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Body Weight Related Interactions Between Health Care Professionals and Women with Prediabetes and Type 2 Diabetes

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BODY WEIGHT RELATED INTERACTIONS BETWEEN HEALTH CARE PROFESSIONALS AND WOMEN WITH PREDIABETES AND TYPE 2 DIABETES

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Ivonne Marie Cobelo

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To: Dean Tomás Guilarte
Robert Stempel College of Public Health and Social Work

This dissertation, written by Ivonne Marie Cobelo, and entitled, Body Weight Related Interactions Between Health Care Professionals and Women with Prediabetes and Type 2 Diabetes, having been approved in respect to style and intellectual content, is referred to you for judgment.

We have read this dissertation and recommend that it be approved.

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The dissertation of Ivonne Marie Cobelo is approved.

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Florida International University, 2022

DEDICATION

I dedicate this dissertation to my children Cristine and Juliette. The passion, perseverance, and courage that I see in both of you is my greatest inspiration to pursue my own dreams. Your love and belief in me have truly made this possible. I am thankful for the two of you every day and I love you very much! To my mother Irmina, you taught me about unconditional love. I feel your love as a constant energy that has always been with me helping me through my life. To my father Armando, you taught me to believe in limitless possibilities! You showed me that if I stay dedicated, trust in God, and keep working, all things are possible. Thank you for being my guardian angel and guiding me from above. I thank my aunt Miriam for being my rock, my Mighty Mouse! You have taught me through your own life and endless support that I can conquer any mountain by facing it with faith and a positive attitude. To my dearest friends and sisters, Alixa and Veronica. Thank you for always having my back. You have shown me that I always have someone that will catch me when I fall. I love you both! Last, but not least, to my partner and my love, Jesse. You have taught me how to stay calm in a storm, to stay the course and believe I can accomplish anything. Believe, behave, become! Thank you for your never-ending support, for your encouragement and your love. I could not have done this without you! This dedication is not complete without acknowledging that none of this would be possible without the grace of God. I thank the Lord for the gifts I have been given, for placing this dream in my heart, for working through me and making the impossible possible. I pray that this work reaches many and that it results in kindness being spread throughout the world.

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ABSTRACT OF THE DISSERTATION

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by

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Florida International University, 2022

Miami, Florida

Professor Fatma Huffman, Major Professor

Introduction

Interactions that involve a woman's body weight in a health care setting elicit emotions that can affect food and exercise behaviors and health outcomes. This study explored body weight related interactions between women that have prediabetes and type 2 diabetes with health care professionals. Body weight related interactions were analyzed from the women's perspective, exploring how the interactions affected their feelings, cognition, self-efficacy, and health related actions. Experiences involving weight bias in a health care setting were identified and the possible association between internalized weight bias and eating disorder symptoms was investigated.

Methods

This convergent mixed-method, grounded theory study integrated survey data and narrative interviews. Participants completed the Weight Bias Internalization Survey (WBIS) and the Eating Disorder Examination Questionnaire (EDEQ). Interviews explored the women's experiences interacting with health care professionals about their

body weight. The investigation included the effects of the menopausal transition and diabetes counseling on these interactions.

Results:

The sample included 30 women, mean age 63 ± 10.07 years, 67.7% white Hispanics, and mean BMI 35.22 ± 6.75. Linear regression analysis found an association between internalized weight bias (WBIS scores) and eating disorder symptoms (EDEQ scores). An inverse relationship was found between WBIS scores and the participant's age. No correlation was found between WBIS scores and the participant's body mass index. Ninety body weight interactions were identified in the interview data, 66.7% of the body weight related interactions involved weight bias. Four common themes emerged: "Gutted": Negative feelings after body weight-related interactions with health care professionals, "Adrift and ineffective": Lack of understanding and reduced self-efficacy, "Behavioral inertia": Lack of food and exercise behavioral changes and "Going solo": Break in therapeutic relationships and resistance to follow-up medical care.

Conclusion

This study identified a need for improvements in the way health care professionals interact with middle-aged women about their body weight. Experiences that increase internalized weight bias can increase a woman's risk of developing eating disorder symptoms. Based on these findings, health care professionals can begin by addressing their own weight bias and use sensitive communication when discussing body weight. Developing a partnership that identifies barriers to care and addresses each woman's individual needs can lead to effective behavior changes that improve health and wellbeing.

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ABREVIATIONS AND ACRONYMS

BMI	Body Mass Index
EDEQ	Eating Disorder Examination Questionnaire
HCP	Health Care Professional
PSE	Perceived Self-Efficacy
SD	Standard Deviation
SE	Standard Error
WBIS	Weight Bias Internalization Survey

CHAPTER I: INTRODUCTION

Weight related interactions with health care professionals (HCP) can have a positive or negative effect on an individual's health-related actions.[1-5] The feelings a person has during a health care setting interaction may determine the level of engagement that they have with the HCP and enhance or undermine the therapeutic relationship.[1,3] Women with Prediabetes and Type 2 Diabetes over the age of forty are dealing with the natural body changes related to the menopause transition and the metabolic changes of diabetes. Body weight focused interactions with HCP are common in this population and the approach and attitude of the HCP can influence a woman's understanding of how to navigate food and exercise behaviors.[6,7] The perception of a health care provider exhibiting weight bias can lead to higher levels of internalized weight stigma further impacting health related behaviors.[4,7,8-11] The phenomenon of how weight related interactions with HCP affect a woman's feelings, understanding and health related actions including behavior change and possible resistance to further medical care has not been fully investigated before this study. The unique experiences of middle-aged women with a chronic disease navigating menopause and their body weight related experiences with health care professionals is a novel area of research.

Body weight related interactions

Experiencing negative body weight related interactions in health care settings has been directly related to patient outcomes.[1,2,4,7,9,10,12] Previous qualitative findings have discovered that in general women of larger size report negative interactions between

themselves and health care professionals (HCP) when discussing their body weight.[2-4,13] Poor communication skills on the part of the practitioner and the individual's perception of being judged due to body size are also connected to a poor health outcomes.[2,4] In previous studies, health care professionals have been found to lack sensitivity when discussing body weight resulting in feelings of shame which may affect successful behavior changes. [2,4] Negative feelings experienced during an interaction can affect a patient's understanding and affect their trust in the HCP and the medical program provided.[14] The experience of psychological distress in a health care setting is a barrier to the HCP to patient relationship and can lead to an individual's lack of understanding of medical consultations.[15]

Weight Bias among Health Care Professionals

A systematic review of the literature on weight bias conducted by Panza and associates (2018), found that 73% of the studies had evidence of weight bias among health care professionals.[8] Health care professionals exhibiting anti-fat bias is observed in practitioners treating women of larger size.[11] Weight bias among health care practitioners creates health disparities and barriers to health care for individuals of larger size.[16] The presence of weight bias by health care practitioners when communicating regarding body weight has been interpreted by women in prior studies as critical and not useful.[2,17] Avoiding medical care becomes an even greater risk to health outcomes when considering individuals with a chronic disease such as prediabetes or type 2 diabetes.[7,10] Identification of the spoken language that may be interpreted as weight bias is necessary to avoid weight stigma internalization that creates a negative effect on patient's self-efficacy and health related actions.[6,7]

Development of ***Internalized Weight Stigma***

Internalized weight stigma is when individuals believe the negative weight-based attitudes and associations that are inferred by society regarding the size of their bodies.[18] Past research suggests weight bias exhibited by health care professionals is one of the strongest sources of this type of bias.[7,11,20,21] The experience of weight bias can lead to poor disease management and negatively affect the health care professional to patient relationship and health related goals.[7,10,19,22,23] Literature exists on internalized weight stigma in women of larger size, however, research on this topic does not expose the direct impact of weight bias on feelings, understanding of HCP guidance and overall effect on

health-related actions.[2,24] Women in larger sized bodies are at risk for weight discrimination which has been connected to poor mental and physical health outcomes and eating disorder symptoms, independent of the implications associated with obesity.[16,21] This study explored this phenomenon as voiced by women that have experienced weight bias in a health care setting.

Menopause Transition

For the purpose of this study middle-aged will be defined as ages 45 to 65 years old. This time in life is marked by the menopause transition which includes a perimenopausal period and concludes with menopause. Menopause is defined as the permanent termination of menarche for women usually marked with at least one year of absence of a monthly menses.[25] The researcher chose this population to investigate because the normal body changes that women experience during the transition such as weight gain, increase in abdominal girth and changes in metabolic panels increases the chances of interactions with health care practitioners (HCP) about their health behaviors such as food intake and exercise.[26-28] In addition, women of menopausal age with chronic diseases typically have had a greater exposure to interactions regarding their body weight with HCPs.

Women have been found to lack understanding of the signs, symptoms and body changes related to menopause and how to navigate wellness and a great need for health promotion is identified.[25,29] The body changes and psychological demands associated with aging puts these women at risk for the development of internalized weight stigma and disordered eating. Research is limited for this population on both these topics.[30-32]

Population studies on middle-aged women and eating disorders (ED) indicate that developed body image problems and the drive for thinness are as prevalent in this age group as it is in younger women.[31] However, previous studies regarding menopause transition, body weight related interactions and how they are impacted by weight bias have not been conducted in this population.

Diabetes Management

The diagnosis of prediabetes or type 2 diabetes can elicit an emotional response in most individuals marked by an increase incidence of depression and disordered eating behaviors.[7,33-34] The focus on weight and dieting typical for the treatment of diabetes can lead to body dissatisfaction.[33-34] Diabetes self-management interventions often focus on restrained eating which can lead to weight cycling and a sense of individual failure.[34] Experiencing the effects of weight bias in a health care setting has been found to be a barrier for early diagnosis of T2D, diabetes management and continuation of medical care.[7] Individuals experiencing internalized weight stigma tend to blame themselves and their weight for the development of T2D.[10] Most of the diabetes education an individual receives is given when newly diagnosed and long-term diabetes self-management support by health care professionals is currently lacking.[35]

Women of menopausal age dealing with diabetes are underrepresented in studies regarding health interactions, eating disorders and internalized weight stigma.[30,32] The education and communication style of the health care professional can determine the success of diabetes management interactions.[5,7,36] This study explored how effective

different HCP education and counseling styles were perceived by women with prediabetes and diabetes.

Eating Disorders

An eating disorder is a psychological condition characterized by symptoms of body dissatisfaction, unhealthy weight control behaviors and dysfunctional eating pathology.[16,30] Having experienced weight bias and developing of internalized weight stigma has been connected to mental health issues, eating disorder thinking and behaviors.[16,20,21,23,24,37,38] Unexplained body changes during the menopause transition can be met with an increased risk of unhealthy dieting behaviors that can lead to disordered eating.[30] Women with type 2 diabetes are at increased risk of developing eating disorders, specifically binge eating disorder.[40-41] Being labeled "obese" or implication that her body weight is the cause of her disease can elicit emotions of shame, guilt, anxiety, and stress leading to low levels of self-esteem and the development of disordered eating behaviors.[9,34,42]

Purpose and Significance

The purpose of this study involving middle-aged women with prediabetes and type 2 diabetes is to explore their experiences interacting with health care professionals (HCP) regarding their body weight, menopause, and diabetes management. This research also investigated the association between the degree of internalized weight stigma and eating disorder symptomatology, age, and body mass index.

This mixed-method research contributes in several areas to improve health and wellness for women ages 40 and above. It defines the experience of middle-aged women with diabetes and how interactions with health care professionals can affect their feelings, understanding of information introduced in the interaction and ultimately the actions taken as result of the body weight related interaction. The answers found in the stories and emotional experiences told by these women will help prepare other women with shared experiences. This research identifies new domains of interest in the interactions between HCP and their patients by shedding light on how the conversations related to body weight can affect self-efficacy, health related behaviors and an individual's possible resistance to follow up care with the same practitioner and/or future preventative medical care.

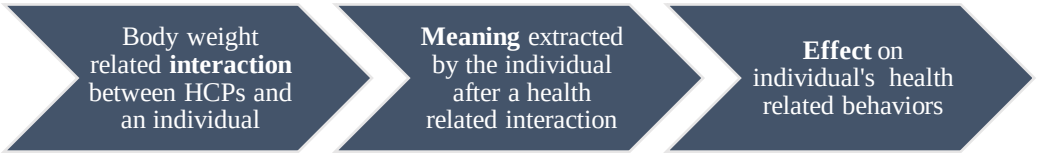
There is no dispute that behaviors associated with body weight management can contribute to positive or negative diabetic outcomes. However, this study furthered the understanding of the salient nature that the approach of the HCP can affect the success of healthful behavior changes. This study illuminates how interactions can affect a woman's perceived ability to properly care for herself during the menopause transition while managing diabetes.

Theoretical perspective and proposed model

Symbolic Interaction Theory is a theoretical framework aimed to provide understanding of individuals' interactions, the meaning extracted from these interactions and how that meaning affects related attitudes and behaviors.[43-45] The constructs of Symbolic Interaction Theory are used to inform this study during the investigative

process. The path model demonstrated in Fig.1 illustrates the proposed model applying of Symbolic Interaction Theory constructs to the current study. The aims of this study have been aligned to begin with the understanding of the nature of the interactions between health care professionals and middle-aged women with prediabetes and type 2 diabetes. Identification of the meaning of the interactions as seen by the feelings that were derived from and the understanding of the information the health care professional is imparting. Lastly the effect of the interaction as seen in the reported food and exercise behavior changes and willingness to follow up medical care.

Fig.1. Symbolic Interaction Theory constructs applied to this study



Note: HCP = Health Care Professional

Specific Aims and Hypothesis

The purpose of this study is to explore body weight related interactions between women 40 years old and older with prediabetes and type 2 diabetes with health care professionals. Body weight related interactions were analyzed from the women's perspective and how the interaction affected their feelings, cognition, self-efficacy, and health related actions. The experience of weight bias was identified, and level of internalized weight stigma was assessed to determine the association with eating disorder symptoms.

Aim 1: To determine the association between the degree of internalized weight bias and eating disorder symptoms, age, and body mass index.

Hypothesis 1: Internalized weight bias will be positively associated with eating disorder symptoms.

Hypothesis 2: Age will be negatively associated with internalized weight bias.

Hypothesis 3: Body mass index will be positively associated with internalized weight bias.

Aim 2: Grounded theory development through the identification and exploration of body weight related interactions between health care professionals and women with prediabetes and type 2 diabetes.

Grounded Theory Development

This study used grounded theory development to further understand the body weight interactions analyzed in this study.[46] Coding was done throughout the study classifying the most common interactions with health care professionals (HCP) experienced by the women interviewed. Casual conditions, intervening conditions and consequences were identified highlighting to the researcher the common themes and storyline found within the interviews. The central phenomena that emerged from the data was that interactions with HCP will affect individual's feelings. Those feelings determine the individuals understanding resulting in health-related actions including behavior

change, self-efficacy and follow up medical care. Aims 2 is specific to the results of the grounded theory investigation process.

CHAPTER II. LITERATURE REVIEW

Body weight related interactions

Interactions relating to body weight in a healthcare setting can be emotion inducing due to the sensitive nature of the topic, especially in women.[2-4,13] Emotions derived in health care setting interactions have been found to be a major contributor to an individual's health related behaviors and future intentions regarding medical care.[3] Body weight related interactions resulting in negative feelings and experiences have been previously documented.[2,4,13] It has also been found that even when health care professionals show high levels of knowledge, lacking acknowledgement of an individual's feelings can create a break in communication that affects the HCP to patient relationship.[4] The concept of the therapeutic alliance was first conducted by Edward Bordin in relation to how it applies to psychotherapy therapist to client relationships.[47] Further investigation regarding the alliance between and individual and an HCP resulted in finding that feelings defined as psychological distress led to lack of motivation and confusion.[15] The therapeutic alliance has been heavily studied in relation to psychotherapeutic interactions but research on how this alliance affects body weight related behavior changes is lacking. Studies investigating the therapeutic alliance in other health care professionals is lacking.[48] This research was needed to fill a gap in understanding how feelings derived through interaction affect behavior change and follow up medical care.[3]

Weight bias in health care professionals

Modern society places a high value on thinness giving positive attributes to those with a slender body such as intelligence, power, and beauty.[49] Weight bias is exhibited by individuals when they attach certain negative qualities towards larger people which can result in unfair and hurtful associations.[10] Weight bias is prevalent in our culture and it may be done out in the open, known as explicit bias or it can be not spoken and possibly unconscious, implicit bias.[18,50-52] Past research has found that health care professionals have some of the highest levels of anti-fat bias.[7-8,10-11,53] Schwartz and associates studied clinicians attending an obesity conference.[11,17] Their research found strong evidence of weight bias among health care professionals attributing implicit stereotypes to people of larger bodies. Highest levels of anti-fat implicit bias were found among younger female health care practitioners. The professionals with higher body mass index themselves that worked directly with larger sized clients, expressed a greater understanding of the factors contributing to body weight scored lower in weight bias and greater levels of empathy.[11,17] A second comparison study was done 12 years later in 2013 at the same conference to see if levels of weight bias statistics were alike. In a similar sample of 213 health care professionals, it was found that explicit weight bias had increased but implicit decreased. The data infers that those exhibiting spoken anti-fat/pro-thin beliefs have increased. The authors of the study speculate that the "war on obesity" may be fueling acceptability of health care professional's verbalization of fat-phobic beliefs. They also report that repeated exposure to the "obesity" disease model has produced a reduced affective neural resonance towards those of larger size reducing empathy by health care professionals towards those individuals.[52] Studies have also found that health care

practitioners overwhelmingly feel frustrated when treating large sized individuals, regarding them as having "lack of compliance" and equating their size to unintelligence, laziness and lack of discipline.[18] Being the target of this form of bias has been connected to a multitude of negative consequences including the development of eating disorders, advancement of chronic diseases and difficulty with health improvement behavior changes.[16,19,34,37,39,54] Interviews conducted on individuals experiencing this bias show that negative judgements result in feelings of inadequacy and shame.[18,51]

A weight centric counseling approach taken by health care professionals for overall health and diabetes management has been associated to cyclic dieting, binge eating and the development eating disorders.[16,18-19,33,38-39,51] Exploration on the impact a health care professional's counseling style may have on the development of healthful behaviors is necessary to improve health outcomes.

Development of internalized weight bias

Weight bias leads to internalized weight stigma (IWS) defined as the internalization of negative attitudes and self-blame related to larger sized bodies.[19,55] Studies indicate that IWS is more common in individuals with larger sized bodies and is connected to higher incidence of anxiety, depression, negative body image and poor self-esteem.[18] Additionally, there is a strong negative correlation between IWS and healthful eating and exercise behaviors.[18]

A 2015 randomized control trial found that women of larger body size experiencing internalized weight stigma where unable to sustain healthy living behavior changes while exhibiting and maintaining a higher level of disordered eating symptoms

than control participants.[49] Ferrate and associates administered the Stigma Situation in Health Care Instrument to 149 higher body weight women finding that the more times they experienced weight stigmatization the less empathy they felt they had from physicians. This study concluded that reduction of these types of interactions would improve doctor-patient relationships and quality of care.[22] When body weight neutral programs are compared to conventional weight-management programs to promote health, participants engaging in weight-management are more likely have and continue disordered eating patterns. In turn participants showing low internalized weight stigma that engage in a body weight neutral program improve their disordered eating behaviors as measured by the Eating Disorder Examination Questionnaire.[49] It follows suit that individuals who report having experienced weight bias are less likely to seek preventative medical care to avoid further confrontations and feeling of shame associated with body weight related conversations.[1,7,9,19,52-53] They were also more likely to self-blame and did not challenge what was told to them by the health care professional.[51]

The more exposures individuals had to health care professionals the increased likelihood of weight bias occurring.[18] In addition, although many studies have been done on internalized weight stigma in women of larger size, the literature in this topic does not uncover the direct impact of weight bias and weight shame on eating disorder behaviors. Older women are also less investigated in eating disorder studies as well as their reaction to weight bias when they are also dealing with a chronic disease. [16,19,34,37,39,54] Past research has identified that experiencing weight bias and internalized weight stigma increase the chances of unhealthy eating and exercise patterns however there is little

known about the actual language used by health care professionals to address body weight in their practice and how it is interpreted by the individual receiving the advice.

Women of larger size that have been frequently addressed in health care setting regarding their weight report a higher level of internalized weight stigma compared to women considered to be of a normal size.[20] The language used by health care professionals adds to the development of weight stigma experienced by individuals and can result in negative health outcomes.[2,4,20] There is not to date clarity on the step-by-step process derived from the emotions experience of internalized weight bias and its effect on individual's understanding within the interaction resulting in the negative health outcome. Qualitative research questioning the experiences of weight bias in the individual's words is lacking in this area of interest.

Menopause transition

During the perimenopausal period the woman's body begins the decline of estrogen produced by the ovaries. The physiological changes that occur in this period of time has been well studied. Common changes to reproductive organs including uterine enlargement and inflammation. Estrogen deficiency induced body weight gain has been documented independent of changes in eating and exercise. As well as accumulation of central fat, insulin resistance, lipid dysregulation.[27-28,56-57] By the time women reach menopause, they are at an increased chance of metabolic syndrome, diabetes and advancement of cardiovascular disease.[56-57] Past studies have found that the change in body composition and increase in risk factors is thought to be the direct result of estrogen deficiency and central fat redistribution not the isolation of increase of body weight.[28,56]

Studies have found that estrogen replacement therapy alleviates the symptoms associated with menopause further identifying body changes originating from the lack of estrogen.[57]

Although these changes are well documented as part of the "condition" of menopause in the literature menopausal women are usually made to feel that it is something that they have done wrong in their behaviors as they age that causes these changes and resulting negative health markers. This self-blame that is promoted by health care professionals and by society's diet culture is at the root of internalized weight stigma among women.[11,20-21] Lack of guidance during the menopause transition can lead women to seek information that would not be considered evidence-based guidance. This can lead to misguided food and exercise beliefs and behaviors that increase the risk of development of an ED and malnutrition.[30-31,40,58-59]

Studies are lacking that explore the level of education and instruction women have received regarding the menopausal transition. The GABI study explored body image and aging in women over 50 years old. Women shared that they felt there were injustices and inequities of being an aging woman along with a decrease in a contributory role in society.[60] In addition, women reported feeling "blindsided" by menopausal body changes and lack of preparation and education given by health practitioners to manage this time healthfully.[60] Lack of education of evidence-based information within this population promotes a cycle which can lead to disordered eating behaviors such as on and off restrictions and binge eating and further body dissatisfaction.[31] Research is necessary to investigate the experience women have regarding these body changes, the level of education of what causes body changes versus their own wrongdoing and the choices they are encouraged to make by health care professionals to deal with these changes. In

addition, how women interpret the interactions with health care practitioners which address their body weight and possible changing health markers during this time has not been explored.

Diabetes management counseling

Prediabetes and type 2 diabetes are chronic conditions that require individuals to make many health management decisions on a regular basis.[61] Diabetes self-management counseling from health care providers is at center of successful health outcomes in diabetes and treatment as defined by the principles of practice delineated by emphasizes on body weight loss as an initial course of action.[7,35] A body weight centric focus versus a behavior centric focus can contribute to a "weight loss at any cost" approach seen in eating disorders.[62] In addition, body weight as a primary focus can lead to underdiagnosis and lack of guidance for individuals in identified "normal" body weights. Even though the cause of diabetes is considered multifaceted, body weight focus and misconceptions that diabetes can be reversed with weight loss can lead to self-blame and failure regarding disease state by individuals not successful in losing body weight.[62] It is reported that this sense of failure along with anti-obesity messages perceived will create a barrier to regular health care and adherence to health care practitioner's recommendations.[49]

Women with type 1 diabetes going through the menopausal transition identify that there is a lack of information regarding expected signs and symptoms of menopause and challenges in managing their blood sugar, anxiety and fears related to health to be the key emerging themes in a grounded theory study seeking to help professionals treat this population. [63] A woman's perception of her body weight, the aging process, and her

ability to manage a disease state determines her overall success in achieving health.[9,28-29,64] In addition, many patients find themselves feeling shame for their inability to manage the disease.[7,9-10,62] A recent qualitative system review found that physicians encounter difficulties to reach patient expected outcomes due to lack of resources and time resulting in frustration which may be projected onto patients.[65] Kato and colleagues conducted a qualitative study to see how individuals with T2D behaviorally react to the effects of social stigma and they found that when feelings of shame are present it can limit participants' compliance to physician recommendations.[12] There is a lack of studies investigating how these feelings of shame interlace with messages given by society and health care professionals as it relates to body weight and T2D in menopausal women.

Eating disorders

The feelings of body shame that are connected to the experience of weight bias and the development of internalized weight stigma has been associated with eating disorder development.[16,23,33-34,37,37-39,54] The vast body of research in the area of eating disorders (ED) is done mostly in younger women. Although few studies have been done on older women, they do indicate that ED thought process and behaviors are common in this population, especially binge eating disorder.[31,60,66]

The lack of education based on evidence-based information of the normal body changes experienced during the menopausal transition, coupled with body weight shame promotes a vicious cycle which can lead to disordered eating behaviors such as on and off restrictions and binge eating.[30] Body dissatisfaction is common in aging women and studies report that the drive for thinness is similar to that seen in younger women.[30-31]

Qualitative studies investigating the experience of middle-aged women have found that societal views on aging also affect women by contributing to compromised body image and body shame and eating disorder development.[67-68]

The effects of internalized weight stigma on eating disorder symptoms in middle-aged women is lacking investigation. Exploration that measures the association between internalized weight stigma and eating disorders including age in addition to the rich narratives achieved through narrative inquiry will provide a holistic view of this topic.

Symbolic Interaction Theory

Symbolic Interaction Theory is a theoretical framework that is rooted in the concept that we better understand human behavior when we recognize the meaning that individuals assign to interactions. It is that meaning or "symbols" then drives human behavior.[44-45,69-70] Past studies have recognized the benefits of using Symbolic Interaction Theory in grounded theory research and in conjunction with a mixed method research design.[69-70] The foundation of this theory dates to research done in the 1900s done by social psychologist George Herbert Mead. The theory was further advanced by Herbert Blumer in 1969. [69-70] In addition, this theory has also been a valuable guide for past behavior change researchers specifically in the area of women's health.[69-72]

The constructs of the theory frame symbolic interactionism as it relates to research in human health behavior change. Individuals construct meaning through the interactions they have with individuals in health care settings.[43,69-71] These interactions have the power to shift an individual's self-concept. Since self-concept is a motivation for behaviors, the nature of the interaction between the individual and the health care

professional will ultimately change the course of health status for the better or the worse.[69-71] By investigating the body weight related interactions between women and their health care professionals, this study investigated the meaning that individual gave to the interaction and the result on their health-related behaviors which included health related behavior change and returning for follow-up care.

CHAPTER III: RESEARCH DESIGN AND METHODOLOGY

Research Design

This convergent, parallel mixed methods study explored weight related interactions between health care professionals and women with prediabetes and type 2 diabetes from the patient's perspective. Qualitative interviews and quantitative surveys were collected in the same phase of the study on the same participants. The data was analyzed separately and then used together to draw conclusions.

Participant Recruitment

Recruitment was done through selective sampling to fully be able to address the aims of the study. The study was done fully online allowing participants to be recruited from anywhere in the United States. Participants were recruited through word of mouth, flyers sent via email to private medical offices and announcements posted on social media including LinkedIn, Facebook, Instagram, and Twitter. Participants received a $25 gift as incentive to participate. The incentive was distributed to the participants by direct deposit via Zelle or Venmo applications or a donation in their name to their chosen charity. Two participants declined any payment for participating.

Initial contact with participants involved eligibility screening via telephone. To qualify for the study the participants needed to be female, 40 years old or older, diagnosis by a medical doctor of prediabetes or type 2 diabetes and be willing to give access to their current medical record information. Table 1 details the eligibility inclusion and exclusion criteria for the study. Once screened and found eligible, participants were asked

to sign a Florida International University, Internal Review Board approved consent form to participate in the study and release of medical information from their primary physician. Medical record information obtained included date of birth, Hemoglobin A1c, body weight and height and date of last menstrual period.

Table 1. Eligibility criteria

Inclusion criteria	Exclusion criteria
Females	Pregnant or lactating
40 years old or older	Does not meet age requirement
Prediabetes or Diabetes	No medical record proof of diagnosis
Recent Hemoglobin A1c	No Hemoglobin A1c available

Sample size

Recruitment was done ten participants at a time until saturation of the qualitative data was met (*N = 30).* The participants completed two surveys that were analyzed with quantitative methods. Prior to the study, effect size was determined to be 0.15 based on research methods similar to the quantitative portion of this study. The effect size was used to calculate the sample size using G-power software. The sample size was calculated to include a total of 40 participants using linear regression with 80% power. Since the main design of the study was qualitative in nature recruitment was stopped when the data was sufficient as per the guidelines of grounded theory development (*N*=30).[46]

Semi-structured Interviews

One-on-one semi-structured interviews were conducted with each participant. Interviews were done via the Zoom application platform with the interviewer in a private office space due to the sensitive nature of the interview questions. The interviews were

both video and audio recorded for future analysis, duration of each video was 30 to 60 minutes. Tables 2 - 5 include the questions used in the interviews. The questions were divided into three areas of interest, body weight related interactions, menopause transition questions, diabetes management counseling questions and weight bias experiences.

Table 2. Interview questions

Body weight related interactions questions
1. Can you please tell me about any conversations you have had with any type of health care professional, regarding your body weight or size? This can be any time in your lifetime. 2. How did you feel after leaving that interaction with a health care professional? 3. Did you feel that you understood and could do what the health care professional was asking you to do? 4. What actions did you take in your food and exercise behaviors as a result of that interaction? 5. Do you think that experience and that interaction changed the way you felt about how you take care of yourself or your ability to take care of yourself? 6. After that experience, did that keep you from going back to that health professional or seeing another practitioner for medical care? 7. How would you have preferred to have been approached regarding your body weight? 8. Where do have you gotten the majority of your information regarding food, exercise and body weight? 9. Can you please tell me about your experiences being weighed at medical office?

Table 3. Interview questions

Menopause transition questions
1. Have you gone through menopause yet or are you in the perimenopausal stage? 2. Have any health care professionals talked to you about the normal body changes that can happen associated to menopause? 3. What symptoms or body changes did you or are you experiencing? 4. Were you given counseling by any health care professional on how to take care of yourself during menopause? 5. Where have you gotten information regarding menopause?

Table 4. Interview questions

Diabetes management counseling questions
1. What have you been told when it comes to your body weight, and the management of type two diabetes by your healthcare professionals? 2. Do you feel prepared to manage your diabetes with the information health care professionals have given you? 3. Do you feel that health professionals have taken into account your lifestyle and current behaviors when giving you advice on diabetes management? If not what has been their main focus? 4. Do you think that any interaction with a health care professional has changed the way you feel about your ability to manage your diabetes? 5. Have you ever been referred to a registered dietitian for nutrition guidance? 6. Where have you gotten most of your information regarding diabetes management?

Table 5. Interview questions

Weight bias experiences
1. Have you ever felt that any health care professional you've seen has assumed anything about the way you eat, or about your exercise habits without even asking just based on your body weight and size? 2. How did that make you feel when they made that assumption? 3. Do you feel that any interaction with a health care professional has stopped you from actually taking care of yourself? 4. Do you feel that any interaction regarding your body weight with a health care professional has ever kept you from returning to a follow up visit or getting medical attention with another practitioner? 5. If you had to give health professionals advice on how to guide women regarding their weight and body size, what would you say?

Once the interview was complete the participants were sent surveys to complete directly to their telephones via text using Qualtrics XM management software. The participants completed the surveys with the researcher present to answer any questions via the Zoom call. The surveys included a demographic survey, the Weight Bias Internalization Scale, and the Eating Disorder Examination Questionnaire.

Demographic survey

Demographic questions included including age, race, ethnicity, marital status, education level, date of onset of prediabetes or type 2 diabetes, and date of last menstrual cycle. Years since menopause was calculated for women that had stopped menstruating.

The information obtained also classified the women by diagnosis of prediabetes or type 2 diabetes as well as years since the respective diagnosis.

Quantitative Outcome Measures

Weight Bias Internalization Scale – Modified (WBIS)

The Weight Bias Internalization Scale (Appendix A) measures the degree to which an individual has perceived the experience of discrimination, stereotyping and prejudice based on their body size. The survey is validated to an alpha of 0.90.[73-74] There are eleven questions in the WBIS-M, the original WBIS is designed for individuals in larger bodies, but modified version is applicable for individuals of any body type. Possible scores range from 1 -7, with higher scores indicates a higher level of internalized weight bias.[74] Past studies have found a correlation between high scores on WBIS-M and eating pathology, negative body image and anti-fat attitudes associated with higher body weight.[75]

Eating Disorder Examination Questionnaire (EDE-Q)

The Eating Disorder Examination Questionnaire (Appendix B) is the gold standard survey that for assessing behavioral and cognitive symptoms associated with eating disorders.[76] The instrument assesses eating disorder thoughts and behaviors over the past 28 days. Scores are presented as an average score (between 0 and 6), where 0 represents "No Days" of eating disorder symptoms and 6 represents symptoms "Everyday". It has been found to have high levels of reliability and validity in distinguishing cases from non-cases with eating disorders with an established score of ≥

2.8 considered the diagnostic cut off for.[76-77] The survey identifies behavioral symptoms include restriction, frequency of binge eating, excessive exercising, self-induced vomiting, laxative and diuretic misuse. Cognitive features assessed include body weight and body size concern, restraint in eating and eating concerns.[76]

Anthropometrics

Anthropometrics were collected from medical records for each participant measurements included height (cm) and weight (kg). Body Mass Index (BMI in kg/m^2) was calculated using BMI formula ($weight/height^2$).

Statistical analysis plan

Quantitative Data

Data was analyzed using SPSS v26.0. Testing was done for skewness and normality and descriptive statistics were reported including means and standard deviations. The data was used to determine the association between the degree of internalized weight bias and eating disorder symptoms, age, and body mass index. Pearson correlation coefficient analysis was performed to measure the strength and direction of the correlation between internalized weight bias and eating disorder symptoms and age and body mass index on the outcome variable (internalized weight bias). Simple linear regression was used to test all three hypotheses by determining the association between the variables. Table 6 explains the analysis used to answer Aim 1 determining the association between the degree of internalized weight bias and eating disorder symptoms, age, and body mass index.

Table 6. Table of Analysis

AIM 1: To determine the association between the degree of internalized weight bias and eating disorder symptoms, age, and body mass index.

Hypothesis	**Independent and Dependent Variables**	**Outcomes**	**Statistical Analysis**
H1: Internalized weight bias will be positively associated with eating disorder symptoms	Independent: Weight Bias Internalization Scale score Dependent: Eating Disorder Examination Questionnaire score	Participants with higher internalized weight bias will show higher levels eating disorder symptoms	-Pearson Correlation -Linear Regression
H2: Age will be negatively associated with internalized weight bias	Independent: participant's age in years Dependent: Weight Bias Internalization Scale score	Older participants will show lower levels of internalized weight bias	-Pearson Correlation -Linear Regression
H3: Internalized weight bias will be positively associated with Body Mass Index	Independent: participant's BMI Dependent: Weight Bias Internalization Scale score	Participants with higher BMI levels with show higher levels of internalized weight bias	-Pearson Correlation -Linear Regression

Qualitative Outcome Measures

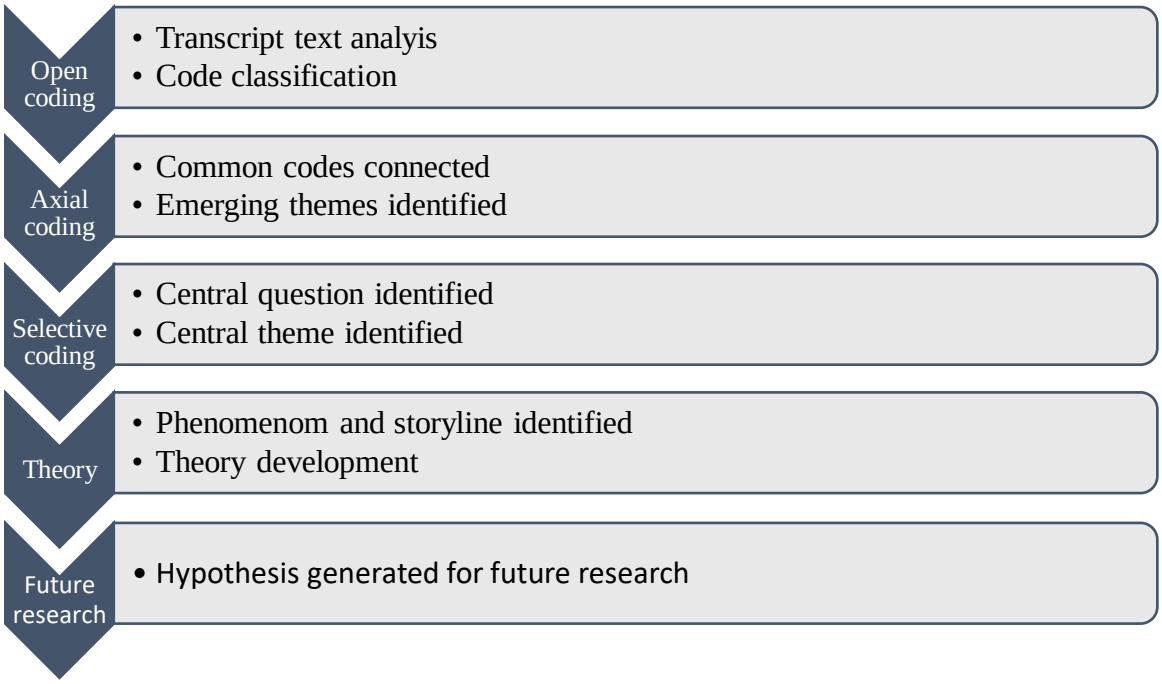
Thematic analysis was done on written text generated form the participant's

interviews. Close examination of the data through open coding identified and classified the women's responses into codes. Further analysis through axial coding methods generated the emerging themes found in the data and selective coding generated the central question and central theme uncovered from the observed phenomenon. Once the phenomenon storyline and theory is developed, hypothesis for future research will be generated from the results of the analysis. Figure 2 is a flow chart of the qualitative research process used in the study to answer Aim 2, grounded theory development through the identification and exploration of body weight related interactions between health care professionals and women with prediabetes and type 2 diabetes.

A memo book was kept by the researcher throughout the qualitative process. It served as a central place to elaborate on observations and decisions made during the grounded theory process. The context of the memos were considered in addition to the data analysis when developing the research theory.

Figure 2. Grounded theory development

Aim 2: Grounded theory development through the identification and exploration of body weight related interactions between health care professionals and women with prediabetes and type 2 diabetes



CHAPTER IV: RESULTS

Participants were recruited using a convenience sample of individuals meeting the study criteria. Phone calls were made, and emails were written to private practice medical practitioners requesting referrals for participation of eligible subjects. Flyers were distributed to local medical practice locations that were willing to participate. To recruit subjects the flyer was also distributed through social media advertisement, including LinkedIn, Facebook, Instagram, and Twitter. Participants received a $25 as an incentive to participate.

Narrative inquiry was done in the form of structured interview questions to explore the body weight related experiences of women over the age of forty with prediabetes and type 2 diabetes. Recruitment continued until saturation of qualitative data was met, (N = 30). All participants completed a demographic questionnaire, the structured interview, and two administered surveys. The interview and the surveys were done through an online platform. All subjects signed a consent form as per Florida International University, Internal Review Board protocol (FIU IRB Approval # IRB-20-0537-AM01).

Descriptive Analysis

Participant's characteristics

Thirty women completed the study, in alignment with the study's criteria, all women were over the age of 40. The mean age was 63 ± 10.07 years (ranging from 46 to 82 years old). Most participants were White Hispanics (66.7%) with the remaining being

White Non-Hispanics (33.3%).

Ninety percent of the sample were post-menopausal with a mean of 14.2 ± 11.07 years (ranging from 0 to 37 years post-menopause). A majority of the women had a diagnosis of Type 2 Diabetes (T2D) (22 of 30; 73%) and a minority were diagnosed with prediabetes (8 of 30; 27%). The women were not new to the diabetes diagnosis with average years since diagnosis from either T2D or prediabetes of 10.48 ± 7.82 years. Hemoglobin A1c was obtained from medical records as an eligibility criterion for the study, the average Hemoglobin A1c level of the participants was 7.0 ± 1.32%. Table 7 summarizes the characteristics of the women in the study.

Table 7. Participant's characteristics

Variables	*N*	Percentage (%)
Gender	30	100
Female		
Age (years)		
40-49	3	10
50-59	9	30
60-69	10	33.3
70 or more	8	26.7
Race/ Ethnicity		
White Hispanic	20	66.7
White Non-Hispanic	10	33.3
Marital Status		
Single	3	10
Married	9	30
Domestic partnership	2	6.6
Divorced	11	36.7
Widowed	5	16.7
Education Level		
High school	7	23.3
Bachelor's degree	16	53.4
Master's degree	4	13.3
Doctorate degree	3	10
Diagnosis		
Type 2 Diabetes	22	73.3
Prediabetes	8	26.7

Note N: sample size.

Quantitative Results

Measures

Cross-sectional analysis was done to test three hypotheses. The variables analyzed were the weight bias internalization scale score (WBIS), the eating disorder examination

questionnaire score (EDE-Q), participant's age in years and participant's calculated body mass index (BMI). All the variables are continuous in nature.

The Weight Bias Internalization Scale (WBIS) was used to measure the degree of internalized weight stigma experienced by an individual. It is an 11-item survey scored on a seven-point Likert scale; two items were reverse-scored. The mean of the item responses was calculated to determine the participant's score. Higher scores indicate greater symptom severity. The survey is validated to a Cronbach's alpha of 0.90[73-74,78]. This instrument was used in part to answer the research questions for all three hypotheses investigating the possible association between eating disorder thinking and behaviors and the level of WBIS in addition to exploring if WBIS is affected by age and body mass index. The mean WBIS scores were 3.56 ± 1.07, scores ranged from a minimum of 2 to a maximum of 6.18. The maximum score possible in this survey is 7. These results were higher than the established mean for WBIS scores of 2.47 from previous studies in the general population.[78]

The Eating Disorder Examination Questionnaire (EDE-Q) is considered the gold standard survey to assess eating disorder pathology with a Cronbach's alpha of 0.90.[79] The EDE-Q is a 28-item questionnaire scored on a seven-point Likert scale. The instrument assesses eating disorder thoughts and behaviors over the past 28 days. Scores are presented as an average score (between 0 and 6), where 0 represents "No Days" of eating disorder symptoms and 6 represents symptoms "Everyday". Higher scores indicate a greater degree of eating disorder thinking and symptoms. The answers are grouped into four subscales: (1) investigating restraint in eating, (2) eating concern, (3) weight concern, and (4) shape concern. The subscales are calculated to determine the total score which is the measure of disordered eating symptomology. The higher the EDE-Q score

the higher the eating disordered thinking and behaviors. Mean EDE-Q score in this study was 2.55 ± 1.45, the clinically significant cut off for diagnosed eating disorders is ≥ 2.8 (Mond 2015). The population studied had a mean EDE-Q score that is slightly below the diagnostic value indicating a high level of eating disorder symptomology in the sample.

The age of the participants ranged from 46 to 82 years old, mean age was 63 ± 10.07 years. A majority of the women were post-menopausal, 27 out of 30 (90% of the participants).

Twelve of the 27 women that were post-menopausal have had premature menopause by hysterectomy (44.4% of the post-menopausal women). In previous studies an inverse relationship has been found between age and eating disorder symptoms and this study was seeking to see if the same is found with the relationship between age and internalized weight bias.[31]

Anthropometric data (last available height and body weight) was taken from the participants medical records and used to calculate body mass index (BMI). Mean BMI in the sample was 35.22 ± 6.75, with a range of 23.6 to 52. Based on the World Health Organization BMI classifications, one participant was normal weight (3.34%), 6 were classified as overweight (20%) and the remaining participants were obese (76.66%). BMI level was studied to investigate its possible association with WBIS. Table 8 summarizes the mean scores for the variables analyzed.

Table 8. Continuous variables

Variable	Mean ± SD	Ranges
WBIS Score	3.56 ± 1.07	Possible range 1 – 7
EDE-Q Score	2.55 ± 1.45	Eating disorder diagnostic range ≤ 2.8
Age (years)	63 ± 10.07	Population range 45 – 82
BMI	35.22 ± 6.75	Normal range 18.5 – 24.9

Note. N= 30, sample size. M=means. SD=standard deviation.
Data expressed as means ± standard deviation (SD)
WBIS = Weight Bias Internalization Scale score, BMI = body mass index
EDEQ = Eating Disorder Examination Questionnaire score

Visual inspection of the scatterplot indicated a linear relationship and homoscedasticity between all the variables tested. There was independence of residuals as assessed by Durbin-Watson statistics between 1.5 to 2.5. No significant outliers were identified. variables were normally distributed, as assessed by Shapiro-Wilk's test ($P > 0.05$). The variables WBIS (0.055) and BMI (0.661) were found to be normally distributed. Normal Q-Q Plots showed that the scores were normally distributed with WBIS having a skewness of 0.761 (SE 0.427), kurtosis of 0.108 (SE = 0.833), EDEQ skewness of 0.984 (SE = 0.427), kurtosis of 0.963 (SE = 0.833), age in years skewness of 0.029 (SE = 0.427), kurtosis of -0.702 (SE = 0.833) and BMI skewness of 0.391 (SE = 0.427), kurtosis of -.0131 (SE = 0.833).

Correlations Matrix between all variables in the study

Multiple Pearson's product-moment correlation was run to assess the relationship between all variables in the study. According to the correlation matrix shown in Table 9, there was a strong positive correlation between WBIS and EDE-Q scores, $r = 0.544$, $P < 0.01$, there was a moderate negative correlation between age in years and WBIS survey scores, $r = -0.42$, $P < 0.05$. A small positive correlation between WBIS scores and BMI, r = 0.24, as well as Age and EDE-Q scores, $r = 0.29$, these correlations were not significant. No association was found between age and EDE-Q or BMI.

Table 9. Correlational Matrix, examining association between variables

	WBIS Score	EDE-Q Score	Age (in years)	BMI
WBIS Score	1	0.55**	-0.42*	0.24
EDE-Q Score		1	-0.080	0.290
Age (in years)			1	-0.05
BMI				1

** $P < 0.01$, * $P < 0.05$
WBIS = Weight Bias Internalization Scale score, EDE-Q = Eating Disorder Examination Questionnaire score, BMI = body mass index

Aim 1: To determine whether there is an association between the degree of internalized weight bias and eating disorder symptoms.

Hypothesis 1: Weight bias internalization scale scores will be positively associated with eating disorder examination questionnaire scores.

A simple linear regression was done to explore the association between the internalized weight bias survey scores (WBIS) and eating disorder examination

questionnaire scores (EDE-Q). Table 8 indicates the results from the regression analysis. The findings suggest a high level of correlation between the variables. The level of WBIS scores accounted for 29.6% of the variation of EDE-Q scores, $R^2 = 0.296$, $F(1,28) = 11.79$, $p < 0.0002$. WBIS significantly predicted EDE-Q, *B =0 .737, P <0 .002.*

Table 10. Linear regression between weight bias internalization survey scores and eating disorder examination questionnaire scores

Variables	*B*	*SE B*	*β*	*t*	*P*	*F*	Sig (*P*)	R^2 (Adj- R^2)
EDE-Q score						11.79	0.002	0.296 (.271)
WBIS score	.737	.215	.544	3.43	.002			

Note: WBIS = Weight Bias Internalization Scale score, EDE-Q = Eating Disorder Examination Questionnaire score

Aim 2: To determine whether there is an association between internalized weight bias and age or body mass index.

Hypothesis 2: Age in years will be negatively associated with weight bias internalization scale scores.

A negative correlation was found between age in years and WBIS scores. As detailed in Table 9, the liner regression revealed that age in years explained for 17.5% of the variance of WBIS, $R^2 = 0.175$, $F(1,28) = 5.9$, $P < 0.021$. Age in years inversely predicted WBIS, *B* = -0.044, *P <0.021.*

Table 11. Linear regression between age and weight bias internalization survey scores

Variables	*B*	*SE B*	*β*	*t*	*P*	*F*	Sig (*P*)	R^2 (Adj- R^2)
WBIS score						5.944	0.021	0.175 (.146)
Age	-0.044	0.018	-0.418	-2.438	0.021			

Note: WBIS = Weight Bias Internalization Survey scores, Age is in years

Hypothesis 3: Body mass index will be positively associated with weight bias internalization scale scores.

There was no association found between BMI and WBIS. The linear analysis results were not significant with a P value > 0.05. Table 12 explains the results of this analysis. This outcome is consistent with some previous studies that seem to indicate that internalized weight bias is not associated with body size.[80-81] However, that may not be a valid assumption for this study since this sample consisted of mostly women of larger size having a mean BMI of 35.22 ± 6.75, a classification of obese by the World Health Organization BMI standards.

Table 12. Linear regression between body mass index and weight bias internalization scores

Variables	*B*	*SE B*	*β*	*t*	*P*	*F*	Sig (*P*)	R^2 (Adj- R^2)
WBIS score						1.66	0.208	0.056 (0.022)
BMI	0.037	0.029	0.237	1.29	0.208			

Note: WBIS = Weight Bias Internalization Survey scores, BMI = Body mass index

Qualitative Findings

Structured interviews were conducted to explore lived experiences of the participants and their body weight related interactions. Interviews were recorded using video and audiotaping and then transcribed into text. Following the guidelines of grounded theory development, the transcripts were then coded using methods of open coding, axial coding and ultimately selective coding led to the identification of a central phenomenon and development of a theory.[46] These methods were used to address Aim 2, grounded theory development through the identification and exploration of body weight related interactions between health care professionals and women with prediabetes and type 2 diabetes.

Open Coding

Thirty women were interviewed with a structured question format. The interviews were audio and videotaped and the transcripts derived from the interviews were used for thematic analysis. In the interviews, the women were questioned regarding their body weight related interactions with health care professionals (HCP). Additionally, they answered questions regarding their interactions with HCP regarding menopause and diabetes management. The women were encouraged to discuss as many interactions as possible regarding body weight that they recalled.

"Can you please tell me about any conversations you have had with any type of health professional, regarding your body weight or size? This can be any time in your lifetime."

Through the process of open coding of the transcripts, a total of 90 described interactions were identified connected to this research question. Table 13 summarizes

open codes of the interactions by category and the percentages for each code. Body weight-related interactions were the main observances accounting for 60% of the women's responses. It was noted that a majority of the accounts of conversations regarding body weight included the women's interpretation of having encountered weight bias in an HCP (66.7% of the BWR interrelations). Some of the women recounted encounters with HCP that involved direct advice regarding food or exercise, not necessarily weight loss focused, and those interactions were separated into their own code. Lastly, some women spoke about their interactions with HCP involving diabetes management counseling and BWR interactions also coded separately because of their unique nature.

Table 13. Types of body weight related interactions identified in open coding

Type of Interaction	Interactions (*N*)	Percentage (%)
Body weight-related Weight Bias	54 36/61	60 66.7 % of body weight related interactions
Food and exercise advice	18	20
Diabetes management counseling	18	20

Table 14 summarizes the type of health care professionals that were involved in the different interactions the women reported. The overwhelming majority were

interactions between the women and medical doctors (84.5% of the interactions). Body weight-related experiences with registered dietitians followed but account for only 8.9% of the total interactions. Noting early in the interview process with curiosity about the lack of body weight related interactions mentioning registered dietitians a question was added later in the diabetes management counseling section of the interview inquiring if the women had ever been referred to a registered dietitian for nutrition counseling. Fourteen out of the 30 women had been referred to a registered dietitian (46.7%) for diabetes nutrition counseling but not all reported following through with appointments with that type of HCP (8 out 14; 57.2% saw a registered dietitian after referral). Table 15 summarizes these findings followed by interview accounts from the women.

Table 14. Type of health care professional in interactions

Type of health care professional	Interactions (*N*)	Percentage (%)
Medical Doctor	76	84.5
Registered Dietitian	8	8.9
Registered Nurse/ ARNP	2	2.2
Imaging Technician	2	2.2
Physician Assistant	1	1.1
Medical Facility	1	1.1

Table 15. Has a health care provider referred you to a registered dietitian?

Was a referral made?	Referrals (*N)*	Percentage (%)
Yes	14	46.7
No	16	53.3

Referral to a registered dietitian typical comment:

P1. *No, nobody has ever suggested that to me. When I was in the hospital a dietitian tried to talk to me. I was panicked when I first had that diagnosis. I thought I was going to die I really thought I might die. So, because I didn't quite understand everything it did not make an impact on me. The only referral was by my family doctor to go to Weight Watchers.*

P21. *Yes, it was the same information that they have given me before. The same list of things to do that they have given me before. Also, it was just one meeting and no follow-up, it's better to go to Weight Watchers where you go in every week, or Nutrisystem, to get some counseling.*

Axial Coding

Constant comparative analysis and coding of the interactions resulted in the identification of four themes that assigned meaning to the women's stories. The feelings elicited by the interaction, the understanding and self-efficacy they felt leaving the interaction, their behavioral actions, and openness to follow-up and future preventative care after the interaction. The common themes that arose concerning this collective occurrence in the women's stories showed that they were joined by the common experience of negative interactions regarding body weight with a health care professional.

Intervening conditions and Casual conditions

Intervening conditions were observed throughout the women's stories about their interactions with a health care professional (HCP). The presence of these conditions further contributed to the themes identified. The intervening condition that was most common was the women's perception that of the HCP exhibiting weight bias. Other conditions included a negative tone or attitude, a clinically minded detached attitude, a

disease fear-based approach and an encouraging or discouraging approach and finally an explanatory, instructional approach taken by the HCP.

The casual conditions identified were previous negative experience interacting with HCPs regarding their weight, internalized weight stigma development from multiple sources such as family, peers, and societal negative messages regarding body weight. These casual conditions may have created a pre-disposing expectation of weight bias and added to the negativity of the stories shared. Better assess these conditions is the reason why the Weight Bias Internalization Score survey was administered to the women as a quantitative outcome. The results of this survey are found later in this chapter under the quantitative results. Another casual condition identified is the education and counseling style was taken by the HCP to prepare them for behavioral self-care. This condition is explored in detail in the diabetes management section later in this chapter.

Emerging themes

Once the themes and the intervening conditions were identified, axial coding led way to finding the interrelationship between common themes from the women's responses. The themes shown in Table 16 and the results of each theme will be detailed separately in the next section.

Table 16. Emerging themes

Theme	Meaning
Theme 1: "Gutted"	Negative feeling after body weight related interactions with health care professionals
Theme 2: "Adrift and ineffective"	Lack of understanding, and reduced self-efficacy
Theme 3: "Behavioral inertia"	Lack of food and exercise behavioral changes after body weight related interactions
Theme 4: "Going solo"	Break in therapeutic relationships and lack of follow-up medical care

Emerging Theme 1: "Gutted": Negative feeling after body weight-related interactions with health care professionals

The first key theme that emerged came from the identification of feelings that were elicited in the women during and after the body weight related interactions with a health care professional. Using an open coding method, all the feelings expressed by the women were given a code name and then put into three subcategories, positive feelings, negative feelings, and neutral feelings. Table 17 contains the results of these subcategories. Negative emotions permeated the women's stories, 80 out of the 90 interactions (91.2%) resulted in a negative feeling. The theme name "Gutted" was chosen because of the emotion elicited when reading the personal emotional experiences that the women experienced. Some of the coded feelings expressed by the women included

helplessness, shamed, demoralized, hurt, guilty, embarrassment, disrespected and discouragement. The most intense negative emotions were expressed when describing the experience of encountering weight bias. Typical examples of the narrative the women gave of the negative feelings they have felt include:

P8. Feeling anxiety and helplessness

"As an overweight person you're always anxious about talking about your weight, I know personally it affects me a lot and so I'm always thinking about it. I'm anxious about it and I feel you know it's like a catch-22. I am accomplished, and I feel I'm a smart woman and it's like the one thing in my life I've never been able to get a handle on and it just pisses me off. You know what I mean. Bringing up my weight showing empathy and kindness, you know, towards me and excuse me, I'm getting a little teary here. I just don't know. It just was never really happened, and nobody has ever said, I want to help you reach your goal."

P14. Feeling judged

"I left there thinking, she was very sweet in other ways, but as far as how she discussed my weight, I felt she was judgmental. It felt condescending. When you have your trusted, medical professionals making you feel like this would be so easy if you would just do what you're supposed to and lose weight. If you lost weight, you wouldn't be having these issues and I think that approach just leads to more self-loathing. It makes you think what is wrong with me? Why can't I do that? I just think it's dangerous. I think they need to be a lot more careful and know more about the psychology and eating disorders because I think the medical professional have helped create eating disorders by what they say."

P11. Feeling shame

"I felt self-conscious and embarrassed. I thought that she was thinking I was not doing well with my diet or my lifestyle because I gained weight."

P30. Feeling hurt and ashamed

"When I went to do my MRI, the technician looked at me and he said to me You're too big for the machine. He said I was going to have to hold my breath to fit and I did it fine. I felt hurt, it was hurting me but I did not reply. I didn't reply anything to him, I just looked down and I said to him "I think I can fit". I was able to do it and it was not uncomfortable, I was fine. But it did bother me that hurt me by saying that without really knowing if I would fit.

Table 17. How did you feel after leaving that interaction with a health care professional?

Feelings after HCP interaction	Interactions (*N*)	Percentage (%)
Negative	82	91.2
Positive	4	4.4
Neutral	4	4.4

Note: HCP = Health care Professional

Body weight when taken at the health care professional's office

Another set of questions that prompted responses on the emotional level were questions involving the experience of being weighed at the health care professional's (HCP) office. These questions were added after noticing that it was being mentioned as a body weight related interaction that affected the women. Since it was added due to constant comparative analysis it was answered by 15 of the 30 women. The majority of the women described being weighed in a hallway or a public space at the HCP office (10 women, 66.6%). Nine out of the 10 women had negative emotions associated with this experience. In turn when it was done in a private setting, such as an exam room ,4 out of those 5 women had neutral feelings about the experience. Neutral feelings were described as feelings that it was something expected at a HCP's office, similar to blood pressure being taken. Table 18 shows the breakdown of the data on weights taken at the HCP's office followed by narratives by the women on this topic.

Table 18. Feelings after being weighed at the health care professional's office

Setting	Feelings	Interactions (*N*)	Percentage (%)
Public	Negative	9	90
N= 10	Positive	0	
	Neutral	1	10
Private	Negative	1	20
N=5	Positive	0	
	Neutral	4	80

Emerging Theme 2: "Adrift and ineffective": Lack of understanding, and reduced self-efficacy after body weight related interactions with health care professionals

Understanding the behavioral actions that health care professionals were asking of the women and their perceived abilities to follow through with these actions was asked in three parts of the structured interviews. It was asked about all the interactions the women brought forth and then separately about the menopause transition and diabetes management.

There were 70 interactions discussed that involved the women needing to understand something the health care professional (HCP) was asking of them. In the interview, they were questioned on how well they understood what was being asked of them by the HCP. The participants were also asked how they perceived their ability to follow through with what was being asked of them and their overall ability to care for themselves behaviorally. All 70 interactions have a corresponding answer for perceived self-efficacy. This theme was called, "Adrift and ineffective" because the common experience was to have a lack of understanding, as described by one participant as being

"lost." Based on the answers, the majority of the interactions resulted in a lack of understanding and reduced perceived self-efficacy by the women many were describing the encounters as "ineffective."

Understanding of what the HCP was asking was coded in three subcategories that fit all the women's answers. "Yes", they understood what the HCP was asking them to do, "No", they did not understand, and the third category was "Reject information while listening because it was not realistic." This was a common theme that several women expressed indicating that they did not try to understand what was being said to them because it did not seem realistic or fit their current abilities or situation. Table 19 shows the summary of the women's understanding. The participant's report of understanding was 39% of the time and not understanding was 40%. However, since 21.4% rejected the information, meaning that the majority of the interactions resulted in a lack of understanding (61.4%). Notable to the next theme is the connection between understanding and following through with behavioral changes, coded as perceived self-efficacy.

Table 19. Did you feel that you understood and could do what the health professional was asking you to do?

Understanding	Interactions (*N*)	Percentage (%)
Yes	27	38.6
No	28	40.0
Reject information while listening	15	21.4

The participants were asked if they felt their confidence in their ability to care for themselves behaviorally was improved by the interaction or not. This section was coded as perceived self-efficacy after interaction with the subcategories, “improved “or “not improved.” Table 20 summarizes the findings for perceived self-efficacy. All the women answered this question. The vast majority of the interactions resulted in a lack of improvement in perceived self-efficacy (95.6%). It is important to note that this total includes the interactions that involve an understanding of what the women were asked to do by the HCP. However, the four interactions that resulted in improved perceived self-efficacy were preceded by understanding what the health care professional was guiding them to do.

Table 20. Do you think that interaction improved your confidence in your ability to take care of yourself and make the changes asked of you?

Perceived Self-efficacy	Interactions (*N*)	Percentage (%)
Improved	4	4.4
Not improved	86	95.6

The following examples are taken from the transcripts depicting the most common experience of a lack of understanding followed by no improvement in perceived self-efficacy (PSE) within the same interaction:

P9. No understanding, confused about the treatment focus

This was with the first oncologist that I saw when I was diagnosed with breast cancer. The first thing he talked to me about was him wanting me to lose weight, two pounds a week. You know, he said that every single time I would come and see him he was planning to weigh me, and he wanted me to get on a vegan diet. He gave me a whole booklet, I just didn't understand, you know, I mean you're here seeing an oncologist, and I just want to survive this, but I felt that at that point he was telling me that I got cancer because I was heavy and I'm going to be honest with you. If you were to sit in the waiting room of the Cancer Institute you will see a lot of thin people there, so it really screws with your head.

PSE not improved by interaction, increased negative body image

"Oh yeah, of course, I mean, it just adds on to what you're going through. Your body image, the thoughts you have about yourself, that what you're really trying to fight, the perception that people have about, you. Because people see someone that's heavy or obese, and they automatically think, oh, they can't stop eating, you know, and they don't really see what's behind that. So, it really, really, really affected me.

P10. Reject information while listening, judgmental approach

"The orthopedic doctor that told me I needed to lose 100 pounds without asking me any other questions. He said, "You think you eat healthy, but you are obviously not because you developed prediabetes." I'm pretty sure the doctor thinks I sit around and eat chocolate pie and, you know, I really don't. I feel upset, I don't listen because it's not true and I think that he is being rude."

PSE not improved, feel like a failure

"It has made me feel that I wasn't doing anything right."

P13. No understanding, lack of practical information

"Not really, I was given the Metformin that kind of management, but no communication on any changes I should make in my diet. There should be a conversation because just looking at the chart and looking where the number is not effective communication. It's never a conversation of with good communication saying how I can make a small change in your diet, something I might achieve. That never happens."

PSE not improved

"No because everything is tied to my weight. And every time they talk to me, it's always tied to the weight without giving me the steps. What they do is put a bandaid on it by giving me the Metformin but nothing on how to change my eating."

P26. No understanding, lack of instructions

"No, I did not and he did not explain it to me. In the end, he just asked his secretary to give me a diet plan. I think it was, like 1200 calories a day on a piece of paper, and that was it, I didn't really feel like I got any guidance."

PSE not improved

"Yes, I feel less likely to take care of myself because I didn't feel that I got any guidance. It was obvious I'm having a problem that I need more support than just here's a diet plan go ahead and follow it."

Menopause transition questions

The summary of the women's account of interactions with health care professionals (HCP) regarding the menopause transition are in this section because it added to the theme of being "Adrift and ineffective." The women declared a lack of preparation and education given by their HCP regarding body changes and behavioral self-care during this time in their lives. When asked if any HCP had discussed the normal body changes that occur during the menopause transition the women were unanimous (0 out of the 30 women), they had no conversations with any HCP on this topic. The women were questioned regarding their own experiences during the menopause transition with body changes. The most common answer was an increase in body weight (11/30, 36.6%), mood changes (9/30, 30%), and increased waist size (7/30, 36.7%). An interesting note is that 12 out of the 30 women (30%) had the experience of having had a hysterectomy. Those women having had a hysterectomy are included in the summary of body changes.

When asked if they had received any counseling regarding their food and exercise behaviors during the menopause transition only one woman out of the 30 responded

"Yes" (3.3%). They were asked who has or is providing the most guidance for them regarding menopause. The top three answers include family (mother top answer), friends, and Google. Next are some comments from the women regarding this topic.

P3. Not informed about menopause, hopeful for change, self-blaming

"No but I don't blame them because I'm 67, so I'm not talking about 25 years ago, maybe they weren't doing the best that they could back then. I don't know, I'm not in the medical field. I would have loved somebody to sit down and talk to me. But I really don't know why they didn't do it. It's just, I don't know, maybe I didn't ask."

P14. Not informed about menopause, wanting to be forewarned

"Honestly, it was not discussed unless I asked questions. Nobody said "okay, you, you want to look for this and you want to be prepared for this and if this happens don't think you're weird. This is all part of the range of normal."

P26. Not informed about menopause, body change experienced

"No, not really. I was just told, "You're not going to have a period anymore. That's it. I haven't really had hot flashes, but I have had body changes, I have gained some weight and it is different than my past weight gain. Before it would go to my hips and buttocks and now it was more like in my stomach. I've developed more of an apple shape."

Diabetes management questions

The women's stories on their interactions regarding diabetes management also fall under this section because it speaks to the guidance the women feel they experienced in their preparation for diabetes management. Information from the participants medical records revealed that the mean years since diabetes diagnosis was 10.5 ± 7.8 years. The women were asked if they felt prepared to manage their diabetes by the interactions they have had with health care professionals (HCP)and the large percentage responded, "No" (26 out of the 30 women, 86.6%). They were then asked what education and counseling style was used by the health care professional (HCP) to prepare them for diabetes

management. Coded answers for these casual conditions included Food/exercise lifestyle behavior focused, Weight loss centered focus, Blood sugar level focused and Medication centered focus. The women were asked to pick the main HCP that counseled them on diabetes management to answer this question. Based on the women's answers, the majority of the HCPs focused on weight loss as their main education and counseling style for diabetes management (53.4%). This was followed by 26.6% taking a food/exercise lifestyle behavior counseling approach. The participants were further questioned as to whether their HCP had considered their current food and exercise behaviors when educating and counseling them on diabetes management. Most of the women, 86.7% said that their HCP had not questioned them about their current behaviors when counseling them on diabetes management.

Similar to the previous question about behavior change, the women were asked if their diabetes-related interactions with their HCP improved how confident they were in their ability to take care of themselves, coded perceived self-efficacy. Only two out of the 30 women (6.7%) felt there was some improvement in their abilities for diabetes management. When asked where they get most of their information regarding diabetes management, the internet/Google was the most frequent answer, followed by HCPs and family. The summary for all the diabetes management questions is found in Table 21 followed by comments on diabetes management from the women's interviews.

Table 21. Diabetes management interactions

	Interaction (*N*)	Percentage (%)
The participant feels prepared by HCP to manage diabetes		
Yes	4	13.3
No	26	86.7
HCP focus when giving diabetes education		
Food/exercise behavior lifestyle	8	26.6
Weight loss centered	16	53.4
Blood sugar centered	4	13.3
Medication centered	2	6.7
HCP has taken current food and exercise behaviors into account when counseling?		
Yes	4	13.3
No	26	86.7
Self-efficacy after interaction about diabetes management with HCP?		
Improved	2	6.7
Not improved	28	93.3

Note = HCP = Health care professional

Participant's comments on being prepared by health care professionals (HCP) to manage diabetes:

P12. Not prepared by HCP to manage diabetes, advice not realistic

"No, it's been hard to manage my diabetes because the advice I have gotten is not realistic for me. The healthier food that I am told to eat is more expensive and I am stuck in a sad poverty cycle. It is much cheaper to eat fast food. It's a real problem, I am always afraid I won't be able to pay for my diabetic blood sugar strips."

P13. Not prepared by HCP to manage diabetes, medication focus only

"Not really, I was given the Metformin that kind of management, but no communication on any changes I should make in my diet. There should be a conversation because just looking at the chart and looking where the number is not effective communication."

P29. Not prepared by HCP to manage diabetes, denial about the diagnosis

"No, I've been a diabetic for more than 15 years and I'm still maybe not understanding the reality of what I have to do. It took me a while to say that I was diabetic, I would call it a sugar problem. Health professionals do not realize that we need to accept it without blaming ourselves before we can understand how to take care of it."

Some of the women's comments on the counseling style of HCP for diabetes management education:

P3. HCP diabetes management education focus, blood sugar focus

"She doesn't talk about the food and exercise, even though these days with so much technology! I think it is worse because doctors have to see so many patients in their clinics and we don't have time to build a relationship with them. It's always the same, she checks my blood sugar, and all she says is you're doing good or you're falling behind, nothing else."

P9. HCP diabetes management education focus, weight centric

"I have been told that if I would have taken care of my, of my weight there could have been a chance that I wouldn't have been diagnosed with type two diabetes. So I feel my weight is to blame, it's always been attributed to that, by everyone, always. However, people don't know anything because even thin people get type two diabetes, and I don't think I'm wrong about that, a lot of people do."

P29. HCP diabetes management education focus, food behavior focus, ineffective

"The doctor talked about food, he wrote down and gave me a list of what things not to eat. "This is what you have to take out of your life." He actually said this, he had a white coat and said anything that is that is this color, you don't need because of the starch and the carbs and those are bad. I did not listen because I am Latin, and I am not going to stop eating my family food."

How some of the women feel that the interactions affecting their ability to take care of themselves regarding diabetes management, coded PSE after diabetes management interaction:

P1. PSE after DM interaction with HCP, not improved, self-improved

"My endocrinologist focuses on medicine and sent me to Weight Watchers to learn how to lose weight. I feel prepared and confident now but not from what they have told me or a diet, I figured it out myself."

P18. PSE after diabetes management interaction with HCP, not improved, hopeless

"I would not say I feel prepared. I feel frustrated, and sometimes depressed. When I leave there I feel like I've already lost the race."

P26. PSE after diabetes management interaction with HCP, not improved, lack of matched approach

There are interactions with doctors when they tell me all the bad things that will happen if I don't change, and it scares me for a while and then when I'm stressed, I eat. I'm an emotional eater. Then I'll grab whatever's convenient and then I'll feel bad about myself, and the vicious circle starts again. No one has ever tried to investigate why I am an emotional eater or even asked if that was a problem.

Emerging Theme 3: "Behavioral inertia": Lack of behavioral changes after body weight-related interactions with health care professionals

The third theme is coded "Behavioral inertia" because it describes the lack of change in health-related behaviors that most of the women recounted in their stories. Out of all the interactions, 48 involved a call to behavior action or change (53.3% of the interactions). The women were questioned regarding the results of the actions, and they were coded as "no behavior change", "positive behavior change", "unsustainable behavior change", and "negative behavior change".

When asked about the behavior changes, they made after the interaction most of the women described not even attempting to make a behavior change, coded "No Change" (45.8% of the call-to-action interactions). The next most common answer was attempting to make the change suggested by the HCP but not being able to sustain behavior change (31.3%). Only 8.3% reported making positive, long-lasting behavior changes, 4 out of the 48 interactions documented. Negative behavior change was coded when the person described a decline in food or exercise behaviors and that totaled 14.6% of the interactions. Table 22 summarizes the behavior change section of the coding followed by statements by the women regarding behavioral action after the interactions.

Table 22. *What actions did you take in your food and exercise behaviors as a result of that interaction?*

Behavior change	N= 48	Percentage (%)
None	22	45.8
Positive	4	8.3
Unsustainable	15	31.3
Negative	7	14.6

Comments on behavior change:

P11. No behavior change, lack of guidance

"None, that conversation was not helpful"

P12. Unsustainable behavior change

"I followed the diet on and off for five years and after losing a lot of weight and gaining it back multiple times I realized the diet was the problem not me, I needed another approach."

P14 No behavior change, suggestions not realistic

"It's not like I didn't know it would be good for me to lose weight. It didn't really change what I thought or knew, but I remember being kind of being agitated because of how she could flatly say a blanket statement like I wouldn't have a care in the world if I lost weight. I thought, that's what all of us that struggle with weight are told to believe, that if we could lose the weight our whole world, our whole life would be magical with unicorns and then fantasy men and you people will love you, you get to that point and realize that's not true and I mean it's just frustrating kind of sets you up for failure, I think. I didn't take her advice it was not realistic."

P30. Negative behavior change, disordered eating behaviors

"No change, they don't understand my problem. I feel hopeless, in the past I used to eat and throw up, but it was hurting me. It was difficult for me to throw up and it was hurting my throat so I stopped. I never told the doctor I was doing that because I do not believe she cares what I do unless I lose weight."

Emerging Theme 4: "Going solo": Break in therapeutic relationships and lack of follow up medical care.

Theme 4 emerged as the women expressed their decisions not to return to certain HCP after having a negative BWR interaction. In addition, many told stories about their difficulties wanting to return to any health care setting for fear of these type of experiences happening again. Out of the 90 documented interactions, 52 of them involved the participant not returning for follow-up care with that same health care professional (57.8% of the interactions). Furthermore, 43.3% of the women (13 out of the 30) stated they have not returned for follow up or preventative care with any HCP because of these interactions. The results found in this theme as well as those in Emerging theme 3 are the main consequences found through the women's stories.

Some of the women's comments about their resistance to medical care:

P4. Avoiding follow up medical care after BWR interaction

"She was very thorough in her medical expertise and so after time passed, I convinced myself that she was a good doctor. Thinking about it now, I don't know how I came to that conclusion, but either way I did go back to her. I did a full checkup and everything, and she gave me instructions to lose weight, focusing on what every doctor seems to focus on, regardless of what you're there for. When it was time for my next checkup, and I hadn't done anything, I just never made the appointment because I knew just from her personality that she was going to yell at me, and I didn't want to get yelled at, so, I didn't go back to the doctor for a checkup or any doctor for a very long time."

P12. Postponing follow-up appointments due to BWR interactions

"Yes, I have postponed many appointments. I dread having to go and weigh myself. The first thing they do is they weigh you. I don't want to weigh myself; I know what my weight is, I know I have a problem."

P18. Not returning to same HCP after BWR interaction

"For sure I was resistant to go back, for sure, for sure. You know, I thought they were going to see that I had not lost weight or my A1C was higher or that my cholesterol hadn't gone down, so I definitely avoid going back in. I had an appointment with my endocrinologist recently and I lied and said I had a sore throat, and I couldn't go to it."

The women expressed a desire to find effective approaches to improve their eating and exercise behaviors. They were questioned about where they have gotten most of their information regarding food, exercise and body weight, and size. The answers were varied but the most common response was "Online or Google" mentioned by 14 of the 30 women (46.6%). The other top two answers were their health care professionals (20% of the women) and "Commercial diet programs", with Weight Watchers the most mentioned program at 16.6%. Table 23 summarizes the results.

Table 23. "Where have you gotten the majority of your information regarding food, exercise and body weight and size?" Top three answers:

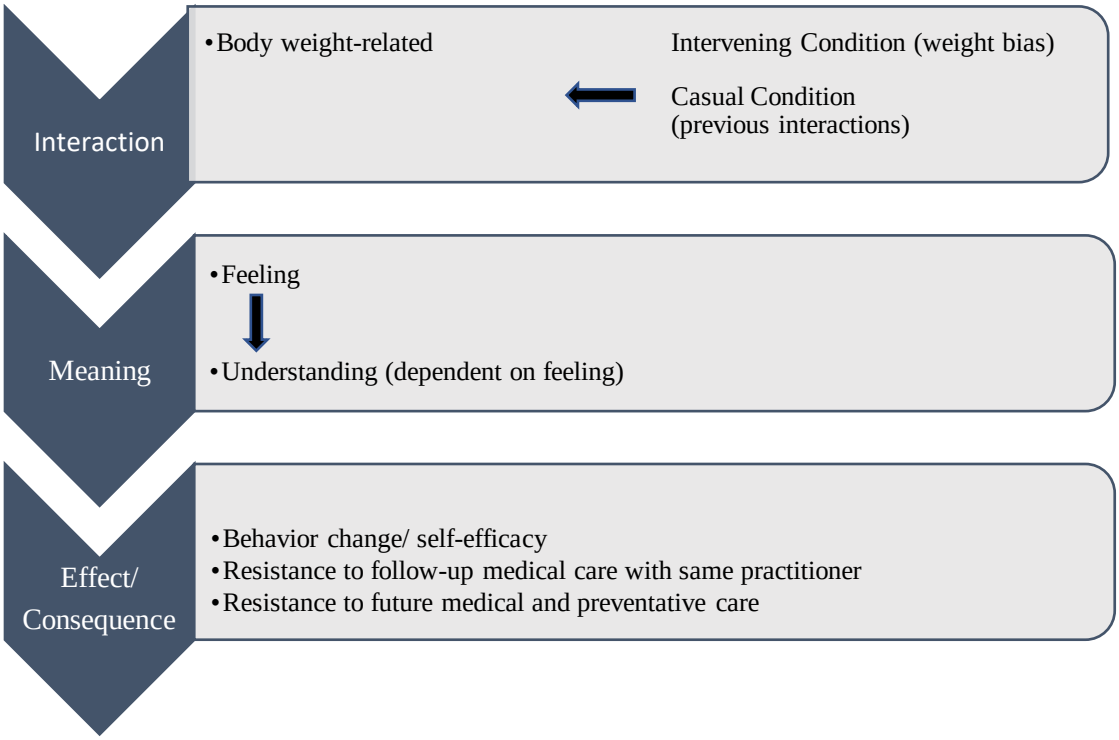
Response	*N*	Percentage (%)
Online/ Google	14	46.6
Healthcare Professional	6	20.0
Commercial Diet Program/ (Weight Watchers)	5	16.6

Selective Coding

Through the grounded theory process a central question emerged in the data; How do body weight related interactions with health care professional affect women's health related actions? The selective coding process and the themes that have emerged have weaved a connection between all the women's stories and states the central phenomena. Figure 3 illustrates the answer to the central question and depiction of the central phenomena and storyline. The observed phenomena indicates that the majority of body weight related interactions elicited negative feelings, limited understanding, reduced self-efficacy and resistance to follow-up. A woman's history of negative body weight related interactions and the current identification of internalized weight stigma contribute to current experiences. Figure 7 illustrates the central phenomena and the observed storyline.

Figure 3. Central Phenomena/ Storyline

Central Question: How do body weight related interactions with health care professionals affect women's health related actions?



The majority of the body weight related interactions involved the intervening condition of the participant encountering a health care provider with implicit or explicit weight bias in a health care setting (36 out of 61; 59%). Specific questions were asked to explore those types of interactions and their effect on the women's feelings, understanding, self-efficacy, behavior change and desire for follow-up and future preventative medical care. The analysis of these interactions led to central phenomenon observed in this study.

Central Phenomenon:

Interactions with health care professionals affect individual's feelings. Those feelings determine the individual's understanding, resulting in health-related actions including behavior change, self-efficacy, and willingness for follow up medical care.

The observation of this phenomenon leads to the strategies observed, if the main feeling after the body weight related interaction elicited in the woman is negative there will be a lack of understanding to what the health care professional wants her to do, that leads to behavioral stagnation and reduced self-efficacy. Ultimately these storyline leads to a resistance to future follow-up medical care.

The rest of this section will elaborate on the process of the central phenomenon as seen in Figure 7, specifically as it relates to those interactions involving the intervening condition, weight bias and illustrating each emerging theme that was identified in the study with true examples, in the women's words from the data derived with the interviews.

Example 1:

P12. Weight bias interaction, internalized weight stigma

Interaction: Code: Body weight-related

"Yes. I don't know if it is my perception or reality, but I have felt 99% of the time in my interactions with doctors that they assume my IQ is not as high as theirs or that they assume that because I'm fat I'm also stupid. I get spoken down to a lot and I assume it's because they think that since I don't know what to eat, I'm not smart. I don't know if doctors speak down to skinny people also so it's kind of a weird perception versus reality. I do know that when I go to a doctor's office, I will not go in wearing shorts and a raggedy t-shirt like I would go to the gas station to fill up. I actually do make sure to shower, put on makeup and look my best so I can be treated with the utmost respect at a doctor's office. I would never show up in my everyday attire because I know that I'm going to feel that I'm going to have to battle something."

Feeling: Code: Negative feeling

"I would rather go on a job interview or on a first date than a first meeting with a doctor because the judgment there just feels overwhelming. I have to explain all my problems and then wait to see if they're going to be a partner or an enemy. Are they going to be an ally? Are we going to try and make me better or am I just another number to them and another insurance claim and they're just going to have this one approach with me and make their assumptions?"

Understanding: Code: Reject information while listening

"Yes, I understand that they want me to diet and lose weight. I block it out because the message is that I am being told that extreme restriction was the cure for everything."

Behavior change: Code: None

"No, none, these conversations make me feel bleak about my future."

Self-efficacy: Code: Not improved

"It has affected my ability to take care of myself, these types of conversations only started me on the path of yo-yo dieting, I would lose 20 pounds, but I'll gain back 35. They can not help me fix what they cannot understand how."

Future medical care: Code: Resistant

"Every single problem I have had, including mental and physical ailments, have always been blamed on weight. I have always been told that if I lost weight, it will go away and it's hindered me from getting proper diagnoses throughout my life. This has made me hesitant to see doctors."

Example 2:

P13. Weight bias interaction, judgement
Interaction: Code: Body weight-related

"Yeah, they observe the way you look and immediately start in on telling you everything that is going wrong, "Your knees are going to go, your ankles are going to go, they start by trying to scare you about the physical aspect of it. I think it's an automatic bias the moment you walk into any place. It took me a long a long time to get rid of entering a room and see people moving away the chair so you could go by, you know, it's hard when you're heavy. It's really tough. When I see a healthcare professional I immediate can tell that by their face that they are thinking, "There is something totally wrong with you." Or

they say something like you should lose weight it's bad for you or worse, you should lose weight because you have a pretty face."

Feeling: Code: Negative feeling

It is not good, really tough because the world sees you different and interacts with you different when you're overweight. So do the doctors.

Understanding: Code: No

"I have no real direction and I don't connect with my doctor. It's like he doesn't know how it feels to be the patient and not see me as a number."

Behavior change: Code: None

"No change, I come out of whatever discussion wanting to do the opposite."

Self-efficacy: Code: Not improved

"Whenever we finish a conversation like that about losing weight, I go home and go straight to the refrigerator to see what I can eat. It was like contrary to what the doctor wanted."

Future medical care: Code: Resistant

"I have decided I am going to change my doctor because the overall lack of communication with him."

Example 3:

P14. Weight bias interaction, behavioral assumptions

Interaction: Code: Exercise advice

"Yes, a doctor told me that I needed to exercise more. I was right out of college and at the time I walked four days a week and I would go to the gym the other three and when I told him. Then he said "Really? Really you do that? Now is that what you say you do or is that what you really do?"

Feeling: Code: Negative feeling

"He was calling me a liar! I was pissed, I was angry, I thought that was kind of rude."

Understanding: Code:

"No, he did not give me any specifics just comments on my weight and exercise"

Behavior change: Code: None

"None, I was angry. That anger led me to think, well why bother to exercise?"

Self-efficacy: Code: Not improved

I felt worse about my self-care. I started off thinking I'll show you; you know you have no idea that I'm out here, exercising, I thought maybe I should take a picture and send it to him. It just made me angry, and it always makes me angry when people judge people by their weight, and just assume things about them.

Future medical care: Code: Resistant

"I never saw that doctor again. As far as seeking medical attention after it did stop me. I hate going to new doctors. I have so many issues and there's so much history is seems like a daunting task. A big part of not wanting a new doctor is because you don't know how judgy they are going to be or how dismissive they are going to be. Are they going to look at you and think "Oh yeah so you have all these issues, well then how about losing weight Are they even going to ask me about what I do or don't do or are they just going to dismiss me as someone that is old and complicated?"

Example 4:

P19. Weight Bias Interaction, lack of health concerns, reverse bias

Interaction: Code: Body weight-related

"Yes, a doctor that I had, I think he didn't, talk to me, because I don't look like I'm really 65 and I keep my body in shape. I don't look like an old lady, so he assumes that I'm doing everything right."

Feeling: Code: Negative feeling, worried

"I'm used to it, but it makes me worry that he may miss something, I am thinking about changing that doctor."

Understanding: Code: No

"They don't tell me anything because of the way I look so I have no guidance."

Behavior change: Code: None

"I did nothing new."

Self-efficacy: Code: Not improved

"No not improved, I do not get guidance"

Future medical care: Code: Resistant

"Yes, I am not going back to that doctor I need more guidance."

Example 5:

P27. Weight bias interaction, shaming approach

Interaction: Code: Body weight-related

"My doctor told me, "You're too fat, you have to lose weight." And not only that, but the doctor just grabbed me in my stomach, like this (grabs her stomach) and said "What is this? This is too fat.". He actually did this! That made me feel bad and think, think this not good, how he can do that? He also said, "You're obese and 63 years old, you need to take care of yourself!"

Feeling: Code: Negative feeling

"Terrible, so terrible. I felt so embarrassed, and I feel guilty. I thought I am fat, and it is my fault!"

Understanding: Code: No

"No, he didn't say "do this" or "do that" just "you need to lose weight."

Behavior change: Code: Extreme action

"I had a liposuction because being told I was super fat by the doctor made me feel disgusting"

Self-efficacy: Code: Not improved

"Yes, it made me have even more problems with food. I feel worse and that means I am not doing what I supposed to do. To make it worse, a little while later my blood sugar started going in to the 300s."

Future medical care: Code: Resistant

"Yes, that happened at the end of the last year, and I haven't gone back since. No I feel doctors treat you like a number, not like a human being."

Research Theory

The observation of the central phenomenon that was developed by the data led to the theory developed by the qualitative research:

"Negative feelings derived in body weight related interactions between health care professionals and women with prediabetes and type 2 diabetes result in lack of understanding, behavior change or improvement in self-efficacy. The experience of weight bias creates resistance to follow up medical care"

The theory will be used to generate hypothesis for future research. These hypotheses will be detailed in the Discussion chapter of this paper.

The women's preferred approaches

The results of this section are added as information that will give direction for future research and the development of new models of care relating to interactions with women regarding body weight, not part of the grounded theory development. It will be elaborated in the Conclusion chapter of this paper. The last question in the interview was added to ask the women to give their opinions on how they would have preferred to have been approached about their body weight and size in health care setting interactions. The outcome of this question is divided into main categories and code words that represent the women's sentiments. This summary is found in Tables 24 - 26, although in table format, the answers are not tabulated because many of the women expressed thoughts that fell into multiple codes. The table is written instead in order of the most common expressed desire by the women for these interactions. All the statements given by the women fall in to three codes. The most popular was a desire for a partnership with their health care professionals, followed by identification of certain traits they want their health care professionals to possess when talking to them, the third was direct thoughts on the treatment approach. The summaries found in Tables 24 - 26 will be followed by narrative excerpts from each one of the women's interviews.

Table 24. If you had to give health professionals advice on how to guide women regarding their weight and body size, what would you say?
Code: Desire for partnership with health care professional

Preferred approach code	Common answers
Desire for partnership with a health care professional	Spend more time with me Talk one on one with me Sit down and talk to me Give me individual advice Teach and guide me Connect and communicate with me Work with me as a team Give me facts Show respect Question my individual needs Give direction based on where I am Get to know me Give me personal direction

Table 25. If you had to give health professionals advice on how to guide women regarding their weight and body size, what would you say?
Code: Preferred health care provider attributes

Preferred approach code	Common answers
Preferred health care professional attributes	Kind and empathetic Use nice words Caring and understanding Notice effort and progress Be personal Be conversational, not a check list approach Straightforward Non-judgmental Make me feel valued See me as a real person, not a number Encouraging Be curious Treat me humanely Be positive Notice and compliment positive changes

Table 26. If you had to give health professionals advice on how to guide women regarding their weight and body size, what would you say?
Code: Preferred treatment approach

Preferred approach code	Common answers
Preferred treatment approach	Ask me first what I am currently doing with food and exercise Focus on health not weight Refer me to a specialist, registered dietitian Give me small, realistic steps Let me ask you when I am ready Give more time to follow-up with me about this Don't use charts and numbers, talk to me Treat weight as a sensitive topic Pay attention to body language Spend more time with me Give me resources Ask, "How can I help you" Don't make assumptions, ask me Teach good communication and weight sensitivity in medical school and other health care programs Wholistic treatment Don't talk about weight if it is not the presenting problem Discuss science facts, don't talk to me about fad diets Ask me if I want advice before giving it Don't give counseling when I am in a hospital

In their own words:

P1. "*This is how you should handle it, straightforward, not necessarily judging what the person is doing one way or another, just basically saying, "This is what's going on with your blood sugar this is what's going on with your body. This what you need to know to go about it, that is what has been very helpful for me. The other thing I want to say is being in the hospital is not the place to get an education. It's better if you can have time to settle and absorb the information."*

P2. "*To truly motivate your patients to make change and continue to make those changes don't just tell us, show us. Give us examples, give us real data, and tell us where to find good information so we can read it on our own if you don't have the time to talk about it."*

P3. "*I will say to them, first of all, listen to what we are saying, but not just listen but also make us feel that you are connecting with us. If you give me the feeling that you are connected to me I probably could respond to you better and take care of myself better."*

P4. "*I think it's an innate thing about that person's personality and style of how they do their job, that can gently encourage me, not shaming me, not judging me not giving me a cookie cutter plan, but actually listening to my life. I need a person that will work with me, and how to get me to manage my obstacles. It's not that I need to learn, but the approach that matters."*

P5. "*Health professionals should have more concern for you and talk to you more freely"*

P6. "*I think I would be honest and ask, how do you like help, or do you want help? Get down to the nitty gritty and actually ask things to understand the person, for me, they didn't do that. I think there could be more in interchanging between people, and I just don't think doctors or health care physicians would say that to a person, "How can I help you do this."*

P7. "*Explain more and give more information, refer us to a nutritionist that you trust."*

P8. "*Well, I would say, don't make assumptions about people, because you may be your doctor and mean well but you don't they really know what people are going through unless you ask. If someone is coming into your office and they're overweight, they're conscious of being overweight, they're thinking about it, they're struggling with it. They're looking for support, kindness, and empathy, and they are looking for a solution. Looking at it as a partnership, I think, would serve the patient and the doctor best in those situations."*

P9. "*How much time do you have? (laughing) Definitely, I know how busy their lives can be but I would definitely make it a part of their curriculum learning, or how do you say their training, r, you know, continuing education. Because as medicine evolves, there is just so many new ways of encountering and helping patients, especially nowadays. It's everywhere, mental health and people are openly talking about all these things, you know, women's health. Now, women are talking openly about menopause and all this other stuff, so I really think that they need to be more open and educated on how to speak to their patients, and that's how they're going to keep the patients around."*

P10. "*I think that they would have to approach it with respect. I think that even doctors who are overweight don't treat women, the same as they would treat themselves. I think*

they don't approach women with respect. I think especially male physicians have no idea how to talk to women, even a large percentage of female physicians don't know either. I think they get very tied up in what they're doing, and they don't think about the fact that they are talking to a real person."

P11. *"I just wish that health care providers were a little bit more of a connection. I think some do, but I have not really had that experience. It should be like having a conversation with a friend."*

P12. "*Once you remember that we're all human and we're all battling something it changes how you approach everything. I think when you're a doctor, listening to everybody's problems, it gets overwhelming and it gets easy to assume, and forget that we're humans, we're not just numbers. I think the most important thing that I have needed and that I got from a doctor once in my life was that no matter what I looked like on the outside, I am worthy, and I deserve to be loved."*

P13. "*More honest conversation and less data. Less results, but conversation as a person as a human as a woman. What is it that triggers certain behaviors? If you do this diet change, this will help you. Match the information to the person, give practical advice."*

P14. "*Well, I think acknowledging that weight is a difficult topic to discuss. Maybe saying, as your physician, it's kind of my job to just let you know that your weight may be related to some conditions. Then give some advice on how to make some gradual changes. Remind the person that small changes are still better than no changes that would feel like less pressure to do it.*
Keep it realistic, personal, and respectful, don't talk to them like they're stupid. I'm sure if I had to say it as many times as a doctor said it I'd get tired of it too, maybe they're not as patient as they should be about it but I just think they need to focus on what damage could be done if they handle that inappropriately and end up contributing to certain types of eating disorders."

P15. "*I think they should first understand the whole issue of the person, the holistic view, not make assumptions. Help them with their issues, it's not that they don't know what to eat. It's not that they don't exercise. It's not they don't have willpower. It's not any of that stuff. It's, I think an underlying reason. They're much deeper than those things but it doesn't mean that they can't improve, they can do it, it's just that they have to deal with some issues before they can put everything into practice. Health professionals need to understand that."*

P16. "*Give us formal direction, this is how it should be. This is what you have to do. And let's go back and check you a week from now, two weeks from now, three weeks from now, and see if you were able to do what I tell you to do. This would make a difference."*

P17. "*Be as real as you can, you know, be real. Don't put unrealistic goals just because the charts say something. Everybody's different, everybody thinks differently, and everybody acts differently. So, I think they have to tailor that to the to the person."*

P18. "*Ask questions to find out what is causing weight changes. Wait a while before jumping in to advice until you figure out the person, it could be so many things that can cause it. It seems like doctors are always trying to see how many patients they can fit in to a short time. They schedule someone like every 15 and I don't think they really get to know the patient very well. They should have longer appointments, so they have time to get as much information about the person, to get to know the whole, we are whole people not just a high cholesterol number."*

P19. "*They assume about me so I will assume back, I assume doctors don't know much about eating, they, especially primary doctors because they tend to recommend fad diets. They should know more real science or refer to someone who does."*

P20. "*Talk to them about exercise, but to you know talk to the person and see what they enjoy doing.*"

P21. "*Maybe what I need is to have someone sit down and talk with me. I understand that the doctors don't have that much time when they meet with you because there's 20 patients waiting. I understand that. But I guess more emphasis in the one-to-one patient relationship will benefit you and benefit your knowledge."*

P22. "*All my doctors are male doctors; men don't know about menopause they also don't know how to talk to women about their weight. It's a very touchy subject because we don't like to be told that we're heavy especially by a man. It's best if it is not a matter of losing weight but it's a matter of being healthy. Don't judge, give specific advice, like go walking 20 min three times a week. I think that they need to refer to a dietitian. I think this type of person could help a lot."*

P23. "*I would say first, listen to them and let them tell you what they have done and what they believe is the problem. After listening to them, find out where they might have a problem and then try to attack that issue encourage them and provide them with information they need. Tell them if they try all this and they're still having problems to come back and see them and then we'll see if there's something else going on that could be contributing. Actually work with a person don't just throw out an information you need to lose 40 pounds, see you next time"!*

P24. "*I think understanding their lifestyle. When giving advice personalize it so it does not feel like you are in a class and do it in a more fun way. Use more online tools and offer resources at a variety of times because people have different types of schedules."*

P25. "*I would ask them, what do you do regarding food and exercise? Ask those questions and then address them. I feel that they should ask you about your symptoms, explain how that is related to diabetes. Also, if you are prediabetic explain to them how*

to avoid becoming diabetic. So basically, find out what you're doing, and then take it from there."

P26. "*I would say you just have to give them concrete advice on what works based on science data to improve your health, not based on a weight goal or how you look. The focus should be on changes to make you feel better, not only to look better. Also, they should let people know that this is advice that they are giving to all their patients no matter how much they weigh, because it's possible for you to be at the correct weight and not be healthy. I think that your shape is also based on genetics. It's not just based on what you're eating or not eating and so then they should go ahead and look at the whole entire picture, not assume things because of a person's weight. It should be more holistic, and not just based on what they see."*

P27. "*Nice words. Compliments because you know, everybody reacts better to a compliment. If you just tell them the negative that will make the person feel down and instead of trying, they won't even try to fix a problem."*

P28. "*That they shouldn't assume that if a person has a weight problem that it is because they are eating bad. There can be other reasons like a hormonal problem. That they shouldn't just judge the person but have a conversation and see what the person is doing and how it is affecting their self-care. Maybe the person is in a depression or something like that, so you should never just assume it is because the person wants to eat bad. Approach people by asking if they want advice so that they won't become defensive. Get to know the person so that they know which way to talk to them."*

P29. "*Approach to the person with kindness. I know they see 20 patients in an hour, but spend more time one on one more, be more not humble and kind."*

P30. "*Listen, everyone wants to be heard. If doctors heard you out it would be easier to talk to them about meaningful things that that may help you to take better care of yourself."*

CHAPTER V: DISCUSSION

This study explored the body weight related interactions between health care professionals and women over the age of forty with prediabetes and type 2 diabetes. The study proposed two aims: The first aim was quantitative in nature and used descriptive, arthrometric and survey data to determine the relationship between the degree of internalized weight bias and eating disorder symptoms, age, and body mass index. The second part of the study was done by qualitative inquiry with the aim to develop a grounded theory exploring women's experiences having body weight related interactions with health care professionals.

A convergent parallel mixed methods design was used collecting quantitative survey data and qualitative narratives from participants during the same phase of the study. This chapter will first discuss the quantitative results, followed by the qualitative findings, and then unify both sets of results to draw final conclusions.

Discussion of the Quantitative Results

Thirty women completed this study. The sample had a relatively large age range from 46 to 82 years old, mean age of 63 ± 10.07 years. Race and ethnicity were split in two with the majority of the women being White Hispanics (66.7%) and the remainder being white non-Hispanics (33.3%). The sample characteristics are unique to previous studies with this population being older, of larger size and predominantly of Hispanic descent.

The main outcome measures used in this study were Weight Bias Internalization Scale score (WBIS), the Eating Disorder Examination Questionnaire score (EDE-Q), the

participant's age and calculated body mass index. The results will be discussed as they relate to the proposed hypothesis.

Hypothesis 1: Internalized weight bias will be positively associated with eating disorder symptoms.

The findings of the study supported this hypothesis, Eating Disorder Examination Questionnaire (EDE-Q) scores did positively increase Weight Bias Internalization Scale (WBIS) scores. A strong correlation was found between the variables as predicted. The mean WBIS score was 3.56 ± 1.07, the mid- level score for WBIS score established by the creators of the instrument is 2.53 ± 1.42.[78] The current sample scored substantially higher indicating a high level of internalized weight bias in the study population. The mean outcome of this research is compatible with other studies using the WBIS to identify internalized weight bias.[10,20,54,75,78]

Research conducted on eating disorders previously focused on teenage and young adult women.[30,58-59] Investigations on eating disorders in middle aged and older women has increased in the last few years.[30,59] It has been found that body weight and shape concerns along with disordered eating is comparative in women 50 years old and beyond to younger women.[16,30,40-41,59] In the present study, seven women scored in the diagnostic range for eating disorders of ≥ 2.8 (scores ranging 3.2 to 6.4). The findings of this research are consistent with previous studies that show an increased incident of eating disorder thinking and behaviors when an individual exhibits internalized weight bias.[16,20,23,37,39] Past findings have found an inverse relationship with EDE-Q scores and

age but an increase with elevation of body mass index.[80] Information on normative EDE-Q scores for women has not been studied, women aged 41 – 50 years old were found to have low scores (mean 1.12).[80] The subjects in this study were older (mean age 63 ± 10.07 years) with substantially higher EDE-Q mean score 2.55 ± 1.45. Future studies are needed to investigate the incidence of and contributors to eating disorder symptoms in older women.

Hypothesis 2: Age will be negatively associated with internalized weight bias.

Based on Weight Bias Internalization Scale scores, internalized weight bias decreased as age increased, this hypothesis was supported by the current data. The women in the study had a mean age of 63 ± 10.07 years with 26.7% of the women being over the age of 70. This is a much older population than appears in other research studies involving internalized weight bias. Most of the existing research has been done in teenage and young adult samples and to the best of our knowledge there were no studies that investigated specifically internalized weight stigma in middle aged or older women.[30-31,40,58-59] We found and inverse relationship between age and Weight Bias Internalization Survey scores with the oldest women exhibited the least amount of internalized weight bias.

Hypothesis 3: Body mass index will be positively associated with internalized weight bias.

Level of internalized weight stigma was not associated with body mass index (BMI). The data did not support this hypothesis. Almost all the women in this sample were of larger size, the mean BMI was 35.22 ± 6.75. Only one subject in the study had normal BMI. As previously mentioned, the mean WBIS score was high for the population studied but due to the small sample size it was not possible to determine if BMI was a core contributor to those higher scores. Body mass index in women increase with age especially during the perimenopausal period at a mean age of 52.[26-27] This is consistent with the current sample since all were either experiencing or had past the menopause transition. Ninety percent of the sample was post-menopausal with a mean of 14.2 ± 11.07 years post menopause (ranging from 0 to 37 years).

The current study contributes to research on the relationship between internalized weight bias and BMI since previous studies have mixed outcomes. Moat studies find an association between internalized weight stigma and BMI.[4,7,9,10,18,20,21,23,82] However, some have not, for example, among women of larger size, weight loss has not predicted a decrease in internalized weight bias adding to the possibility that the effects of weight bias is not size dependent.[82] Additionally, it is unclear if body changes seen in middle age are due to aging or the menopause transition.[26] Most of the current sample had a high BMI, a similar analysis should be done in middle-aged women of varying sizes to clarify the relationship between BMI and internalized weight bias.

Confounders

The adjusted effects of WBIS score, age, and BMI were tested in multiple linear regressions adjusted by education level and marital status as potential confounders. The results were a minimal change of effect size less than 10% change. It was concluded that there were no confounders.

Ethnicity

The association between ethnicity and internalized weight stigma was not the focus of this study. However, since 67.7% of the participants were of Hispanic ethnicity the results created an area of interest regarding how ethnicity may play a role in the elevated levels of internalized weight bias and eating disorder symptoms seen in the study sample. In previous studies higher levels of internalized weight stigma has been found to be higher among Hispanic women that have experienced weight bias and have eating disorder symptoms.[16] Further research on Hispanic women and how they interact with health care professionals is needed as well as research similar to this study in diverse ethnic groups.

Discussion of the Qualitative Results

Grounded theory methods were used to code transcript texts, create subcategories, and identify the central phenomena story line and generate a theory. The central question investigated was: How do body weight related interactions with health care professionals affect women's health related actions? A total of 90 interactions were extracted from the participant's interviews, the interactions were classified by type and most of those

interactions were body weight related (60%). Of the interactions body weight related interactions (66.7%) involved the woman identifying weight bias affecting the experience. Previous research is compatible to this finding with greater than a third of individuals with high body mass index having experienced weight bias in health care settings.[4,7,9,10,18,20,21,23,82]

Most of the interactions the women shared in their stories involved an interaction with a medical doctor (84.5%) indicating that medical doctors were the main providers of body weight, food, and exercise behavior related information for this group of middle aged and older women. Studies on nutrition education in medical schools find that nutrition is typically only taught for 19 hours out of the four years spent in medical school.[83-84] Primary physicians have reported that having limited time with individuals, lack of reimbursement for nutrition education along with minimal education in the field of nutrition contributes to reduced patient counseling on healthy eating.[83] Some of the women reported being referred by their medical doctor to a registered dietitian 46.7% but only a little over half followed through on that referral (57.2%). How this apparent deficiency in nutrition counseling in medical doctors affects body weight related interactions is a topic needing much further investigation through research.

Emerging themes

The interactions coded into subcategories and then major themes from the data identified. Four major themes emerged; “Gutted”: Negative feeling after body weight-related interactions with health care professionals, “Adrift and ineffective”: Lack of understanding, and reduced self-efficacy after body weight related interactions with

health care professionals, “Behavioral inertia”: Lack of food and exercise behavioral changes after body weight related interactions with health care professionals and “Going solo”: Break in therapeutic relationships and lack of follow-up medical care.

A storyline that arose from the data is stated as the central phenomenon: Interactions with HCPs affect individual’s feelings. Those feelings determine the individuals understanding resulting in health-related actions including behavior change, self-efficacy and follow up medical care. In this section each theme will be discussed separately.

Emerging Theme #1: “Gutted”: Negative feeling after body weight-related interactions with health care professionals

The women were questioned regarding their feelings after the identified body weight related interactions. The feelings they expressed were coded and then categorized as positive, negative, or neutral. From the interaction experiences they shared in the interviews the women stated that their feelings were mostly negative, accounting for 91.2% of all the interactions. The interactions involving weight bias had the strongest negative feelings expressed. The theme “gutted” truly represents the feelings expressed. This is consistent with current research regarding health care provider interactions with individuals resulting in negative experiences and those experiences involving weight bias being consistently eliciting negative emotions.[1-4,13] These findings add to the existing recommendation of the need for sensitivity and communication training for medical doctors when interacting with patients.[3,20] It also adds to the recognition of the sensitivity needed when interacting with women especially regarding their body weight.[20,24]

The experience of being weighed at a health care professional's (HCP) office was one that derived negative feelings in the women depending on the location that the body weight was taken. When body weight was taken in a public setting like in a hallway it elicited negative emotions while private settings created generally neutral feelings like any other medical examination. These questions about being weighed at the HCP office was added after a round of comparative analysis and was not answered by all women in the study. Future investigation into this topic is necessary to better inform HCPs on how to make their offices sensitive in dealing with body weight.

Emerging Theme #2: "Adrift and ineffective": Lack of understanding, and reduced self-efficacy after body weight-related interactions with health care professionals

After being questioned regarding their feelings during the weight related interactions, the women were asked if they understood what the health care professional was asking them to do. Seventy of the interactions analyzed involved a behavior change request from the health care professional (HCP) to the woman. Based on the women's accounts lack of understanding was directly connected to negative feelings with 61.4% of the interactions resulting in "No" understanding or the woman rejecting the information while it was given due to her current feelings, or the unrealistic nature of the advice given. These findings are consistent with research that found patient confusion during medical consultation was increased by psychological distress and lack of connection with the HCP.[15]

The woman's perceived self-efficacy was then questioned by asking her if she felt her ability to care for herself behaviorally had been improved by the interaction. Almost

all of the women felt that the interactions they were described did not contribute to any improvement in their confidence to improve their behavioral self-care (95.6%). This included women who felt that they understood what was asked of them indicating lack of motivation, limited guidance and/or the information was not realistic to the person. This information is novel since the effects on understanding and self-efficacy that follow negative emotions elicited during a weight related interaction has not been previously studied to the best of our knowledge.

This theme was labeled "adrift and ineffective" because of the women's descriptions of lack of clear direction in making weight related behaviors and the hopelessness and inability they expressed regarding being able to follow through on what their HCP was asking them to do.

Menopause transition

The interviews included a section regarding education and preparation for the body related changes and behavioral self-care needs during the menopausal transition. These questions did not analyze any interactions because none of the women had any to share. They all expressed a lack of preparation and communication by any health care professional regarding menopause or how they could best navigate the body changes they experienced. These findings are consistent with previous research evaluating health education during menopause.[25,30,85] It is unclear if the lack of guidance women receive about the menopause transition is due to HCP lack of knowledge of their needs during this time in the lifecycle or this problem stems from a lack of communication.[14,86] Improved quality of life has in older age has been improved by menopause counseling.[26]

Future studies are needed to identify the root cause and promotion of proper education and counseling needed for this time in a woman's life. The evaluation of public health efforts has shown the effectiveness of menopause counseling in improving women's quality of life.[85]

Diabetes Management Counseling

The participants were asked a series of questions regarding their interactions with health care professionals (HCP) regarding their preparation for diabetes management. The majority of the women said they did not feel prepared by their HCP to manage the chronic disease (86.7%). Previous studies have found that most education and counseling from HCPs regarding diabetes management is given when a person is newly diagnosed.[35] This may explain the lack of support and direction the women in the study expressed since they have been diagnosed with type 2 diabetes for a mean of 10.5 ± 7.8 years.

The women reported that education and counseling style of their main diabetes care HCP was mostly weight loss focused (53.4%), with only 26.6% receiving a behavior centric approach on food and exercise behaviors. Only 4 out of the 30 women (13.3%) said their HCP has individualized treatment and has taken their current food and exercise behaviors into account when counseling and educating them on diabetes management. Previous studies have connected a weight centric approach for diabetes management to a higher incidence of eating disorders and depression and the results of possible weight cycling from dieting and sense of failure towards behavior change.[16,33-34,37-39,54,82] Past findings indicate that the approach taken by an HCP can negatively affect health behaviors and health status.[5,24] In addition, technical language related to diabetes has not

been found to be helpful by individuals newly diagnosed.[36] This research further informs these findings since the women reported a general lack of confidence found in their abilities to change their food and exercise behaviors after HCP diabetes management interactions (28 out of 30 women, 93.3%).

Emerging Theme #3: "Behavioral inertia": Lack of behavioral changes after body weight-related interactions with health care professionals

Behavior change was analyzed in all the interactions that concluded with the participant being asked by the health care professional to make some form of behavior change. It needs to be noted that although weight loss is not an individual behavior change, the interactions when the woman were asked to lose body weight are included in these findings. Lack of behavior change was seen through most of the interactions in the form of no attempt made at change after the interaction (45.8% of the call-to-action interactions). Some women did make behavior changes after the interaction but stated that the change was not sustainable for their lifestyle or cultural norms (31.3%). This is consistent with past results found in literature that directly connect behavior change outcomes with negative body weight related interactions.[1,4,7,9-10,12] The women had interactions that they predominantly perceived as negative that resulted in lack of behavior change. This theme was called "behavioral inertia" because inertia is defined as a tendency to do nothing and remain unchanged and that accurately describes this population and their health related behaviors.

Negative or disordered behavior change was reported by some at 14.6% of the interactions. The women described disordered eating behaviors such as engaging in

extreme caloric restrictions, cyclic dieting and binge eating behaviors, purging food after eating, and resorting to diet pills, plastic surgery, and surgical weight loss procedures as a result of the body weight related interactions. This finding is consistent with previous results connecting women with type 2 diabetes and a higher risk of developing eating disorders.[40-41] This is further congruous with past results of eating disorder behaviors seen among women of menopausal age due to dissatisfaction related the body changes associated with the menopause transition.[26-28,30-31]

Emerging Theme #4: "Going solo": Break in therapeutic relationships and lack of follow up medical care.

A large portion of the women decided to "Go solo" by not returning for follow up care with the same health care professional involved in the interaction they described (57.8% of the interactions). When asked if they avoided all preventative and medical care out of concerns of experiencing weight bias 13 out of the 30 women said they did evade care (43.3% of the women). This adds to decades of research that has found women in larger sized bodies delay medical care.[1,7,17-19,52-53,87]

Optimal evidence-based treatment involving behavior change guidance should have health care professionals as the primary source of health related behavior information for individuals. Lack of guidance or development of a therapeutic connection will lead individuals to obtain information from other sources that can result in misguidance.[2-4,13] The women in the study turned mostly online for guidance regarding food and exercise behaviors (46.6%). Online diet information has been linked to eating disorders in younger populations but not studied amongst middle-aged women.[88]

Symbolic Interaction Theory

The qualitative outcome of the study follows the constructs of Symbolic Interaction Theory. Interactions create meaning for individuals that lead to effects and consequences (The interactions were identified as body weight-related interactions. The expressed meaning given in the women's stories is the account of their feelings, how well they felt they understood what the health care professional was asking them to do (understanding) and how confident they were that they could follow through and sustain the behavior change (perceived self-efficacy). The effect or consequence was the actual food or behavior changes made by the participant and if the woman went back for follow-up care with the same health care professional or if had resistance to future follow-up care with the same practitioner and future medical care with any practitioner. Figure 8 identifies the constructs of Symbolic Interaction Theory.

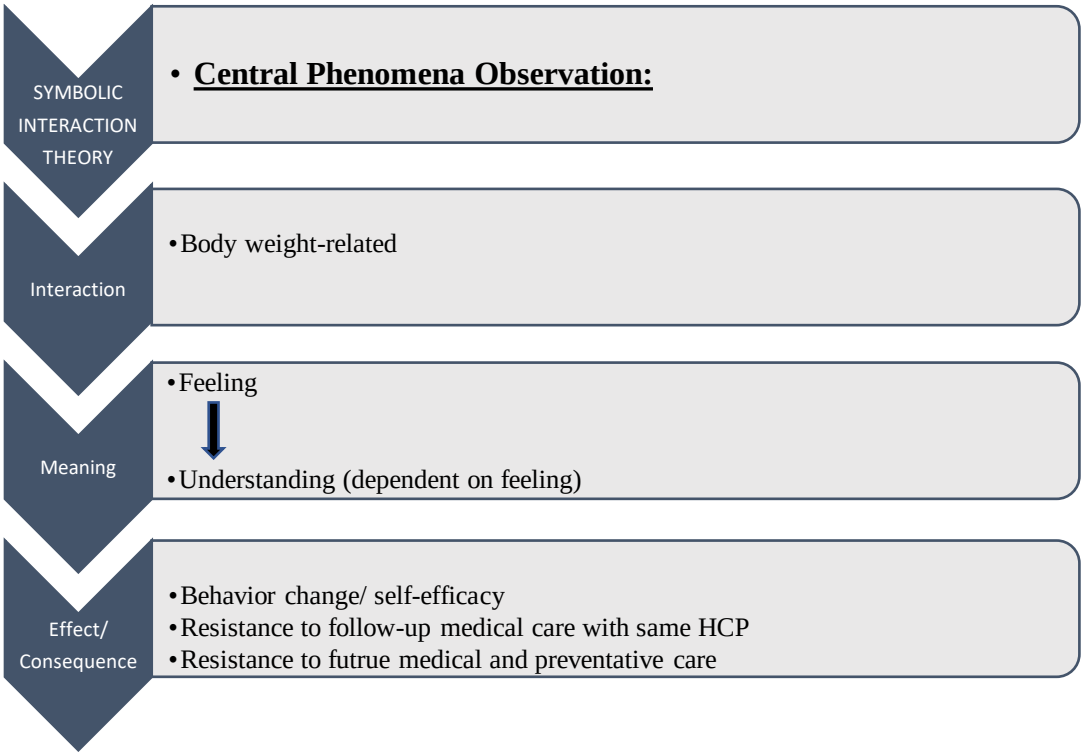
Central Phenomenon

The emergent themes that arose from the data led to the development of a storyline and identification of a central phenomenon which answers the central question, how do body weight related interactions with health care professionals affect women's health related actions? Figure 4 illustrates the grounded theory development of this research and how it intersects with Social Interaction Theory.

Central Phenomenon:

Interactions with health care professionals affect individual's feelings. Those feelings determine the individual's understanding, resulting in health-related actions including behavior change, self-efficacy, and willingness for follow up medical care.

Figure 4. Body weight related interactions

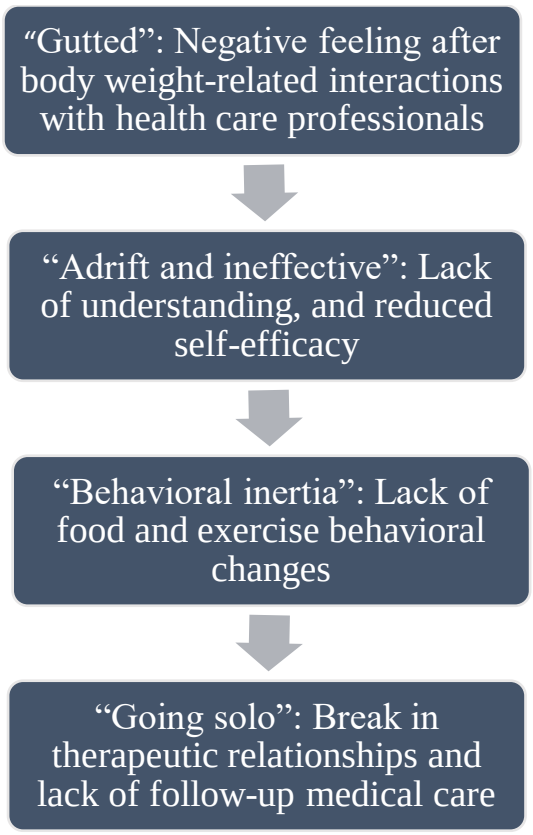


HCP = Health care professional

Current study research theory

Complete analysis of the qualitative data in this study has led to the development of a research theory. This theory is best explained when illustrated and seen by observing the natural flow from each of the themes identified in the study. Figure 5 is a flow chart of the emerging themes of the study. The theory that is observed is that the first theme that emerged leads to the next and so on. The combination of the emerging themes then leads to the research theory.

Figure 5. Flow chart of emerging themes



Research theory:

"Negative feelings derived in body weight related interactions between health care professionals and women with prediabetes and type 2 diabetes result in lack of understanding, behavior change or improvement in self-efficacy. The experience of weight bias creates resistance to follow up medical care."

The process described in the theory was observed over and over in the women's stories and is the best overall description of the qualitative data observed. To further understand the results a brief investigation was done of the four interactions that did not follow the common storyline observed. Four out of 90 interactions observed had positive

behavioral outcomes. All four started off with positive feelings that led to understanding of what the health care professional was asking of the woman, and self-reported confidence to follow through with the recommendations. All four interactions ended in positive behavior change and willingness to return for follow up care with the same health care professional. Although this is a small group of interactions within this study, it furthers the explanation of the common themes observed and the ultimate development of the research theory.

Hypothesis for future research

The research process that led to the central theory of this research conceptualizes the data observed in this study as well as provides new insight into better understanding the impact that weight related interactions between health care professionals and women with prediabetes and type 2 diabetes. Based on the qualitative data analysis and the generation of a research theory the following hypothesis were written to inform the need for future qualitative and quantitative research.

Research generated hypothesis:

Hypothesis 1: Individuals derive meaning (feeling and understanding) and take actions after experiencing feelings resulting from weight related interaction with a health care professional.

Hypothesis 2: The experience of weight bias during interactions in a health care setting negatively influences feelings, understanding, self-efficacy and health related actions.

Hypothesis 3: Follow-up medical care and preventative medical care is influenced by interactions between an individual and a health care professional.

Hypothesis 4: The experience of weight bias during weight related interactions in a health care setting leads to resistance to follow up medical care.

Hypothesis 5: Understanding of what a health care provider is asking an individual to do is affected by the initial feeling the individual has during an interaction with a practitioner.

Hypothesis 6: An individual's ability to change their food and exercise behaviors is affected by their feelings during body weight related interactions.

Hypothesis 7: Interactions between women and their health care professionals regarding the menopause transition and health management are lacking.

Hypothesis 8: A health care provider's approach towards diabetes management will affect an individual's self-efficacy and health related actions.

Hypothesis 9: The environmental setting used when taking body weight measurement at a health care professional's office can affect an individual's feeling before interacting with the practitioner.

The women's preferred approaches

The qualitative portion of this study concluded with the women expressing their desires for future body weight related interactions with health care professionals (HCP). The most common responses included a desire to have a partnership with their practitioners and wanting to be addressed in a non-judgmental manner. This is consistent with past research the found that the relationship that a HCP develops with their patients is the greatest contribution to behavior change.[14,48] Previous studies also find that when a HCP gives the perception of judgement and does not communicate effectively it negatively effects an individual's understanding of their medical condition and self-care behaviors.[2,4,86] This study further contributes to the body of work indicating the importance of change in HCP attitude and communication style when interacting with their patients about their weight.[2,14,48,86]

Mixed Methods Discussion

A convergent mixed methods approach was used in this study. Qualitative interviews were conducted followed immediately by the participant's completion of survey data used for quantitative analysis.[89] The data for each phase was analyzed separately and brought together for discussion. The synergy of the data will provide greater insight to the interest of this research. Several connections and cross reference are possible between the two data sets. This section will take the main quantitative outcomes analyzed, (Weight Bias Internalization Scale score, Eating Disorder Examination Questionnaire score, participant's age, and body mass index) and connect the pertinent qualitative results that the study uncovered.

Internalized weight bias

Weight Bias Internalization Scale (WBIS) score, a quantitative variable in the study was found to be on the higher level than the established mean for the item.[78] Higher levels of internalized weight bias have been previously connected to lack of behavior change in larger sized populations.[1,4,7,9,10,12] The interactions analyzed revealed that the women in the study had several experiences with weight bias which has been found to contribute to the development of internalized weight stigma which can account for the high WBIS score as per prior findings.[1,4,7,9-10,12]

Negative feelings were predominant in the interactions shared by the women. Past work has found that negative feelings associated with weight bias is contributes to the development of internalized weight bias as seen through the women's WBIS scores.[10,19,22,38,81] Increased feelings of shame has been associated through studies done on

body size teasing of children, however more research is needed to explore the effects created in later age and in health care settings.[38,81]

Previous studies have connected internalized weight bias to lack of health behavior changes, especially in larger sized women.[4,7,9-10] Most of the women in the study were of larger size and the qualitative results show that successful food and exercise behavior change was minimal. In addition, since the women perceived the health care providers were exhibiting weight bias the increase in internalized weight stigma further impacts health related behaviors.[1,4,7,9-10,12]

Resistance to medical care after the experience of weight bias was seen in all of the women's stories. This finding is informed by the level of WBIS scores since internalized weight stigma has shown to contribute to lack of medical care.[1,7,19]

Eating disorder symptoms

A positive correlation was found between WBIS and Eating Disorder Examination Questionnaire (EDE-Q) scores. There were several accounts given by the women about their behaviors that describe disordered eating behaviors. Previous studies have found that a high level of weight bias experiences and the development of internalized weight bias contribute the development of eating disorders.[16,37-39,54,82]

Studies that investigate that encountering a health care professional (HCP) that exhibits weight bias have also been connected to increased likelihood of disordered eating behaviors.[7-10] The stories shared by the women uncovered frequent encounters involving weight bias which could have contributed to elevated EDE-Q scores. The interactions analyzed found that most of the health care professionals approached

diabetes management with a weight loss focus approach. This could have also contributed to the EDE-Q scores since this type of approach for the management of diabetes has been connected to eating disorder development and internalized weight stigma.[7,62]

Middle age

The women spoke about experiencing body changes including weight gain during the menopause transition. These changes are consistent with previous findings of body changes for women forty years old or older.[27-28] At the same time, the Eating Disorder Examination Questionnaire scores and the Weight Bias Internalization Scale (WBIS) scores indicate that many of them are exhibiting high levels of body dissatisfaction and behaviors that include binge eating. Some studies identify eating disorders in middle age as a public health risk.[30-31,40] In addition, having the diagnosis of prediabetes or type 2 diabetes contributes to that risk with higher levels of Binge Eating Disorder found in middle aged women with chronic diseases.[28,52]

The women also reported a lack of counseling received by health care professionals regarding the menopause transition. Lack of evidence-based information given to women about this time was previously associated with cyclic dieting and disordered eating behaviors as seen in the women's stories.[31]

The oldest women in the study had the lowest WBIS scores, we noted in memo notes from the interviews that the older women had frequent comments about resolving their body image issues and releasing many of the emotions related to internalized weight stigma. This is a plausible explanation for the inverse scoring of these variables.

Body mass index

The anthropometrics of the study sample identified most of the women in the study as clinically obese. Although we were not able to make an association between WBIS scores and body mass index in this study, previous findings have related being in a larger sized body to the experience of weight bias and internalized weight stigma.[4,7,9-10,18,21,23] Eating disorder behaviors, especially binge eating, has been connected to women of larger size and women with type 2 diabetes as well as the women testimony in this study (Abbott 2018, Phelan 2015, Puhl 2016, Teixiera 2010). Lastly, lack of health behavior changes and resistance to follow up medical care was seen in the subject have also been associated with being in a larger sized body in previous studies.[1,7,19] Table 27 is a summary of the mixed methods analysis.

Table 27. Mixed Methods Analysis

Quantitative Variables	Associated Qualitative Finding
Weight Bias Internalization Scale score	Lack of behavior change 67% of the interactions involved weight bias 85% involved medical doctors Negative feelings resulting from interactions HCP weight centric approach Lack of behavior change Resistance to medical care
Eating Disorder Examination Questionnaire score	14.6% of behaviors were extreme changes Reported cyclic dieting and binge eating Experience of weight bias HCP weight centric focus Weight bias interactions Feelings of shame and judgement about eating
Age > 45 years	Reported body changes Reported eating disorder behaviors Lack of counseling and education Older women resolution of body issues
Body Mass Index	Weight bias experiences Reports of dieting and binge eating behaviors Lack of behavior change Resistance to medical care

Note: HCP = Health care professional

CHAPTER VI: CONCLUSION

This study investigated body weight related interactions between health care professionals and women with prediabetes and type 2 diabetes. The research was guided by the proposed research aims to give a holistic understanding of the topic of interest. This chapter will summarize the key findings as related to the aims of the study, discuss the value and contribution this work provides, identify the study's limitations, and provide direction for future research.

Summary

A convergent mixed method design was used to explore weight related interactions between health care professionals (HCP) and women with prediabetes and type 2 diabetes. The sample population was comprised of thirty women over the age of 40 years old, the mean age was 63 ± 10.07 years (ranging from 46 to 82 years old), two-thirds of the women were white Hispanics, and their mean BMI was 35.22 ± 6.75.

Participants completed surveys to identify their levels of internalized weight bias (Weight Bias Internalization Scale score (WBIS) and eating disorder symptoms determined by the Eating Disorder Examination Questionnaire score (EDE-Q). The women also took part in structured interviews describing their body weight related interactions with HCP as well as their experiences regarding the menopause transition and interactions with HCP involving diabetes management.

Aim 1: To determine the association between the degree of internalized weight bias and eating disorder symptoms, age, and body mass index.

Quantitative methods were used to investigate Aim 1. An association was found between internalized weight bias measured using the participant's Weight Bias Internalization Scale score (WBIS) and eating disorder symptoms determined by the Eating Disorder Examination Questionnaire score (EDE-Q). An inverse relationship was found between WBIS scores and the sample age in years. No correlation was found between WBIS scores and the participant's body mass index.

Aim 2: Grounded theory development through the identification and exploration of body weight related interactions between health care professionals and women with prediabetes and type 2 diabetes.

Qualitative inquiry directed by grounded theory was used to explore Aim 2. The central question for this part of the study was: How do body weight related interactions with health care professionals affect women's health related actions?

Ninety body weight interactions were identified between the women and health care professionals (HCP), the majority having the experience of interacting with an HCP exhibiting weight bias. Four common themes were identified in the data: "Gutted": Negative feelings, "Adrift and ineffective": Lack of understanding, and reduced self-efficacy, "Behavioral inertia": Lack of food and exercise behavioral changes and "Going solo": Break in therapeutic relationships and lack of follow-up medical care.

Exploration of the lack of interactions regarding menopause shed light on the need for education and counseling during the premenopausal stage of a woman's life. Diabetes management interactions revealed that the health care professionals and the

women identified as their primary doctor tended to have a weight centric approach that did not include discussions about their current food and body behaviors leading them to feel a lack of preparation to manage diabetes.

The central phenomenon observed is that interactions with health care professionals affect individual's feelings. Those feelings determine the individual's understanding, resulting in health-related actions including behavior change, self-efficacy, and willingness for follow up medical care. Applying the central phenomena to the results from this study proposed theory for this research was developed.

"Negative feelings derived in body weight related interactions between health care professionals and women with prediabetes and type 2 diabetes result in lack of understanding, behavior change or improvement in self-efficacy. The experience of weight bias creates resistance to follow up medical care"

This theory generated several hypotheses identified for future qualitative and quantitative research to better understand the experience of weight bias, and body weight related interactions with health care professionals, including factors that influence an individual's feelings, cognitive understanding, self-efficacy, health behavior changes and willingness for follow up care.

Mixed methods

Combining the results of both quantitative and qualitative analyses brought synergy to the findings and a better understanding of how weight related interactions were experienced and affected the participants. Elevated Weight Bias Internalization Scale scores (WBIS) added to the understanding of the women's descriptions of weight bias interactions focused on weight loss and the feelings they elicited. This was further

supported by the experiences they described involving weight bias, their lack of behavior changes and resistance to follow up medical care.

Eating Disorder Examination Questionnaire scores (EDE-Q) were informed by interview reports of dieting and binge eating behaviors as well as health care providers' weight centric approach and the women's experience of weight bias. The age of the participants as they experienced the menopause transition was described as a time of body changes without medical guidance connected with the weight bias experience and higher disordered eating behaviors. Lastly, higher BMI levels in the study population increased understating of the women's reports of dieting and binge eating, difficulty with food and exercise behavior changes and overall resistance to medical care fueled by weight bias experiences.

Contributions

This research study furthers the research in many areas including that of weight related interactions within health care settings, the effects of weight bias on behavior changes, the development of internalized weight stigma and eating disorders, the needs of women during the menopause transition, and the effects health care professionals can have on an individual's feelings, health care behaviors and willingness for follow up care. This study provides valuable insight and further explains aspects of all these areas. The results should inform and help guide health care professionals when interacting with middle-aged women with chronic diseases. In addition, the mixed-method design allowed for a holistic view of different sides of the research problem.

Prior to this work, a gap existed between the experience of weight bias and negative health outcomes. The results of this study suggests that negative feelings associated with body weight related interactions affect understanding of medical guidance that can deter health behaviors and result in negative health outcomes and increase resistance to medical care. This research has identified a plausible explanation for the phenomenon identified and an area of study that to the best of our knowledge is not found in current literature and needs further investigation.

Using social interaction theory as a guide for this research, the results contribute to the theory's constructs that interactions lead to the meaning assigned by the individuals and that leads to effect and consequences.[44] The women in this study interacted with health care professionals they mainly had negative feelings and a lack of understanding (meaning) that led to a lack of behavior change and resistance to follow up medical care (effect and consequence).

The personal perspective and the rich narratives that resulted from this study are practical and can be used to inform health care professionals on how to improve body weight related interactions with women. The results coupled with the women's strait forward advice for how they would prefer to be addressed regarding their weight, and food and exercise behaviors can be incorporated to improve health outcomes in real-world health care settings.

Limitations

The small sample size and the qualitative research design do not make the results generalizable. In addition, the intent to study to recruit women that were going through or

had gone through the menopausal transition created a large age range from 45 -82 years of age. This was mainly due to the small sample size and the constraints for recruitment during the COVID-19 pandemic. The intent was to focus on women with prediabetes and type 2 diabetes however this did make for a homogeneous sample set. In addition, the population was two-thirds white Hispanic women leaving little insight into how internalized weight bias and the other topics of this investigation affect other genders, races, and ethnicities.

All the data was self-reported and due to the sensitive nature of the topic may have caused embarrassment or elicited shame that would limit the details of the information obtained or also can lend itself to exaggeration of the information given. The participant's own weight bias may have influenced their answers and although the researcher was a trained professional there is a possibility of personal bias that may have come across in the interview process.

Future Direction

This study is a step in developing insight into the nature and effect of body weight related interactions. Several areas for future research have been explained in the discussion section which details the hypotheses that arose from the theory development process. The hypotheses suggest further research to better explain body weight related interactions, specifically investigating how feelings derived from interactions result in a change in cognition which can affect behavior change

There is a need for similar qualitative research to include voices from all genders, races, and ethnicities on how they have interpreted body weight related interactions. Body

weight related interactions also need to be further explored from the perspective of the health care professional's point of view. In addition, future exploration on the best office space for health care professionals to take an individual's body weight should be conducted.

Future quantitative studies with a larger sample will clarify and further the association between middle-aged women and internalized weight stigma, eating disorders and the effects of being in a large body size. In addition, surveys that can quantify the experience of body weight related interactions need to be developed.

Based on the results of this study, there is a need for body size sensitivity training for health care professionals. Health care professionals need more guidance on how to communicate effectively regarding body weight as well as direction on how to develop an effective therapeutic relationship that supports women to make positive behavior changes that improve mental and physical health outcomes.

Conclusion

The current study provided insight into body weight related interactions between middle-aged and older women and health care professionals. The study identified that women develop feelings after body weight interactions involving the experience of weight bias that can interfere with their understanding of medical guidance and their ability to follow through with food and exercise related behavioral changes. The women that experienced weight bias were more resistant to follow up medical care. Based on the results of the study health care professionals can begin to improve their body weight related interactions with women by identifying and addressing their own weight bias,

using body size sensitive language, and developing a partnership that encourages women to make the necessary behavior changes that will improve their health and wellbeing.

LIST OF REFERENCES

1. Gimenez L, Kelly-Irving M, Delpierre C, Rougé-Bugat M-E, Lepage B, Lang T. Interaction between patient and general practitioner according to the patient body weight: A cross-sectional survey. *Fam Pract*. 2022. doi:10.1093/fampra/cmac086.

2. Gudzune KA, Bennett WL, Cooper LA, Bleich SN. Perceived judgment about weight can negatively influence weight loss: A cross-sectional study of overweight and obese patients. *Prev Med*. 2014;62:103-107. doi:10.1016/j.ypmed.2014.02.001.

3. McColl-Kennedy JR, Danaher TS, Gallan AS, Orsingher C, Lervik-Olsen L, Verma R. How do you feel today? managing patient emotions during health care experiences to enhance well-being. *J Bus Res*. 2017;79:247-259. doi:10.1016/j.jbusres.2017.03.022.

4. Setchell J, Watson B, Jones L, Gard M. Weight stigma in physiotherapy practice: Patient perceptions of interactions with physiotherapists. *Man Ther*. 2015;20(6):835-841. doi:10.1016/j.math.2015.04.001.

5. Swanson V, Maltinsky W. Motivational and behaviour change approaches for improving diabetes management. *Practl Diabetes*. 2019;36(4):121-125. doi:10.1002/pdi.2229.

6. Raves DM, Brewis A, Trainer S, Han S-Y, Wutich A. Bariatric surgery patients' perceptions of weight-related stigma in healthcare settings impair post-surgery dietary adherence. *Front Psychol*. 2016;7(1):1497-1510. doi:10.3389/fpsyg.2016.01497.

7. Teixeira ME, Budd GM. Obesity stigma: A newly recognized barrier to comprehensive and effective type 2 diabetes management. *J Am Acad Nurse Pract*. 2010;22(10):527-533. doi:10.1111/j.1745-7599.2010.00551.

8. Panza GA, Armstrong LE, Taylor BA, Puhl RM, Livingston J, Pescatello LS. Weight bias among exercise and nutrition professionals: a systematic review. *Obes Rev*. 2018;19(11):1492-1503. doi:10.1111/obr.12743.

9. Phelan SM, Burgess DJ, Yeazel MW, Hellerstedt WL, Griffin JM, Ryn MV. Impact of weight bias and stigma on quality of care and outcomes for patients with obesity. *Obes Rev*. 2015;16(4):319-326. doi:10.1111/obr.12266.

10. Puhl RM, Phelan SM, Nadglowski J, Kyle TK. Overcoming weight bias in the management of patients with diabetes and obesity. *Clin Diabetes*. 2016;34(1):44-50. doi:10.2337/diaclin.34.1.44.

11. Schwartz MB, Chambliss HO, Brownell KD, Blair SN, Billington C. Weight Bias among Health Professionals Specializing in Obesity. *Obes Res*. 2003;11(9):1033-1039. doi:10.1038/oby.2003.142

12. Kato A, Fujimaki Y, Fujimori S, Izumida Y, Suzuki R, Ueki K, Kadowaki T, Hashimoto H. A qualitative study on the impact of internalized stigma on type 2 diabetes self-management. *Patient Educ Couns*. 2016;99(7):1233-1239. doi:10.1016/j.pec.2016.02.002.

13. Buxton BK, Snethen J. Obese women's perceptions and experiences of healthcare and Primary Care Providers. *Nurs Res*. 2013;62(4):252-259. doi:10.1097/nnr.0b013e318299a6ba.

14. Currie K, Strachan PH, Spaling M, Harkness K, Barber D, Clark AM. The importance of interactions between patients and healthcare professionals for heart failure self-care: A systematic review of qualitative research into patient perspectives. *Eur J Cardiovasc Nurs*. 2014;14(6):525-535. doi:10.1177/1474515114547648.

15. Rivers AS, Sanford K. Both trusting and understanding medical advice: Assessing patient alliance and confusion after medical consultations. *Patient Educ Couns*. 2020;103(2):376-384. doi:10.1016/j.pec.2019.09.028.

16. Najjar RH, Jacob E, Evangelista L. Eating behaviors, weight bias, and psychological functioning in multi-ethnic low-income adolescents. *Journal of Pediatric Nursing*. 2018;38:81-87. doi:10.1016/j.pedn.2017.11.008.

17. Lindhardt CL, Rubak S, Mogensen O, Lamont RF, Joergensen JS. The experience of pregnant women with a body mass index >30 kg/m2of their encounters with healthcare professionals. *Acta Obstet Gynecol Scand*. 2013;92(9):1101-1107. doi:10.1111/aogs.12186.

18. Spooner C, Jayasinghe UW, Faruqi N, Stocks N, Harris MF. Predictors of weight stigma experienced by middle-older aged, general-practice patients with obesity in disadvantaged areas of Australia: a cross-sectional study. *BMC Public Health*. 2018;18(1). doi:10.1186/s12889-018-5556-9.

19. Pearl RL, Puhl RM. The distinct effects of internalizing weight bias: An experimental study. *Body Image*. 2016;17:38-42. doi:10.1016/j.bodyim.2016.02.002.

20. Remmert JE, Convertino AD, Roberts SR, Godfrey KM, Butryn ML. Stigmatizing weight experiences in health care: Associations with BMI and eating behaviours. *Obes Sci Prac* 2019;5(6):555-563. doi:10.1002/osp4.379.

21. Sutin AR, Terracciano A. Perceived weight discrimination and obesity. *Plos One*. 2013;8(7). doi:10.1371/journal.pone.0070048.

22. Ferrante JM, Seaman K, Bator A, Ohman-Strickland P, Gundersen D, Clemow L, Puhl R. Impact of perceived weight stigma among underserved women on doctor-patient relationships. *Obes Science & Prac*. 2016;2(2):128-135. doi:10.1002/osp4.40.

23. Robinson E, Sutin A, Daly M. Perceived weight discrimination mediates the prospective relation between obesity and depressive symptoms in U.S. and U.K. adults. J *Heath Psychol*. 2017;36(2):112-121. doi:10.1037/hea0000426.

24. Cardel MI, Newsome FA, Pearl RL, et al. Patient-centered care for obesity: How health care providers can treat obesity while actively addressing weight stigma and eating disorder risk. *J Acad Nutr Diet*. 2022;122(6):1089-1098. doi:10.1016/j.jand.2022.01.004.

25. Koyuncu T, Unsal A, Arslantas D. Evaluation of the effectiveness of health education on menopause symptoms and knowledge and attitude in terms of menopause. *J Epidemiol Glob Health*. 2018;8(1-2):8-12. doi:10.2991/j.jegh.2018.08.103.

26. Ambikairajah A, Walsh E, Tabatabaei-Jafari H, Cherbuin N. Fat mass changes during menopause: A metanalysis. *Am J Obstet Gynecol*. 2019;221(5). doi:10.1016/j.ajog.2019.04.023.

27. Greendale GA, Sternfeld B, Huang M, Han W, Karvonen-Gutierrez C, Ruppert K, Cauley JA, Finkelstein JS, Jiang SF, Karlamanla AS. Changes in body composition and weight during the menopause transition. *JCI Insight*. 2019;4(5):1-14. doi:10.1172/jci.insight.124865.

28. Udo T, Mckee SA, White MA, Masheb RM, Barnes RD, Grilo CM. Menopause and metabolic syndrome in obese individuals with binge eating disorder. *Eat Behav*. 2014;15(2):182-185. doi:10.1016/j.eatbeh.2014.01.003.

29. Simarjeet K. Assessment of knowledge of menopausal women regarding menopause: A descriptive study. *Int J of Applied Res*. 2018;4(4):347-351.

30. Lande MS, Rosenvinge JH, Skeie G, Rylander C. Prevalence and correlates of self-reported disordered eating: A cross-sectional study among 90,592 middle-aged Norwegian women. *Plos One*. 2019;14(1):1-10.

31. Mangweth-Matzek B, Hoek HW, Rupp CI, Lackner-Selfert, K, Frey, N, Whitworth, A, Pop, H, Kinzl, J. Prevalence of eating disorders in middle-aged women. *J of Eat Disord*. 2014;47(3):320-324. doi:10.1002/eat.22232.

32. Thompson KA, Bardone-Cone AM. Evaluating attitudes about aging and body comparison as moderators of the relationship between menopausal status and disordered eating and body image concerns among middle-aged women. *Maturitas*. 2019;124:25-31. doi:10.1016/j.maturitas.2019.03.014.

33. Pinhas-Hamiel O, Hamiel U, Levy-Shraga Y. Eating disorders in adolescents with Type 1 Diabetes (revision number 6). *Diapedia*. 2014. doi:10.14496/dia.61047161486.6.

34. Miller CK, Kristeller JL, Headings A, Nagaraja H, Miser WF. Comparative effectiveness of a mindful eating intervention to a diabetes self-management intervention among adults with type 2 Diabetes: A pilot study. *J Acad Nutr Diet*. 2012;112(11):1835-1842. doi:10.1016/j.jand.2012.07.036.

35. Van Smoorenburg AN, Hertroijs DF, Dekkers T, Elissen AM, Melles M. Patients' perspective on self-management: Type 2 diabetes in daily life. *BMC Health Serv Res*. 2019;19(1). doi:10.1186/s12913-019-4384-7.

36. Dowell A, Stubbe M, Macdonald L, et al. A longitudinal study of interactions between health professionals and people with newly diagnosed diabetes. *Ann Fam Med*. 2018;16(1):37-44. doi:10.1370/afm.2144.

37. Baldofski S, Rudolph A, Tigges W, et al. Weight bias internalization, emotion dysregulation, and non-normative eating behaviors in prebariatric patients. *Intl J of Eat Disord*. 2015;49(2):180-185. doi:10.1002/eat.22484.

38. O'Hara L, Tahboub-Schulte S, Thomas J. Weight-related teasing and internalized weight stigma predict abnormal eating attitudes and behaviours in Emirati female university students. *Appetite*. 2016;102:44-50. doi:10.1016/j.appet.2016.01.019.

39. O'Brien KS, Latner JD, Puhl RM, et al. The relationship between weight stigma and eating behavior is explained by weight bias internalization and psychological distress. *Appetite*. 2016;102:70-76. doi:10.1016/j.appet.2016.02.032.

40. Allison KC, Grilo CM, Masheb RM, Stunkard AJ. Binge eating disorder and night eating syndrome: A comparative study of disordered eating. *J Consult Psychol*. 2005;73(6):1107-1115. doi:10.1037/0022-006x.73.6.1107.

41. Çelik S, Kayar Y, Akçakaya RÖ, Turkyilmaz UE, Kalkan K, Aydin C, Yucel B. Correlation of binge eating disorder with level of depression and glycemic control in type 2 diabetes mellitus patients. *Genl Hosp Psych*. 2015;37(2):116-119. doi:10.1016/j.genhosppsych.2014.11.012.

42. Hopkins CM, Bennett GG. Weight-Related terms differentially affect self-efficacy and perception of obesity. *Obes*. 2018;26(9):1405-1411. doi:10.1002/oby.22255.

43. Aksan N, Kısac B, Aydın M, Demirbuken S. Symbolic interaction theory. *Proced Soc Behav Sci*. 2009;1(1):902-904. doi:10.1016/j.sbspro.2009.01.160.

44. Blumer H. Mead and Blumer: The convergent methodological perspectives of social behaviorism and symbolic interactionism. *Am Sociol Rev*. 1980;45(3):409. doi:10.2307/2095174.

45. Wallace WL, Ritzer G. Metatheorizing in Sociology. *Soc Forces*. 1992;71(2):522-523. doi:10.2307/2580028.

46. Glaser BG, Strauss AL. Applying grounded theory. *The Discovery of Grounded Theory*. 2017:237-250. doi:10.4324/9780203793206-13.

47. Bordin ES. The generalizability of the psychoanalytic concept of the Working Alliance. *Psychotherapy: Theory, Res Pract*. 1979;16(3):252-260. doi:10.1037/h0085885.

48. Vennik J, Hughes S, Smith KA, et al. Patient and practitioner priorities and concerns about primary healthcare interactions for osteoarthritis: A meta-ethnography. *Patient Educ Couns*. 2022;105(7):1865-1877. doi:10.1016/j.pec.2022.01.009.

49. Mensinger JL, Calogero RM, Tylka TL. Internalized weight stigma moderates eating behavior outcomes in women with high BMI participating in a healthy living program. *Appetite*. 2016; 102:32-43. doi:10.1016/j.appet.2016.01.033.

50. Hatzenbuehler ML, Phelan JC, Link BG. Stigma as a fundamental cause of population health inequalities. *Amer J Public Health*. 2013;103(5):813-821. doi:10.2105/ajph.2012.301069.

51. Lewis DM, Cachelin FM. Body image, body dissatisfaction, and eating attitudes in midlife and elderly women. *Eat Disord*. 2001;9(1):29-39. doi:10.1080/106402601300187713.

52. Tomiyama AJ, Finch LE, Belsky AC, Finch LE, Belsky AC, Buss J, Finley C, Schwartz MB, Daubenmier J. Weight bias in 2001 versus 2013: Contradictory attitudes among obesity researchers and health professionals. *Obes*. 2014;23(1):46-53. doi:10.1002/oby.20910.

53. Olson CL. Overweight women delay medical care. *Arch Fam Med*. 1994;3(10):888-892. doi:10.1001/archfami.3.10.888.

54. Sienko RM, Saules KK, Carr MM. Internalized weight bias mediates the relationship between depressive symptoms and disordered eating behavior among women who think they are overweight. *Eat Behav*. 2016;22:141-144. doi:10.1016/j.eatbeh.2016.06.002.

55. Alberga AS, Russell-Mayhew S, Von Ranson KM, McLaren L. Weight bias: a call to action. *J Eat Disord*. 2016;4(1): 34-35. doi:10.1186/s40337-016-0112-4.

56. Carr MC. The emergence of the metabolic syndrome with menopause. *Journal Clin Endocr*. 2003;88(6):2404-2411. doi:10.1210/jc.2003-030242.

57. Lizcano F, Guzmán G. Estrogen deficiency and the origin of obesity during menopause. *BioMed Res Int*. 2014;2014:1-11. doi:10.1155/2014/757461.

58. Hilbert A, Baldofski S, Zenger M, Löwe B, Kersting A, Braehler E. Weight bias internalization scale--German version. *PsycTESTS Dataset*. 2014. doi:10.1037/t49442-000.

59. Samuels KL, Maine MM, Tantillo M. Disordered eating, eating disorders, and body image in midlife and older women. *Curr Psychiatry Rep*. 2019;21(8). doi:10.1007/s11920-019-1057-5.

60. Hofmeier S, Runfola, C, Sala M, Gagne DA, Brownley KA, Bulik CM. Body image, aging, and identity in women over 50: The Gender and Body Image (GABI) study. *J Women Aging*, 2015;29(1):3-14. doi:10.1080/08952841.2015.1065140.

61. Powers MA, Bardsley J, Cypress M, et al. Diabetes self-management education and support in type 2 diabetes: A joint position statement of the American Diabetes Association, the American Association of Diabetes Educators, and the Academy of Nutrition and Dietetics. *Diabetes Care*. 2015;38(7):1372-1382. doi:10.2337/dc15-0730.

62. Abbott S, Dindol N, Tahrani AA, Piya MK. Binge eating disorder and night eating syndrome in adults with type 2 diabetes: a systematic review. *J Eat Dis*. 2018;6(1). doi:10.1186/s40337-018-0223-1.

63. Mackay L, Horsburgh D, Kilbride L. How women manage their type 1 diabetes during the menopausal transition: a qualitative study using a grounded theory approach. *Pracl Diab*. 2014;31(4):149-154. doi:10.1002/pdi.1851.

64. Furman, F. (2013). Facing the mirror: Older women and beauty shop culture. New York, NY: Routledge. doi:10.4324/9780203825310.

65. Rushforth B, Mccrorie C, Glidewell L, Midgley E, Foy R. Barriers to effective management of type 2 diabetes in primary care: qualitative systematic review. *Br J Gen Prac*. 2016;66(643):114-127. doi:10.3399/bjgp16x683509.

66. Gagne DA, Von Holle A, Brownley KA, Runfola C, Hofmeier S, Branch S, Bulik C. Eating disorder symptoms and weight and shape concerns in a large web-based convenience sample of women ages 50 and above: Results of the gender and body image (GABI) study. *Jf Eat Disord*. 2012;45(7):832-844.

67. Bennett EV, Clarke LH, Kowalski KC, Crocker PR. From pleasure and pride to the fear of decline: Exploring the emotions in older women's physical activity narratives. *Psychol Sport Exerc.* 2017;33:113-122.

68. Erbil N. Attitudes towards menopause and depression, body image of women during menopause. *Alexandria J Med*. 2018;54(3):241-246. doi:10.1016/j.ajme.2017.05.012.

69. Benzies KM, Allen MN. Symbolic Interactionism as a theoretical perspective for multiple method research. *J of Adv Nurs*. 2001;33(4):541-547. doi:10.1046/j.1365-2648.2001.01680.x.

70. Jeon Y-H. The application of grounded theory and symbolic interactionism. *Scandinavian JCaring Sci*. 2004;18(3):249-256. doi:10.1111/j.1471-6712.2004.00287.

71. Crooks DL. The importance of symbolic interaction in grounded theory research on women's health. *Health Care for Women Int*. 2001;22(1-2):11-27. doi:10.1080/073993301300003054.

72. Crooks DL. Older women with breast cancer: New understandings through grounded theory research. *Health Care Women Intl*. 2001;22(1-2):99-114. doi:10.1080/073993301300003108.

73. Hübner C, Schmidt R, Selle J, Kohler H, Muller A, De Zwaan M, Hilbert A. Comparing Self-Report Measures of Internalized Weight Stigma: The Weight Self-Stigma Questionnaire versus the Weight Bias Internalization Scale. *Plos One*. 2016;11(10). doi:10.1371/journal.pone.0165566.

74, Lillis J, Luoma JB, Levin ME, Hayes SC. Measuring weight self-stigma: The weight self-stigma questionnaire. *Obes*. 2009;18(5):971-976. doi:10.1038/oby.2009.353.

75. Pearl RL, Puhl RM. Measuring internalized weight attitudes across body weight categories: Validation of the Modified Weight Bias Internalization Scale. *Body Image*. 2014;11(1):89-92. doi:10.1016/j.bodyim.2013.09.005.

76. Berg KC, Peterson CB, Frazier P, Crow SJ. Psychometric evaluation of the eating disorder examination and eating disorder examination-questionnaire: A systematic review of the literature.*J Eating Disord*. 2011;45(3):428-438. doi:10.1002/eat.20931.

77. Fairburn CG, Beglin SJ. Eating Disorder Examination Questionnaire. *PsycTESTS Dataset*. 1994. doi:10.1037/t03974-000.

78. Durso LE, Latner JD. Understanding self-directed stigma: Development of the weight bias internalization scale. *Obesity*. 2008;16(S2). doi:10.1038/oby.2008.448.

79. Mond JM, Hay PJ, Rodgers B, Owen C, Beumont PJV. Temporal stability of the Eating Disorder Examination Questionnaire. *Int Jl Eat Dis*. 2004;36(2):195-203. doi:10.1002/eat.20017.

80. Rø Ø, Reas DL, Rosenvinge J. The impact of age and BMI on Eating Disorder Examination Questionnaire (EDE-Q) scores in a community sample. *Eat Behav*. 2012;13(2):158-161. doi:10.1016/j.eatbeh.2011.12.001.

81. Zuba A, Warschburger P. The role of weight teasing and weight bias internalization in psychological functioning: A prospective study among school-aged children. *European Child & Adolescent Psychiatry*. 2017;26(10):1245-1255. doi:10.1007/s00787-017-0982-2.

82. Pearl RL, Wadden TA, Hopkins CM, et al. Association between weight bias internalization and metabolic syndrome among treatment-seeking individuals with obesity. *J Obes*. 2017;25(2):317-322. doi:10.1002/oby.21716.

83. Aggarwal M, Devries S, Freeman AM, et al. The deficit of nutrition education of physicians. *The Amer J of Med*. 2018;131(4):339-345. doi:10.1016/j.amjmed.2017.11.036.

84. Devries S, Willett W, Bonow RO. Nutrition education in Medical School, Residency Training, and Practice. *JAMA*. 2019;321(14):1351. doi:10.1001/jama.2019.1581.

85. Faraji K, Kamrani MA, Saeieh SE, Farid M. Could a midwife leading health behavior counseling improve self-care of women during perimenopause? A quasi-experimental study. *J Mid-life Health*. 2018;9(4):195. doi:10.4103/jmh.jmh_18_17.

86. D'Agostino TA, Atkinson TM, Latella LE, et al. Promoting patient participation in healthcare interactions through communication skills training: A systematic review. *Patient Educ Couns*. 2017;100(7):1247-1257. doi:10.1016/j.pec.2017.02.016.

87. Alegria Drury CA, Louis M. Exploring the association between body weight, stigma of obesity, and Health Care Avoidance. *J Amer Acad Nurse Pract*. 2002;14(12):554-561. doi:10.1111/j.1745-7599.2002.tb00089.

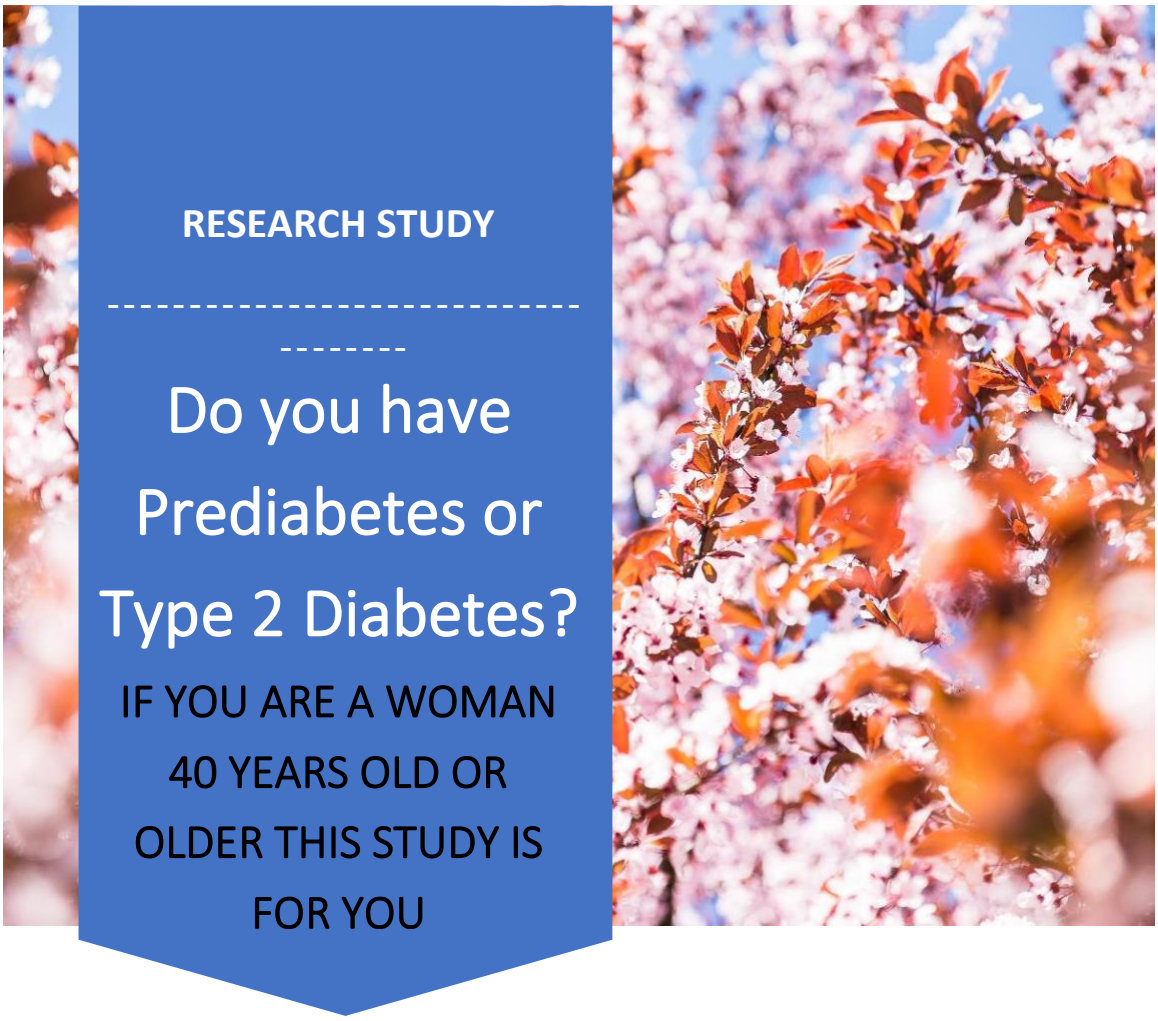
88. Hinojo-Lucena F-J, Aznar-Díaz I, Cáceres-Reche M-P, Trujillo-Torres J-M, Romero-Rodríguez J-M. Problematic internet use as a predictor of eating disorders in students: A systematic review and meta-analysis study. *Nutrients*. 2019;11(9):2151. doi:10.3390/nu11092151.

89. Creswell JW, L. PCV. *Designing and Conducting Mixed Methods Research*. Los Angeles, CA: SAGE; 2018.

APPENDICES

Appendix 1

Recruitment Flyer



FIU | Robert Stempel College of Public Health and Social Work
FLORIDA INTERNATIONAL UNIVERSITY

For participating in the interview and filling out the surveys you will receive:

- → **$25**
- → **Free admission to a wellness seminar provided by a Registered Dietitian**

You will be asked to:

- → **Meet for a private online meeting to talk about your experiences discussing diabetes, menopause and body weight with health care professionals (approximately 1 hour)**
- → **Fill out three short questionnaires online**

You are eligible to participate if:

- → **You are a woman 40 years or older**
- → **Have been diagnosed with Pre-Diabetes or Type 2 Diabetes by a medical doctor**
- → **You are not currently pregnant or lactating**

READY TO PARTICPATE OR HAVE ANY QUESTIONS? PLEASE CONTACT:

Ivonne Cobelo,
MS, RDN, CEDRD,
PhD Candidate
(305) 297-3285
icobe002@fiu.edu

Appendix 2

Consent Form:

ADULT CONSENT TO PARTICIPATE IN A RESEARCH STUDY

The Impact of Body Weight Related Interactions Between Health Care Professionals and Women with Type 2 Diabetes

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SUMMARY INFORMATION

Things you should know about this study:

- **Purpose:** The purpose of the study is to find out how conversations with health professionals about Type 2 Diabetes, menopause and your body weight have affected your thoughts about yourself and the health actions you have taken.
- **Procedures**: If you choose to participate, you will be asked to fill out some forms with questions and talk about your body weight, menopause and diabetes in an interview. This will all be done online.
- **Duration:** This will take approximately ninety minutes to complete.
- **Risks**: The main risk or discomfort from this research is changes in mood since talking about health, body changes and body weight may be distressing.
- **Benefits:** The study has the following possible benefits to you: Relief from telling your story and helping health care professional understand better how conversations about body weight affect women.
- **Alternatives:** You have the option to not take part in this study.
- **Participation:** Taking part in this research project is voluntary.

Please carefully read the entire document before agreeing to participate.

PURPOSE OF THE STUDY

The purpose of the study is to find out how conversations with health professionals about Type 2 Diabetes, menopause and your body weight have affected your thoughts about yourself and the health actions you have taken.

NUMBER OF STUDY PARTICIPANTS

If you decide to be in this study, you will be one of approximately forty people in this research study.

DURATION OF THE STUDY

Your participation will involve meeting online, one day for approximately ninety minutes.

PROCEDURES

If you agree to be in the study, we will ask you to do the following things:

1. Answer questions about your age, nationality, marital status, education level, last menstrual

   cycle and date of diabetes diagnosis.

2. Give permission for the researcher to contact your doctor to obtain your last blood sugar test

   height and body weight.

3. Be interviewed about:
    1. The times you have discussed your body weight with health professionals and how it has affected your thoughts about yourself and the health actions you have taken.
    2. *Your thoughts on menopause and how it has affected your body shape and how you feel about yourself.*
    3. *Your thoughts on diabetes and how it has affected your body shape and how you feel about yourself*
4. Answer questions on two forms about how you feel about your weight and ways you may have tried to change your weight.

RISKS AND/OR DISCOMFORTS

The study has the following possible risks to you: It may affect your overall mood to talk about your body weight since it can be a sensitive subject.

BENEFITS

You will be given a payment of $25 for participating and have free admission to a wellness seminar hosted by the researcher, a Registered Dietitian.

ALTERNATIVES

You have the option to not take part in this study.

CONFIDENTIALITY

The records of this study will be kept private and will be protected to the fullest extent provided by law. In any sort of report, we might publish, we will not include any information that will make it possible to identify you. Research records will be stored securely, and only the research team will have access to the records. However, your records may be inspected by authorized University or other agents who will also keep the information confidential.

USE OF YOUR INFORMATION

Your name will be removed from all private information. After the information is not connected to you in any way it may be used for future research studies or distributed to another investigator for future research studies without additional informed consent from you.

COMPENSATION & COSTS

You will receive a payment of $25 for your participation. You will also receive a free entrance ticket to attend a wellness seminar about menopause and diabetes hosted by the main researcher, a Registered Dietitian.

RIGHT TO DECLINE OR WITHDRAW

Your participation in this study is voluntary. You are free to participate in the study or withdraw your consent at any time during the study. The investigator reserves the right to remove you without your consent at such time that he/she feels it is in the best interest.

RESEARCHER CONTACT INFORMATION

If you have any questions about the purpose, procedures, or any other issues relating to this research study you may contact Ivonne Marie Cobelo, MS, RDN, CEDRD at (305) 297-3285 or by email: icobelo@fiu.edu.

IRB CONTACT INFORMATION

If you would like to talk with someone about your rights regarding this research study, you may contact the FIU Office of Research Integrity by phone at 305-348-2494 or by email at ori@fiu.edu.

PARTICIPANT AGREEMENT

I have read the information in this consent form and agree to participate in this study. I have had a chance to ask any questions I have about this study, and they have been answered for me. By clicking on the "consent to participate" button below I am providing my informed consent.

(Consent to Participate Button will be inserted here on the Website)

Appendix 3

IRB – Florida International University

FIU | FLORIDA INTERNATIONAL UNIVERSITY

MEMORANDUM

To: Dr. Fatma Huffman

CC: Ivonne Cobelo

From: Elizabeth Juhasz, Ph.D., IRB Coordinator

Date: November 24, 2020

Protocol Title: "The Impact of Body Weight Related Interactions Between Health Care Professionals And Women with Type 2 Diabetes"

Office of Research Integrity Research Compliance, MARC 414

The Health Sciences Institutional Review Board of Florida International University has approved your study for the use of human subjects via the **Expedited Review** process. Your study was found to be in compliance with this institution's Federal Wide Assurance (00000060).

IRB Protocol Approval #: IRB-20-0537 **IRB Approval Date:** 11/18/20 **TOPAZ Reference #:** 109518 IRB Expiration Date: 11/18/23

As a requirement of IRB Approval you are required to:

1. 1) Submit an IRB Amendment Form for all proposed additions or changes in the procedures involving human subjects. All additions and changes must be reviewed and approved by the IRB prior to implementation.
2. 2) Promptly submit an IRB Event Report Form for every serious or unusual or unanticipated adverse event, problems with the rights or welfare of the human subjects, and/or deviations from the approved protocol.

3. 3) Utilize copies of the date stamped consent document(s) for obtaining consent from subjects (unless waived by the IRB). Signed consent documents must be retained for at least three years after the completion of the study.
4. 4) Receive annual review and re-approval of your study prior to your IRB expiration date. Submit the IRB Renewal Form at least 30 days in advance of the study's expiration date.
5. 5) Submit an IRB Project Completion Report Form when the study is finished or discontinued.

HIPAA Privacy Rule: **Satisfied**
Special Conditions: N/A
For further information, you may visit the IRB website at http://research.fiu.edu/irb.

Appendix 4

IRB – Florida International University, Amendment

FIU | FLORIDA INTERNATIONAL UNIVERSITY

MEMORANDUM

To: Dr. Fatma Huffman

CC: Ivonne Cobelo

From: Elizabeth Juhasz, Ph.D., IRB Coordinator EJ

Date: August 3, 2021

Proposal Title: "The Impact of Body Weight Related Interactions Between Health Care Professionals and Women with Prediabetes and Type 2 Diabetes"

Approval # IRB-20-0537-AM01 **Reference #** 109518

Office of Research Integrity Research Compliance, MARC 414

The Health Sciences Institutional Review Board has approved the following modification(s):

- Addition to the participant criteria in the study to include the diagnosis of Pre-Diabetes (Hgb A1c of 5.7% - 6.4%). This change is being made to include women with prediabetes since there is a possible association between prediabetes and type 2 diabetes and eating disorders. Investigation of the association will provide valuable information for future preventative measure at this earlier stage of diabetes. In addition, including women with prediabetes will provide a larger pool of subjects that can participate in the study. This change would also change the title and the recruitment flyer of the study to include prediabetes.

There are no additional requirements in regards to your study. However, if there are further changes in the protocol after you commence your study, then you are required to resubmit your proposal for review. As a reminder, you are still required to receive continuing review and re- approval prior to your expiration date of **November 18, 2023**.

For further information, you may visit the FIU IRB website at http://research.fiu.edu/irb.
EJ

Appendix 5

Online medical consent

Q1. Please answer the following authorization of medical release information:

Q2. Please type your full name:

Q3. Please enter your birth date:
Month Day Year

Q4. Select today's date:
Month Day Year

Q5. Please type your medical doctor's name:

Q6. Please type your medical doctor's phone number:

Q7. Please type your medical doctor's address:

I hereby authorize and request you to share my medical information with:

Ivonne Cobelo, MS, RDN, CEDRD, PhD Candidate

Florida International University, Doctoral researcher (305) 297-3285
icobe002@fiu.edu

Medical information to be shared:
Recent hemoglobin A1c level and body weight, date of Prediabetes or Type 2 Diabetes diagnosis, Date of last menstrual cycle, height

I do
I do not

Appendix 6

Demographic Questionnaire

Please answer the following questions regarding your demographics

What is your age?

- 40-49
- 50-59
- 60-69
- 70 or more

How would you describe yourself?

- Asian/ Pacific Islander
- Black/ African American
- Hispanic/Latino
- Native American
- Non-Hispanic White
- Other

What is the highest level of school you have completed?

- Less than high school diploma
- High school degree or equivalent
- Bachelor's degree
- Master's degree
- Doctorate degree

What is the highest level of school you have completed?

- Less than high school diploma
- High school degree or equivalent
- Bachelor's degree
- Master's degree
- Doctorate degree

What is your marital status?

- Single
- Married
- Domestic partnership
- Divorced
- Widowed

Appendix 7

Weight Bias Internalization Scale – Modified (WBIS-M)

Instructions: Participants are asked to answer Yes or No to the following questions:

1. Because of my weight, I feel that I am just as competent as anyone.
2. I am less attractive than most other people because of my weight.
3. I feel anxious because of my weight and what people might think of me.
4. I wish I could drastically change my weight.
5. Whenever I think a lot about my weight, I feel depressed.
6. I hate myself for because of my weight.
7. My weight is a major way that I judge my value as a person.
8. I don't feel that I deserve to have a really fulfilling social life, as long as I'm at this weight.
9. I am OK being the weight that I am.
10. Because of my weight, I don't feel like my true self.
11. Because of my weight, I don't understand how anyone attractive would want to date me.

Appendix 8

Eating Disorder Examination Questionnaire (EDE-Q)

Instructions: Participants are asked to pick one answer for each question. Answer options for all questions based on number of days participant engaged in thought or behavior for the past 28 days include:

No days, 1-5 days, 6-12 days, 13-15 days, 16-22 days, 23-27 days, every day

Questions:

1. Have you been deliberately trying to limit the amount of food you eat to influence your shape or weight (whether or not you have succeeded)?
2. Have you gone for long periods of time (8 waking hours or more) without eating anything at all in order to influence your shape or weight?
3. Have you tried to exclude from your diet any foods that you like in order to influence your shape or weight (whether or not you have succeeded)?
4. Have you tried to follow definite rules regarding your eating (for example, a calorie limit) in order to influence your shape or weight (whether or not you have succeeded)?
5. Have you had a definite desire to have an empty stomach with the aim of influencing your shape or weight?
6. Have you had a definite desire to have a totally flat stomach?
7. Has thinking about food, eating or calories made it very difficult to concentrate on things you are interested in (for example, working, following a conversation or reading)?
8. Has thinking about shape or weight made it very difficult to concentrate on things you are interested in (for example, working, following a conversation, or reading)?
9. Have you had a definite fear of losing control overeating?
10. Have you had a definite fear that you might gain weight?
11. Have you felt fat?
12. Have you had a strong desire to lose weight?
13. Over the past 28 days, how many times have you eaten what other people would regard as an unusually large amount of food (given the circumstances)?
14. On how many of these times did you have a sense of having lost control over your eating (at the time that you were eating)?

15. Over the past 28 days, on how many DAYS have such episodes of overeating occurred (i.e.you have eaten an unusually large amount of food and have had a sense of loss of control at the time)?
16. Over the past 28 days, how many times have you made yourself sick (vomit) as a means of controlling your shape or weight?
17. Over the past 28 days, how many times have you taken laxatives as a means of controlling your shape or weight?
18. Over the past 28 days, how many times have you exercised in a “driven” or “compulsive” way as a means of controlling your weight, shape or amount of fat or to burn off calories?
19. Over the past 28 days, on how many days have you eaten in secret (ie, furtively)? Do not count episodes of binge eating.
20. On what proportion of the times that you have eaten have you felt guilty (felt that you’ve done wrong) because of its effect on your shape or weight? Do not count episodes of binge eating
21. Over the past 28 days, how concerned have you been about other people seeing you eat? Do not count episodes of binge eating
22. Has your weight influenced how you think about (judge) yourself as a person?
23. Has your shape influenced how you think about (judge) yourself as a person?
24. How much would it have upset you if you had been asked to weigh yourself once a week (no more, or less, often) for the next four weeks?
25. How dissatisfied have you been with your weight?
26. How dissatisfied have you been with your shape?
27. How uncomfortable have you felt seeing your body (for example, seeing your shape in the mirror, in a shop window reflection, while undressing or taking a bath or shower)?
28. How uncomfortable have you felt about others seeing your shape or figure (for example, in communal changing rooms, when swimming, or wearing tight clothes)?

VITA

IVONNE MARIE COBELO

1990 – 1994	B.S., Dietetics and Nutrition Recipient: Mead Johnson Scholarship Award, Recipient: National Hispanic Scholarship Fund Award Florida International University, Miami FL
1994 – 1996	Clinical Registered Dietitian Pan American Hospital, Miami, FL
1996 – 2000	Outpatient Registered Dietitian Baptist Health Systems, Miami, FL
2000 – 2002	Consulting Registered Dietitian The Renfrew Center, Coral Gables, FL
2000 – 2015	Registered Dietitian, private practice Ivonne Hamilton, PA, Coral Gables, FL
2005 – 2010	Certified Sport Science Dietitian (CSSD) The Commission on Dietetic Registration
2015 – 2017	M.S., Dietetics and Nutrition Florida International University, Miami FL
2015 – Present	Registered Dietitian, private practice The RD to Wellness, Inc., Coral Gables, FL
2017 – 2022	PhD Student and Doctoral Candidate Florida International University, Miami FL
2019 – 2021	Assistant Teaching Professor, Dietetics and Nutrition Florida International University, Miami FL
2020 – Present	Certified Eating Disorder Specialist (CEDS) International Association of Eating Disorder Professionals
2021 – Present	Nutrition Therapist, Eating Disorder Specialist The Food and Body Program (FAB), Miami, FL