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The Medical Treatment of Obesity: On the Page & in the Office

Shayla J. Staley
University of New Orleans, shaylajstaley@gmail.com

The Medical Treatment of Obesity: On the Page & in the Office

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Abstract

This paper sought out the causes of weight discrimination in healthcare. Through content analysis of medical journals, the study illuminated several causes. These causes were used to create a concept matrix surrounding the medicalization of fatness that illustrated how these concepts are defined relationally, as well as how they combine to form the medical conception of the "obesity epidemic". The concept matrix carries an indirect influence upon weight stigma that can lead to weight discrimination when fat folks seek out healthcare.

Keywords: Sociology, Fat Studies, Discrimination, Weight, Stigma, Bias, Healthcare, Medical

Introduction

Weight discrimination in the field of medicine has grown in notoriety as a topic of discussion in news media articles and personal stories (Ellin 2020; Friend 2018). I learned about this issue through personal experience, my peers, and through several online videos, wherein women spoke out about their experience of discrimination when they sought out healthcare (Rodriguez 2019; L. Saunders 2019). In terms of weight discrimination, healthcare bias competes with employment discrimination, as the most common place where fat people experience discrimination (Kirldand 2008). Those who have experienced weight discrimination often report seeking medical care for something ailing them and were subsequently gaslit concerning their own body (Friend 2018; Holohan). The healthcare professional directs the conversation to their body size, even if the health issue is entirely unrelated (e.g. the flu) (L. Saunders 2019). This can create serious implications for the health and safety of fat people, who won't have access to the same quality of healthcare as a result of this discrimination. Upon my initial research, I discovered that these incidents were far from anecdotal. Anti-fat bias is proven to exist among medical professionals (Sabin 2012), and many plus-size folks have reported discrimination when seeking medical care (Puhl & Brownel 2006).

Of obese patients who pursued bariatric surgery (i.e. the umbrella term for weight loss surgeries), 13% reported experiencing consistent discrimination from medical professionals stating that they were treated in a "disrespectful" manner (Anderson & Wadden 2004). In a study of 2,560 overweight or obese women, 53% expressed receiving inappropriate comments about their size from healthcare professionals (Puhl & Brownel 2006). It has also been shown that fat people have avoided routine cancer screenings due to perceived discrimination (Mitchell 2008).

This paper seeks to expand the discussion on weight discrimination and explain its existence from a theoretical perspective. Several concepts addressing weight bias are used to illuminate possible reasons for weight discrimination such as the medicalization of fatness and weight stigma. The aim of this project is to use medical journals to analyze the root of weight discrimination in healthcare. What feeds into the mindset of healthcare professionals who are discriminatory towards fat folks? What can prominent medical journals reveal about anti-fat bias, and the origins of its presence in the medical field? To begin answering these questions, this study will perform a content analysis of high impact factor medical journals, seeking patterns in the data that correlate to concepts that create the narrative surrounding the obesity epidemic in the medical field. Once these concepts are established into categories, the content in the data is coded for construction of meaning, and finally attributed to an unconscious bias or belief about fatness, linking the analysis to the approaches introduced in the literature review. This analysis will expose how a system of assumptions regarding fatness is mechanized in reinforcing this harmful narrative.

Literature Review

Weight bias and as a result weight discrimination are rooted in the idea of stigma. A concept expanded upon by Erving Goffman, stigma is "the situation of the individual who is disqualified from social acceptance" (Goffman 1963). Stigma is a means by which society can determine what is “normal” and what’s considered “deviant” (Goar 2019). There are various means by which someone can be labelled “deviant” including physical characteristics and certain behaviors (Goar 2019). Deviancy challenges an established social norm, which results in stigma (process of social discrediting) (Goar 2019). The idea of stigma proposed by Goffman can be applied to weight discrimination. Goffman highlights two types of stigma: “discreditable stigma” involves the concealment of the stigmatized characteristic, meaning it's not obvious or visible to the people an individual may interact with, that is, unless the stigmatizing characteristic is revealed (Goar 2019). “Discredited stigma” involves the exposure of the deviant characteristic or the inability to hide it in the first place (Goar 2019). Fat folks experience discredited stigma. Because fatness cannot be hidden, fat people experience stigma everywhere they go in the social world. In other words, when a fat person goes to the doctor, it follows that because fatness is stigmatized, their doctor is likely to make a certain set of assumptions associated with the stigma of being fat because a fat person deviates from the societal standard of thinness.

Fat studies is a subfield within the discipline of sociology that focuses on the stigmatization of fat people. As a discipline, it tackles weight bias and the narrative surrounding fatness. Theories within fat studies vary greatly. While there is significant discourse on the subject, fat studies scholars seem to come from a collective approach and interpretation on the issue of fatness and its societal significance. Lesleigh Owens (2008) has posited that fat studies

researchers should focus on making fat experience central to research. Other scholars have defined fat studies in terms of what it is not, such as Marilyn Wann (2009), who in the foreword of the *The Fat Studies Reader* has created a list of things that you cannot do if you're doing fat studies, and thusly defines the field by its antithesis or what it is not. She states, "if you believe that fat people could (and should) lose weight then you are not doing fat studies…If you believe that being fat is a disease and that fat people cannot possibly enjoy good health or long life, then you are not doing fat studies… If you believe that thin is inherently beautiful and fat is obviously ugly, then you are not doing fat studies." (Wann 2009). In a paper on the subject, Breanna Fahs (2016) has argued that fat studies should focus on issues such as, "the importance of activism and the challenging of oppression and discrimination against fat individuals; attentiveness to issues of language; problematizing fatness as a medical issue; and placing the actual experiences of fat individuals at the center of research, both in practice and in analysis". "Problematizing fatness as a medical issue" has its roots in the narrative surrounding the "obesity epidemic", and the popular conception that all people who appear to be overweight are inherently unhealthy.

Discrimination in healthcare could be rooted in the aforementioned ideas. Intertwined with discussions around terms like "obesity" and "overweight", is the importance of language to fat studies scholars. According to Cooper (1998), these words are problematic because they are tied to preconceived notions of fatness. Fahs explains this importance claiming, "If 'overweight' is a linguistic symbol of a socially normative category, who has the power to define that category and what does it mean to individuals who are stigmatized by the category and yet had no say in its creation?" (Fahs 2016). Marilynn Wann expands this further by illustrating that "medicalization" actually serves to further stigmatize fat folks as "social untouchables", and the term "obesity" helps to further categorize them into a separate medical category (Wann 2009).

This stigmatization is made worse by the assumption that fat people are to blame/responsible for their "failing health".

Scholarship surrounding discrimination in medical care, suggests that it is a relevant and important problem for fat people. Discrimination when seeking healthcare is "one of the most prevalent types of stigmatizing situations that fat people suffer from" (Wang 2008). In a group of interviews, Anna Kirldand discovered that intolerance when seeking medical care was the most common issue brought up when interviewees were asked about "unfair treatment" (Kirldand 2008). Another study found that healthcare discrimination was comparable to the level of employment discrimination that fat folks experience. In the Puhl and Brownell study, respondents were asked to rate the frequency of stigmatizing experiences. The study subsequently revealed that discrimination perpetrated by doctors was extremely prevalent. However, results of the studies did vary based on how broadly discrimination was defined in the question being asked (Wang 2008). In a paper discussing whether fatness is a feminist issue, Janna L. Fikkan & Esther D. Rothblum (2012) argue that while fat men do experience discrimination it is usually at a much higher weight, while fat women experience stigmatization at lower weights and more frequently than fat men. They also claim, "there is evidence that fat women delay care or avoid certain types of facilities entirely in order to avoid these stigmatizing experiences and yet this impact on the health of fat women has received very little attention" (Fikkan & Rothblum 2012). This also leads to fat women taking on more risk because of the perceived lack of access to health services (Fikkan & Rothblum 2012). Evidence of avoidance of medical care by marginalized groups based on discrimination is cited by other prominent sociologists. One notable example is Brian Tuohy's discussion of institutional avoidance by undocumented folks. He poses that immigrants avoid "public spaces and institutions" out of fear

for the possible repercussions (2017). There is also cited evidence of system avoidance in Sarah Brayne's work, which focuses on individuals with a criminal record (2014). For those who have come in contact with the criminal justice system, there is an aspect of surveillance that sets it apart from other marginalized groups where system avoidance is present. People who have come in contact with the criminal justice system need access to institutional resources in order to help them break free of the cycle of repeated incarcerations, which stems from employment discrimination, that leads to a criminal record. Yet surveillance by these institutions pose a serious threat to their existence (Brayne 2014). Moreover, institutional avoidance compounded with discrimination has been detrimental for health outcomes for fat people, especially fat women. For instance, fat women are less likely to get cervical cancer screenings (Adams et al., 1993; Simoes et al., 1999; Cohen et al., 2007). The same is true for several other types of cancer screenings such as breast cancer and colorectal cancer (Wee et al., 2000; Østbye et al., 2005; Zhu et al., 2006; Mitchell et al., 2008; Ferrante et al., 2006). Linked to these findings is evidence that fat women are more likely to die from cervical and breast cancers than nonfat women (Hunt and Sickles, 2000; Wee et al., 2004; Aldrich and Hackley, 2010). Other studies have cited the impacts of institutional avoidance on the health of fat people as well. Lavoie et al. (2006) discovered a link "between BMI and asthma and quality of life, while controlling for asthma severity, sex, and age" (Lee & Cat, 2016). The authors suspected that this could be attributed to behavioral factors with institutional delay and avoidance of healthcare as possibilities (Lee & Cat, 2016). These studies confirm the presence of healthcare disparities for fat people as a result of institutional delay and avoidance.

In investigating where healthcare discrimination might stem from, I found multiple studies that give plausible explanations or describe multiple origins for weight discrimination.

One such study published in 2012 pointed to anti-fat bias among medical doctors. Janice A. Sabin, Maddalena Marini, and Brian A. Nosek found that implicit and explicit weight bias among doctors is as widespread as its prevalence within the general public (Sabin 2012). While this may account for a large portion of the discrimination fat people experience in healthcare settings, what else comes into play? And what has made anti-fat bias so common?

Theories about the obesity epidemic prove relevant here because, as mentioned above, the medicalization of fatness plays a role in othering and stigmatizing fat people (Wann 2009). The term obesity is hotly contested in terms of its utility and placement, as well as its validity overall. In a paper critiquing popular conceptions and "treatments" of obesity, Esther Rothblum (1999) explores the inaccuracies about weight and dieting perpetuated by the field of psychology through three outlets of information. She posits that diets and weight loss programs have shown to be ineffective over and over again, yet they are still given as a solution or treatment for weight loss (Rothblum 1999). The term "obesity" is defined by the body-mass index (BMI), and the most common term used by the medical field to define fatness. Rothblum explains that studies are often inconsistent and switch between weight and BMI as a measure, which creates inconclusive or inaccurate results about the effectiveness of any given method for weight loss. Rothblum (1999) points to a larger system that generates revenue off of the shame women feel over their bodies. Pulling her source material largely from psychology journals and textbooks, that reinforce the assumption that dieting is a "solution" to obesity, while being critical of "diets" as a whole. The current system seeks to cure a "disease" with a treatment that has been proven to fail repeatedly. Even if the treatment is successful in making someone lose weight, there is no link to any inherent health benefits. For all we know, a person who did not attempt weight loss in the first place may be "healthier" than someone who has lost weight as a result of dieting and

subsequently, gained it back, because this change in weight can have negative impacts on metabolism (Rothblum 1999). These conceptions regarding obesity and how it is treated medically, are what make it one of the most important key terms in my research. Rothblum's work proved to be foundational for how I conducted my project. These sources were helpful in understanding the ways that the medical field defines these terms. The concepts discussed above informed my interpretation of medical journals.

Since the BMI scale is the most commonly used measure of fatness in the medical field, a more expansive exploration into the indexes' history and usage is required. In an article discussing the Body Mass Indexes' uses and downfalls medical sociologist, Iliya Gutin, expounds upon its history describing it as ironic. He says, "Conceptualized by Adolphe Quetelet in *On Man and the Development of his Faculties, or Essays on Social Physics* (1842), BMI is a function of height and mass (mass (kg) / height (m)) whose derivation originates from Quetelet's goal of identifying statistical laws governing the many dimensions of the average man, and how they were manifest in the population". Quetelet never intended for his scale to be used as a standardized measure for "normal" size (Gutin 2019). The index was scarcely used until 1972 when Ancel Keys published a review of methods for measuring body fat percentages that would go on to popularize the measure (Gutin 2019). The BMI's favorability among the medical community was tied to its accessibility. According to Gutin, "Simultaneously viewed as a disease, risk factor, comorbidity, and epidemic, BMI proves versatile as a convenient clinical and epidemiological metric for identifying and monitoring national obesity prevalence" (2019).

In "Re-thinking 'the obesity problem'", Rachel Colls and Bethan Evans (2010) illuminate some of the underlying assumptions about obesity and the BMI. As discussed above, BMI is used as an indicator for obesity as well as an indicator of overall health within the medical field

and elsewhere, despite the fact that these causal connections have been proven inaccurate. Another common misconception is that BMI measures body fat percentage, but in fact, it does not measure body composition at all. This is why those with higher muscle mass can tend to have a high BMI as well (Colls & Evans 2010). Despite all the factors which make BMI an unreliable health measure, it remains one of the most widely used tools for measuring health as it pertains to weight i.e., obesity (Colls & Evans 2010). Another argument posited by Colls and Evans (2010), involves the link between BMI and "co-morbidities" (diseases and health risks linked with high BMI). They point out that the causal link between the two is not airtight. Instead, some studies have shown that lower BMI poses a greater health risk than a higher BMI. Higher BMI has been linked to a greater life expectancy (Colls & Evans 2010). The assumptions asserted above have served as foundations for the majority of medical research on weight and its linkages to health. It turns out that these foundations are shaky at best, and at worst they marginalize and medicalize an entire group of people. The direct consequences of spreading these conceptions have not been fully explored but expanding scholarship on these effects would be a worthwhile endeavor. The universal implementation of the BMI scale as an indicator of obesity makes it a significant measure for answering my research question.

Similarly, problematic is the proposed association between size and health, according to fat studies scholars. They suggest that, culturally, thin bodies equate to "healthy" bodies, as well as "good" and "normal". Different body types are assigned moral categories. In response to this conflation, the Health At Every Size (HAES) was born (Robison 2007). In a paper discussing HAES, Jon Robison (2007) outlines the main points of the movement:

- The naturally existing diversity in body shapes and sizes.
- The ineffectiveness and dangers of dieting for weight loss.

- The importance of relaxed eating in response to internal body cues.
- The critical contribution of social, emotional, spiritual, and physical factors to health and happiness.

Essentially, HAES rejects the idea that one weight is inherently healthier than any other. The movement also refutes diet culture and the idea that if a person is "overweight" or "obese" they should seek to lose weight so they can match a certain body type and appear to be "healthy". HAES is also associated with the Intuitive Eating movement, which involves listening to hunger cues instead of limiting calories or going on a diet program such as Weight Watchers. The linkage between health and size will prove to be an important factor in understanding theoretical approaches to the medicalization of fatness. Ultimately, this context should provide insights for constructing a larger framework of different approaches and shed light on the origins of discrimination in healthcare.

Another approach which could help to answer my research question is the field of medical sociology. If theoretical frameworks for approaching weight existed on a linear spectrum; perhaps on one side would be Fat Studies and the HAES movement, the other side might include the medical field and the arguments suggesting fatness and BMI are tied to health, and somewhere in the middle you might find medical sociology. Medical sociology is often critical of diet culture, and other "treatments" for obesity, but doesn't necessarily take issue with obesity's treatment as a disease. There is discourse among medical sociologists, however, generalizing their views can help place the field within the larger framework of approaches to obesity and weight bias detailed above. Medical sociologists tend to illuminate ways in which social processes can affect health in various ways. Markus H. Schafer and Kenneth F. Ferraro (2011) conducted a study finding that stigma as a result of "obesity" has measurable effects on

health. They claim, “Our results reveal that the social processes of perceived weight discrimination are responsible, at least in part, for the deleterious effects of severe obesity on health” (Schafer & Ferraro 2011). The existence of these health effects provides further evidence that discrimination poses a problem that can have serious health outcomes. This also provides a good example of how medical sociologists approach weight bias. A study in Sweden focusing on the discrimination “obese” respondents experience found that fatness is a “highly stigmatizing” social characteristic (Hansonn 2010). The study also found that “discrimination against severely obese folks in healthcare is the highest among discrimination in any other area of life (workplace, interpersonal, lifetime)” (Hansonn 2010). While the studies above use language that would be considered problematic by fat studies researchers, such as the term “obesity”, their findings still prove relevant for this project.

Methodology: Content Analysis

Since my research question seeks to discover the processes and mindsets that cause weight discrimination in healthcare, my method should reveal several of the nascences and sources that have informed the medical profession and influenced the resultant paradigm and responding approach, adopted by medical professionals as applied to the treatment of their fat patients. Medical journals advise healthcare professionals on current findings relevant to their profession including patient care. By creating a data set of the most cited sources from a medical journal with a high impact factor, several insights can be found to illuminate the construction of ideas that relate to weight discrimination. Concepts surrounding fatness in prominent medical journals have the capacity to indirectly influence doctor-patient interaction by contributing to the narratives surrounding the medicalization of fatness. Analysis of these articles reveals a consensus for defining assumptions and viewpoints that medical professionals use to operationalize and define; diet, fatness, and other key terms. Most of the research I have come across pertaining to this subject used a quantitative approach, such as survey data. Using content analysis for this project provided a different perspective and helped to construct theoretically based results. The content analysis method aided in disentangling these commonly held assumptions in order to explain how these terms are defined separately as well as how they are weaved together to form a network of information surrounding obesity as a disease, and the popular conception of fat people. This network will be referred to as a concept matrix; “a group of interrelated co-occurring concepts that would suggest an overall meaning” (“Content Analysis”).

There are several main components present in assessing commonly held conceptions about obesity and fatness within the medical field. These include the moralization of fatness, the mention of Body Mass Index (BMI), the mention of dieting, and the mention of obesity, and the use of weight as a variable. By separating these into a coding scheme, content analysis revealed how these terms "fit together" like puzzle pieces to create a trend or pattern that addresses the research question.

Like all methods, content analysis has its own benefits and drawbacks regarding this project. Content analysis proves to be a safe method to conduct during the COVID-19 pandemic. It doesn't require any type of one-on-one or group interaction. It is also an unobtrusive method in that it utilizes existing sources ("Content Analysis"). The nature of coding also sheds light on certain patterns that may not be apparent at first glance. Coding allows for statistical analysis of the text in source material that wouldn't be possible otherwise ("Content Analysis"). It also provides insight into certain conceptions and meanings, by looking at the context in which certain words are used by a group of people, in this case the medical field. Additionally, critical content analysis can be a tool for exposing power dynamics and the mechanisms of inequality. According to Beach et al. (2009), content analysis should "focus on locating power in social practices by understanding, uncovering, and transforming conditions of inequality". In this case, content analysis is being used to illuminate possible causes of discrimination by concentrating on the common narrative and associations attributed to fat folks seeking healthcare.

There are also limitations to this method that might call for further investigation regarding this research question. It can miss valuable insights by reducing papers down to whatever they are coded by and lacking nuance ("Content Analysis"). Separating each source into a coding scheme can also miss insights about the study as a whole. Concepts that are established using

more than one sentence in an article cannot be analyzed in this paper because the method used to analyze the relevant concepts involves separating the sources into sentences. Also, a fair amount of researcher interpretation of the journals is involved. This makes content analysis as a method subjective in nature, which can lead to inaccuracies. The results of this paper will inevitably be affected by myself as the researcher and my positioning and perspective of the concepts. I aim to minimize this bias by operationalizing my coding categories in a clear and concise manner. Furthermore, content analysis of medical journals only shows writing from one perspective for the most part. Those working in the healthcare field and contributing to these papers can only show so much. Unlike fat studies, this paper does not center fat perspectives. Since the aim is to explore the sources of weight discrimination through medical journals, it is fitting to center the perspective (the field of medicine) from which the discrimination originates rather than those who experience it (fat people).

Medical journals with high impact factors were researched. Only the journals covering general medicine were included because the research question addresses discrimination in the healthcare industry as a whole and does not pertain to any specific field of medicine. *The New England Journal of Medicine* is a well-respected journal which has the highest impact factor of any collection covering general medicine ("About NEJM"). Impact factor is "calculated by dividing the number of current year citations to the source items published in that journal during the previous two years" ("The Clarivate…"). The search engine on the New England Journal of Medicine was used to create a data set. The key words "BMI OR obesity" were used to narrow down the subject matter to 206 articles. I used these terms because when one of them is included in the article it will cover source material relevant to my research question. These terms provided articles that addressed and constructed meanings around the topics I was looking for. Some of

the studies directly addressed the terms as the focus of the paper, but in other articles the terms were utilized in a more peripheral way. The search was further refined by organizing the articles from “Most Cited” to “Least Cited” to show that these papers are used to construct meaning around weight within the medical field. During the coding process each article was cited, and the number of times they were cited within other articles was recorded. The citing and reference numbers came directly from the article page on the website for the New England Journal of Medicine. The article with the highest number of citations in the data set had 3,866 citations, while the article with the lowest number had 1,124 citing articles. Date of posting was not used to refine the data set. Since all of the studies were over 10 years old, it’s worth noting that all of the articles were published from 2004-2009. Date posted was not a factor in narrowing the data set due to the importance of having the most cited articles. The influence of these articles (measured by number of times cited) was more central to the research question. These articles may not represent the most contemporary findings on how fatness is conceptualized in the medical industry, but they helped to construct the popular narrative in the medical field. Plus, it can be argued that their influence could contribute to the weight bias of doctors who are still treating fat patients.

Several preliminary coding categories were developed to illuminate patterns in the source material. Coding for frequency singled out the terms BMI and body-mass index, obese, obesity, and weight. These categories worked to isolate the concepts in medical papers that were relevant in answering the research question. I recorded the use of these terms in all contexts, in order to create a broad definition that represents the most common patterns in my data. Categories for the content coding portion varied with each term because the categories were developed based on patterns in the data. The relational (content) coding portion of the methods utilized a concept

called “proximity analysis”, which isolates the co-occurrence of specified concepts (“Content Analysis”). These concepts in relation to each other create a concept matrix (defined above).

First, I recorded how often the key terms were used. From that collection, I narrowed my data to the mentions of these terms that served to construct meaning. Initial coding accounted for the frequency with which these topics are mentioned, and secondary coding was sub-categorized for content. Each use of the terms in the preliminary coding categories was coded for frequency; this includes each mention of the word in the article, including graphs or tables of any sort. However, the categories used in the title and references were excluded, as it does not contribute to the content of the paper. During frequency coding each sentence that served to construct meaning about a key term was collected and sorted into a category. Sentences that contained more than one key term were added to both categories. Fifteen of the most cited articles were coded, the most cited ones being the first in the data set. Fifteen was the point at which saturation was reached for the dataset. Upon further exploration of the search results, the patterns found remained the same. Refined coding began with each frequency category. Each sentence was analyzed for any information that served to construct meaning or defined the term in question. For example, in the “BMI” category sentences that aimed at defining, operationalizing, or placing the term in the context of a larger body of knowledge were kept. Sentences that used the term but did not construct meaning were discarded. Further coding categories were based on phenomena present in the content related to each term. The moralization of fatness, as mentioned in the literature review, relates certain body types and weights with being good or bad. For example, a thin body is seen as better, healthier, and more attractive, than a fat body. For the purposes of this project, the moralization of fatness will pertain to any mention of “fat” or “obese” respondents, where they are labelled “unhealthy”, solely based on their weight. The

moralization of fatness is also present when referring to smaller bodies as “ideal”. The Body Mass Index (BMI) scale is often associated with health. High BMI has been linked to negative health consequences in medical studies. Coding for BMI illuminated four common uses of the term, which were translated into the following categories: BMI and mortality, BMI and health risks, the moralization of BMI, and operationalizing BMI. The terms obese and obesity were coded for frequency as well as meaning, because the treatment of this term is the focal point of my research. Both terms proved relevant in collecting data that constructed meaning. Refined coding categories for obese/obesity included: moralization of obesity, treatments of obesity, mortality and obesity, obesity and health risks, operationalizing obesity, public health and obesity, and causes of obesity. Lastly, refined coding for “weight” revealed three approaches in discussing the term: effects of weight loss, the moralization of weight, and weight loss and mortality. Sentences that contained more than one concept in the refined coding categories were added to both.

Once all of the data was consolidated and filed into the refined coding categories. I began analyzing the meanings perpetuated by the common uses of each term, determining whether they relate to the concepts discussed in the literature review and furthermore how they fit into the larger concept of the medicalization of fatness.

Results

Frequency coding revealed that among the fifteen articles analyzed, BMI was mentioned 379 times, obesity was mentioned 215 times, obese was mentioned 202 times, and weight was mentioned 408 times. In totality, these terms were used 1,204 times within the data set.

Results of the refined coding process began with the categories created based on patterns in the data. For the term BMI, four categories were isolated. BMI and health risks involved relating BMI to any health risks including disease and mortality. Cardiovascular risk, risk of cancer, and changes in glycated hemoglobin levels are examples of risks associated with BMI that were presented by articles in the data set. The moralization of BMI is similar to the moralization of fatness (discussed above). The moralization of BMI was coded when there was a direct equation between BMI and a word with a positive or negative connotation. Words like "ideal", "normal", and "optimal" were coded when accompanied by a respondents BMI, or a range on the BMI scale. Operationalizing BMI contained direct definitions used in the articles, as well as how the scale was operationalized. Articles that used the generic definition (the weight in kilograms divided by the square of the height in meters) were discarded from the data set because they did not serve to construct meaning. Of the four categories related to the term BMI, BMI and health risks and the moralization of BMI were the most common concepts. Each of these categories included mentions of the concepts in five different articles. Following that, was BMI and mortality which was mentioned in 4 of the 15 studies in the data set. Lastly, operationalizing BMI was present in 2 articles.

The first category under the terms "obese" and "obesity" was causes of obesity. Studies argued various causes of obesity among them were things like fructose intake and the mutations

in the ob gene. The next category was the moralization of obesity, followed by operationalizing obesity. The operationalizing obesity category explained how studies in the data set defined obesity using BMI and other measures. The treatments for obesity category documented the various treatments discussed in the data set. Examples include bariatric surgery and brown adipose tissue. Mortality and obesity is similar to mortality and BMI, the difference being risk of death is used in relation to the terms “obese” or “obesity”. Health risks and obesity is functionally similar to the category health risks and BMI. The last category, obesity and the public, encompasses the prevalence of obesity and the public health outcomes associated with it, which were often discussed in tandem. This category was one of the most important ones for constructing meaning. Of these categories, health risks and obesity were present in 9 of the 15 studies, mortality and obesity was in 8 of the 15. Treatments of obesity and operationalizing obesity were included in 7 articles. Obesity and the public, as well as the moralization of obesity were discussed in 6 articles.

Categories for the term weight included weight loss and effects, the moralization of weight, and weight and mortality. The latter two function similarly to categories listed above. Weight loss and effects mainly covered the effect of any variable on weight loss, and the longevity of the weight loss. Conceptions around weight loss and its effect were present in 10 of the 15 studies. The moralization of weight, as well as weight and mortality were present in 5 out of 15 studies.

Analysis

In analyzing my results, underlying meanings in each approach to these terms aid in understanding how the usages of the terms apply to the research question. These patterns illustrate trends in construction of meaning and assumptions surrounding weight loss within the medical field that provide some insights as to why discrimination occurs. Coding for frequency is relevant in answering my research question because the number of times a term is used contributes to the content of the overall articles, and it shows relevance as being a heavily used term in one of the most cited studies pertaining to obesity or BMI, published in a medical journal with the highest impact factor in general medicine. It speaks to the term's influence on the medical profession, the term's "impact value". The presence of these convergent factors contributes exponentially to the "impact value" of the specified term, and frequency coding illuminates this multiplying component and aspect of influence. The limitations of the BMI and how it measures size and health, make the frequency coding for BMI and obesity more significant. The use and re-use of these terms serve to normalize and solidify their usage within a larger system of "established knowledge" surrounding weight in the healthcare industry. By contributing to a larger narrative concerning the medicalization of fatness, the prevalence of these terms influences all sectors of the medical field, where they could contribute to weight discrimination. Further investigation on how these terms are used and their underlying meanings is required to understand the impact of their influence.

Observing the similarities between the categories for each term starts to reveal how the concepts surrounding fatness in healthcare are defined relationally. The central concepts present in the data set were fatness and health risks (mortality or disease), fatness and public health, the

moralization of fatness, the operationalization of fatness, and fixing fatness. All of these fit into the concept matrix of the medicalization of fatness that created the "obesity epidemic" and the ideology coupled with it.

Fatness as it relates to negative health outcomes such as risk of disease or mortality, was a concept present in several categories discussed above. Several studies in the data set centered their paper around the correlation between fatness (BMI, obesity, weight) and risk of death/life expectancy. One paper posited, "Our large cohort enabled us to estimate risks of death according to narrow categories of BMI with great precision and to discern not only an elevated risk for most categories of overweight but also substantially enhanced risk among the obese" (Adams et al. 2006). The aim of critical analysis is not necessarily to disprove the posited results of studies correlating obesity and mortality, although BMI has proven to be a problematic measure, but to investigate the underlying assumptions that contribute to the medicalization of fatness. The issue with this study is the implied causation between BMI and health risks (Colls & Evans 2010). These two variables may occur entirely independent of each other, but this article suggests that BMI is the cause of increased risk of mortality, and while this may be accounted for in a medical study, when the association between BMI and mortality disseminates through the medical profession as a supposed "fact", it can generate and reinforce an unconscious bias equating weight to health. This weight bias could manifest itself in weight discrimination in the healthcare industry and elsewhere. This is an example of how common conceptions of weight have become universal, associations were made between fatness and lack of health, and as this information is disseminated to an ever-increasing number of medical professionals, the data is internalized along with the resultant unconscious bias. Unfortunately, this correlation between negative health outcomes and BMI could just as easily be caused by institutional avoidance as a result of

weight stigma. Several studies discussed in the literature review prove the existence of health disparities as a result of institutional avoidance or delay by fat people (Hunt and Sickles, 2000; Wee et al., 2004; Aldrich and Hackley, 2010; Lavoie et al., 2006). The concept of "problematizing fatness as a medical issue", introduced by Breanna Fahs (2019), associated obesity with poor health. However, this concept had the outcome of associating visible fatness to poor health within the common narrative. The association between weight and health within the medical conception of fatness (i.e. obesity) has contributed to the unconscious bias medical professionals carry causing them to make the same association based on weight or the amount of visible fat. This constitutes discrimination because it changes the level of care and consideration a fat person may receive as opposed to the treatment of their thin counterpart in the healthcare industry.

Fatness and public health were discussed less than other concepts in the data set, but when it was discussed, it provided more context regarding the perspective the studies took in defining and studying fatness. Articles in the data set often began by including sources on the prevalence of obesity. One study claiming, "After remaining relatively stable in the 1960s and 1970s, the prevalence of obesity among adults in the United States increased by approximately 50 percent per decade throughout the 1980s and 1990s" (Olshansky et al. 2005). Similar statements were made by four other articles in the data set. Olshanky et al. (2005), took it one step further to position obesity as a threat to public health, and he went on to argue that the World Health Organization's predictions suggesting an increase in overall life expectancy would be prevented as a result of the "obesity epidemic". He also correlates obesity with several other negative outcomes calling it a "danger" to the economy, and the cause of rising healthcare costs. Olshansky is certainly a more extreme example within the data set, but his arguments reveal an

important underlying narrative that is present in all of the articles when discussing the prevalence of obesity. Obesity is not only seen as a spreading epidemic, but it's seen as a threat to public health. Olshansky goes as far as to suggest that it's a danger to the functioning of society, and will counter progress, claiming, "In fact, if the negative effect of obesity on life expectancy continues to worsen, and current trends in prevalence suggest it will, then gains in health and longevity that have taken decades to achieve may be quickly reversed" (Olshansky et al. 2005). Utilization of the concepts; fatness and public health in medical studies suggest that obesity is a threat to public health and the functioning of society. It is concerning that Olshansky's work is the fifth most cited journal discussing obesity in the New England Journal of Medicine with 1,583 citing articles. The conception of obesity as a threat to public health conceptualizes fat people as a problem to be solved, rather than human beings, and serves to further stigmatize fatness. Recall Marilynn Wann (2009), who posited that "medicalization" actually aids in stigmatizing fat folks as "social untouchables". This also bears influence on the concept matrix that encompasses the healthcare industry's conception of fatness, so it follows that these concepts can contribute to weight bias manifesting itself in weight discrimination.

The moralization of fatness was a phenomenon present in relation to every term in the initial coding scheme. Recall, the concepts origins are in Fat Studies, and it boxes body size into categories assigning moral value to each one. Collectively moralization of size was present in ten of the fifteen articles that were coded. In the data set, the moralization of fatness allocated certain terms to body size, whether it was BMI, weight, or obesity. Terms like "extremely", "severely", and "morbidly" were used to describe those labelled as obese, while those in the "healthy" BMI range were called "normal", "optimal", and "ideal". If the moralization of fatness is present in influential medical studies that are heavily cited, it follows that the dissemination of these

polarizing concepts within the healthcare industry, and the resultant precipitating mentality, now coupled with an incorrectly perceived "authority and gravity" that medical journals inherently and unconsciously convey, could indirectly influence how medical professionals view fatness, and thusly dictate doctor-patient interactions and discourse, creating an environment where weight discrimination is possible and probable.

Operationalizing fatness referred to how each article defined the terms obesity and BMI in order to delineate what we can call a fat person. The most common measure is BMI (discussed above), which is problematic as a measure because it does not measure body composition (body fat percentage) and it over-generalizes the vast range of variation in human anatomical sizes. Furthermore, the BMI was never meant to be used for measuring individual health. Despite these issues, the evidence in the data set suggests that the BMI is an accurate measure, and that the findings based on it have little margin of error. None of the articles discussed the limitations of BMI, and how that might affect the accuracy of their findings. Due in part to prominent medical studies like the data set in this study, the belief that the BMI is an accurate measure of health has become a part of the larger narrative surrounding how healthcare professionals measure fatness. In effect, how fatness is operationalized in medical research bears an influence on how healthcare professionals decide which patients they consider to be fat and therefore at risk of the health concerns that have been associated with obesity.

Fixing fatness refers to methods of treating obesity, and on a macro level, methods of addressing the "obesity epidemic". The most common treatments for obesity listed in the data set were modification of nutritional and physical activity habits, bariatric surgery, pharmacotherapy, brown adipose tissue, rimonabant, and adaptive thermogenesis. Studies testing the effectiveness of obesity treatments were the most forward regarding the benefits and drawbacks of the method

as well as the limitations in their study. Studies that addressed treatments of obesity that were unrelated to weight loss did not serve to construct meaning that contributed to the research question. Nevertheless, these methods were included in order to accurately represent the data set. Of the obesity treatments that pertained to weight loss some underlying phenomena based in the theories above were sought out to aid in answering the research question. What can concepts featured in prominent medical journals reveal about weight discrimination in healthcare? The medical community has shown that weight loss can reduce health risks associated with obesity namely cardiovascular risks, however the inverse is true with reference to mortality; weight loss is associated with an increased risk of death (Sjöström, et al. 2007). Despite the lack of established knowledge about the health impacts of weight loss, there seems to be a common belief that weight loss will improve the health of fat people. A common circumstance for fat folks who have experienced discrimination in healthcare settings is the doctor's insistence that a health problem will be solved by weight loss, even when it is entirely unrelated. This form of discrimination is rooted in the idea that for fat people, weight loss can solve most if not all health problems. When you analyze the underlying associations of that belief, it correlates thinness to health. As discussed in the literature review, there isn't enough reliable evidence to judge health based on weight alone. Simply, fat people can be more healthy than thin people and the reverse is possible as well. Weight loss is posed as a solution to obesity, however weight loss has been shown to have a negative effect on metabolism (Rothblum 1999), so are fat folks really being asked to lose weight for their health? Or does it have more to do with the societal standard of thinness?

Furthermore, weight loss at any costs is often recommended even when confounding factors associated with weight loss can pose a health risk. For example, in the case of fat folks

struggling with eating disorders being told to lose weight can trigger their disorder and create adverse health effects related to malnourishment, which has the potential to further endanger their health than the possible health risks associated with obesity. Fat people have reported this happening as their lived experience which suggests that this mentality plays a role in weight discrimination in healthcare. However, more research is needed to confirm how these phenomena were conceptualized and perpetuated in the healthcare industry. The evidence procured from this data set did not provide enough information. Weight loss was mentioned many times; however, the sentences usage of the term did not imply or suggest that weight loss will solve all the health problems fat people struggle with. Perhaps a larger data set, or a data set consisting of more recent articles would provide more material that would help to source this concept. It is also possible that the structure of medical research cannot effectively address these phenomena. Since this form of weight discrimination stems from the unconscious belief that thinness equals health maybe it doesn't stem from the medical field at all, but the broader societal stigma regarding fatness. Medical journals seek to isolate variables and test how they relate to each other so even if the researcher carries this type of bias, it is unlikely to make it onto the page of a study.

The frequency and underlying meanings explored in the refined coding process allowed me to connect my findings back to my research question in a significant way. Fatness and health risks, operationalizing fatness, the moralization of fatness, and fatness and public health can be defined relationally in order to create a concept matrix that culminate in the conceptions associated with the medicalization of fatness. The establishment of the matrix can also be utilized to define the weight bias in relation to other critical approaches. As shown above concepts mirror the opposite approach to beliefs around fatness. For example, the moralization of

fatness can be examined alongside the value measures of the BMI scale in order to examine these two conceptions in comparison with each other. Likewise, the dueling concept matrices (medicalization of fatness v. the "obesity epidemic") can be utilized to explore unconscious weight bias, and the manifestation of weight discrimination. However, "fixing fatness" as it may or may not relate to the belief that medical problems that fat people experience would be fixed if they had an ideal body weight, could not be substantiated by the data set. Other evidence is required to investigate the concepts role in the narrative surrounding the medicalization of fatness.

This paper analyzes some of the problems with how the medical field studies fatness, along with the negative implications of their actions. Implications including their role in creating a narrative surrounding fatness that has led to weight bias and discrimination. However, the creation of this narrative suggests it can be changed by the same people who have aided in its creation. Toward that effort, I'll be illuminating ways in which medical studies can more accurately discuss fatness as it relates to health. A first step in accurately studying fatness would be to acknowledge the limitations of the BMI scale when it's used as a measure. The scale is not sophisticated enough to measure the vastness of human size as it relates to health, the causal connection between the BMI and health has been proven unreliable, and it does not measure percentage of body fat or body composition at all (Colls & Evans 2010). None of the articles in my data set discussed these limitations, positioning the BMI scale as an infallible measure of weight as it pertains to health. Furthermore, medical studies should acknowledge other factors that contribute to negative health outcomes for fat people. Not that they need to study social factors but at the very least acknowledge that there is a limit to what medical studies can contribute regarding the negative health outcomes of fatness.

Conclusion

Using a collection of fifteen of the most cited medical studies from the New England Journal of Medicine, this study was able to isolate and identify several concepts that expounded upon the medicalization of fatness, a concept matrix, which was used to evaluate the postulation that a mechanism whereby popular assumptions about fatness in the medical field are relationally connected to medical journals and weight discrimination in healthcare, repeatedly in the cycle of influencing and being influenced by these conceptions. The term mechanism in this case, is used in reference to the way the concept matrix is influenced by several actors involved in constructing the concepts within the matrix. Actors being researchers working on medical studies and healthcare professionals acting based on the ideology perpetuated by the matrix. In other words, conceptions of fatness in the healthcare field are constantly being changed or reinforced by the interaction of these ideas with several actors that reinforce, reconstruct, or replace these conceptions. In this study, the mechanism was used to illuminate the concepts surrounding obesity that formed a narrative, was then influenced by the biases of researchers conducting medical studies and had the capacity to seep outward (by influencing the narrative of the concept matrix surrounding the medicalization of fatness) until these concepts reached doctors and healthcare workers treating fat patients and affected the existence of discrimination. Although the prevalence of weight discrimination in healthcare is discouraging, the presence of this relational process shows that these stigmas can be edited, reconstructed, or replaced by those who play a role in the relational concept construction process. In this case, roles in changing the narrative are those in positions of power, which proves to be a challenge. The fact that the concepts surrounding fatness in medical journals could be traced to individual doctor-patient

interaction is evidence of the relational process taking place. This study posits that this relational process is present, not just within the medical field, but everywhere in the social world, with groups and meanings interacting and collaborating in constructing stigmas related to fatness and other marginalized identities.

This mechanism can be utilized in studying the construction of meaning in relevant concepts that, when combined, form a concept matrix. Findings for this project speak to more than just the processes behind weight discrimination. They'll be able to explain social processes for other groups that are stigmatized based solely on appearances or a number. My results may also be useful for other medicalized groups. These findings situate themselves within the larger context of the weight loss industry and the narrative surrounding the "obesity epidemic". Medical journals are just one small element of this scheme, but ideally other parts that play a role in continuing the spread of these misconceptions and harmful biases can be analyzed in a similar way. My research speaks to a network of ideas that contribute to cultural messages surrounding fatness. The medicalization of fatness and the notions associated with it have influenced the medical industry. The outcome for fat folks seeking medical care is the possibility of discrimination or mistreatment.

This theory can offer some explanation as to where weight bias and discrimination stems from, although it does not come close to a comprehensive answer to the research question. My results represent a small piece in a larger ideology surrounding weight in the medical field that contribute to medical discrimination. The answer to my research question involves a complex set of variables. The aim of this study was not to disqualify all scholarship positing that body size is correlated to health risks rather to critically analyze the limitations of the terminology and measurements that are most commonly used, and to recognize the influence of weight bias (and

other misconceptions associated with fatness) and how it creates an environment in which discrimination can occur. This content analysis does not center fat experience as called-for by fat studies scholars. Further study might benefit from a qualitative approach like participant observation or one-on-one interviews that include the perspectives of fat people who have experienced discrimination when seeking medical care. A survey could also aid in studying factors related to the research question. More investigation is needed to make sense of the complexities involved in the reasons for weight discrimination in healthcare. These methods would provide the perspectives of fat people who have experienced discrimination when seeking medical care. Patterns in the type of discrimination being perpetuated should be recorded for comparison to the findings of this study. Furthermore, this study could benefit from applying the same analysis to a data set of medical school syllabi. Lack of access constituted the need to use medical journals with high impact factors, however medical school syllabi would address what healthcare professionals learn directly. Using syllabi from required classes (all medical students have to take them), would ensure their influence. Syllabi provides access to the only texts that you can ensure doctors have been exposed to. Given more time, this paper would benefit from a larger data sample, perhaps using different search terms to investigate whether the same patterns were present in both data sets. The mechanism behind the concept matrix needs more development as well. I've taken all the concepts present in the data and observed how they related to each other. I noticed the cycle of conceptions surrounding weight which was created and reinforced repeatedly to create a narrative that developed into a larger system of concepts relating to each other, which all fit within conceptions regarding the medicalization of fatness. More exploration is needed to see if this phenomenon is common or varied by topic. How often is it used to understand stigma and bias? The idea of a concept matrix for analyzing categories is

nothing new, but the mechanism of how the matrix morphs and changes based on who's influencing the narrative is what proved to be most interesting about this project. While weight discrimination in healthcare is an ongoing issue, understanding this opens up the possibility for these misconceptions to be challenged and taken to task by changing the ideology around medical treatment of the concept of fatness.

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Vita

Shayla Staley is from Detroit, Michigan. She moved to New Orleans in 2015 to pursue higher education. She earned a Bachelor of Arts in Political Science from the University of New Orleans in 2019. In further pursuit of her education, she sought a master's degree in Sociology from the University of New Orleans with plans to graduate in Spring 2021.