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Exploring Potential Solutions to Weight Stigma in Healthcare: A Mixed Methods Study

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ABSTRACT

This study seeks to identify specific shaming triggers in office procedures and the clinic environment to mitigate them. Data for this parallel mixed methods, cross sectional survey were collected online between January and February 2021. We ran descriptive and multivariate logistic regression analyses in IBM SPSS. Qualitative responses were analyzed in Excel using content analysis and thematic coding. Cisgender women (N = 384) were recruited through social media. The majority were White (n = 260, 67.7%) with 27.1% Black (n = 104). The mean age was 33.18 (SD = 7.43). The fear of enacted stigma subscale was positively related (p < .05) to all five proposed solutions, and body appreciation was negatively related (p < .05) to one proposed solution. Identified themes include mental health and emotions, provider presence and communication, structural issues, the provider's view of the patient, interactions during the appointment and a view of health. Implicit and explicit weight-related stigma play a negative role in medical care and create barriers to access. Changes in the healthcare environment and in provider bias can improve patient outcomes.

Keywords: weight stigma, healthcare, solutions, mixed methods.

1. Introduction

Individuals classified as "overweight" to "obese" on the Body Mass Index (BMI) scale experience many challenges navigating the healthcare system. The challenges faced by these individuals reflect both societal and structural bias. Research supports that overweight and "obese" individuals may inconsistently acquire healthcare, potentially stemming from negative experiences with health providers[1-2]. This discrimination extends further into the medical realm, where both implicit and explicit biases from physicians and medical students contribute to the creation of an unwelcoming healthcare environment for those with larger body sizes[3-5].

Doctors may inadvertently hinder effective patient care by forming less emotional rapport with individuals who are "overweight", and misguided attempts at encouraging weight loss through shaming tactics can lead to decreased adherence to medical recommendations[6-8]. Research suggests that promoting body acceptance may contribute to a reduction in health concerns among individuals with higher body weight[9-11]. Moreover, while it is commonly believed that being "overweight" necessarily leads to a higher incidence of mortality, research indicates no significant difference in mortality rates for "overweight" versus "normal" weight individuals[12-14]. Further, the cycle of diet, weight loss, and weight regain (weight cycling) has a greater relationship to health concerns than being "overweight"[15-16].

Structural stigma further compounds the challenges faced by those with larger body sizes, as healthcare facilities often lack appropriately sized furniture and diagnostic machines, and medications may not be adequately researched for use with higher-weight individuals[1]. Moreover, the pervasive focus on weight loss and dieting within the medical community contributes to implicit stigma, with physicians often delivering lectures on these topics, sometimes even refusing treatment until patients lose weight[5]. This structural and implicit stigma, coupled with the higher allostatic load experienced by individuals with larger body sizes, significantly impacts patients' mental and physical health, perpetuating a cycle of discrimination that needs to be addressed within the healthcare system[8,17-19]. The current study seeks to identify solutions by examining ways to reduce shaming triggers in office procedures and the clinic environment that could lead to improved healthcare utilization among weight stigmatized women. We limited the study to women because women experience weight stigma at higher rates when compared to men[1].

2. Materials and Methods

PARTICIPANTS

The final sample included 384 cisgender women. Most of the sample was White (n = 260, 67.7%) with 27.1% Black (n = 104). The mean age of the sample was 33.18 (SD = 7.43). See Table 1.

Table 1. Participant Demographics and Descriptive Analyses

Characteristic	n	%
Race		
White	255	66.4
Black	99	25.8
Other Person of Color	30	7.8
Is it OK to Refuse to be Weighed by a Healthcare Provider		
Yes	185	50.1
No	130	35.2
I am not sure	54	14.6
Ever Refused to be Weighed by a Medical Provider		
Yes	124	32.3
No	260	67.7
If Yes, How Often do you Refuse to be Weighed…		
Every time	13	10.5
Some of the time	69	55.6

Characteristic	n	%
Rarely	41	33.1
Never	1	0.8
Characteristic	**M (range)**	**SD**
Age	33.2 (19-65)	7.4
Body Appreciation Scale-2 Score	3.3 (1.30-5.00)	0.6
Financial Strain Index	8.4 (5-15)	2.8
Body Mass Index	28.4 (15.94-62.64)	7.6

PROCEDURE

This parallel mixed methods, cross sectional survey study received IRB approval (project number 2040882; approved 11/20/2020) and participant consent prior to data collection. Data were collected between January 15, 2021 and February 1, 2021. Participants were required to be 18 years or older, living in the United States, identifying as a cisgender woman, and with English as a first language. We recruited through social media (i.e., Facebook and Twitter) and used reCAPTCHA to minimize bots. We compensated participants with $5 for their time.

MEASURES

The dependent variable was developed for the purpose of this study and examined possible healthcare solutions. The one item was: "Please indicate which of the following changes would make you feel more comfortable about receiving healthcare services (select all that apply). 1) If healthcare providers made it clear that being weighed was optional ('Are you going to weigh today?'), 2) If healthcare providers posted a sign above the scale making it clear that weight does not equal health, 3) If healthcare providers did not use the BMI (but still weighed patients), 4) If healthcare providers used kilograms instead of pounds on the scales, 5) If healthcare providers had furniture that comfortably fit my body size, 6) I don't feel comfortable receiving healthcare services, but none of these options would make me feel more comfortable, 7) I feel comfortable receiving healthcare services." Each response option was treated as a dependent variable in the logistic regression analyses, coded 0 = no, 1 = yes.

Independent variables included the Body Appreciation Scale-2 (BAS-2), the Weight Self-Stigma Questionnaire (WSSQ), age, race, and the Financial Strain Index (FSI) to measure socioeconomic status (SES). The BAS-2[20], a 10-item scale had a highly acceptable reliability with the current sample (Cronbach's α = .86). The WSSQ[21] includes the Self-Devaluation subscale (6 items) and the Fear of Enacted Stigma subscale (6 items), both of which had good reliability with the current sample, Cronbach's α = .76 and .81, respectively. Age was treated as a continuous variable. Race was recorded as Caucasian/White/European American; Black/African American; Indigenous Peoples/ Alaska Native; Asian/Asian American; Native Hawaiian/Pacific Islander; and not listed. For the purposes of our analyses, we coded race as white (0), Black (1), and Other Persons of Color (2). The FSI[22], a 5-item scale measuring socioeconomic status, had good reliability (Cronbach's α = .83).

QUANTITATIVE ANALYTIC PLAN

We ran a series of tests for statistical assumptions, descriptive statistics, and multivariate logistic regression analyses using IBM SPSS 27.

QUALITATIVE-SPECIFIC METHOD

Participants were asked one open-ended question: "What other ideas do you have for solutions healthcare providers could implement that would make you feel more comfortable receiving healthcare services?" After invalid responses (*n*=76) were excluded (e.g., "N/A", "none,"), 106 valid responses were coded. Responses were analyzed in Excel using content analysis[23] and thematic coding[24]. Authors EH and SS read all responses, inductively generated codes, and established a coding dictionary, which was revised during four iterations. Codes were refined, consolidated, reorganized, and arranged in hierarchical categories. Authors EH and SS independently coded all responses. Overall interrater agreement was 0.94, with *Cohen's Kappa* of .88, indicating excellent interrater agreement, with individual variables ranging from *K*= .70 (substantial agreement) to *K*= 1.0 (perfect agreement). Following this, all variables were double coded with discrepancies resolved through consensus.

3. Results

QUANTITATIVE-DESCRIPTIVES

With regard to the dependent variables, 34.9% (*n* = 134) indicated that they would feel more

comfortable receiving healthcare if weighing was optional, 48.2% (n = 185) if healthcare providers posted a sign above the scale making it clear that weight does not equal or determine health, 35.4% (n = 136) if healthcare providers did not use the BMI, 27.6% if healthcare providers used kilograms instead of pounds on the scale, and 31% (n = 119) if healthcare providers had furniture that comfortably fit their body size. Approximately a quarter of the sample indicated that they feel comfortable receiving healthcare services (n = 101, 26.3%) and 5.5% (n = 21) said they do not feel comfortable, but none of the options listed would help.

The mean BAS-2 was 3.34 (SD = 0.66). The mean WSSQ self-devaluation subscale score was 16.92 (SD = 4.62), mean fear of enacted stigma subscale was 17.21 (SD = 4.96), and the WSSQ total score mean was 34.04 (SD = 8.79).

QUANTITATIVE-MULTIVARIATE

If healthcare providers made it clear that being weighed was optional.

The generated model was significantly different from the constant-only model (X^2 (7) = 39.65, p < .001). The WSSQ fear of enacted stigma was significantly related; higher weight stigma (OR = 1.12, CI = 1.04, 1.19), older age (OR = 1.05, CI = 1.02, 1.09), and being an other Person of Color when compared to white participants (OR = 3.54, CI = 1.51, 8.30) was related to being more likely to select healthcare providers making it clear that being weighed was optional.

If healthcare providers posted a sign above the scale making it clear that weight does not equal or determine health.

The generated model was significantly different from the constant-only model (X^2 (7) = 37.67, p < .001). Higher experiences of fear of enacted weight stigma (OR = 1.13, CI = 1.06, 1.21) and higher financial strain (OR = 1.13, CI = 1.04, 1.23) were related to being more likely to select having a posted sign as one of the options that would make them feel more comfortable receiving healthcare.

If healthcare providers did not use the BMI (but still weighed patients).

The generated model was significantly different from the constant-only model (X^2 (7) = 32.93, p < .001). Higher experiences of fear of enacted weight stigma (OR = 1.04, CI = 1.03, 1.18) and higher age (OR = 1.04, CI = 1.01, 1.08) were related to being more likely to select providers not using the BMI as one way to improve their comfort with receiving healthcare. Conversely, higher scores of weight stigma self-devaluation (OR = 0.91, CI = 0.85, 0.98) and identifying as Black, compared to White participants, (OR = 0.42, CI = 0.23, 0.75) were related to being less likely to select providers not using the BMI.

If healthcare providers used kilograms instead of pounds on the scales.

The generated model was significantly different from the constant-only model (X^2 (7) = 27.07, p < .001). Higher experiences of fear of enacted weight stigma (OR = 0.93, CI = 0.86, 1.00) was related to being less likely to select using kilograms as one way to make them feel more comfortable receiving healthcare, while higher financial strain (OR = 1.25, CI = 1.13, 1.38) was related to being more likely to select using kilograms instead of pounds as one of the options that would make them feel more comfortable receiving healthcare.

If healthcare providers had furniture that comfortably fit my body size.

The generated model was significantly different from the constant-only model (X^2 (7) = 47.34, p < .001). Higher experiences of fear of enacted weight stigma (OR = 1.07, CI = 1.00, 1.15), higher financial strain (OR = 1.27, CI = 1.15, 1.40), and identifying as Black when compared to white participants (OR = 2.06, CI = 1.19, 3.56) were related to being more likely to select having appropriately-sized furniture as one of the options that would make them feel more comfortable receiving healthcare. Higher levels of weight stigma self-devaluation (OR = 0.90, CI = 0.83, 0.97) was related to being less likely to select appropriately-sized furniture as an option that would make them feel more comfortable receiving healthcare.

Table 2. Logistic Regression Results

If healthcare providers made it clear that being weighed was optional				
Characteristic	**B**	**OR**	**p value**	**CI**
Body Appreciation Scale-2 Score	-0.07	0.94	.765	0.61,1.44
WSSQ Self Devaluation	-0.00	1.00	.916	0.93,1.07
WSSQ Fear of Enacted Stigma	0.11	1.12	.001	1.01,1.19
SES: Financial Strain Index	0.03	1.03	.562	0.94,1.13
Race				
Black	-0.50	0.61	.088	0.34,1.08
Other Person of Color	1.26	3.54	.004	1.51,8.30
Age	0.05	1.06	.003	1.02,1.09
If healthcare providers posted a sign above the scale making it clear that weight does not equal health				
Characteristic	**B**	**OR**	**p value**	**CI**
Body Appreciation Scale-2 Score	-0.23	0.801	.282	0.53,1.20
WSSQ Self Devaluation	-0.06	0.94	.099	0.88,1.01
WSSQ Fear of Enacted Stigma	0.12	1.13	<.001	1.06,1.21
SES: Financial Strain Index	0.12	1.13	.006	1.04,1.23
Race				
Black	-0.34	0.72	.213	0.42,1.21
Other Person of Color	0.58	1.78	.183	0.76,4.15
Age	0.10	1.01	.541	0.98,1.05
If healthcare providers did not use the BMI (but still weighed patients)				
Characteristic	**B**	**OR**	**p value**	**CI**
Body Appreciation Scale-2 Score	-0.38	0.69	.083	0.45,1.05
WSSQ Self Devaluation	-0.09	0.91	.013	0.85,0.98
WSSQ Fear of Enacted Stigma	0.10	1.10	.003	1.03,1.18
SES: Financial Strain Index	0.06	1.06	.177	0.97,1.17
Race				
Black	-0.87	0.42	.004	0.23,0.75
Other Person of Color	0.07	1.07	.878	0.46,2.48
Age	0.04	1.04	.017	1.01,1.08
If healthcare providers used kilograms instead of pounds on the scales				
Characteristic	**B**	**OR**	**p value**	**CI**
Body Appreciation Scale-2 Score	-0.05	0.95	.844	0.60,1.52
WSSQ Self Devaluation	0.04	1.04	.352	0.96,1.12
WSSQ Fear of Enacted Stigma	-0.08	0.93	.041	0.86,1.00
SES: Financial Strain Index	0.22	1.25	<.001	1.13,1.38
Race				
Black	-0.25	0.78	.411	0.43,1.41
Other Person of Color	0.14	1.15	.754	0.48,2.73
Age	0.00	1.00	.884	0.97,1.04
If healthcare providers had furniture that comfortably fit my body size				
Characteristic	**B**	**OR**	**p value**	**CI**
Body Appreciation Scale-2 Score	-0.35	0.71	.139	0.45,1.12
WSSQ Self Devaluation	-0.11	0.90	.001	0.83,0.97
WSSQ Fear of Enacted Stigma	0.07	1.07	.044	1.00,1.15
SES: Financial Strain Index	0.24	1.27	<.001	1.15,1.40
Race				
Black	0.72	2.06	.010	1.19,3.56
Other Person of Color	0.14	1.15	.761	0.46,2.87
Age	0.02	1.02	.383	0.98,1.05

Note: White was the reference group for the race variable.

QUALITATIVE

Qualitative results are summarized in Table 3. Seventy-five percent of participants emphasized the importance of mental health and emotions in the healthcare experience. A minority (14.2%) reported experiencing positive emotions in healthcare ("comfortable," "satisfied"), with 65.1% experiencing negative emotions (e.g., "scary," "embarrassed," "disrespected"). A small subset (5.7%) expressed feelings of hopelessness or

futility, stating that little could improve their comfort (e.g., suggesting "anesthesia" as a solution). Another 5.7% viewed their comfort in healthcare as their own responsibility, rather than the provider's. Ten percent reported concerns for confidentiality and security, requesting greater respect for privacy, "one-on-one" appointments without "onlookers," and the option of home visits. Another group (6.6%) emphasized the importance of attending to body image concerns as many patients are "sensitive about their weight," or feel "ugly," or "embarrass[ed]." They pointed out these concerns often overlap with eating disorders or higher BMI. Finally, several participants (1.9%) imagined healthcare experiences in which physicians attended to self-care and joy in appointments which could potentially improve health behavior engagement (e.g., enjoyable exercise, delicious nutritional foods, meaningful social connection).

Table 3. Qualitative themes regarding increasing patient comfort in healthcare.

Themes & Subthemes	%	*K*	Illustrative Quote
Patient Wellbeing & Emotions	**74.5**	-	"Doctors should be more careful about the patient's feelings." "Consider… customer's feelings."
• Negative emotions in healthcare	65.1	0.75	"Stop treating women as if they did something wrong for being heavier than 'accepted.'" "It would be nice if they didn't rush through the appointment like you didn't really matter."
• Positive emotion in healthcare	14.2	0.98	"I feel quite comfortable with the present scheme." "I am very satisfied with my general practitioner because she takes the time to listen."
• Privacy issues	10.4	0.98	"Full respect for privacy." "The doctor promised not to reveal my privacy [or] laugh at me."
• Body image	6.6	0.94	"After having anorexia... she didn't ask anything about food or body image or mental health."
• Hopelessness and futility	5.7	0.96	"Anesthesia."
• Patient feelings of responsibility	5.7	0.94	"For me, the challenge is prioritizing myself, and the need to take care of myself." "I don't think it's up to the healthcare provider… It has taken time for me to be comfortable."
• Patient self-care and joy	1.9	0.94	"'What kind of activities do you like? …Walking? Sit aerobics? …alone… or with a group?'"
Provider Presence and Communication	**70.8**	-	"Hope to provide more humanized service." "Takes the time to listen, makes eye contact, acknowledges concerns… demonstrates empathy."
• Communication style	52.8	0.70	"Just listening to women PERIOD about theirs concerns about their bodies." "She… makes offhand comments about weight and is very cold." "Actually believe me."
• Provider attitude	46.2	0.77	"Kind and caring." "Communicate more, smile more, praise and encourage more."
• Provider identities	8.5	0.98	"Female healthcare providers will make me feel a little more comfortable."
• Providers doing their homework	8.5	0.87	"I wish more doctors would educate themselves regarding Health at Every Size." "More in-depth training on eating disorders and… intuitive eating."
Structural Issues	**53.8**	-	"Healthcare providers can [] help; but there need to be changes to our societal perceptions."
• Structural/environmental concerns	36.8	0.72	"Would like mental and physical healthcare in the same place." "More clarity about how much tests, procedures, and medication costs."
• Discrimination/stigma in healthcare	26.4	0.81	"Not sharing white supremacist and eugenist [SIC] views or opinions about my body." "I see people discriminated against because of their weight."
• Difficulty finding provider	2.8	1.00	"There isn't one dr in [city] that is HAES friendly." "Lists of fat friendly doctors." "It needs to be simpler and easier to get into doctors."
• Patient self-advocacy	1.9	0.94	"I've gotten to the point where I'm good at advocating for myself about what I want."
View of Patient	**50.0**	-	"Don't treat the patient with colored eyes." "Respect woman… Pay attention to what they say."
• Patient Characteristics	30.2	0.75	" It's scarier for black women." "ESPECIALLY for women, we are societally taught to be agreeable and not to argue… (especially someone with higher education/ status… like a doctor)."
• Whole Patient View	28.3	0.72	"Having person-based healthcare- I am not just a woman who is overweight."
• Patient choice, options, or consent	15.1	0.89	"Tell me what you are doing and why, ask for consent." "I have tried to say no... and then been talked into it, and fe[lt] manipulated."
• Patient's health definition or goals	2.8	0.94	"Examine assumptions about avoidance of death & quality of life… Ask the patient's wishes." "Focus... on my concerns and actual health and habits rather than my weight."
During the Appointment	**40.6**	-	"If doctors would slow down." "Stop weighing. It is so irrelevant…Ask[] about behavior."
• Weight or weight loss talk	26.4	0.81	"Being able to permanently opt out of discussions about weight." "If we need to discuss health issues it needs to not be rooted in weight loss." "ASK if patients want to talk about weight."
• Health behavior talk	15.1	0.92	"I really appreciate when providers focus on health behaviors rather than just weight."
• Weighing practices	10.4	0.94	"I would love if they didn't weigh me every time." "Use kilograms."
• Investigate body/complaint	10.4	0.96	"Get comfortable touching & examining fat instead of being squeamish or repulsed by it." "Address possible causes related to weight last instead of first."
• Intentional inclusion of all sizes	9.4	0.85	"Having the right kind of equipment and training to give appropriate medical care to fat folx, such as larger blood pressure cuffs, or using longer needles on syringes."

Themes & Subthemes	%	K	Illustrative Quote
View of Health	31.1	-	"Not using weight/BMI as the sole factor in determining course of treatment."
• Wholistic, individualized view	26.4	0.79	"Making it known that they are fat positive, have ED knowledge." "Inclusive environment… Providing the provider's pronouns... destigmatizing potential mental health issues."
• Physician view	22.6	0.81	"Have the provider actually believe that weight alone does not equal or determine health."
• Critical/alternative view	18.9	0.91	"Disinvestment from "obesity" as a concept/epidemic, an understanding that weight loss is not feasible and a commitment to not recommending it, a trauma-informed practice."
• Weight-based stereotypes/assumptions	13.2	0.89	"Don't judge me based on my size. At 300 lbs I still compete in triathlons, swim 2 miles a day, and can run and bike with no problem."
• Explicit weight-inclusive lens	8.5	0.87	"If they were explicit on their website that they were health-at-every-size/body positive."

Seventy-one percent of participants emphasized the importance of providers' characteristics and behavior on patient comfort. While a few (8.5%) discussed provider identities (e.g., preferring female physicians, acknowledging identity differences between patients and physicians), the majority emphasized the importance of communication style (52.8%) and provider attitude (46.2%). Patients reported disliking providers who appeared cold, "rushed", "shaming", "judgmental", or relied heavily on numbers, "diagnosed without discussion", or failed to listen or believe them. Rather, they emphasized the importance of "empathy", "genuineness", "praise", "caring", "listening conversationally," humility, and more "humanized service". Participants emphasized they wanted providers to listen to them ("with a growth mindset"), believe them, and seek their own education (8.5%), particularly in areas less addressed in formal education (e.g., "LGBTQ", "Health at Every Size®", "eating disorders", "fat positivity", "addiction/ recovery", "wholistic wellness practice").

Over half (53.8%) of participants made suggestions that would necessitate structural changes to the healthcare system or suggested structural changes directly (36.8%). They acknowledged that true change required "systems thinkers" rather than "individualist" changes, as much was outside providers' control. For example, participants wanted more time with providers, more transparency with pricing, more affordable services, integrated health and mental health systems, support finding competent providers (2.8%), and options for approaching weight in ways contrary to current practice guidelines. Participants also emphasized environmental and resource concerns (36.8%), such as the need for medical equipment that fit all bodies (e.g., gowns, syringes, chairs, bathroom stalls, orthopedic equipment, blood pressure cuffs, prosthetic aids, medications).

Undergirding the need for structural change, participants (36.8%) also discussed encountering stigma and discrimination in healthcare, sharing stories of doctors "laughing at me," imposing "white supremacist and eugenist [SIC] views… about my body," and "discriminating against [people] because of their weight".

Respondents (50.0%) also expressed concerns about how healthcare providers viewed them as patients and recommended centering patients' individuality, health goals, context, and joint decision making. Participants (30.2%) referred to their own identities (e.g. gender, race, financial status, body size) as impacting their care, explaining that women, People of Color, and patients who are LGBT, disabled, lower-income, or larger-bodied experience meaningful power differentials with providers that make accessing care more "scary." Patients (28.3%) wanted to be viewed more wholistically, with a trauma-informed approach where practitioners recognize their context, emotions, and identities. Similarly, 15% of respondents mentioned suggestions that would increase opportunities for patient choice. Within this, participants (2.8%) wanted physicians to investigate the patient's definition of health to better center the patient's goals. Finally, participants frequently (15.1%) expressed the desire for more options, choices, foreknowledge, and meaningful informed consent, while keeping in mind that some patients may feel pressured or manipulated due to power differentials with providers. They wanted to know and understand what options are available to them for exams, testing, and ways of pursuing health so that they are properly able to consent in those settings.

Participants (40.6%) frequently referenced suggestions to improve what happens during healthcare appointments. Respondents (26.4%) frequently critiqued how weight and weight loss

was discussed, expressing the desire to avoid discussions of weight, "permanently opt out" of weight talk, with a desire to focus on health behaviors instead (15.1%). Respondents (10.4%) also suggested changes to weighing practices, such as reducing times patients are weighed, eliminated unnecessary weighing, weighing in kilograms (to reduce focus on numbers), or providers communicating that health is "more important than a single number." These participants also emphasized the need to "focus on my concerns and actual health" rather than weight. They want their doctors to investigate the physical complaint "the same way they would if you were a thin person," and examine their bodies ("get comfortable… examining fat instead of being…repulsed"), rather than being sidetracked by discussions of weight that may be less relevant to their presenting concerns. Finally, 9.4% highlighted intentionally including all body sizes, with regard to the equipment, clothing, and tools needed for medical appointments.

Lastly, respondents (31.1%) desired more critical, inclusive conceptualizations of health. Most importantly, participants (26.4%) wanted their providers to have a wholistic, individualized, view of health that recognized patients as multifaceted, contextualized beings. Several respondents described positive experiences in non-Western healthcare settings where more time was spent on rapport-building, body examination, and communication, making them feel more deeply understood. Similarly, 19% wanted health systems to engage a more critical view of health that divested from traditional paradigms equating weight with health. These participants called for practitioners to "examine their fatphobia," "disinvest from 'obesity'," and avoid weight management conversations. They wanted weight and numbers de-emphasized, with 13% of participants highlighting the harm of weight-based stereotypes (e.g., assuming large patients "constantly eat mcdonalds fries," are "lazy," or "do not take care of" themselves). Finally, 8.5% wanted providers to *explicitly* highlight their weight-inclusive lens to signal a sense of safety and belonging, particularly for larger-bodied patients.

4. Discussion

The results of this study confirm results of prior research related to the negative effects of implicit and explicit weight-related bias from healthcare providers[3-5] and the absence of appropriately-size furniture and medical equipment[1]. Results further emphasize the role of weight stigma on the potential efficacy of changes in the healthcare environment that would increase patient comfort. Quantitatively, relationships between weight self-stigma and possible solutions varied depending on the WSSQ subscale and solution. Participants with higher *fear of enacted stigma scores*, which relates to patients' fear that they will experience weight stigma, were significantly more likely to report increased comfort accessing healthcare if healthcare providers make it clear that being weighed was optional, post a sign above the scale that weight does not equal or determine health, do not use BMI, or have appropriately sized furniture. Conversely, higher scores of *weight stigma self-devaluation* were related to participants being *less* likely to select that not using BMI or having appropriately sized furniture would increase their comfort receiving healthcare. Notably, there were no positive relationships between self-devaluation and the possible solutions included in this study. These quantitative results suggest that the selected interventions included in this study may be most effective for individuals who experience weight self-stigma related to fear of stigma, rather than for those who primarily experience self-devaluation.

Qualitative results similarly emphasized the effects that weight stigma have on women's healthcare experiences. Participant responses underscored the need for structural changes and within health service delivery, such as revising weighing practices, ensuring the availability of medical equipment that fits a variety of body sizes, and system-wide perspectives that equate health with weight, as well as for changes to physicians' approach and communication regarding patient health and weight/body size. There is a need to determine when it is medically necessary to be weighed, because patients are delaying care because of the stigma of being weighed[e.g.,6]. In addition to stigmatizing experiences, such as being weighed, bias and stigma directly from physicians were commonly expressed by participants, which suggests that structural changes alone are unlikely to mitigate patient comfort concerns, and necessitates the need for education and training related to weight-inclusive healthcare and communication, and unconscious bias.

The relationship between patient identity factors and healthcare comfort was also revealed in the results of this study. Qualitative results indicated that participants' identities other than body size (e.g. gender, race, sexual orientation, financial status) impact the comfort with healthcare, particularly as it relates to power differentials with providers when their identities do not match. The intersections of these identities with body size will require additional attention when considering possible solutions to increase comfort. Relatedly, quantitative results indicated that participants who identified as Black were *less* likely to indicate increased comfort accessing healthcare if healthcare providers didn't use BMI. Thus, efforts to identify and implement interventions to increase healthcare comfort and improve patient-provider relationships should consider the intersections of patients' identities.

The results of this study offer important information regarding patient perspectives and experiences with healthcare as it relates to weight-stigma, however they must also be considered in light of its limitations. Notably, the dependent variables in this study included possible solutions that were pre-selected for participants. While these solutions were selected based on prior research, they do not encompass all possible solutions to be considered. However, we do include open-ended questions about solutions that can inform the development of new quantitative survey tools. Next, by the nature of this remotely administered survey, the sample may not include older and vulnerable populations who may not have the same access to digital resources (e.g. expertise in digital tools or lack of technologies). Last, future research should include populations that do not speak English as their first language to determine how intersectionality among weight stigma, race, and socioeconomic status impacts, which was not included in this study.

Providing weight-inclusive healthcare will take require structural, environmental, and interpersonal changes between patients and providers to improve the weight-inclusiveness of healthcare systems and decrease barriers to care. This study shows that patients often don't feel heard or valued by their provider, and intersectionality among socio-economic status, weight stigma, and race impacts the solutions and preferences of patients. Workforce training is need for providers to improve patient-provider communication to deliver weight-inclusive healthcare and improve trust. These training opportunities should include the importance of providing patient choice, exploring options for approaching dialogue around weight, and realizing that no one intervention will be a fit for all. Healthcare system leaders should consider innovative approaches that would increase the time providers spend with patients (e.g. telehealth) to create more opportunities for tailored discussions, and better integrated care with mental health systems.

5. Conclusion

Individuals in large bodies experience societal and institutional weight stigma in the many facets of their lives. The current mixed-method study identifies some of the ways in which weight stigma experiences in healthcare affect large-bodied women and identify some solutions that could increase comfort with receiving healthcare for these women. The current study's results suggest that making changes to the healthcare environment and reducing provider bias against large-bodied individuals may improve patient outcomes.

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