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Weight Stigma Among Providers Decreases the Quality of Care Received by Obese Patients

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Abstract

Background: Prior research has provided evidence supporting the hypothesis that weight stigma exists among health care providers and affects the quality of care delivered to obese patients. Evidence has also shown that obese patients delay health care, contributing to the decrease in their quality of health care compared to non-obese patients. This systematic review aims to provide a comprehensive analysis of current research uncovering weight stigma in the health care field.

Methods: An exhaustive search of the available medical literature was performed using the following MeSH terms: obesity, weight stigma, quality of care, and bias. Studies were included if published within the last twelve years with a focus on weight stigma among health care providers. Randomized controlled trials, case control studies, and cohort studies were all included in this review.

Results: Ten studies, out of fifteen, were included in this review. Studies examining provider attitudes toward obese patients showed evidence of weight stigma. Other studies examined patient perceptions of provider attitudes, with findings that also lent support to the hypothesis of weight stigma occurring among providers. Quality of care was found to be sub-optimal for obese patients compared to non-obese patients, with decreased rates of preventive services in the obese population. Obese patients were also shown to delay seeking health care due to their perceptions of provider weight stigma.

Conclusion: Health care providers maintain weight bias, which ultimately affects the quality of care delivered to obese patients. Obese patients are aware of the weight bias their health care providers hold, and this plays a major role in their decision to delay seeking health care. Further education is needed among health care providers on how to ameliorate weight bias and improve the standard of medical care they deliver to obese patients.

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**Weight Stigma Among Providers Decreases the Quality of Care
Received by Obese Patients**

Kortni Jones, PA-S



A Clinical Graduate Project Submitted to the Faculty of the

School of Physician Assistant Studies

Pacific University

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Faculty Advisor: Jim Ferguson, PA-C

Clinical Graduate Project Coordinators: Annjanette Sommers MS, PAC & Rob Rosenow
PharmD, OD

Biography

Kortni Jones is a native Californian, born and raised in a small town outside Fresno, CA. She received her BS in Neurobiology, Physiology, and Behavior at the University of California, Davis. She then went on to explore medicine from the perspective of clinical research, initially working at the Pain Clinical Research Center at UCSF. She then went on to work in Cancer Clinical Research at Mayo Clinic Arizona prior to beginning the Physician Assistant Program at Pacific University of Oregon.

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List of Abbreviations

NAAFANational Association to Advance
Fat Acceptance

BMI.....Bod
y Mass Index

IAT.....Implicit
Association Test

CME.....Continuing
Medical Education

BDI II.....Beck Depression
Inventory II

Weight Stigma Among Providers Decreases the Quality of Care Received by Obese Patients

BACKGROUND

Recently, a prominent cardiology surgeon, employed by the highly esteemed Cleveland Clinic, was quoted in the New York Times Magazine stating that he would not only stop hiring smokers, but would also stop hiring obese persons if it were legal¹. When the reporter told Dr. Delos M. Cosgrove that many people would find this comment unfair, he replied as follows: “Why is it unfair? Has anyone ever shown the law of conservation of matter doesn’t apply? People’s weight is a reflection of how much they eat and how active they are. The country has grown fat because it’s consuming more calories and burning fewer. Our national weight problem brings huge costs, both medical and economic. Yet our anti-obesity efforts have none of the urgency of our antismoking efforts. We should declare obesity a disease and say we’re going to help you get over it.”¹ While you might be as surprised as I was to discover that a physician could make a statement with such strong anti-fat sentiment, knowing full well it would have a far reaching audience, he is by far not alone in holding biases towards obese persons.

The statement made by Dr. Cosgrove is an example of weight stigma that exists among health care providers. His statement devalues obese persons, suggesting that they would somehow be inferior employees compared to non-obese persons. One is forced to wonder if health care providers who hold such anti-fat biases are able to provide equivalent care to their obese and non-obese patients. An important component of delivering quality medical care includes protecting patients from ridicule and prejudice,

including that which they may be subject to from their provider. As will be covered in this systematic review, obese patients may avoid seeking health care due to embarrassment about their body habitus, and therefore creating a safe environment where patients feel they can trust those caring for them, could promote continuity of care. There are groups who have formed to combat the inequalities which obese persons face, such as the National Association to Advance Fat Acceptance (NAAFA). While this group might take extreme steps, one has to wonder if their creation signals the need for advocacy of obese patients even in the health care field. Social bias against obesity emanates all aspects of obese persons lives, including extension into medical care received. Despite medical care providers' continuing education in the ever growing research on obesity, such as the role genetics play- showing that obesity is not solely caused by poor diet and lack of exercise, the irony remains that obese patients are continually forced to validate obesity as a medical condition to their health care providers.

The latest data shows that 68% of the U.S. population is either overweight or obese, and approximately 1/3 of Americans are obese.² The Centers for Disease Control define overweight as a BMI of 25.0-29.9 and obesity as a BMI of 30 or higher.³ The considerable number of obese Americans presents an economic challenge to the health care system, with a reported 9.1% of health care spending allocated to obesity.⁴ These economic demands are, in part, responsible for the vast amount of research performed each year on this medical condition. However, the majority of research focuses on uncovering the etiology and pathology of obesity, rather than the psycho-social issues surrounding it. We know from prior works that the psychosocial aspect of a disease has

a significant impact on the patient.⁵ Managing this component of a disease can play an equally important role in treatment and recovery.

History of Weight Stigma Research

Past research of the bias and prejudice obese patients face in the medical community has been ongoing, with the earliest study performed in 1969 by Maddox and colleagues. This study, and others reviewed in this section, were not included in the analyses due to publications dates greater than twelve years ago. The study by Maddox and colleagues⁶ followed 100 physicians in an outpatient clinic and examined the relationship between the physicians and their overweight patients.⁶ Results of questionnaires completed by the physicians showed that they associated overweight (the term used during this time period, which was later expanded to further stratify patients into overweight, obese and morbidly obese sub groups) patients with negative characteristics. The study also showed that physicians felt the majority of their education on the medical condition of “overweight” was gleaned from informal experiences and not from their medical education. Physicians also reported feeling incompetent in dealing with overweight patients, and commented that these patients were not the “preferred” type of patient.⁶

Further research, performed by Price and colleagues⁷, found that there was significant difference in physicians’ beliefs about obesity with regard to physician sex, physician weight, and years of practice.⁷ Female physicians were more likely to assume obese patients were sad or unhappy and were more likely to recommend commercial weight loss programs as well as exercise. Overweight physicians were less likely to attribute obesity as a major risk factor for coronary artery disease, diabetes mellitus, and

stress. Overweight physicians were also less likely to believe that they needed to be a role model with their own weight for their patients. Those physicians who had fewer years of practice were more likely to believe that obese patients could lose weight and sustain the weight loss. This particular result was important in pointing towards possible physician burn out in the management of obesity. Most importantly, a significant number of physicians were shown to maintain negative attitudes about their obese patients, characterizing them as “sad”, “lacking self-control”, and even referring to them as “lazy”.

Later studies looked at this issue from the patient perspective by analyzing a subgroup of obese patients, those patients classified as morbidly obese who had undergone weight loss surgery. Using this specialized sub set of obese patients, Rand and colleagues⁸ were able to take an interesting look into patient perceptions of social discrimination before and after undergoing weight loss surgery.⁸ Patients completed questionnaires 1-6 weeks prior to weight loss surgery and 12-18 months post-operatively. Results showed that patients reported far more weight-related social discrimination prior to weight loss surgery than they reported post-operatively.

Other past research into this issue examined the impact obesity has on receipt of healthcare. Olson and colleagues⁹ enrolled 310 women, 81% of which were nurses, to complete questionnaires aimed at examining whether or not concerns about their weight had ever resulted in them delaying receipt of health care.⁹ Of note, only 11% of study participants were mildly obese, deemed by the study as a BMI of 25-26.9, 24% were obese with a study defined BMI of 27-34.9, and 4% were very obese with a BMI >35. Results showed that participants with greater BMIs reported delaying medical visits with their physician due to embarrassment about body weight more than participants with

normal body weights. While this study is a highly specific sampling of healthcare workers, it did lay important ground work into the field, showing that obesity may have an effect on healthcare delivered to obese persons. In fact, one might argue that the highly educated nature of this patient population, nurses who understand the consequences of delaying medical care, would be well equipped to overcome the embarrassment of weight related issues, and seek care more often than the general overweight or obese population⁹.

As past research has pointed to, an important concern regarding weight bias in the health care field is not only the emotional toll this can take on patients, but also the effect it may have on their health. In order to uncover possible weight bias within the medical community and its affect on the quality of care delivered to obese patients, this systematic review was conducted examining original research aimed at answering this question.

METHODS

Studies published in the last 12 years examining bias against obese patients within the medical community were included. Studies varied in their focus of weight stigma in healthcare by examining the issue from patient perspectives, physician perspectives, physician and patient perspectives, and differences in procedures and testing received between obese and non-obese patients. All of these foci are important components of examination into a policy driven area. Case-controlled studies comprise the entirety of the research included within this systematic review. A large majority of these case-controlled studies are retrospective analyses, but despite the recall bias they carry, their

findings are relevant to this review and provide important data. Meta-analyses and case reports were excluded from this systematic review.

An in depth search of the literature published over the past twelve years was conducted on the MEDLINE, Google Scholar, and ISI Web of Science databases using the following search terms: obesity, weight stigma, quality of care, and bias. MeSH terms were selected where appropriate and permitted by the search engine. Studies were also obtained and chosen for inclusion through appraisal of research cited within the studies retrieved. Three studies were included in the background information rather than the analysis, due to the publication years falling beyond the past twelve year window as specified in the inclusion criteria.

Inclusions/Exclusions

Inclusion criteria also required that studies were from English language publications and enrolled only adult participants. Exclusion criteria were defined as any studies which had a focus beyond weight stigma or quality of care delivered to obese patients. Therefore, any study that also looked at the etiology, pathology, or treatment of obesity was excluded. With the application of these inclusion and exclusion criteria, nine studies were included out of the original fourteen located (see Table 1).

The Jadad scoring method was not used, due to the difficulty in behavioral research including randomization and blinding as a part of their study design.

RESULTS

This systematic review summarizes nine articles focused on the topic of weight stigma. All of the articles reviewed are classified as case control studies. Studies

reviewed examine this topic from the provider perspective, patient perspective, and from comparison of the provider and patient perspectives.

Provider Attitudes Towards Obese Patients

Foster and colleagues¹⁰ examined the topic of weight stigma by evaluating 2500 physicians, in two US geographic locations and asking them to complete a questionnaire, developed by the authors, focused on ascertaining their beliefs and attitudes towards obese patients. The questionnaire focused on assessing the physician perceptions of the following areas: causes of obesity, attributes of obese individuals, beliefs about obesity treatment, weight loss outcomes, and the relative efficacy of obesity treatments.¹⁰ The first area asked physicians to prioritize eleven listed causes of obesity, covering biological, behavioral, and other contributing factors. Analyses of this section showed that physicians rated inactivity as the greatest contributor to obesity, with overeating and high fat diets in close second.¹⁰

. In another area of the questionnaire, physicians were asked to use a Likert-type scale to attribute nine items, such as “neat” versus “sloppy”, as characteristics of obese patients. Obese patients were regarded by half of the physicians as awkward, unattractive, ugly, and non-compliant. However, only 37.4% of the physicians reported that they had negative reactions towards the appearance of obese patients when asked directly in a later section of the questionnaire. This later section also assessed physician beliefs regarding patient weight loss potential, provider feelings of competency in obesity treatment, and barriers to treating obesity. Almost half of physicians, 49%, reported feeling competent when prescribing weight loss programs for obese patients. Only 7.5% of physicians reported having difficulty in feeling empathy for obese patients. A mere

9.1% of physicians reported feeling uncomfortable when examining an obese patient. A majority of physicians, 54%, reported that lack of appropriate reimbursement caused them to spend less time on weight management issues with their patients. However, results also showed that 85% of the physicians felt it was an obligation to educate obese patients on the health risks associated with obesity. A weight reduction of 10% was believed to result in positive health effects by 75% of the physicians.

Physicians' perceptions of successful weight loss outcomes were captured by asking them to define an ideal weight, successful weight, and acceptable weight for an obese patient in a case scenario. Physicians chose all three categories as acceptable weight loss with ideal, successful, and acceptable weight loss BMIs reported as 23, 27, and 29. Another portion of the questionnaire asked physicians to compare the efficacy of obesity treatment to treatments for ten other common chronic conditions using a three-point Likert scale. A majority of the physicians reported that treatments for other chronic conditions, such as asthma, were felt to be far more effective than obesity treatments. Additionally, cigarette smoking, alcoholism, and drug addiction treatments were the only other conditions deemed to be equally or less effective than obesity treatment by a majority of physicians.

A study conducted by Hebl and colleagues¹¹ examined physician attitudes towards obese patients through chart review simulation, a commonly performed task before the start of an office visit, following which, physicians completed a questionnaire focused on ascertaining attitudes formulated towards the patient.¹¹ Participants were comprised of 122 primary care physicians, 90 males and 30 females (2 unidentified), who were blinded to the focus of the study. Participants were informed that the purpose

of the study was to collect general impressions physicians form about a patient following initial chart review prior to an office visit, nor were they informed that the case scenarios did not represent real patients. Physicians were presented with one mock patient, who had one of three possible BMIs, defined as average weight, overweight, or obese. Each BMI was represented by a male or female patient and all patients were listed as having a chief complaint of migraine headaches. Physicians were asked to then complete two questionnaires following the chart review. The first questionnaire, the Medical Procedures Form, required physicians to mark various tests listed that they would order to evaluate the medical condition of the patient. Results from this questionnaire showed that physicians ordered more testing for obese patients compared to average weight patients. However, testing commonly used to monitor obesity related health risks, such as cholesterol or serum glucose levels, were not ordered more often for obese patients. More referrals were made for psychological counseling with obese patients. Only 42% of physicians reported that they would have addressed weight loss with obese patients.

The second questionnaire, the Patient Follow-up Questionnaire, asked questions regarding the attitudes and impressions the physician formulated about the patient following chart review, as well as how much time the physician would spend with the patient. Results provide evidence of negative attitudes towards obese patients among physicians, deeming them as less healthy, worse in taking care of themselves, less self-disciplined, and needing stricter medical advice. Physicians reported that obese patients would cause them to enjoy their job less, feel the visit was a greater waste of their time, have less patience, possess less of a personal desire to help the patient, and have less positivity overall toward the patient. Physicians also were found to spend less time with

obese patients compared to non-obese patients with a reported 31.1 minutes spent with average weight patients, 25.0 minutes with overweight patients, and 22.4 minutes with obese patients.

Do Providers Who Specialize in the Treatment of Obesity Hold Bias Towards Obese Patients?

Teachman and Brownell¹² examined providers who specialize in obesity treatment, for evidence of weight bias.¹² They argue that a majority of prior studies has only examined explicit beliefs and attitudes, which are those that are held consciously. The goal of this study was to examine implicit beliefs and attitudes, which are held outside conscious awareness, and occur automatically. The study utilized the Implicit Association Test (IAT), which measures the reaction time of automatic memory-based associations. The IAT requires a participant to classify a group of words into subordinate categories. A specified task is given only 20 seconds to complete, and thereby is believed to bypass conscious thought processes, allowing one to uncover implicit beliefs and attitudes. The reaction time was a dependent variable, as a person's implicit beliefs have been shown to be classified more quickly than those that are not held implicitly. Teachmen and colleagues¹² measured automatic associations with 'fat people' and compared these to automatic associations with 'thin people'. They enrolled 84 health professionals, who were identified through attendance at a Continuing Medical Education (CME) meeting focused on obesity, which was sponsored by a pharmaceutical company. The study participants were comprised of physicians, nutritionists, pharmacists, and "other health care professionals". A large majority, 71%, of the health care professionals were men. The first page of the IAT asked participants to classify words listed in a

category, with target and attributes being listed on both sides of the column. The first page listed categories in a manner that coincides with expected negative automatic associations, while the second page listed categories in a manner that contradicted the expected negative automatic associations. By comparing the reaction times of the first and second pages, the implicit beliefs could be ascertained. An additional questionnaire was administered to ascertain explicit beliefs and attitudes towards obesity, by asking participants to “rate their feelings about ‘fat people’”. Demographics were collected from study participants through completion of an additional questionnaire. Findings provide evidence of an implicit anti-fat bias among health professionals, as participants categorized more items correctly when ‘fat people’ was paired with negative attributes. Results of the explicit beliefs and attitudes testing showed that health care professionals did not categorize ‘fat people’ as ‘bad’. However, they did categorize ‘thin people’ as ‘motivated’ more often than they did ‘fat people’ ($p=0.001$). When comparing the explicit and implicit beliefs and attitudes, results showed that ‘bad/good’ and ‘lazy/motivated’ terms were positively correlated when measured explicitly ($p < 0.006$). These same terms showed only a weak correlation when measuring them in regards to implicit beliefs, with a p value of >0.10 . However, a significant correlation was found between ‘lazy/motivated’ explicit and implicit beliefs. Analysis of age and sex, showed no difference with implicit and explicit beliefs. Further analysis of participant BMI found that increasing BMI among providers resulted in a strong correlation to lower self-reported anti-fat bias ($p=0.06$), but was only weakly correlated to lower implicit anti-fat bias ($p= 0.09$).

Another component of the study aimed to compare anti-fat bias among providers specializing in obesity treatment with that of the general population.¹² The authors hypothesized that physicians would have less implicit anti-fat bias compared to the general population. The sample group used to represent the general population was obtained from a prior study, where participants were enrolled and completed the IAT and explicit belief tasks, identical to the tasks given to the health care professional groups. The general population group underwent the study testing while on a beach in Connecticut. The groups were equally matched for sex. Age was not matched between groups, with the general population sample having slightly younger men. The results showed that implicit anti-fat bias was significantly higher in the general population compared to health care professionals ($p < 0.05$). The authors purport that their findings provide evidence of an implicit anti-fat bias among health care professionals.

Patient Perspectives on Provider Attitudes Towards Obese Patients

Wadden and colleagues¹³ examined weight stigma from the perspective of the patient. The patient's impression of the physician attitude towards obesity was analyzed by enrollment of 259 women who were identified by their concomitant participation in other weight related studies at the local University of Pennsylvania's Weight and Eating Disorders Program.¹³ Within this study population, 96% of participants had self-referred to the Weight and Eating Disorders Program. Weight and height data were obtained from measurements performed by study staff. Wadden and colleagues developed a "Health Care Questionnaire" focused on collecting satisfaction ratings regarding various aspects of participants' health care in relation to their weight. The questionnaire underwent item-retest reliability and was found to have strong reliability coefficients. Participants were

also asked to complete a Beck Depression Inventory II (BDI II). Wadden discovered that patients were satisfied with the medical care they received from their primary care provider for their general health. When compared to the satisfaction ratings for the care received in relation to their weight, satisfaction ratings were significantly lower ($p \leq .001$). They found that increased symptoms of depression, as marked on the BDI II, resulted in greater dissatisfaction ratings with health care related interactions related to weight. Findings also showed that 45.5% of patients did not rely on their primary care provider for weight management issues. A related finding showed that 44.8% of patients reported their primary care provider had never prescribed them any of the 10 weight control methods listed on the questionnaire. The weight control methods listed were as follows: diet plan, commercial program (i.e. weight watchers), medication, readings, exercise plans, controlled energy diet, eating habits, dietitian, exercise instructor, and other commercial programs. When asked if they had ever experienced negative weight related interactions with physicians in their lifetime, 80% of patients responded they had not. Additionally, 80% also reported they had not been upset by comments physicians made regarding their weight and did not feel that physicians criticized them for not trying hard enough. From these results, the authors surmise that women do not feel subjected to weight bias by their providers. However, their results do show that women report less satisfaction with their weight related health compared to the health care received for their general health issues.

Kaminsky and colleagues¹⁴ also examined weight bias as viewed from the patient perspective. They enrolled 40 morbidly obese patients, who had recently undergone weight loss surgery, to complete questionnaires regarding attitudes of physicians and

hospital personnel towards them before, during, and after their surgery.¹⁴ The study also examined how patients felt about the appropriateness of medical equipment for their size and comfort. The mean time from surgery and time to completion of the questionnaire was 9.5 months, and average weight loss at the time of questionnaire completion was 42.8kg. Findings showed that patients felt their weight had no effect on their primary care providers attitude or judgment. A majority of participants reported that their primary care provider was supportive of their weight loss surgery, with only a reported 20% opposed to it. Patients reported that equipment was inadequate, including exam tables, gowns, blood pressure cuffs, scales, and chairs. Gowns and chairs received the worst ratings, reported as “inappropriate” for size and comfort. An area was provided on the questionnaire where patients were prompted to fill in comments. Some patients reported unfortunate and embarrassing events such as “exam tables tipping”, and gowns which provided little coverage.

Patients also appraised the level of support and comfort they received from specialists they were referred to for evaluation and preparation of weight loss surgery. These included Gastroenterology, Pulmonology, Orthopedics, and Sleep Apnea medicine specialists. Gastroenterology and Pulmonology received the highest ratings of support. In general hospital staff was reported as supportive, and received high marks. However, dietary staff received the worst grade of in hospital staffing, with negative remarks made by 37.5% of the participants.

Drury and Louis¹⁵ examined BMI, self-esteem, attribution for weight, and satisfaction with medical care to determine if these factors had any effect on women delaying or avoiding health care.¹⁵The study was conducted using a sample of 216

women who were recruited through advertisements with five local churches in the Las Vegas area. The study population was comprised solely of women, 80% of which fell within the age range of 30-59. The majority of the women in the study, 94.2%, deemed themselves to be in good health, and 84.2% had health insurance that covered “check-ups”. Only 34% of the women in the study population were obese. The authors cite literature supporting their claim that the proportion of obese women within their study population is equivalent to the proportion of obese women in the general population, and therefore is a representative sample. Of note, height and weight were self-reported on the questionnaire. Also of note, 87% of the women in the study reported that they believed preventative health care to be an important part of medical care. Questionnaires were dispersed during church meetings. The questionnaire utilized in this study was developed by Packer and assessed the women’s perceptions of current health status, frequency of medical care received, reasons for seeking or avoiding medical care, satisfaction with the medical care they received, self-esteem, attribution for weight, and demographic data. All questions were asked in reference to two differing time frames, “ever” and “in the past 12 months”. Study findings show that among the obese women, increasing BMI had a direct correlation with an increase in the delay or avoidance in seeking health care within the past 12 months ($p=.01$). In addition, 34% of the obese women reported that they had delayed or avoided health care due to “weight gain since the last health care visit”. Another 26% of the obese women reported that they delayed or avoided health care due to “not wanting to be weighed on a provider’s scale”. The greatest factor in deterring obese women from seeking health care was knowing that they would be “told to lose weight” at that their health care visit.

Within the group of women classified as morbidly obese, 1/4 reported that they would delay health care to avoid “undressing in the provider’s office”, a common requirement for the physical exam. Self-esteem was not found to have a significant correlation with delay or avoidance in seeking health care. Of note, the women in this study were found to have a high self-esteem, on average receiving 40/50 points on the questionnaire for self-esteem ratings. In general the women were satisfied with the medical care they received, with a mean of 33/60 points received for health care satisfaction. A positive direct correlation between women’s perception of their and weight-related reasons for delaying or avoiding health care was seen with not only obese participants, but with normal weight participants as well. The authors report this finding as providing evidence that perception of weight, not just actual weight, affects a person’s decision in whether to delay/avoid seeking health care.

Examination of Both Physician and Patient Perspectives of Provider Weight Stigma

A more recent study, published in September of 2009, by Huizinga and colleagues¹⁶, examined the issue of weight stigma by assessing both the provider and patient perspective.¹⁶ The study was a retrospective analysis using data from the Patient-Physician-Partnership Study, a randomized-controlled trial aimed at improving patient and physician communication. Questionnaires were completed following an office visit by both patient and physician, and questions were designed to elicit attitudes and impressions formed during the visit. The primary outcome was physician respect for the patient. Study findings demonstrated that physicians reported lower respect for patients

with higher BMIs. A significant correlation was found between BMI and physician respect for the patient, with a *p*-value of 0.039.

Quality of Health Care Received by Obese Patients

Fontaine and colleagues¹⁷ tackled the matter of subjectivity surrounding the weight bias issue in healthcare by choosing to approach the topic through examination of solid end points. They examined the differences in preventive services received between obese and non-obese patients.¹⁷ The data were obtained retrospectively from the 1992 National Health Interview Survey (NHIS) and Cancer Control and Health Insurance supplements conducted by the National Center for Health Statistics of the Centers for Disease Control and Prevention. BMI and height data were self-reported and covariate analyses were performed for the following socioeconomic and health risk factors: age, race, family income, education, smoking status, and health insurance status. These covariate analyses were performed to account for factors that might affect the number of annual physician visits. Fontaine and colleagues chose to examine the number of physician visits within the past year and the interval since the most recent mammography, clinical breast exam, pap smear, and gynecological exam. Data from this study showed that increasing BMI resulted in an increased number of physician visits. Delays were found in receipt of the clinical breast exam, gynecologic exam, and pap smear with increasing BMI. However, no delay in mammography was noted to occur with increasing BMI.

A similar study, performed by Ostbye and colleagues¹⁸, examined the difference in quality of care received by obese patients through analysis of the rates of three preventive services received in relation to varying BMI.¹⁸ The three preventive services

evaluated included the influenza vaccination, pap smear, and screening mammography. This was also a retrospective analysis and data were obtained from the Health and Retirement Study (HRS) and the Asset and Health Dynamics Among the Oldest Old Study (AHEAD). Data were also obtained from self-reported weight and height measurements. Other comorbid conditions were accounted for in the study analysis, but were also collected via self-report. The mean age range of the AHEAD study was 70-74 years old and the HRS study did not include anyone under the age of 50 years old. The study found that as BMI increased, the rate of receipt of all three preventive services decreased. The highest class of obese patients, class III, had the lowest incidence of screening mammography. This trend was only found among white participants, and did not hold true for African American participants. The following socioeconomic and health risk factors were found to correlate with increased receipt of preventative health services: exercise, currently married, insured, higher income, greater number of physician visits per year, and higher education.

DISCUSSION

Weight bias among physicians has been evidenced by assigning such negative characteristics to obese patients as “awkward”, “unattractive”, “ugly”, and “non-compliant”.¹⁰ Despite assignment of such negative character terms, only a small percentage of these physicians reported experiencing difficulty in feeling empathy or having a negative reaction to the appearance of obese patients. Physicians also claimed that they did not feel uncomfortable when performing the physical exam on obese patients. The paradoxical nature of these self-reports point towards unawareness among physicians of their weight bias. Another plausible explanation for inconsistencies in the

physicians self-reports is a possible awareness of expected compassion among health care providers, and subsequent denial of negative views held towards obese patients.

Maintaining negative views of obese patients would likely cause difficulty in inciting feelings of empathy towards these patients.

Further discord in physician beliefs is apparent with 49% of participants reporting that they feel competent in prescribing weight loss programs. Physicians also report that if financial reimbursement were more appropriate, they would spend more time on weight management with their patients. Even more stunning, 85% report that they feel it is their “obligation” to educate obese patients on the associated health risks of obesity. And yet, from their prior reports, it is clear that they fail to deliver this education, according to them, due to lack of reimbursement. In spite of these issues, they continue to esteem themselves as “competent” in prescribing weight loss programs. Despite their feelings of competence in this area, they also recognize that weight loss treatments are highly ineffective. They appeared educated on, and agreed with, data showing a 10% reduction in weight can have beneficial health effects. Physicians were found to have reasonable expectations of weight loss outcomes, as ideal, successful, and acceptable weight loss were reported with BMIs of 23, 27, and 29.

While the findings of this study lend support toward the hypothesis that there is weight stigma among health care providers, it fails to illicit the critical issue of whether one’s attitudes or beliefs will manifest in actions towards the patient and affect medical decision making. The study also fails to assess whether obese patients are able to perceive the weight bias these physicians maintain towards obesity. Failing to assess the relationship between interpersonal beliefs and outward interactions leaves a large gap in

the study, which should be addressed in future research. Examination of the interaction between the physician and patient, as well as investigation of the patient's perceptions, would lend further validation to data. Other limitations of the study include an inappropriately matched physician sampling, with women representing only 37.4% of the study participants.

Further evidence of weight bias among providers was demonstrated by a study conducted by Hebl and colleagues¹¹, best exemplified by physicians reporting obese patients would cause them to enjoy their job less.¹⁹ Not only did this study further support weight stigma among providers, but it provides evidence pointing toward the translation of weight bias among providers into decreased quality of healthcare delivered to obese patients. This was demonstrated by the decreased amount of time physicians reported spending with obese patients. Interestingly, one would suspect the opposite effect, with obese patients requiring more time to manage the additional complex medical issues associated with obesity. It is easy to extrapolate from this data that a shortened office visit will likely result in a poorer quality of health care delivered to obese patients. However, there are some limitations of this study, including the some ambiguity in the case scenario and questionnaire completion process. Physicians were told that all simulated patients were being seen for evaluation of migraine headaches. The authors state that this was chief complaint was chosen due to the unrelated nature of migraine headaches with obesity, as per advice received from their physician consultants. Therefore, when physician participants completed the "Medical Procedures" questionnaire, it is possible that they marked tests ordered to evaluate a migraine headache, leaving obesity out of the evaluation as that was not the chief complaint. With

our current state of health care, office visits are commonly limited to fifteen minutes, leaving no time for evaluation of any other medical issues outside of the chief complaint. Due to the brief time allotted for office visits, obesity is often addressed at the yearly physical exam. Later studies have shown that physicians spend less time addressing weight management issues due to lack of adequate financial reimbursement.¹⁰ It is unclear if the “Medical Procedures” questionnaire instructed physician participants to complete the form with reference to all of the patients’ medical problems, or solely based on evaluation of the migraine headache.¹⁹ With the lack of clarity in instructions, the authors’ criticism of physicians failing to order obesity related examinations and results showing that physicians ordered non-obesity related testing more frequently with obese patients, is void and based on skewed data.

Another limitation of the questionnaires used by Hebl and colleagues¹⁹ are the potential differences in physician report if asked to complete the same questionnaire based on one of their own obese patients, rather than a simulated patient. A physician-patient bond, as often formed in primary care medicine, may be responsible for physicians associating positive characteristics towards obese patients. Future studies should be directed at examining these areas with reference to real, rather than mock, patient visits.

Teachmen and Brownell’s work exploring implicit and explicit bias among health care providers toward obese patients offered a new and unique way of examining this issue.¹² All other studies in this systematic review measured only explicit attitudes and beliefs, and therefore do not provide insight into biases providers potentially hold on a subconscious level. In an era where use of politically correct terminology is rapidly

becoming the norm, providers may be unwilling to admit prejudice they hold toward a group of patients on a questionnaire. Additionally, there is an ever growing awareness of disparities in health care, often examined under the spot light of the political stage, and those inflicting the disparity are not well received in society. Providers may not want to admit any bias toward obese patients, as this would cause them to evaluate any disparities in the care they deliver to their patients. The combination of these factors may result in health care professionals' inability to recognize, or even admit to themselves, the bias they hold against obese patients.

With a provider population comprised of health care professionals specializing in obesity treatments, the study also aimed to uncover weight bias among this specialized group. Evidence of anti-fat bias among this group of health care professionals was shown, while shown to be less than anti-fat bias among the general population, it is nonetheless alarming. However, one limitation of the study is the failure to assess how anti-fat bias affected the quality of health care that these providers delivered to their obese patients. It is unclear if these beliefs manifest in one's actions. A plausible argument can be made that the conscious mind overrides these prejudices, keeping them from appearing in our actions. Interestingly, the authors of this study comment that "wishing to be unprejudiced and consciously feeling no bias does not make us immune to negative social messages".

The study has multiple limitations, one, of which, is the failure to have a gender matched sampling of health care providers. An even more troubling limitation is lack of transparency in the process used by the authors to determine the health care providers were specialists in obesity treatment. The study outlines that the conference attendees

were reported to have received invitations from a pharmaceutical company, who sponsored the conference, and targeted those providers who were likely to prescribe obesity treatments. However, what constitutes an “obesity specialist” is not defined. There is also no mention of possible financial incentives for providers to attend the conference, which could create a bias in the study, as this would not provide a representative sampling of health care providers specializing in obesity. Another important study limitation was the lack of demographic matching between the general population and health care provider groups. Not only did they fail to match demographic data, IAT tasks were conducted in entirely different environments, a pharmaceutical conference and a beach. The latter of the two environmental settings is likely to cause a study participant to lose focus, skewing data and subsequently negating validity of study findings. In spite of the study limitations, it provides important data pointing towards potential anti-fat bias at the subconscious level among health care providers. Focusing on helping providers to uncover anti-fat bias they maintain may be an important first step in ameliorating weight stigma within the health care field.

The study conducted by Wadden and colleagues¹³ sheds interesting light to the effects weight bias can have in health care. While women in this study did not report negative interactions with their physician regarding weight, 45.5% also reported they do not rely on their health care provider for weight management. Close to half of the women, 44.8%, reported that physicians had never prescribed any of the 10 commonly listed weight loss treatments. The lack of discussion about weight loss at visits with physicians may account for participants’ denial of negative weight-related interactions with physicians. Findings showing patients are choosing to not seek advice from their

health care providers regarding weight management issues elucidates a disconnect in the provider- patient relationship. This break down may be playing a significant role in the high weight loss failure rates among obese patients. Further research into this area is needed, and may help shed light on how providers can become more effective in assisting patients with weight loss.

While this study provides important findings, they cannot be applied to obese patients across the board, as 96% of study participants were women who had self-referred to the Weight and Eating Disorders Program. Study results are based on a sub-set of obese patients, who are highly motivated, and able to seek out assistance. This is not a representative sampling of obese patients, as many do not seek out such programs due to frustrations and feelings of despair stemming from prior weight loss failures. Other important factors that prohibit obese patients from participating in weight loss programs are the financial difficulties, as these programs are often costly and not covered by health insurance. Further examination of the dissimilarities among study participants and obese patients who have not self-referred to a weight loss program should focus on why the women who self-referred chose to do so. Is there a strong difference in their attitude towards obesity than the general population of obese patients? Understanding these differences might help providers understand how to promote these attitudes in other patients and provide better weight loss support.

Kaminsky and colleagues¹⁴ report that morbidly obese patients generally feel support by their primary care physicians in their pursuit of weight loss surgery. The study states that a comparison is made between physician treatment before, during, and after weight loss surgery. However, the time frame patients were asked to reference in

grading the supportiveness of their primary care physician prior to undergoing bariatric surgery remains unclear. Therefore, it cannot be concluded that the study participants' primary care physicians did not have weight bias towards them earlier on in their care, especially prior to making the decision to undergo bariatric surgery. Physicians may be more supportive of patients who decide to undergo bariatric surgery, as this a known effective treatment for obesity. Physicians who have an aversion to the appearance of obese patients, as reported in the study by Foster and colleagues¹⁰, may be more likely to exude a supportive attitude for a treatment that diminish their aversion to the patient.

The study finds that the specialists whom patients were referred to received the highest ratings of supportiveness.¹⁴ However, the authors do not take into account the financial incentives specialty physicians have to provide satisfactory care to morbidly obese patients. The financial incentive of maintaining a patient panel of bariatric surgical candidates may promote the outward appearance of compassion among these physicians, but does not necessarily imply they do not hold a weight bias. It is apparent from the findings that patients do not perceive a weight bias among these specialists.

One unique aspect of the study by Kaminsky and colleagues¹⁴ is the examination of the appropriateness of medical equipment for morbidly obese patients in the medical community. The study provides evidence that there is a lack of comfortable and appropriately sized medical equipment as perceived by morbidly obese patients.¹⁴ This simple and relatively inexpensive problem to fix epitomizes the lack of respect, as a whole, the medical community conveys to obese patients. Obesity is a medical condition, and should be treated as such, with appropriate accommodations made for patients comfort and care. Yet, a vast majority of offices and health care facilities fail to provide

adequate and comfortable equipment for obese patients, lacking even something as simple as an appropriately sized chair.

Drury and colleagues¹⁵ showed that obese women delay health care more due to weight related concerns. They also found this effect extended to normal weight women, showing that not just obese patients have a fear of being subjected to provider weight stigma. These findings also lend support to the study by Wadden and colleagues,¹³ where women reported they did not rely on their health care provider for weight management assistance. Further research should focus on how providers can approach weight management with patients in a positive and supportive manner.

The study by Fontaine and colleagues¹⁷ provides data that substantiates the claim that obese patients receive sub-standard quality of care compared to non-obese patients¹⁷. Results showed lower rates of clinical breast exam, pap smear, and gynecological exam receipt with increasing BMI. Interestingly, increasing BMI was also correlated with an increase in number of physician visits per year. Ostbye and colleagues¹⁸ also examined this issue using preventive services as a measure of quality of care. Their results support the work by Fontaine and colleagues, showing that as BMI increased, receipt of preventive services decreased.¹⁸ In Fontaine's study, it remains unclear if the office visits, which were higher in frequency among obese women, were spent managing other co-morbid conditions, leaving little time for preventive services, and ultimately causing them to be ignored. Or, were these women more embarrassed to undergo procedures requiring exposure, often invoking feelings of vulnerability. Ostbye¹⁸ also fails to elucidate the reasons patients or physicians have for failure of receiving the preventive services. The question remains unanswered and further research should develop questions

which ascertain the reason patients and physicians give for the failure in receiving these preventative procedures.

One important limitation of all studies reviewed were the lack of a standardized questionnaire to assess weight stigma. With no standard to follow, researchers are left to develop their own variation of a questionnaire, as evidenced in the plethora of variations seen in all studies analyzed within this review. A standardized scale would bring continuity to this research topic, allowing for further validity of study results. It would also insure that medical language was used where possible, eliminating persuasive language found among some questionnaires, and ultimately leading to more accurate data collection.

A group of limitations were noted to be a common theme among a majority of the studies analyzed within this review. One, of which, was the use of self-reported weight and height data among patients and physicians within the study populations. The lack of validated height and weight measurements introduces potential error to the data, and represents a confounding factor in the impact of the results. In addition, lack of diverse ethnic group representation in the study populations presents another limitation. The common trends of weight stigma among providers noted in these studies may not be applicable to other ethnic groups, as cultural differences may impact attitudes towards weight for the patient, as well as the provider. A similar limitation is the predominance of women in sample populations. Findings may not apply to men, who are subject to different social norms than women with regards to weight. In order to uncover all aspects of weight stigma among providers, further research needs to focus on inclusion of study populations which represent all ethnic groups and sexes equally.

CONCLUSION

All studies reviewed provide converging evidence that obese patients receive a sub-optimal standard of care compared to their non-obese counterparts. Evidence collected over the past twelve years continues to document negative attitudes towards obese patients among health care providers, ultimately affecting their quality of health care. While there has been a plethora of research into the etiology of obesity and possible treatments, with some important discoveries, there continues to be fewer research endeavors into the psychosocial aspects of obesity, including weight stigma among providers. Further research and development is needed into programs aimed at educating providers in methods to overcome weight bias and effectively handle the challenges they face in managing obesity among their patients. Some groups, for example, The Rudd Center for Food Policy and Obesity, have conducted important work in the amelioration of weight stigma among providers through development of Continuing Medical Education. These CME courses focus on helping providers to identify weight bias they may hold, and secondly, perform workshop tasks aimed at educating the provider on how to overcome this bias. Future medical education should focus on teaching not only the pathology of obesity, but in methods to identify and overcome one's own bias toward obese patients. These efforts, along with continued research, are needed to close the gap in the healthcare disparity that currently exists between obese and non-obese persons.

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TABLE 1: SUMMARY MATRIX

Article Title/Author/Year Published	Patients/ Population	Intervention	Comparison	Outcome	Study Type	Comments
Exploring the association between body weight, stigma of obesity, and health care avoidance. Drury, C.A.; et al (2002)	216 women recruited from church sites; both obese and non-obese participants included	health care utilization and BMI relationship among obese women	health care utilization and BMI relationship among non-obese women	overweight and obese women utilize health care less often than non-obese women	Case Control Study	
Body weight and health care among women in the general population. Fontaine, K.R.; et al (1998)	6981 women ages ≥ 18 yo; both obese and non-obese participants included	Preventive Services: screening mammography, gynecological exam, papanicolaou smear, and clinical breast exam	receipt of preventive services among obese vs. non-obese women	obese women received a lower rate of clinical breast exam, pap smear, and gynecological exam compared to non-obese women; however no difference in mammography between the two groups	Case Control Study	data used from prior studies: Cancer Control Health and Insurance Supplements of the 1992 National Health Interview Survey
Primary care physicians' attitudes about obesity and its treatment. Foster, G.D.; et al (2003)	620 physicians in 2 differing geographical locations	Physician attitudes towards obese patients	physician attitudes towards non-obese patients	Physicians had more negative attitudes towards obese patients	Case Control Study	
Weighing the care: physicians' reactions to the size of a patient. Hebl, M.R.; et al (2001)	122 primary care physicians	Physician attitude toward patient size	attitude toward obese vs. non-obese patients	physicians had increased negative attitudes towards obese patients	Case Control Study	Physicians were blinded to the question being studied

Physician respect for patients with obesity. Huizinga, M. M.; et al (2009)	40 physicians and 238 patients	physician respect for the patient	Physician respect for obese vs. non-obese patients	physicians had less respect for obese patients	Case Control Study	data obtained from prior trial focused on physician-patient communication
A study of discrimination within the medical community as viewed by obese patients. Kaminsky, J.; et al (2002)	40 patients who had undergone bariatric surgery; and were pre-operatively classified as morbidly obese	attitudes of health care providers towards morbidly obese patients	none	specialists had less negative attitudes toward morbidly obese patients; primary care providers were generally supportive of bariatric surgery	Case Control Study	
Associations between obesity and receipt of screening mammography, Papanicolaou tests, and influenza vaccination: results from the Health and Retirement Study (HRS) and the Asset and Health Dynamics Among the Oldest Old (AHEAD) Study. Ostbye, T.; et al (2005)	4439 women from the Health and Retirement Study, ages 50-61yo; 4045 women and 2154 men ≥ 70yo from the Asset & Health Dynamics Among the Oldest Old (AHEAD) Study	number of Screening Mammographies, Papanicolaou Tests, and Influenza Vaccinations received over the eight year duration of the study	rates of preventive testing received by obese vs. non-obese patients	inverse dose relationship between BMI and receipt of screening mammography and pap tests among white participants; inverse dose relationship between BMI and influenza vaccinations	Case Control Study	
Implicit anti-fat bias among health professionals: is anyone immune? Teachman, B.A.; et al (2001)	84 health professionals who treat obesity, attendees of obesity conference sponsored by a pharmaceutical company	implicit and explicit attitudes and beliefs among health professionals	health provider implicit and explicit attitudes towards obese vs. non-obese patients	health care professionals held an implicit anti-fat bias, but no significant explicit anti-fat bias	Case Control Study	

<p>Obese women's perceptions of their physicians' weight management attitudes and practices. Wadden, T.A.; et al (2000)</p>	<p>259 obese women recruited from their participation in other obesity trials</p>	<p>satisfaction with health care</p>	<p>satisfaction with health care received for general health vs. obesity related care</p>	<p>Obese women were satisfied with care received for general health, but significantly less satisfied with obesity related care, half of the participants reported that their physicians had never recommended a weight loss method; 75% of the women said they do not turn to their physician for assistance in weight management issues</p>	<p>Case Control Study</p>	<p>height and weight was measured (not obtained via self-report)</p>
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