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Examining Weight Loss Support Messaging Among Black Women: A Content Analysis of Social Media Interactions

By

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Submitted to the graduate faculty as partial fulfillment of the requirements for the

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Department of Public Health and Healthcare Leadership

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An Abstract of

Examining Weight Loss Support Messaging Among Black American Women: A Content Analysis of Social Media Interactions

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Black American women have the highest prevalence of obesity in the United States and develop more obesity-related health complications resulting in shortened life expectancy. Related to this disparity, Black women are increasingly engaging in online communities across a range of social media platforms for weight loss support. However, the content and sentiment of their messages in social media interactions is unknown. The purpose of this study was to conduct a qualitative content analysis to examine Black women's social media interactions for weight loss support. Four online communities with the greatest number of monthly publicly available posts in 2019-2020 and a mission focused exclusively on Black women weight loss were selected as a source of message data. One hundred sample text-based message posts with comments were retrospectively extracted from each community's Facebook platforms as units of analysis (n = 400). Using Dedoose, two researchers independently coded and weight de-identified meaning units using a deductive approach (Kappa Cohen's > .80; $p < .001$). The social omparison Theory and its four constructs (e.g., self-evaluation, self-assessment, upward comparison, and downward comparison), along with components of the AHA/ACC/TOS Evidence-Based Lifestyle Obesity Management Clinical Guidelines (e.g., dietary activity, physical activity, and behavior therapy) were used as frameworks for coding themes and categories. Each meaning unit was scored on a sentiment weight scale of 1-5; ranging from very negative to very positive. Findings showed that the high level themes commonly found within the weight loss support groups were Evidence-Based Lifestyle Obesity Guidelines (n = 219 mu), Motivation (n = 141 mu), Social Comparison Theory (n = 89 mu), Encouragement (n = 64 mu), Lbs Lost (n = 51 mu), Advice (n = 34 mu), COVID-19 (n = 29 mu), Challenges (n = 27 mu), and Black Lives Matter (n = 16 mu). The total number of participants was 328, and the total number of administrators was 71. The key takeaway is that for Black women to achieve realistic and

sustainable weight loss goals via online weight loss support, social media messaging should emphasize a more Evidence-Based approach. It is recommended that group administrators of online weight loss groups increase messaging about the benefits of incremental weight loss and how losing 3-5% of one's body weight will significantly improve overall health outcomes. Administrators can do this by showcasing the "Target Weight Loss Chart" on their platforms. Furthermore, administrators can also implement monthly weight loss challenges with the Evidence-Based Lifestyle Obesity guidelines as their framework for successful and sustainable weight loss goals.

Dedication

I dedicate this research to my parents, husband, children, and siblings, who have given their unending support, love, and affection as I passed through this tiring process of research.

Acknowledgement

I cannot express enough thanks to my committee members for their continued support and encouragement: Dr. Sarah E. Johnson, Ph.D., MPH, MCHES, and Dr. Frances J. Everhart, Ph.D., MBA, MPH, CHES. I offer my sincere appreciation for the learning opportunities provided by my committee.

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List of Abbreviations

AHA……American Heart Association

ACC…….American College of Cardiology

ABGGTWL ……... A Black Girl's Guide to Weight Loss

BMI…….…..... Body Mass Index

BRFSS…… Behavioral Risk Factor Surveillance System

BWLS …… Black Weight Loss Success

BWLW…… Black Women Losing Weight

CDC……... Centers for Disease Control and Prevention

DGFA ……. Dietary Guidelines for Americans

EBLOMG ……Evidence-Based Lifestyle Obesity Management Guideline

NHW …….. Non-Hispanic White

SCT …….Social Comparison Theory

TOS……...The Obesity Society

WHO……... World Health Organization

WLE ……Weight Loss Expectations

Introduction

Overview

Obesity, a condition of excess body fat, is one of the most significant, complex health conditions contributing to poor health and disease disparities for Black women in the United States (Hales et al., 2020; CDC, 2018). For this research study, the term "Black" will be used in reference to African American, as it is more encompassing. Related to this disparity, culturally specific online communities for Black women weight loss support have recently grown in presence (Blackstone & Herrmann, 2018; Brown et al., 2012). Across a range of social media platforms, such as Facebook, Instagram, and Twitter, Black women are increasingly interacting, posting comments, and sharing their perceptions related to weight loss support (Blackstone & Herrmann, 2018; Brown et al., 2012). However, the content, evidence base, and the sentiment of messages in Black women's social media interactions is unknown (Blackstone & Herrmann, 2018; Merolli et al., 2013). Analyzing the content of Black women's social media interactions offers a strategy to gain greater insights into culturally relevant messaging for obesity management.

This study was a retrospective, qualitative content analysis study used to identify common messaging themes in active online communities targeting Black women and weight loss support. Publicly available text-based message posts with comments (n = 400) were extracted and deductively analyzed from four online communities. The Social Comparison Theory (SCT) and its four constructs (e.g., self-evaluation, self-assessment, upward comparison, and downward comparison) (Festinger, 1954), along with components of the most recent 2013 AHA/ACC/TOS Evidence-Based Lifestyle Obesity Management Clinical Guidelines were used as the theoretical and evidence-based practice frameworks for analysis (Jensen et al., 2014). Dedoose, a web-based

application, was used for coding, sentiment weighting, and presentation of common themes and categories found in Black women's social media interactions.

Findings from this study highlighted the current social media message narratives of an underrepresented population in relation to the culturally significant health-related issue of obesity. The content analysis identified potential targets for improving weight loss support messaging in the online communities of a health disparate Black female population. Findings from this research are also beneficial in contributing to recommendations for how Black women can achieve realistic and sustainable weight loss goals.

Statement of the Problem

Black women are carrying more body weight in comparison to their female counterparts of all other racial demographics (CDC, 2018; Hales et al., 2020; ; Odgen et al., 2015; Olivier, Wenhold, & Becker, 2016). Yet, there is less of a cultural pressure to be thin, which often leads Black women to be more content with their body at a higher weight (Angulo, 2015). If trends continue, Black women will develop more obesity-related health complications that may result in shortened life expectancy rates for that demographic population (Hammond & Levine, 2010; Kitahara et al., 2014). If one reaches a class III obesity level (BMI = 40% or higher), the likelihood of a premature death resulting in the shortening of one's life expectancy increases by up to 14 years (Kitahara et al., 2014).

For Black women who are trying to manage their obesity, they are increasingly seeking weight loss support in online communities (Blackstone & Herrmann, 2018; Brown et al., 2012). However, the content, evidence base, and the sentiment of messages in BLACK women's interactions in the social media platforms is unknown (Blackstone & Herrmann, 2018; Merolli et al., 2013). There are concerns that how Black women are socially comparing themselves to

others in the online weight loss support groups and what they are suggesting as weight loss strategies may be more harmful, rather than helpful (Blackstone & Herrmann, 2018). Furthermore, weight loss participants set unrealistic weight loss goals at 20% or above ideal weight loss goals (Dalle Grave et al., 2015). This is nearly double the average weight percentage that results from lifestyle modification programs, making the goals rarely achievable and unrealistic (Dalle Grave et al., 2015).

Significance

The rise of obesity issues poses a threat at a national and global level (Hale et al., 2020). Over 2.1 billion individuals, equaling 30% of the global population, were considered to fall into the overweight and obese category in 2014 (Tremmel, Gerdtham, Nilsson, & Saha, 2017). Of those figures, 5% died from obesity-related deaths worldwide (Tremmel et al., 2017). If trends continue at this rate, it is estimated that half of the world's population will be classified as overweight and/or obese by the year 2030 (Tremmel et al., 2017).

Economically speaking, obesity incidence attributes to excessive healthcare expenditure, loss of productivity resulting in lost work days, increased levels of mortality, and an escalation in permanent disability rates (Tremmel et al., 2017). All these factors contribute to the economic burden associated with the cost of illness. In 2014, the global impact of obesity led to an estimated $2.0 trillion or 2.8% of the United States' gross domestic product (Tremmel et al., 2017).

Purpose of the Research

The purpose of this study was to examine the content and sentiment of Black women's social media interactions in online weight loss support groups. The content analysis was conducted in relation to the SCT's constructs (i.e. self-evaluation, self-enhancement, upward

comparison, and downward comparison). Also, the social media content was analyzed to see if the messaging aligns with each component of the Evidence-Based Lifestyle Obesity Management Guidelines relating to physical activity, dietary activity, and behavioral therapy (Jensen et al., 2014; NHLBI Obesity Education Initiative Expert Panel on the Identification, 1998). Realistic weight loss goal setting, an evidence-based behavior therapy strategy, was evaluated to assess how successful weight loss and perceived body weight ideals are normalized within the Black community. Overall patterns of positive or negative messaging within the online social media communities were reported by administrator and participant.

Research Questions and Outcomes

Research questions and expected outcomes for this study were crafted from previous literature on Black women and obesity, as well as the theoretical SCT framework and the evidence-based practice for obesity management. There were three *a priori* research questions to be explored in the study. Table 1 includes the list of proposed research questions coupled with expected outcomes. As a qualitative study, this research was not testing specific hypotheses, but exploring the common themes and messaging of existing social media community content. The existing messaging was compared to evidence-based strategies for safe and effective weight loss and weight loss maintenance.

Table 1. Study Research Questions	
Question	**Expected Outcome(s)**
1) What are common messaging themes found in Black women's social media groups for weight loss support?	It was expected that messaging themes would range from appearance to health, and to overall general fitness levels (Blackstone & Herman, 2018).
2) How do Black women's social media messages relate to each of the constructs of the Social Comparison Theory? 2a) Self-Evaluation 2b) Self-Enhancement 2c) Upward Comparison 2d) Downward Comparison	It was expected that Black women would display higher rates of the "self-enhancement" and "downward comparison" constructs (Festinger, 1954). It was expected that Black women would display lower rates of "self-evaluation" and "upward comparison" constructs (Festinger, 1954).
3) How do Black women's social media messages relate to each of the components of Evidence-Based Lifestyle Obesity Management? 3a) Physical activity (Aerobic & Strength training) 3b) Dietary activity (Calories, Fats, Fruits & Veggies) 3c) Behavioral therapy (Goal setting, Problem Solving, Stress Management) • (3-5% initial body weight loss goal)	It was expected that there would be gaps in messaging related for each component of Evidence-Based Lifestyle Obesity Management Guidelines (Bradford et al., 2017). It was expected that of the Evidence-Based Lifestyle Obesity Management Guidelines, more messages would emphasize physical activity and diet, than behavioral strategies (Fitzgerald et al., 2016). It was expected that there would be limited messaging centered around the benefits of an incremental 3-5% achievable weight loss goal. Weight loss expectations will be unrealistic (Dalle Grave et al., 2015; Jensen et al., 2014).

Review of the Literature

A literature review was conducted by searching PubMed and Google Scholar for peer-reviewed articles 2010-present. Key search terms included Black Women, Black Women, Obesity, Weight Loss Support, Social Media, Facebook, Online, and/or Content Analysis.

Background

The Health Issue

Obesity is characterized as any individual who has an excess fat accumulation that could potentially result in a disturbance of the individual's health functioning (WHO, 2018). Obesity is measured by the body mass index (BMI). The BMI is an assessment centered around the weight to height ratios of individuals, which can be done by calculating body weight divided by the height squared ("WHO | Obesity and overweight," 2018). Based on the BMI guidelines, adults are officially considered obese at a BMI > 30 (refer to Appendix A). The obesity classifications are further broken into three classes. Those that fall within the 30.00-34.99 range are considered part of Obese Class I ("WHO | Obesity and overweight," 2018). Individuals within the 35.00-39.99 range are of the Obese Class II category ("WHO | Obesity and overweight," 2018). Those who have BMIs > 40 fall into the Obese Class III classification (WHO, 2013). See Appendix A, Figure 1 for BMI chart with obesity categories.

Obesity Disparity Among Black Women

The obesity epidemic is a serious issue affecting various demographic groups. Of these groups, Black women have been found to have the highest rates of obesity in the United States (CDC, 2018). There is a high prevalence of Black women who are classified as obese in the United States. Statistical findings show that one in six Black women are measured to have extreme obesity (Jensen et al., 2014).

As an exacerbation of obesity complications, heart disease, diabetes, hypertension, stroke, and cancer can result and have all been found to significantly affect Blacks at a disproportionate rate (Orsi, Margellos-Anast, & Whitman, 2010). Such dismal complications attribute to the all-cause mortality rates that Black women face as well as the significantly lower life expectancy rates because of being overweight or obese (Hammond & Levine, 2010).

Cultural Acceptance of Obesity

Race comparisons on weight also play a significant role in this field of research. Since the early 1990s, studies have shown that Black American women are less preoccupied with dieting and are more complacent with being overweight in comparison to other races of women (Angulo, 2015). Furthermore, various studies indicate that there are disparities that result in Black American women displaying unhealthy eating patterns and lack of physical activity. For example, Black American women are 38% less likely to meet the fruit and vegetable intake recommendations from the Dietary Guidelines for Americans. Instead, Black American women have been found to have higher rates of saturated fat consumption in their diets (Angulo, 2015). Compared to their non-Hispanic White (NHW) counterparts, Black women tend to lose weight at a slower pace as a result of their lower resting energy expenditure (Olivier, Wenhold, & Becker, 2016). Furthermore, race comparison studies on body size perception indicate that Black women were less inclined to be dissatisfied with their BMI rate until it reached at least 29.3 kg/m2; this BMI is significantly higher than the dissatisfaction rates of their White counterparts at 24.6 kg/m2, and their Hispanic counterparts at 28.6 kg/m2 (Baruth, Sharpe, Magwood, Wilcox, & Schlaff, 2015). This level of self-rated health and perception of beauty can be attributed to the Social Ecological Framework that proposes that an individual's emotions and behaviors are a direct result of the social interactions we face within our environments, which also include the

perceptions and/or affirmations of the opposite sex, which creates an environment of cultural acceptance (Ley, Barrio, & Leach, 2015).

Barriers for Weight Management

The social environment of Black women is less negative with regards to obesity because the Black community does not typically consider being obese and overweight as synonymously linked with being unattractive (Angulo, 2015). For instance, studies have shown that Black men continued to choose larger framed female silhouettes for their ideal preferences more often than their White counterparts who selected thinner framed females (Cachelin, Rebeck, Chung, & Pelayo, 2002).

Furthermore, research indicates that middle-aged and older Black women report barriers to weight loss to include a shortage of social support, a lack of time, apprehensions about body image, and hair maintenance concerns (Durant et al., 2014). The cultural importance placed on hairstyles in the Black community has been shown to take a priority over the health of Black women. Black women are more reluctant to do physical activity that would cause them to compromise their hairdos (Ard et al., 2013). The reasoning for this is that cultural context and financial resources combine to create a scenario whereby Black women are faced with the dilemma of exercising, which will jeopardize their hairstyles and ultimately force them to tap into their limited funds and resources for hair products to remedy their hair situation. When faced with this decision, oftentimes Black women sacrifice their physical activity to allocate their funds towards other necessities that benefit their family unit overall (Ard et al., 2013). In addition to these variables, there is a lack of influence from society that encourages Black women to feel the pressures of being thin, which leads Black women to be more content with their bodies even though they may be at a higher weight (Ard et al., 2013).

Body image perceptions can create a distinctive physical and psychosocial effect on the individual particularly if the individual has been negatively influenced by a number of factors (McDermott et al., 2014). However, experts say that Black women tend to do well with regards to their body image, especially if they feel they are living healthily by getting regular exercise and maintaining their weight, even if they do not fall within the normal BMI standards that are deemed as appropriate for their statures (Amber, 2014). If this is the case, this belief shows that weight loss itself is not a major motivator for Black women. Instead, an overall emphasis on improved health can lead to long-term weight sustainability (Amber, 2014).

Various factors can contribute to increased weight gain over time, such as socioeconomic level, genetics, and environmental factors (Williams, Mesidor, Winters, Dubbert, & Wyatt, 2015). Even with these health outcomes leading to disproportionately higher levels of stress and adversities for Black women, findings suggest that Black women have increased chances of prospering despite their disadvantages, which is indicated by their mental health evaluations (Carter & Assari, 2016). This very examination on stress is significant with relation to health and obesity. Researchers confirmed the correlation between psychosocial well-being and how it effects obesity rates (Carter & Assari, 2016). Most importantly, this correlation differs by race (Carter & Assari, 2016). Depression and negative affect are two main sources that directly reflect an individual's physical health outcomes and potential for mortality (Assari & Burgard, 2015).

Genetic Factors of Obesity in Black Women

Researchers have presented the idea that genetic factors play a significant role in the weight gain found within Black women. Studies hypothesize that the "Thrifty Gene" is a leading cause for this overweight epidemic within the Black community (Amber, 2014). This particular gene responds to calorically dense foods by storing excess amounts of fat. This very response

was essential many decades ago when times of feast and famine were prevalent (Amber, 2014). However, with today's current living situations allowing for easy access to an abundance of food sources, this same gene invokes a counterproductive weight gain effect found amongst Black women.

Furthermore, scientists have declared that obesity is not a matter of purely overeating, but is instead moreso a biological disorder, especially with regards to carbohydrate consumption and insulin resistance. Black women display sensitivities to the breakdown of sugars and carbohydrates causing fat accumulation that can lead to weight-related health risks such as Type II diabetes (Amber, 2014). Researchers explain that the introduction of sugar and carbohydrates into the Black diet is relatively new in comparison to their European counterpart's descendants who have had a much longer exposure to such foods in their diet, therefore allowing their systems to adapt and efficiently process those types of foods (Amber, 2014). European descendants have had this food exposure of eating refined grains for over 10,000 years, whereas Blacks have only been exposed for 300-400 years after being forcibly imported. This concept plays into the hypothesis that something newer in one's environment will have a greater effect on one's health outcomes (Amber, 2014).

Weight Loss Expectations

Studies indicate that there is a difference in younger and older women's perceived weight loss expectations. In addition to their WLEs, motivators for those WLEs are different as well (Evans et al., 2015). Older women report career success attributing to their need for a greater level of weight loss, whereas their younger counterparts necessitate their greatest level of weight loss being influenced by mass media (Evans et al., 2015). Older women, also, are reported to have a 2-5% lower weight loss goal in comparison to their younger counterparts (Dalle Grave et

al., 2015). Research proposes that younger age is found to be one of the main indicators of weight loss attrition. This indicates higher body dissatisfaction rates amongst the younger age demographics (Dalle Grave et al., 2015).

Furthermore, studies find that weight loss participants regularly set unrealistic weight loss expectations that are deemed as barely acceptable weight loss (Dalle Grave et al., 2015). Weight loss seekers tended to set weight loss goals at or above 20%, which is highly unachievable for many obese individuals and nearly double the average weight percentage that results from lifestyle modification programs (Dalle Grave et al., 2015). Evidence-Based Lifestyle Obesity Management Guidelines suggest that just losing 3-5% of one's weight significantly improves obesity-related health complications attributed to excess weight (Jensen et al., 2014; NHLBI Obesity Education Initiative Expert Panel on the Identification, 1998).

Black Women, Internet Use, and Technology

Black women have higher rates of mobile technology ownership (The Nielsen Company, 2017). Eighty percent of Black women own smartphones, which is 8% higher than their NHW counterparts (The Nielsen Company, 2017). This indicates that Black women have more opportunities to stay connected and utilize various social media platforms such as Facebook. It is reported that 72% of Black women spend most of their time consuming Facebook as their top social media networking site (The Nielsen Company, 2017). Black women have been noted as using their smartphones as their sole basis for internet connectivity (James & Harville, 2018).

Blacks are more prone to rely on their smartphones to obtain health information over their White counterparts (Perrin & Turner, 2019). Black women especially turn to the Internet for weight-related resources (Brown et al., 2012). Studies indicate that Black women are concerned with their weight and frequently search the web for both dieting and nutritional material (Brown

et al., 2012). Additionally, mobile health services, delivered through smartphones and web-based sources, have also been on the rise. Evidence suggests that more providers are delivering this source of care to their patients as a means to inform and empower their patients to self-manage their weight and other medical conditions (James & Harville, 2018). Since Black women have higher rates of mobile technology use, they are the prime demographic of consumers to utilize such health-based technologies. This is especially beneficial for weight loss management or weight loss interventions.

Additionally, online support groups have been used as an effective means towards weight loss (Bradford, Grier, & Henderson, 2017). Sharing weight loss accomplishments and failures virtually has allowed for members to feel supported through their weight journeys. This growing trend has created online communities geared towards identity-based motivation that leads individuals towards obtaining their weight loss goals (Bradford et al., 2017). The idea is that by setting one's weight loss goals publically, it will enable one to commit due to the online community holding him or her accountable. Members within the community regularly offer words of encouragement and inspiration towards one another, increasing the likelihood of compliance towards the course of action (Bradford et al., 2017).

Major Black women social media weight loss support groups include Black Women Losing Weight (BWLW), A Black Girl's Guide to Weight Loss (ABGGTWL), and Black Weight Loss Success (BWLS). A majority of the messaging on these sites is based on weight loss accomplishments. Posts are user-friendly and generate inspiration so individuals can visibly see women who look like them reaching their weight loss goals.

Although weight loss management interventions and online support groups have proven to be successful, scientists warn that many individuals who engage in social media "Fitsporation"

or “Thinsporation” content are more likely linked to eating disorders, body dissatisfaction, and weight/shape concerns (Blackstone & Herrmann, 2018). Researchers equate the effect of this Fitsporation/Thinsporation movement to negatively impact the impressionable minds of individuals who frequent social media (Blackstone & Herrmann, 2018). This is because unrealistic messages stigmatizing overweight women while idealizing thin women tend to promote weight loss in a destructive and demoralizing manner (Blackstone & Herrmann, 2018).

Furthermore, individuals can become susceptible to comparing themselves to the perceived beauty ideals that are not always what they seem. This is because social media content oftentimes gets altered and enhanced digitally to cover up and create exaggerated forms of beauty (Raiola, 2016). This problem is particularly apparent when individuals and/or social media influencers post before and after progress pictures of themselves during their weight loss journeys (Raiola, 2016). The act of comparing one’s self to another person is a natural part of human nature that gets attributed to the Social Comparison Theory.

Social Comparison Theory

The Social Comparison Theory is a psychological theory whereby individuals compare themselves to others (Festinger, 1954). As shown in Table 2, the SCT includes four unique constructs: Self-Evaluation, Self-Enhancement, Upward Comparison, and Downward Comparison. The comparisons occur under situations of uncertainty (Festinger, 1954). Essentially, this means that conclusions about one’s self cannot be made in isolation. Therefore, as harmless as it may seem, comparisons may lead to an increased pressure on individuals who stray from the ideal majority (Gerber, 2018). Furthermore, this added pressure can result in ostracism from the majority if the minority further strays from the ideal or altogether refuses to change (Gerber, 2018).

Table 2. Social Comparison Theory Constructs with Definition

Construct	Definition
Self-Evaluation	Individuals tend to compare themselves to a target (person/group) that display similar characteristics as a way to ensure an accurate self-evaluation assessment.
Self-Enhancement	Individuals making an interpretation of their social comparison to positively improve upon their goals and increase their self-esteem.
Upward Comparison	When an individual compares themselves to others who are better than them.
Downward Comparison	When an individual compares themselves to others who are worse than them. 1) **Passive Downward Comparisons** – When an individual considers a previous condition while making their comparisons. 2) **Active Downward Comparisons** – When a person compares themselves to others by belittling or causing harm to others.

Nevertheless, self-evaluation and self-enhancement are two of the main motivators that lead people to compare themselves to others (Gerber, 2018). Both categories rely on individuals targeting their influences in an upward manner rather than a downward manner when considering their inspirations towards enhancement or improvement. Although both self-enhancement and self-improvement are significant, the leading motivator is the downward comparison where people feel less threatened or even better about themselves when comparing themselves to an individual in a worse off position. Studies find that those who have a higher self-esteem tend to reflect more on a downward comparison basis while those with a lower self-esteem more often compare upwardly (Gerber, 2018).

Additionally, with regards to gender and social comparison, females with a high affinity to compare frequently compare on the basis of their appearances. These comparisons are commonly associated with low body satisfaction, which can lead to higher rates of eating disorders (Gerber, 2018). Potential implications of the SCT and ways to measure are featured in Appendices B and C.

Evidence-Based Lifestyle Obesity Management Guidelines

In 2013, the American Medical Association declared obesity as a disease and Evidence-Based Lifestyle Obesity Management Guidelines were issues for clinical primary care practice (Jensen et al., 2014). The guidelines were a joint issue from the American Heart Association (AHA), the American College of Cardiology (ACC), and The Obesity Society (TOS). Table 3 highlights and describes each of the specific recommended components of lifestyle obesity management: 1) physical activity – aerobic and strength training, 2) dietary activity – calorie deficit and restrictions, and 3) behavioral therapy elements.

Table 3. 2013 Evidence-based Lifestyle Obesity Management Guidelines

Components to Weight Loss	Description of Activity of Towards Weight Loss
Physical Activity	1) Aerobic – 150 minutes per week of moderate intensity, or 300 minutes for weight loss and weight loss maintenance 2) Strength-training – At least 2 days a week of 15 minutes or more, working all major muscles
Dietary Activity	1) A calorie deficit of 500 to 1,000 calories a day to achieve a weight loss of 1 to 2 pounds a week 2) Increased fruit and vegetable consumption 3) Reduction in dietary fat and carbohydrates aid in caloric reductions
Behavioral Therapy	1) Multimodal strategies (self-monitoring, problem-solving) appear to work best for sustained weight loss results 2) An individual's motivation (goal-setting) is key to the success of weight loss and weight maintenance 3) Realistic goal setting of a 3-5% initial body weight loss

Research shows that exercise can offset genetic predispositions that could ultimately lead to weight-related health problems (Amber, 2014). As a means of targeting obesity, it is recommended that obese individuals get encouraged to modify their lifestyles for maintainable weight loss to that could reverse adverse health effects (Jensen et al., 2014). Clinical studies

indicate that even a modest amount of weight loss within the 3-5% range can significantly improve risk factors for cardiovascular disease, Type 2 diabetes, and other comorbidities (Jensen et al., 2014). If this is followed, the perception of obtaining unrealistic weight loss expectations from Black women may seem more attainable.

By getting an understanding of these contributory factors, it can aid in further development of targeted health and obesity interventions specifically tailored towards Black women and their community to combat their unique weight loss needs. If carried out effectively, the obesity-related risk factors affecting Black women may become modified, which can eventually lead to an increased quality of life. This study will examine the relationship between weight loss support among Black women's social media communities and how it directly relates to each component of the evidence-based clinical guidelines.

Gaps in Literature

Significant gaps in literature include pinpointing what some of the barriers are in overweight and obese Black women (Durant et al., 2014). A growing population of people are turning to online weight loss communities on social media platforms like Facebook, Instagram, and Twitter as a tool for weight loss support (Bradford et al., 2017). However, there is no evaluation in the messaging of those platforms.

Furthermore, the current literature about online weight loss groups highlights women, in general. This indicates that there is a lack of research about online weight loss support that is specifically catered towards Black women. Lastly, literature fails to capture the degree to which Black women receive messaging on evidence-based lifestyle obesity management clinical guidelines. Specifically, behavioral messages that promote a realistic 3-5% initial body weight loss are limited.

Methodology

Study Design

This study was a retrospective, qualitative content analysis study. Content analysis is a technique used in research to make valid interpretations from qualitative data (usually in the form of texts, documents, and graphs) that get converted into quantitative data via a coding of the textual material (Neuendorf, 2011). Content analysis is a valuable tool because it allows researchers to discover patterns in communication as well as analyze data in a non-intrusive manner. Content analysis of messaging in social media groups has recently been reported more in the literature for a variety of health issues, such as eating disorders, diabetes, and vaping (Brett et al., 2019).

Target Population

This study employed the use of electronic social media platforms to help analyze the obesity messages and comparisons geared towards Black women. Social media platforms provide an attractive, scalable solution for weight loss messaging and solutions (McCrady-Spitzer & Levine, 2010). The online weight loss communities targeting Black female adults for weight loss support, specifically weight loss communities active on the Facebook platform, were sampled.

Sampling. This study sampled Facebook message postings from Black women's online weight loss communities. Administrators and active Black women participants on online weight loss groups have the option to post messages publicly or privately to the community weight loss support group. They may disclose health, fitness, nutritional, or motivational information on weight loss support pages. This study solely used publicly available posts from online weight

loss communities. Additionally, the study was a convenience sample study because it specifically targeted Black women who have regular use of the Facebook social media platform.

Inclusion Criteria. The study population included active social media weight loss communities targeting active Black females who are seeking weight loss online, social media weight loss communities that cater to the English-speaking demographics that have regular access to Facebook, and additionally, social media weight loss communities that have publicly accessible pages with at least 100 posts within the last 12 months and had accrued more than 100 members and likes. Also included were social media communities that have a mission statement including Black women "weight loss" or "obesity" published on their platforms. Lastly, the study included social media communities with a group title focused solely on supporting Black women. See Appendix D for a sample of included social media communities meeting criteria.

Exclusion Criteria. Social media communities that did not have a mission focused solely on Black women and weight loss support/obesity were not included in the study sample. Also, social media communities that lacked at least 100 publicly available posts for extraction were excluded. See Appendix E for social media communities excluded from the study for not meeting criteria.

Sample Size. The sample population consisted of the four most active social media weight loss communities that had Black women internet users who regularly engaged in weight loss support online. Although various social media platforms were targeted, namely Facebook was the focus, as it tended to have greater participation rates (refer to Appendices D & F). Selected Black women weight loss social media groups were chosen after doing a review of each group's mission, number of followers, number of members, number of likes, and number of publicly available posts within a 12-month timeframe.

Social media networks that had internet users who were actively engaged were ideal for the sample population. This is because the internet is considered a platform for communication that provides a convenient basis for conducting social research (Kayam & Hirsch, 2012). Since the internet is so vast, conducting online studies has the potential of reaching larger groups of people, which increases the likelihood of obtaining a greater sample size for added validity (Kayam & Hirsch, 2012).

Data Collection

Data collection began by searching Facebook groups and inputting key terms such as "Black Women," "Weight loss," and "Obesity." Selected Black women weight loss social media groups were chosen after doing a review of each group's mission, number of followers, number of members, number of likes, and at least 100 publically available posts within the past 12 months. The most engaged social media group became the preliminary group of focus to conduct an in-depth analysis of the study's frameworks (SCT & the EBLOMG).

Extraction of data for the content analysis took place by pulling the first 25 text-based posts from each seasonal quarter for 2019-2020 from each selected Black weight loss social media group pages. Each unique post was considered as one extraction. All extractions were entered into Word documents labeled for each group (i.e., Group A, Group B, Group C, and Group D). A total of 100 posts from each group were cut and pasted onto their respective Word document. Of those 100 posts extracted, the first 25 posts were extracted from August-October 2019, the second 25 posts came from November 2019-January 2020, the third batch of 25 posts came from February-April 2020, and the final 25 posts came from May-July 2020.

To keep anonymity of engaged Black administrators and participants from each group, no usernames were documented during data extraction of the posts. Furthermore, comments were

extracted as either Administrator “XXXXXX” and/or Participant “XXXXXX.” Due to more stringent privacy policies displayed on various social media platforms, other demographic variables (i.e., gender, age, geographic location) of users were not readily available. Therefore, exclusion of any demographic variables describing administrator or participant occurred (Lerman et al., 2017).

A feasibility test was conducted to make sure data was publicly available from sample groups. Both administrator and participant posts were present.

Data Analysis

This study used Dedoose version 8.2.32, a web-based mixed methods software, described as a feature-rich, collaborative tool that provides opportunities of visual comparisons for analyzation (Dedoose.com, 2020). See Appendix F, Figure 2 for a sample of the Dedoose Project Platform. Data was independently coded deductively based on assessment of common themes and how they relate to the Social Comparison Theory and Evidence-Based Lifestyle Obesity Management Clinical Guidelines. A code tree system was developed in Dedoose for each framework, construct, and guideline component. See Appendix G, Figure 3 for a sample of the Dedoose Code Tree. Each unique concept presented in a post was individually coded as a single meaning unit (mu). Meaning units per each theme and category were tabulated and compared across frameworks.

Before initiating final data analysis, sample social media posts were used for training purposes within the Dedoose Training Center to assess the inter-rater reliability statistic. At least 10% of data was double-coded and tested. The inter-rater reliability statistic for Cohen’s Kappa Statistic between the two researchers was > 80%. Multiple consensus meetings took place to resolve discrepancies in coding.

For presentation of findings, the number and content of posts from administrators versus participants was tabulated. Overall themes were compiled with illustrative quotes/posts. Finally, recommendations were made on improving on the gaps and evidence base of Black women messaging in social media groups.

Institutional Review Board

This study involved the use of public, de-identified data and did not involve human subjects. All data was publicly available on each Facebook group and accessible without being a member. Posts in member groups or in private settings were not extracted. Following best practices of social media research ethics, all extractions from social media communities were stripped of all identifying information (Beninger, 2017). There was no way to link excerpts or posts back to an administrator or participant. Names of each online community were also de-identified for analysis and reporting. The data used for the content analysis was considered secondary data. The project did not fall within the regulatory definition of research involving human subjects. The exempt study was submitted to the Radford University Institutional Review Board (IRB) for review and approved as Exempt Category 4: Secondary research, for which consent is not required (refer to Appendix H).

Results

Overall

As shown in Table 4, differences in administrator (n = 85 mu) versus participant (n = 341mu) showed overall greater activity among participants as well as consistent posting throughout quarters.

Table 4. Administrator vs. Participant Posts in Social Media Communities by Quarter

Group	Quarter							
	1 (Aug – Oct 2019)		2 (Nov 2019 – Jan 2020)		3 (Feb – Apr 2020)		4 (May – Jul 2020)	
	AD	***P***	***AD***	***P***	***AD***	***P***	***AD***	***P***
A	7	18	7	18	4	22	3	23
B	5	20	6	19	9	15	9	16
C	1	24	1	22	1	24	3	22
D	3	22	6	20	2	22	4	21
Total	**16**	**84**	**20**	**79**	**16**	**83**	**19**	**82**

AD = Administrator, **P** = Participant.

As shown in Table 5, the highest rate of messaging was centered around the Evidence-Based Lifestyle Obesity Management Guidelines (n = 219 mu). Furthermore, messaging was significantly higher than that of the Social Comparison Theory (n = 89 mu). There was relatively equal mention of physical activity (n = 116 mu) and dietary activity (n = 98 mu), which were both slightly mentioned more than behavioral therapy (n = 64 mu). Higher messaging themes were found around motivational posts (n = 141 mu), followed by encouragement messaging (n = 64 mu) given by members of the support group. Lastly, there was more emphasis on strength training (n = 25 mu) over aerobic activity (n = 31 mu).

Table 5. Common Messaging Themes in Black Women's Social Media Groups with Illustrative Posts by Administrator and Participant

Theme	Administrator Illustrative Post	Participant Illustrative Post
Evidence-Based Lifestyle Obesity Guidelines (N = 219 mu)	*"Fit mom XXX got into the best shape of her life after pregnancy by training to workout videos on tv and cleaning up her diet."*	*"I understand that health is wealth, and some of the best defenses against illness are good nutrition, exercise, and a strong mind."*
Motivation (N = 141 mu)	*"Follow XXX on Instagram for tips on how she lost weight."*	*"Thanks for sharing and motivating."*
Social Comparison Theory (N = 89 mu)	***Positive:*** *"Black people have a higher bone density. Body composition is a better measure to use for goals."* ***Negative****: "Its always disheartening that people jump to a negative space when a fan submits a photo of weight and muscle gain."*	***Positive:*** *"Keep going girl! I'm also on the way to regain my health. Posts like this remind me that its possible to achieve this."* ***Negative:*** *"I don't see a difference between your before and after pic"*
Encouragement (N = 64 mu)	*"Just because you aren't making progress as fast as you think you should does not mean you aren't making progress. Keep going!"*	*"You look amazing thank you for sharing your inspirational story. Your abs are fire."*
Lbs. Lost (N = 51 mu)	*"XXX lost 102 pounds by exercising and making healthier choices."*	*"Since Jan 2020 starting at 202 lbs, I've lost 37 lbs to date and couldn't be any happier with my progress."*
Advice (N = 34 mu)	*"A 1-hour workout is only 4% of your day….no excuses!"*	*"Honoring your body with exercise and healthy food is so important during times like these."*
COVID-19 (N = 29 mu)	*"After catching COVID-19 and dealing with the multiple rounds of hell breaking loss around us, I'm proud of myself for not gaining weight."*	*"The stay at home orders were so frustrating especially when the kids got taken out of school. I had to fight the temptation of overeating because I was so stressed."*

Challenges (N = 27 mu)	*"I left the locker room, had my last lift, came home to my babies…where I'd remain for another 4 months."*	*"My biggest barrier is that I don't have time to work out."*
Black Lives Matter (N = 16 mu)	*"Did you protest/march? Did you amplify the cause? Did you also workout today to maintain your health?"*	*"How does it make you feel that our BLM concerns have reached the world?"*

Social Comparison Theory

As shown in Table 6, there was slightly more discussion around self-enhancement (n = 26 mu) over self-evaluation (n = 22 mu). Also, there was more mention of upward comparison (n = 26 mu) as downward comparison (n = 19 mu). More specifically, there was similar mention of statements displaying active comparison (n = 11 mu) and passive comparisons (n = 13 mu). Less discussion was centered around self-evaluation (n = 22 mu) in comparison to self-enhancement (n = 26 mu).

Table 6. Social Comparison Theory Themes, Category, and Illustrative Posts by Administrator and Participant

Theme	Category	Administrator Illustrative Post	Participant Illustrative Post
	Self-Evaluation (n = 22 mu)	*"The first picture shows my overall journey, the second shows one year of progress. This represents hard work, but also a major mentality shift."*	*"Hey her arms are just like mine!"*
	Self-Enhancement (n = 26 mu)	*"This page was created after going to the doctor for a physical and being told that I was obese."*	*"If I could get these results, I'd give up junk food for life."*

Social Comparison Theory (N = 89 mu)	**Upward Comparison (n = 26 mu)**	*"XXX seeing an old friend's success with a local fitness program encouraged her to try the program herself."*	*"This is why I squat. You have lit a whole fire under me!"*
	Downward Comparison (n = 19 mu) • ***Active (n = 11 mu)*** • ***Passive (n = 13 mu)***	***Active:*** *"Growing up, she was always the bigger girl in the group until she became motivated to become a healthier person."*	***Active****: "Looked better before. Now it just looks fake."*
		Passive: *"She stopped complaining and took charge of her life. Patience was the key."*	***Passive:*** *"There's no way…lol. I was a fitness instructor for years. All the squats in the world can't do THIS, but nice peach…however she got it."*

Evidence-Based Lifestyle Obesity Management Guidelines

As shown in Table 7, there was more mention of physical activity (n = 116 mu) than there was dietary activity (n = 98 mu). There was slightly more mention of calories (n = 22 mu) than fruits and veggies (n = 17 mu). Both categories were mentioned significantly more than fats (n = 7 mu). The least amount of discussion was centered around behavioral therapy (n = 64 mu) in comparison to physical activity (n = 116 mu) and dietary activity (n = 98 mu). There was no mention of utilizing a 3-5% initial weight loss goal. Higher mention of goal setting (n = 56 mu) than problem solving (n = 20 mu) and stress management (n = 13 mu). However, there was a greater mention of problem solving (n = 20 mu) over stress management (n = 13 mu).

Table 7. Evidence-Based Lifestyle Obesity Management Clinical Guidelines Themes, Category, and Illustrative Posts by Administrator and Participant

Theme	Categories and Subcategories	Administrator Illustrative Post	Participant Illustrative Post
Physical Activity (n = 116 mu)	**Aerobic (n = 31 mu)**	*"Swimming is one of the most effective weight loss exercises of them all because it combines cardiovascular and muscular workouts."*	*"I plan to walk at least 5 days a week and eventually start going back to the gym."*
	Strength Training (n = 25 mu)	*"Strength training and maintaining a high protein diet are key aspects of a successful routine."*	*"Celebrating my birthday, the only way I know how: with 245 lbs of solid iron."*
Dietary Activity (n = 98 mu)	**Calories (n = 22 mu)**	*"Avoid skipping meals or you won't be burning calories like you should."*	*"My 1st lunch of the day. 140 calories – boneless, skinless chicken breast and cut green beans."*
	Fruits & Veggies (n = 17 mu)	*"Try to drink a green smoothie with fruits and veggies for 7 days straight."*	*"I've been eating healthier – more fruits and veggies and drinking lots of water."*
	Fats (n = 7 mu)	*"Do not skip meals! Your body thinks that you are starving so when you eat again, your body stores away more than usual, resulting in more fat."*	*"I'm going to continue staying away from the hydrogenated fats and added sugars."*
	Goal Setting (n = 56 mu)	*"Give yourself a 2 lb weight loss goal and see if you can meet that."*	*"New goal: to lose 20 lbs by Aug 9. Possible? Will you join me?"*

Behavioral Therapy (n = 64 mu)	**Problem Solving (n = 20 mu)**	*"XXX making jokes about her health before others could, became her routine. Now she is medicine free, devoted to fitness, and full of self-love."*	*"Couldn't afford a gym membership so I used YouTube videos to work out."*
	Stress Management (n = 13 mu)	*"Join us in this necessary conversation about mental health and wellness, live right now."*	*"I feel so much better overall when I exercise…mentally, emotionally, and physically."*

Discussion

Overall

There was more mention of physical activity over dietary activity, yet both were mentioned more than behavioral therapy. This finding aligns with the literature that there is a lack of addressing behavioral therapy with regards to the implementation of Evidence-Based Obesity Guidelines, specifically with providers. This lack of addressing the behavioral piece directly correlates to the observable lack of mention regarding a 3-5% goal setting when discussing the weight loss aspect. In primary care, physicians are encouraged to relay more messaging about the benefits of moderate weight loss as part of their advisory piece to patients; however the emphasis tends to get overlooked (Fitzpatrick et al., 2016).

There were higher messaging themes having to do with motivational posts followed by posts that displayed encouragement by members of the support group. These findings showed the emergence of an overall theme relating to motivation and encouragement when considering the actions and intentions of the group members.

Results showed more emphasis on strength training over aerobic activity. This aligns with the onset of newer programs like CrossFit that have gained recent popularity. Participants of

CrossFit report higher levels of intrinsic motivation while being in the program in comparison to other resistance training modalities (Simpson et al., 2017). Despite these findings, the BRFSS data shows the opposite trend (BRFSS, 2017). Furthermore, to achieve weight loss, the Evidence-Based Obesity Guidelines specify to increase aerobic activity to about 300+ minutes a week, which may be harder for individuals to achieve. This makes it more likely that individuals would opt for the more attainable strength training approach. It does pose the question of if individuals are getting enough of the FITT Principle (Frequency, Intensity, Time, Type) to reap the full benefits of sustainable weight loss.

Social Comparison Theory

There was more discussion around self-enhancement over self-evaluation. This aligns with the mission and purpose of the groups in terms of supporting each other. Individuals that are joining the groups tend to be more positive and supportive, indicating that individuals are using the group for self-improvement. Research demonstrates that peer-to-peer social support in the form of weight loss groups contributes to long-term weight loss successes, which is especially beneficial for women considered to be ethnic minorities (Ufholz, 2020).

There was also more mention of upward comparison than downward comparison. Furthermore, results showed similar mention of statements displaying active and passive comparisons within the downward comparison category. Per expected outcomes, the expectation was that Black women would display higher rates of the self-enhancement and downward comparison. Results could reflect challenges in deciphering the statements between upward versus downward versus passive versus active. Per the Social Comparison Theory, it states that those portraying downward comparison traits are associated with having lower self-esteem. Additional consideration should be made that administrators do have the ability to delete and/or

monitor offensive or derogatory remarks that are made on the publicly available posts. This can directly affect how many downward comparison remarks are remaining versus those that were removed. Nevertheless, there was an overall communal effect where members tried to keep things positive and combat any negative feedback from unsupportive members.

Evidence-Based Lifestyle Obesity Management Guidelines

There was more mention of physical activity than there was dietary activity, with greater emphasis on strength training over aerobic activity. There was slightly more mention of calories than fruits and veggies. However, results showed higher mention of calories, and fruits and veggies, over fat consumption. These findings align with literature that emphasizes the focus on caloric intake with regards to weight loss and weight loss sustainability. However, if individuals want to improve health, there also needs to be an emphasis on improving quality of food sources.

This could be an issue for those who are enduring food poverty issues. Trends from 2001 to 2016 persistently indicate that Blacks experience nearly double the amount of food insecurity issues in comparison to Whites (Odoms-Young, 2019). Food disparities can limit the access to fresh fruits and vegetables, which are a vital part of maintaining a well-balanced diet. These limitations, coupled with the cultural propensity for the traditional Black diet to have higher amounts of fatty foods, add to Black women's barriers for weight loss success and sustainability (Brown-Riggs, 2012).

Findings also emphasized a lower amount of discussion regarding behavioral therapy in comparison to physical activity and dietary activity. Participants and administrators did not specifically mention the 3-5% initial weight loss goals. It is recommended that group administrators showcase the "Target Weight Loss Chart" (see Appendix I) to advertise attainable weight loss goals.

Goal setting was mentioned more than problem solving and stress management. Furthermore, problem solving was discussed more than stress management. There was a significant lack of mention of stress management and problem solving. This leads researchers to push to have greater messaging around these two areas. This lack of mention regarding yoga, mindfulness, meditation – are these culturally acceptable? If not, how can one increase messaging around these? Overall, there is a greater cultural acceptance around religious seeking over mental health seeking, which is seen as a coping mechanism of "taking your problems to God" or "go to church to find spiritual relief" (Okunrounmu et al., 2016).

Limitations

The study focused solely on online participants who had regular access to the internet. Furthermore, the study was only limited to those with an active Facebook account since Facebook is an online platform that caters to a wide range of ethnicities (Smith & Anderson, 2018). Out of five major social media platforms (Facebook, Instagram, Twitter, Linkedin, and Pinterest), Facebook reportedly has a 68% of adult Facebook users whereas the other platforms fail to make up even 40% of user consumption. Although use of the internet to conduct the study was beneficial, it was also limiting as not everyone has access to utilize the internet, therefore deeming them as the unreachable. The study only looked at a sample of publicly available Facebook weight loss groups, limiting the aggregate data to just the posts found on the four preliminary selected weight loss groups.

Delimitations

Delimitations of the study included the exclusion of males and children. The study specifically targeted Black women Facebook users and their text-based posts. This was because the study was focusing on an introspective view of how Black women and their body image

perceptions related to weight loss and healthy weight maintenance. Also, the study did not account for variability between Black women living in the United States versus Black women living abroad, perhaps in African nations.

Furthermore, acknowledgments of environmental factors that attribute to obesity were not examined in this study. Some of these delimitations include the observation of obesogenic environments, food gaps causing a limit to the supply of natural food sources, as well as the ease in accessibility to fast food restaurants. People with greater geographical access to fast food restaurants and convenience stores tend to have higher BMI rates in comparison to individuals who have better access to quality supermarkets (Zenk et al., 2018). Additionally, the study focused solely on lifestyle obesity management guidelines and not the pharmaceutical or surgical approaches used in today's current market. Lastly, no analyzation of images or videos were considered during this study.

Conclusion

The study proposal was intended to map out the plan of action for this study. This study focused on Black women's perceptions on weight loss with regards to the Social Comparison Theory and how it relates to Evidence-Based Lifestyle Obesity Management Guidelines. Research was conducted primarily using Dedoose, a web-based application, to help assess a content analysis of social media weight loss support group messaging geared towards Black women who are interested in weight loss and weight manageability.

Findings from this research will be beneficial in contributing to recommendations for how Black women can achieve realistic and sustainable weight loss goals. This can be done by directing social media messages towards a more evidence-based approach that will help to improve Black women weight loss outcomes. Findings also highlight the current social media

message narratives of an underrepresented population in relation to a culturally significant health related issue. Lastly, this study focused solely on lifestyle obesity management guidelines and not pharmaceutical or surgical approaches.

It is recommended that group administrators of online weight loss groups increase messaging about the benefits of incremental weight loss and how losing 3-5% of one's body weight will significantly improve overall health outcomes. Administrators can do this by showcasing the "Target Weight Loss Chart" on their platforms. Furthermore, administrators can also implement monthly weight loss challenges with the Evidence-Based Lifestyle Obesity Guidelines as their framework for successful and sustainable weight loss goals. Doing so will increase the overall awareness of Black women so they will know what it takes to achieve realistic weight loss goals. Lastly, findings of this study revealed a significant gap in focusing on mental health, yoga, and stress relief. Among the Black community, it would be beneficial for administrators to emphasize the power of the behavioral component when trying to achieve weight loss success and sustainability. Additional recommendations consider that administrators maintain their engagement of deleting and/or monitoring offensive remarks that are made on the publicly available posts. Therefore, it is advisable to emphasis how impactful administrators can be in effectively changing the narrative of their pages by carefully selecting and screening the messaging they are relaying to their weight loss support communities.

As this study focused on Black American women, future studies should research obesity trends of Black women globally or to see if there are similar limitations in weight loss messaging. Researchers can look at similar developed nations to the United States like the United Kingdom and Canada, and then compare to those living in African populations where Black women are more populous and may display different lifestyle patterns. Future studies can

also reach out to the administrators of these groups for more extensive research by utilizing qualitative strategies to do surveys, interventions, and testing of the messages. Other studies can also explore more about the effects of the pandemic in correlation to weight loss maintenance. During the duration of this study, the Black Lives Matter (BLM) movement was prevalent because of the social unrest occurring at the time, coupled with the COVID-19 pandemic. Future studies may explore the magnitude of these events and how they may have adversely affected or derailed the weight loss efforts of those within the Black community.

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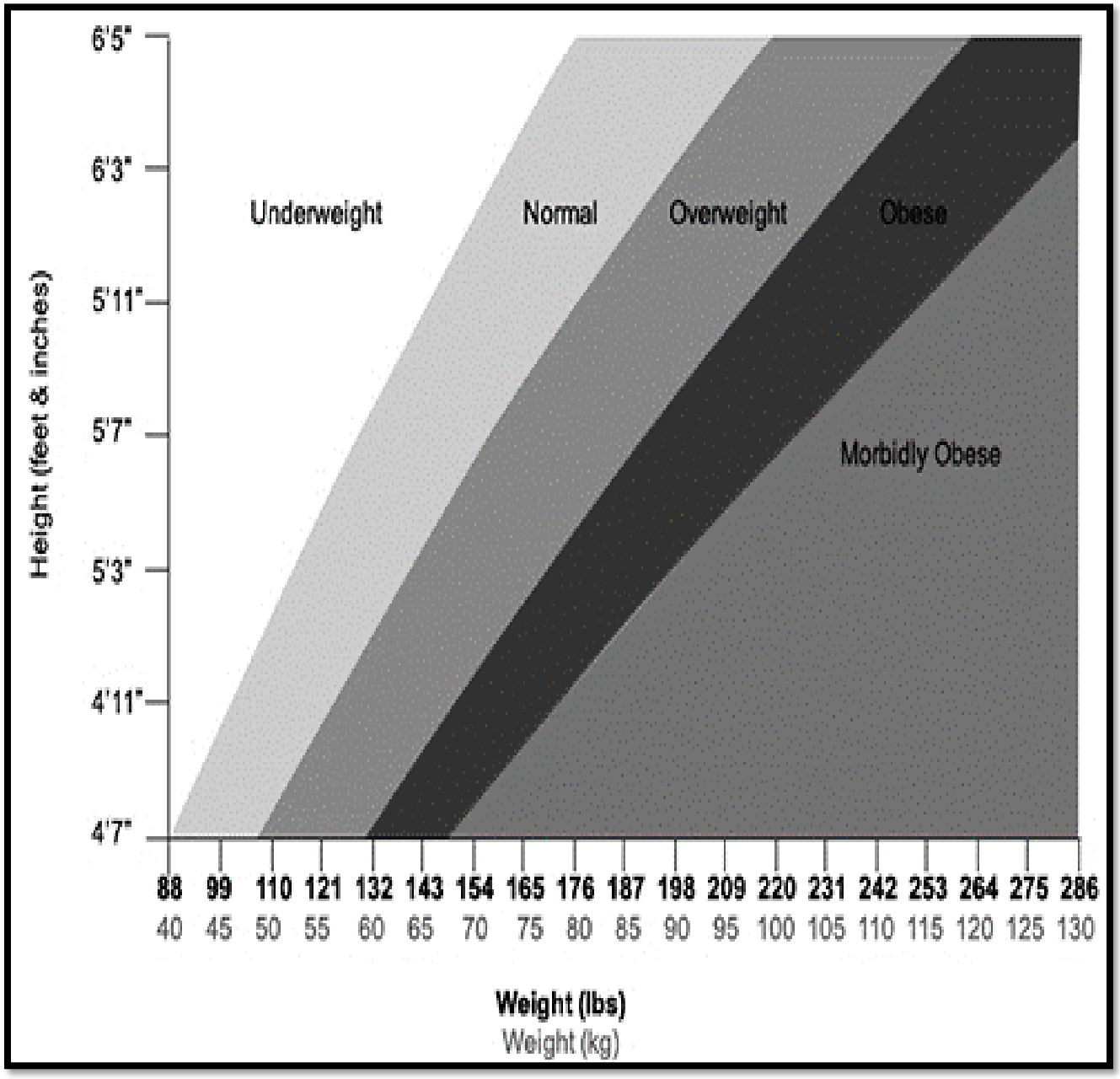
Appendix A

Figure 1. Body Mass Index (BMI) Chart with Obesity Category



Appendix B

Table 8. Social Comparison Theory: Constructs and Implications

CONSTRUCT	IMPLICATIONS
Self-Evaluation	Individuals are not always unbiased self-evaluators especially if accurate self-evaluations are not their main goals.
Self-Enhancement	Similarity is seen as a threat since the target may outperform the individual. This can ultimately lead to psychological denial as a means of keeping one's belief of themselves intact.
Upward Comparison	Highly motivated individuals tend to compare themselves upwardly and see themselves as better or equal to the target. *People more often display this type comparison
Downward Comparison	Unhappy and unmotivated individuals tend to compare themselves downwardly to feel better about themselves.

Appendix C

Table 9. Social Comparison Theory and Ways of Measurement

CONSTRUCT	DEFINITION	WAYS OF MEASUREMENT
Self-Evaluation	Individuals tend to compare themselves to a target (person/group) that display similar characteristics to ensure an accurate self-evaluation assessment.	Every time an individual compares the post pic to themselves. **Examples**: 1) "You and I are built the same." 2) "My legs also get that big when I lift heavy."
Self-Enhancement	Individuals making an interpretation of their social comparison to positively improve upon their goals and increase their self-esteem.	Every time an individual expresses a phrase depicting a motivation for improvement. **Example**: 1) Leaving a comment on a post saying "body goals!"
Upward Comparison	When an individual compares themselves to others who are better than them.	Every time an individual expresses a motivation of what they feel to be an achievable goal. **Example**: 1) "I can't wait until I lose these last five pounds so that I can reward myself with a new wardrobe like you did."
Downward Comparison	When an individual compares themselves to others who are worse than them. **<u>Two Downward Comparisons</u>**: 1) Passive Downward Comparisons – When an individual considers a previous condition while making their comparisons. 2) Active Downward Comparisons – When a person compares themselves to others by belittling or causing harm to others.	Every time an individual admits there is a difference and proceeds to use phrases that exhibit their upper hand advantage over those in the post. **Example**: 1) "I used to have that problem until I fixed it." 2) Giving unsolicited advice to those in the post on how they can do better "Suck it up, and stop crying…just don't eat" **Passive Downward Comparison Example**: 1) "I've always been the fattest person in the room, but she is even bigger than me!" **Active Downward Comparison Example**: 1) "I've always been the fattest person in the room, until I've met you!"

Appendix D

Table 10. Sample Selection: Included Social Media Communities

		FACEBOOK				INSTAGRAM		BLOG	OTHER SOCIAL MEDIA			
Title	Mission	Total Members	Total Followers	Total Likes	100 Publically Avail. Posts within 12 months	Total Followers	# Public Posts	YES/NO	SNAPCHAT	TWITTER	PINTEREST	YOUTUBE
Fit Chocolate (FC)	Inspiring black fitness. Founded: September 11, 2016	N/A	5, 479	5, 192	**YES** *Approx. 131 posts in past 30 days*	341,000	6,430	NO	NO	NO	NO	NO
Black Women in Fitness (BWF)	We talk about Diet, Health, Spirituality and Exercising and how we can become better as a result to it for not just the sake of ourselves but for our community! Founded: August 14, 2009	17, 898	N/A	N/A	**YES** *Approx. 213 posts in past 30 days*	N/A	N/A	NO	NO	NO	NO	NO
Fitness and Health for Black Women (FHBW)	To make a safe haven for black women to discuss getting fit and healthy. Founded: January 15, 2015	6, 993	N/A	N/A	**YES** *Approx. 146 posts in past 30 days*	N/A	N/A	NO	NO	NO	NO	NO
Fitness for Beautiful Black Women (FBBW)	If you're looking for motivation and encouragement, during your fitness journey and you own a Fitbit. We will gladly accept you. This group is for women of color only. Founded: May 17, 2017	882	N/A	N/A	**YES** *Approx. 547 posts in past 30 days*	N/A	N/A	NO	NO	NO	NO	NO
A Black Woman's Journey to Weight Loss (ABWJTWL)	The purpose of the group is to motivate and encourage women from all over the world to enjoy a healthier lifestyle one day at a time. Founded: N/A	N/A	658	654	**NO** *Approx. 9 posts in past 30 days*	N/A	N/A	YES	NO	YES	YES	NO

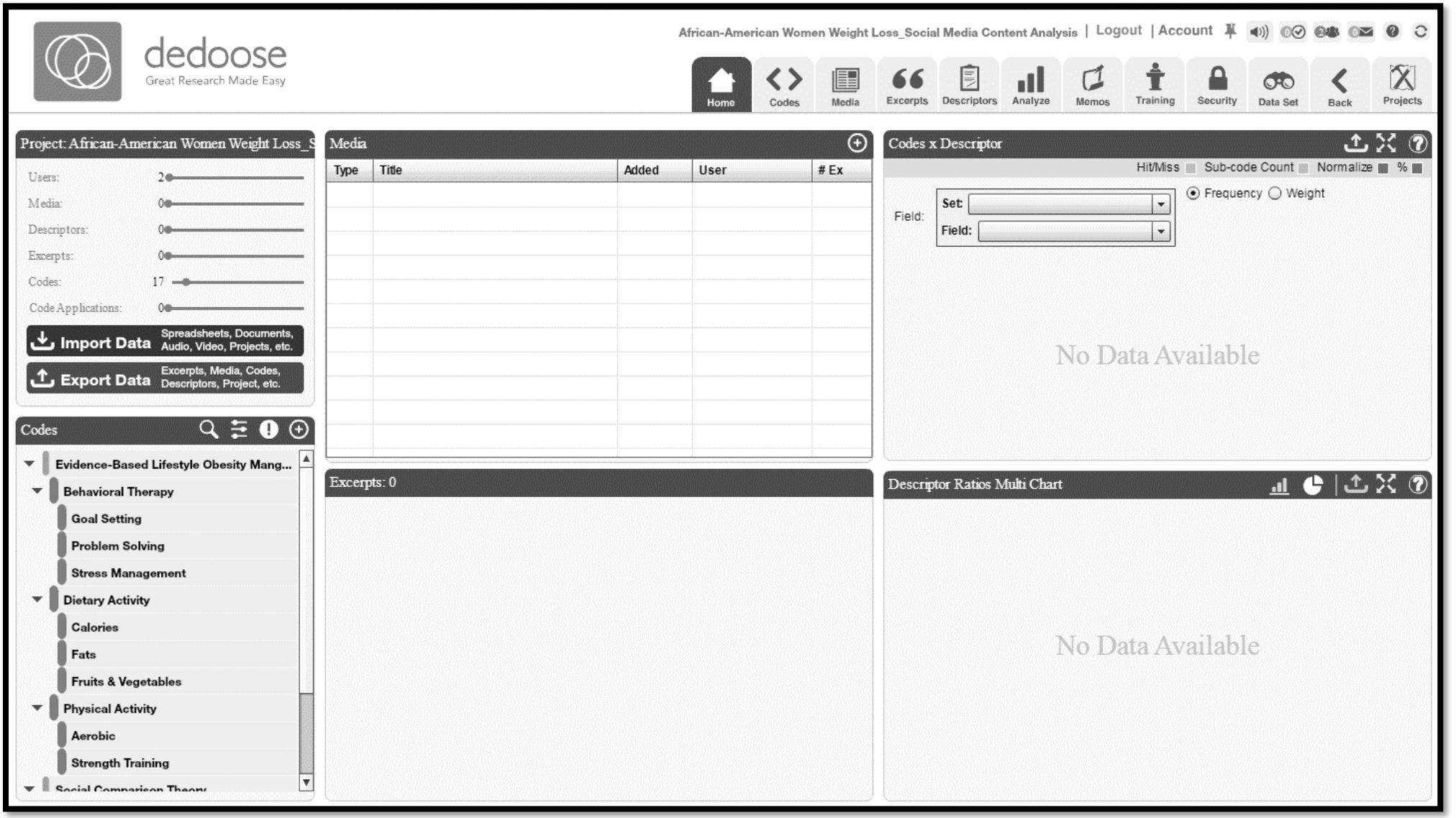
Appendix E

Table 11. Sample Selection: Excluded Social Media Communities

		FACEBOOK				INSTAGRAM		BLOG	OTHER SOCIAL MEDIA			
Title	Mission	Total Members	Total Followers	Total Likes	100 Publically Avail. Posts within 12 months	Total Followers	# Public Posts	YES/NO	SNAPCHAT	TWITTER	PINTEREST	YOUTUBE
Black Women Losing Weight (BWLW)	The group is meant to be a place of inspiration for women who are on a weight loss journey. Whether you've lost the weight, want to lose it, are in the thick of the fight...we welcome you. Founded: May 27, 2010	27, 610	951, 732	962,438	**YES** *Approx. 263 posts in past 30 days (Posts only accepted on Tuesdays & Thursdays)*	304, 000	6,250	YES	NO	YES	YES	YES
A Black Girl's Guide to Weight Loss (BGG2WL)	Sharing the story of one woman's journey of learning more about health, wellness, fitness and most of all, learning to love her body! Creating a place where women can come together and learn about ourselves and our health together- becoming healthy and happy through support, accountability, and responsibility. Founded: July 19, 2009	N/A	131, 823	135,210	**YES** *Approx. 50 posts in past 30 days*	N/A	N/A	YES	NO	YES	YES	NO
Weight Loss and Fitness forMelanin Beauties (WLFMB)	This group is for Melanin Beauties who are looking for the inspiration to shed some pounds, gain some muscle and embark on a healthy lifestyle! Whether you are in shape or looking to get there, let's help and inspire one another to reach our goals! Founded: July 6, 2017	65, 407	N/A	N/A	**YES** *Approx. 1334 posts in past 30 days*	N/A	N/A	NO	NO	NO	NO	NO
Black Women Do Workout! (BWDW)	To help decrease the risk of many obesity related issues including: heart disease, type 2 diabetes and high blood pressure (leading diseases for African-Americans) by promoting the health benefits of athletic exercises. Grassroots effort for promoting and championing Black women around the world who are determined to not be a part of disproportionate statistical data regarding health and obesity Founded: October 2009	N/A	511, 440	522, 676	**YES** *Approx. 50 posts in past 30 days*	301,000	2,860	YES	NO	YES	NO	NO

Appendix F

Figure 2. Dedoose Project Platform



Appendix G

Figure 3. Dedoose Code Tree

Appendix H

Figure 4. IRB Approval Letter

RADFORD UNIVERSITY

Research Compliance Office

Institutional Animal Care and Use Committee / Institutional Review Board

18-August-2020

TO:	Sarah Johnson
RE:	Exemption Approval
STUDY TITLE:	Examining Weight Loss Support Messaging Among African-American Women: A Content Analysis of Social Media Interactions
IRB REFERENCE #:	2020-224 / FY20-135
SUBMISSION TYPE:	Initial Submission
ACTION:	Approved
DECISION DATE:	18-August-2020

The above-referenced study has been approved by Radford University's Institutional Review Board (IRB). A copy of your approved IRB protocol is available for your records in IRBManager under your dashboard of active protocols.

Your study has been approved under Exempt Category 4: Secondary research for which consent is not required. Detailed explanations of the exempt review categories are available on the Research Compliance Office webpage.

Should you need to make changes in your protocol, you must submit a request for amendment for review and approval before implementing the changes. Amendments must be submitted via the IRBManager system. Please contact our office for assistance, if needed.

As the principal investigator for this project, you are ultimately responsible for ensuring that your study is conducted in an ethical manner. You are also responsible for filing all reports related to this project.

If you have any questions, please contact the Research Compliance Office at 540.831.5290 or irb-iacuc@radford.edu. Please include your study title and reference number in all correspondence with this office.

Good luck with this project!

Anna Marie Lee

Anna Marie Lee, MHA, CPIA
Research Compliance Manager
Radford University
Irb-iacuc@radford.edu
https://www.radford.edu/content/research-compliance/home.html

Radford University IRB
Approval Date: 18-August-2020

Appendix I

Figure 4. Target Weight Loss Chart

What's Your Target Weight?

My Current Weight (pounds)	My 12-Month Goal Weight	My 6-Month Goal Weight	Pounds to Lose Each Month
130	117	124	1.1
135	122	128	1.1
140	126	133	1.2
145	131	138	1.2
150	135	143	1.3
155	140	147	1.3
160	144	152	1.3
165	149	157	1.4
170	153	162	1.4
175	158	166	1.5
180	162	171	1.5
185	166	175	1.5
190	171	180	1.6
195	175	185	1.6
200	180	190	1.7
205	184	194	1.7
210	189	199	1.8
215	193	204	1.8
220	198	209	1.8
225	202	213	1.9
230	207	218	1.9
235	211	223	2.0
240	216	228	2.0
245	220	233	2.0
250	225	237	2.1
255	229	242	2.1
260	232	245	2.2
265	234	247	2.2
270	243	257	2.3
275	248	261	2.3
280	252	266	2.3
285	257	271	2.4
290	261	276	2.4
295	266	280	2.5

My Current Weight (pounds)	My 12-Month Goal Weight	My 6-Month Goal Weight	Pounds to Lose Each Month
300	270	285	2.5
305	275	290	2.5
310	279	295	2.6
315	284	299	2.6
320	288	304	2.7
325	293	309	2.7
330	297	314	2.8
335	302	318	2.8
340	306	323	2.8
345	311	328	2.9
350	315	333	2.9
355	320	337	3.0
360	324	342	3.0
365	329	347	3.0
370	333	352	3.1
375	338	356	3.1
380	342	361	3.2
385	347	366	3.2
390	351	371	3.3
395	356	375	3.3
400	360	380	3.3
405	365	385	3.4
410	369	390	3.4
415	374	394	3.5
420	378	399	3.5
425	383	404	3.5
430	387	409	3.6
435	392	413	3.6
440	396	418	3.7
445	401	423	3.7
450	405	428	3.8
455	410	432	3.8
460	414	437	3.8