreed with questionnaire statements that PNs (85.7%) and GPs (71.4%) had an essential role in identifying and treating patients with overweight and obesity,

and that patients were *well-aware* of the health risk of overweight and obesity (table 4). Few PCPs believed that PNs' (28.6%) and GPs' (14.3%) time was best spent working on obesity prevention; however, few believed that the role of GPs (21.4%) and PNs (14.3%) was to refer patients with

**Table 2** Patient perceptions of own weight and weight as a problem

	Patient BMI classification, n(%)*			Class 1‡ (n=54)	Class 2 (n=23)	Class 3 (n=16)	Overall (n=94)‡
	Healthy weight (n=87)	Overweight (n=124)†	Obesity				
Patient perceived weight							
Underweight	7(8)	0	0	0	0	0	0
Healthy weight	73(83.9)	57(46)	4(7.5)	0	0	0	4(4.3)
Overweight	7(8)	67(54)	47(87)	15(65.2)	9(56.3)	9(56.3)	71(75.5)
Obesity	0	0	3(5.5)	8(34.8)	7(43.7)	7(43.7)	18(19.1)
Patient perception of weight as a problem							
Not a problem at all	64(73.6)	48(39)	9(16.7)	1(4.3)	1(6.3)	1(6.3)	11(11.8)
A slight problem	18(20.7)	63(51.2)	22(40.7)	5(21.7)	2(12.4)	2(12.4)	29(31.2)
A problem	2(2.3)	11(8.9)	20(37)	14(61)	9(56.3)	9(56.3)	43(45.7)
A serious problem	3(3.4)	1(0.8)	3(5.6)	3(13)	4(25)	4(25)	10(10.8)

\*BMI classification taken from WHO definitions.<sup>33</sup>

†One response missing from the perceptions of weight as a problem.

‡One response missing from perceived weight.

BMI, body mass index.

**Table 3** Risk perceptions of developing weight-related health conditions in the future of patients with overweight (BMI 25+) by patient weight perceptions

Health condition	Likelihood of developing health condition in the future $\chi^2$		
	Weight perception	Unlikely	
<b>Diabetes</b>			
Healthy weight	52	3	<0.001*
Overweight	98	43	
<b>Cancer</b>			
Healthy weight	34	20	>0.05
Overweight	78	61	
<b>Hypertension</b>			
Healthy weight	28	14	>0.05
Overweight	57	51	
<b>CVD/heart disease</b>			
Healthy weight	40	17	<0.05*
Overweight	70	69	
<b>Joint/back pain</b>			
Healthy weight	18	17	<0.05*
Overweight	30	68	
<b>Asthma</b>			
Healthy weight	40	10	>0.05
Overweight	112	20	

\*Statistically significant.  
BMI, body mass index; CVD, cardiovascular disease.

overweight and obesity onto other health professionals. Most PCPs reported that PNs (69.2%) and GPs (78.6%) should maintain a healthy weight and act as role models for patients (table 4).

Interview data revealed that GPs and PNs had differing views about the perceived role of primary care in patient weight management. GPs varied in their views about what their role should be and how much responsibility primary care should take for patient weight. Addressing patient weight issues and awareness raising was perceived by most GPs as a *professional responsibility*, particularly when patients' excessive weight was impacting directly on their health or when patients requested assistance with their weight (table 5; Quotation 1).

Some GPs did not believe their role was to engage patients in preventative weight management or to monitor patient weight during weight loss attempts, articulating that prevention and monitoring were not an efficient use of their time and that standalone weight issues were the responsibility of the patient, not primary care (table 5; Quotations 2 and 3).

PN participants perceived direct weight management as part of their role and reported regularly engaging

**Table 4** PCPs attitudes towards patients with overweight and role in weight management

Question	N agreed (%)
<b>Primary care in the treatment of overweight and obesity</b>	
Practice nurses have an essential role in identifying and treating overweight and obese patients	12 (85.7)
GPs have an essential role in identifying and treating overweight and obese patients	10 (71.4)
Treating overweight and obese patients is professionally gratifying	8 (57.2)
I feel well prepared to manage overweight and obese patients	9 (64.3)
GPs' time would be best spent in this area by preventing overweight and obesity in the first place	2 (14.3)
<b>Obesity is a disease</b>	
Practice nurses' time would be best spent in this area by preventing overweight and obesity in the first place	4 (28.6)
I do not like treating overweight or obese patients	0
Treatment for weight loss should be offered only to adults who are obese (not overweight)	6 (42.8)
I do not believe that I can have any effect on patients' ability to lose weight	2 (14.3)
Overweight and obese patients are usually quite motivated about lifestyle change	1 (7.1)
I would only offer advice regarding weight control when a patient requests it	2 (14.3)
<b>Difficulties of weight loss</b>	
It is very difficult for overweight and obese patients to lose weight, no matter what support they are given	9 (64.3)
Only a small percentage of overweight and obese patients can lose weight and maintain this loss	8 (57.2)
GPs' role is to refer overweight and obese patients to other professionals rather than attempt to treat them themselves	3 (21.4)
Practice nurses' role is to refer overweight and obese patients to other professionals rather than attempt to treat them themselves	2 (14.3)
<b>Impacts of health professionals' weight</b>	
I feel my own weight affects how my overweight/obese patients view my advice	11 (78.6)
GPs should be role models and maintain normal weight	11 (78.6)
Practice nurses should be role models and maintain normal weight*	9 (69.2)
<b>Attitudes towards overweight patients</b>	
Most overweight and obese patients are well aware of the health risks of obesity	11 (78.6)

Continued



Table 4 Continued

Question	N agreed (%)
I do not experience any barriers to treating overweight and obese patients	4 (28.6)
I am reluctant to mention weight as I do not want to make patients feel uncomfortable	1 (7.1)
<b>Weight loss and health</b>	
Normal weight is important for health	14 (100)
For overweight and obese patients, even small weight loss can produce health benefits	14 (100)

\*1 response missing.

GPs, general practitioners; PCP, primary care practitioners.

in weight management and monitoring with patients referred to them from GPs. One PN expressed frustration that while GPs were referring patients to them with substantial weight issues, the PN's practice weight management programme was not able to effectively manage those patients (table 5; Quotation 4).

#### What do PCPs believe are the barriers to weight discussion and management in primary care consultations?

In questionnaires, PCPs reported lack of patient motivation (92.8%), shortage of referral pathways (57.2%) and lack of time (50%) as frequent barriers to weight discussion and management during consultations. Few PCPs reported lack of training, knowledge, skills and confidence as frequent barriers.

During interviews, PCPs expressed a clear preference for discussing weight issues within the context of patients' existing health issues that could be directly related to weight. PCPs deemed this as an appropriate context to discuss weight because they believed they had the medical evidence to support them and they can also make it clear to the patient why it was relevant to discuss weight (table 5; Quotations 5 and 6).

Conversely, many PCPs expressed an apprehension to start a discussion about patient weight when they could not establish a clear link between existing health issues and the patient's weight, or when patients did not recognise that their body weight was excessive and potentially problematic. Many PCPs perceived that weight was an affective and personal issue for patients and discussing weight without a clear health-related reason was inappropriate and may elicit a negative emotional reaction from patients (table 5; Quotations 7 and 8).

When asked about barriers to weight management, PCPs highlighted the inefficacy of weight management interventions as a barrier, citing examples of their own lack of success with them. Some questioned the evidence base for weight management interventions recommended by clinical guidelines (table 5; Quotation 9).

Systemic barriers to weight management were emphasised by PCPs, including lack of consultation time, and

shortage of financial and human resources in primary care. Restrictive eligibility criteria for specialised weight management referrals were also highlighted as a barrier. There was despondency among PCPs that they had nowhere to refer overweight patients when weight was not (yet) impacting on their health, and even when patients had clinical weight issues, they were not eligible for some specialist care (table 5; Quotation 10).

Issues at the policy and management level were discussed. One PCP highlighted that current NHS working contracts did not prioritise or incentivise weight management (table 5; Quotation 11).

Patient-related issues were also perceived as a significant barrier to weight management in primary care. Several PCPs described patients with overweight and obesity as lacking the motivation to address weight issues, and that for many patients their weight was not a priority (table 5; Quotation 12).

PCPs acknowledged that training was always potentially useful; however, most were confident in their ability and were ambivalent about receiving additional weight management training. Lack of weight management effectiveness was instead attributed to patient factors, including lack of motivation (table 5; Quotation 13).

#### DISCUSSION

This study investigated the perceptions of patients with overweight and obesity, and their PCPs' perceptions of weight and weight management. Our findings suggest that many patients with overweight and obesity have inaccurate perceptions about their body weight and underestimate their risk of developing weight-related health issues. Conversely, PCPs (whom the patients in this study consulted) believed their patients with overweight and obesity were *well aware* of weight-related health risks. Patients and PCPs agreed that behavioural factors were most important for causing obesity and that medical issues were the most important consequence of obesity. PCPs perceived responsibility to address patient weight issues when they impacted directly on health but did not believe their role was to engage in preventative patient weight management. PCPs identified systemic barriers to weight management, and perceived ineffective weight management interventions and patient factors as significant obstacles to assisting patients with weight issues.

#### Patient weight and risk misperceptions

Many patients with overweight and obesity in this sample underestimated their clinically defined weight, confirming previous UK research.<sup>37</sup> Two-thirds of Scottish adults have overweight,<sup>4</sup> therefore shifts in societal norms, as overweight becomes the new 'normal', provide a possible explanation for these weight-related misperceptions.<sup>20</sup> Adults with overweight and who do not accurately perceive their weight engage less in weight management,<sup>23</sup> highlighting how inaccurate weight perceptions may challenge effective weight management.

**Table 5** Themes and quotations from PCP semi-structured interviews

Theme	Quotation
PCP role in patient weight management	<ol style="list-style-type: none"> <li>1. I have a responsibility to make them aware that (their weight) is an issue where it's clearly impacting on their (health). Do I have a responsibility to assist them with that? If they are looking for that assistance. I would have a responsibility to assist them or signpost them to what can assist them'. (GP 11; male; BMI 26.2)</li> <li>2. I don't want to be weighing people every week. I don't think that's my role.(...)I think it's also not a good use of our expertise as generalist doctors. I think we've got other things that we could be doing. (GP 6; female; BMI 23.3)</li> <li>3. Patients need to take some responsibility themselves. And if they know that they're carrying a bit of extra weight, they don't need to see a GP necessarily. (GP 12; female; BMI 24.7)</li> <li>4. We do have patients referred from the GP with bigger (weight) problems. I think perhaps they say, well that's that problem solved. Whereas(...)we've probably made it worse for that person because(...)we're not offering a solution. (PN 2; female; BMI 29.9)</li> </ol>
Discussing weight issues with patients	<ol style="list-style-type: none"> <li>5. So, I have to say that I tend only to (raise weight for discussion) if I see it as relevant to the problem that they've got. (GP 1; male; BMI 26.2)</li> <li>6. I can legitimise that conversation (about weight) because I've got evidence here in front of me that helps me with that discussion. (GP 6; female; BMI 23.3)</li> <li>7. It's when (patients) don't present (weight) as a problem, and clearly, to my mind, it is a gross, elephant in the room, problem. And they don't even want to even pick it up. Then I have a problem. Because it is an invitation for a dysfunctional consultation. (GP 5; male; BMI 23.4)</li> <li>8. To raise (weight for discussion) completely out of the blue, just because it's on the doctor's agenda, the patient hasn't even invited you to talk about that, what may be a very sensitive aspect of their self-image. I find, I would say, naturally difficult as a human being. (GP 11; male; BMI 26.2)</li> </ol>
Barriers to weight management	<ol style="list-style-type: none"> <li>9. The biggest (weight management barrier) is the lack of any good intervention. Say if someone has high blood pressure, I can give them tablets that will bring it down (or) can give them an injection and make them better. If someone's got obesity, I'm kind of stuck. I can give them advice on what to do but I don't feel in many cases, that's terribly helpful or terribly effective. (GP 1; male; BMI 26.2)</li> <li>10. Someone with a BMI of 36, won't be referred to a dietician because it's not enough. So, we've got to allow a problem to become bigger before they get more specialised care. (PN 2; female; BMI 29.9)</li> <li>11. (Patients')obesity feeds into (their other health issues), but actually whether or not I do anything about the obesity makes no difference to whether I've fulfilled my contract, which I've signed with the health board. (GP 8; male; BMI 25.5)</li> <li>12. (Patients') can be helped with (weight issues) if they want to be or they can probably get there themselves with time and a bit of patience. But I think it is extremely difficult for people who find themselves in poor housing, they've got limited money, they perhaps feel that they have very little that is going to change or improve in their lives.(...)You're saying to them, well you could be a few pounds lighter and they're thinking, well actually, I could be less suicidal. (GP 8; male; BMI 25.5)</li> <li>13. I don't feel I'm particularly badly trained in (weight management), but obviously what I'm asking them to do isn't working. Maybe the way I'm presenting it. I don't think what I'm saying is wrong.(...)It's maybe the way I present it to them, it's not ticking the right box and motivating them. (GP 2; female; BMI 22.6)</li> </ol>

BMI, body mass index; GP, general practitioner; PCP, primary care practitioner.

Our analysis found that patients who underestimated their weight were more likely to underestimate their risk of weight-related health issues, including type 2 diabetes and cardiovascular disease, reflecting previous findings.<sup>30</sup> Given the well-established links between excessive weight and these conditions,<sup>38 39</sup> this finding is concerning. Patients' inaccurate weight-related risk perceptions contrast with PCPs' beliefs that most patients were *well aware* of the health risks of obesity. The current Scottish government clinical strategy, 'Personalising Realistic Medicine', emphasises shared and informed decision making.<sup>40</sup> This aims to ensure that patients are fully aware of the risks and benefits to treatment and care decisions, and that health professionals understand and respect patient values.<sup>40</sup> Inaccurate weight-related perceptions

held by many PCPs and their patients may hinder informed decision making about weight management.

### Shared PCP and patient beliefs about cause and consequences of obesity

PCPs and patients shared beliefs that unhealthy behaviours were most important for causing obesity and that medical issues were the most significant consequence of obesity. These findings support previous research where PCPs and patients framed obesity as a consequence of lifestyle choices, as opposed to a medical health issue,<sup>41</sup> therefore management of obesity should include lifestyle change for all patients, supplemented by medication and/or bariatric surgery in those patients with severe obesity or obesity with complex needs, if required.<sup>42</sup> Medical professionals



can perceive lifestyle change as the responsibility of the patient<sup>43</sup> and do not view excess weight alone as a medical issue.<sup>14</sup> These perceptions may diminish the role of PCPs in weight management and pass responsibility onto patients, catalysing a barrier to effective patient weight management. Several countries have recognised obesity as a disease, including the USA, Canada and Portugal, while the UK does not currently.<sup>44</sup> Recognition of obesity as a disease could increase the priority of obesity management within the health service and could enable primary care to focus resource on prevention and develop more effective patient weight management pathways.<sup>44 45</sup>

### PCP beliefs about the role of weight management in primary care

PCPs perceived that primary care has an *essential role* in patient weight management, yet they were clear that their role was not the prevention of overweight and obesity. Some PCPs believed patient weight is only the responsibility of primary care when it impacts on patients' health or if patients requested assistance with weight. A thematic synthesis of PCPs weight management beliefs found that PCPs only perceived weight management as their role when it was associated with comorbidities, and that non-symptomatic weight issues were non-medical and therefore not the responsibility of primary care.<sup>14</sup> Qualitative work from Canada found that primary care patients believed it was the responsibility of family physicians to discuss weight management options with them.<sup>46</sup> Beliefs that preventative weight management is not the responsibility of primary care are incompatible with clinical guidelines and Scottish Government policy, which prioritise obesity prevention.<sup>8 47</sup> PCPs in this sample highlighted systemic and policy issues, such as lack of incentivisation or contractual obligation to address weight issues, and shortage of preventative referral options for people with overweight and or obesity. These findings therefore highlight a need for a review of current guidelines and policies, and the structure of care pathways, to prioritise and facilitate the implementation of obesity prevention practices within primary care in Scotland.

### PCP's perceptions of barriers to weight discussion and patient weight management

PCPs in this sample highlighted the importance of context when starting a discussion about weight with their patients. PCPs felt supported by medical evidence to discuss weight when it was relevant for patients' existing health issues but were concerned that they may upset patients if they were unable to clearly link weight issues to patients' existing health issues. Previous research has reported that PCPs feel apprehensive about discussing weight issues for fear of upsetting or offending patients.<sup>48 49</sup> However, research also suggests that few patients perceive that they have been treated disrespectfully by PCPs when discussing weight issues.<sup>50 51</sup> A recent UK-based obesity intervention trial, whereby PCPs opportunistically (ie, randomly) offered weight management

referrals to patients with obesity, concluded that patients welcomed the intervention and 81% thought it was helpful and appropriate in this context,<sup>52</sup> however, international evidence suggests that some patients may not view primary care as the most appropriate place to seek weight-related advice and/or management.<sup>53 54</sup> Additionally, analysis of directly observed weight discussion in primary care, conducted alongside the research reported in this paper, found that patients *reduced* their uses of emotional expression and responsiveness communication during weight discussion.<sup>11</sup> Hence, while PCP concerns about upsetting or offending patients by discussing weight was cited as a significant barrier to weight discussion by this sample, the evidence suggests that such concerns may be misplaced.

This study found that PCPs generally had confidence in their own skills and ability to manage patients' weight, however they did not have confidence in the health system to support them in this. PCPs reported that they lacked time or resource to deliver patient weight management effectively and were sceptical about the efficacy of weight-related advice and signposting, reflecting previous findings.<sup>13 14</sup> Limited weight management referral options were also a frequently cited barrier by PCPs, which is concordant with a recent review of NHS Scotland weight management provision.<sup>55</sup> Survey research exploring weight-related beliefs of over 100 PCPs working in Scotland also concluded that time and referral pathways were barriers to weight management,<sup>26</sup> indicating that these are common barriers to primary care weight management in Scotland.

Lack of patient motivation to lose weight was identified by many PCPs in this study as a barrier to weight management, however previous work has shown that PCPs often underestimate the motivation of people with obesity to lose weight.<sup>56</sup> Additionally, over 50% of PCPs in this study agreed with questionnaire statements that it was difficult for patients with overweight and obesity to lose weight and that few patients maintain weight loss. This combined evidence suggests a possible PCP biased belief that patients with obesity lack motivation to engage in weight loss. Health professional assumptions and biases about people with overweight and obesity have been cited by various studies as a potential barrier to effective weight management<sup>57-59</sup> and may even result in poorer care and outcomes for patients.<sup>60</sup>

PCPs describe a 'catch 22' situation; they perceive many barriers to managing patient weight and regard current patient weight management approaches as ineffective (partly due to patients' lack of willingness to engage) but are unable to offer patients specialist services or referrals due to lack of resource and availability. Qualitative evidence highlights that an educational intervention using a structured communication strategy (Ask, Assess, Advise, Agree and Assist: 5As) for PCPs may help to reduce perceived barriers such as time restriction, bias and interdisciplinary communication related to patient weight management. This was reported to improve PCP



knowledge about obesity and confidence to discuss and facilitate weight management.<sup>61</sup>

### Strengths and limitations

A novel aspect of this study was that all participating patients were consulted by one of the participating PCPs, allowing more meaningful interpretations of the data. Previous studies examining primary care weight-related beliefs focus only on PCPs or patients; or they compare convenience samples of PCPs and patients who have no direct relationship with each other.

A notable strength of this study was the representative patient sample, in terms of prevalence of patients with overweight. The patient sample in this study under-represented patients aged 18–24 years (6.23% vs 13.66% nationally) and over-represented patients aged 65–74 years (22.30% vs 12.03% nationally) when compared with the most recent primary care patient list information from national NHS Scotland statistics.<sup>62</sup>

PNs proved challenging to engage and recruit during this study and were under-represented in this sample. The PNs who did participate in this study perceived themselves to have a more active role in weight management than GPs, suggesting they should be the focus of future research in patient weight management in primary care.

Interviews exploring beliefs about obesity and primary care weight management were not conducted with primary care patients in this study due to the logistics of the data collection procedure within practices. Although the patient questionnaire data were sufficient for the purposes of this study, exploring these complex topics in greater detail with an interview would have provided a more comprehensive insight into the patients' perspective.

### CONCLUSION

While many patients with overweight and obesity underestimated their weight and their risk of developing chronic disease, most PCPs perceived that their patients were aware of their weight issues. This incongruence may perpetuate patients' inaccurate perceptions of their risk of weight-related health consequences. PCPs acknowledged a responsibility for patient weight, however they find it challenging to discuss weight issues with patients and to assist patients with weight management due to systemic and patient-related barriers. PCPs suggest that obesity alone is not an issue for primary care and that current practice is to treat symptomatic obesity rather than prevent obesity in the first instance. Acknowledging a shared responsibility for patient weight, as outlined in 'Practicing Realistic Medicine',<sup>63</sup> could improve outcomes for patients with overweight and obesity. There is a pressing need to review, standardise and clarify the primary care weight management process in NHS Scotland and move towards a shared responsibility for obesity as a disease.

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