Evaluation of a Pilot Program to Increase Healthcare Professionals Awareness of the Effects of Weight Bias: A Doctor of Nursing Practice Scholarly Project

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UVA Honor Pledge: I have neither given nor received any unauthorized aid on this assignment.

Abstract

Weight bias and stigma are factors that impact obesity. Many healthcare professionals (HCPs) may be unaware of their biases regarding obesity, leading to poor provider-patient communication and decreased health maintenance appointments. This project evaluated the outcomes of *We Matter,* a multi-modal, virtual pilot educational program designed to increase HCPs awareness of the effects of weight bias and stigma, utilizing the Elaboration Likelihood Model (ELM) as a theoretical framework. The study design was a one-group pre-test/post-test performed on a convenience sample of HCPs from two university student health centers. Ten participants completed the seven-week program. For seven weeks, participants received an email with a link to a survey every week. Participants received information on weight bias and answered questions to assess participation. Participants rated their level of weight bias awareness using a Likert like scale pre-intervention and post-intervention. A Related-Samples Wilcoxon Signed Rank Test was conducted to compare the level of awareness of weight bias and stigma before and after the intervention. There were no significant differences seen in awareness scores, $Z = -1.613$, $p = .107$. Despite not having statistical significance, *We Matter* increased 60% of the participant's awareness scores. Raising awareness of the harmful repercussions of weight bias and stigma is vital. HCPs should lead efforts to mitigate weight bias and stigma.

Keywords: weight bias, obesity, stigma, healthcare professionals

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Size discrimination affects all races, genders, and socioeconomic levels, making weight discrimination a social injustice and a persistent public health problem (Rubino et al., 2020). Identifying as an obese person is emotionally significant because it is associated with a sense of vulnerability (Phelan et al., 2015), reduced quality of life, psychological problems, low self-esteem, poor body image, blame, shame, and guilt (Haga et al., 2019). According to the National Association to Advance Fat Acceptance (NAAFA, 2020), people with obesity exist within every marginalized identity. Individuals with obesity are often subject to discrimination in the workplace, educational, and healthcare settings (Rubino et al., 2018). This stigma and discrimination can lead to feelings of rejection and derogation. For example, it is common for people with obesity to experience stigma when interacting with healthcare professionals (HCPs), who often talk about obesity in unhelpful ways or cause offense (Albury et al., 2020). According to decades of research, healthcare professionals are a prevalent source of weight bias toward the obese. Individuals with obesity are stigmatized by physicians, nurses, psychologists, dietitians, fitness experts, medical students, and even obesity specialists. Research also shows that prejudice towards the obese exceeds that directed toward other commonly stigmatized groups (O'Brien et al., 2010). Well-known factors contributing to obesity are genetics and the environment; however, weight bias is a less-known factor that requires more consideration (Najjar et al., 2017).

Weight bias is the expression of negative attitudes, beliefs, and behaviors toward higher-weight, overweight, or obese persons (Brochu et al., 2020). The outcome from weight bias is weight stigma-discriminatory acts targeted toward people due to their weight and size (Obesity

Action Coalition [OAC], 2021). Weight internalization is another outcome of weight bias and stigma. Internalization occurs when a person with obesity blames themselves for their perceived overweight or obesity. People with obesity, especially adolescents, experience higher levels of depressive symptoms, anxiety, lower self-esteem, social isolation, perceived stress, substance use, unhealthy eating, and weight control behaviors, such as binge eating and emotional overeating, when dealing with external and internalized weight bias and stigma (Najjar et al., 2017). Weight bias and stigma are seen in HCPs at levels the same or, in some instances, higher than non-HCPs (Rubino et al., 2020). To address this issue, a multidisciplinary group of international experts, including representatives from ten scientific organizations, reviewed available evidence on the causes and harms of weight stigma. These experts developed a Joint International Consensus Statement with recommendations to eliminate weight bias, and best inform HCPs, policymakers, and the public about the stigma associated with obesity. They concluded that explaining the disparity between scientific evidence and the conventional narrative of obesity based on unproven assumptions and misconceptions may aid in reducing weight bias and its negative consequences (Rubino et al., 2020).

According to Rubino et al. (2020), evidence suggests that weight stigma, not obesity itself, is harmful to mental health. Experiencing high levels of weight bias is associated with unhealthy coping strategies, body dissatisfaction, increased risk for depression, and other mental health disorders, and perpetuates the cycle of obesity (Najjar et al., 2017).

Perpetuating the cycle of obesity does nothing to curtail the epidemic facing many countries. In the United States, being overweight or obese has escalated to epidemic proportions, with more than two-thirds of adults considered overweight or obese (Center for Disease Control and Prevention [CDC], 2018). Overweight and obesity are significant and growing concerns

impacting many people worldwide. It is a complex health issue resulting from various causes and individual factors. Obesity is associated with more than 60 chronic diseases (Brochu et al., 2020) and causes more deaths than being underweight, costing Americans $172 billion each year (CDC, 2018). Unfortunately, traditional efforts to mitigate obesity have failed, as evidenced by the increasing rates of obesity around the world. “To date, no country has experienced a reduction in the prevalence of individuals with overweight/obesity” (Popkin et al., 2020 para.1).

One possible cause of failed efforts to mitigate obesity is underestimating the effects of weight bias and stigma. Although the popular opinion is that weight stigma may motivate people to lose weight, it worsens health and reduces quality of life (Puhl et al., 2021). Data suggests that weight stigma can trigger physiological and behavioral changes that contribute to poor metabolic health and further weight gain (Phelan et al., 2015). For example, experiencing weight bias and weight discrimination causes higher C-reactive protein, cortisol, long-term cardio-metabolic risk, and increased mortality compared to those who do not experience weight discrimination (Rubino et al., 2020). This stigma harms the mental and physical health of people with obesity, can lead to avoidance of the healthcare system and disrupts the doctor-patient relationship (Albury et al., 2020). According to a study conducted in six countries, people with internalized weight bias reported worse health-related quality of life and healthcare experiences. Experiences included avoiding healthcare, less frequent checkups, and greater substandard healthcare than people with less internalization (Puhl et al., 2021).

"People with obesity commonly face a pervasive, resilient form of social stigma" (Rubino et al., 2020, p. 485). Weight bias, compared to other forms of social biases, is pervasive, socially accepted, and difficult to mitigate (Brochu et al., 2020). The socially accepted negative attitudes regarding weight bias can be explicit or implicit. Implicit bias, also known as unconscious bias,

is defined by the Institute for Healthcare Improvement (IHI) (2016) as the bias in judgment and or actions caused by subtle cognitive processes (e.g., implicit attitudes and implicit stereotypes) that often operate at a level below conscious awareness and without purposeful control. Much attention is given to implicit race bias; however, implicit bias is not limited to race. Implicit bias can exist for any characteristic we have as humans. There can be biases around gender, age, sexual orientation, and appearances, such as height and weight, just to name a few (Wyatt et al., 2016). Research has shown that biases are likely to influence diagnosis, treatment decisions, and level of care in some circumstances (Fitzgerald & Hurst, 2017). Because implicit bias may affect how providers and others interact with patients regarding communication, treatment protocols, or options for pain management, it can, in turn, affect perception and clinical decision-making (Rubino et al., 2020). Many HCPs may be unaware of their biases towards persons living with obesity (Rubino et al., 2020).

Research Question

What is the effect of an educational intervention on weight bias/weight stigma levels in healthcare professionals?

Evidence Search Method

A systematic literature review of academic journal articles published in English, with no date limitations, was conducted to find studies that include interventions that impact obesity bias in HCPs. A Master's prepared health sciences librarian was consulted to ensure the accuracy of the search and fidelity to the research question. Databases used for this search were PubMed, Cumulative Index to Nursing and Allied Health Literature (CINAHL), Web of Science, and PsychInfo. The keyword search string (obesity OR obese) AND healthcare professionals AND (bias OR "weight bias" OR stigma) AND (training OR education) was used in all four databases.

The total number of sources retrieved from all four databases was 255. The exclusion criteria included sources not based on an intervention to affect bias (147) and any article that involved children (5). Reference management software was used to maintain the records and remove duplicates. After eliminating all duplicates, 21 articles remained for analysis after the title and abstract review.

Figure 1 shows the search process using Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA).

Literature Review Results and Summary

A search of the grey literature using Google Scholar was performed to address the possibility of publication bias by searching the same key terms from the other database searches (obesity OR obese) AND healthcare professionals AND (bias OR "weight bias" OR stigma) AND (training OR education). The first 40 results showed no publication bias based on the grey literature. Findings were consistent with findings in the systematic review except for two unpublished dissertations. Several themes in the grey literature included obesity stigma and bias in children, perspectives of adults living with obesity, and reduction of obesity bias in medical students.

The 21 articles retained were then reviewed further to include reference searches. Seven articles were removed for irrelevance to the PICO question (3) and no performed intervention (4). One article was retained from the reference review. Fifteen articles were retained for further analysis (see Appendix A).

Analysis and Synthesis of Evidence

This systematic review includes six qualitative analyses, four RCTs, and five quasi-experimental design studies. The level and quality of evidence were appraised using the

appropriate Johns Hopkins Nursing Evidence-Based Practice Evidence Appraisal Tool. Four articles are Level I evidence, four are Level II, and seven are Level III. Six of the Level III articles are a quality rating of A/B, and one was rated a C. All four of the Level II evidence articles rated a B, and the Level I evidence yielded two A's and two B's. The analysis identified four themes, including reducing levels of weight bias by teaching the causes and controllability of overweight and obesity, using perspective-taking interventions to induce empathy and acceptance, anti-stigma films or narratives to manipulate the social consensus of others regarding obesity, and using multiple modalities as an intervention to affect levels of bias.

Causes and Controllability

Five studies used interventions designed to educate participants about genetic factors and uncontrollable causes of obesity. Two of the studies were Level III/AB, two were Level I, with quality of A and B, and two were Level II/B. In an RCT conducted by Persky & Eccleston (2011), the genetic causal information group exhibited less negative stereotyping than the control group. The other RCT showed that levels of anti-fat prejudice could be reduced or exacerbated based on the causal information provided (O'Brien et al., 2010). The last Level II study is an outlier among all articles. A prospective survey of medical students showed how bias levels were influenced in medical students. The results included eliminating unprofessional role modeling and education that increased positive contact and education of obese patients (Phelan et al., 2015). One of the Level III articles attempted to use an educational intervention that included ethics, genetics, and uncontrollable factors for obesity. The other was an educational intervention on the many causes of obesity. The former did not change the negative attitudes of medical students over time (Geller & Watkins, 2018), and the latter was effective at decreasing weight stigmatization in HCPs one month after completion of the intervention (Falker & Sledge, 2011).

Perspective Taking

Four articles attempted to use perspective-taking to create empathy and decrease stigma and bias. All were qualitative. One article highlighted the use of obese patient scenarios to encourage empathy. The results showed that HCPs need more education on the importance of empathy and compassion when providing treatment to obese patients (Seymour et al., 2018). The Ancel (2006) article showed the importance of empathy training. One article shared the impact of subjects who wore a simulated fat suit for two hours. The results showed that the simulation might increase awareness among HCPs and positively influence diffusing weight stigma and bias (Hales et al., 2018). The last article showcased a calorie-restricted diet for seven days on nutrition students. The results showed that fat-phobia scores decreased significantly after the intervention (Cotugna & Mallick, 2010).

Anti-stigma Films or Narratives

Four of the articles identified used films or narratives as an intervention to reduce stigma/bias. Three articles were Level I evidence, two of the three articles used 17 min films about weight bias, and one article had students read a play about obesity. They all showed that a brief educational intervention utilizing film might effectively reduce stigmatizing attitudes or increase empathy in trainee HCPs (Matharu et al., 2014; Poustchi et al., 2013; Swift et al., 2013). One article that rated Level II evidence addressed a publication on stigma as an intervention for medical students. The results showed a short-term decrease in negative stereotyping and a longer-term increase in empathy (Kushner et al., 2014).

Multiple Modalities

Three articles used multiple modalities as the intervention. All the articles were Level II levels of evidence. One article used three days of lectures, videos, and group activities about

uncontrollable causes of obesity (Wijayatunga et al., 2019). The other article explored standard strategic intervention components of education, including controllability to reduce blame, consciousness-raising, and evoking empathy through perspective-taking, role-playing, and exposure to overweight individuals (Rukavina et al., 2010). Both studies showed a reduction in explicit weight bias and proved that implicit bias is difficult to affect. However, research from the Wijayatunga group showed an increase in implicit bias when traditional education on obesity was limited to conventional diet and exercise interventions. Fitterman-Harris and Vander Wal (2021) used multiple modes in one session utilizing the Elaboration Likelihood Model as a theoretical framework and controlled for social desirability. Both groups showed less discomfort when near individuals with obesity.

The analysis showed two distinct perspectives on the researched question. Perspective A utilized students or future HCPs to be subjects for obesity bias changing interventions to affect the levels of bias seen in future practice. Perspective B uses current HCPs for interventions for lowering levels of obesity bias to affect current practices. Although only four of the 14 articles utilized active HCPs as their subjects, all four of the studies were Level 3 evidence. Three of the studies used perspective-taking interventions that all showed that they could decrease stigma/bias or increase empathy. One study was an educational intervention that effectively reduced weight stigmatization in HCPs.

Conclusion

This systematic review aimed to answer the research question: What is the effect of an educational intervention on levels of weight bias/weight stigma in HCPs? This question is clinically important because weight bias and discrimination can have various adverse health implications that influence a person's psychological, social, and physical well-being (Puhl et al.,

2014). Fighting stigma is a question of human rights and social fairness and a means of improving disease prevention and treatment (Rubino et al., 2020). The evidence is compelling as to the need for more high-level research on healthcare professionals. Despite an abundance of literature regarding weight bias and stigma, rigorous experiments with high-quality quantitative data explicitly focused on currently practicing HCPs are scarce, limiting the interpretability of many of the results. Randomized control trials (RCT) or quasi-experimental studies using control groups, including specific interventions designed to increase awareness of and decrease levels of weight bias, are needed.

Evaluation and Recommendations

Recommendation 1

Evidence suggests that educational interventions that go against the traditional education of diet and exercise alone and instead focus on genetic factors and other uncontrollable causes for obesity effectively decrease bias and stigma towards the obese in pre-professional students. Additional research involving practicing HCPs is needed. In addition, research suggests that HCPs need to understand the importance of empathy and compassion when providing treatment to patients regardless of weight to increase the quality of care and ultimately improve patient outcomes (Seymour et al., 2018).

Recommendation 2

There are high to moderate levels of evidence that support anti-stigma films and multi-modal interventions to effect levels of implicit and explicit levels of obesity bias. This evidence is noted in trainee HCPs. Trainees are targeted and make an excellent convenience sample to affect future change. However, creating change now requires involving HCPs. Introducing anti-stigma films to practicing HCPs is associated with schedule, buy-in, and attrition challenges

(Rukavina et al., 2010). Yet, people living with obesity are stigmatized now and need help now. Ultimately, experiencing stigmatization from HCPs can negatively affect living a healthy lifestyle (Rukavina et al., 2010). Therefore, finding ways to decrease HCPs bias and stigma towards people living with obesity can improve healthy lifestyle outcomes for this population.

Implications for the Present Project

This literature review supports the need for increased awareness and efforts to reduce levels of weight bias exhibited by HCPs. Raising awareness and decreasing levels of weight bias aligns with the quintuple aims of healthcare: improving the experience of patient care, improving population health, reducing per capita costs of healthcare, enhancing clinical well-being, and achieving health equity (Itchhaporia, 2021). This pilot study will evaluate the effects of a multi-modal, virtual educational program, *We Matter*, on HCPs' awareness. According to a systematic review of literature, innovative and coordinated strategies to address weight bias among health professionals are urgently needed (Alberga et al., 2016). The analysis also revealed that a multi-modal educational intervention delivered over more than one day is more effective than one mode given at one time (Alberga et al., 2016). A similar technique utilized by Fitterman-Harris and Vander Wal (2021) used a multi-faceted approach to change attitudes around weight bias in students. A meta-analysis by Lee et al. (2014) found that interventions focusing on weight bias reduction have produced small to medium effects on weight bias attitudes. These small effects occurred no matter the intervention type, increasing empathy towards individuals with obesity or addressing beliefs about the causes of obesity.

We Matter does not attempt to directly affect weight bias and stigma levels due to the anticipated minor effects. Instead, the program focuses on increasing the awareness of the impact of weight bias and stigma. Awareness is the first step in changing deep-seated unconscious bias

(Kushner et al., 2014). This is a pilot program to evaluate *We Matter* because new intervention designs are needed (Lee et al., 2014).

Theoretical Framework

The Elaboration Likelihood Model Theory (ELM) can be the cornerstone of a weight bias reduction intervention (Fitterman-Harris & Vander Wal, 2021). The ELM, developed in the mid-1970s by John Cacioppo, cofounder of the field of social neuroscience, and Richard Petty, a distinguished psychology professor at Chicago University, sought to explain how humans process stimuli differently and the effects of these processes on changing attitudes and, consequently, behavior. The ELM proposes two avenues to attitude modification, central and peripheral. The model suggests that when motivation and ability are high, an individual's extensive consideration of the message presented results in attitude change via the central route. When motivation or the ability to process the message is low, attitude change via the peripheral route occurs. The peripheral route necessitates the least amount of cognitive effort. Change through the central route is persistent and predictive of future behavior, whereas shifts in attitude through the peripheral route are transient and less predictive of future behavior (Petty & Cacioppo, 1981).

The goal of *We Matter* is to access the central route of attitude change. Attitude change through the central route is achieved during times of increased motivation. The ELM suggests that the level of motivation determines the extent to which someone engages in cognitive activity. *We Matter* expects that participants would be motivated to change after taking the Implicit Association Test (IAT) and learning about the effects of their bias on their patients. To enhance participants' engagement via the central route, each week for seven weeks, they will receive educational information and assessments to embed this change in their minds.

Additionally, participants were asked to express their thoughts and ideas regarding the modules to encourage thoughtful reflection on weight bias to further engage the central route of processing.

The Purpose of the Project

This project aims to evaluate *We Matter*, a multi-modal educational pilot program designed to increase HCPs awareness of the effects of weight bias and stigma. Unlike other healthcare issues, obesity is a visible diagnosis that can spark many judgments (Brochu et al., 2020). According to Cassiano et al. (2021), it's critical to determine what motivates and drives these unfavorable views. Combining an obesogenic and stigmatizing environment and HCPs' negative attitudes towards people with obesity can exacerbate the obesity problem (Cassiano et al., 2021). According to The Joint International Consensus Statement for Ending Stigma of Obesity, raising awareness of the harmful repercussions of weight stigma is vital. Academic institutions, professional organizations, the media, public health authorities, and the government should promote weight bias/stigma education and develop a new public narrative about obesity consistent with current scientific evidence (Rubino et al., 2020). Obesity stigma can be reduced in HCPs through education on providing care, free of obesity bias and stigma (Albury et al., 2020). It is necessary to focus on interventions that challenge weight-based stereotypes, create awareness of the harmful effects of weight stigma on mental and physical health, and encourage active listening skills with empathetic communication (Cassiano et al., 2021).

Study Question

Does the *We Matter* program increase HCPs awareness of the effects of weight bias? Do participants intend to use what they learned during the program in their future practice?

Materials and Methods

Setting

There were two practice sites for this scholarly project: a small student health center (A) in the Southeastern United States and a student health center at a larger university in the same region. Older adolescents and young adults are not immune to the obesity epidemic, making a student health center suitable for the intervention. According to a longitudinal study, more than 50% of adolescents with a normal BMI move to overweight/obesity by adulthood. Of that 50%, only 8% of those considered overweight, and 2% of those considered obese, ever return to a normal BMI in their adult lives (Ng & Cunningham, 2020). Addressing the issue of weight bias with HCPs at a student health center could lead to positive interactions for the adolescents and young adults of the university.

Student health center (A) is staffed by one physician, two nurse practitioners (NPs), three registered nurses (RN), one receptionist, three medical assistants, and three mental health care professionals. Student health center (B), staffed by two physicians, three NPs, three licensed practical nurses (LPN), four RN's, three clinical assistants, and a clinic and laboratory supervisor.

Sample

Participants were recruited as a convenience sample. Due to the low number of employees to sample from Center A, a secondary student health center was chosen to increase the sample size and provide anonymity to co-workers. HCPs were defined as anyone over 18 years of age working in a healthcare facility with direct contact with patients. A recruitment email was sent to employees of the health centers by the medical directors. The email explained

the program and asked for participation. Participation inclusion criteria consisted of any HCP who agreed to participate in the intervention. Virtual consent was obtained.

Measures

Increased awareness of weight bias in HCPs is the primary outcome measure for *We Matter*. A pre-intervention and demographic questionnaire were given during week one of the program, and a post-intervention questionnaire was given during week seven. During weeks two through six, participants were asked to provide responses related to the module for that week. The Implicit Association Test (IAT) was given during week two. All questionnaires were administered via Qualtrics XM. Qualtrics XM is an online survey platform that allows researchers to create and share questionnaires and other materials while supporting analysis. The Be Kind program (Weimorts, 2018) and its surveys were foundational to the development of *We Matter*.

Demographics Questionnaire

Demographic data collected were categorical age and body mass index (BMI). Research that utilized similar demographics used height weight, and the researcher calculated the BMI. However, a BMI calculator was provided to the participants via a link in the online survey for this study. The use of categorical data and participants using the BMI calculator to self-report their BMI provided more anonymity for peers, subordinates, and superiors.

Pre-intervention Questionnaire

The pre-intervention questionnaire was used to assess participants' familiarity with the subject of weight bias using yes or no questions. A five-point Likert scale was used to evaluate participants' perceived awareness of their weight bias.

Implicit Association Test

The Harvard Implicit Associations Test (IAT) measured the participant's weight bias level before the education modules. The IAT measures the strength of associations between concepts. For over 20 years, the IAT has helped measure attitudes or beliefs that people are unwilling or unable to report (Project Implicit, n.d.). Implicit bias is an automatic reaction we have towards other people. These attitudes and stereotypes can negatively impact our understanding, actions, and decision-making (Project Implicit, n.d.).

In this pilot study, the IAT was used as an intervention to make participants aware of their own weight bias. Participants completed the test and received automatic feedback, stating they have a slight, moderate, or strong implicit preference for thin compared to overweight. Participants did not share their IAT results. Instead, participants were asked using a five-point Likert scale if their level of weight bias determined by the IAT was what they expected. The first step towards correcting behaviors is awareness. This step was used to make participants aware of their bias, increase motivation, and encourage engaged participation. According to the ELM, fostering a sense of personal relevance is an excellent method to increase motivation (Geddes, 2016).

Evaluation of the Weekly Modules

Participants answered yes or no and Likert-style questions about the specific module to assess learning and participation. Additionally, participants were asked to free text any thoughts or ideas they had while completing the modules. There were no character limits for the short answer questions, and participants were not required to answer to end the survey. The short answer question was asked to encourage thoughtful reflection of the content to increase

elaboration on the topic. Written statements about the actual topic are more indicative of central route processing (Petty & Cacioppo, 1981).

Post-intervention Questionnaire

The post-intervention questionnaire included six five-point Likert scale responses and one short answer question. Participants were asked the same question about awareness of weight bias from the pre-intervention questionnaire. The remaining questions were used to evaluate the *We Matter* program and assess the intent of the participants to use the knowledge gained from the program in their future practice. The short answer question for week seven was evaluated for aspects of the program that could be improved.

Before implementing the study, the pre-intervention and post-intervention questionnaires were evaluated for face validity by three peer reviewers. The reviewers included my clinical advisor, an analytic data specialist, and a bariatrics expert.

Procedures

This pilot study used rolling recruitment to minimize delays. The medical directors of the practice sites sent a recruitment email to the entire convenience sample (see Appendix B). The recruitment email contained a link to an online survey. The survey included the consent form (see Appendix C). If individuals chose not to participate, they were thanked for their time, and the survey ended. If individuals decided to consent by selecting the yes response to participate, the survey continued to the module for week one.

Participants were asked to participate in the program but not while working. For central processing to be the primary route, distractions must be limited (Petty & Cacioppo, 1981). Participants received a $10 gift card for completing the program.

Consciousness-raising and anti-fat shaming techniques

The week 1 module of the pilot program included the pre-intervention questionnaire, demographics questionnaire (see Appendix D), a short introduction, and background information about the implication of weight bias in HCPs. Participants completed the questionnaires and read the introduction and background. They recorded their names as the first response to each week's module. Week 1 took one week to complete.

During the week 2 module, participants received a survey via email that contained a link to a brochure from NAAFA (National Association to Advance Fat Acceptance, 2020) and a link to the free, Fat-Thin IAT (Project Implicit, n.d.) in addition to a post-module questionnaire related to the week 2 module. The NAAFA brochure contained information and education on reducing stigmatizing behaviors, changing the obesity narrative, and improving many aspects of practice when dealing with obesity. The survey included three statements about the module: the information provided in the NAAFA brochure was informative. The information learned from the NAAFA brochure could be easily used in my future practice. Participants answered using a five-point Likert scale. Participants described any thoughts or ideas about the module for the last question. There were no character limits for the short answer question, and participants were not required to answer to end the survey. In line with the ELM framework, change routed through the central pathway stems from a motivation to change (Petty & Cacioppo, 1981). Learning about their weight bias through the IAT and the adverse effects of weight bias throughout the program should motivate the participants to change.

Empathy building and Perspective taking

The module for week 3 started the first part of Eva's story, which combines empathy evoking, anti-stigma behaviors, and perspective-taking in a fictional narrative case study. I

developed the outline and general idea for the story. I took to a social media platform to search for a writer. A Ph.D. student from another university responded. We collaborated to create Eva.

The research participants received a survey link via email to Eva during weeks three to five, a perspective-taking fictional narrative. Each week for three weeks, the story of Eva would unfold. At the end of each story, two reflective statements were posed in the survey to engage the central route purposefully. According to the ELM, fostering a sense of personal relevance is an effective method to increase motivation to think deeply about the content (Geddes, J., 2016). The statements were that Eva's story increased my awareness of weight bias and highlighted how easy it could occur, and Eva's story helped me better understand the concept of weight bias internalization. A five-point Likert scale was used. To assess engagement in the story, participants were also asked about their thoughts and ideas that arose during the module and provided a short answer in the space provided with no character limits.

Causes and Controllability

For the week 6 module, participants received an online survey that included a link to a 20-minute anti-weight stigma documentary (Nevins & Hoffman 2012) that teaches about the uncontrollable causes of obesity and personal accounts of the effect of weight bias. This program segment aligns with the ELM, but it will access both routes for processing. Watching a video is thought to take a low level of elaboration (Petty & Cacioppo, 1981); however, the information in the video should increase participants' motivation to change through actual first-person accounts. One yes or no question and one short answer question were asked after the module. Did this *We Matter* module affect my awareness of weight bias? Yes, or no. The short answer question asked participants about their thoughts and ideas that arose during the module.

Week 7 consisted of a summary of weeks past, the post-intervention questionnaire, and the questionnaire to evaluate the program's effectiveness (see Appendix E), all via online surveys. Participants had two weeks to complete the questionnaire, taking the intervention to week 8. Additional resources and information were provided for future personal or professional use via links in the email.

The *We Matter* program (see Appendix F) is provided in its entirety. The primary aim of this pilot study was to evaluate whether the proposed program was successful in making HCPs aware of the effects of weight bias and stigma. HCPs were also asked about their intent to use the lessons learned from the program in future practice. “Reducing negative attitudes, beliefs, and stigmatization is an important starting point in the battle against this growing public health concern” (Darling & Atav, 2019, p. 138).

Ethical considerations

The academic and practice sites’ institutional review boards (IRB) approved this study (see Appendix G). All IRB institutional policies were followed. Although performed at a student health center, this research project did not include any students and had a minimal risk for participants. Participants were informed of the study’s purpose, duration, risks, benefits, information to be collected, data usage, and any potential inconveniences or emotional distress. Risks to participants were minimal and included psychological discomfort related to discussing the emotionally charged subject of weight bias. The confidentiality of the participant's responses was assured by using an intermediary. However, the researcher knew of their participation. The DNP student and the intermediary completed the required IRB courses before the commencement of the study. Data collected were de-identified and stored in a secure data storage platform. The data collected during this scholarly project was de-identified by the

intermediary before I had access to it. It was also de-identified during the dissemination of the results. The data was only accessible to selected individuals directly involved with the study, including the statistician, my advisor, and me. Findings are reported at an aggregate level.

Design and Data Analysis

Central and peripheral routes are more likely to be accessed by utilizing a multi-faceted approach to learning (Fitterman-Harris & Vander Wal, 2021). This pilot study used a multi-modal intervention with a one-group pretest/post-test design. The pre-test was given during week 1, and the post-tests were given in week 7. The outcome indicator for the program was an increase in awareness of weight bias. This increase was evaluated by a questionnaire with a five-point Likert scale. In addition, HCPs answered questions about how effective they thought the *We Matter* program was and if they intend to use aspects of the program to guide their future practice.

Quantitative data was collected, de-identified by the intermediary, and made available to me. As the primary investigator, I shared my data analytic software profile with the intermediary. This enabled the intermediary to receive all the data from the surveys, give each participant an identification number, and then send the de-identified data to me. Categorical age and BMI were the demographics used. Descriptive data are reported as percentages since the data is categorical to protect anonymity. Descriptive statistics were employed on all data, and the differences from the awareness scores were compared by a Related-Samples Wilcoxon Signed Rank Test. I consulted with a PhD-prepared statistician throughout this section of the process. The data obtained from this scholarly project was collected through a survey platform, analyzed, and recorded using IBM Statistical Package for Social Sciences (SPSS) for Macintosh, version 28. Information obtained from participants that did not complete the program was not used.

Data Collection

For each module, the first question asked for the participants' names. Allowing for this enabled me to identify who participated for the week without seeing any other data. By knowing who participated, I was able to control the progression of the study and send weekly emails. Each week the intermediary would email the de-identified responses to me. Project data was collected over ten and a half weeks, exceeding the programs initially planned eight weeks. Factors contributing to the extension included the holidays, winter break for the universities, and difficulties experienced during week 2.

Week 2 proved to be the most difficult for participants. One participant ended their participation. Contributors to week two difficulties included the extended time it took to complete the IAT and using only one browser when accessing the survey links. When participants accessed the link for the IAT, it opened in the same browser as the survey. The same thing happened when participants accessed the link for the NAAFA brochure.

Consequently, after participants read the brochure and completed the IAT, they had to go back to the survey link they received in the email to re-access the survey. I could have minimized the confusion around this process by instructing the participants to copy and paste the links in a separate browser. Instead, I sent a subsequent email to the entire sample to clarify the process. Doing so added another week to the study. Data was collected through the survey platform and de-identified by the intermediary before being made available to me.

Data Analysis

The project data was analyzed using SPSS, version 28. I received assistance from the team statistician to facilitate the data analysis process. Descriptive statistics for demographics and Likert-scale responses were analyzed and reported as counts and percentages. The level of

awareness of weight bias and stigma was a Likert scaled measure. Therefore, a Related-Samples Wilcoxon Signed Rank Test was conducted to compare the level of awareness of weight bias and stigma before and after the intervention.

Participants were asked to express their thoughts or ideas about modules two through six in the form of a short answer question with no character limits. The response was voluntary. The short answer questions provided participants a time for thoughtful reflection on the module. Thoughtful reflection of the module could enhance the chance of accessing the central route for attitude change identified by the ELM theoretical framework. The central route is the pathway most related to change (Petty & Cacioppo, 1981).

Results

There were two minor and administrative deviations during the study. There were no violations, unanticipated problems or serious adverse events associated with this study. At no time was there any affect to the scientific soundness of the research plan, or the rights, safety, or welfare of human subjects. Deviations were reported to the IRB and the program was approved with the revisions (see Appendix G).

Demographics

There were 13 eligible participants from Center A, and 17 from Center B. Fourteen participants agreed to participate from the recruitment email by answering yes to the consent form. Of the 14 participants, 10 completed the entire program. Demographics used during the research were categorical age and BMI. For the 10 participants completing the study, 40% were between the ages of 25-35, 20% were between 35-45, 10% were between 45-55, and 30% were 55 or older (see Table 1). For BMI, 10% had what is considered a healthy BMI between 18-25, 40% had a BMI of 30-35, and 50% of participants had a BMI of greater than 35 (see Table 2).

All but one of the participants was overweight or obese according to BMI standards, with greater than 30 considered obese.

Pre-intervention and Post-intervention Level of Weight Bias and Stigma Awareness

The week 1 pre-intervention questionnaire was administered to determine participants' awareness of weight bias and stigma. A five-point Likert scale was used and ranked items from no awareness (1), low awareness (2), moderate awareness (3), high awareness (4), and expert awareness (5). Of the 10 participants completing the program, 30% noted low awareness, 30% had moderate awareness, 30% had high awareness, and 10% considered themselves experts in weight bias (see Table 3). When the participants were asked if they had completed any education specifically about weight bias in the last two years, 90% responded no and 10% yes. When the participants were asked if that education was mandatory, 90% said no, and one answer was missing. Evaluating previous education enhances the need for programs like *We Matter*.

In week 7, the post-intervention statement of rate your level of awareness of weight bias and stigma, using the same Likert scale, 20% of the participants rated their awareness as moderate, 60% as high, and 20% as an expert (see Table 3).

The level of awareness of weight bias and stigma was a Likert scaled measure. Therefore, a Related-Samples Wilcoxon Signed Rank Test was conducted to compare the level of awareness of weight bias and stigma before and after the intervention. There were no significant differences seen in awareness scores, $Z = -1.613$, $p = .107$. The mean score before the intervention was 3.20 (SD=1.03) and the median score was 3.00 (IQR = 2.00 - 4.00). The mean score after the intervention was 4.00 (SD = 0.67) and the median score was 4.00 (IQR = 3.75 - 4.25).

IAT and NAAFA Brochure

In week 2, participants took the weight IAT and were asked if their score was what they expected based on the Likert scale of strongly disagree (1), disagree (2), neither agree or disagree (3), agree (4), and strongly agree (5). Of the ten participants, 20% disagreed, 30% neither agreed or disagreed, 30% agreed, 10% strongly agreed, and one answer was missing. Week 2 also included a brochure from NAAFA that contained education on how to correct stigmatizing behaviors. Participants were asked if the information in the brochure could easily be used in their future practice. Using the same Likert scale, one answer was missing (10%), 10% strongly disagreed, 10% disagreed, 20% neither agreed or disagreed, 30% agreed, and 20% strongly agreed (see Table 5).

The Story of Eva

During the next three weeks, the same two questions were evaluated. Using the same Likert scale as above, participants were asked if the story of Eva increased their awareness of weight bias and if the story highlighted how easy it could occur. The other question asked if the story helped them understand the concept of weight bias and internalization. At week 3, the responses to the first question revealed that 10% strongly disagreed with the statement, 10% disagreed, 30% neither agreed or disagreed, 30% agreed, and 20% strongly agreed with the statement. Ten percent strongly disagreed with the second question, 30% neither agreed or disagreed, 30 % agreed, and 30% strongly agreed (see Table 5).

At week 4, the same questions revealed that 10% strongly disagreed with the first question, 10% disagreed, 40% neither agreed or disagreed, 30% agreed, and 10% strongly agreed. For the second question: 10% strongly disagreed, 10% disagreed, 40% neither agreed or disagreed, 30% agreed, and 10% strongly agreed (see Table 5).

The week 5 computations for the same questions revealed that 10% of the participants disagreed with the first question, 40% neither agreed or disagreed, 20% agreed, and 30% strongly agreed. For the second question, 10% disagreed, 30% neither agreed or disagreed, 40% agreed, and 20% strongly agreed (see Table 5).

Weight Bias Documentary

During week 6, one question was asked and analyzed. The question, "did this module of *We Matter* affect your awareness of weight bias? Yes or No," demonstrated that only 40% of the participants felt their awareness of weight bias was affected by this module (see Table 5).

Evaluation of Weeks 2-6 Short-Answer Questions

Seventy percent of the participants answered the short answer question in week two. In week 3, 100% of the participants answered the short answer question. Week four, 70% responded. In week five, 100% answered, and in week 6, 80% of the participants answered the voluntary question. Sharing thoughtful reflections about the modules increased the chance that the primary route of processing was the central route (Petty & Cacioppo, 1981).

Evaluation of *We Matter*

Week 7 also included a questionnaire to evaluate the effectiveness of *We Matter* and the participants' intent to use elements of the program in their future practice. Using the scale of no intent (1), undecided (2), low intent (3), moderate intent (4), or high intent (5) in response to whether they would use the information provided in the program: 10% had low intent, 50% had moderate intent, and 40% had high intent of usage (see Table 6). When asked if the program helped them be mindful of weight bias during patient interactions, 30% said neither agree or disagree, 20% agreed, and 50% strongly agreed (see Table 6). When asked if the program was relevant to their practice: 20% said neither agree nor disagree, 10% agreed, and 70% said they

strongly agreed (see Table 6). When asked if the program was time-consuming: 20% said they strongly disagreed, 40% disagreed, and 40% neither agreed nor disagreed (see Table 6). When asked if at any time during the program they found themselves using elements of the program in their practice: 70% said yes, and 30% said no (see Table 6).

The last question of the post-intervention survey was a short answer question: what if anything would you change about the *We Matter* program to make it more useful in practice? Twenty percent of the participants did not answer, 50% said to leave it as is. Thirty percent made recommendations for change. One participant felt that more examples of alternative language would be helpful. Another participant suggested that a male scenario would be beneficial. One of the participants shared that participating during a hectic time with COVID was challenging. Overall, the feedback was encouraging. One participant stated that this type of program should be offered with other required annual education, such as abuse in the workplace or sexual harassment.

Discussion

This pilot study aimed to determine the effectiveness of *We Matter* in increasing weight bias awareness in HCPs. In addition to changing awareness, certain aspects of the program were specifically designed to create empathy through increased awareness of the psychological and emotional consequences that result from bias and stigma. Other elements were designed to dispel the negative stereotypes for those facing overweight or obesity and improve fat-shaming behaviors. While the results of the pilot study are not statistically significant, they are encouraging and clinically relevant.

The utilization of the ELM as the theoretical framework for attitude change served the intervention well. The program appears to be successful in accessing the central route of

processing. Many of the responses to the short answer questions included thoughtful reflections of the content. Several participants discussed personal experiences with weight bias, and several expressed concerns about their own bias. These responses are an indication that change through the central route may have occurred. Change through the central route is seen as persistent and predictive of future behavior (Petty& Cacioppo, 1981). This understanding gives hope that the benefits of the *We Matter* program will continue long after the end of the intervention.

It took ten and a half weeks to complete the program instead of the eight weeks that were initially planned. The seven weeks of the intervention, the one additional week given for week two, and two and a half weeks were given in the end for participants to complete all the program elements. Factors that necessitated this increase in time were the complications during week 2, winter break, the return of students to the universities, and increases in COVID-19 cases. These factors increased the workload of the participating student health staff. Understanding that completing the *We Matter* program might be difficult for participants, more time was allowed. No aspect of the program was time-sensitive and increasing completion time potentially decreased attrition rates. This change was submitted to the primary IRB.

Strengths and Limitations

There are several core strengths of this program highlighted in the literature. First, unlike other programs that have attempted to focus on attitude change, *We Matter* focused on increasing awareness. Awareness is the first step in changing deep-seated unconscious bias (Kushner et al., 2014). According to The Joint International Consensus Statement for Ending Stigma of Obesity, raising awareness of the harmful repercussions of weight stigma is vital (Rubino et al., 2020). *We Matter* also used multiple strategies to maximize thoughtful reflection via the central processing route over several weeks. The literature review from this research revealed that a multi-modal

educational intervention delivered over more than one day is more effective than one mode given at one time (Alberga et al., 2016). According to Rukavina et al. (2010), the deep-seated nature of implicit biases and the range of negative preconceptions necessitate diverse techniques.

At the time of this literature review, there were no multi-modal educational interventions focused on current practicing HCPs, making *We Matter* a novel virtual program. Finklestein and Lapshin (2007) found that a web-based educational module directed towards HCPs caring for those with stigmatizing conditions, such as depression, effectively decreased bias with this patient population. Also, by educating HCPs on the uncontrollable causes of obesity, *We Matter* addressed the gap between scientific evidence and the conventional narrative of obesity. The Joint International Consensus Statement for Ending Stigma of Obesity considers this a significant issue that may reduce weight bias and its negative consequences (Rubino et al., 2020).

Only two participants kept the same awareness score pre-and post-intervention. While many scores increased, two of the scores went down. A survey limitation includes not accounting for changes in awareness that would decrease. Was there too much time between the pre-and post-intervention survey, and respondents forgot what they said initially? Did *We Matter* cause them to reconsider their response? Exploring and correcting these possibilities of why awareness scores decreased can be an element of future research for the program.

The chosen one-group pretest-posttest design has several project constraints such as no control group and no randomization. This, along with sample size and it being a pilot study limited the ability to derive statistical significance from the project's findings. The use of limited categorical demographic data limited the ability to conduct other statistical analysis such as correlations. In addition to being small, the sample was not representative of the population,

considering 73.6% and not 90% of the US population is experiencing overweight or obesity (CDC, 2018). The possibility of selection bias was heightened by convenience sampling of consenting individuals. Using a convenience sample was also a limitation. In trying to provide anonymity for co-workers' demographic data such as gender, race, and education were excluded. This limited the available analysis and inferences that could be made. Another project limitation is the seven-week implementation period. This time span can be seen as a benefit, since educating HCPs can be challenging due to the time constraints related to work and life schedules (Finkelstein & Lapshin, 2007), or it can be limiting, as similar research that statistically reduced implicit racial bias was 12 weeks in duration (Devine et al., 2012). Another limitation was not having more discussion around what participants IAT scores were. Only asking if they were what they expected did not help determine their level of bias. Participants could have been asked if their IAT score showed bias.

Barriers to implementation included the lack of valid and reliable tools to assess weight bias awareness. Many of the tools used in other studies regarding weight bias were designed to assess attitudes about weight bias or the presence of weight bias. These tools have shown to be inconsistent in capturing the intended measurement in an evaluation of the most popular scales (Stewart & Ogden, 2021). To reduce the negative impact of this barrier, I used face validity to evaluate self-created tools. This study was not immune to attrition; however, the sample did not suffer greatly. Another significant barrier to implementation was the current COVID-19 pandemic. The pandemic has increased the demands on struggling student health centers and colleges (Hayat et al., 2021), making recruitment difficult with all the participants coming from university student health centers.

Research has shown that it is challenging to make a lasting change on implicit and explicit biases (Devine et al., 2012), and weight bias is no exception. For *We Matter* to be a more effective intervention, future studies would need to include a larger and more diverse sample of men and women of varying sizes and utilize a more diverse practice setting. With a larger sample, the demographic data collected could be more detailed, and post-intervention analysis could possibly control for variables such as age, BMI, and practice setting. Future studies would also need to include valid and reliable tools to measure the program's effectiveness. This could include paying for Project Implicit to perform the Fat-Thin IAT pre and post intervention and evaluate the difference scores. A thought-listing technique could be employed to analyze further the short answer questions used to promote thoughtful reflection (Cacioppo & Petty, 1981). Fitterman-Harris and Vander Wal (2021) utilized the qualitative approach of a thought-listing technique to statistically determine if their intervention accessed the central route of processing. The high participation in answering the short answer questions for this study demonstrates the feasibility of utilizing a thought-listing technique in the future. In addition to the inclusion of a qualitative researcher, this could be a rich source of data to evaluate *We Matter*. Finally, it would be beneficial to assess each program element to determine the most effective aspect. The long-term goal is for *We Matter* to be a required competency program at healthcare centers worldwide.

Choosing to highlight the downstream consequences of stigma and bias on a vulnerable population has been a challenging and rewarding experience. Studies show that the higher a person's BMI, the more discrimination they face (Carpenter, 2019), yet body size rarely enters discussions around discrimination. What started as a personal goal to address my deficiencies has become a passion for bringing nursing care in line with nursing's ethical values regarding

diversity, equity, and inclusion (DE&I) and bringing weight discrimination to the discussion. The ethical values of the principles of autonomy (self-determination), beneficence (what is good), justice (what is fair and right) and non-maleficence (do no harm) are guiding principles of the profession (Jonsen et al., 2022). Although research has continually shown that changing attitudes, especially implicit attitudes, is challenging, I believe that behaviors can be controlled and taught through adequate training. According to Shinners (2021), an environment of DE&I starts with awareness and culminates in creating a nursing workforce and practice environment that reflects the values and beliefs of our profession. Making overweight and obesity a part of the DE&I discussion is needed to diminish stereotypes and change the narrative.

I would be remiss if I did not discuss what the current COVID-19 pandemic has highlighted regarding the effects of weight bias—remembering that people with obesity exist within every marginalized identity (NAAFA 2020). The pandemic has highlighted the importance of becoming aware of our biases and changing our behaviors to reflect a more inclusive approach to care. Individuals who are overweight or obese had increased morbidity and mortality related to a COVID-19 diagnosis (Popkin et al., 2020). Given our understanding that experiences of stigma lead people to delay or avoid healthcare (Rubino et al., 2020), it is reasonable to believe that some of the disparity in COVID outcomes experienced by people with obesity are related to stigma. Furthermore, individuals with obesity were more likely to have vaccine effectiveness reduced due to mechanisms like those that cause a higher risk of primary infection (Popkin et al., 2020). I believe that overlooking these critical issues results from the exclusion of obesity considerations in medicine, despite the increasing prevalence of this population (Popkin et al., 2020). Providers of healthcare try to offer their patients the best possible care. However, obesity is frequently viewed by healthcare providers as a preventable

risk factor that limits their ability to treat and prevent disease. Evidence suggests this attitude impacts the care they provide (Phelan et al., 2015). I seek to change these attitudes.

Conclusion

Despite the barriers and limitations, *We Matter* introduces an innovative program to increase weight bias awareness in HCPs. At the conclusion of the program, 0% of the respondents reported a low level of weight bias awareness. Two of the participants who reported low awareness levels during the pre-intervention survey reported expert awareness during the post-intervention survey. Only 20% considered themselves to have moderate awareness. Sixty percent of the participants rated themselves to have high weight bias awareness post-intervention. Overall, six of the participants' scores increased, two stayed the same, and two went down.

This study added to the literature by using a multi-faceted, theoretically based intervention to include perspective-taking, empathy building, and teaching about the uncontrollable causes of obesity to HCPs and not students. *We Matter* also adds to the literature by focusing on awareness rather than attitude change. The overall outcome measures focused on awareness, but the program educated participants on how to define weight bias, recognize it, and correct fat-shaming behaviors. Understanding the needs of patients with overweight or obesity may help HCPs become more sensitive in their assessments and improve the quality of care they provide (Falker & Sledge, 2011). With the increasing rates of obesity in this country, it is necessary to focus on interventions that challenge weight-based stereotypes and create awareness of the harmful effects of weight stigma on mental and physical health (Cassiano et al., 2021). This focus is important for everyone, especially HCPs whose intention is to help and not harm patients.

Nursing Practice Implications

Finding the best way to approach the problem of weight bias and stigma is a continuing challenge. Weight bias is not a specific practice problem; it is a universal problem, as evidenced by the literature review. HCPs having levels of bias towards the obese that match or exceed that of the public should concern all involved. Nurses can be advocates, health educators, and change-makers for families, patients, and communities (Najjar et al., 2017). The American Nurses Association (ANA) has introduced the expectation of Cultural Congruence in the update to Nursing: Scope and Standards of Practice. Standard 8 provides guidelines for registered nurses and advanced practice registered nurses concerning health equity and respect for diversity. These guidelines require nurses to practice introspection related to their values and beliefs while dedicating themselves to lifelong learning about caring for diverse populations and advancing health equity (ANA, 2015).

Consequently, training nurses in obesity-related behavior change techniques are appropriate for the future of nursing (Fillingham et al., 2014). Nurses can serve as role models to other HCPs and increase awareness of weight bias. Nurses and nurse practitioners can significantly make a difference in helping others understand the uncontrollable causes of obesity (Najjar et al., 2017). They can also help combat weight bias/stigma by signing the pledge from The Joint International Consensus Statement for Ending Stigma of Obesity. Nurses can pledge to treat overweight and obese individuals with dignity and respect, encouraging support initiatives to prevent weight-bias discrimination in the workplace, education, and health care settings (Rubino et al., 2020). When it comes to ending weight bias and stigma, every voice counts (Obesity Action Coalition [OAC], 2021).

References

Alberga, A. S., Pickering, B. J., Hayden, K. A., Ball, G. D., Edwards, A., Jelinski, S., Nutter, S., Oddie, S., Sharma, A. M., & Russell-Mayhew, S. (2016). Weight bias reduction in health professionals: a systematic review. *Clinical Obesity*, *6*(3), 175–188. https://doi.org/10.1111/cob.12147

Albury, C., Strain, W. D., Le Brocq, S., Logue, J., Lloyd, C., & Tehran, A. (2020). The importance of language in engagement between healthcare professionals and people living with obesity: A joint consensus statement. *The Lancet Diabetes & Endocrinology*, 8(5), 447–455. https://doi.org/10.1016/S2213-8587(20)30102-9

American Nurses Association (2015). Standard 8. Culturally Congruent Practice. *Nursing: Scope and Standards of practice* (3rd ed.) https://www-r2library-com.proxy01.its.virginia.edu/Resource/Title/1558106197

Ancel, G. (2006). Developing empathy in nurses: An in-service training program. *Archives of Psychiatric Nursing, 20(6)*. 249-257. https://doi.org 10.1016/j.apnu.2006.05.002

Berwick, D. M., Nolan, T. W., & Whittington, J. (2008). The triple aim: care, health, and cost. *Health affairs (Project Hope)*, *27*(3), 759–769. https://doi.org/10.1377/hlthaff.27.3.759

Brochu, P. M., Banfield, J. C., & Dovidio, J. F. (2020). Does a common ingroup identity reduce weight bias? Only when weight discrimination is salient. *Frontiers in Psychology*, *10*(3020). https://doi.org/10.3389/fpsyg.2019.03020

Cacioppo, J. T., & Petty, R. E. (1981). Social psychological procedures for cognitive response assessment: the thought-listing technique. In T. V. Merluzzi & C. R. Glass (Eds.), *Cognitive assessment* (pp. 309–342). Guilford Press.

Carpenter, J. (2019). One type of diversity we don't talk about at work: Body size. *CNN Business*. https://www.cnn.com/2019/01/03/success/weight-bias-work/index.html

Cassiano, G. S., Carvalho-Ferreira, J. P., Buckland, N. J., & da Cunha, D. T. (2021). Do registered dietitians, nutrition students, and laypeople perceive individuals with obesity differently? *International Journal of Environmental Research and Public Health*, *18*(17). https://doi.org/10.3390/ijerph18178925

Center for Disease Control and Prevention. (2018, January 1). *Obesity and Overweight*. National Center for Health Statistics. https://www.cdc.gov/nchs/fastats/obesity-overweight.htm

Cotugna, N., & Mallick, A. (2010). Following a calorie-restricted diet may help in reducing healthcare students' fat phobia. *Journal of Community Health*, *35*(3), 321–324. https://doi.org/10.1007/s10900-010-9226-9

Devine, P. G., Forscher, P. S., Austin, A. J., & Cox, W. T. (2012). Long-term reduction in implicit race bias: A prejudice habit-breaking intervention. *Journal of experimental social psychology*, *48*(6), 1267–1278. https://doi.org/10.1016/j.jesp.2012.06.003

Falker, A. J., & Sledge, J. A. (2011). Utilizing a bariatric sensitivity educational module to decrease bariatric stigmatization by healthcare professionals. *Bariatric Nursing and Surgical Patient Care*, *6*(2), 73–78. https://doi.org/10.1089/bar.2011.9974

Fillingham, A., Peters, S., Chisholm, A., & Hart, J. (2014). Early training in tackling patient obesity: A systematic review of nurse education. *Nurse Education Today*, *34*(3), 396–404. https://doi.org/10.1016/j.nedt.2013.06.020

Finkelstein, J., & Lapshin, O. (2007). Reducing depression stigma using a web-based program. *International journal of medical informatics*, *76*(10), 726–734. https://doi.org/10.1016/j.ijmedinf.2006.07.004

Fitterman-Harris, H. F., & Vander Wal, J. S. (2021). Weight bias reduction among first-year medical students: A quasi-randomized, controlled trial. *Clinical Obesity*, 1–11. https://doi.org/10.1111/cob.12479

Fitzgerald, C., & Hurst, S. (2017). Implicit bias in healthcare professionals: A systematic review. *BMC medical ethics*, *18*(1), 19. https://doi.org/10.1186/s12910-017-0179-8

Geddes, J. (2016). *Elaboration likelihood model Theory: Using ELM to get inside the user's mind*. Interaction design foundation. https://www.interaction-design.org/literature/article/elaboration-likelihood-model-theory-using-elm-to-get-inside-the-user-s-mind

Geller, G., & Watkins, P. A. (2018). Addressing medical students' negative bias toward patients with obesity through ethics education. *AMA Journal of Ethics*, *20*(10), 948–959. https://doi.org/10.1001/amajethics.2018.948

Haga, B. M., Furnes, B., Dysvik, E., & Ueland, V. (2019). Putting life on hold: Lived experiences of people with obesity. *Scandinavian Journal of Caring Sciences*, *34*(2), 514–523. https://doi.org/10.1111/scs.12756

Hales, C., Gray, L., Russell, L., & MacDonald, C. (2018). A qualitative study to explore the impact of simulating extreme obesity on healthcare professionals' attitudes and perceptions. *Ostomy/Wound Management*, *64*(1), 18–24.

Hayat, A. A., Keshavarzi, M. H., Zare, S., Bazrafcan, L., Rezaee, R., Faghihi, S. A., Amini, M., & Kojuri, J. (2021). Challenges and opportunities from the COVID-19 pandemic in medical education: a qualitative study. *BMC Medical Education*, *21*(247). https://doi.org/10.1186/s12909-021-02682-z

Itchhaporia, D. (2021). The evolution of the quintuple aim: Health equity, health outcomes, and the economy. *Journal of the American College of Cardiology, 78*(22) 2262-2264

Jonsen, A.R., Siegler, M., & Winslade, W.L. (2022). *Clinical ethics: A practical approach to ethical decisions in clinical medicine.* 9th Edition. McGraw-Hill Education.

Kushner, R. F., Feinglass, J. M., & Yelen, M. (2014). An obesity educational intervention for medical students addressing weight bias and communication skills using standardized patients. *BMC Medical Education, 14*. https://doi.org/10.1186/1472-6920-14-53

Lee, M., Ata, R. N., & Brannick, M. T. (2014). Malleability of weight-biased attitudes and beliefs: A meta-analysis of weight bias reduction. *Body Image, 11*(3), 251–259. https://doi.org/10.1016/j.bodyim.2014.03.003

Matharu, K., Shapiro, J. F., Hammer, R. R., Kravitz, R. L., Wilson, M. D., & Fitzgerald, F. T. (2014). Reducing obesity prejudice in medical education. *Education for Health*, *27*(3), 231–237. https://doi.org/10.4103/1357-6283.152176

National Association to Advance Fat Acceptance. (2020). *Guidelines for healthcare providers with fat clients.* https://static1.squarespace.com/static/5e7be2c55ceb261b71eadde2/t/605d0b09af80014b16bbb2cd/1616710410284/2020+Guidelines+for+Healthcare+Providers.pdf

Najjar, R. H., Jacob, E., & Evangelista, L. (2017). Eating behaviors, weight bias, and psychological functioning in multi-ethnic low-income adolescents. *Journal of Pediatric Nursing*, *38*(2018), 81–87. https://doi.org/10.1016/jpedn.2017.11.008

Nevins, S. & Hoffman, J. (Executive Producers). (2012, May 14). *The weight of the nation: Stigma-the human cost of obesity* [Video] https://www.youtube.com/watch?v=4Ow1uiWcn4c

Ng, C. D., & Cunningham, S. A. (2020). In, out, and fluctuating: Obesity from adolescence to adulthood. *Annals of epidemiology*, *41*, 14–20. https://doi.org/10.1016/j.annepidem.2019.12.003

O'Brien, K. S., Puhl, R. M., Latner, J. D., Mir, A. S., & Hunter, J. A. (2010). Reducing anti-fat prejudice in preservice health students: a randomized trial. *Obesity*, *18*(11), 2138–2144. https://doi.org/10.1038/oby.2010.79

Obesity Action Coalition. (2022). *OAC Action Center*. OAC. Obesityaction.org/advocacy/resources/weight-bias-resources/

Obesity Action Coalition (n.d.). *People-first language for obesity.* https://www.obesityaction.org/wp-content/uploads/1033162_FirstPersonOne-Pager01_041921.pdf

Persky, S., Eccleston, C.P. (2011). Impact of genetic causal information on medical students' clinical encounters with an obese virtual patient: Health promotion and social stigma. Annals of Behavioral Medicine: A Publication of the Society of Behavioral Medicine, 41(3), 363-372. https://doi.org/10.1007/s12160-010-9242-0

Petty R, & Cacioppo J. (1981). *Attitudes and persuasion: Classic and contemporary Approaches*. Dubuque, Iowa: William C. Brown Company Publishers.

Phelan, S. M., Burgess, D. J., Yeazel, M. W., Hellerstedt, W. L., Griffin, J. M., & van Ryn, M. (2015). Impact of weight bias and stigma on quality of care and outcomes for patients with obesity. *Obesity Reviews*, *16*, 319–326. https://doi.org/doi: 10.1111/obr.12266

Popkin, B. M., Du, S., Green, W. D., Beck, M. A., Algaith, T., Herbst, C. H., Alsukait, R. F., Alluhidan, M., Alazemi, N., & Shekar, M. (2020). Individuals with obesity and COVID-19: A global perspective on the epidemiology and biological relationships. *Obesity*

reviews: an official journal of the International Association for the Study of Obesity, *21*(11), e13128. https://doi.org/10.1111/obr.13128

Poustchi, Y., Saks, N. S., Piasecki, A. K., Hahn, K. A., & Ferrante, J. M. (2013). Brief intervention effective in reducing weight bias in medical students. *Family Medicine*, *45*(5), 345–348.

Project Implicit (n.d). *Fat-Thin IAT.* https://implicit.harvard.edu/implicit/iatdetails.html

Puhl, R. M., Lessard, L. M., Pearl, R. L., Himmelstein, M. S., & Foster, G. D. (2021). International comparisons of weight stigma: Addressing a void in the field. *International Journal of Obesity*. https://doi.org/10.1038/s41366-021-00860-z

Puhl, R. M., Luedicke, J., & Grilo, C. M. (2014). Obesity bias in training: Attitudes, beliefs, and observations among advanced trainees in professional health disciplines. *Obesity*, *22*(4), 1008–1015. https://doi.org/10.1002/oby.20637

Rubino, F., Puhl, R. M., Cummings, D. E., Eckel, R. H., Ryan, D. H., Mechanick, J. I., Nadglowski, J., Salas, X. R., Schauer, P. R., Twenefour, D., Apovian, C. M., Aronne, L. J., Batterham, R. L., Berthoud, H.-R., Boza, C., Busetto, L., Dicker, D., DeGroot, M., Eisenberg, D., Korner, J. (2020). Joint international consensus statement for ending stigma of obesity. *Nature Medicine*, *26*, 485–497. https://doi.org/10.1038/s41591-020-0803-x

Rudd Center (n.d.). *Having a productive conversation: Weight bias-dispelling myths.* https://uconnruddcenter.org/wp-content/uploads/sites/2909/2020/07/Having-a-Productive-Convo.pdf

Rudd Center (n.d.). *Reducing stigma when talking to patients about weight.* https://uconnruddcenter.org/wp-content/uploads/sites/2909/2020/11/Reducing-Stigma-Talking-to-Patients.pdf

Rudd Center (n.d.). Motivational interviewing for promoting healthy behaviors. https://uconnruddcenter.org/wp-content/uploads/sites/2909/2020/07/Motivational-Interview-for-Promoting-Healthy-Behaviors-2-1.pdf

Rudd Center (n.d.) Creating a comfortable and welcoming office environment for patients with high body weight. https://uconnruddcenter.org/wp-content/uploads/sites/2909/2020/07/Creating-a-Comfortable-and-Welcoming-Office-Environment-1-1.pdf

Rudd Center (n.d.) Toolkits for health care providers. *Preventing weight bias: Helping without harming in clinical practice.* http://biastoolkit.uconnruddcenter.org/index.html

Rudd Center (2009). Weight Bias in health care [Video]. https://www.youtube.com/watch?v=lZLzHFgE0AQ

Rukavina, P. B., Li, W., Shen, B., & Sun, H. (2010). A service-learning based project to change implicit and explicit bias toward obese individuals in kinesiology pre-professionals. *Obesity Facts, 3*(2), 117–126. https://doi.org/10.1159/000302794

Seymour, J., Schumacher, J., & Vollmer, R. L. (2018). A qualitative exploration of weight bias and quality of health care among health care professionals using hypothetical patient scenarios. *Inquiry*. https://doi.org/10.1177/0046958018774171

Shinners J. (2021). Diversity, Equity, and Inclusion: A Call to Action. *Journal of continuing education in nursing, 52*(2), 57–60. https://doi.org/10.3928/00220124-20210114-02

Stewart, S. F., & Ogden, J. (2021). What are weight bias measures measuring? An evaluation of core measures of weight bias and weight bias internalization. *Health psychology open*, *8*(2), https://10.1177/

Swift, J. A., Tischler, V., Markham, S., Gunning, I., Glazebrook, C., Beer, C., & Puhl, R. (2013). Are anti-stigma films a useful strategy for reducing weight bias among trainee healthcare professionals: Results of a pilot randomized control trial. *Obesity Facts*, *6*(1), 91–102. https://doi.org/10.1159/000348714

Weimorts, A. (2018). *Provider awareness of implicit bias and evaluation of the feasibility and utility of a perspective taking intervention*. [Unpublished Scholarly DNP Project]. University of Virginia.

Wijayatunga, N. N., Kim, Y., Butsch, W. S., & Dhurandhar, E. J. (2019). The effects of a teaching intervention on weight bias among kinesiology undergraduate students. *International Journal of Obesity*, *43*(11), 2273–2281. https://doi.org/10.1038/s41366-019-0325-0

Wyatt, R., Laderman, M., Botwinick, L., Mate, K., & Whittington, J. (2016). *Achieving health equity: A guide for health care organizations* [IHI White Paper]. Cambridge, Massachusetts: Institute for Healthcare Improvement

Table 1

We Matter Program Participant Categorical Age at the time of Survey (N = 10)

	n	%
25-35	4	40
35-45	2	20
45-55	1	10
55+	3	30
Total	10	100

Table 2

We Matter Program Participant Categorical Body Mass Index (N = 10)

	n	%
18-25	1	10
25-29	0	0
30-35	4	40
>35	5	50
Total	10	100

Table 3

We Matter Program Pre- and Post-Intervention Level of Awareness of Weight Bias and Stigma Counts and Percentages (N = 10)

Likert-scale	Pre-intervention		Post-intervention	
	n	%	*n*	%
No Awareness 1	0	0	0	0
Low Awareness 2	3	30	0	0
Moderate Awareness 3	3	30	2	20
High Awareness 4	3	30	6	60
Expert Awareness 5	1	10	2	20
Total	10	100	10	100

Table 4

We Matter! Program Pre- and Post-Intervention Level of Awareness of Weight Bias and Stigma Related-Samples Wilcoxon Signed Rank Test

Questionnaire	*N*	Mean (SD)	Median (IQR)	Min-Max	*p*-value
Pre-Intervention	10	3.20 (1.03)	3.00 (2.00-4.00)	2 – 5	1.07
Post-Intervention	10	4.00 (0.67)	4.00 (3.75-4.25)	3 – 5	

Table 5

We Matter Responses to IAT, NAAFA Brochure, Story of Eva and Weight Bias Documentary Counts and Percentages (N = 10)

Statement	Strongly Disagree *n* (%)	Disagree *n* (%)	Neither Agree or Disagree *n* (%)	Agree *n* (%)	Strongly Agree *n* (%)	Missing *n* (%)
Week 2 Weight IAT score was what was expected.	0 (0)	2 (20)	3 (30)	3 (30)	1 (10)	1 (10)
Week 2 The information in the brochure could easily be used in future practice	1 (10)	1 (10)	2 (20)	3 (30)	2 (20)	1 (10)
Week 3 Story of Eva increased personal awareness of weight bias and highlighted how easy it could occur	1 (10)	1 (10)	3 (30)	3 (30)	2 (20)	
Week 3 Story of Eva helped better understand the concept of weight bias and internalization	1 (10)	0 (0)	3 (30)	3 (30)	3 (30)	
Week 4 Story of Eva increased personal awareness of weight bias and highlighted how easy it could occur	1 (10)	1 (10)	3 (30)	3 (30)	2 (20)	
Week 4 Story of Eva helped better understand the concept of weight bias and internalization	1 (10)	0 (0)	3 (30)	3 (30)	3 (30)	
Week 5 Story of Eva increased personal awareness of weight bias and highlighted how easy it could occur	1 (10)	0 (0)	4 (40)	2 (20)	3 (30)	
Week 5 Story of Eva helped better understand the concept of weight bias and internalization	1 (10)	0 (0)	3 (30)	4 (40)	2 (20)	

	Yes n (%)	No n (%)
Week 6 This module affected awareness of weight bias	4 (40)	6 (60)

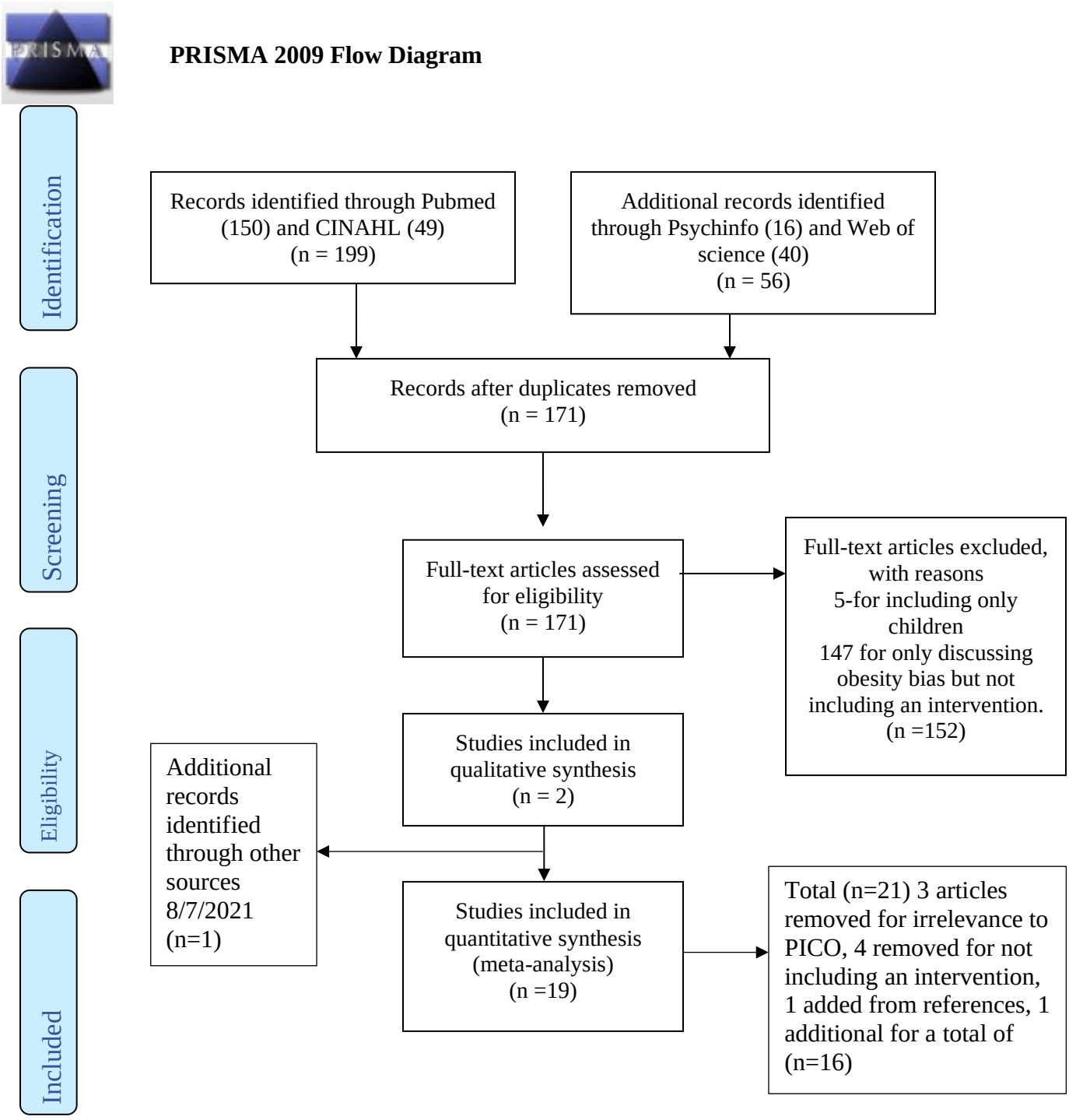
Table 6

Post-intervention evaluation of We Matter

Rate your intent to use the information provided in the We Matter! program. No intent (1), undecided (2), low (3), moderate (4), high (5)	*n* (%) Low	n (%) Moderate	*n* (%) High
	1 (10)	5 (50)	4 (40)
We Matter! helped me to be mindful of weight bias during patient interactions. Strongly disagree (1), disagree (2), neither agree or disagree (3), agree (4), strongly agree (5)	*n* (%) Neither agree or disagree	*n* (%) Agree	*n* (%) Strongly agree
	3 (30)	2 (20)	5 (50)
The We Matter! intervention is relevant to my practice. Strongly disagree (1), disagree (2), neither agree or disagree (3), agree (4), strongly agree (5)	*n* (%) Neither agree or disagree	*n* (%) Agree	*n* (%) Strongly agree
	2 (20)	1 (10)	7 (70)
The We Matter! intervention was time consuming. Strongly disagree (1), disagree (2), neither agree or disagree (3), agree (4), strongly agree (5)	*n* (%) Strongly disagree	*n* (%) Disagree	*n* (%) Neither agree or disagree
	2 (20)	4 (40)	4 (40)
At any time during the course of the intervention did you find yourself using elements of the program in your practice?	*n* (%) Yes	*n* (%) No	
	7 (70)	3 (30)	

Figure 1

Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) flow diagram for the systematic literature search process for We Matter



Appendix A

Literature Review Table

Study Citation (Author; Year)	Study Purpose	Study Design	Sample	*n*	Variables (Independent; Dependent)	Findings	JHNEBP Rating
Ançel G. (2006).	to determine whether in-service communication training enhanced the empathic skills of nurses	qualitative, pretest/posttest	Nurses employed at a particular hospital	190	Empathy training	This study revealed that in-service training directed toward integrating basic communication skills increased the empathic skills of nurses.	III; A/B
Cotugna, N., & Mallick, A. (2010).	If putting dietetics and other health professional students on a weight-reducing diet for a short period of time would alter their attitudes toward the overweight/obese person.	non-experimental, mixed methods	Convenience Sample; Healthcare students	40	Calorie restricted diet	Results showed the change in fat-phobia scores after attempting to follow a calorie-restricted diet for just one week was significant $t = 3.184$, $P < .05$	III; A/B

Study Citation (Author; Year)	**Study Purpose**	**Study Design**	**Sample**	***n***	**Variables (Independent; Dependent)**	**Findings**	**JHNEBP Rating**
Falker, A. J., & Sledge, J. A. (2011).	An educational module was designed to address the many causes of obesity and to improve sensitivity through education and knowledge	Qualitative; Program evaluation	Recruitment from multiple organizations within a hospital	30	All participants were given educational module	The educational module was effective in decreasing weight stigmatization in HCPs one month after the completion of the intervention.	III; A/B
Fitterman-Harris & Vander Wal (2021)	This study aimed to decrease weight bias in medical students via a one-session, curriculum-based intervention founded on the elaboration likelihood model (ELM)	Quasi-experimental	First year medical students	101	group-based experimental or education-based control intervention group	After controlling for social desirability, the intervention group showed no greater reduction in multi-item explicit bias rating scales or a computerized implicit bias task than the control group. Both groups showed less discomfort when near individuals with obesity	II; B

Study Citation (Author; Year)	Study Purpose	Study Design	Sample	*n*	Variables (Independent; Dependent)	Findings	JHNEBP Rating
Geller, G., & Watkins, P. A. (2018).	Here we describe first-year medical students' attitudes and our effort to improve their attitudes through an innovative ethics session embedded within the required course	Qualitative With-in subjects study design pre/post experimental design	Six first-year medical school cohorts 2012-2017	720	Ethics session	Medical students have negative attitudes about obesity that are consistent over time. Providing opportunities for students to discuss their personal experiences and beliefs about obesity within an ethics framework and using popular media as a basis for discussion might improve their attitudes toward obesity.	III; A
Hales, C., Gray, L., Russell, L., & MacDonald, C. (2018).	To assess the impact of simulating obesity on the attitudes and perceptions of health professionals toward extreme obesity	Qualitative, phenomenological	Health professionals with regular contact with people with obesity	7	Wearing a simulated fat suit for 2 hours and journaling the experience	Using a simulation suit may increase awareness among health professionals regarding issues facing persons with obesity and maybe a positive influence on diffusing weight stigma and bias in health care settings, particularly in the area of wound prevention and management where excess weight often requires additional nursing care that may exacerbate existing biases	III; A/B

Study Citation (Author; Year)	Study Purpose	Study Design	Sample	*n*	Variables (Independent; Dependent)	Findings	JHNEBP Rating
Kushner, R. F., Zeiss, D. M., Feinglass, J. M., & Yelen, M. (2014).	to evaluate changes in students' attitudes and beliefs about obesity and their confidence in communication skills after a structured educational intervention.	Quasi-experimental	first-year medical students enrolled in a communications class	127	Medical students required to read an article on stigma	A structured encounter with an overweight SP was associated with a significant short-term decrease in negative stereotyping and language-term increase in empathy and raised confidence first-year year medical students toward persons who are obese. The encounter was most effective for increasing confidence in counseling skills.	II; B
Matharu, K., Shapiro, J. F., Hammer, R. R., Kravitz, R. L., Wilson, M. D., & Fitzgerald, F. T. (2014).	Researchers sought to determine whether an innovative educational intervention could diminish obesity prejudice relative to a standard medical lecture.	RCT with pre-test post-test	Enrolling Medical students from three universities	129	Students reading a play about obesity. Students receiving a standard lecture	There was a significant increase in empathy for those in both the theater (P = 0.007) and lecture group (P = 0.02). The intervention had no significant effect on implicit bias or regard for obesity as a civil rights issue.	I; B

Study Citation (Author; Year)	Study Purpose	Study Design	Sample	*n*	Variables (Independent; Dependent)	Findings	JHNEBP Rating
O'Brien, K. S., Puhl, R. M., Latner, J. D., Mir, A. S., & Hunter, J. A. (2010).	The present experiment sought to reduce implicit and explicit anti-fat prejudice in preservice health students.	RCT, pre/post test	Health promotion and public health bachelor's degree students	159	focused on controllable reasons for obesity. given a prejudice reductions presentation on genetics as the cause Given a curriculum focused alcohol use in young people	The present results show that anti-fat prejudice can be reduced or exacerbated depending on the causal information provided about obesity. The present results have implications for the training of health professionals, especially given their widespread negativity toward overweight and obesity.	I; A
Persky, S., & Eccleston, C. P. (2011)	This study explores whether information about the genetics of obesity reduces medical student stigmatization of obese patients, and how it affects rates of health behavior-related referral	RCT	3rd and 4th year medical students	110	Students reading that obesity is primarily caused by genetic factors, students reading about an unrelated medical topic	Rates of most health behavior screening recommendations (weight loss, exercise, and diet consultations) were lower among participants exposed to genetic causal information than control. The genetic causal information group exhibited less negative stereotyping of the patient than control, $F(1,105) = 5.00$, $p = 0.028$, but did not differ in anticipated patient adherence	I; B

Study Citation (Author; Year)	**Study Purpose**	**Study Design**	**Sample**	***n***	**Variables (Independent; Dependent)**	**Findings**	**JHNEBP Rating**
Phelan, S. M., Puhl, R. M., Burke, S. E., Hardeman, R., Dovidio, J. F., Nelson, D. B., Przedworski, J., Burgess, D. J., Perry, S., Yeazel, M. W., & van Ryn, M. (2015).	to assess medical school factors that influence change in implicit and explicit bias against individuals from one stigmatized group: people with obesity.	Prospective cohort study	Medical students from 49 US medical schools randomly selected from all US medical schools	1795	Web-based surveys to the students included measures of weight bias and medical school experiences. As compared to changes in the general public during the same time frame	Medical schools may reduce students' weight biases by increasing positive contact between students and patients with obesity, eliminating unprofessional role modelling by faculty members and residents, and altering curricula focused on treating difficult patients.	II; B
Poustchi, Y., Saks, N. S., Piasecki, A. K., Hahn, K. A., & Ferrante, J. M. (2013).	This study pilot tested the effectiveness of an educational intervention in reducing bias toward obese patients	Qualitative With-in subjects study design pre/post experimental design	Cohort study	64	Watched a 17 min video and engaged in discussion afterward	Implementing a short educational intervention was effective in improving medical students' beliefs and stereotypes regarding obese patients.	III; B

Study Citation (Author; Year)	**Study Purpose**	**Study Design**	**Sample**	***n***	**Variables (Independent; Dependent)**	**Findings**	**JHNEBP Rating**
Rukavina, P. B., Li, W., Shen, B., & Sun, H. (2010).	to assess the efficacy of a multi-component intervention to reduce kinesiology pre-professionals' implicit and explicit bias.	Cohort study pre/post-test experimental design	Kinesiology pre-professionals	42/ 36	Received multiple interventions to attempt to reduce implicit and explicit biases. Students from other classes that did not go through any of the interventions	On the pre-test, participants did not display overall explicit bias on the Anti-Fat Attitudes Test (AFAT) but had strong implicit bias and bias on the lazy/motivated semantic differential scale. Participation in the intervention reduced explicit bias on the AFAT social character disparagement and weight control/blame subscales but not implicit bias.	II; B
Seymour, J., Barnes, J. L., Schumacher, J., & Vollmer, R. L. (2018).	The purpose of this study was to determine whether weight bias exhibited by health care professionals (HCPs) impacts quality of health care provided to individuals with obesity	With-in subjects study design	HCP practicing in the Midwest region of the US above 18, able read and write English. Voluntary survey	220	Obese patient scenario, Normal BMI scenario	The findings of this study suggest a need to educate HCPs on the importance of empathy and compassion when providing treatment to all patients, regardless of weight, to increase quality of care and ultimately improve patient outcomes.	III; C

Study Citation (Author; Year)	Study Purpose	Study Design	Sample	*n*	Variables (Independent; Dependent)	Findings	JHNEBP Rating
Swift, J. A., Tischler, V., Markham, S., Gunning, I., Glazebrook, C., Beer, C., & Puhl, R. (2013).	Pilot a randomized controlled trial of the effects of educational films designed to reduce weight stigmatization toward obese patients on trainee dietitians' and doctors' attitudes.	Single-mask RCT	Trainee HCPs	43	n=22 Were shown two 17 min films about weight bias. n=21 Were shown one 34-minute film of a historical documentary that had nothing to do with obesity	The current study suggests both that it is possible to conduct a substantive trial of the effects of educational films designed to reduce weight stigma on a larger cohort of trainee HCPs, and that brief educational interventions may be effective in reducing stigmatizing attitudes in this population.	I; A
Wijayatunga, N. N., Kim, Y., Butsch, W. S., & Dhurandhar, E. J. (2019).	objective was to test if learning about uncontrollable cause of obesity and about weight bias would reduce explicit and implicit weight bias	IAT was used pr/post, mixed model analysis, quasi-experimental	Kinesiology pre-professionals	77	3 days of lecture, videos and a group activity all about uncontrollable causes of obesity and about weight bias and empathy evoking activities.	"Blame" component of explicit weight bias significantly decreased when students learned about controllable causes of obesity and weight bias, but implicit bias did not reduce. However, implicit weight bias appears to increase when education on obesity is limited to diet and exercise interventions as taught in the traditional curriculum.	II; B

Appendix B

Recruitment Email

Recruitment email: Hello, my name is Habibah Williams, I am a DNP student at the University of Virginia. I am requesting your participation in my scholarly project. My scholarly project will consist of a pilot study to evaluate an educational intervention designed to increase healthcare professionals' awareness of the effects of weight bias. The risk to participants includes psychological discomfort related to discussing an emotionally charged subject. There is a growing body of evidence that physicians and other HCPs hold strong negative opinions about people with obesity. Health providers need to know how to provide care, free of obesity bias and stigma.

The program *We Matter* will be 7 weeks in duration. Each week the program will require between 20-30 minutes of your time. Each module will be a short reading or a video and some questions to assess learning at the end of the reading. Demographic information will be collected: age and BMI.

To ensure confidentiality an intermediary will be used. The intermediary will de-identify the data before I see it. I will only have knowledge of who is participating, so that consent can be obtained, after that I will have no knowledge of who has started or completed the program. A $10 gift card will be given at the completion of the program. Choice of Wawa or Chick-Fil-A.

Appendix C

Consent form

Evaluation of a Pilot Program to Increase Healthcare Professionals Awareness of the Effects of Weight Bias: A Doctor of Nursing Practice Project Proposal Participant Consent Study # 4738

You are being asked to take part in a research study about weight bias in the healthcare setting and trying to find an intervention that is useful in being mindful of this bias when interacting with patients. Participants must be 18 years of age or older. Your decision to participate in this research study is completely voluntary and you should take your time to make your decision about whether to participate. You should feel free to discuss it with your family and friends.
Why Is This Study Being Done? The purpose of this study is to add to the literature by evaluating an educational intervention on healthcare professionals' awareness of weight bias and to decrease stigmatizing behaviors towards the obese.
How Many People Will Take Part in the Study? Up to 20 participants will be included in this study.
What Will Happen If I Take Part in This Research Study? If you agree to participate, you will complete a pre-intervention assessment and survey. You will receive an email every week for seven weeks with education about the effects of weight bias. Each week will require approximately 20 minutes of your time when you are not working. At the end of the seven weeks, you will complete a post-intervention assessment and survey to evaluate the We Matter! educational intervention.
How Long Will I Be in the Study? Study participation is seven weeks, but there will be 1 additional week given for completion of the program for a total of 8 weeks.
What Are the Risks of the Study? The risk to participants includes psychological discomfort related to discussing an emotionally charged subject, obesity bias.
Are There Benefits to Taking Part in the Study? There are no direct benefits to you for being in this research study. The results of this study may contribute to the development of strategies to reduce weight bias.
What Other Choices Do I Have If I Do Not Take Part in This Study? You have the option to decline to participate in this study.
Will My Medical Information Be Kept Private? The data about your participation in this study will be protected. It will be used only for research, as allowed by state and federal laws. Your information will be connected to your name for collection and tracking purposes only and will be saved on a secure University of Virginia server. Your name and any identifiable information will not be used in any reports. Efforts will be made to keep your personal information confidential. We cannot guarantee absolute confidentiality. Your personal information may be disclosed if required by law. If the information learned from this study is published in a medical journal, you will not be identified by name or in any other way.
What Are the Costs of Taking Part in This Study? There is no cost to the participants. Participants who complete both evaluations will receive a ten-dollar gift card from Wawa or Chick-fil-A as an incentive.
What Happens if I Am Injured Because I Took Part in This Study? There is no risk of injury related to this project.

What Are My Rights as a Participant? Your participation in the study is completely voluntary. You have the right to withdraw from the study at any time without penalty. If you decide to withdraw or not participate in the study, it will have no effect on your treatment or employment. How to withdraw from the study: If you want to withdraw from the study, there is no penalty to you for withdrawing. Please discuss your desire to withdraw with Habibah Williams. You will need to also send Habibah Williams your request to withdraw in writing. You may send your written request to Habibah Williams Hdw2zq@virginia.edu (804) 943-5361
Who Can Answer My Questions About the Study? You can talk to the researcher about any questions or concerns you have about this study. Her contact information is: Habibah Williams University of Virginia Hdw2zq@virginia.edu (804) 943-5361 Work Virginia State University 1 Hayden Dr. Petersburg, VA 23806 Elizabeth Hundt, Ph.D., APRN eah8yc@virginia.edu (434) 924-0130 the University of Virginia for questions about your rights while taking part in this study or to express concerns about your participation, please contact Tonya Moon. Tonya Moon, Ph.D. Chair, Institutional Review Board for the Social and Behavioral Sciences One Morton Dr. Suite 500 University of Virginia P.O. Box 800392 Charlottesville, VA 22908-0392 (434) 924-5999 Email: irbsbshelp@virginia.edu Website: www.virginia.edu/vpr/irb/sbs You may also request a copy of the protocol (full study plan). Consent and Signature You are deciding whether to take part in this study. If you click yes, it means that you have decided to volunteer to take part in this I agree to participate in the study described above:

Appendix D

Pre-intervention questionnaire

https://virginia.az1.qualtrics.com/jfe/form/SV_4PgXATpR6iwaemq (survey link)

1. Age at the time of survey
    a. 18-25
    b. 25-35
    c. 35-45
    d. 45-55
    e. 55+

2. BMI Calculator: https://www.nhlbi.nih.gov/health/educational/lose_wt/BMI/bmicalc.htm
    1. <18
    2. 18-25
    3. 25-30
    4. 30-35
    5. >35

3. Use the following scale to rate your level of awareness of the effects of weight bias and stigma.

No awareness (1), low (2), moderate (3), high (4), expert (5)

4. Have you completed any type of education specifically about weight bias in the last two years?
    a. Yes
    b. No
5. If so, was it mandatory?
    a. Yes
    b. No

Appendix E

Post-intervention and *We Matter* evaluation questionnaire

https://virginia.az1.qualtrics.com/jfe/form/SV_7U62tvVmUNeYELQ (survey link)

Post-intervention survey

1. Use the following scale to rate your level of awareness of weight bias and stigma.

No awareness (1), low (2), moderate (3), high (4), expert (5)

2. Use the following scale to rate your intent to use the information provided in the We Matter program.

No intent (1), undecided (2), low (3), moderate (4), high (5)

Questions regarding, We Matter

1. We Matter helped me to be mindful of weight bias during patient interactions.
Strongly disagree (1), disagree (2), neither agree or disagree (3), agree (4), strongly agree (5)

2. The We Matter intervention is relevant to my practice
Strongly disagree (1), disagree (2), neither agree or disagree (3), agree (4), strongly agree (5)

3. The We Matter intervention was time consuming.
Strongly disagree (1), disagree (2), neither agree or disagree (3), agree (4), strongly agree (5)

4. At any time during the course of the intervention did you find yourself using elements of the program in your practice?

a. Yes
b. No

5. What if anything would you change about the We Matter intervention to make it more useful in practice?

Thank you for your participation

Appendix F

We Matter Program

Week 1 approximately 30 minutes

Email to HCPs participants:

Thank you for agreeing to participate in my study to evaluate an educational intervention designed to educate healthcare professionals on the effects of weight bias. This is the email with the pre-intervention survey and some information and background on weight bias. Please complete the survey prior to reading the information provided.

Qualtrics Survey Link: Individual link generated from Qualtrics

Each week you will receive an email from an intermediary with a different Qualtrics survey, and something to read or watch before you complete each survey. There will be a total of 7 weeks, and you will have an additional week to complete the provided questionnaires.

Information and Background

Identifying as an obese person is emotionally significant because it is associated with a sense of vulnerability (Phelan et al., 2015), reduced quality of life, psychological problems, low self-esteem, poor body image, blame, shame, and guilt (Haga et al., 2019). "People with obesity commonly face a pervasive, resilient form of social stigma; they are often subject to discrimination in the workplace as well as in educational and healthcare settings" (Rubino, 2020, p. 485). This stigma and discrimination can lead to feelings of rejection or derogation. For example, it is common for people with obesity to experience stigma when interacting with healthcare professionals (HCPs), who often talk about obesity in unhelpful ways or cause offense (Albury et al., 2020). According to decades of research, healthcare professionals are a particularly common source of weight bias toward the obese, who are stigmatized by physicians,

nurses, psychologist dietitians, fitness experts, medical students and even obesity specialist. Research also shows that prejudice towards the obese exceeds that shown toward other commonly stigmatized groups (O'Brien et al., 2010). Well-known factors contributing to obesity are genetics and the environment; however, another factor requires more consideration than in the past. According to Najjar (2017), that factor is weight bias.

Weight bias is the expression of negative attitudes, beliefs, and behaviors toward people who are higher-weight, overweight, or obese (Brochu et al., 2020). The outcome from weight bias is weight stigma--discriminatory acts targeted toward people due to their weight and size (Obesity Action Coalition [OAC], 2021). Weight bias/stigma is associated with depressive symptoms, higher anxiety levels, lower self-esteem, social isolation, perceived stress, substance use, unhealthy eating, and weight control behaviors, such as binge eating and emotional overeating, especially in adolescents (Najjar et al., 2017). Weight bias and stigma are seen in HCPs at levels the same or, in some instances, higher than non-HCPs (Rubino et al., 2020). Size discrimination touches all races, genders, and socioeconomic levels. According to the National Association to Advance Fat Acceptance (NAAFA), “fat people exist with in every marginalized identity,” making weight discrimination a social injustice and a persistent public health problem (Rubino et al., 2020). To address this issue a multidisciplinary group of international experts, including representatives from ten scientific organizations, reviewed available evidence on the causes and harms of weight stigma and developed a Joint International Consensus Statement with recommendations to eliminate weight bias, to best inform HCPs, policymakers, and the public about the stigma associated with obesity. They concluded that, explaining the disparity between scientific evidence and the conventional narrative of obesity, that is based on unproven

assumptions and misconceptions may aid in reducing weight bias and its negative consequences (Rubino et al., 2020).

Thank you for participating in this study

Week 2 Approximately 30 minutes

https://implicit.harvard.edu/implicit/takeatest.html (Link for IAT, please take first)

https://static1.squarespace.com/static/5e7be2c55ceb261b71eadde2/t/605d0b09af80014b16bbb2cd/1616710410284/2020+Guidelines+for+Healthcare+Providers.pdf (Link for Brochure)

Post Module questions

1) **The level of weight bias measured by my IAT was what I expected it to be?**

   Undecided (1), Agree (2), Strongly agree (3), Disagree (4), Strongly Disagree (5)

2) **The information provided in the NAAFA brochure was information I already knew?**

   Undecided (1), Agree (2), Strongly agree (3), Disagree (4), Strongly Disagree (5)

3) **The information learned from the NAAFA brochure could be easily used in my future practice?**

   Undecided (1), Agree (2), Strongly agree (3), Disagree (4), Strongly Disagree (5)

4) **What thoughts and ideas did you have during the module?**

Week 3 Eva, part 1 Approximately 20 minutes

Directions: Read this first-person account of 'Eva', think about if you have ever experienced anything similar, or if you have treated anyone similar to what's happening in the story. Put yourself in Eva's place. Answer the questions that follow.

Part 1

I think I have everything. Thankfully I have always been pretty organized. I printed off my food log for the last 6 weeks and I have my workouts in a notebook. I've been logging my periods in an app on my phone, and I have been keeping track of my symptoms. The proof of my hard work is meticulously kept.

The last thing I need to do is to figure out what to wear. I need an outfit that says, "Take my complaint seriously. I am a college educated woman. I have lived in this body my whole life, and this is not normal." Nothing is quite right. None of it fits anymore. The last month my belly has been so tight and it's harder to breathe. So, what do I wear that says, "I know I am fat? This is not because I am fat."

It's okay, we don't need to come up with a cute euphemism for it. I've never met another fat woman who didn't know she was fat. As soon as we cross that unmarked line where being chubby stops being cute, the world lets us know. For me, it was when I was 10. My soccer coach wondered aloud if I really needed a sports drink on a 90-degree day. "Eva, you have so much potential but…wouldn't it be easier to move around the field if there was a little less of you to move? Why don't we stick with water?" By high school I was playing club ball and varsity and

there was a little less of me. But a broken ankle senior year took me off the field and the weight came back.

In college I made the mistake of going to the student health center in sweats after a yeast infection left me unpleasantly itchy. “These things happen,” the doctor lamented, “when we put on the freshman 15…or 20 and stop worrying as much about our hygiene.”

I found a dress that doesn’t cling too much but also doesn’t look too much like pajamas. I am practicing my mantra in the mirror. “This is not because I am fat. This is new.” Still, I am nervous. I cling to my notebooks. The truth of it all is here, so we will go over this and then we will move on to the real problem. I am prepared.

I call to make the appointment and the receptionist wants to know how much weight I’ve gained. The truth is, I’m not sure. I haven’t been on a scale in over a year but the last time I weighed myself I was 200lbs. I would guess I’ve probably gained another 20lbs. We schedule my appointment.

The morning of my appointment I scrub clean and put on deodorant twice. I start my car 15 minutes before I have to leave because it is a hot day, and I will not be the sweaty, smelly fat girl. I ran a 5k for Memorial Day so I’m not having anyone believe that I can’t walk into the doctor’s office without breaking a sweat.

But when I get there I'm out of breath despite my best efforts. I remind myself; this is why I came. I repeat my mantra, "This is not because I am fat. This is new."

I beam at the receptionist. "Hi, I'm Eva. I have a 2:30 appointment."

"Have a seat," she says, "and fill out these forms."

Have a seat. In this busy waiting room, every seat has stiff wooden arms and people have spaced themselves out so that anywhere I sit will put me next to someone. I play the game I always play. Which of these people will be the least disgusted with how I dare to exist and take up space? I find the other big girl in the room and know that at least she will know the unspoken rules and forgive me the trespass of spilling over into her space a bit.

A few minutes later I returned the forms to the receptionist. By the time I'm back to my seat, she calls me back up.

"Eva. Hey honey. We actually need you to fill in this section about your medications even if you haven't really been taking them the way you're supposed to."

"Oh…umm. I put my birth control down. But I'm not on anything else."

"Right. I know but like, we still need to know what you've been prescribed. Like your blood pressure medications or insulin."

“Like I said. Just the pill.”

The medical assistant calls me back. “Let’s get your blood pressure,” she says. “Sarah,” she shouts to the nurse, “Do you know where the big cuff is?” Awesome.

“Alrighty, let’s get you on the scale. Hmmm….” She sizes me up as she decides which fifty-pound increment to start with. She sets the bottom block to two hundred and slides the little one all the way to the end. With an awkward chuckle she says, “Oops, not quite!” and clicks it over to 250.

“253lbs. And you said you recently gained 20?”

“Looks like it was a little more,” I mumble.

Eventually I’m escorted into an exam room to wait. In my head, I’m practicing, “I know I am fat. This is not because I am fat.”

“Eva, what brings you in today?” a nurse practitioner in navy scrubs asks while washing hands.

“I’ve put on weight. My clothes were fitting tighter, and I thought maybe it was just some stress and a little bloating after a bad break up. But it’s been harder to breathe lately. And I’ve gained a lot more than I realized so fast.”

“Well,” they ask, “what does your diet look like?”

“I have it all here. I’ve been eating between 1600 and 1800 calories a day and I jog 4 days a week. Before all this started,” I can’t resist sharing, “I set a personal best on my 5k. 35 minutes and 15 seconds.”

“Walking is great,” like I didn’t just say I ran a 5k, “but weight loss is calories in and calories out and most people underestimate how much they’re eating. Your BMI is 39.6, Eva. We don’t get to that size on accident.” We don’t get to that size on accident. Like we are the same and I just haven’t found my fit body hiding inside yet.

The NP chuckles the way people do when they’re going to say something really mean but want you to take it as a lighthearted joke and follows with another condescending “we.”

“Have we maybe been eating our feelings since the breakup and not logging those calories? Depression can really send a diet out of control. I’m gonna put in a referral for a wonderful weight loss provider I know. It sounds like they would be a really good fit for you.”

“It’s just that it’s getting harder to breathe. I think this is more than my weight. And I’ve been keeping a really close eye on my food.”

“I know it can be hard to be consistent,” they say as they squirt their hands with hand sanitizer, “Carol will get you that referral when you check out. And stop by phlebotomy to get labs before you go. The weight loss clinic likes to have those before they see you.”

I feel like I’ve been hit by a truck which makes no sense because this NP literally didn’t touch me. My notebook and printouts and phone with all my symptoms, I never even got to take them out of my bag. I rehearsed my mantra, but I never found my opening.

Phlebotomy is exactly as expected. Another chair I don’t fit in. And this one has one of those padded bars that folds down over your lap. It’s tight but I get it down.

When the phlebotomist comes in weighed down with a tote full of tubes and butterfly needles and band aids she says, “I keep telling them we need one without the rail for our pregnant patients.” It’s not even worth correcting.

The rest is a daze. I jam the referral in my pocket and walk to my car so ashamed. How have I gotten here? How is my problem so plain to everyone but me?

I get to my car out of breath and sob.

End of story

Questions: https://virginia.az1.qualtrics.com/jfe/form/SV_cMbMevInVVrv0Mu (survey link)

End of Module Questions

1. **The story, Eva, increased my personal awareness of weight bias, and highlighted how easily it can occur.**

   Strongly disagree (1), agree (2), neither agree or disagree (3), Agree (4), Strongly agree (5)

2. **The story, Eva, helped me better understand the concept of weight bias internalization.**

   Strongly disagree (1), agree (2), neither agree or disagree (3), Agree (4), Strongly agree (5)

3. **Please list your thoughts and ideas that you had during the reading of the story.**

Week 4, Eva, Part 2 Approximately 15 min

Directions: Read this first-person account of 'Eva', think about if you have ever experienced anything similar, or if you have treated anyone similar to what's happening in the story. Put yourself in Eva's place. Answer the questions that follow.

The alarm again. I really need to change that thing. It's set for 6am so I can get my run in before work but in the 6 weeks since I saw my provider, I can count on one hand the number of days I've felt well enough to run. This morning is no different. Who can run when you're out of breath before you've brushed your teeth?

I know I said that today wasn't any different but that's not entirely true. Today is so much worse. I don't understand it. I have no appetite and I've eaten so little the last month but still, I'm

getting bigger. I can't fit into a single pair of pants anymore and only a couple dresses. I'm supposed to have a lunch meeting with a colleague though, so I have to wear something.

As I pull my dress over my head, I am struck by how it clings to my increasingly firm belly. It was so much looser when I wore it to my appointment. And there it is, in my pocket, the referral to the weight loss clinic. I was so mad when they gave me this, but the proof is in this dress. Something has to change.

When I call and make the appointment, the receptionist says that she's going to email me the paperwork in advance so I can take my time filling it out. "Also," she says, "bring anything that will help the provider get a picture of your day-to-day life. Like if you write down your cycle, keep a food log, anything like that. It all helps them understand your circumstances better. Can you come on Thursday?"

Thursday comes and I'm back to practicing my mantra. "This is not because I'm fat. This is new." Somehow, it's lost its oomph now that I've conceded to seeing a weight loss doctor.

When I get to the clinic, I give the receptionist my paperwork. "Eva, it's so nice to meet you. Let me review all of this to make sure we have what we need. Have a seat and the nurse will call you back shortly."

Have a seat. The reception area is appointed with several different chairs. I choose a soft couch across from an older man in a wide, high-backed chair. And as I settle in, the door opens, and a nurse walks out, rather than calling from the door.

“Hi Roger. Let’s head back for your appointment.” He must have been coming here a while because she seemed to know he would need help with his walker and getting out of the chair.

Fifteen minutes pass and the door swings open again. The same nurse comes and sits next to me.

“Hi, I’m Sarah, Jesse’s nurse. We’re ready for your appointment. I saw on your intake form that you are having a lot of new shortness of breath. I am sure that is very scary. Do you need any assistance getting up or back to the exam room?”

My heart skips a beat. It’s the first time since all of this started someone asked me about how I feel before asking me what I’ve done to cause it. And it is scary.

“I’m fine. Thank you.”

“Alright. Let’s head back then.”

Our first stop is a room with a bench next to a table and a scale. The scale seems to just be a plate with a few wires coming out of it. As the door closes behind us Sarah asks, “Would you be comfortable letting me weigh you today?”

“Is ‘no’ an option to that at a weight loss clinic?” I ask, flippantly.

“No is always an option in any clinic. You can say no to things even when we forget our manners and don’t ask.”

I’ve never said no to a nurse or a doctor. It would never have occurred to me. To this, however, I say yes, and step on the scale. She looks at a box that is faced away from me on the desk, writes down a number, and asks, “Would you like to know the number today?”

“No.” I surprise myself. But this number doesn’t serve me. I have lived in this body my entire life. That number does not change what I know.

While she gets my blood pressure, we chat about how I’ve been feeling. Sarah moves with practiced hands that seem to find equipment without looking for it. When I tell her about my 5k she says, “That sounds like it was a lot of fun. I have bad knees so I’m more of a bicycle person. Did you bring any logs or diaries for us to look through today?”

I pull them out of my purse, and we talk about the changes I’ve had in my activity, appetite, menstrual periods, and bowel movements. As we talk, she puts notes into my chart from a tablet.

“Alright,” she says, “that’s all from me for now. Let’s get you to the exam room and the nurse practitioner, Jesse, will be in shortly.”

We walk back to another exam room and the exam table is low and against one wall. I have a seat. As Sarah is leaving, Jesse walks in.

“So, Eva, how are you feeling today?” Jesse asks while hand washing.

“Not well. And I know this is a weight loss clinic, but this is not because I’m fat. This is new.” Fine, it wasn’t exactly how I rehearsed it, but I saw my opening and had to get it out.

“You’ve lived in your body your whole life. You would know. But let’s check a few things and see what we find. It looks like your primary put this referral in a while ago. What made you decide now was the time to see me?”

“Nothing fits. I write everything down. I’m eating 800 calories a day and not even because I want to but just because I can’t fit another bite in me. And still, my belly is getting bigger. I can’t run anymore because I can’t breathe. But I keep getting bigger and I didn’t know what else to do.”

It’s the most words I’ve ever said in a doctor’s office, and it comes out in a torrent. The exertion of it makes my belly ache and Jesse, one hand outstretched towards my belly says, “May I?”

"Please, yes. It's so tight that when I breathe heavily my whole middle aches."

Firm pressure is put on my abdomen as the provider feels around in a few spots.

"Eva, is most of your weight gain right here in the middle?"

"All of it from what I can tell."

"When was the last time you saw your gynecologist?"

"It's been a few years," I admit reluctantly.

"Eva, I'd like you to get an ultrasound…"

End of story

Questions: https://virginia.az1.qualtrics.com/jfe/form/SV_brtTdy07GmA6LRQ (link to survey)

1. **The story, Eva, increased my personal awareness of weight bias, and highlighted how easily it can occur.**

   Strongly disagree (1), agree (2), neither agree or disagree (3), Agree (4), Strongly agree (5)

2. **The story, Eva, helped me better understand the concept of weight bias internalization.**

   Strongly disagree (1), agree (2), neither agree or disagree (3), Agree (4), Strongly agree (5)

3. Please list any thoughts and ideas that you had during the reading of the story.

Week 5, Eva, PART 3 approximately 15 minutes

I'm shaking. With fear or relief or vindication? I'm not sure. Probably all three and a few more feelings I haven't identified yet.

The doctor was so kind. When he came into the room, he pushed his computer station to the side, introduced himself and asked me about what I've been experiencing. I told him about how I'd been gaining weight. "These rarely get this big. They're usually found when they're much smaller during routine care."

I wince, "I'm sure that's true. But when you're fat, nobody assumes anything is really wrong, they just think you got fatter. And honestly, the thought of having another provider tell me what I already knew…" I trail off. "But you said, 'these things.' What did you find?"

I had to have the surgeon say it twice because I couldn't believe it. There is a mass on my right ovary growing up and out that is, according to the ultrasound, 36cm across. I have 14 inches of tumor attached to a little ovary. The doctor said, "I can't believe you can breathe the way this is pushing on your diaphragm."

"I can't breathe. That's what made me finally be seen," I admitted.

“You’re right though. When you are already overweight, we providers make assumptions. I’m sorry my colleagues made it hard for you to seek care and I’m even more sorry that our biases meant you were referred to a weight loss clinic instead of me right away.”

We talked some more, and I left with a lot to consider and the terrifying task of telling my mother.

I take a minute in my car. We’re meeting for lunch, and she doesn’t really know what’s been going on. The surgeon says that I will need support after surgery and there’s nobody, I’d rather have but I have not kept her in the loop.

She’s at the restaurant when I arrive. When I see my mother, I am done. I realize I’ve been avoiding her and the sight of her now causes all the emotions I’ve been compartmentalizing to spill out of my eyes. I didn’t want her to see how I’d been gaining weight, worried she would pester me into seeing the doctor who would just tell me I’m fat. But my mother is not the *I told you so* type. So, I cry until I’ve run dry and then I share.

“I have a massive,” and I pull out the visit summary, so I get it right, “ovarian mucinous cystadenoma and I need surgery.”

“Isn’t there anything less invasive they can do?” my mother asks.

“The surgeon did say that they could possibly place a drain as an outpatient interventional radiology procedure and wait on the surgery.” However, mine is pressing on my diaphragm and adhering to other parts of my body. I rather it just be taken out right away.”

“Oh honey,” she said with a tenderness I didn’t realize I had been missing in this whole process.

“Mom, he asked me a question I didn’t know the answer to right away. He asked me how important giving birth was to me?”

“Well, why did he ask that? Is there some option other than surgery if you want to have babies?”

“He said that he can’t do anything about my right ovary and tube. He could tell from the ultrasound there was no saving them. But he told me that we could either be aggressive with the tumor and take my uterus and other ovary or he could try his hardest to save as much of my reproductive organs as possible but that that could mean more complications down the road.”

This was hard to tell my mother. She’s always wanted grandkids and I could see the ambivalence in her eyes.

“I told him that I was choosing me. That I wanted the safest plan. The plan that meant I wouldn’t be doing this again in 10 years. I’m going to have a total hysterectomy on the 17th.”

“How do you feel about that?” my mom asked.

"I don't want to say that I feel good about it, but I feel...validated. I knew this was more than being fat. I knew that this was something I couldn't fix on my own. I feel good that I have an answer, but I have a lot of anger, too. I feel like maybe I wouldn't have to choose between motherhood and personal safety if I had been taken seriously sooner. I don't think I've settled on how I feel just yet."

"Me either, honey, but I'm so glad you have answers now."

"I'm going to need a lot of help for a few days. Can you take some time off and stay with me?"

End of story

Questions: https://virginia.az1.qualtrics.com/jfe/form/SV_3ki1Qb5K1lW2qmG (Link for survey)

Post Module Questions

1. **The story, Eva, increased my personal awareness of weight bias, and highlighted how easily it can occur.**

   Strongly disagree (1), agree (2), neither agree or disagree (3), Agree (4), Strongly agree (5)

2. **The story, Eva, helped me better understand the concept of weight bias internalization.**

   Strongly disagree (1), agree (2), neither agree or disagree (3), Agree (4), Strongly agree (5)

3. Please list your thoughts and ideas that you had during the reading of the story.

Week 6 HBO video, approximately 20 minutes

https://www.youtube.com/watch?v=4Ow1uiWcn4c

Post Module Questions

1. **This module of We Matter affected my awareness of weight bias**
   Strongly disagree (1), agree (2), neither agree or disagree (3), Agree (4), Strongly agree (5)

2. Please list your thoughts and ideas that you had during the video.

   https://virginia.az1.qualtrics.com/jfe/form/SV_enTt8dmx1pElYQm (Link to survey)

Week 7 Approximately 30 minutes

Summary of We Matter During We Matter you have learned about what weight bias; weight stigma and weight discrimination is. You met Eva, through a fictional first-person account of a woman who could be you, me, your mother, sister, daughter, aunt, cousin, or friend. You have learned about the uncontrollable causes of obesity, and about some of the daily struggles that a person with obesity lives with. I hope you have learned and enjoyed the We Matter program. Please complete these post intervention Questionnaires. Provided in your email are some additional resources if you would like to learn more about reducing weight bias.

Additional information

https://uconnruddcenter.org/wp-content/uploads/sites/2909/2020/07/Having-a-Productive-Convo.pdf (having productive conversations, weight bias dispelling myths)

https://uconnruddcenter.org/wp-content/uploads/sites/2909/2020/11/Reducing-Stigma-Talking-to-Patients.pdf (Reducing stigma when talking to patients)

https://www.obesityaction.org/wp-content/uploads/1033162_FirstPersonOne-Pager01_041921.pdf https://www.obesityaction.org/action-through-advocacy/weight-bias/people-first-language/

https://uconnruddcenter.org/wp-content/uploads/sites/2909/2020/07/Motivational-Interview-for-Promoting-Healthy-Behaviors-2-1.pdf

https://uconnruddcenter.org/wp-content/uploads/sites/2909/2020/07/Creating-a-Comfortable-and-Welcoming-Office-Environment-1-1.pdf

http://biastoolkit.uconnruddcenter.org/index.html

https://www.youtube.com/watch?v=lZLzHFgE0AQ

Appendix G

IRB Approvals

Institutional Review Board for Social & Behavioral Sciences
University of Virginia

Office of the Vice President for Research

Human Research Protection Program

Institutional Review Board for the Social and Behavioral Sciences

IRB-SBS Chair: Moon, Tonya

IRB-SBS Director: Blackwood, Bronwyn

Protocol Number (4738) Approval Certificate

The UVA IRB-SBS reviewed "Evaluation of a Pilot Program to Increase Healthcare Professionals Awareness of the Effects of Weight Bias: A Doctor of Nursing Practice Project Proposal" and determined that the protocol met the qualifications for approval as described in 45 CFR 46.

Principal Investigator: Williams, Habibah

Faculty Sponsor: Hundt, Elizabeth

Protocol Number: 4738

Protocol Title: Evaluation of a Pilot Program to Increase Healthcare Professionals Awareness of the Effects of Weight Bias: A Doctor of Nursing Practice Project Proposal

Is this research funded? No

Review category: Exempt Review

3B. Benign behavioral interventions: no risk to criminal/civil liability, financial standing, employability, education advancement, reputation

Review Type:

Modifications: No
Continuation: No
Unexpected Adverse Events: No

Approval Date: 2021-10-26

As indicated in the Principal Investigator, Faculty Sponsor, and Department Chair Assurances as part of the IRB requirements for approval, the PI has ultimate responsibility for the conduct of the study, the ethical performance of the project, the protection of the rights and welfare of human subjects, and strict adherence to any stipulations imposed by the IRB-SBS.

The PI and research team will comply with all UVA policies and procedures, as well as with all applicable Federal, State, and local laws regarding the protection of human subjects in research, including, but not limited to, the following:

1. That no participants will be recruited or data accessed under the protocol until the Investigator has received this approval certificate.
2. That no participants will be recruited or entered under the protocol until all researchers for the project including the Faculty Sponsor have completed their human investigation research ethics educational requirement (CITI training is required every 3 years for UVA researchers). The PI ensures that all personnel performing the project are qualified, appropriately trained, and will adhere to the provisions of the approved protocol.
3. That any modifications of the protocol or consent form will not be implemented without prior written approval from the IRB-SBS Chair or designee except when necessary to eliminate immediate hazards to the participants.
4. That any deviation from the protocol and/or consent form that is serious, unexpected and related to the study or a death occurring during the study will be reported promptly to the SBS Review Board in writing.
5. That all protocol forms for continuations of this protocol will be completed and returned within the time limit stated on the renewal notification letter.
6. That all participants will be recruited and consented as stated in the protocol approved or exempted by the IRB-SBS board. If written consent is required, all participants will be consented by signing a copy of the consent form unless this requirement is waived by the board.
7. That the IRB-SBS office will be notified within 30 days of a change in the Principal Investigator for the study.
8. That the IRB-SBS office will be notified when the active study is complete.
9. The SBS Review Board reserves the right to suspend and/or terminate this study at any time if, in its opinion, (1) the risks of further research are prohibitive, or (2) the above agreement is breached.

Date this Protocol Approval Certificate was generated: 2021-10-27

Purpose of Form: *If not using the SMART IRB Online Reliance System to coordinate and document study-specific reliance arrangements, institutions may use this template to document the Reviewing IRB and Relying Institutions for a study.*

Template Letter: Acknowledgement of Site Agreement to Cede IRB Review and Reviewing IRB to Provide Oversight

This form documents that:

1) University of Virginia (FWA # 00006183)will serve as the Reviewing IRB for Virginia State University (FWA # A00027945) for the study noted below; and

2) Virginia State University has agreed to cede IRB review to University of Virginia for the study noted below.

Study Title: Study # 4738	Evaluation of a Pilot Program to Increase Healthcare Professionals Awareness of the Effects of Weight Bias: A Doctor of Nursing Practice Project Proposal
Overall PI:	Habibah Williams
Relying Site Investigator:	*None.*

IRB review will be ceded under the SMART IRB Master Common Reciprocal Institutional Review Board Authorization Agreement.

Questions about the IRB review process or study status should be directed to Bronwyn Blackwood at blb2u@virginia.edu or 434-243-2915.

UVa Authorized Signature:	VSU Authorized Signature:
_____ Date: 11/02/2021 Name: Bronwyn Blackwood Title: Director, IRB-SBS	M. Omar Faison Digitally signed by M. Omar Faison Date: 2021.11.08 09:45:55 -05'00' Date: Name: *M. Omar Faison, Ph.D.* Title: *Institutional Officer, IRB*

OLD DOMINION UNIVERSITY
IDEA FUSION

Habibah Williams
School of Nursing
University of Virginia

November 1, 2021

Dear Ms. Williams,

Thank you for your protocol submission entitled "Evaluation of a Pilot Program to Increase Healthcare Professionals Awareness of the Effects of Weight Bias: A Doctor of Nursing Practice Project Proposal". As a non-affiliated researcher, your protocol has undergone an administrative review within the Office of Research at ODU.

Everything appears to be in order with your IRB submission and approval from UVA. Administrative approval from the ODU Office of Research is granted. Please note that this only confirms that appropriate human subjects approval has been obtained from your home institution for your project. You may need to secure additional approval from the administrative unit at ODU in which you intend to recruit participants before you begin recruitment and data collection.

If you make any modifications to your project that require approval by your IRB, you must submit those changes to ODU upon receipt of approval by your IRB. Please feel free to contact me if you have any questions or require any additional information regarding your data collection at ODU.

Regards,

Adam J. Rubenstein, Ph.D.
Assistant Vice President for Research Compliance

Institutional Review Board for Social & Behavioral Sciences
University of Virginia

Office of the Vice President for Research

Human Research Protection Program

Institutional Review Board for the Social and Behavioral Sciences

IRB-SBS Chair: Moon, Tonya

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Principal Investigator: Williams, Habibah

Faculty Sponsor: Hundt, Elizabeth

Protocol Number: 4738

Protocol Title: Evaluation of a Pilot Program to Increase Healthcare Professionals Awareness of the Effects of Weight Bias: A Doctor of Nursing Practice Project Proposal

Is this research funded? No

Review category: Expedited Review

7. Research on individual or group characteristics or behavior or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies

Review Type:

Modifications: Yes
Continuation: No
Unexpected Adverse Events: Yes

Approval Date: 2022-03-17

As indicated in the Principal Investigator, Faculty Sponsor, and Department Chair Assurances as part of the IRB requirements for approval, the PI has ultimate responsibility for the conduct of the study, the ethical performance of the project, the protection of the rights and welfare of human subjects, and strict adherence to any stipulations imposed by the IRB-SBS.

The PI and research team will comply with all UVA policies and procedures, as well as with all applicable Federal, State, and local laws regarding the protection of human subjects in research, including, but not limited to, the following:

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4. That any deviation from the protocol and/or consent form that is serious, unexpected and related to the study or a death occurring during the study will be reported promptly to the SBS Review Board in writing.
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7. That the IRB-SBS office will be notified within 30 days of a change in the Principal Investigator for the study.
8. That the IRB-SBS office will be notified when the active study is complete.
9. The SBS Review Board reserves the right to suspend and/or terminate this study at any time if, in its opinion, (1) the risks of further research are prohibitive, or (2) the above agreement is breached.

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