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140 CHARACTERS TO SKINNY: SOCIAL SUPPORT PROVIDED BY COMMERCIAL WEIGHT-LOSS PROGRAMS VIA TWITTER

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140 CHARACTERS TO SKINNY: SOCIAL SUPPORT PROVIDED BY
COMMERCIAL WEIGHT-LOSS PROGRAMS VIA TWITTER

A Thesis
Presented to
the Graduate School of
Clemson University

In Partial Fulfillment
of the Requirements for the Degree
Master of Arts
Communication, Technology & Society

by
Sarah Arbogast
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Accepted by:
Dr. Karyn Ogata Jones, Committee Chair
Dr. Darren Linvill
Dr. D. Travers Scott

ABSTRACT

The state of healthcare in the United States is changing. Amidst this change, there is a debate as to whether health is a public good or if health is a private matter. This change and debate challenges health professionals to rethink the way we go about planning health interventions to better address the many public health issues looming the general population today. The recent rise of obesity and at-risk weight in the United States is a major epidemic that has yet to be resolved. There are many approaches to addressing weight management and for many, public health campaigns have not supported lasting behavioral change. Some have looked to the online scale and contracted the support services of popular commercial weight-loss programs for help attaining an ideal weight. Commercial diet and weight-loss programs such as Weight Watchers and Jenny Craig have integrated new media into their communication strategy. These programs have the capacity to support the needs of a wide range of participants while providing customized support through a variety of media. This study focuses on how commercial weight-loss programs use Twitter to facilitate support.

This study seeks to better understand how three major commercial weight-loss programs use Twitter as a starting point for future research discovering industry best practices. Through analysis using an adapted version of the Social Support Behavioral Codes (SSBC) - originally employed by Curtron's and Surh

(1992) – this study was able to make sense of commercial weight-loss program Twitter use. The results of a content analysis of program tweets (n=1,172) show potential for Twitter to be a valuable tool when integrated into health campaigns. Results also show that commercial weight-loss programs were able to provide all five major themes of support described in the SSBC. *Informational support* and *network support* were the predominant themes used by the programs, but the programs did not use the themes of support the same way. The results reported from this analysis make way for future studies in the effectiveness of commercial weight-loss program support. Eventually, these findings will lead to greater practical application of best practices for providing support to those suffering from various diseases using Twitter.

DEDICATION

There are several individuals who I would like to dedicate this thesis too. This group of people has helped guide and support me beyond recognition over the past twenty-four years. I would like to dedicate this thesis to my family. Specifically, I dedicate this to Robert Arbogast II, Rebecca Arbogast, Robert Arbogast III, Donna Arbogast, Sondra Guthrie and Charles Smith. I would also like to dedicate this thesis in memory of Robert Arbogast I and Thelma Smith. We are a strange bunch and you have all supported me beyond words. Thank you for keeping me fabulous and motivating me to always stay true to myself.

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CHAPTER ONE

INTRODUCTION

The line between personal health and public health in the United States is unclear. Health is situated on a continuum between a being public good and being a private lifestyle choice. It is clear that the democratization of healthcare will invoke drastic changes in the way we think about health and force us to be more critical when designing health interventions. While arguments for and against healthcare reform are omnipresent in political, medical and popular discourses – the reality is that change is happening and an individual’s health contributes to larger public concerns. This study moves the conversation of health forward by looking at a public health concern through the lens of successful commercial practices. The way consumers interact and relate to their products today is more integrated now than ever, given the rise in computer-mediated communication and social networks. This is the first step towards establishing best practices in health communication based on communication research, commercial practices and the need to change the way we communicate to the general public today.

One epidemic that is inescapable and completely preventable is obesity. Popular media’s depiction of the ideal body image (Cash, 1993, Bordo, 1993, Thomsen, Michelle & Brown, 2002) and the growing diagnosis of obesity in the United States (Ogden, Carroll, Kit & Flegal, 2012) set an environment

encouraging attention to weight and weight-loss. There are health related and aesthetic related motivations that have a role in weight management (Cheskin & Dosnze, 2001). The obese and at-risk weight population is not homogeneous, varying in age, gender, health status and self-perception (Holle, 2004; Matz, Foster, Faith & Wadden, 2002). The range of weight management motivations and demographics within this population makes planning and implementing effective weight-loss programs and public health interventions complex.

A Costly Epidemic

The growing incidences of at-risk weight and obesity in the United States pose a threat to overall public health. The direct cost of obesity in the United States in 1995 was over 70 billion dollars (Colditz, 1999). Direct impact from government spending is only growing. In 2011, the Society of Actuaries reported 270 billion dollars in to total economic cost as a result of at-risk weight and obesity (McKeown, 2011). This resulted in excessive medical care costs, excessive mortality and loss of productivity in the workforce (2011). With current changes in public health and healthcare, obesity and at-risk weight trends will impact every person in the United States from quality of care to cost of care. This public health example is where this study is grounded.

The obesity and at-risk weight epidemic - similar to other prominent public health disparities - can benefit from public campaign and intervention. Extreme diversity within this pool of individuals can make creating campaigns difficult.

Having a large target audience builds barriers to successful public health intervention surrounding weight-loss. Parvanta, Nelson, Parvanta & Harner (2011) explain:

While we would like to help everyone with a particular health problem by providing “everyone” with the same prevention information, a one-size-fits-all approach works no better in public health than it does for clothing. (p.149)

There are several contributing influences that contribute to weight gain. These influences vary across the general population including age, gender, region, biological disposition and self esteem to name a few. This is a situation where health interventions must choose between doing the most amount of good for the most amount of people or targeting the groups at the highest risk level. This is not an easy choice.

The Centers for Disease Control and Prevention reported that nearly 35% of the U.S. adult population met the criteria for obesity between 2009 and 2010, with likelihood for diagnosis increasing with age (National Center for Health Statistics, 2012a). While these recent statistics are alarming, the epidemic is not static to U.S. adults and is a growing concern among U.S. adolescents. Nearly 17% of children and adolescents in the U.S. met the criteria for obesity between 2009-2010 (National Center for Health Statistics, 2012b). Data suggests that adolescent boys are more likely than adolescent girls to meet the criteria for obesity (Ogden, Carroll, Kit & Flegal, 2012). Holle (2004) argues that there has been a lack of interest in studying body-image in men stating, “...some men wish

to *lose* weight as do many women, while other men desire to *add* to their size, weight, and muscle mass” (p.99). Caloric intake, exercise and lifestyle choices all factor in the maintenance of health and weight to attain a popularized ideal.

Centers for Disease Control and Prevention (2012a) surveillance, tracking the spread of obesity over the past decade sheds some light to diversity in diet and weight management specific to geographic region. Regionally, data shows cases of at-risk weight and obesity heavily concentrated in the Southwest U.S. with cases growing drastically over the past decade. This data uncovers some of the many contributing factors for understanding weight gain, including environment, socioeconomic status and culture (Surgeon General, 2004).

While extreme caloric intake is a clear issue, this population is also sensitive to potential negative impacts of health intervention. Trends in extreme food aversion - including those who suffer from various eating disorders like anorexia or bulimia - show major polar extremes in U.S. food consumption. Public health intervention and addressing obesity can have adverse affects. Specifically, recent health intervention employed in Georgia had the potential to influence children who are at healthy weights adversely (National Association of Anorexia Nervosa and Associated Disorders, 2012). Anorexia Nervosa and Related Eating Disorders (2012) reported that 1 in every 100 young women has anorexia and 4 in every 100 college-age women have bulimia. Age, gender, self-esteem, perfectionism and peer pressure can all influence extreme weight-loss

tactics demonstrated by those suffering from eating disorders (Sheldon, 2010). The line between healthy weight and underweight is less clear and stigmatized than healthy weight and overweight.

Approaches to Weight-Management

There are alternative approaches to weight-loss beyond traditional dieting. Pathologic dieting methods like consuming laxatives, intentional vomiting or consuming appetite suppressants are common unhealthy pathologies for weight management (Polivy & Herman, 1987). These methods define weight as a disease or sickness that can be cured through medications and regiment. The use of medicine as a device of bodily control is an example of Western medicine and the medicalization of society (Conrad, 2007). The use of the cosmetic surgeries to lose weight is a more extreme example of weight and body management using medicine (Balsamo, 1999). Unlike the listed pathological dieting methods, these drastic surgeries are popularly accepted as healthy, being the result of physician consultation and approval (Balsamo, 1999). While medicalization can be a successful tactic, the excessive and non-recommended pathology for a physical condition can yield harmful results. This study opens doors for a better understanding of health past this drastic medicalization of the body.

This study also refers to health disparity outside what society constitutes as normal. Parrott (2009) explains that normal is subjective and that culture

normalizes poor health. There is of body of feminist knowledge surrounding the tyranny of weight-loss (Bordo, 1993). Weight-loss is a way to control the body to make it fit a societal norm. When the body does not fit cultural norms that are reinforced by media (advertising, movies, commercials, celebrity), this can lead to a negative self-image and body hatred. "This was once thought to be a "body image distortion" unique to those with anorexia nervosa. We know that seeing oneself as "too fat" is a norm of female perception" (Bordo, 2000, pp.69-70). Bordo (2000) also explains that this self-hatred is not limited to the female body as a result of societal body ideals. Weight-loss is a disciplinary practice over the body to align with the societal standards; weight-loss is an attempt to normalize the body prioritizing aesthetics over health.

Cases of obesity are growing and widely accepted, blurring the line between what is normal and what is healthy. Parrott (2009) also explains that it may be normal to be overweight, but that does not make obesity healthy. Fat Studies is an emergent body of knowledge accepting and liberating obese and at-risk bodies. Wann (2009) briefly overviews Fat Studies and explains that the movement rethinks the weight-related belief systems. Wann (2009) explains, "If you believe that obesity is a disease and that fat people cannot possibly enjoy good health or long life, then you are not doing fat studies." (p.ix). While there has been arguments legitimizing the emergent field of Fat Studies, this study seeks to better understand weight-loss a productive effort for the betterment of

our soon-to-be universal health system. The intervention is vital to addressing health issues that have yet to be addressed with major success. This study agrees with medical discourse and considers obesity to be a disease and at-risk weight a pathway to disease. Successes reaped by commercial weight-loss programs show that there are ways of addressing weight-loss outside medicalization and harmful pathologies. Successful intervention is possible.

Studying Commercial Weight-loss Programs

It is clear that modeling successful health intervention to promote healthy weight is a highly complicated task. Public intervention, designed to do the most good for the largest population possible, lacks the customizable nature and message adaptability that commercial weight-loss programs can produce for a customer payment. With the advent of free media – like Facebook and Twitter – health interventions have chance to provide the right marketing mix at a low cost. Therefore, this study looks to popular commercial weight-loss program use of new media as a point-of-interest. The selected programs used in this study and rationale for choosing them is better explicated in later in the text.

To help overcome stress as a result of weight-loss, individuals seek support. Regardless of the motivation behind achieving a healthy weight, supportive messaging can be a driving force for long-term change. Advances in computer-mediated communication have opened doors for new approaches for support seeking through an anonymous, multidirectional and seemingly

boundless space. Therefore, this research seeks to understand the value of micro-blogging as source of supportive communication for active participants in commercial weight-loss programs. The online component of support does not mean that support needed by program participants is any more or less complex than other means of support. Support-seeking behavior is varied based on the needs of the individual and their preferred space of supportive interaction. This study recognizes the significance of both the message and the medium- arguing a need to study one medium of communication alone - adding to the overall conversation of social support. This will lead to future research looking into how different media can be designated to provide different types of support.

Computer-mediated support serves as a large platform to meet the needs of a large population. Weight-loss intervention and support has been addressed through other traditional blogging and online forums in the past. These studies - later discussed in the literature review - have not fully discussed the potential of micro-blogging forums. Just as blogging has proved to be a valuable technology for facilitating support, micro-blogging has the same potential if best practices can be established. The literature further explores other health disparities and health interventions addressing HIV, cancer, disability and mental illness. This precedent set in the literature makes way for fruition in online media research as popular media outlets are adopted. Specifically, this study seeks to better understand the use of Twitter as a source of support used by commercial weight-

loss programs to reach program participants. Rather than focusing on the fallbacks of online media, this study focuses on how the media can be better leveraged to provide the best mix of support possible.

This study uses content analysis of messages sent by commercial weight-loss programs via Twitter using the Social Support Behavioral Codes employed by Cutrona and Surh (1992). Cutrona and Surh (1992) provide a broad foundation for coding supportive messages sent by commercial weight-loss programs that considers a breadth of literature surrounding social support. Conclusions from Sanford's (2010) study on social support for the morbidly obese using blogs helped to better adapt this support taxonomy for weight-loss support online. This provides a framework for a deductive thematic analysis of program Twitter feeds. This research furthers the study of social support via micro-blogging by popular commercial weight-loss programs.

Twitter is the channel of focus in this study. This medium was chosen considering the platform's rapid adoption, wide popularity and potential to serve as an outlet for social support for a relatively small unit of society. This highlights new communication tools and accepts new media as a tool for health practices. Microblogging opens the door for an inexpensive, accessible application of support in preventive care. This study recognizes that Twitter is only one forum in the vast array of the Internet tools. The purpose of this study is to better make sense of Twitter as an outlet of program participant communication for three

highly rated commercial weight-loss programs: Jenny Craig, Weight Watchers and Biggest Loser Diet.

CHAPTER TWO

REVIEW OF LITERATURE

This study was designed to uncover how commercial weight-loss program use Twitter to support their program participants was designed based on knowledge of communication technologies and the broad application of social support in communication research. The following review of literature overviews the foundations of this study, leading to the theoretical framework for identifying supportive messages sent via Twitter. First, this reviews the development of blogging and micro-blogging, then the popularity of Twitter in communication-based research since its conception in 2006. Second, this review identifies how this study punctuates social support in communication research. Third, this review uncovers the use of social support as a basis for understanding health communication acts specific to chronic illness and weight management via Internet communication. Last, this briefly reviews application of the Social Support Behavior Codes, which is the device used to help answer the research questions posed at the end of this chapter.

Blogging & Micro-blogging

The Internet is a platform designed for sharing information and is the debated cause for the decline of traditional media (Himmelboim, McCreeey and Smith, 2013). Similar to earlier communication technologies, the Internet has developed unintended uses and consequences (Baym, 2006). It is suggested

that this technological expansion has laid the framework for the democratization of media (McChesney, 2007; Singer 2005). McChesey (2007) explains that society is at the forefront of a communication revolution where the power can be put in the hands of citizen. While changes in communication technologies will inherently change the way society interacts, stewards of this revolution can also promote political and journalistic revolutions to align (2007). Now there is a path for scholars to promote new media as a forum for public health. Regardless of the original purpose and recent consequence of Internet communications, the possibilities of sharing media without wires and even via mobile device has paved way for productive expansions of Internet-based communication. The rise in new media usage might not be the moral panic it has been made to be.

Blogging

Blogging is a communication that was created as a result of the expansion of Internet technologies. How blogs are created, used and participated in is not consistent to any one standard. Broadly, a blog is an accumulation of chronologically organized posts found on the same host page (Doctorow, Dornfest, Powers, Trott, & Trott, 2002). The content on a blog page can be linked or tagged to other online content and certain blogs allow for reader participation (2002). This explanation is broad because blogs are not one in the same. The capabilities of a blogs is limited by the host website capabilities. Exploring different host websites like Wordpress or Blogger, show that not all blog

platforms are the same and may require varying skillsets to use them. Coleman (2004) explains how blogs have changed into an easy-to-build, accessibly template for public disclosure. The accessibility and general ease of use of blogs creates an inclusive and accepting environment for users.

Blogging popularity increased during the 2004 Presidential Election and with that launched blogging as journalistic tool for professional and citizen participation (Scott, 2008; Singer, 2005). Online information sharing is a way to increase creative expression across fields (Buckingham, 2006). Being easy-to-use and a forum for sociopolitical conversations changes how people can participate. Lasorsa, Lewis and Holton (2012) explain that the blogs, “...by [their] inherently participatory nature, offer a chance for journalists to achieve greater accountability and transparency...” (p.21). Blogs have transformed into a weblog for political conversation and news.

Outside politics, blogging can be described as a means for *mass-self communication*. Castells (2009) explains *mass-self communication* as communication that is self-produced and self-directed. This description of mass-self communication leaves room for interpretation and debate. However, recent blog information reported by the Pew Institute stands to reason for the *mass-self communication* description. The Pew Institute reported that 78% of American adults use the Internet (Pew Internet & American Life Surveys, 2011). Of this population, nearly 10% participate in reading blogs and nearly 10% work on or

create their own blogs (Pew Internet & American Life Surveys, 2011). Technorati (2011) - an online aggregate of the blogosphere - reported an increase in bloggership from 2010 to 2011. Technorati holds over 70 million blogs and that number is growing everyday. Technorati (2011) also reported their findings concerning the motivation for blogging after conducting a survey of bloggers. The survey reported that 60% of bloggers fit the criteria of *hobbyist*. A *hobbyist* blogs for personal enjoyment and disclosure rather than for the sake of journalism or as a paying job. Those who blog as a hobby align with Castell's (2009) understanding of blogging as a form of *mass self-communication*.

Micro-Blogging

Blogs have shown a rise in use, onlookers and credibility; over the past decade they have also been mimicked and shorted into micro-blogs. Micro-blogs are public forums for web logging that are designed in a way that decreases the quantity of content shared in a single post when compared to a traditional blog. Twitter is arguably the most popular micro-blog in use today having 140,000,000 active users producing 340,000,000 posts per day worldwide (Twitter, 2012a). Micro-blogging leverages several of web communication capabilities in one platform. These capabilities include blogging, text messaging, away messages, linking and multi-media sharing.

Twitter entered the online social scene in 2006 (Twitter, 2012a). This short-messaging forum was originally created as an application for cellphones

(Lasorsa, Seth, Lewis and Holton, 2012). Twitter has transformed into a social networking website that is global and participatory (2012). The Twitter *About* webpage (2012a) states, “Twitter is a real-time information network that connects you to the latest stories, ideas, opinions and news about what you find interesting. Simply find the accounts you find most compelling and follow the conversations” (Twitter, 2012a). Twitter is designed to enable users to choose topics and influencers for real-time information updates by way of *tweet*.

A tweet is the actual text posted on the forum organized in reverse chronological order. A tweet is limited to 140 characters. Tweets are shown on a user’s feed in reverse chronological order, similar to how a blog orders content. Users can subscribe to other feeds and send messages directly to other users using the @-mention feature. The main difference in content organization between a traditional blog and Twitter is that tweets are ordered next to other tweets generated by several users simultaneously on a twitter page, while blog content is generated from a host and posts generally allow comments from readers. This means that a Twitter feed is always changing, contributing to a much larger conversation of all users rather than one host. These features enable Twitter to be a conversation platform.

Mashable (2012), a popular news source for communication professionals, reported that the average Twitter user spends nearly twelve minutes on their feed. Mashable (2012) also reported that 36% of the average user on Twitter

tweets daily. This argues that Twitter is just as much - if not more - of an information source rather than an engagement platform. Users actively go on Twitter to scan content rather than just share. Further, the Twitter About webpage (2012a) explains that the value in the platform is not in personal production of information. The value is based on how users understand the information being produced.

Twitter Research

Recent works surrounding micro-blogging websites, have explored the credibility and perceived influence of this medium (Alloway & Alloway, 2012; Liu, Liu & Hong, 2012; Schmicrback & Oeldorf, 2012). Schmicrback and Oeldorf (2012) explain that Twitter – despite recent rise in popularity - is perceived to be less credible than other news and media outlets. The *New York Times* print media and website media were both perceived to be more credible than the *New York Times* official Twitter feed (2012). This study shows that the channel of communication is just as important than the source. This research shows that Twitter might not be the best outlet for every topic, but can be effective when used in collaboration with other media.

Recent research in communication and Twitter is limited. This is not surprising given how relatively new Twitter is in comparison to other popular online networks like Facebook. Twitter supplies researchers with a wide pool and large quantity of data. Big data is the product of modern informatics using various

communication technologies (Body & Crawford, 2012). The use of big data has been argued for and against for academic research (2012). Aggregates of communication technologies are considered big data, making Twitter a debated forum for studying human behavior. While there is controversy surrounding the use of Twitter in academic research, this study sees the outlet as a forum for popular discourse and a space that enables the users.

Many recent studies using Twitter have been fruitful, regardless of the debates in academic research. Lovejoy, Waters, and Saxton (2012) surveyed 73 non-profit organizations' Twitter accounts. In this analysis of over 4000 messages, Lovejoy, Waters, and Saxton, (2012) were able to see the depth that 140 characters can convey when utilizing the various capabilities that Twitter has to offer. Twitter capabilities include hashtags, links, direct-messaging, hyperlinks and generating a following. Hashtags are a way to join a conversation under the same topic. Followers are the user's audience who have actively elected to be updated by user content. More importantly, Lovejoy, Waters, and Saxton (2012) discovered that tweets serve more purpose as a one-sided communication tool. Lovejoy, Waters, and Saxton, (2012) surveyed Twitter accounts of non-profit organizations and found that Twitter was used more for disseminating information than engaging in conversation. This finding suggests that Twitter is a source of information, not just a tool for individual users to produce content alone.

Research studying Twitter as a journalistic tool has also made meaningful

contributions to the Twitter conversation. Cozma and Chen (2013) explored Twitter as a forum for breaking international news. They found that Twitter was a tool for broadcast correspondents to discuss current events and real-time news as well as a way to promote their work. The study showed that print-specific communication is more opinion-based than Twitter. This study explains that Twitter is used differently within journalism when compared to print media. Cozma and Chen (2013) also explain that popularity of a Twitter feed is based on their longevity and use of Twitter-specific features like hashtags.

Much like earlier social media platforms, Twitter has also enforced online activism. Movements like Occupy Wall Street and Arab Spring are specific instances where Twitter has been used as a modern word-of-mouth for sociopolitical movements. Youmans and York (2012) explain that the use of social media in activist movements can both inhibit and constrain action. Youmans and York (2012) explored four cases where social media was used for sociopolitical reasons and the users were punished after government and host network surveyed their usage. While these cases were specific to areas of hostile political unrest, this study showed the negative consequences of online activism (2012). These consequences include limiting anonymity, prohibiting content and using social media as a tool of surveillance.

Strategic communication practices applied to Twitter have also been researched. Waters and Williams (2011) used content analysis of government

agencies' Twitter feeds to study how government agencies communicate with the lay public. This six-month analysis categorized content into four models of public relations (2011). Waters and Williams (2011) found that government agencies prefer traditional public relation strategies when using Twitter and were more likely to use already established models when disseminating information. Waters and Williams (2011) conclude:

As this study found, government agencies are using the micro-blogging service to serve a myriad of organizational communication needs. Although the dominant use of the service revolved around the agencies' need to release information in a one-way manner, it was also used to foster relationship growth with other Twitter users (p.361).

This study shows how Twitter can be used for disseminating information and to facilitate a network of interactive communication simultaneously.

Twitter is a conversation tool. Linvill, McGee and Hicks (2012) explored how colleges and universities used Twitter through a content analysis of 113 Twitter feeds (2012). This study looked to see if the universities and colleges were employing principles of dialogical communication. The study showed that universities and colleges primarily use Twitter as a news feed for the institutional lay public. The study found that the universities and colleges surveyed in the study were successful using Twitter for disseminating information. However, the universities and colleges were not successful in using Twitter to foster conversation and dialogue (2012). Content analysis of organizational Twitter feeds has started to trend in Twitter-specific research.

Social Support

Social support is a phenomenon of study that has been long applied and across fields (Burlison, Albrecht, & Sarason, (1994). Bureson et al. (1994) explain social support as a form of communication which - when studied - explores the many facets of supportive action. Supportive action has a clear place in exploring mental and physical well-being (Albrecht, Burlison, & Sarason, 1992). This is a broad phenomenon of study than can be applied to several contexts outside physical health. This study does not generalize the use and effectiveness of social support across different populations suffering from health disparity, but recognizes patterns. Expanding the adaptations of social support to new technologies opens an even larger pool of application and is the driving justification for this study.

The use of blogging and other online social groups have been argued to be a form of alternative medicine (Owen, Boxley, Goldstien, Lee, Breen, & Rowland, 2010). For example, Alcoholics Anonymous is a support group for those diagnosed with alcoholism. Social support used by this group is traditionally thought to be based on group meetings and one-on-one sponsorship. Now, AA has found a space online allowing for expanded social support (Alcoholics Anonymous, 2012). This study adopts the understanding of social support as health communication action that facilitate well-being. There is value in expanding the way social support is provided through online tools.

Online support still has some notable shortcomings. Haythornewaite (2002) explains that new media seems to reduce cues, social involvement and richness of emotional support compared to face-to-face communication. However, Haythornewaite (2002) also rationalizes the use of new media as a means of social support because the ties built via new media can still be strong. To address this confusion while studying social support, it is important to consider message quality and user intention.

Haythornewaite (2002) also highlights the nature of a network of members and explains how new media allows for rich ties to form through online communication networks.

Haythornewaite (2002) also notes that the influence of the medium can be easily overlooked. To study computer-mediated communication in the exploration of support networks without focusing on the medium itself would be deterministic and not adaptive to the ever-changing nature of communication. Online networks like Facebook, Twitter, Google+ or TUMBLR have different capabilities and different demographics of users. The medium, the messages and the evolution of users influence the support being sent and received.

Social Support and Health Disparity

Support for health disparity paves way for a breadth of research potential. Brashers, Neidig and Goldsmith (2004) explore the role of social support and uncertainty management among individuals suffering from HIV/AIDS. After a

series of focus groups, the researchers found the importance of support networks for uncertainty management surrounding an illness. Uncertainty is managed through information seeking and avoiding, providing instrumental support, facilitating skill development, giving acceptance and validation, allowing ventilation, and encouraging perspective shifts. Brashers, Neidig and Goldsmith (2004) saw instances of support through family, friends, peers and others alike. More importantly, Brashers, Neidig and Goldsmith (2004) were able to report that both receiving and giving support were effective for uncertainly management. This study explored a health disparity during a time when care was limited and coping publicly was taboo. Recent studies of support for those diagnosed with HIV/AIDS may not show the same results today.

Those diagnosed with HIV/AIDS are suffering from a chronic long-term illness. Those diagnosed with cancer are also suffering from a chronic illness and seek social support for both physical and mental well-being. Sen (2008) explored how individuals diagnosed with cancer use online peer support groups. Sen (2008) saw a trend for using online health support groups and how the motives for participation in these groups were different than other groups. This trend shows that individual personality traits may be less scrutinized when using online groups. Sen (2008) also found that not all members of the cancer support group are the same. The participants varied in types of cancer, stage of cancer and if the participant was a survivor. This study notes that the medium of online support

groups may influence the user personality and their health motivation.

This studied shows how that the severity of diagnosis and personal experience influence the support needs. Sen (2008) reported that those who identified as survivors and those who are current cancer patients differ in posting activity. Those who consider themselves survivors were more likely to post more frequently. This showed a difference in media use within the group. Sen (2008) also noted the importance of meeting emotional and informational needs through support groups, which is not surprising. More importantly, Sen (2008) found that both survivors and patients found more importance in the online support groups than face-to- face support groups.

Online support groups are common sources for support seeking behavior. Their availability and ease of use reason that other computer-mediated communication channels might have potential for facilitating social support. Srivastava and Moreland (2009) explore how cancer patients use personal blogging as a form of social support through content analysis. Using the PACE system and Cutrona and Surh's Social Support Behavioral Codes, Srivastava and Moreland (2009) analyzed the content and commentary of *cancer blogs* for the type of support provided and given on these blogs. The study showed that bloggers use their blog more for posting about everyday life experiences rather than medical experiences. Also, the commentaries posted in the blogs were mainly emotional support and informational support. Srivastava and Moreland

(2009) also note that not all blog posts receive commentary. Still, the act of blogging and the ventilation process should not be overlooked, because those types of support were also apparent in the study.

In the context of chronic illness, the preceding scholarship shows the existence of support groups and general perceived effectiveness of new media outlets when seeking support. Lee and Hawkins (2010) looked to uncover whether the needs of the patient were really being met when using new media outlets. After teaching 122 women diagnosed with breast cancer how to use Internet support groups, the researchers observed the group to see if needs of the women were being met online. The group was periodically surveyed and Lee and Hawkins (2010) were able to show how emotional and information needs could be met online using support groups and that those who felt isolated offline were able to meet unmet needs that they would not have been able to otherwise. This study shows that there is meaning to the message and the medium.

While chronic illness is high priority when studying social support. Sanford (2010) expanded social support beyond chronic illness and studied social support concerning the morbidly obese and weight-loss efforts. Morbid obesity is a disease and given the recent rise of obesity in the United States making it relevant in health-related studies. The group of individuals in this study were seeking support to help lose 100 pounds or more.

The study predicted that blogging was a supportive tool in the

accomplishment of weight-loss. Sanford (2010) used a qualitative survey completed by bloggers (n=50) to test her prediction. The survey explored topics of blogging, weight-loss, and the influence of blogging in productivity of weight-loss. In addition to the survey, Sanford (2010) also analyzed blog content over a four-month period. The study saw an emergence of four themes of support, which included empathy, venting and advice seeking, validation, and accountability. Sanford (2010) was able to claim that online messages can be supportive and defends blogging as a means for social support for the morbidly obese.

Rains and Keating (2011) looked broader at the value of blogging to marshal social support across health contexts arguing that blogging can build strong ties. After identifying individuals who actively authored their own blogs in relation to a health condition, the researchers sent out a survey instrument measuring sample demographics. Next Rains and Keating (2011) sent blogger the medical outcome survey (MOS) to measure perception of support online and from family and friends. The study found that blogging about a health condition may provide social support to readers and writers. In this, the researchers found that frequency and commentary on posts factored into perceived support. The nature of a blog allows for increase sharing and allows strong ties to develop between sender and receiver while providing multiple types of support. This study was primarily focused on blog readers with well-developed communities, leaving

room for more research surrounding the sender experience in less developed communities.

Literature in support and mediated-communication shows that there is not one way to study social support online. The content, the user and the medium all influence support received. Studying supportive messages sent via Twitter narrows the scope to a demographic of users. The literature shows that studying a specific medium can lead to valuable results and user participation can help foster a network of social support. Moreover, specific to support-seeking behavior motivated by health disparity, using new media outlets expands the breadth of a support network and has potential if used effectively.

Social Support Behavioral Codes

While there are several ways to deduce messages into categories, this study looks specifically to the Social Support Behavioral Codes as a guiding mechanism for organizing supportive messages. Cutrona and Surh (1992) studied the interactions between 30 married couples when discussing a stressful life event when developing the SSBC. They coded the frequency of supportive behavior using this mechanism and used the Stress Dimensions Scale to better understand support effectiveness between the married couples. Cutrona and Surh (1992) observed and coded interactions between the participants and asked participants to complete a survey measuring satisfaction with the supportive exchange. Table 2.1 shows the breakdown and definition of the supportive

behaviors used in the SSBC.

Table 2.1 Brief Definitions of Social Support Behavioral Codes

Support type	Purpose of communication
Informational Support	
Suggestion/Advice	Offers ideas and suggests actions
Referral	Refers recipient to some other source of help
Situational appraisal	Reassesses or redefines the situation
Teaching	Provides detailed information, facts, or news about the situation or about skills needed to deal with the situation
Tangible Assistance	
Loan	Offers to lend the recipient something (including money)
Direct task	Offers to perform a task directly related to the stress
Indirect task	Offers to take over one or more of the recipient's other responsibilities while the recipient is under stress
Active Participation	Offers to join the recipient in a action that reduces stress
Willingness	Expresses willingness to help
Esteem Support	
Complement	Says positive things about the recipient or emphasizes the recipient's abilities
Validation	Expresses agreement with the recipient's feelings on the situation
Relief of Blame	Tries to alleviate the recipient's feelings of guilt about the situation
Network Support	
Access	Offers to provide the recipient with access to new companions
Presence	Offers to spend time with the person, to be there
Companions	Reminds the person of availability of companions, of others who are similar in interests of experience
Emotional Support	
Relationship	Stresses the importance of closeness and love in relationship with the recipient
Physical affection	Offers physical contact, including hugs, kisses, hand-holding, shoulder patting
Confidentiality	Promises to keep the recipient's problem in confidence
Sympathy	Expresses sorrow or regret for the recipient's situation
Listening	Attentive comments as the recipient speaks

Understanding/empathy	Expresses understanding on the situation or discloses a personal situation that communicate understanding
Encouragement	Provides the recipient with hope and confidence
Prayer	Prays with the recipient

This study lays the foreground for identifying themes of supportive messages. Using the SSBC seen in Table 2.1, Cutrona and Surh (1992) were able to code over 1,400 supportive messages sent by the provider and explain effectiveness of support received by the recipient using survey results. The study found that the most common types of support provided could be defined as *emotional support* and *informational support*.

With the advent of communication technologies and popularity of hobbyist blogging, there is a clear pathway for social support to take place via emerging computer-mediated networks. Braithwaite, Waldron and Finn (1999) explored early emergence of supportive messages among individuals with disabilities through a computer based sharing board. Braithwaite, Waldron and Finn (1999) collected a series of messages among users and coded them as (1) *informational support*, (2) *tangible assistance*, (3) *network support*, (4) *esteem support*, and (5) *emotional support* based on Cutrona and Surh's category system. Coders made note of unique supportive behaviors as well. This study showed how support is varied and that not all messages are interpreted the same way across multiple media.

Braithwaite, Waldron and Finn (1999) were able to conclude that support networks allowed for high levels of giving and receiving social support. The

researchers found high frequencies of *emotional support* and *informational support*. Computer mediated support shows utility for individuals who otherwise would have limited access to face-to-face support networks. The researchers also noted the limitations of their research, given the requirement of access and the unattended influence that the anonymity of mediated communication may cause. Overall, this study showed that new media provides an alternative means for support seeking behaviors and can be deduced and studied using the proper mechanism.

More recently, the SSBC mechanism was adapted to emergent facets of online communication and support within the health context. This system has been adapted to communication among members of online support groups coping with Irritable Bowel Syndrome (Coulson, 2005). Coulson (2005) used the SSBC to study 572 messages posted to a computer-mediated bulletin board. Coulson (2005) used a deductive thematic analysis based on the five categories of social support used in the SSBC data analysis. The data showed that the main utility for those participating in online message board was to provide *informational support*. Coulson (2005) also concluded that *emotional support* was prominent when the recipient was experiencing a health stress outside of their control.

The SSBC has also been used to study messages sent through an online support group for individuals suffering from Huntington's disease. Coulson, Buchanan and Aubeeluck (2007) conducted a content analysis of messages

(n=1,313) using an adapted version of SSBC. Their data showed *informational support* and *emotional support* to be the most prominent among the online support group members. These results opened to an opportunity for physicians to employ these types of messages to enhance quality of care.

Braithwaite, Waldron and Finn (2009) adapted a version of the SSBC to study social support among individuals with disabilities. The continued use and variety of health contexts that the SSBC has been applied to attests to the reliability and adaptability of the mechanism as a guiding coding mechanism for studying social support online. The SSBC has been tested, used and easily adapted to fit the specifics of various health disparities. Given the nature of Twitter and the rise of content analysis to study Twitter, this study sees the SSBC as an ideal mechanism for exploring social support via Twitter.

Research Questions

This study is exploratory and is looking at the intersection between health and online communication. Given recent research using Twitter as a platform for data, there seems to be a tendency for organizations to use the platform as an information dissemination tool (Cozma & Chen, 2013; Linvill, McGee & Hicks, 2012; Lovejoy, Waters & Saxton, 2012; Waters & Williams, 2011). Organizations highlighted in the literature review were primarily non-profit and government funded – leaving room for expansion of study to for-profit organization.

Research specific to social support for those coping with illness and disability show that support is beneficial when it is interactive (Brashers, Neidig & Goldsmith, 2004). Regardless of the medium, informational support and emotional support are important for those seeking support to alleviate stress associated with chronic illness and disease (Sen, 2008). Studies exploring types of support provided online have shown significant trends in *emotional support* and *informational support* (Coulson, 2005; Coulson, Buchanan & Aubeeluck, 2007; Lee & Hawkins, 2010; Braithwaite, Waldron & Finn, 1999; Srivastava & Moreland, 2009). This spurs the first research question that this study was designed to answer:

RQ 1: How do popular commercial weight-loss programs use Twitter as a support mechanism for their Twitter audience?

Government organizations and public health intervention are for the public good. In the past, providing customized support to a large target audience is next to impossible. With the rise of new media – free and easily accessible – public health professionals have the chance to customize their marketing mix like commercial programs can. Recent obesity intervention has not made a significant impact, and we could learn from different commercial program successes. Given that the diet programs used in this study are not the same brand but still provide the same service, this study also asks:

RQ 2: Do the commercial weight-loss programs used in this study employ the

same social support strategy?

CHAPTER THREE

RESEARCH DESIGN AND METHODS

This study was designed to better understand how commercial weight-loss programs use new media as a conduit for providing social support to program participants. Participation in a commercial weight-loss program shows a desire to receive support, having paid for the service. Specifically, this study seeks to better understand the types of supportive messages crafted by commercial weight-loss programs for their program participants. This will make way for future research concerning perceived message effectiveness. The program-participant communication relationship mirrors the two-way marital relationships studied by Cutrona and Surh (1992) using their Social Support Behavioral Codes as a deductive mechanism for understanding support. The SSBC (1992) has been further adapted and validated exploring supportive messaging in various health contexts and by way of multiple communication media (Braithwaite, Waldron & Finn, 1999; Coulson, 2005; Coulson, Buchanan & Aubeeluck, 2007). This study uses an adapted version of the SSBC (1992) as a coding mechanism for content analysis by way of deductive thematic analysis. The SSBC (1992) was adapted to fit the parameters of weight-loss support and Twitter capabilities.

Content Analysis

Content analysis is a systematic way to view texts such as newspapers, websites, press releases, scripts, advertising and a number of communication

tools (Krippendorff, 2004). This method helps to reduce what may seem to be an unmanageable amount of data into a manageable set. Krippendorff (2004) describes content analysis as "...a systematic reading of a body of texts, images, and symbolic matter, not necessarily from the author's perspective" (p. 3). Moreover, Krippendorff (2004) defines content analysis to be "...a research technique for making replicable and valid inferences from texts (or other meaningful matter) to the contexts of their use" (p.18). Content analysis does not follow a single methodical protocol and requires understanding of the content before deducing and analyzing it.

This study employs deductive thematic analysis to examine texts as they align with five categories or themes of social support later defined in this chapter and seen in table 3.1. This method was employed by Coulson (2005) using the SSBC (1992) to identify instances of support online for those coping with Irritable Bowl Syndrome. Boyatzis (1998) explains that deductive thematic analysis is a way of seeing, making sense and analyzing information through patterns or themes. He explains, "Thematic analysis is a process to be used with qualitative information" (p.6). However, it is important to note that deductive thematic analysis "...is not another qualitative method..." ; it is a way to help make sense of qualitative information through translation into quantitative data (p.6). This study uses tweets crafted to support weight-loss efforts; deductive thematic analysis provides a clear path for helping to make sense of the messages in an

efficient way.

Sender: Selected Commercial Weight-Loss Programs

This study uses text produced by three commercial weight-loss programs, which include Jenny Craig, Weight-Watchers and Biggest Loser Diet. These programs were selected because they (1) are reviewed and ranked, (2) provide paid services and (3) are active Twitter participants. These three programs were initially selected being the top three ranked in the *U.S. World and News Report*, Best Diets 2013 in the Best Commercial Diet Plans category. The programs selected have active Twitter accounts linked to through their websites.

Biggest Loser Diet is a product of the National Broadcast Company (NBC) reality television show, *The Biggest Loser*. The series has completed thirteen seasons and is moving forward into season fourteen (NBC Universal Media, 2013). The diet and fitness plan combines a low-calorie diet incorporating fruits, vegetables, lean protein, whole grains and allowing some room for other caloric intake. The diet program also included regular exercise requirements. Zelman (2011), director of nutrition for *WebMD*, explains that Biggest Loser Diet was created using university obesity research, a dietician, a chef and multiple trainers that included celebrity Jillian Michaels. The diet plan homepage explains,

You don't have to be on the show to lose weight and start your own transformation! The Biggest Loser Membership gives you online access to The Biggest Loser diet and fitness program designed by our health and wellness experts - personalized to fit your goals and lifestyle. The Biggest Loser gives you all the tools, expert help and

community support you need to succeed (NBC Universal Media, 2013).

The plan can be adapted for special dietary needs, but requires attention to meeting nutritional needs. The show acts an extended example case of the diet encouraging audience participation at-home. The popularity and success of the television show reasons for a faithful and active fan base.

Weight-Watchers has accumulated fifty years of participants, research and weight-loss know-how to into their program (Weight Watchers International, 2013). Their new diet plan, Weight Watchers 360°, is advertised as a program that is made for the everyday person living in the real world. Their mission reads,

WeightWatchers.com Inc.'s fundamental mission is to bring over 40 years of Weight Watchers success to consumers online, helping them to lose weight safely and effectively and keep it off. At WeightWatchers.com, we accomplish this by combining the proven Weight Watchers weight loss plan with the very best online weight loss tools on the Internet (Weight Watchers International, 2013).

Much like Biggest Loser Diet, Weight Watchers 360° combines diet and fitness into the program (Weight Watchers International, 2013). Compared to those attempting to lose weight through self-help groups alone, those who participated in Weight Watchers were more successful in maintaining weight-loss efforts over a two-year period (Heshka, Anderson, Atkinson, Greenway, Hill, Phinney, Kolotkin, Miller-Kovach & Pi-Sunyer, 2003). More recently, Mitchell, Ellison, Hill and Tsai (2012) studied the effectiveness of Weight Watchers as part of Tennessee Medicaid (TennCare) from January 2006 through January 2009. Of

the 1,192 applicable participants, 21% lost at least 5% of their initial weight, resulting in clinically significant results (2012). Weight-Watchers is represented by a number of celebrity spokespersons. Spokespersons include Jenifer Hudson, Charles Barkley, Jessica Simpson and Hungry Girl - a celebrity blogger.

Jenny Craig is the top ranked diet plan in the *U.S. World and News Report*, Best Diets 2013 in the Best Commercial Diet Plans category (U.S. World and News Report, 2013). The diet uses packaged meals, exercise planning and counseling to help teach participants how to eat (Jenny Craig, ND). The plan uses prepackaged food to start weight-loss and slowly teaches participants how to cook for themselves as they continue to lose weight. Their website states,

What gets us out of bed in the morning? It's our commitment to transforming peoples' lives. We've been doing it for over 28 years and have helped impact millions of lives worldwide. Jenny focuses on one-on-one support and attention to help clients learn about portion control, gain a healthy relationship with food, and start gettin' active.

Simply put, Jenny helps people build more balance into their lives guiding them to eat well, move more and live life. (Jenny Craig, ND)

In a randomized controlled study, *Jenny Craig* participants resulted in greater weight loss than those who were given professional counseling and public print material only (Rock, Flatt, Sherwood, Karanja, Pakiz and Thompson, 2010). The use of structured food-focused programs like *Jenny Craig* can be useful for promoting behavior change associated with weight-loss. All three of the selected

diet plans meet the criteria for this study given their rankings as commercial weight-loss programs, clinical reviews and active Twitter accounts.

Program Participants

Similar to other groups actively working to accomplish a health goal, those participating in commercial weight-loss programs actively participate in a formal support network to overcome their caloric imbalance. Weight-loss can be viewed as a health intervention resulting from prescribed disease or disorder. Caloric imbalance can also include a variety of niche groups avoiding specific foods such as gluten, sugar or meat products. Specific needs can vary from participant to participant. Not all individuals within this group are motivated for the same reasons, highlighting a need for message variation specific to the person and their habits for weight-loss success. This study recognizes that not all program participants use Twitter and that not all followers of program Twitter feeds are program participants. Still, the programs are employing Twitter as an alternative outlet for program participants.

Data Collection

Data for this study was collected from the three official Twitter pages of the selected commercial weight-loss programs. Pages were archived for every tweet available between January 31, 2012 and ending February 1, 2013. Not all pages offered a backlog of tweets starting January 31, 2012. Fortunately, there was more than enough data for this study available on the twitter feeds. An individual

tweet qualifies as a unit of data. When finished, there was a sample of 2,802 available tweets across the three Twitter feeds.

This large sample was condensed using systematic sampling. Krippendorff (2004) explains, “In content analysis, systematic samples are favored when texts stem from regularly appearing publications, newspapers, television series, interpersonal interaction sequences, or other repetitive or continuous events” (p.115). A group of tweets collected in chronological order is repetitive and continuous because of the layout of Twitter. Every third tweet was collected from the available tweets collect on the Weight Watchers Twitter feed, every 2.5 tweet was collected from Biggest Loser Diet Twitter feed and every fifth tweet was eliminated from the Jenny Craig Twitter feed. This was used to ensure that each program was equally represented in terms of data in a way that ensured a random sample from each program page. This resulted in 1255 tweets total, where 1,172 met the criteria of this study. There were 380 applicable tweets of the 411 collected from Weight Watchers, 389 applicable tweets of the 411 collected from Biggest Loser Diet and 403 applicable tweets of the 433 collected from Jenny Craig. This provide more than enough data to lend reliable results.

Coding Process

This study used two independent coders. Each coder was familiar with supportive communication, the coding process and Twitter. The coding scheme was outlined in the coding sheet found in table 3.1. There are five

categories/themes of support outlined in the SSBC (1992) and eighteen sub-categories of supportive behavior within these themes specific to the adapted scale used in this study. The themes of support were treated as mutually exclusive categories given the 140-character limit to each tweet. Each tweet was coded for the dominant theme of support present. The two coders analyzed tweets together when instances of confusion occurred.

Table 3.1 Brief Definitions of Social Support Behavioral Codes Adapted for Commercial Weight-loss Programs.

Support theme	Purpose of communication	Example of communication
Informational Support	Messages that lend explicit guidance for understanding that reference a fact, suggests an alternative or gives a model example.	
Suggestion/Advice	Offers solution to problems related to weight management. This would include specific recipe suggestions.	1: Hungry? Try incorporating avocado in your diet! 2: "How about a warm stew to get in the fall spirit! http://t.co/fRx7eEgn #BiggestLoser #Recipe" (BLD, 2012)
Referral	Offers advice from an expert/spokesperson of credibility.	CDC reports 1 in 10 children will be diagnosed with diabetes as a result of weight.
Teaching	Provides information to acquire the skills needed to complete an activity or information for coping with weight management. This might be a recipe alternative as well.	1. Who says fried chicken can't be healthy? Satisfy your southern craving with this #recipe: http://t.co/g9rTjWdr #BiggestLoser (BLD, 2012) 2. Can't leave the house to hit the gym? Try running your stairs instead.
Example Cases	Offers narrative of success from spokesperson or program participant.	Our program helped Jennifer Hudson drop 5 dress sizes!

Tangible Assistance	Messages that offer a resource or database for meeting a weight-loss or emotional need.	
Discount	Offers reduced fees for program services.	Sign up for 7 weeks of food at half the price today only!
Active Participation	Highlights opportunity/tools for participation program activities. This would include workout plans/ideas or recipe databases	Download our calorie counter app to stay on track.
Willingness	Expresses outreach/assistance.	What is your biggest work out challenge?
Esteem Support	Messages of praise or validation that are aimed to reduce stress of health disparity.	
Complement	Positive expression about a participants or participant efforts.	Great work @user for losing 10 pounds this month!
Validation	Confirmation of participant efforts.	Keep up the good work @user!
Relief of Blame	Helps to reduce guilt or shame from stagnant or reverse progress.	Everyone losses weight at different rates!
Network Support	Messages that highlight a sense of belonging or inclusion of a larger group of peers with similar goals as you.	
Access	Provides program recipient with new face-to-face resources for programs for success.	Having a hard time working with workouts? Our friends at Gold's Gym can help!
Presence	Offers a sense of "being there" and personal contact. This includes questions for participants from the program.	1: Looking forward to seeing you at the Walk for A Cure in Atlanta! 2: What is your favorite type of cuisine? Answer using #wwquestion! (WW, 2012)
Companionship	Provides program participants with an opportunity to meet program peers.	Join the Twitter chat today to share your weight-loss tricks!
Emotional Support	Messages that offer support for the emotional and mental state of the receiver.	
Relationship	Provides a sense of closeness.	We are here for you @user.
Sympathy	Offers sorrow for program recipient struggles.	We are sorry to hear that you had a bad weigh-in @user.
Empathy	Offers understanding or compares to personal experience as a indicator of understanding.	Our food options can seem repetitious in our program. We feel your pain.
Encouragement	Provides program participant with motivation or will to continue efforts.	One more day of the running challenge! You can do it.

Thoughts	Allows program participants to know that they are being thought of.	Your calls have been heard! We are working to recreate the meal plan options with your feedback.
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Pilot Test & Remaining Data

A pilot test was conducted to ensure that the themes used for coding were apparent in the text and to declare inter-rater reliability between the two independent coders. Deductive thematic analysis requires recognition of reoccurring themes (Boyatzis, 1998). To test the coding mechanism this study employed a pilot test using a sample of 225 tweets; 75 tweets were selected from each program sample set and 207 tweets qualifies for the study. Two independent coders coded the pilot sample and Cohen's Kappa was used to test inter-rater reliability. Cohen's Kappa was used to ensure that the level of agreement between the two coders beyond percent agreement and is a popular calculation to determine inter-rater reliability (Osborne, 2008). The two coders worked together to determine any disagreement between the coders for data used in the final study. Coders were able to declare inter-rater reliability of 0.87 and the mechanism was deemed fit for the remaining study. Each coder independently coded half of the remaining data to complete the study. Coder A was responsible for half of the remaining tweets and Coder B was responsible for the half of the remaining tweets resulting in 1,172 applicable tweets after eliminating the non-supportive messages.

Themes Defined

This study uses Cutrona and Surh's (1992) Social Support Behavioral Codes, which brackets supportive behaviors into five themes: *informational support, tangible assistance, esteems support, network support and emotional support*. The SSBC (1992) is further bracketed within the five overarching themes of supportive behavior sub-themes. This study utilizes the same overarching themes of support defined by Curtrona and Surh (1992) and further adapted the sub-themes of supportive behaviors to fit the nature of Twitter and the supportive needs of individuals trying to lose weight. The code sheet - found in table 3.1- explains these themes and gives specific examples of each sub-theme.

Informational Support

Informational support involves messages that lend explicit offerings of guidance for understanding. Curtrona and Surh (1992) explain that informational supportive behaviors "...provide information about the stress itself or how to deal with it..." (p.159). These messages are factual and are meant to spread knowledge or teach. Referring to experts, reporting data and biological claims can all be categorized as *informational support*. This study uses four sub-themes of informational supportive behaviors including (1) *suggestion and advice*, (2) *referrals*, (3) *teaching* and (4) *example cases*. These sub-themes of behavior were adapted from the original SSBC (1992) to include example cases as proof of program success. The adaptation of the SSBC (1992) used in this study omits

situational appraisal because of the physical distance that Twitter puts between participant and the program.

During the pilot test the primary research found areas of potential confusion and clarified the codes within *informational support*. First, messages that refer to a single recipe or set of themed tips would be considered *suggestion/advice*. For example, @biggestloserdiet tweeted, “How about a warm stew to get in the fall spirit! <http://t.co/fRx7eEgn> #BiggestLoser #Recipe” (2012). This tweet focuses on one specific recipe, even though this is linked to a different webpage, which might be confused with *tangible support*. The information is specific enough to be informative rather than a new resource with a database of information. Tweets directing readers to a new database without a specific fact or piece of information highlighted are considered *tangible assistance*.

Second, when messages were crafted to alter or relearn an already known skill or recipe the message is considered *teaching*. For example, @Biggestloser diet tweeted, “Who says fried chicken can’t be healthy? Satisfy your southern craving with this #recipe: <http://t.co/g9rTjWdr> #BiggestLoser (2012). Because of the link present in the tweet, this message could be confused as *tangible assistance*. This message is informative provide in this tweet and fits within the teaching sub-theme because it teaches followers how to cook fried chicken in a new healthy way.

Tangible Assistance

Tangible assistance includes any supportive message that offers a resource or database needed for overcoming stress (Curtrona & Surh, 1992). These resources can be navigated. These messages might include Internet links for extended resources or databases as a whole. *Tangible assistance* for weight-loss could include offerings of low-calorie recipe builder or customized workout planner. The specific sub-categories of supportive behavior within *tangible assistance* include (1) *discount*, (2) *participation resource* and (3) *willingness*.

These sub-themes of behavior have been altered from the original SSBC (1992) by omitting the *direct task* and *indirect task* sub-themes. These behaviors were omitted because a Twitter feed cannot physically perform a task for a participant face-to-face and is not able to take on responsibilities of the twitter followers. The former supportive behavior sub-theme of *loan* has been altered to *discount*. This change was made do to the fiscal nature of commercial programs. Commercial weight-loss programs are designed to make money for their services but still offer discounts and sales to help alleviate fiscal stresses.

Esteem Support

Any message that offers praise or validation of program participant actions and efforts classify as *esteem support*. These messages convey "...respect and confidence in abilities..." (Curtrona & Surh, 1992, p.159). These messages also include motivation for sharing or ventilation. These supportive words foster a sense of respect for program participant efforts and troubles. Sub-themes of

supportive behavior within the esteem support category include (1) *complement*, (2) *validation* and (3) *relief of blame*. The sub-themes used in this study are the same as those used in the original SSBC (1992).

A *complement* is a broad expression of approval of weight-loss efforts as a whole. For example, Jenny Craig tweeted, “@dld82 Congratulations on your amazing journey and weight-loss!” (2012). This tweet directly tags a program participant and compliments their overall effort. Messages that offer *validation* are more specific to a participation in a weight-loss activity. For example, Jenny Craig re-tweeted, “RT @BrelyEvans: My little Pink @JennyCraig pedometer is my BEST FRIEND I really feel like Ive done something when it says 10,000 steps! That = 4 to 5 miles” (2012). This re-tweet validated participant participation in an activity that promotes weight-loss, walking.

Network Support

Network support includes messages that foster a sense of belonging or inclusion within a larger group of individuals with the same goals or disparity (Curtrona & Surh, 1992). Sub-themes of supportive behavior within this theme include (1) *access*, (2) *presence* and (3) *companionship*. The sub-themes used in this study are the same as the sub-themes used in the original SSBC (1992). These messages are also relational.

Emotional Support

Emotional support includes any supportive message that offers caring or

love (Curtrona & Surh, 1992). These messages reflect closeness and understanding without judgment. Sub-themes of supportive behavior within this theme include (1) *relationship*, (2) *sympathy*, (3) *understanding/empathy*, (4) *encouragement* and (5) *thoughts*. The adapted scale omits the physical affection and listening sub-themes because of the physical distance between the Twitter feed creator and program participant. This also omits the *confidentiality* sub-theme because Twitter is a public platform and this study only looks at public profiles for ethical. The *prayer* behavioral sub-theme was changed to *thoughts* because these programs are commercial and not religiously affiliated. The ambiguity of prayer also reasoned to alter the sub-theme.

Computations

After collecting and coding the tweets, the researcher used SPSS statistical analysis software for computations. Given the sample size of the study, frequency and percentages were calculated to show instances of support overall and for each program. Each program sample contained enough data to confidently use percentages for the discussion. Using a one-way ANOVA, groups were compared within the five main themes of support. For themes exhibiting significant results at the $p < .01$ level, a post hoc test was conducted. Using the Tukey HSD test, programs were compared with each other to locate the point of difference in themes.

CHAPTER FOUR

RESULTS

This study conducted a content analysis of three popular commercial weight-loss program Twitter feeds to better understand how commercial weight-loss programs employ social support via Twitter. The three programs used in this study were Weight Watchers, Jenny Craig and Biggest Loser Diet. Each tweet was coded to fit one of five mutually exclusive categories and further coded into sub-themes. This study asked two research questions specific to how commercial weight-loss programs employ themes of support:

RQ 1: How do popular commercial weight-loss programs use Twitter as a support mechanism for their Twitter audience?

RQ 2: Do the commercial weight-loss programs used in this study employ the same social support strategy?

Descriptive statistics were calculated and the results were further studied using analysis of variance. One-way ANOVA was used to compare occurrences of the major themes of support found on the Weight Watchers, Jenny Craig and Biggest Loser Diet Twitter feeds. Overall, the analysis found that usage of social support aligned with the literature relaying predominantly on *informational support* and *network support*. Individually, the programs employed all themes of support but did not employ the same strategy.

Of the 1,255 tweets in the sample, 1,172 were applicable to the study. This excluded technology problems addressed in tweets or incomprehensible tweets. Tweets that addressed technology problems addressed issues surrounding program mobile applications or program website issues. There were 322 (27.5%) tweets coded as *informational support*. This was closely followed by the 309 (26.4%) tweets coded as *network support*. Third, 246 (21.0%) tweets were coded as *esteem support*. There were 177 (15.1%) tweets coded as *emotional support* and the remaining 118 (10.1%) tweets were coded as *tangible assistance*. Table 4.1 shows how these themes were further broken down into sub-themes of support.

Table 4.1 Frequency of commercial weight-loss program tweets by the Social Support Behavioral Codes

Count and percentage of commercial weight-loss program tweets employing various themes of social support behavioral codes (*n=1172*)

Informational Support	322 (27.5 %)
Suggestion/Advice	96 (8.2%)
Referral	64 (5.5%)
Teaching	80 (6.8%)
Example Cases	82 (7.0%)
Tangible Assistance	118 (10.1%)
Discount	22 (1.9%)
Active Participation	78 (6.7%)
Willingness	18 (1.5%)
Esteem Support	246 (21.0%)
Compliment	185 (15.8%)
Validation	60 (5.1%)
Relief of Blame	1 (0.1%)
Network Support	309 (26.4%)
Access	18 (1.5%)
Presence	259 (22.1%)

Companionship	32 (2.7%)
Emotional Support	177 (15.1%)
Relationship	65 (5.5%)
Sympathy	13 (1.1 %)
Empathy	1 (0.1%)
Encouragement	84 (7.2%)
Thoughts	14 (1.2%)

Informational Support

Within *informational support*, 96 (29.8%) were coded as *suggestion or assistance*. For example, Weight Watchers tweeted, “Fresh summer fruit + 3 pantry staples = 1 sweet confection! <http://t.co/sakdHIWp>”. This tweet gave a suggested recipe for a sweet treat that is both good and healthy. Recipes were not the only suggestions given by the programs. For example, Jenny Craig tweeted, “When planning your next night out, skip the bar and find somewhere you can boogie down! <http://t.co/vQhHco3k>”. The second most popular sub-theme occurring within *information support* were tweets explaining *example cases*. These messages referred to success stories. There were 82 (25.5 %) tweets coded as *examples cases*.

There was a statistically significant difference in the occurrence of *informational support* at the $p < .01$ level for the three programs [$F(2, 1169) = 31.848, p = .000$]. Post hoc comparisons using the Tukey HSD test indicated that the mean score for Weight Watchers ($M = .4211, SD = .4944$) was significantly different than Jenny Craig ($M = .2108, SD = .4084$) and Biggest Loser Diet ($M = .1985, SD = .3994$).

Of the 411 tweets in the Weight Watchers sample, 380 were applicable for the study. Of the 380 applicable tweets, 160 (42.1 %) were coded as *informational support*. There were 88 (23.1 %) tweets coded as *network support*. The third most frequently occurring theme was *emotional support* accounting for 64 (16.8 %) tweets. Both *tangible assistance* and *esteem support* each accounted for 34 (8.9 %) of the tweets respectively. It is clear that *informational support* was the preferred theme of support used by Weight Watchers. Within the Weight Watchers sample 52 (32.5%) were coded as *suggestion or assistance* under *informational support*. *Suggestion or assistance* tweets accounted for 13.7% of the Weight-Watchers sample. *Suggestion or assistance* was closely followed by *teaching*, which accounted for 36 (26.9%) of the tweets within *informational support* and 11.3% of the Weight-Watchers sample. This variation showed that Weight Watchers used *informational support* in different ways.

Network Support

Within *network support*, 259 (83.8%) were coded as *presence*. Tweets coded as *presence* account for 22.1% of the overall sample. *Presence* was the most used sub-theme of *network support*. Some tweets asked followers questions specific to their weight-loss efforts using Twitter to initiate a conversation. For example, Biggest Loser Diet tweeted, “#Thanksgiving is the ultimate temptation holiday. How do you keep from overindulging on holiday food? #BiggestLoser <http://t.co/4J1VoAbJ>”. Weight Watchers used the

#wwquestion hashtag as a tool to facilitate program to participant conversations: “Losing weight would make me feel free because _____ Answer using *#wwquestion!*”. This use of Twitter reinforced presence and interaction.

There was a statistically significant difference in the occurrence of *network support* at the $p < .01$ level for the three programs [$F(2,1169) = 31.646, p = .000$]. Post hoc comparisons using the Tukey HSD test indicated that the mean score for Biggest Loser Diet ($M = .1886, SD = .3917$) was significantly different than Weight Watchers ($M = .2316, SD = .4224$) and Jenny Craig ($M = .3738, SD = .4842$).

Of the 411 tweets collected in the *Biggest Loser Diet* sample, 389 were applicable for this study. Of the applicable tweets 145 (37.3 %) were coded as *network support*. Second, 82 (21.1 %) tweets were coded as *informational support*. Next, 59 (15.2%) were coded as *tangible assistance*. This was followed by 56 (14.4%) tweets, which were coded as *emotional support*. Finally, 47 (12.1%) tweets were coded as *esteem support*. This shows that Biggest Loser Diet preferred *network support*.

Esteem Support

There were 246 (21.0%) tweets coded as *esteem support* in this study. Only 1(0.1%) tweet in the sample was coded as *relief of blame*. *Compliment* was the predominant sub-theme within *esteem support* accounting for 185 (15.8%) of the tweets used in the study. Biggest Loser Diet tweeted, “@AshleyPena21

We've got some great stuff in store! And good job for getting your workout in!”.

This tweet is an example of *validation* found in the study.

There was a statistically significant difference in the occurrence of *esteem support* at the $p < .01$ level for the three programs [$F(2,1169) = 82.317, p = .000$].

Post hoc comparisons using the Tukey HSD test indicated that the mean score for Jenny Craig ($M = .3738, SD = .4842$) was significantly different than Weight Watchers ($M = .2316, SD = .4224$) and Biggest Loser Diet ($M = .1886, SD = .3917$).

Of the 433 tweets collected in the Jenny Craig sample, 403 were applicable for this study. Of the applicable tweets, 165 (40.9 %) were coded as *esteem support*. There were 88 (19.9 %) tweets coded as *informational support*. Next, 76 (18.9%) were coded as *network support*. This was followed by 57 (14.1%) tweets coded as *emotional support*. Finally, 25 (6.2%) tweets were coded as *tangible assistance*. Instances of *esteem support* were the most frequent (40.9%) within the Jenny Craig sample. Within the Jenny Craig sample, 129 (32%) were coded as *compliment* under *esteem support*. These accounted for 11% of all the tweets in this study. Jenny Craig preferred the use of *compliment* to the alternative sub-themes of *esteem support*.

Emotional Support

There were 177 (15.1%) tweets coded as *emotional support* in this study. The most frequently used sub-theme in *emotional support* was *encouragement*, accounting for 84 (7.2%) of the tweets in the overall study. These tweets included

messages of motivation and inspirational quotes. For example, Jenny Craig tweeted “ “The more you praise and celebrate your life, the more there is in life to celebrate.” [-] Oprah Winfrey ”. These messages were created to foster a healthy mindset about weight-loss and participant efforts.

Tangible Assistance

Tangible assistance was least popular theme employed by commercial weight-loss programs accounting for 118 (10.1%) tweets. *Active participation* was the predominant sub-theme of *tangible assistance*. *Active participation* accounted for 78 (6.7%) of the tweets in the study. The overall use of *tangible assistance* by commercial weight-loss programs was limited.

CHAPTER FIVE

DICUSSION AND CONCLUSION

This study focuses on the messages sent by three popular weight-loss programs: Weight Watchers, Jenny Craig and Biggest Loser Diet. Through content analysis of program Twitter feeds, this study was able to uncover how successful commercial weight-loss programs use Twitter to facilitate support. The results provided by the content analysis were able to answer the research questions addressing how the programs use Twitter in general and showing differences in how the programs used Twitter independent of one another. First, the programs used Twitter for relaying *informational support* and *network support*. There is potential for using new media when planning health intervention. Interestingly, the three programs showed different preferences for different themes of support. This shows how Twitter may have potential for multiple audiences and audience needs.

General Use of Twitter

The first research questions asked: *how do popular commercial weight-loss programs use Twitter as a support mechanism for their Twitter audiences?* The results of this study found that *informational support* and *network support* were the most frequently occurring themes in the study. Together, these claimed over half of the applicable tweets. This result was not surprising based on the nature of Twitter and how Twitter has been employed by other organizations.

This study used a tested and widely accepted supportive coding mechanism. Cutrona and Surh (1992) were able to code and test the effectiveness of supportive categories. Their study found that *emotional support* and *informational support* to be popular and effective. The use of *emotional support* and *informational support* are common when addressing the needs in health (Coulson, 2005; Coulson, Buchanan & Aubeeluck, 2007; Lee & Hawkins, 2010; Braithwaite, Waldron & Finn, 1999; Sen, 2008; Srivastava & Moreland, 2009). While this study showed that Twitter was used to disseminate information to followers it was unable to show preference for providing *emotional support*.

Social support for health disparity has been effective when support is interactive (Brashers, Neidig & Goldsmith, 2004). Twitter (2012b)

...connects businesses to customers in real time—and businesses use Twitter to quickly share information with people interested in their products and services, gather real-time market intelligence and feedback, and build relationships with customers, partners and influencers.

This explanation reasons that Twitter can be a potential platform for facilitating social support and highlights the potential utility of Twitter to facilitate *network support*. Still, recent studies have shown a tendency for organizations to use Twitter primarily as a tool for disseminating information rather than facilitating conversation (Lovejoy, Waters & Saxton, 2012; Cozma & Chen, 2013; Waters & Williams, 2011; Linvill, McGee & Hicks, 2012). The results in this study aligned

with this tendency and have expanded the use of Twitter for facilitating network support.

Emotional Support

As stated in the preceding text, *emotional support* was not the most popular theme of support used by the programs. It was the fourth most occurring theme overall. While this might seem like a pitfall of the programs, it can also be viewed as a rational strategy when planning a social marketing mix. Each program used *emotional support*, but none of the programs preferred this theme over the other themes. This shows that Twitter was not being used by the programs to facilitate *emotional support*, which has been associated with positive supportive effects (Cutrona & Surh, 1992). This lacking theme questions the effectiveness of commercial weight-loss programs' use of Twitter. Still, Twitter is only one of the several outlets for used by the programs.

This study does not speak to the effectiveness of the message provided and seeks to gain better understanding of how Twitter can be best used. The effectiveness of *emotional support* via Twitter is unknown. This form of support is highly personal and relational, requiring strong-ties between the sender and receiver. While Twitter is designed to be a conversation platform, it cannot be concluded that 140 characters is sufficient for providing *emotional support*. Rather than seeing this as a lacking characteristic of Twitter, it is important to realize that these programs use multiple outlets at different capacities for offering

support. Providing quality content through the use of *informational support* and *network support* is more important than forcing insincere messages of *emotional support*. This can also be said for the programs' use of *tangible assistance*.

Informational Support

Of the applicable tweets, 27.5% were coded as *informational support*. This theme accounted for the highest number of tweets produced by the three programs. Based on frequency, the results in this study aligned with Twitter literature by using *informational support* (Lovejoy, Waters & Saxton, 2012; Cozma & Chen, 2013; Waters & Williams, 2011; Linvill, McGee & Hicks, 2012). The results of this study also showed similarities to literature specific to health (Coulson, 2005; Coulson, Buchanan & Aubeeluck, 2007; Lee & Hawkins, 2010; Braithwaite, Waldron & Finn, 1999; Sen, 2008; Srivastava & Moreland, 2009). These similarities are not surprising given how other organizations have used Twitter in previous studies. Twitter is a fast media allowing for frequent, real-time information dissemination. The ease of providing *informational support* in general makes these findings predictable.

This study defines *informational support* as messages that lend explicit guidance for understanding that references a fact, suggests an alternative or gives a model example. Instances of *suggestion or advice* were the most popular within *informational support*. This study shows that popular commercial weight-loss programs use all four sub-themes of *informational support*, but they do not use

the theme the same way. Twitter limits the amount of characters used in a message, but the results show that this does not limit how Twitter can be used. More importantly, the results showed that all programs in this study employed *informational support* as well as every sub-theme of *informational support*. There was no overly dominant sub-theme of *informational support*. This means that *informational support* was used frequently and in variation. The medium allows for real-time customization of *informational support*.

Overall, the programs did not favor one sub-theme over the other within *informational support*. However, the three programs individually used *informational support* differently. Weight Watchers ($M=.4211$, $SD=.4944$) was significantly more likely to employ *informational support* than Jenny Craig ($M=.2108$, $SD=.4084$) and Biggest Loser Diet ($M=.1985$, $SD=.3994$). Regardless, all programs were able to successfully *provide informational support* to their followers.

Network Support

While there was a tendency for the programs to provide *informational support*, *network support* was frequently employed by the weight-loss programs as well. Overall, 26.4% of the tweets used in the study were coded as *network support*. This study defines *network support* as messages that highlight a sense of belonging or inclusion to a larger group of peers with similar goals. Twitter is a conversation tool that brings together millions of users everyday. These

messages have the power to give program participants the feeling that they are not alone and provide opportunities for individuals to meet other participants online and offline. Weight-Watchers frequently employed this theme of support, accounting for 23.2% of their tweets. More notably, Biggest Loser Diet ($M=.1886$, $SD=.3917$) was significantly different than Weight Watchers ($M=.2316$, $SD=.4224$) and Jenny Craig ($M=.3738$, $SD=.4842$) when using *network support*.

Presence was by far the most used sub-theme of *network support* employed by each program individually and overall. This study defines *presence* as messages offering a sense of “being there” and personal contact. These messages also include general questions for participants from the program. This gives the illusion that the program and their participants to be in constant conversation. *Presence* creates closeness and gives meaning to the relationship. However, this sub-theme of *network support* facilitates conversation between the program feed and the participants, but it does not facilitate interactions among program participants. The tendency to utilize *presence* limited the breadth of participant needs being met through *network support*.

Overall, the programs used *network support* similarly. The programs also ignored sub-themes of *network support* that facilitate participant-to-participant communication, a foundation of a network. Again, it is important to note that these programs use multiple outlets for participant interaction and Twitter is not the only way to provide support. The messages used confirmed that the

participant was not alone, but did not confirm that they were part of a larger group of peers. This is interesting because the purpose of Twitter is to facilitate a larger conversation of several users. The commercial weight-loss programs included in this study do not facilitate larger peer-to-peer conversations. This may impact the quality of support found on Twitter when used as the sole outlet for support.

Commercial Weight-loss Program Support Strategy

Overall, the commercial weight-loss programs used in this study employed a variety of support themes when crafting messages. Given that the programs selected are top-ranked and clinically studied, it is reasonable to assume that the support provided by the programs would be similar. However, this was not the case and provided interesting findings. While there were similarities, individual programs favored different themes of support. Weight-watchers favored *informational support*, Jenny Craig favored *esteem support* and Biggest Loser Diet favored *network support*. When comparing the results of the study to program organizational statements or missions, rational for these tendencies can be better explained.

Weight Watchers

Weight Watchers clearly states their mission on their website. The Weight-Watchers mission reads:

WeightWatchers.com Inc.'s fundamental mission is to bring over 40 years of Weight Watchers success to consumers online, helping them to lose weight safely and effectively and keep it off. At WeightWatchers.com, we accomplish this by combining the proven Weight Watchers weight loss

plan with the very best online weight loss tools on the Internet (Weight Watchers International, 2013).

This mission statement emphasizes the program's efforts to provide *tangible support* through online tools. Weight Watchers was lacking in their use of *tangible support* in tweet content. Only 34 (8.9 %) of the tweets in the Weight Watcher sample qualified as *tangible support*. However, the program successfully used Twitter – an online tool - to disseminate supportive messages specific to weight-loss. The messages sent on Twitter did not support their mission specific to *tangible support*, but their use of Twitter to support participants aligns with their mission overall.

Weight watchers was significantly more likely to employ *informational support* than Jenny Craig or Biggest Loser Diet at the $p < .01$ level for the three programs [$F(2, 1169) = 31.848, p = .000$]. Weight Watcher's mission explains that the program has accumulated over forty years of knowledge and they want to bring this knowledge to the consumers. This type of support is informative, giving tips, advice and teaching the safe way to lose weight. The Weight Watcher mission aligns with their use of informational support on Twitter. Twitter has provided a new way for Weight-Watcher to pass along their forty years of knowledge. The Weight Watchers presence on Twitter and use of Twitter shows this.

Suggestion and advice was the most frequently used sub-theme of *informational support* for Weight-Watchers accounting for 33% of the Weight

Watchers sample. The alternative sub-themes were not lacking in comparison to *suggestion and advice*, but they were not as common. This showed Weight Watchers was more likely to use *informational support* than the other programs while employing several sub-themes of *information support*.

Jenny Craig

Esteem support was the most frequently employed theme of support by Jenny Craig. This study defines *esteem support* as messages of praise or validation that are aimed to reduce stress surrounding the health disparity. Twitter gives programs the ability provide personalized support, which can be valuable for providing esteem support. Jenny Craig was significantly more likely to employ *esteem support* than Weight Watcher or Biggest Loser Diet at the $p < .01$ level for the three programs [$F(2, 1169) = 82.317, p = .000$]. Within *esteem support*, there are three sub-themes that the messages can convey. Jenny Craig preferred the use of *complement* to the alternative sub-themes of *esteem support*.

Jenny Craig was more likely to use *esteem support* than the other groups. These types of messages express positive expression about the overall weight-loss success of the participant weight-loss. While these messages are relational, they are more specific to esteem needs of the participants by confirming their actions. Jenny Craig does not have an explicit mission statement available on their website. The broad organizational statement presented on their website states:

What gets us out of bed in the morning? It's our commitment to transforming peoples' lives. We've been doing it for over 28 years and have helped impact millions of lives worldwide. Jenny focuses on one-on-one support and attention to help clients learn about portion control, gain a healthy relationship with food, and start gettin' active.

Simply put, Jenny helps people build more balance into their lives guiding them to eat well, move more and live life. (Jenny Craig, ND)

This statement emphasizes one-on-one support, which is highly relational.

This type of support fits within *emotional support* for long-term change in participant lifestyle. Only 57 (14.1%) of the messages used in the Jenny Craig sample qualified as *emotional support*. This was not consistent with their organizational statement. As explained, *Esteem support* is also relational because this form of support continually reinforces behaviors and validates continued effort. *Esteem support* was the most frequently occurring form of support in the Jenny Craig sample. In this light, the program's use of Twitter supported their overall organizational goals.

The Biggest Loser Diet

Biggest Loser Diet's preferred theme of support was *network support*. The diet program was designed after the reality television show - *The Biggest Loser* - became a success. Participation in the program is related to the television show in real time, which acts an ongoing topic for fandom. The Biggest Loser Diet homepage shares their program goals and approach to weight-loss. This states:

You don't have to be on the show to lose weight and start your own transformation! The Biggest Loser Membership gives you online access to

The Biggest Loser diet and fitness program designed by our health and wellness experts - personalized to fit your goals and lifestyle. The Biggest Loser gives you all the tools, expert help and community support you need to succeed (NBC Universal Media, 2013).

This statement emphasizes the relationship with the television show as well as the program's efforts to provide tools and community support. This alludes to *tangible assistance* and *network support* as their favored ways of supporting program participants. Of the Biggest Loser Diet sample, 59 (15.2%) qualified as *tangible support*. *Tangible support* was present, but not prominent. However, 145 (37.3%) qualified as *network support*. This was the dominant form of support used by the program. Twitter has provided a forum that Biggest Loser Diet was able to facilitate *network support* successfully. Biggest Loser Diet's use of Twitter aligned with their overall organizational goal.

Conclusion

This study explored how commercial weight-loss programs use Twitter to support their program participants. The undeniable rise in obesity and the societal costs of this epidemic makes this topic in health important. Literature has shown a rise in the use of Twitter as a conduit for information dissemination from organizations to organizational members. Beyond non-profit and government-funded organizations, for-profit organizations are using Twitter as a way to connect with consumers. Commercial weight-loss programs address a public health issue for financial gain. This makes their participation in fostering healthy lifestyle choices relevant to the overall study of support and social support. When

a program does not meet customer health goals, the company will lose customers and fail.

This study was exploratory, looking at how three popular commercial weight-loss programs use Twitter to support their program participants using an adapted version of the Social Support Behavioral Codes. The study showed that the programs used all major themes of support in the SSBC. Surprisingly, each program had preferred themes of support apparent in the text. These preferred themes aligned with program organizational statements and goals. This reasons that the organizations have successfully transferred their organizational goals to a popular new media. This is an example to learn from. It is important to remember that people are the creators of the content and facilitators of support, not the medium.

Informational support and *network support* were the top two themes of support apparent in the text. They were also near-equals. The use of *network support* aligns with the concept of Twitter - being a social networking site which facilitates a network of conversations. The use of *informational support* aligns with finding from previous studies specific to health and support (Coulson, 2005; Coulson, Buchanan & Aubeeluck, 2007; Lee & Hawkins, 2010; Braithwaite, Waldron & Finn, 1999; Sen, 2008; Srivastava & Moreland, 2009). New media has potential for facilitating social support.

The lack of *emotional support* as compared to *informational support* does

not align with this precedent set in the literature specific to effectiveness. This is interesting because it is questionable whether strong-ties that help to create emotional support can form over a micro-blogging platform. Research shows how blogs can facilitate meaningful relationships (Rains & Keating, 2011; Sanford, 2011). *Emotional support* may be better suited for a different outlet like blogs, rather than forced through Twitter.

The future of health communication should not be understood by highlighting the setbacks of different communication outlets. The future of health communication should be understood through the potential of new media outlets. Twitter has the potential to provide *informational support and network support* to large audiences. This study can help change the way health professionals think about support and learn to adopt new media in a productive and optimistic way.

Limitations

While it is clear that there are limitations to this study, it is important to consider the multiple doors it opens for the future of health communication research. First, this study was limited because it was specific to a very narrow case. This limitation is what also made this study so interesting. Studying for-profit organizations compromises the integrity of the content – being for fiscal gain over public good. However, it seems rational to study commercial organizations that provide health service because they are still under the scrutiny of government regulations on top of being able to produce marketable results.

Quality is paid for in this case. The future of healthcare is uncertain. It is certain that major epidemics are costly and successful interventions are far and few. This case rethinks how we can approach health interventions and campaigns.

Second, this study is also limited because the results only show how Twitter was being used and not if it was effective for fostering supportive messages. This study is exploratory, adding to conversations surrounding the general use of Twitter is a relatively new communication technology. The programs studied were selected because of their success and status. Studying efficient use of a new media is important. This points out the potential of an outlet rather than what it is lacking. This also opens the doors for better understanding of how to best use resources and use them in collaboration with one another. If blogs have shown effectiveness for providing emotional support and Twitter is an efficient outlet for providing *informational support* and *network support*, their use together may be fruitful.

Third, this study relies on content analysis of Twitter. Content analysis deduces text and simplifies the analysis process. This is a debated methodological practice. Twitter is a debated source for content given that it is a large conversation of anonymous users. It could be argued that content analysis of Twitter extracts text and takes it out of context. The demographics and intentions of the users are unknown when studying new media outlets. This study was designed to overcome these concerns by collecting a large sample size,

proving inter-coder reliability and by collecting text that were disseminated by the programs exclusively. This ensured that the information shared was purposely created to meet the needs of the program participants – consumers. Twitter has been and can be studied through different methods, and this study could benefit from different perspectives and interpretations of the data in a more organic way. Additions to this conversation will strengthen the legitimacy of Twitter in health campaigns.

Future Research

Future research covering support generated by commercial weight-loss programs on Twitter can help solidify some of the limitations of this study and expand the application of social support. First commercial weight-loss programs are able to customize support because they are given continued revenue from customers. This leaves opportunity for government programs to learn from popular and successful commercial programs for best practices in health intervention. This application would need to be carefully negotiated. It would be interesting to see the how commercial tactics work when applied to government health intervention programs.

Second, a better understanding of the perceived and actual effectiveness of these themes would benefit the study of support and the study of Twitter. Support has transcended successfully into various social networking platforms. It would be beneficial to see if this effectiveness can transcend to Twitter. This

would require a study from the participant's perspective and an isolated study around Twitter. Future research understanding the same data using different methods would move the conversation forward. These methods could be applied to other emerging social media like Pinterst and Instagram in the future to keep developing the application and effectiveness of new media as a means for social support.

Last, it would be beneficial to better understand the impact of the themes alone and in relation to each other. This would ask what the best mix of support is for addressing a specific health disparity. What media is the best fit for specific themes of support and how much activity is ideal for providing the best possible support to the most amounts of people? This field of research should be expanded as new media platforms emerge.

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