Understanding weight management in adult secure mental health services: findings from a mixed-methods study in Northern England

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Abstract

Purpose – *Obesity and associated morbidity and mortality are major challenges for people with severe mental illness, particularly in secure (forensic) mental health care (patients who have committed a crime or have threatening behaviour). This study aims to explore experiences of weight management in secure mental health settings.*

Design/methodology/approach – *This study used a mixed-methods approach, involving thematic analysis. A survey was delivered to secure mental health-care staff in a National Health Service (NHS) mental health trust in Northern England. Focus groups were conducted with current and former patients, carers and staff in the same trust and semi-structured interviews were undertaken with staff in a second NHS mental health trust.*

Findings – *The survey received 79 responses and nine focus groups and 11 interviews were undertaken. Two overarching topics were identified: the contrasting perspectives expressed by different stakeholder groups, and the importance of a whole system approach. In addition, seven themes were highlighted, namely: medication, sedentary behaviour, patient motivation, catered food and alternatives, role of staff, and service delivery.*

Practical implications – *Secure care delivers a potentially "obesogenic environment", conducive to excessive weight gain. In future, complex interventions engaging wide-ranging stakeholders are likely to be needed, with linked longitudinal studies to evaluate feasibility and impact.*

Originality/value – *To the best of the authors' knowledge, this is the first study to involve current patients, former patients, carers and multidisciplinary staff across two large NHS trusts, in a mixed-methods approach investigating weight management in secure mental health services. People with lived experience of secure services are under-represented in research and their contribution is therefore of particular importance.*

Keywords *Diet, Obesity, Public health, Secure mental health, Severe mental illness*

Paper type *Research paper*

(Information about the authors can be found at the end of this article.)

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Introduction

Patients with severe mental illness (SMI), such as schizophrenia and related psychotic disorders, die on average 15–20 years earlier than the general population (Chesney *et al.*, 2014). This is primarily due to avoidable physical health conditions, such as cardiovascular diseases, strongly influenced by modifiable behavioural risk factors, particularly overweight and obesity (Olfson *et al.*, 2015; Liu *et al.*, 2017). People experiencing SMI are two to three times more likely to be living with non-communicable chronic diseases such as type 2 diabetes, when compared with the wider population (De Hert *et al.*, 2011).

Mental illness and excess weight tend to exhibit a bidirectional relationship, such that people living with poor mental health are also more likely to develop overweight and

obesity, and vice versa (Lavallee *et al.*, 2021). Internationally, the prevalence of excess weight is approximately twice as high amongst people living with SMI compared with the wider population (Afzal *et al.*, 2021) and is most extreme in secure (forensic) mental health settings, where at least 80% of patients are affected (Day and Johnson, 2017). Secure care patients are detained under the Mental Health Act (1983) as a result of committing a crime and/or posing a threat to themselves or others, and are not able to leave the setting at will (Government of the United Kingdom, 1983). In England and Wales, there are currently approximately 4,500 mental health inpatients detained across 150 low, 65 medium and three high secure hospitals (Ministry of Justice, 2023). Many patients have been in contact with the criminal justice system, and all are assessed according to the risk of harm posed to others.

The majority of such patients are male, of white ethnicity and single, and tend to have low educational attainment (Völlm *et al.*, 2017). In contrast with patients admitted to acute hospitals for physical health conditions, secure mental health patients frequently experience a length of stay lasting several years (Kasmi *et al.*, 2020). The management of chronic conditions such as overweight and obesity is therefore particularly salient.

Research into the prevention of chronic physical conditions, such as obesity and associated comorbidities, amongst people living with mental illness, has been identified as a major national priority in England (NHS England, 2016) and internationally (Afzal *et al.*, 2021). This need is even greater amongst those with SMI (John *et al.*, 2018) and patients detained in secure hospitals (NHS England, 2019; Aboaja *et al.*, 2021). A systematic review conducted by Public Health England in 2017 specifically highlighted a critical lack of research addressing weight management in secure services (Day and Johnson, 2017).

Engaging key stakeholders in health-care research, including amplifying the voices of current and former patients, carers and multidisciplinary clinical staff is fundamentally important in addressing complex health challenges (Staley, 2009). To date, studies considering weight management in the context of SMI have not included the perspective of all relevant parties, and the particular need for lived experience has been highlighted (Wilton, 2020). The importance of a whole system approach, including transition into and out of secure mental health services, has also been recognised (Johnson *et al.*, 2018; NHS England and NHS Improvement, 2021).

This research aimed to explore, what are the barriers, facilitators and priorities for weight management in secure mental health settings? We sought to address current evidence gaps through a staff survey, focus groups with current and former patients, carers and multidisciplinary staff and interviews with multidisciplinary staff in secure mental health services.

Methods

This programme of work involved two mental health trusts which together form the North East and North Cumbria Mental Health, Learning Disability and Autism Partnership (covering the North East, North Cumbria and Yorkshire). Both quantitative and qualitative methods were used to explore weight management in secure mental health services. This mixed-methods approach involved thematic analysis and facilitated the collection and interpretation of rich data, which both investigated the extent of challenges around obesity in secure care, and explored associated views, experiences and perceptions. The work is reported according to the Standards for Reporting Qualitative Research (O'Brien *et al.*, 2014).

The study received National Health Service (NHS) Research Ethics Committee (REC) approval from the London – Bromley REC, and Health Research Authority (HRA) and Health and Care Research Wales (HCRW) approval, reference 22/PR/0100. The work conformed to

ethical principles outlined in the Declaration of Helsinki. All participants provided written informed consent.

The survey aimed to address views and experiences of weight management, from the perspective of staff in secure services. This online questionnaire was composed of closed questions where responses could be quantified, including respondent characteristics, five-point Likert scales (Likert, 1932) and binary responses, complemented by open-ended questions and free text responses. Given the absence of a pre-existing validated tool, this bespoke questionnaire was developed by a diverse steering group with representation from multidisciplinary mental health staff, academia, public health, former service users and a third sector mental health organisation. It was piloted with six multidisciplinary staff with diverse clinical roles and revised on the basis of feedback. This anonymous survey was produced using an NHS trust online tool. Participants for the secure staff survey were drawn from an NHS trust delivering mental health, intellectual disability and neuro-rehabilitation services (male patients only) across the North East and North Cumbria (trust one). Survey participants were invited via an email distribution list encompassing all staff in secure services ($n = 488$), and an advert in the trust staff online bulletin. The questionnaire was open for responses for seven weeks between April and June 2022, with three reminder prompts sent. The opportunity to win online shopping vouchers was offered as an incentive to take part. The data collected were entered onto a computer database and held securely.

The findings from the staff survey were used to help identify key topic areas, which were subsequently explored further through focus groups and interviews, alongside new issues raised by participants. The focus groups and interviews followed a semi-structured topic guide, which aimed to explore the challenges and opportunities for maintaining a healthy weight and avoiding weight gain, in the context of secure mental health services. The topic guide was developed by the same steering group as for the staff survey.

Participants for the secure services focus groups were all drawn from trust one. Potential participants who were current patients were identified and invited by the Recovery and Engagement Lead for Secure Care. Focus groups with current patients were conducted in person at the hospital site. Former patients and carers were identified for the study by sharing the offer of involvement with those who had already engaged in the design and development of the project, through the trust's Peer Support Network and Involvement Bank. One focus group with former patients was undertaken in person, and a second group with former patients and carers took place online. Potential multidisciplinary staff focus group participants were purposively sampled by invitation through adverts shared by trust email, the staff online bulletin and ward meetings. Groups with staff were conducted online.

Participants for the multidisciplinary semi-structured interviews were purposively sampled from a second NHS mental health trust delivering mental health and intellectual disability services (both male and female patients) across the North East and North Yorkshire (trust two), by advertising through trust email distribution lists and ward meetings. Interviews were undertaken online.

Participant recruitment for the focus groups and interviews was undertaken exploring any emergent or unforeseen issues until no new topics arose through concurrent data analysis by the research team. Nine focus groups were undertaken between July and November 2022: two with current patients, two with former patients and carers and five with multidisciplinary staff. Groups ranged in size from three to seven participants, and lasted between 46 and 102 minutes. Eleven one-to-one interviews with multidisciplinary staff were held between August and October 2022, each lasting between 41 and 69 minutes.

Groups and interviews were conducted by the lead researcher, a female public health doctor with a PhD and training and experience in qualitative research. The researcher was previously unknown to participants before their engagement in the project. Participants were informed that their responses would remain anonymous and that there were no right or

wrong answers to questions. They were expressly encouraged to share their views and experiences candidly, and assured that their care and experiences would not be altered by any contribution they provided, nor their decision whether or not to take part.

Focus groups and interviews were audio-recorded with consent, anonymised and transcribed *verbatim* by an external transcription company. Data were entered onto a computer database and held securely. Transcripts were read for accuracy by the lead researcher and any identifying details redacted.

Quantitative survey data were tabulated and the percentage of responses for each level of the five-point Likert scales were calculated. Qualitative survey results were extracted and analysed alongside the focus groups and interviews data.

Transcripts and free-text survey responses were read in full by the lead researcher to promote familiarisation. Using a combined inductive and deductive approach, initial codes were allocated, and texts then re-read and codes grouped into key themes, through thematic analysis (Braun and Clarke, 2006). A data clinic comprising the lead researcher and supervisory team (two public health professors and a forensic psychiatry clinician academic, all with experience of qualitative research) met on three occasions to review themes and identify any divergence of opinion. Disagreements were resolved through discussion. Themes were subsequently presented at two meetings with a diverse steering group of former patients and carers, and multidisciplinary staff. The themes were explored through different clinical scenarios and proposed evidence statements, and used to generate discussion and identify key future action areas for policy and practice.

Results

Staff survey: quantitative results

A total of 79/488 (16% response rate) survey responses were received from staff in secure services. The responses covered different service areas within secure care; different professional roles; and length of time working in mental health care (Table 1). Further details regarding respondent demographics were not collected to preserve anonymity.

Survey respondents were invited to share their level of agreement, on a five-point scale, with a range of statements regarding key issues in weight management in secure services, such as training, routes to raising concerns and ethical challenges. The proportion of survey respondents stating that they agreed or strongly agreed with proposed statements ranged widely according to the proposition (Table 2). For example, only 23% respondents agreed/strongly agreed that “weight management is well addressed in secure services”, whereas 89% agreed/strongly agreed with the statement “staff have a duty to promote healthy weight amongst patients”. Survey statements were explored further through open-ended questions, reported in the qualitative data section.

Current factors influencing weight management for patients in secure services, such as different sources of food, activities and physical exercise, were rated by survey respondents on a five-point scale in terms of perceived importance (Table 3). “Sedentary lifestyle” (spending most of the time physically inactive) and “patients’ motivation levels” were deemed very/somewhat important by largest proportion of respondents, with 87% and 86%, respectively. Less important factors were considered by respondents to be “purchases from the patients” on-site social club” and “social events”, with 58% and 57% staff, respectively, rating these as very/somewhat important.

To ascertain key issues perceived by staff as important in helping patients to maintain a healthy weight in future, respondents rated proposed changes, such as increased patient activities and greater emphasis on healthier eating, on a five-point scale (Table 4). The proportion of staff indicating that changes were very or somewhat important ranged from 90% for “increased staffing to escort patients to exercise”, to 47% for “altered meal timings”.

Table 1 Characteristics of staff survey respondents

Service area (not mutually exclusive)	N
Community transitions/SOTT†	5
Hospital based rehabilitation	9
Intellectual disability	11
Mental health	31
Medium secure	31
Low secure	19
Not stated	1
Professional role	N (%)
Nursing assistant	24 (30)
Staff nurse	13 (16)
Senior nursing role	8 (10)
Assistant practitioner	7 (9)
Administration	5 (6)
Peer support team	5 (6)
Clinical psychologist	4 (5)
Doctor	3 (4)
Exercise therapist	2 (3)
Pharmacist	2 (3)
Social worker	2 (3)
Not stated	4 (5)
Total	79 (100)
Length of service (years)	
Less than 2	15 (19)
2–5	14 (18)
6–10	13 (16)
11–20	14 (18)
More than 20	22 (28)
Not stated	1 (1)
Total	79 (100)

Notes: †SOTT = Secure Outreach Transitions Team. This team works at the interface between secure wards and community settings to aid the discharge of patients from hospital and provide enhanced support to community patients who are at risk of admission
Source: Created by the authors

Table 2 Proportion of survey respondents agreeing or strongly agreeing with proposed statements

Proposed statement	N *(%)*
Staff have a duty to promote healthy weight amongst patients	70 (89)
I am aware of the role of antipsychotic medications in weight gain	59 (75)
I know the routes available to raise concerns about a patient's weight	54 (68)
Patients have regular access to healthy nutritious food	45 (57)
I have had adequate training in weight management and healthy lifestyles	37 (47)
Patients have adequate opportunities for exercise	34 (43)
It is unethical to restrict patients access to food	30 (38)
Weight management is well addressed in secure services	18 (23)

Source: Created by the authors

Staff survey, focus groups and interviews: qualitative results

Two overarching issues were identified across the qualitative data drawn from the survey, focus groups and interviews:

Contrasting perspectives expressed by different stakeholder groups. Current patients, former patients, carers and *multidisciplinary staff* chose to highlight different respective

Table 3 Proportion of survey respondents rating current issues as very or somewhat important in influencing patients' weight management

Current factor	N *(%)*
Sedentary lifestyle	69 (87)
Patients' motivation levels	68 (86)
Purchases from shop	65 (82)
Food brought in by others	63 (80)
Hospital meals provided by catering	62 (78)
Takeaways	59 (75)
Purchases from canteen	58 (73)
Limited exercise opportunities	52 (66)
Occupational therapy activities	48 (61)
Purchases from patients' on-site social club	46 (58)
Social events	45 (57)

Source: Created by the authors

Table 4 Proportion of survey respondents rating proposed future changes as very or somewhat important in helping patients maintain a healthy weight

Proposed change	N *(%)*
Increased staffing to escort patients to exercise	71 (90)
Increased exercise resources	70 (89)
More patient activities to alleviate boredom	66 (84)
Greater provision of healthier meals	64 (81)
Focussing on healthier social activities	63 (80)
Restrictions on less healthy foods	53 (67)
Staff training on role of medications in weight gain	49 (62)
Altered meal timings	37 (47)

Source: Created by the authors

topics and viewpoints. *Current patients* in secure services have historically been seldom heard through research, and participants in this study used the opportunity to express dissatisfaction with hospital food provision.

"*I go to the canteen for my food. Because, like, the catered food's not, I wouldn't say it's up to standard and it's bland and horrible. Some food doesn't come, and some food does come and it's overkilled and the food like chips and mash and the veg is anaemic sometimes.*" *Current patient*

Patients also often focussed on their rights, and maximising choice.

"*They try and say you can't eat that, but they can only advise you. Isn't that right.*" *Current patient*

In contrast, *carers and former patients* tended to voice concern over longer-term behaviour patterns and implications for health and well-being associated with developing excess weight whilst in secure care.

"*Because it's the pleasure it [food] affords in an otherwise not pleasurable place. But it's not a great thing to do, you can say that logically from the outside.*" *Former patient*

The *health-care staff* generally reported that the hospital environment and individual patients' experiences were not conducive to physical health, and many expressed frustration at the evident challenges around unhealthy weight. However, there was divergence observed between staff. Some staff members sought to prioritise patient choice and the opportunity to experience pleasure through food, over physical health.

"*Blanket restrictions are never good, after all they are still human beings with a choice. Patients should be able to make choices about their food - they lack control over many other areas within their daily lives.*" *Staff*

Other staff perceived their main professional responsibility to be optimising patients' physical and mental health.

"*In my opinion mental health and physical health go hand in hand and staff have a duty of care to improve and support all aspects of health improvement during a patient's treatment journey.*" *Staff*

Staff also acknowledged that their work patterns and environment often presented barriers to promoting their own health, and the associated need for more support for themselves, to foster healthy weight and well-being.

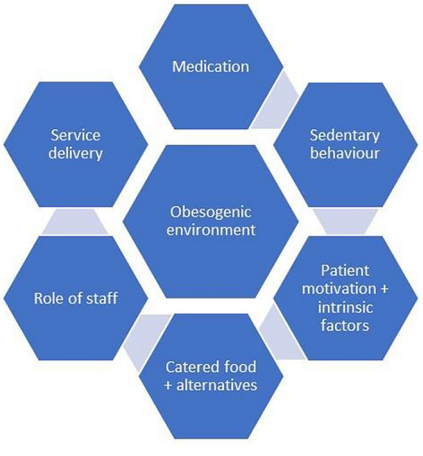
"*Thirty minute lunch break does not allow enough time for staff to leave the ward, get through the airlock and walk to the canteen, queue for a hot meal, eat it and return to the ward.*" *Staff*

Whole system approach. The lead researcher's role as a public health doctor facilitated the exploration of a second cross-cutting issue, identified across the qualitative data drawn from the survey, focus groups and interviews. Participants highlighted the need to consider the whole patient journey into and out of services, and beyond the secure care environment. Key topics included the importance of continuity of information and support shared between different services spanning inpatient and community care, for example through a care passport. Potential links, such as leisure centres and commercial weight management groups, were identified. The benefits of non-food based activities, including music, art, gardening and service skills such as portering, and their continuity into the community following hospital discharge, were also emphasised.

"*I'd eat three days' worth of food in one day and it was almost like because it's so kind of structured you go from very structured to no structure quite suddenly and that needs to be managed better for people that are coming out of any length of stay in a secure unit.*" *Former patient*

Beyond these two overarching issues, seven key themes addressing weight management in secure services were identified through qualitative data drawn from the survey, focus groups and interviews (Figure 1). Themes highlighted: medication; sedentary behaviour;

Figure 1 Key qualitative themes from the survey, focus groups and interviews



Source: Created by the authors

patient motivation and intrinsic factors; catered food and alternatives; role of staff; and service delivery. These factors all contributed towards an "obesogenic environment", which predisposed patients to unhealthy, excessive weight gain. These themes and sub-themes are illustrated by supporting quotations in Table 5.

The impact of anti-psychotic medication in precipitating patient weight gain was recognised, alongside a general absence of early intervention for this predictable pattern of weight change. Opportunities to be physically active were perceived to be lacking, particularly during the COVID-19 pandemic due to restrictions on patient mixing. In terms of patient motivation and intrinsic factors, low motivation amongst patients to eat healthily and exercise was widely perceived. Concern was also expressed regarding patients' potential lack of capacity to understand weight gain and associated longer-term impact on health. Patients' unhealthy food choices were considered to be influenced by prior patterns of behaviour, such as replacing illicit substances with food, and by health conditions, such as limited food preferences shown by some neurodiverse patients. Food choices were also thought to be determined by low self-esteem and negative emotions.

Catered hospital meals were almost universally perceived as unappetising, with a very repetitive menu and small portion sizes. Cooking therapy sessions, socialising, events and patients' leave (trips away from the hospital ward) were reported to focus disproportionately on unhealthy food. In terms of the ward environment, boredom was noted as a key reason for excessive food consumption. Relationships with both peers and staff were also considered to influence behaviour. For example, patients might use food as leverage to develop friendships with other patients, and staff could encourage positive or negative practices through their own role modelling. Restrictive practice – whereby patient autonomy was reduced, for example by limiting the frequency of hot food takeaways on the ward – was frequently raised as a tension with patient choice, which could cause conflict.

Understaffing was noted as a limitation on opportunities for patients to exercise, and for wider health promoting activities. Insufficient training and education for staff around weight management was also reported. In terms of overall service delivery, a need for individualised care planning, tailored to specific patients' needs, was recognised. Overall, the importance of prioritising weight management in the context of other competing demands, and ensuring disseminated responsibility across staffing teams, was highlighted.

Discussion

Tackling excess weight in secure mental health settings is a complex challenge, with similar issues experienced across two NHS trusts and across the different clinical areas within secure services. Only a small minority of surveyed staff considered that weight management is currently well addressed. A range of key themes were identified, namely: medication, sedentary behaviour, patient motivation and intrinsic factors, catered food and alternatives, role of staff, and service delivery. Such factors contributed to an overall "obesogenic environment", which predisposed patients to excessive, unhealthy weight gain. Cross-cutting issues, in terms of the differing perspectives and priorities of current patients, former patients, carers and multidisciplinary staff were elicited. The importance of a whole systems approach to weight management, incorporating the patient journey into and out of inpatient and community mental and physical health services, was also highlighted.

Strengths and limitations of the study

Addressing excess weight has been identified by patients in secure services as their number one research priority (Aboaja *et al.*, 2021), and the issue has similarly been highlighted at the UK national level through policy (NHS England, 2016), practice guidance (NHS England and NHS Improvement, 2021) and recommendations (Day and Johnson, 2017). This research

Table 5 Qualitative themes and sub-themes from the survey, focus groups and interviews and supporting participant quotations

Themes and sub-themes	*Quotations*
Medication	
Anti-psychotic medication associated with weight gain	"I think medication adding weight is a massive issue and I think it reduces some patient quality of life" Staff
Lack of early intervention for predictable weight gain	"Yeah, I think I needed to be warned about the side effects of olanzapine and I wasn't" Former patient
Sedentary behaviour	
Lack of exercise opportunities, particularly during COVID-19	"I think it's challenging for people because they're locked in. And I think that's a really good point if you're on a section you can't even go out for a walk around the grounds" Former patient
Patient motivation and intrinsic factors	
Unhealthy food choices influenced by poor self-esteem, emotions, health conditions and prior patterns of behaviour	"Making unhealthy choices such as takeaway food from the shop may be a way of trying to manage emotional states and create a sense of comfort" Staff
Low patient motivation to eat healthily and exercise	"Patients' motivation levels are very poor, they don't seem to see any incentive to eating healthier foods or doing exercise and as much as staff can provide them with information and encouragement, ultimately it is up to the individual to take the advice on board and engage with sports and the dieticians. There is virtually nothing staff can do to influence this" Staff
Lack of capacity around weight and long-term health impact	"If patients lack capacity to make these decisions – then it is unethical and negligent to provide an environment and food that lead to unhealthy weight gain which might be dangerous to their health – it can be a very difficult balance to strike" Staff
Catered food and alternatives	
Hospital meals not appetising, portion sizes too small, repetitive menu	"So, the food, absolutely disgusting, still is. It hasn't changed at all in all the years. It's really poor quality" Former patient
Patient leave focussed on unhealthy food, with excess personal funds available	"The outings are a regular occurrence and they are eating bad stuff every time they go out" Staff
Cooking therapy sessions, socialising and events involving unhealthy food	"Social activities tend to be hugely food orientated – celebrations on the ward, outings off the ward always seem to include treat food" Staff
Environment	
Relationships with peers and staff	"They build friendships with other peers and will then order food to socialise with their new friends and acquaintances" Staff
Restrictive practice and tension with patient choice	"It's a delicate balance taking somebody's right to make their unwise choice away, because that can affect your mental health" Former patient
Boredom	"Yeah, I think there just needs to be more to do on the wards because a lot of the rubbish people are eating is literally because there's nothing to do" Former patient
Service delivery	
Weight management prioritisation and responsibility	"Weight management is everyone's responsibility. It doesn't just fall to one or two people to champion" Staff
Need for individualised care planning	"In mental health services we can support our patients to achieve their goals by ensuring inclusion within their own care plan. Give encouragement and praise which will build a new trust and confidence between the patient and care coordinator team" Staff
Role of staff	
Lack of staff training and education	"Staff training must put a greater emphasis on nutrition – keeping a healthy realistic body weight and education on preventing diabetes, heart disease and cancers – also making exercise fun and enjoyable" Staff
Understaffing as a limitation on patient exercise and health promotion	"I think staffing is the biggest issue to patients exercising. There rarely is enough staff to facilitate the sessions that all patients want to do. . . Likewise there would be enough to do additional health based sessions also. I feel like I have all the tools available to be able to educate and staffing plays a major role in being able to actually do things with the patients" Staff

Source: Created by the authors

benefitted from involving wide-ranging stakeholders in a mixed-methods approach, including first-hand perspectives from current patients, former patients, carers and multidisciplinary staff. People with lived experience of mental illness, particularly those who currently or previously received care in secure services, are under-represented in research and their contribution is therefore of particular salience and value (Crawford *et al.*, 2003). Recruiting participants from different sectors within secure services, across two large NHS trusts comprising the North East and North Cumbria Mental Health, Learning Disability and Autism Partnership, promoted ascertainment of a range of views and experiences. Concordance in perceptions and practices between different services served to emphasise the pervasive nature of shared challenges around excess weight. Specific issues were however highlighted in certain settings. For example, some female patients (present in trust two only) reported reticence to lose weight, due to complex feelings around poor self-esteem and low personal concern for their own body and physical health.

The quantitative survey responses received were complemented by in-depth qualitative data, thereby facilitating contextual interpretation and development of associated recommendations. Using a mix of online and in-person focus groups offered participants flexibility and helped to promote wide participation. Adopting a whole system approach enabled consideration for issues relevant to the full patient journey, including both inpatient and community services. The lead researcher was independent and not previously known to participants, which is likely to have facilitated candid sharing of views and experiences.

In terms of limitations, the staff survey response rate was low (16%), despite reminder prompts and prize incentives. However, the survey was distributed widely within secure care services ($n = 488$) and included large numbers of non-clinically facing staff, who may have misperceived the research as irrelevant to their job role. Furthermore, the response rate is consistent with previously published surveys of active NHS staff with multiple competing demands (Medina-Lara *et al.*, 2020; Attala *et al.*, 2023), and respondents were broadly representative with regard to their service sector, professional role and length of time working in health care. It is possible that the response rate reflects low prioritisation of weight management in secure services, which may account – at least in part – for the persistent challenges around excess weight in such settings.

Demographic characteristics, such as age and ethnicity, were not collected for those taking part in the focus groups and interviews. It is therefore possible that a biased perspective may have been provided, if participants were not representative of wider population groups. Participants in this study may also have sought to provide socially desirable responses, particularly if they felt their contribution could influence their job security, or future health-care treatment. However, this potential was reduced by: the lead researcher's independent status; anonymisation of all data collected; and reminding participants that their involvement would have no bearing on future care or job roles. This study was cross-sectional, therefore, we are unable to deduce pathways of cause and effect. However, we did not seek to assess the impact of a specific intervention, and respondents also reflected on long-term challenges and often drew on many years of experience.

Comparison with other studies

A systematic review addressing obesity in mental health secure units published by Public Health England in 2017 sought to assess obesity prevalence, potential interventions and policies, and barriers to change (Day and Johnson, 2017). The review identified 22 studies using a range of methods, and highlighted opportunities to positively influence health education and physical health. In alignment with our research, the review recognised the importance of staff training and motivation, organisational resources, holistic interventions, social engagement and involving patients in decision-making.

A recent qualitative study explored staff perspectives on obesity in a medium-secure psychiatric inpatient service in South Wales (Davies *et al.*, 2023). This small study involved 12 participants and identified key themes: increasing demand for integrated physical health care; unhealthy lifestyles; and weight gain viewed as a symptom of poor mental health. In accordance with our findings, Davies *et al.* (2023) highlighted that the secure care setting is conducive to unhealthy eating and sedentary behaviour, and weight gain was perceived by staff as inevitable. This study also discussed the issue of role modelling by staff, and the difficulties inherent in a working environment that creates barriers for staff in pursing healthy behaviours.

Attala *et al.* (2023) collected data from one of the same NHS trusts involved in our work, and explored the culture of food used as a "treat" and the impact of "treats" on weight in secure mental health services. This study limited scope to a single NHS trust, involving staff only and the lead researcher was previously known to research participants. Attala *et al.* (2023) highlighted the need in future to engage with patients and carers; involve additional NHS trusts; consider a whole system approach to the patient health-care journey; and to promote candid participant responses by involving an independent data collector. Through our research, we developed Attala *et al.*'s (2023) findings further by addressing these requirements, and delivering a larger-scale study extending beyond the concept of "treat culture", to identify clinical and public health priorities for weight management in secure mental health services and beyond. Themes from Attala *et al.*'s (2023) work, such as difficulties from living within a secure care environment, and improvements to make managing weight in secure care easier, were supported through our findings. We also elicited additional considerations and perspectives, and highlighted key divergence in staff views around weight management. This was particularly evident with regard to tensions between patient choice and optimising physical health, which could potentially hamper future attempts to address excess weight in secure care.

Implications for policy and practice

Our research illustrates the complexity of weight management in secure mental health services; the potential benefit of addressing concerns and priorities expressed by patients themselves; and the value of adopting a holistic approach encompassing the whole patient journey through care. It is important that any proposed future changes are developed with due consideration for the specific challenges encountered in secure services, such as limited patient liberties, use of medications predisposing to weight gain and national guidance from the Care Quality Commission (CQC) on restrictive practice.

The key themes identified through our study support a number of recommendations. The NHS catered meal provision should be improved to meet patients' needs and preferences through, for example, greater variation in the menu and tailoring of portion size to patient characteristics, such as age and gender. A wider scope of non-food related patient activities should be developed, with expansion of physical activity opportunities, adapted to patients' individual requirements. Weight gain associated with medication, particularly anti-psychotics, should be monitored and addressed through individualised care planning, involving the whole multidisciplinary team and community pathways. Staffing should be optimised through involvement of peer supporters, joint working across teams and group activities. Guidance from the CQC should be clarified, to promote shared understanding and proportionate implementation by clinical staff. Overall, secure services and wider mental health care should adopt a culture focussed on holistic health, with an integrated approach to multi-morbidity, addressing both physical and mental health dimensions through person-centred care.

Unanswered questions and future research

Further research will be important to explore the feasibility and potential impact of implementing proposed changes, including interactions between active components and

any unintended consequences. Longitudinal studies following up patients over time will be crucial to establish long-term impact, particularly in view of recognised widespread predisposition to regain lost weight (Hall and Kahan, 2018). Adopting a positive deviance stance, through investigating the experiences of patients living with SMI in secure services who successfully avoid or mitigate weight gain, could offer important insights for future approaches.

Conclusion

This mixed-methods study explored the views and lived experiences of current patients, carers, former patients and multidisciplinary staff, to identify a range of perspectives on weight management in secure mental health settings. Factors driving excess weight amongst patients with SMI in secure services are multifaceted and embedded into current approaches to SMI management and health-care culture. Secure care delivers a potentially "obesogenic environment", conducive to excessive weight gain. Key influences include medication, sedentary behaviour, patient motivation and intrinsic factors, catered food and alternatives, role of staff, and service delivery. A whole system approach to weight management should be adopted, involving all relevant actors and addressing the full patient journey through care. Long-term complex interventions involving wide-ranging stakeholders are likely to be required, with associated longitudinal studies to explore feasibility and evaluate impact.

Implications for practice

- Secure mental health care provides a potentially "obesogenic environment", predisposing patients to excessive weight gain.
- Excess weight is a complex challenge and support needs to be coordinated throughout the patient journey into and out of services.
- Interventions to promote weight management in secure care should engage wide-ranging stakeholders, including people with lived experience.
- Secure services and wider mental health care should deliver a holistic health culture, supporting both physical and mental health needs, through an integrated person-centred approach.

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