

DELIVERING SOCIAL SUPPORT VIA ONLINE HEALTH MESSAGES:
TESTING THE EFFECTS OF STRESS AND PERSON-CENTEREDNESS ON EMOTIONAL
IMPROVEMENT, ATTITUDE AND BEHAVIORAL INTENTION

BY

GIANG VU HANG PHAM

THESIS

Submitted in partial fulfillment of the requirements
for the degree of Master of Science in Advertising
in the Graduate College of the
University of Illinois at Urbana-Champaign, 2017

Urbana, Illinois

Adviser:

Assistant Professor John G. Wirtz

ABSTRACT

This study investigated the effect of exposure to person-centered messages delivered in a mass-mediated context on individuals experiencing mild or moderate levels of stress. Person-centeredness describes “the extent to which messages explicitly acknowledge, elaborate, legitimize, and contextualize the distressed other’s feelings and perspective” (Burlinson, 2003, p. 11). The study used a 3 (person-centeredness: low, moderate, high) x 2 (stress: mild, moderate) between-subjects experiment with emotional improvement, attitude toward the message, and behavioral intention as the outcome variables. Participants ($N = 243$) were randomly assigned to a mild (i.e., gaining three pounds) or moderate stress condition (i.e., being diagnosed with Type II diabetes because of rapid weight gain). After exposure to the stress condition, participants then read one of three versions of a health newsletter using language that represented low, moderate, or high levels of person-centeredness. Results showed that higher levels of person-centeredness led to significantly greater emotional improvement and significantly more positive attitudes toward the message, although there was no difference in behavioral intention between the person-centeredness conditions. There was also a main effect for stress, such that participants under the moderate level stress reported greater emotional improvement and more positive attitude toward the message than participants under the mild level of stress, regardless of the type of message they received. However, none of the stress x person-centeredness interactions was significant. This study provides a framework to operationalize and test the effects of person-centered messages delivered in a mass-mediated context. Understanding the effect of person-centeredness in mass-mediated communication also provides practical implications for designing media messages directed to individuals experiencing stress.

Key words: person-centeredness; stress; social support; health communication; dual process; online health newsletter; exercise; healthy eating; emotional improvement; attitude; behavioral intention

TABLE OF CONTENTS

CHAPTER 1: INTRODUCTION	1
CHAPTER 2: LITERATURE REVIEW	3
2.1. Role of Psychological Stress in Health	3
2.2 Role of Social Support in Health	4
2.2.1 Stress and Coping Perspective	5
2.3 Supportive Communication	6
2.3.1 Person-centeredness	7
2.4 Dual Process Theory of Supportive Communication	9
2.4.1 Person-centeredness in Mass Mediated Communication	11
2.5 Outcome Variables	14
2.5.1 Emotional Improvement	15
2.5.2 Attitude Toward the Message	15
2.5.3 Behavioral Intention	16
2.5.4 Message Elaboration and Thought-listing	17
CHAPTER 3: HYPOTHESES	18
CHAPTER 4: METHODOLOGY	20
4.1 Study Design	20
4.2 A Priori Power Analysis	20
4.3 Participants and Recruitments	20
4.4 Stimuli Development	21
4.4.1 Person-centeredness Messages	21

4.4.2 Stress-inducement Manipulation	22
4.5 Pretests	23
4.6 Procedure	24
4.7 Measures	25
4.7.1 Person-centeredness	25
4.7.2 Level of Stress	26
4.7.3 Emotional Improvement	26
4.7.4 Attitude Toward the Message.....	27
4.7.5 Behavioral Intention	27
4.7.6 Thought-listing Task	28
CHAPTER 5: RESULTS	29
5.1 Descriptive Statistics	29
5.2 Manipulation Checks	29
5.3 Emotional Improvement	30
5.4 Attitude Toward the Message	30
5.5 Behavioral Intention	31
5.6 Analysis of Thought-listing Data	31
CHAPTER 6: DISCUSSION	35
6.1 General Discussion	35
6.1.1 Effects of Person-centeredness	35
6.1.2 Effects of the Level of Stress	39
6.1.3 Findings from Open-ended Data	41
6.2 Theoretical Implications	42

6.3 Practical Implications 44

CHAPTER 7: LIMITATIONS AND FUTURE RESEARCH 47

7.1 Limitations 47

7.2 Future Research 49

REFERENCES 51

APPENDIX A: STIMULI 62

APPENDIX B: QUESTIONNAIRE 66

APPENDIX C: TABLES AND FIGURES 68

CHAPTER 1: INTRODUCTION

The quantity and quality of social support in an individual's life is associated with many positive outcomes in his or her physical and psychological health (Goldsmith, 2008; High & Dillard, 2012). For example, positive social support helps a person cope with stress more effectively, reduces the development and consequences of trauma-related psychopathology, decreases morbidity and mortality related to chronic and acute diseases, and increases adherence to health behaviors, such as quitting smoking and making changes in diet and physical activity (e.g., Belgrave & Lewis, 1994; Brummett et al., 2001; Southwick, Vythilingam & Charney, 2005; Uchino, Cacioppo & Kiecolt-Glaser, 1996).

Communication researchers have frequently studied the effects of social support delivered via interpersonal communication and via nonverbal communication (e.g., Bodie, Burleson & Jones, 2012; Jones & Guerrero, 2001; High & Solomon, 2014; Holmstrom et al., 2015). In interpersonal communication, social support is often delivered via messages that demonstrate person-centeredness. Person-centeredness describes "the extent to which messages explicitly acknowledge, elaborate, legitimize, and contextualize the distressed other's feelings and perspective" (Burleson, 2003, p. 11). Messages that are high in person-centeredness are perceived as more helpful, sympathetic, sensitive, and effective (High & Dillard, 2012). Further, person-centered messages are more effective at producing emotional improvement, and increasing ability to reflect on problems and to verbalize emotions and thoughts (Burleson & MacGeorge, 2002; High & Dillard, 2012; Jones & Wirtz, 2006).

Even though a large body of research has been dedicated to supportive communication delivered via interpersonal and nonverbal communication, there is a relative lack of research exploring the implications of supportive messages delivered in other communication contexts.

This is important because the amount of exposure to mediated and computer-mediated communication (CMC) has grown and continues to grow (Herring, 2002). Because of the growth of computer and Internet usage, more attention has been drawn to computer-mediated communication as a channel of support delivery (Walther & Boyd, 2002). Walther and Boyd's review of social support and CMC literature showed that social support had been exchanged in numerous virtual communities on the Internet (2002). Social support has also been discussed in a number of descriptive studies examining the online discussion groups of cancer patients, social network site use and perceptions of social support (e.g., Donath & Boyd, 2004; Donovan et al, 2014; Nabi, Prestin, & So, 2013). However, to date research about supportive communication has mainly focused on messages between individuals, while mass-mediated messages have not been tested for the ability to provide support.

Therefore, this study sought to begin to fill this gap by investigating the effects of supportive communication delivered via mass-mediated messages. This was accomplished by embedding person-centered messages in an online health newsletter and then testing whether differences emerged in the effectiveness of providing emotional improvement, creating positive attitude toward the message, and stimulating changes in eating and exercise as measured by behavioral intention. This study also examined the effects of stress and its interactions with person-centeredness, as guided by the stress and coping perspective, which proposed that social support can buffer the negative consequences of stress on individuals (Cohen & Wills, 1985). The dual-process theory of supportive communication (Burlison, 2009) was employed in explaining the effects of person-centeredness on individuals experiencing stress.

CHAPTER 2: LITERATURE REVIEW

2.1. Role of Psychological Stress in Health

Psychological stress occurs when individuals are faced with a situation in which they have limited capacity to respond to adequately and in which the consequences of failure to respond are at least somewhat important to that person (Lazarus & Folkman, 1984; Sells, 1970). Psychological stress has received considerable research attention because of its direct link to individuals' health (DeLongis, Folkman, & Lazarus, 1988; Schnurr & Green, 2004). For instance, when investigating psychological stress' relation to health, Holmes and Holmes (1970) found that life stressors were directly related to illness and changes in sleep patterns. Similarly, Ng and Jeffery (2003) found that higher levels of psychological stress were associated with increases in unhealthy behaviors, including higher fat intake, less frequent exercise, and increased smoking.

Psychological stress influences health through the activation of negative affective states (e.g., anxiety and depression), which in turn evokes unfavorable physiological or behavioral responses that increase disease risk (Cohen, Kessler & Gordon, 1995). A number of reviews of psychological stress research showed that psychological stress negatively affects the immune system (Segerstrom & Miller, 2004), has a direct association to markers of inflammation (Steptoe, Hamer & Chida, 2007), and leads to changes in cardiovascular physiology that may induce cardiovascular disease risk (Ginty, Kraynak, Fisher & Gianaros, 2017). Furthermore, psychological stress is strongly related to indicators of obesity including less healthy dietary behaviors and higher body weight (see reviews by Ball & Lee, 2000; Moore & Cunningham, 2012). Thus, it is important to understand factors that can ameliorate the negative effects of

psychological stress on health; one prominent factor of which is social support (Lazarus & Folkman, 1984).

2.2 Role of Social Support in Health

Social support refers to a “transaction involving one or more of the following: (1) emotional concern (liking, love, empathy), (2) instrumental aid (goods and services), (3) information (about the environment), or (4) appraisal (information relevant to self-evaluation)” (House, 1981, p. 39). Even though social support can take such various forms, it is usually referred to as perceived or received social support because these four forms of assistance are highly correlated (House & Kahn, 1985). As noted, a large body of research has demonstrated an essential role of social support in protecting and improving health outcomes (e.g., Belgrave & Lewis, 1994; Brummett et al., 2001). For example, a review of 81 studies in social support found a consistent link between social support and improvements in disease-relevant systems including cardiovascular, endocrine, and immune function (Uchino, Cacioppo & Kiecolt-Glaser, 1996). Greater levels of social support are also associated with greater positive appraisals of a stressful situation and greater feelings of control (Cohen & Wills, 1985; Lin, 1986). Furthermore, social support can facilitate healthy behaviors, such as exercising, healthy eating, nonsmoking, and greater adherence to medical regimens (Kreuter, Chheda & Bull, 2000; Lewis & Lynch, 1993).

Studies in social support have also sought to explain why people involved in social relationships tend to be mentally and physically healthier than people who are not, and how social support helps preventing negative outcomes during stressful events (Goldsmith, 2008; House, Landis & Umberson, 1988). Researchers have both examined the main effects of social support delivered through social networks and social integration, and the stress buffering effects of social support in stressful times (Bartholomew, Cobb & Poole, 1997; Broadhead et al., 1983;

Cohen & Wills, 1985). This study investigated social support in regard to psychological stress, based on the position that social support can provide individuals the resources needed to overcome consequences of stress (Cohen & McKay, 1984; Cohen & Wills, 1985; Thoits, 1995). This is referred to as the stress and coping perspective, which is discussed in the following section.

2.2.1 Stress and Coping Perspective

Stress coping comprises cognitive and behavioral efforts to overcome stress or obstacles that are acknowledged as exceeding a person's resources (Lazarus & Folkman, 1984). Stress coping strategies are means to reduce the negative effects of stress by eliminating or avoiding the stressor, or by changing its meaning. The two common coping strategies include problem-focused coping and emotion-focused coping, in which a person directs his efforts to manage the stressful situation or to manage emotional responses to that event (Lazarus & Folkman, 1984).

The stress and coping perspective posits that social support protects people from the negative consequences caused by stressful events (Lazarus & Folkman, 1984). In either problem-focused coping and emotion-focused coping strategies, social support can act as a buffer that helps enhancing adaptive appraisal and coping performance, and as a consequence, minimizing the negative effects of stress on that person's psychological and physical health (Billings & Moos, 1981; Cohen & McKay, 1984; Cohen & Wills, 1985; Thoits, 1995). One important point about the stress and coping perspective is that it predicts that social support is most beneficial during stressful times (Bartholomew, Cobb & Poole, 1997; Broadhead et al., 1983). Thus, it allows for the investigation of the buffering effects of social support on distressing individuals.

The stress and coping perspective also allows for the testing and comparison of different characteristics and features of supportive interaction or message through experimental settings.

For example, many researchers have employed the stress coping mechanism to investigate the verbal and nonverbal cues in supportive interactions, as well as the processes through which social support is coordinated in lab-setting experiments (Jones & Guerrero, 2001; Jones & Wirtz, 2006; High & Solomon, 2014; Holmstrom et al., 2015; Priem & Solomon, 2015). The most common experimental setting involved a stress manipulation or a recall of a life stressor, presentation of supportive communication, and evaluation of supportive communication. Many studies have successfully found the effectiveness of supportive communication, either through positive evaluation of support quality or positive reappraisal of the distressing situation (Bodie & Jones, 2012; Jones & Guerrero, 2001; Jones & Wirtz, 2006).

Based on the stress and coping perspective, this current research examined the direct effects of supportive communication on individuals' coping with stress, measured by emotional improvement. The breadth of existing experimental research in stress and coping perspective also provided a strong foundation for the experimental approach of this study.

2.3 Supportive Communication

Supportive communication is defined as “verbal and nonverbal behavior produced with the intention of providing assistance to others perceived as needing that aid” (MacGeorge, Feng, & Burleson, 2011). Because communication and social interaction are the means through which social support is exchanged, practiced, and generates positive outcomes in health, the study of supportive communication is especially important. Studies in supportive communication showed that supportive communication helps strengthen social relationships, improve psychological disposition, enhances stress-coping and improves personal relationships (see Cunningham & Barbee, 2000). Researchers have also focused on identifying the features of supportive communication that generate positive outcomes and the processes through which supportive

communication leads to those desirable outcomes (Burlison, 2009). A number of studies have shown that person-centeredness, which presents the quality of the message, and nonverbal immediacy, which presents the quality of non-verbal cues, are two key constructs that influence the perceived quality of supportive communication (e.g., Anderson & Guerrero, 1998; High & Dillard, 2012; Jones & Guerrero, 2001; Jones & Wirtz, 2006). Because non-verbal cues are not relevant in the mass-mediated context, this study will focus on person-centeredness as the key feature of supportive messages.

2.3.1 Person-centeredness

One of the most important variables in supportive communication research is person-centeredness (High & Dillard, 2012). Person-centeredness describes “the extent to which messages explicitly acknowledge, elaborate, legitimize, and contextualize the distressed other’s feelings and perspective” (Burlison, 2003, p. 11). Higher levels of person-centeredness are associated with positive outcomes of supportive communication including perceived helpfulness, sympathy, emotional improvement and ability to process problems (see High & Dillard, 2012). In particular, High and Dillard’s meta-analysis of 23 studies on person-centeredness showed that person-centered messages are associated with positive support outcomes including both perceived effectiveness and actual effectiveness. Perceived effectiveness describes the positive evaluation of the message recipients about how supportive messages can help them manage the stress and situation at hand. On the other hand, actual effectiveness refers to the extent to which supportive messages can actually impact the physiology aspect of stress management and actual coping performance.

Typically, person-centeredness has been operationalized using three levels that reflect the degree to which supportive messages are tailored to the recipient’s feelings and the stressing

event's context: low, moderate, and high (Bodie, 2012; Burleson, 1985; Burleson, 2003; High, & Dillard, 2012). Low person-centered (LPC) messages exhibit the lowest level of sensitivity and elaboration by ignoring and condemning the feelings and perspective of the other and questioning the legitimacy of how the person appraised and acted in the situation (Burleson, 2009; MacGeorge, Gillihan, Samter, & Clark, 2003). Examples of LPC are: "Shake it off, it's not the end of the world," "Well, maybe if you tried harder, it wouldn't have turned out that way" and "I think you ought to get over it!"

Compared to LPC, moderate person-centered (MPC) messages offer a higher level of sensitivity and an implicit recognition of the other's feelings and perspectives by attempting to reframe the stressful situation or trying to divert the other's attention away from the upsetting situation (Burleson, 2009). Examples of MPC are: "I know you are extremely talented and hard-working, it could be that they were looking for someone with more experience," "I think if you practice more, there will be better opportunities coming," "That sounds pretty bad. How about going out with me to the new restaurant in downtown to shake it off?" are some instances of messages that fall into this category.

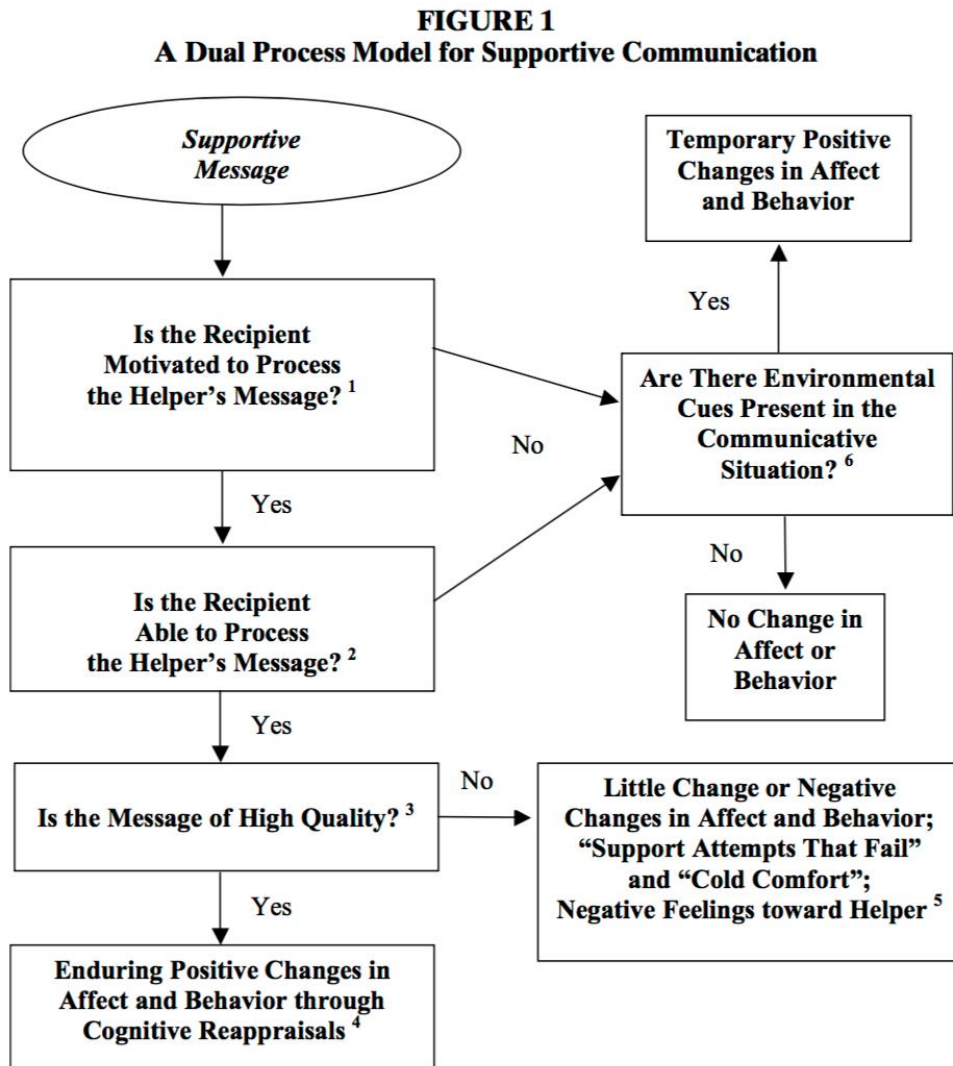
Finally, high person-centered (HPC) messages contain the highest level of sensitivity and comforting quality. HPC messages "explicitly acknowledge and legitimize the other's feelings by helping the other to articulate those feelings, elaborating reasons why those feelings might be felt, and assisting the other to see how those feelings fit in a broader context" (Burleson, 2003, p. 11). Examples of HPC messages are "I am so sorry about what happened, I know how much it means to you," "You did everything you could, it must be very upsetting and I totally understand how you feel," "I am here to help and support you, you can talk to me about your thoughts and feelings. Why do you think it turned out that way?" etc.

Among the three levels, HPC messages lead to the most beneficial support outcomes in terms of perceived helpfulness, appropriateness, sympathy, and sensitivity (High & Dillard, 2012; Jones & Burleson, 2003). HPC was also shown to help people better process their problems (Burleson & MacGeorge, 2002), better verbalize their emotions and thoughts (Jones & Wirtz, 2006), and to associate with better immediate emotional improvement (Bodie et al., 2011; Burleson, 2009). In contrast, LPC messages yield the least positive outcomes compared to other person-centeredness levels; for example, Bodie et al. (2011) found that LPC had very minimal effect on improving recipients' emotion, while MPC and HPC had significantly larger impact.

2.4 Dual Process Theory of Supportive Communication

In order to explain how supportive messages are processed and why similar messages have different impacts on different recipients, scholars have investigated the dual-process approach. The dual-process theory of supportive communication proposed that certain elements of supportive interactions, such as message content, source characteristics, etc., could influence the outcomes of supportive communication; and this process could generate change in cognitions, affects, and behaviors (Burleson, 2009). It also posited that a message will have the strongest outcomes when message recipients are deeply engaged in processing the message, and that message recipients will only engage in-depth with processing the message when they are able and motivated to do so (Bodie et al., 2011; Bodie, Burleson & Jones, 2012; Burleson, 2009). Thus, the dual process model makes the prediction that motivation and ability to process influence the effectiveness of supportive messages. Figure 1 below shows a visual model of dual-process theory of supportive communication created by Burleson (2009).

Figure 1: A dual process model for supportive communication by Burleson (2009)



To further explain the variance in supportive message effectiveness, scholars have examined the factors that account for the differences in motivation and ability to process and found two determinants: stressor severity and degree of emotional upset. Specifically, Burleson (2009) found a significant effect of cognitive complexity and degree of emotional upset on message processing and evaluations, while Bodie (2013) found evidence for the impact of the stressor severity on motivation to process and the processing extent. Together, these findings suggest that the stressor severity and degree of emotional upset both pose significant impact on

individuals' processing motivation and processing extent (see also Bodie et al., 2011). The level of stress, which describes how serious and severe a person thinks a situation is, and how concerned and upset he or she is about it, comprises of both aspects: the perceived stressor severity and the degree of emotional upset. Thus, it is expected that the level of stress would influence individuals' processing motivation and processing extent, and in turns affect the effectiveness of supportive messages.

Furthermore, Bodie (2013) found that stressor severity moderated the effect of person-centeredness on emotional improvement. That is, individuals facing a moderately severe problem had a greater change in emotional improvement than individuals facing a mildly severe situation. At the same time, Holmstrom et. al (2013) failed to find the moderating effect of problem severity on the effect of person-centeredness on evaluations of message helpfulness. These mixed results suggest that it is unclear whether stressor severity can moderate the effect of person-centeredness on outcome variables. Beside stressor severity, the degree of emotional upset was also found to lead to more positive evaluations of supportive messages (Burlison, 2009). Thus, again, there is evidences that suggest stressor severity and degree of emotional upset could both moderate the effect of person-centeredness on effects of supportive messages. As the level of stress captures both of these factors, it is expected it will moderate the effects of person-centered messages, and a more stressful individual will be more motivated to process and perceive supportive message as more effective than a less stressful individual.

2.4.1 Person-centeredness in Mass Mediated Communication

While most research on supportive communication has been applied to interpersonal and nonverbal communication, the main objective of this study is to investigate whether the positive outcomes of person-centered supporting messages will hold when delivered in mass-mediated

communication. The conceptual distinctions between interpersonal communication and mass communication are the number of parties involved and the level of interactions in the communication process (Miller & Steinberg, 1975; Rogers, 1983). Interpersonal communication is the process of sending a message and receiving feedback between only two or a few people, while mass communication is the process of sending a message to a large number of people through a certain medium, and in this process there is no mutual feedback. Because of these characteristics, mass communication allows for reaching and persuading a large number of audience, while interpersonal communication allows for influencing attitude and behavior of a small number of people through personal interactions (Backer et al., 1992).

Even though mass-mediated communication is usually seen as impersonal, there are evidences that reflect interpersonal aspects of it. For example, Walther (1996) reviewed research in computer-mediated communication, a closely related form to mass-mediated communication, and suggested that computer-mediated communication could be personal, sometimes as personal as face-to-face communication, because computer-mediated communication provides participants with high sense of social equality and social information exchange. This observation is especially true for supportive communication, as the exchange of social support has been found in many online discussion groups and social network sites (e.g., Walther & Boyd, 2002; Donath & Boyd, 2004; Donovan et al, 2014; Nabi, Prestin & So, 2013). Because many online comments do not contain personalized factors, many users remain anonymous while communicating online (Morio & Buchholz, 2009) and users are not obligated and do not always interact with each other in online support groups (Stommel & Koole, 2010), it is believed that the social support could be exchanged even when individuals do not interact personally and reciprocally with each other.

The mechanisms through which recipients process messages in mass-mediated context and interpersonal context also share a lot of similarities. For example, the dual-process model of information has been widely applied explaining message processing in both contexts. In interpersonal communication, the dual-process theory of supportive communication discussed earlier provided the helpful understanding that ability and motivation to process could influence message processing (Burlinson, 2009). In mass-mediated communication, the dual-process model was introduced as the elaboration likelihood model (Petty & Cacioppo, 1986), which describes determinants of message processing including ability and motivation to process, and how they affect persuasion and attitude change. Thus, it is reasonable to believe that message processing could be to a large extent similar in mass-mediated and interpersonal context, and that an effective message construct in one could potentially be impactful in another.

For a communication to be persuasive, it is critical that individuals are attracted to the message, pay attention to its content, comprehend its arguments and agree with its assertions (McGuire, 1978, 1989). Once these conditions are satisfied, individuals will be likely to yield to the advocated positions, adopt the suggested perspectives, attitudes and beliefs for future decision-making and actions. Because person-centered messages provide recipients a sense of being listened to (Bodie & Jones, 2012) and being supported (High & Dillard, 2012), it is argued that even with a lack of personal interactions, message recipients will still feel like they are being spoken to in a personal way, and that their concerns, feelings and perspectives are acknowledged and elaborated. Therefore, they will attend to the message, comply with its content; and as a consequence, the message will attain a persuasive impact on its audiences.

In addition, the universal link between person-centered messages and positive support outcomes provides a solid evidence for the assertion that person-centered supporting messages

will have a certain effect in the mass-mediated context (see review by High, & Dillard, 2012). For example, a large number of research on person-centeredness has been found its consistent association with positive perceived support quality and emotional improvement among stressful individuals (e.g., Bodie et al., 2011; Burleson, 2009; Jones & Wirtz, 2006). Thus, it is proposed that even when taken out of the interpersonal context, person-centeredness would still lead to beneficial outcomes. This study aimed to empirically test the effectiveness of each level of person-centeredness in compliance with other variables.

Based on the reviewed literature on dual-process theory of supportive communication, it is proposed that outcomes of supportive communication will be affected not only by the message quality, but also by recipient's factor, in this case, the level of stress. This study sought to extent the knowledge on the dual process in supportive communication by testing the effect of the level of stress on evaluations of person-centered messages. It is posited that similar to stressor severity and the degree of emotional upset, the level of stress will moderate the effect of person-centeredness on dependent variables, such that the effect of person-centered messages will be amplified for more stressful recipients than less stressful recipients.

2.5 Outcome Variables

This study attempted to test the effect of an interpersonal communication construct in a mass-mediated communication environment, hence, outcome variables of both traditions of research were considered. Emotional improvement, a usually investigated outcome of supportive communication in the interpersonal context, and attitude toward the message and behavioral intention, two of the most prominent outcome factors to consider in health communication and advertising were investigated.

2.5.1 Emotional Improvement

According to the dual-process theory, supportive communication could lead to beneficial outcomes in three aspects: cognition (e.g., beliefs and appraisals), affect (e.g., emotions and moods), and behavior (e.g., coping strategies and behaviors; Burleson, 2009). Among these aspects, a change in affect, asserted as emotional improvement, has been found to be the most prominent impact of person-centeredness in interpersonal context (Bodie et al., 2011; Burleson, 2009). That is, when distressing individuals are exposed to higher person-centered messages, they experience a better change in feelings and emotions, and feel better about themselves as well as the stressful situation. Because this study designed person-centered messages to be equal in quality with person-centered messages in interpersonal context, it is posited that even when delivered via mass-mediated communication, person-centered messages can provide distressing individuals a sense of support and sensitivity, thus, help improve their feelings. Emotional change is also the most evident outcome for a short communication attempt like the setting of this study, because recipients only spent a short amount of time reading a short message, while cognition and behavior changes generally require longer and more engaging communication attempts to take place, such as long conversations or repeated messages over certain periods of time (Jones & Wirtz, 2006; Gallagher & Updergraff, 2012). Thus, this study focused on emotional change as one of the main outcomes of supportive communication in an online environment.

2.5.2 Attitude Toward the Message

Attitude toward the message is a key construct in assessing the persuasiveness of messages in mass-mediated context, such as advertisements, public speeches, or brand communications (Brown & Stayman, 1992; MacKenzie, Lutz & Belch, 1986; Shimp, 1981). It

refers to the extent to which message recipients hold consistently favorable or unfavorable sentiments toward the message that they were exposed to. Because it is not relevant to interpersonal context, there has not been any efforts to address the association between person-centeredness and attitude toward the message. However, it is posited that person-centeredness will lead to positive outcomes in the attitude, since it makes the audience feel like they are being understood and comforted (Bodie & Jones, 2012, High & Dillard, 2012). Besides, it is argued that if a message makes the recipients feel better, it is natural that they will find it more likable and interesting.

2.5.3 Behavioral Intention

This study also investigates whether person-centeredness leads to behavioral intention. Behavioral intention describes the degree to which someone believes they will perform a behavior that is usually suggested or recommended by others (Schwarzer & Renner, 2000). Previous research has shown that social support can foster behavioral intentions or behavioral changes, especially behaviors that are related to health (e.g., Kreuter, Chheda & Bull, 2000; Lewis & Lynch, 1993). For example, Kreuter, Chheda and Bull found that patients who received physician advice to quit smoking, eat less fat, or get more exercise prior were more likely to report trying to quit smoking and making some changes in diet and physical activity (2000). However, these research only examined social support as advice-giving in general, but not person-centeredness as a specific construct. Nevertheless, the practices of advice-giving comprise a great part of listening, appraising the feelings of the other person and providing a sense of support, which is also how person-centeredness is conceptualized (Burlison & MacGeorge, 2002). Thus, it is argued that person-centeredness also has the ability to induce behavioral intention, especially pertaining to health.

2.5.4 Message Elaboration and Thought-listing

To gain insights into how the audience perceive supportive messages and the support provided via mass-mediated channel, a thought-listing task was employed in this study. Thought-listing technique has been used to assess cognitive structures, appraisals and processes (e.g., Cacioppo, Von Hippel & Ernst, 1997; Eysenck, Derakshan, Santos & Calvo, 2007; Kuppens, Yzerbyt, Dandache, Fischer & van der Schalk, 2013; Lent, Brown, Gover & Nijjer, 1996; Petty & Cacioppo, 1986). In these studies, thought-listing technique was found to be a consistently helpful methodology to capture natural cognitive processes, particularly the degree of elaboration as in the elaboration likelihood model, that structured self-report constructs could not capture (Petty & Cacioppo, 1986).

With regard to measurement, Cacioppo & Petty (1981) have argued that scales or other psychological tests are not effective at assessing what individuals think because individuals typically have a large quantity and variation of thoughts that cannot be placed in a scale or test. Thus, the thought-listing task is advantageous as it allows for the collection of insights that the scaled measurements cannot capture. Cacioppo & Petty (1981) also observed that when subjects were asked to list their thoughts, there were significantly less neutral/irrelevant thoughts were reported, indicating that individuals were more willing to express their polarized perceptions when listing their thoughts. Therefore, this study employed the thought-listing task to gather the cognitive appraisals and perceptions pertaining to the stimuli and the experimental process that participants might not be able to reflect with scaled measurements.

CHAPTER 3: HYPOTHESES

The major objective of this study is to investigate the effect of person-centered messages in a mass-mediated environment. It is posited that person-centeredness will have a main effect on the support outcomes, such that HPC messages are expected to pose more positive outcomes than MPC and then LPC messages. The following hypothesis is proposed:

H1: Person-centeredness will have a main effect on the support outcomes, such that higher level of person-centeredness will lead to higher levels of emotional improvement (H1a), more positive attitude toward the message (H1b), and stronger behavioral intentions (H1c).

This study also sought to explain the role of psychological stress in relation with person-centeredness on support outcomes. Based on Bodie's (2013) finding that individuals in a more stressful level were more motivated to seek out and attend to support than individuals in a less stressful level, it is predicted that the stress level will moderate the relationship between person-centeredness and support outcomes, such that it will amplify the strength of the relation between person-centeredness and dependent variables. In other words, it is argued that the more stressed an individual is, the more he will be motivated to take action to cope with stress, hence, the more likely he will be "tune-in" to the message's content. Because a more stressful individual experiences a greater extent of distressing feelings, he will also likely to find the supportive messages more comforting and sympathizing than a less stressful individual. As a consequence, he will likely to evaluate person-centered messages more positively.

H2: The level of stress will moderate the effect of person-centeredness on evaluation of support outcomes, such that individuals experiencing higher levels of stress will experience greater emotional improvement (H2a), evaluate the messages more positively

(H2b), and demonstrate stronger behavioral intentions (H2c) than individuals experiencing lower levels of stress.

This study also sought to understand recipients' perceptions on person-centeredness as a message feature in mass-mediated communication. An open-ended question was presented to participants at the end of the study to ask for their thoughts about the stressful scenario, the newsletter and the experimental process. By analyzing the themes emerged from open-ended data, we can gain insights into participants' impressions and feelings toward the supportive communication. The following research question is proposed:

RQ1: Will any relevant themes about emotional improvement or cognitive reappraisal emerge from an analysis of the open-ended data?

CHAPTER 4: METHODOLOGY

4.1 Study Design

The study used a 3 (person-centeredness: low, moderate, high) x 2 (stress: mild, moderate) between-subjects, post-test only, factorial experimental design. Person-centeredness was conceptualized as a message variable that reflects “the extent to which messages explicitly acknowledge, elaborate, legitimize, and contextualize the distressed other’s feelings and perspective” (Burleson, 2003, p. 11). Stress was conceptualized as the psychological distress that resulted from imagining a hypothetical situation (Bodie, 2013).

4.2 A Priori Power Analysis

An a priori power analysis using G*Power (Faul, Erdfelder, Buchner & Lang, 2009) to use an *F*-test family and analysis of variance between factors with six groups with one numerator degree of freedom was conducted, and the minimum number of participants for 95% power and an effect size of 0.25 was 204. The effect size of 0.25 for an *F*-test was chosen, because a medium effect size is consistent with what has been observed in other social support research (see review by High & Dillard, 2012; see also Cohen, 1992).

4.3 Participants and Recruitments

A convenience sample of American adults from various geographic locations were recruited to the study using Amazon Mechanical Turk (MTurk). Paolacci, Chandler, and Ipeirotis (2010) found that the population of MTurk participants is close to the U.S. population as a whole, and it is even more so than subjects recruited from university subject pools. The recruitment material stated that this study aims at understanding how online newsletters are perceived, and is seeking participants between 18 and 64 years old, male and female. Participants were compensated \$0.50 for their participation in this study.

Two hundred and sixty-two participants were recruited for the study. Attention checks were embedded in the study to verify that participants fully read and comprehend the survey instructions. After screening, those who failed the attention checks were removed from the sample ($N = 13$). Therefore, the final sample was composed of 243 participants. The participants (113 females and 130 males) ranged in age 18 to 64 ($M = 34.47$, $SD = 10.59$). The majority of the participants identified as White/Caucasian at 63.4%, 20.6% identified as Asian, 6.2% identified as Latino/Hispanic, 4.1% identified as African American, 4.1% as selected more than one category, and 1.6% identified as others.

4.4 Stimuli Development

The stimuli used in this experiment were person-centered messages embedded in an online newsletter from a company's wellness center. A stress manipulation was also developed and pretested. Development of the person-centered messages and the stress manipulation were adapted from previous studies that examine stress coping and outcomes of social support in laboratory setting (e.g., Feng, 2014; Jones & Guerrero, 2001; Jones & Wirtz, 2006; High & Solomon, 2014; Holmstrom et al., 2015).

4.4.1 Person-centeredness Messages

For each person-centeredness condition, participants were presented an online health newsletter with a person-centered message and a suggestion to eat healthy and exercise daily. All newsletters are designed to be equal in length (101 words) to avoid any confounding effects. The newsletter was designed to look like an actual online newsletter with colored texts, pictures and links to external resources, though the links were non-clickable to prevent distraction from reading the newsletter. Three levels of person-centeredness were operationalized similarly as in interpersonal context, but were written in a formal tone and without personalized factors. In HPC

condition, the message showed a high level of empathy with recipients' concerns, explicitly acknowledges their feelings and perspective, such as "Even though you try hard to eat right, work out and track calories regularly, sometimes it seems impossible to keep from getting heavier." In MPC condition, the message exhibited a more natural, basic tone, directing the recipients away from their concerns to other focuses, such as "Imbalanced diet, stress and lack of physical activity are some common explanations for weight gain;" and "Being overweight can be hard, but there are ways to feel better." Finally, in LPC condition, the message showed a low level of sensitivity and insisted that the recipients themselves were responsible for their situation, for example, "Excessive weight gain is not the end of the world. If you stay focused, you probably won't gain any more weight." The final versions of all three person-centeredness stimuli are provided in Appendix A.

4.4.2 Stress-inducement Manipulation

The manipulation of stress was implemented by putting participants in hypothetical stressful situations. This stress manipulation method has been employed in many experimental studies in supportive communication (e.g., Bodie, 2013; Feng, 2014; Holmstrom & Burleson, 2011). In this study, participants read a short paragraph describing a distressing scenario accompanied by a picture. The length of texts (22 words) and size of pictures (2.78"x 4.18") were equal in both conditions.

In the mild stress condition, the text read "Imagine you just realized that you gained 3 pounds over the past couple of months. You did not at all intend to gain this weight; it was mainly due to your busy schedule interfering with eating well and making time for exercise. You notice that your jeans are becoming a little tight and your shirts are not fitting as nicely. You

have always been conscious about your health and how you look, so gaining even 3 pounds bothers you.” The picture was of a body weight scale.

In the moderate stress condition, the text read “Imagine your doctor just told you that you have type 2 diabetes because you are overweight. Type 2 diabetes is affecting more than 29 million Americans, and could lead to serious health outcomes such as glaucoma, blindness, and kidney failure. In two years, you have gained 40 pounds. Your doctor says you need to lose weight and follow a special diet. You are very concerned about your health and how hard it will be to change your diet and exercise behavior.” The picture was an illustration of type 2 diabetes’ effect on the body.

4.5 Pretests

A series of pretests was conducted to ensure that the three versions of the newsletter were rated as containing low, medium, and high levels of person-centeredness and that the stress-inducement manipulation was successful. Forty-four to 48 participants took part in each pretest, all through Amazon MTurk.¹

For the person-centeredness manipulation, in the first pretest participants’ ratings on the high level ($M = 6.18$, $SD = 1.23$) were significantly higher than the moderate level ($M = 5.05$, $SD = 1.07$), $t(44) = 9.781$, $p < .01$. The ratings for the low level ($M = 4.89$, $SD = 1.91$) differed significantly from the moderate level ($M = 5.05$, $SD = 1.07$): $t(44) = 5.874$, $p < .01$, although this difference was not practically significant. Thus, an additional series of pretests were conducted in which the wording on low level (LPC) was modified to be somewhat harsher and more accusing the recipient for the problem. For example, one part of the first version of LPC that said “Healthy living resources are so readily available that you cannot make excuses. You should

¹ There were 5 pretests in total and pretests data are available upon request.

make a plan and stick to it” was changed to “Healthy living resources are readily available for free, ignorance is not an acceptable excuse. Make a plan and stick to it.”

As a result, in the final pretest, participants perceived significant differences between 3 levels of person-centeredness, with ratings on HPC ($M = 6.26, SD = 1.02$) significantly higher than on MPC ($M = 5.12, SD = 1.33$), and ratings on MPC significantly higher than on LPC ($M = 4.03, SD = 1.78$). An one way ANOVA showed the significant difference between the three levels: $F(2,43) = 54.15, p < .01$, with post-hoc Turkey tests confirming three levels differ significantly at $p < .01$.

The stress-induction manipulation was successful across all of the pretests. For example, in the first pretest, participants rated the moderate stress condition ($M = 6.27, SD = 1.08$) significantly higher than the mild stress condition ($M = 4.11, SD = 1.52$), $t(44) = 10.701, p < .01$. In the final pretest, this difference was replicated using the same stimuli, with ratings higher in the moderate stress condition ($M = 6.19, SD = 1.12$) than in the mild stress condition ($M = 4.22, SD = 1.43$), $t(47) = 10.011, p < .01$.

After the pretests were completed, the final stimulus materials and measures were uploaded to Qualtrics. The sample was then recruited from Amazon Mechanical Turk.

4.6 Procedure

The data was collected online using Qualtrics in approximately 72 hours from March 14, 2017 to March 17, 2017. When participants signed up for the study on MTurk, they were directed to the study’s Qualtrics experiment via a provided link. Upon completion of the experiment, they were redirected to MTurk and got compensated if their full participation was verified.

The experimental procedure. At the beginning of the experiment, participants were presented with the consent form, which stated that this study had been approved by the Institutional Review Board (IRB) at the university where the data were collected. After reading and submitting an agreement with the consent form, participants started the experiment with a stress manipulation task. Participants were randomly assigned to a mildly stressful situation (gaining 3 pounds in the last couple of weeks) or a moderately stressful situation (being diagnosed with type 2 diabetes). The randomization was accomplished through the built-in programming feature of Qualtrics survey. After reading the stress manipulating texts and pictures, participants completed ratings on their perceived level of stress about the situation. (See section 4.6 for measures.) Participants were then randomly assigned to receive one of three versions of a newsletter with language representing low (LPC), medium (MPC) or high (HPC) levels of person-centeredness. To make sure participants read through the newsletter, a 60-second timer was set up so that participants had to spend at least 60 seconds on the newsletter before advancing. After reading the newsletter, participants completed several ratings on manipulation checks, outcome variables and demographics. At the end of the experiment, participants were asked to list their thoughts they had about the stressful situation, the newsletter and the whole process. Upon completion, participants were debriefed and given a completion code for MTurk. The full questionnaire can be found in Appendix B.

4.7 Measures

4.7.1 Person-centeredness

Person-centeredness was assessed by a modified version of a 12-item supportive message evaluation scale that was developed and validated by Goldsmith, McDermott, and Alexander (2000). In this study, items were selected to fit with characteristics of a mass communication

environment, so the items that reflect more specific characteristics of face-to-face communication (e.g., generous, caring) were dropped. Finally, participants assessed person-centeredness on six attributes of the messages (unhelpful-helpful, insensitive-sensitive, inconsiderate-considerate, misunderstanding-understanding, unsupportive-supportive, discouraging-encouraging) with a 7-point scale. This scale proved to have a high internal consistency with Cronbach's *alpha* of .94, and all items were averaged to form a person-centeredness measure.

4.7.2 Level of Stress

The level of stress was assessed by the extent of perceived emotional distress about the particular situation that participants are assigned to. The measurement comprised of four 7-point bipolar items adopted from Holmstrom et al., 2015 that reflected how participants feel about the problem (not at all serious-very serious, not at all severe-very severe, not at all concerned-very concerned, not at all upsetting-very upsetting). The Cronbach's *alpha* of this scale is .95, and all four items were averaged to form a measure for the level of stress.

4.7.3 Emotional Improvement

The emotional improvement refers to the extent to which participants experienced a positive emotional change, and was assessed by three items adopted from Jones and Wirtz (2006). The wording on original items was modified to make the statements appropriate with the current context; for example, if the original item says "I feel better after talking with my conversational partner," the modified item would be "I feel better after reading the newsletter." Participants rated on three 7-point Likert items that ranged from strongly disagree to strongly agree including: "I feel better after reading the newsletter," "The newsletter made me feel better about myself," and "I feel more optimistic now that I have read the newsletter." This scale

yielded a Cronbach's *alpha* of .93, and all three items were averaged to form an item that represents emotional improvement.

4.7.4 Attitude Toward the Message

Attitude toward the message was assessed by five 7-point bipolar items with three items reflected an affect aspect (unlikable-likable, boring-interesting, unpleasant-pleasant) and two items reflected a cognition aspect (unconvincing-convincing, and uninformative-informative) about their feelings about the newsletter that they read. These items were adapted from Biel and Bridgewater (1990) and held a Cronbach's *alpha* of .92. An item was created by averaging the five items to represent the attitude.

4.7.5 Behavioral Intention

Behavioral intention (BI) represents the perceived likelihood that participants would adopt the suggestions or recommendations and perform a behavior. In this study, BI was measured by seven items, four items about healthy diet adopted from Schwarzer & Renner (2000): "I intend to eat only a small amount of fat (such as saturated fat, cheese, butter) over the next months", "I intend to eat healthful foods over the next months", "I intend to live a healthier life", "I intend to invest more into my health"; three items about regular exercise from Wilson & Rodgers (2004): "I intend to exercise regularly during the next months"; "I intend to participate in physical exercise as much as I can every week during the next months" and "I intend to exercise at least three times per week over the next months". Items from Wilson and Rodgers's study were added "over the next months" to maintain a consistency with items from Schwarzer and Renner's study and to give participants a more specific sense of action. All seven items were averaged to form an item that represents BI, with a Cronbach's *alpha* of 0.89.

4.7.6 Thought-listing Task

After completing the scale items, participants were asked to list any thoughts or feelings they might have regarding the stressful scenario, the health newsletter and the whole process they just experience. There were no length and number of thought limit for the thought-listing task. This thought-listing task was adapted from Holmstrom et. al (2013) with the objective to provide a measure of depth into participants' insights for the study.

CHAPTER 5: RESULTS

5.1 Descriptive Statistics

Descriptive statistics for the outcome variables were generated to better understand the data before conducting inferential statistics. Histograms showed that all the outcome variables were approximately normally distributed, and descriptive statistics showed that the kurtosis and skewness levels were acceptable. Table 1 (Appendix C) reports the means and standard deviations for each dependent variable across the six conditions of the study. Kurtosis, skewness levels and correlations between variables are presented in Table 2 and Table 3 (Appendix C).

5.2 Manipulation Checks

Person-centeredness. Three separate levels of person-centeredness were also observed. An one-way analysis of variance (ANOVA) showed the significant between the three levels: $F(2, 240) = 52.69, p < .01$. On person-centeredness scale, HPC produced the highest ratings ($M = 6.37, SD = 0.54$), followed by MPC: $M = 5.36, SD = 0.99$, and LPC produced the lowest ratings: $M = 4.50, SD = 1.62$. To ensure that each level of person-centeredness is significantly different from another, post hoc Tukey tests were conducted. Results showed that each person-centeredness level differed significantly from each other at $p < .01$.

Stress. In the main study, participants showed two separate levels of stress: mild and moderate. Participants assigned to the gaining three pounds' scenario reported a mild level of stress ($M = 4.13, SD = 1.44$), while participants assigned to the type 2 diabetes' scenario reported a moderate level of stress ($M = 6.18, SD = .92$). An independent samples t -test showed the difference between the two conditions was significant: $t(241) = 13.31, p < .01$.

5.3 Emotional Improvement

A two-way ANOVA was conducted with person-centeredness (low, moderate, high) and stress (mild, moderate) as the independent variables and emotional improvement as the dependent variable. Results indicated the main effect for person-centeredness, $F(2, 237) = 11.74$, $p < .01$, $\eta_p^2 = .09$ was significant, as was the main effect for stress, $F(1, 237) = 3.91$, $p = .049$, $\eta_p^2 = .02$. However, the person-centeredness x stress interaction was not significant, $F(2, 237) = .024$, $p = .976$, $\eta_p^2 = 0$. Thus, H2(a) was not supported, and the level of stress did not moderate the relationship between person-centeredness and emotional improvement.

To determine if emotional improvement differed significantly across the three levels of person-centered messages, post-hoc Tukey tests were conducted. Results showed that all person-centeredness levels differed significantly at $p < .05$ for emotional improvement. Thus, H1(a) is supported, and higher levels of person-centeredness lead to a greater change of emotional improvement. The main effect of stress found on emotional improvement indicates that the level of emotional improvement was significantly greater for participants in moderate stress condition than for participants in mild stress condition.

5.4 Attitude Toward the Message

A two-way ANOVA was conducted with person-centeredness (low, moderate, high) and stress (mild, moderate) as the independent variables and attitude toward the message as the dependent variable. Results indicated that the main effect for person-centeredness, $F(2, 237) = 20.335$, $p < .01$, $\eta_p^2 = .146$, and stress, $F(1, 237) = 4.41$, $p = .037$, $\eta_p^2 = .018$, were both significant. However, the result of the person-centeredness x stress interaction was not significant, $F(2, 237) = .738$, $p = .479$, $\eta_p^2 = .006$. To conclude, H2(b) was not supported, and

the level of stress did not moderate the relationship between person-centeredness and attitude toward the message.

To determine if emotional improvement differed significantly across the three levels of person-centered messages, post hoc Tukey tests were conducted. Results showed that all person-centeredness levels differed significantly at $p < .01$ for attitude toward the message. Thus, H1(b) is supported, and higher levels of person-centeredness lead to more positive attitude toward the message. The main effect of stress found on attitude toward the message indicates that the attitude toward the message was significantly more positive for participants in moderate stress condition than for participants in mild stress condition.

5.5 Behavioral Intention

Finally, a two-way ANOVA was conducted with person-centeredness (low, moderate, high) and stress (mild, moderate) as the independent variables and behavioral intention as the dependent variable. Neither the main effect for person-centeredness, $F(2, 237) = 1.31, p = .27, \eta_p^2 = .011$, nor the main effect for stress, $F(1, 237) = 2.28, p = .133, \eta_p^2 = .01$, was significant. Thus, H1(c) is not supported, and higher levels of person-centeredness do not associate with a greater change of behavioral intention., The person-centeredness x stress interaction was not significant either, $F(2, 237) = 1.20, p = .305, \eta_p^2 = .01$. Therefore, H2(c) was not supported, and the level of stress did not moderate the relationship between person-centeredness and behavioral intention. Behavioral intention also did not differ significantly for participants in moderate or mild stress conditions.

5.6 Analysis of Thought-listing Data

In this study, participants were asked to list their thoughts and feelings about the stressful situation, the newsletter, and the whole process at the end of the experiment. A total number of

223 over 243 participants gave input for this question, making a response rate of 91.7%. The average number of words in a participant's response is 17. The grounded theory research practice is employed in analyzing the open-ended data (Corbin and Strauss 1990). First, data were broken down into categories by the common big themes (i.e., thoughts about stressful scenarios or newsletters), which is the open coding process. The axial coding then helped relating details and subcategories with emerging themes; for example, positive or negative thoughts about stressful scenarios. Finally, selective coding was used to highlight particular topics, such as participants' relatedness to stressful scenarios. An example of the coding process on open-ended data is provided in Table 4, Appendix C. Three main themes emerged from the data collected about the helpfulness of the newsletter and the relatedness of the stressful scenarios including the participants' relatedness to stressful scenarios, the perceived helpfulness of the newsletter, and a motivating effect of LPC messages.

Participants' relatedness to stressful scenarios. A noticeable portion of participants ($N = 91$, 40.8%) indicated that the scenarios in this study are realistic and relatable to them. Most of them expressed that they have had the similar concerns about weight and health, so they can easily relate to these situations. For example, participant 22 (Female) said: "I have also worried about these types of issues myself so it was interesting to think about this as a realistic scenario," participant 43 (Male) said: "I am currently trying to lose weight on doctor's orders so this newsletter was very relevant to me." Sharing the same feelings, participant 178 (Male) talked about his situation: "I am actually overweight and I have been told by a doctor that if I don't lose weight and improve my diet I will increase my chance of diabetes. So this newsletter is great for me, and gives me a sense of personal support." Even some people who indicated that they are not having weight concerns admitted that they could relate to the situations. For instance, participant

56 (Female) said: “As a vegan, it's hard for me to imagine being diagnosed with diabetes, but I have other health issues so I can somewhat relate.”

Perceived helpfulness of the newsletter. A majority of participants ($N = 148$, 66.4%) gave input that the newsletter was very useful in helping them cope with the situation. In general, these participants commented that the newsletter is not only helpful in that it acknowledges the difficulty of the issue they are facing, but also give practical advices to improve the situation. Regard to this point, participant 45 (Female) said: “The newsletter touched on all the points people need in order to overcome worth gain through diet, exercise, and weight management. It also mentions the emotional part of a plan to help- thought it was very useful.” Participant 59 (Female) also expressed a positive sentiment toward the newsletter: “I applaud that company for having that monthly newsletter. I find it very uplifting and supportive to anyone trying to get healthier.”

Interestingly, some participants gave the insights that the newsletter is especially meaningful to them, because they don't really have someone beside to support them, or in some case, they didn't think the situation is not serious enough for them to discuss with another person. For example, participant 83 (Male) said: “I liked the newsletter a lot. Why? Because I live alone and don't really have anyone within the household to bounce things off of. A newsletter would be encouraging and helpful.” Another example is comment from participant 12 (Female): “The thought of gaining weight stresses me out, but not to the point that I would talk with someone about it. The newsletter was very pleasant and relaxed about dealing with the issue. I really appreciate that. It makes it seem very attainable and not something that one should worry too much about.”

Motivating effect of LPC. LPC newsletter was written with a somewhat harsh and bold language, and was disliked by the majority of the participants being assigned to. However, there was a noticeable amount of participants in this condition ($N = 34$, 39.6%) thought that this newsletter, even though being somewhat aggressive, is truthful and motivating. Examples of the comments are: “I actually liked the newsletter--it was matter of fact, truthfully presented, and exactly what people need rather than want to hear” (participant 57, Male), “I really feel like this could happen for real since it (diabetes) runs in my family. I already knew the stuff in the newsletter, but it made me think and realize I need to get myself on track” (participant 34, Female), “I found it totally relatable, as I'm going through it myself right now. The bit in the newsletter about how it is not the end of the world and can be fixed was actually quite encouraging. I saw the content as more gently chiding than mean” (participant 6, Male). These insights are very interesting, because previous research has shown that LPC messages are perceived as insensitive and invalidating, and there has not been an indication of them being motivating, if not discouraging. It is possible that LPC when delivered in person is judged differently compared to when delivered in a non-personal manner. Further efforts should be put into addressing and understanding this phenomenon.

CHAPTER 6: DISCUSSION

6.1 General Discussion

This study examined the delivery of supportive communication, operationalized through person-centeredness, to recipients of an online newsletter. Participant's ratings on person-centeredness were used to test the that person-centeredness could be operationalized and delivered in a non-interpersonal context. The study also investigated whether the positive effects of person-centeredness in interpersonal communication would hold in mass-mediated communication. Specifically, the associations between person-centeredness and emotional improvement, attitude toward the message, and behavioral intention in pertain to health of the recipients were directly tested. This study also took into account the distressing feelings that individuals having health issues are facing, and attempted to provide them with social support to buffer their stress. Conforming to the stress and coping perspective, social support's ability to protect people from negative effects of stress in upsetting situations was the key factor underlying this study's hypotheses (Billings & Moos, 1981; Cohen & McKay, 1984; Cohen & Wills, 1985).

6.1.1 Effects of Person-centeredness

This study found a main effect for person-centeredness on emotional improvement and attitude toward the message but not behavioral intention. The main effect of person-centeredness found on emotional improvement is especially important, because it indicates that supportive communication, even when taken out of interpersonal context, could significantly induce emotional change among distressing individuals. This finding conforms to the stress and coping perspective that suggests social support can act as a buffer to reduce the negative affection during upsetting situations (Cohen & Wills, 1985; Thoits, 1995). However, the amount of

variance of emotional improvement that person-centeredness explained in this study was smaller compared to previous studies (see review by High and Dillard, 2012), indicating that even though person-centeredness holds an effect on mass-mediated communication, its power might not be the same as when operated in an interpersonal context.

Part of the explanation for this observation could be that in an interpersonal context, there are live interactions between distressing individuals and support givers, and factors such as nonverbal cues might greatly influence the quality and perception of support. For example, Bodie and Jones (2012) found that support givers that used both higher levels of person-centeredness and nonverbal immediacy were perceived as better listeners, and Jones and Wirtz (2006) found that both person-centeredness and nonverbal immediacy are directly associated with emotional improvement. Thus, the lack of nonverbal elements might influence the effect of person-centeredness, and future studies should look into understanding the role of personal interactions and non-verbal factors in the exchange of social support.

This study's finding that higher levels of person-centeredness lead to more positive attitude toward the message suggested that person-centeredness could potentially become a persuasive technique in mass communication. Attitude toward the message is a key variable in mass communication in deciding the effectiveness and persuasiveness of messages (Brown & Stayman, 1992; MacKenzie, Lutz & Belch, 1986; Shimp, 1981). For example, a review of attitude toward the message in advertising by Muehling and McCann (1993) showed that attitude toward the message led to more favorable outcomes in terms of cognition (i.e., ad and brand recall and recognition), affection (i.e., brand attitude and involvement), and behavior (i.e., purchase intention, brand interest, repeat purchase).

Thus, the finding that person-centeredness can affect attitude toward the message is important because it provides insights into understanding person-centeredness as a message feature that could determine attitude toward the message. This insight is particularly interesting as previous studies have only examined person-centeredness in an interpersonal context, and never considered attitude toward the message as an outcome variable (e.g., Bodie & Jones, 2012; Jones & Guerrero, 2001; High & Solomon, 2014; Holmstrom et al., 2015); It provides the evidence for the effectiveness of person-centeredness not only in terms of perceived support quality, but also persuasive impact on the audience.

This study contributes to the understanding of the effect of person-centeredness such that the effects of person-centeredness might have an attitudinal aspect, beside the frequently found emotional aspect. A possible explanation for the effect found on attitude toward the message is that it was mediated by the effect of messages on emotional improvement, as many studies have shown that emotional state and affective responses to the messages were antecedents of attitude toward the message (Muehling & McCann, 1993). Thus, it is possible that person-centeredness leads to favorable outcomes in attitude toward the message through its impact on emotional improvement.

Contradictory to the predictions, the study did not find a main effect of person-centeredness on behavioral intention. High and Dillard (2012)'s review on 23 studies that empirically tested the effects of person-centeredness revealed that the impact of person-centeredness is stronger on perceived effectiveness than on actual effectiveness. That is, support receivers tended to perceive the messages as effective and helpful, but there were not as much actual changes in their emotions or behaviors as they perceived. This study is among very few research that investigated the effectiveness of person-centered messages on behavioral intention.

The finding failed to find support for the behavioral component of person-centeredness' effects. Other research in social support has found an impact of social support in generating health behavioral change; however, the impact has been usually found in the case of advice-giving (Kreuter, Chheda & Bull, 2000; Lewis & Lynch, 1993). Even though this study attempted to imitate advice-giving by incorporating the recommendations to eat healthy and exercise regularly into the messages, the level of specificity, affection and intensity probably could not compare to usual advice-giving between persons. Thus, further research is required to understand the roles of personal interactions in the linkages of social support to behavioral intention and behavioral change.

The lack of effect on behavioral intention also suggests that behavioral intention might depend on other factors than the supportiveness of the messages. According to the theory of planned behavior, there are three antecedent variables to the intention to perform a behavior: attitude, subjective norm and perceived behavioral control (Ajzen, 1991). Specifically, when someone has a positive attitude towards a behavior, they feel that their social sphere would approve of the behavior and they perceive it as something relatively easy for them to do, they would be likely to intend to perform the behavior. This study did not take into account these factors, thus unable to predict in which way person-centered messages could possibly affect antecedents to behavioral intention, and how personal factors such as perceived behavioral control could possibly counter the effect. It is also possible that the communication was not engaging enough to produce an impact on behavioral intention, as participants were only exposed to the message once in a fairly short amount of time.

6.1.2 Effects of the Level of Stress

Main effect for stress. Because social support research suggested that the effects of supportive communication is most prominent on distressed individuals (Cohen & Wills, 1985; Thoits, 1995), this study examined the effects of supportive communication on not a general audience, but the audience that are coping with a certain kind of stress. The level of stress was found to have a main effect on emotional improvement and attitude toward the message, but not behavioral intention. Specifically, individuals in the moderate stress condition evaluated supportive messages more positively on emotional improvement and attitude toward the message than individuals in the mild stress condition. This finding conforms to what Burleson et al. (2008) has found, that is, the cognitive complexity and degree of emotional upset had a significant impact on message evaluations. Because highly stressful individuals were found to be more motivated to move away from the upsetting feelings and process the problem at hand, they tend to find the supportive messages more helpful and positive than less stressful individuals (Bodie, 2013).

Previous studies in supportive communication had also found the effect of stress on emotional improvement (e.g., Bodie et al., 2011; Bodie, Burleson, & Jones, 2012; Bodie, 2013; Burleson, 2009). However, the main effect of stress on attitude toward the supportive message is something that has not been studied, as it is not a usual construct in interpersonal communication. This effect of stress on attitude offers an important insight for understanding the effect of persuasive messages in mass communication, that is, similar to mood and emotions, stress can influence the way audiences attend to and evaluate the message (Bless, Bohner, Schwarz & Strack, 1990).

A lack of the effect of stress on behavioral intention, as well as the lack of the effect of person-centeredness on behavioral intention, is something needs further efforts to understand. Behavioral intention has not been employed in other studies that look at person-centeredness, so it is unclear whether person-centeredness and stress do not affect people's intentions to comply with healthy behaviors, or the effect is not strong in a mass-mediated context. Behavioral intention is believed to be influenced by a lot of personal factors including attitude, subjective norm and perceived behavioral control, and it is not yet known whether these factors could be influenced by stress (Ajzen, 1991). In this study, the main effect of person-centeredness on behavioral intention was found for individuals in mild stress condition, but not moderate stress condition suggests that different levels of stress influence participant's behavioral intention differently. Future research should take into consideration the impact of stress on antecedents to behavioral intention to understand the effect or lack of effect.

Moderating effects of the level of stress. This study failed to find support for the interaction between the level of stress level and person-centeredness on all dependent variables. According to dual-process theory, the effect of person-centeredness is often moderated by many factors attributing to the processing of supportive messages, two prominent factors of which are motivation and ability to process (Bodie et al., 2011; Bodie, Burleson, & Jones, 2012; Burleson, 2009). This study's hypothesis for the moderating effect of the level of stress operated on the assumption that the level of stress, as a combination of stressor severity and degree of emotional upset, is positively associated with both motivation and ability to process without actually testing for this association. Thus, it is possible that the level of stress was not related to the two determinants of message processing the predicted way, leading to the null findings.

Additionally, Holmstrom et al. (2013) found that participants' perceived support availability in conjunction with problem severity moderated the effect of person-centeredness on helpfulness evaluations. Thus, the level of stress might not interact with person-centeredness directly, but other factors, such as perceived support availability, could influence the outcomes of person-centeredness. In this regard, Bodie and Burleson (2008) also suggested that motivation and ability to process could depend on a lot of factors, both situational factors (e.g., stressor severity, degree of emotional upset, timing of message, presence of attention distractors) and individual-difference factors (e.g., age, cognitive complexity, perceived support availability, attachment style). In the design of this study, participants' relatedness to the stressful scenarios might also influence the effect of person-centeredness and of the level of stress. Someone that are dealing with stress related to weight gain might process the whole situation differently than someone who are not. Similarly, involvement, as suggested by the elaboration likelihood model, could also affect the processing of the message, especially in a mass-mediated context (Petty & Cacioppo, 1986). Thus, it would be valuable to study the role of different factors in the dual process theory in supportive communication beside the level of stress.

6.1.3 Findings from Open-ended Data

The input that participants gave at the end of the experiment provides clarifications for the applicability and practicableness this study. In particular, a large portion of participants acknowledged that the stressful scenarios in this study were realistic and relatable, and that the person-centered newsletters are meaningful and helpful to those in need. In this regard, this insight conforms to Walther's position that mediated communication could be personal (1996). Participants also brought up the notion that there are circumstances when people are not comfortable or are not given the chance to discuss health issues with others (e.g., when a person

lives alone or does not think it was enough a serious issue), and in such cases, a source of support like this is certainly valuable.

A very interesting theme emerges from the qualitative data about the perceived motivating effect of LPC newsletter. Many participants thought that LPC newsletter, despite being harsh, is encouraging and straightforward. A participant (Participant 109, Male) used the work “tough love” to describe the LPC newsletter that he read. In previous studies, LPC was found to have the least positive outcomes and was perceived as least helpful and sensitive among the three levels of person-centeredness by message recipients (Bodie et al., 2011; Bodie & Jones, 2012; Burleson, 2003; High & Dillard, 2012). There has not been any discussion on the perception of LPC being truthful and motivating by past researchers. Additionally, it is worth noting that this effect could be due to the differences in the operationalization of person-centeredness in this context and the interpersonal context. In an interpersonal setting, a person would naturally feel more negative about having a conversation when the other person is insensitive and blaming, especially in combination with personal ties and non-verbal cues, than only reading the messages in the context of this study. Further efforts should be put into understanding the differences between the two contexts and how they affect the outcomes of supportive communication.

6.2 Theoretical Implications

Interpersonal scholars have shown that person-centeredness is associated with positive support outcomes including both perceived effectiveness and actual effectiveness (Bodie & Jones, 2012; High & Dillard, 2012). The effects of person-centeredness found on emotional improvement and attitude toward the message contribute to the understanding of the positive outcomes of person-centeredness and supportive communication, especially actual effectiveness.

This finding conforms to the stress and coping theory, such that social support can buffer the negative emotions caused by stress. Also, it extends the effect of person-centeredness to an attitudinal aspect, and attitude is a very essential indication of persuasion. The lack of effect on behavioral intention suggest that there are more to learn about the mechanism through which social support leads to actual behavioral changes, such as personal factors and engagement with healthy behaviors. Particularly, efforts should be put into understanding how health newsletter's recommendations and advices given from another person are perceived differently, as previous research has shown that advices, as a form of social support, could generate behavioral changes (Kreuter, Chheda & Bull, 2000; Lewis & Lynch, 1993).

This study's findings also extended the knowledge about the dual process in supportive communication. The main effect of person-centeredness and the level of stress found on emotional improvement and attitude toward the message indicated that person-centeredness and the level of stress are two situational factors that influence the message effects. However, the lack of interaction between person-centeredness and the level of stress challenges the link between the level of stress and determinants of message processing including motivation and ability to process. Even though not being directly tested, this finding suggests that the level of stress might not be positively associated with both motivation and ability to process. On the other hand, it is also possible that this lack of effect is due to the differences in the way person-centeredness work in mass communication and in interpersonal communication, and more research is required to address this issue.

Additionally, this study initiates a new path to study the link between person-centeredness and emotional, cognitive and behavioral outcomes. Because mass-mediated messages can be easier to delivered and tested for effects compared personal conversations, it

would be more convenient to examine the links between person-centeredness and outcome variables. Furthermore, since personal factors are eliminated in mass-mediated messages, it is easier to replicate the experimental process, as well as to minimize the confounding factors in the research. These implications are important in understanding the processing of person-centeredness and its effects.

This study also contributes to the understanding of health communication and persuasive messages in mass-mediated communication, in particular, factors what influences the recipients' attention and elaboration with the messages. Research on the effect of mass-mediated communication and health communication has not taken into consideration the notion that the audience might be having distressing feelings when being exposed to the media. Thus, scholars have not studied how media interacts with the distressing feelings of the audience, and how this interaction impacts the intended effect of the media. This study's finding that higher level of person-centeredness induces better level of emotional improvement and more favorable attitude toward the message provides an implication for understanding how distressing audience approach and process media messages. It also brings to light a message feature for persuasive communication, especially health communication, to consider and explore for improving the effectiveness of the communication.

6.3 Practical Implications

An important practical contribution of this study is that it provides a framework to operationalize and test the effects of person-centeredness in a mass-mediated context. person-centeredness has been studied broadly in the context of interpersonal communication, in which participants engaged in conversations and elaborated on the distressing problems they are facing. In this study, person-centeredness was operationalized as non-personal messages to a mass

audience, the audience only read the message in a short amount of time, and still perceived certain supportiveness and helpfulness. This finding suggests that social support exchange does not necessarily require interpersonal interactions, although further efforts are required to understand the differences in quality and intensity between the two means of communication in delivering social support.

Understanding the effect of person-centeredness provides a practical implication for designing supportive messages and/or health communication materials for people in need. As many participants have commented, the scenarios and newsletters employed in this study were very realistic and relatable, and they believed that the newsletters would be very helpful to people under similar circumstances. According to the Centers for Disease Control and Prevention (2016), weight gain is one of the most concerns for adults living in the U.S., and more than one-third of U.S. adults have been dealing with obesity; hence, stress related to weight gain is believed to be relevant to a large number of audience. Furthermore, a systematic review and meta-analysis of 15 longitudinal studies on overweight, obesity, and depression has shown that obesity increased the risk of depression, especially pronounced among Americans (Luppino et al., 2010). Hence, it is important to understand the psychological stress and negative emotions associated with weight gain and potential means to reduce the negative impact of these factors.

Another important insight from the qualitative data is that some problems, like gaining three pounds in this case, are not serious enough or not socially desirable for people to be able to discuss with others and seek support. Therefore, health newsletters like the ones employed in this study are especially meaningful, because they provide people some resources to cope with their upsetting feelings and the situation that they otherwise would not have. Besides, the health

newsletters reminded distressing individuals that despite how bad the situation is, there are remedies for improving and getting to a better place.

Communications technologies such as emails, text messages, mobile apps or Internet-based resources have constituted a hybrid channel that carries both persuasive capabilities of interpersonal communication and the enormous reach capabilities of mass communication (Michael, Christine & Jackson, 1998). These communication means allow sending messages to a mass audience but still give the audience a personal space to interpret the messages. This study's finding that social support could be delivered through online communication offers promising means for expanding the practices of social support exchange. As it is not limited to person-to-person communication, anyone could be exposed to a greater source of social support that they generally get from their social networks, particularly their daily life interactions with other human beings. It also allows for organizations, institutions and companies to reach out to their members and provide them some sort of support without having to communicate with them face-to-face individually, which would help saving a lot of time and efforts. Finally, persuasive communication forces such as advertising, brand communications, corporate communications could benefit from these findings by employing person-centeredness to offer support to their audiences and potentially influence their attitude and other aspects.

CHAPTER 7: LIMITATIONS AND FUTURE RESEARCH

7.1 Limitations

Because this is the first study that attempts to operationalize person-centeredness in mass-mediated communication, it is hard to avoid certain flaws in message design and person-centeredness manipulation. HPC was operationalized with a politer and more personal tone than MPC and LPC, whereas the language used in LPC is somewhat harsh. Thus, even though the messages are designed to be equal in length and parallel in content structure, there could be confounding factors embedded in the language, such as the harsh, accusing tone of LPC when compared to the nice, warm tone of HPC. Also, message recipients might not expect a company wellness center's newsletter to contain such harsh and blaming language as in this study. Replications and further investigations into mediated person-centered messages are required to hone the precision and validity of person-centeredness manipulation in mass-mediated communication.

The experimental method used in the study also has some limitations. First, message recipients were only exposed to person-centered message once in a fairly short amount of time, while research has shown that frequency and repetition are important for mass messages, especially online advertising or newsletters, to produce any effects (Broussard, 2000; Danaher & Mullarkey, 2003). Hence, future studies should look at the effect of person-centeredness over time, and with different levels of frequency and repetition. Also, in the setting of interpersonal context, recipients have the opportunity to express and talk about their feelings and perspective, as well as to observe the other person respond to their talk, but in a mass-mediated setting like this study, recipients can only read the messages. This lack of feeling expression and

recognizance can restrict the extent to which the distressing individual elaborates on the situation and perceives support.

This study also failed to take into account the fact that highly stressed individuals sometime do not have the necessary resources to process the message (Lazarus & Folkman, 1984). Even though distressing individuals are motivated to process the message, they might not always be fully capable of doing so because of the negative impact that stress posed on them, physically and psychologically. In this study, there was no attempt to capture the ability and motivation to process of participants, which are determinants of message processing according to the dual process theory (Bodie, Burlison, & Jones, 2012; Bodie; 2013). Besides, other important constructs in mass-mediated communication such as attention and involvement could also influence message processing, and future researchers should put effort into addressing these factors.

One more limitation of this study was that participants were asked to imagine themselves in upsetting scenarios instead of recalling or processing their actual problems or life stressors. Thus, if participants found the scenarios to be irrelevant, they might not engage in the process the way actual stressful individuals would, as involvement can significantly impact the way individuals process messages and consequently the message effectiveness (Petty & Cacioppo, 1986). Even though a majority of participants gave input that they could relate to the situation because they also were having some health issues, they might not process the whole situation as if they actually face it at the moment. For that reason, a quasi-experimental research design that employs participants facing actual life stressors might be beneficial in understanding how distressing individuals perceive and process mediated supportive messages and improving the ecological validity of the experiment.

Another limitation of the study was that one of the two scenarios (having extra weight concern) is usually more perceived as a common problem for young population, while the other (having type 2 diabetes) is usually more associated with an older population. Weight-related concerns and behaviors were also found to vary with ethnic differences (Story et al., 1995), and are more common among females and males (Potter et al., 2004). These associations might affect the perceived realism of the problem, the level of stress and consequently, the evaluation of support outcomes. This study also did not employ measurements of actual behavioral change, and thus, restricted the understanding of how person-centeredness induces behavioral changes. Finally, this study only employed one coder, who is the main investigator of the study, and this could restrict the objectivity of the findings from open-ended data.

7.2 Future Research

Future studies can seek to broaden the understanding of social support exchange by comparing the delivery of social support via mass-mediated communication to the traditional delivery of social support via face-to-face communication, and analyzing the roles of personal interactions to the perceived outcomes of support. Besides affective, cognitive and behavioral outcomes of mass-mediated supportive communication, especially those pertaining to health, should be investigated. Furthermore, future research should explore other potential communication channels and means to deliver social support, such as mobile messages or mail newsletters.

Message repetition, frequency and long term effect should be taken into consideration for the ability to affect the outcomes of mass-mediated supportive messages. Pertaining to health, other effective tactics of health communication such as message framing or psychological distance could be combined with person-centeredness to explore the most impactful means to

improving health outcomes. Because this study did not find support for an effect of person-centeredness on behavioral intention, further research should also aim to build an understanding of how person-centeredness or social support could or could not lead to actual health behavioral changes.

Because the qualitative data of this study found an evidence for the perception of low supportive messages being motivating, it would be beneficial to put efforts into understanding the relation of LPC and motivation, especially, which characteristics of LPC messages induce motivation, and which factors decide whether a message recipient perceives LPC messages as negative or motivating. It is also important to study stress related to other common aspects of humans' life beside weight gain such as work stress, parental stress, financial stress, etc. and the impact of social support on different stressors and for different demographics. Finally, media and communications researchers can explore the way distressing individuals attend to media and the way their interactions with media influence stress coping. These understandings would contribute significantly to a more effective use of media in improving people's health and health behaviors.

REFERENCES

- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50, 179-211.
- Andersen, P. A., & Guerrero, L. K. (1997). The Bright Side of Relational Communication: Interpersonal warmth as a social emotion. *Handbook of communication and emotion: Research, theory, applications, and contexts* (pp. 305-324). Orlando, FL: Academic Press.
- Backer, T. E., Rogers, E. M., & Sopory, P. (1992). *Designing health communication campaigns: What works?* Newbury Park, CA: Sage.
- Ball, K., & Lee, C. (2000). Relationships between psychological stress, coping and disordered eating: A review. *Psychology & Health*, 14(6), 1007-1035.
- Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51(6), 1173.
- Bartholomew, K., Cobb, R. J., & Poole, J. A. (1997). Adult attachment patterns and social support processes. In *Sourcebook of social support and personality* (pp. 359-378). Springer US.
- Belgrave, F. Z., & Lewis, D. M. (1994). The role of social support in compliance and other health behaviors for African Americans with chronic illnesses. *Journal of Health & Social Policy*, 5(3-4), 55-68.
- Biel, A. L., & Bridgwater, C. A. (1990). Attributes of likable television commercials. *Journal of Advertising Research*, 30(3), 38-44.

- Billings, A. G., & Moos, R. H. (1981). The role of coping responses and social resources in attenuating the stress of life events. *Journal of Behavioral Medicine*, 4(2), 139-157.
- Bless, H., Bohner, G., Schwarz, N., & Strack, F. (1990). Mood and persuasion: A cognitive response analysis. *Personality and Social Psychology Bulletin*, 16(2), 331-345.
- Bodie, G. D. (2013). The role of thinking in the comforting process: An empirical test of a dual process framework. *Communication Research*, 40, 533-558.
- Bodie, G. D., & Burleson, B. R. (2008). Explaining variations in the effects of supportive messages: A dual-process framework. *Communication Yearbook*, 32, 355-398.
- Bodie, G. D., Burleson, B. R., Holmstrom, A. J., McCullough, J. D., Rack, J. J., Hanasono, L. K., & Rosier, J. G. (2011). Effects of Cognitive Complexity and Emotional Upset on Processing Supportive Messages: Two Tests of a Dual-Process Theory of Supportive Communication Outcomes. *Human Communication Research*, 37(3), 350-376.
- Bodie, G. D., Burleson, B. R., & Jones, S. M. (2012). Explaining the relationships among supportive message quality, evaluations, and outcomes: A dual-process approach. *Communication Monographs*, 79(1), 1-22.
- Bodie, G. D., & Jones, S. M. (2012). The nature of supportive listening II: The role of verbal person centeredness and nonverbal immediacy. *Western Journal of Communication*, 76(3), 250-269.
- Broadhead, W. E., Kaplan, B. H., James, S. A., Wagner, E. H., Schoenbach, V. J., Grimson, R., & Gehlbach, S. H. (1983). The epidemiologic evidence for a relationship between social support and health. *American Journal of Epidemiology*, 117(5), 521-537.
- Broussard, G. (2000). How advertising frequency can work to build online advertising effectiveness. *International Journal of Market Research*, 42(4), 439.

- Brown, S. P., & Stayman, D. M. (1992). Antecedents and consequences of attitude toward the ad: A meta-analysis. *Journal of Consumer Research*, *19*(1), 34-51.
- Brummett, B. H., Barefoot, J. C., Siegler, I. C., Clapp-Channing, N. E., Lytle, B. L., Bosworth, H. B., Williams Jr, R.B., & Mark, D. B. (2001). Characteristics of socially isolated patients with coronary artery disease who are at elevated risk for mortality. *Psychosomatic Medicine*, *63*(2), 267-272.
- Burleson, B. R. (2003). The experience and effects of emotional support: What the study of cultural and gender differences can tell us about close relationships, emotion, and interpersonal communication. *Personal Relationships*, *10*(1), 1-23.
- Burleson, B. R. (2009). Understanding the outcomes of supportive communication: A dual-process approach. *Journal of Social and Personal Relationships*, *26*(1), 21-38.
- Burleson, B. R., & MacGeorge, E. L. (2002). Supportive communication. *Handbook of Interpersonal Communication*, *3*, 374-424.
- Burleson, B. R., & Samter, W. (1985). Consistencies in theoretical and naïve evaluations of comforting messages. *Communication Monographs*, *52*, 103-123.
- Cacioppo, J. T., & Petty, R. E. (1981). Social psychological procedures for cognitive response assessment: The thought listing technique. *Cognitive Assessment*, 388-438.
- Cacioppo, J. T., & Petty, R. E. (1989). Effects of message repetition on argument processing, recall, and persuasion. *Basic and Applied Social Psychology*, *10*(1), 3-12.
- Cacioppo, J. T., Von Hippel, W., & Ernst, J. M. (1997). Mapping cognitive structures and processes through verbal content: The thought-listing technique. *Journal of Consulting and Clinical Psychology*, *65*(6), 928.

Centers for Disease Control and Prevention (2016). CDC National Center for Health Statistics (NCHS) data brief. Retrieve March 28, 2017 from:

<https://www.cdc.gov/nchs/data/databriefs/db219.pdf>

Corbin, J. M., & Strauss, A. (1990). Grounded theory research: Procedures, canons, and evaluative criteria. *Qualitative Sociology, 13*(1), 3-21.

Cohen, S., Kessler, R. C., & Gordon, L. U. (1995). Strategies for measuring stress in studies of psychiatric and physical disorders. *Measuring Stress: A Guide for Health and Social Scientists, 3-26*.

Cohen, S., & Wills, T. A. (1985). Stress, social support, and the buffering hypothesis. *Psychological Bulletin, 98*(2), 310.

Cunningham, M.R., & Barbee, A.P. (2000). Social support. In C. Hendrick & S. S. Hendrick (Eds.), *Close Relationships: A Sourcebook* (pp. 272-285). Thousand Oaks, CA: Sage.

Danaher, P. J., & Mullarkey, G. W. (2003). Factors affecting online advertising recall: A study of students. *Journal of Advertising Research, 43*(3), 252-267.

DeLongis, A., Folkman, S., & Lazarus, R. S. (1988). The impact of daily stress on health and mood: psychological and social resources as mediators. *Journal of Personality and Social Psychology, 54*(3), 486.

Donath, J., & Boyd, D. (2004). Public displays of connection. *Bt technology Journal, 22*(4), 71-82.

Donovan, E. E., LeFebvre, L., Tardif, S., Brown, L. E., & Love, B. (2014). Patterns of social support communicated in response to expressions of uncertainty in an online community of young adults with cancer. *Journal of Applied Communication Research, 42*, 432-455.

- Eysenck, M. W., Derakshan, N., Santos, R., & Calvo, M. G. (2007). Anxiety and cognitive performance: attentional control theory. *Emotion, 7*(2), 336.
- Feng, B. (2014). When should advice be given? Assessing the role of sequential placement of advice in supportive interactions in two cultures. *Communication Research, 41*(7), 913-934.
- Gallagher, K. M., & Updegraff, J. A. (2012). Health message framing effects on attitudes, intentions, and behavior: a meta-analytic review. *Annals of Behavioral Medicine, 43*(1), 101-116.
- Ginty, A. T., Kraynak, T. E., Fisher, J. P., & Gianaros, P. J. (2017). Cardiovascular and autonomic reactivity to psychological stress: Neurophysiological substrates and links to cardiovascular disease. *Autonomic Neuroscience: Basic and Clinical, 207*, 2-9.
- Goldsmith, D. J. (2008). Social Support in Interpersonal Communication. In W. Donsbach & W. Donsbach (Eds.), *The International Encyclopedia of Communication* (pp. 4727-4731). Hoboken, NJ: Wiley Publishing.
- Goldsmith, D. J., & MacGeorge, E. L. (2000). The impact of politeness and relationship on perceived quality of advice about a problem. *Human Communication Research, 26*(2), 234-263.
- Goldsmith, D. J., McDermott, V. M., & Alexander, S. C. (2000). Helpful, supportive and sensitive: Measuring the evaluation of enacted social support in personal relationships. *Journal of Social and Personal Relationships, 17*(3), 369-391.
- Herring, S. C. (2002). Computer-mediated communication on the Internet. *Annual Review of Information Science and Technology, 36*(1), 109-168.

- High, A. C., & Dillard, J. P. (2012). A review and meta-analysis of person-centered messages and social support outcomes. *Communication Studies*, 63(1), 99-118.
- High, A. C., & Solomon, D. H. (2014). Communication channel, sex, and the immediate and longitudinal outcomes of verbal person-centered support. *Communication Monographs*, 81, 439-468.
- Holmstrom, A. J., Bodie, G. D., Burleson, B. R., McCullough, J. D., Rack, J. J., Hanasono, L. K., & Rosier, J. G. (2015). Testing a dual-process theory of supportive communication outcomes: How source, message, contextual, and recipient factors influence outcomes in support situations. *Communication Research*, 42, 526-546.
- Holmstrom, A. J., & Burleson, B. R. (2011). An initial test of a cognitive-emotional theory of esteem support messages. *Communication Research*, 38(3), 326-355.
- House, J. S. (1981). *Work stress and social support*. Addison-Wesley, MA: Reading.
- House, J. S., & Kahn, R.L. (1985). Measures and Concepts of Social Support. In S. Cohen and S.L. Syme (Eds.), *Social Support and Health* (pp. 83-108). Orlando, FL: Academic Press.
- House, J. S., Landis, K. R., & Umberson, D. (1988). Social relationships and health. *Science*, 241(4865), 540-545.
- Jones, S. M., & Burleson, B. R. (2003). Effects of helper and recipient sex on the experience and outcomes of comforting messages: An experimental investigation. *Sex Roles*, 48, 1-19.
- Jones, S. M., & Guerrero, L. K. (2001). The effects of nonverbal immediacy and verbal person centeredness in the emotional support process. *Human Communication Research*, 27(4), 567-596.
- Jones, S. M., & Wirtz, J. (2006). How does the comforting process work?: An empirical test of an appraisal-based model of comforting. *Human Communication Research*, 32, 217-243.

- Judd, C. M., & Kenny, D. A. (1981). Process analysis: Estimating mediation in treatment evaluations. *Evaluation Review*, 5(5), 602-619.
- Kreuter, M. W., Chheda, S. G., & Bull, F. C. (2000). How does physician advice influence patient behavior?: Evidence for a priming effect. *Archives of Family Medicine*, 9(5), 426.
- Kuppens, T., Yzerbyt, V. Y., Dandache, S., Fischer, A. H., & van der Schalk, J. (2013). Social identity salience shapes group-based emotions through group-based appraisals. *Cognition & Emotion*, 27(8), 1359-1377.
- Lakey, B., & Cohen, S. (2000). Social support theory and measurement. In S. Cohen, L. G. Underwood & B.H. Gottlieb (Eds.), *Social support measurement and intervention: A guide for health and social scientists* (pp. 29-52). Oxford, U.K.: Oxford University Press.
- Lakey, B., Tardiff, T. A., & Drew, J. B. (1994). Negative social interactions: Assessment and relations to social support, cognition, and psychological distress. *Journal of Social and Clinical Psychology*, 13(1), 42-62.
- Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. Springer publishing company.
- Lent, R. W., Brown, S. D., Gover, M. R., & Nijjer, S. K. (1996). Cognitive assessment of the sources of mathematics self-efficacy: A thought-listing analysis. *Journal of Career Assessment*, 4(1), 33-46.
- Lewis, B. S., & Lynch, W. D. (1993). The effect of physician advice on exercise behavior. *Preventive Medicine*, 22(1), 110-121.
- Lin, N. (1986). Modeling the effects of social support. In Lin, N., Dean, A., and Ensel, W. (Eds.), *Social support, life events, and depression* (pp. 173–209). Academic Press, Orlando, FL.

- Luppino, F. S., de Wit, L. M., Bouvy, P. F., Stijnen, T., Cuijpers, P., Penninx, B. W., & Zitman, F. G. (2010). Overweight, obesity, and depression: a systematic review and meta-analysis of longitudinal studies. *Archives of General Psychiatry*, *67*(3), 220-229.
- MacGeorge, E. L., Feng, B., & Burleson, B. R. (2011). Supportive communication. *Handbook of Interpersonal Communication*, 317-354.
- MacGeorge, E. L., Gillihan, S. J., Samter, W., & Clark, R. A. (2003). Skill deficit or differential motivation? Testing alternative explanations for gender differences in the provision of emotional support. *Communication Research*, *30*(3), 272-303.
- MacKenzie, S. B., Lutz, R. J., & Belch, G. E. (1986). The role of attitude toward the ad as a mediator of advertising effectiveness: A test of competing explanations. *Journal of Marketing Research*, 130-143.
- McGrath, J. E. (1970). *Social and Psychological Factors in Stress*. ILLINOIS UNIV AT URBANA DEPT OF PSYCHOLOGY.
- McGuire, W. J. (1978). The communication/persuasion matrix. In B. Lipstein & W. J. McGuire(Eds.), *Evaluating advertising* (pp. xxvii–xxxv). New York: Advertising Research Foundation.
- McGuire, W. J. (1989). Theoretical foundations of campaigns. In R. E. Rice & C. K. Atkin (Eds.), *Public Communication Campaigns* (p. 416). Newbury Park, CA: Sage.
- Michael, M. C, Christine, J., Jackson, C. (1998). Health communication on the Internet: an effective channel for health behavior change?. *Journal of Health Communication*, *3*(1), 71-79.
- Miller, G. R., & Steinberg, M. (1975). *Between people: A new analysis of interpersonal communication*. Science Research Associates.


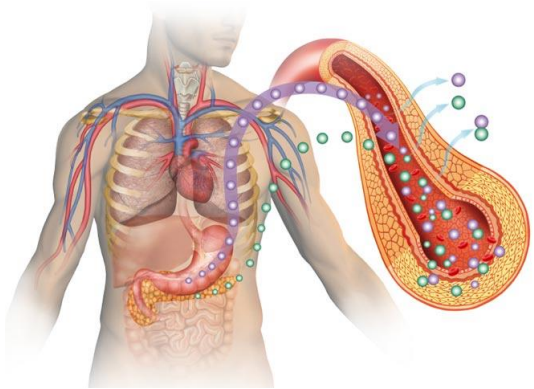
- Moore, C. J., & Cunningham, S. A. (2012). Social position, psychological stress, and obesity: a systematic review. *Journal of the Academy of Nutrition and Dietetics*, *112*(4), 518-526.
- Morio, H., & Buchholz, C. (2009). How anonymous are you online? Examining online social behaviors from a cross-cultural perspective. *Ai & Society*, *23*(2), 297-307.
- Muehling, D. D., & McCann, M. (1993). Attitude toward the ad: A review. *Journal of Current Issues & Research in Advertising*, *15*(2), 25-58.
- Nabi, R. L., Prestin, A., & So, J. (2013). Facebook friends with (health) benefits? Exploring social network site use and perceptions of social support, stress, and well-being. *Cyberpsychology, Behavior, and Social Networking*, *16*(10), 721-727.
- Ng, D. M., & Jeffery, R. W. (2003). Relationships between perceived stress and health behaviors in a sample of working adults. *Health Psychology*, *22*(6), 638.
- Oh, H. J., Ozkaya, E., & LaRose, R. (2014). How does online social networking enhance life satisfaction? The relationships among online supportive interaction, affect, perceived social support, sense of community, and life satisfaction. *Computers in Human Behavior*, *30*, 69-78.
- Paolacci, G., Chandler, J., & Ipeirotis, P. G. (2010). Running experiments on amazon mechanical turk. *Judgment and Decision Making*, *5*(5), 411-419.
- Petty, R. E., & Cacioppo, J. T. (1986). The elaboration likelihood model of persuasion. *Advances in Experimental Social Psychology*, *19*, 123-205.
- Potter, B. K., Pederson, L. L., Chan, S. S., Aubut, J. A. L., & Koval, J. J. (2004). Does a relationship exist between body weight, concerns about weight, and smoking among adolescents? An integration of the literature with an emphasis on gender. *Nicotine & Tobacco Research*, *6*(3), 397-425.

- Priem, J. S., & Solomon, D. H. (2015). What Is Supportive About Supportive Conversation? Qualities of Interaction That Predict Emotional and Physiological Outcomes. *Communication Research*, doi: 10.1177/0093650215595074.
- Rogers, E. M. (1983). *Diffusion of innovations*. New York Free Press.
- Frasure-Smith, N., Lespérance, F., Gravel, G., Masson, A., Juneau, M., Talajic, M., & Bourassa, M. G. (2000). Social support, depression, and mortality during the first year after myocardial infarction. *Circulation*, *101*(16), 1919-1924.
- Schnurr, P. P., & Green, B. L. (2004). *Trauma and health: Physical health consequences of exposure to extreme stress*. American Psychological Association.
- Schwarzer, R., & Renner, B. (2000). Social-cognitive predictors of health behavior: action self-efficacy and coping self-efficacy. *Health Psychology*, *19*(5), 487.
- Segerstrom, S. C., & Miller, G. E. (2004). Psychological Stress and the Human Immune System: A Meta-Analytic Study of 30 Years of Inquiry. *Psychological Bulletin*, *130*(4), 601-630. <http://dx.doi.org/10.1037/0033-2909.130.4.601>
- Sells, S. B. (1970). On the nature of stress. *Social and psychological factors in stress*, *134*, 139.
- Shimp, T. A. (1981). Attitude toward the ad as a mediator of consumer brand choice. *Journal of Advertising*, *10*(2), 9-48.
- Southwick, S. M., Vythilingam, M., & Charney, D. S. (2005). The psychobiology of depression and resilience to stress: implications for prevention and treatment*. *Annu. Rev. Clin. Psychol.*, *1*, 255-291.
- Step toe, A., Hamer, M., & Chida, Y. (2007). The effects of acute psychological stress on circulating inflammatory factors in humans: a review and meta-analysis. *Brain, Behavior, and Immunity*, *21*(7), 901-912.

- Stommel, W., & Koole, T. (2010). The online support group as a community: A micro-analysis of the interaction with a new member. *Discourse Studies, 12*(3), 357-378.
- Thoits, P. A. (1995). Stress, coping, and social support processes: Where are we? What next?. *Journal of Health and Social Behavior, 53*-79.
- Uchino, B. N., Cacioppo, J. T., & Kiecolt-Glaser, J. K. (1996). The relationship between social support and physiological processes: a review with emphasis on underlying mechanisms and implications for health. *Psychological Bulletin, 119*(3), 488.
- Walther, J. B. (1996). Computer-mediated communication: Impersonal, interpersonal, and hyperpersonal interaction. *Communication Research, 23*(1), 3-43.
- Wilson, P. M., & Rodgers, W. M. (2004). The relationship between perceived autonomy support, exercise regulations and behavioral intentions in women. *Psychology of Sport and Exercise, 5*(3), 229-242.

APPENDIX A: STIMULI

STRESS MANIPULATION

Mild stress scenario Gaining weight	Moderate stress scenario Being diagnosed with type 2 diabetes
<p>Imagine you just realized that you gained five pounds over the past couple of months. You did not at all intend to gain this weight; it was mainly due to your busy schedule interfering with eating well and making time for exercise. You notice that your jeans are becoming a little tight and your shirts are not fitting as nicely. You have always been conscious about your health and how you look, so gaining even five pounds bothers you. [79 words]</p>	<p>Imagine your doctor just told you that you have type 2 diabetes because you are overweight. Type 2 diabetes is affecting more than 29 million Americans, and could lead to serious health outcomes such as glaucoma, blindness, and kidney failure. In two years, you have gained 40 pounds. Your doctor says you need to lose weight and follow a special diet. You are very concerned about your health and how hard it will be to change your diet and exercise behavior. [81 words]</p>
	

PERSON-CENTERED NEWSLETTERS

HPC newsletter (high person-centered newsletter)

EMPLOYEE WELLNESS CENTER

YOUR MONTHLY WELLNESS NEWSLETTER

1 WEIGHT MANAGEMENT

It's completely natural to feel upset if you think you are gaining weight, we are here to listen and support you.

- Even though you try hard to eat right, work out and track calories regularly, sometimes it seems impossible to keep from getting heavier.
- Just remember that you have been successful in other areas, and that you have the ability to achieve the goals you set.
- According to our professional experience, **healthy diet and regular exercise** are effective strategies for not only losing weight and keeping it off, but also for achieving a strong and healthy body in the long term.

2 HEALTHY DIET

We understand and value your efforts in developing a more balanced diet.

Here is some information to get you started:

[Healthy Eating & Nutrition](#)

[Popular Diet Plans](#)

[Healthy Recipes Finder](#)



3 FITNESS & EXERCISE

We believe you are fully capable of maintaining regular exercise and getting healthier.

Here is some useful tips for you:

[Get Strong: Most Popular Exercises](#)

[Your Exercise Routine: How Much Is Enough?](#)

[How to Make the Most of Your Fitness Tracker](#)

[10 Workout Secrets From the Pros](#)

YOUR MONTHLY WELLNESS NEWSLETTER

1 WEIGHT MANAGEMENT

Being overweight can be hard, but there are ways to feel better. We have some information that may help you.

- Imbalanced diet, stress and lack of physical activity are some common explanations for weight gain.
- If you are motivated enough to take better care of yourself and comply with healthy habits, you can always improve the situation. Remain positive and turn to others for support.
- The key to healthy weight loss is to stay consistent with **healthy diet and regular exercise**. These are also effective strategies for keeping it off and achieving a strong and healthy body in the long term.

2 HEALTHY DIET

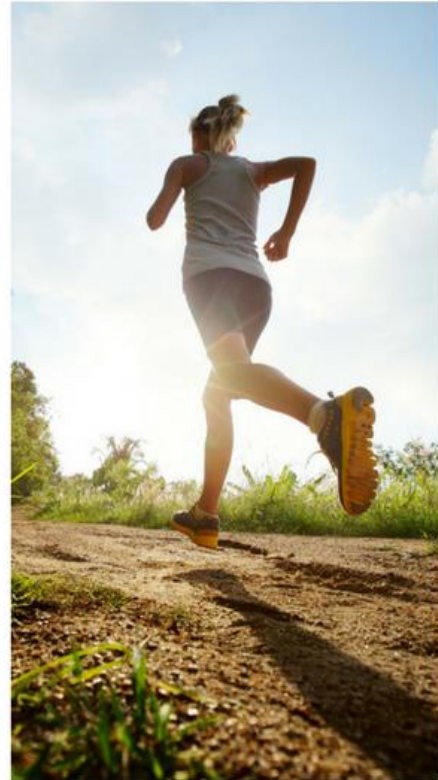
A balanced diet helps you attain a healthy weight and a brighter mood.

Here is some information to get you started:

[Healthy Eating & Nutrition](#)

[Popular Diet Plans](#)

[Healthy Recipes Finder](#)



3 FITNESS & EXERCISE

Maintaining regular exercise requires serious commitment, set some goals to keep you motivated.

Here is some useful tips for you:

[Get Strong: Most Popular Exercises](#)

[Your Exercise Routine: How Much Is Enough?](#)

[How to Make the Most of Your Fitness Tracker](#)

[10 Workout Secrets From the Pros](#)

YOUR MONTHLY WELLNESS NEWSLETTER

1 WEIGHT MANAGEMENT

It's easy to feel sorry for yourself, but you need to realize you are responsible for your own health.

- Weight gain is not the end of the world. If you stay focused, it should not be that hard to keep from getting heavier.
- Healthy living resources are so readily available that ignorance is not an acceptable excuse. Make a plan and stick to it.
- If you want to lose some weight, stay consistent with **healthy diet and regular exercise**. These are also effective strategies for keeping it off and achieving a strong and healthy body in the long term.

2 HEALTHY DIET

It's time to stop whining and put efforts into developing a balanced diet.

Here is some information to get you started:

[Healthy Eating & Nutrition](#)

[Popular Diet Plans](#)

[Healthy Recipes Finder](#)



3 FITNESS & EXERCISE

If you want to get fit and improve your condition, stop making excuses.

Here is some useful tips for you:

[Get Strong: Most Popular Exercises](#)

[Your Exercise Routine: How Much Is Enough?](#)

[How to Make the Most of Your Fitness Tracker](#)

[10 Workout Secrets From the Pros](#)

APPENDIX B: QUESTIONNAIRE

NOTE: Participants did NOT see the numerical value used for coding and the name of the scale.

Level of stress (adapted from Holmstrom et al., 2015)

Please select the option that best represents how you feel about the situation.

7-point Likert scales

1. Not at all serious – Very serious
2. Not at all severe – Very severe
3. Not at all concerned – Very concerned
4. Not at all upsetting – Very upsetting

Person-centeredness (adapted from Goldsmith, McDermott, and Alexander and modified)

Please select the option that best represents how you feel about the newsletter.

7-point Likert scales

1. Unhelpful – Helpful
2. Insensitive – Sensitive
3. Inconsiderate – Considerate
4. Misunderstanding – Understanding
5. Unsupportive – Supportive
6. Discouraging – Encouraging

Attitude toward the message (adapted from Biel and Bridgewater, 1990)

Please select the option that best represents how you feel about the newsletter.

7-point Likert scales

1. Unlikable – Likable
2. Boring – Interesting
3. Unpleasant – Pleasant
4. Unconvincing – Convincing
5. Uninformative – Informative

Emotional improvement (adapted from Jones and Wirtz, 2006)

Please select the option that best represents how you feel after reading the newsletter.

7-point Likert scales (Strongly disagree to Strongly agree)

1. I feel better after reading the newsletter.
2. The newsletter made me feel better about myself.
3. I feel more optimistic now that I have read the newsletter

Behavioral intention (adapted from Schwarzer & Renner, 2000 and Wilson & Rodgers, 2004)

Please select the option that best represents how you feel after reading the newsletter.

7-point Likert scales (Strongly disagree to Strongly agree)

1. I intend to eat only a small amount of fat (such as saturated fat, cheese, butter) over the next months.
2. I intend to eat healthful foods over the next months.
3. I intend to live a healthier life.

4. I intend to invest more into my health.
5. I intend to exercise regularly during the next months.
6. I intend to participate in physical exercise as much as I can every week during the next months.
7. I intend to exercise at least three times per week over the next months.

Open-ended

Please list your feelings or thoughts about the stressful scenario, the Newsletter and the whole process.

()

Demographics

Q1

What is your age?

()

Q2

What is your gender?

Male

Female

Other

Q3

What is your ethnicity?

White/Caucasian

African-American

Latino/Hispanic

Asian/Asian-American

More than one

Other

APPENDIX C: TABLES AND FIGURES

Table 1: Means and standard deviations of Emotional improvement, Attitude toward the message and BI in different levels of person-centeredness and stress.

Variable	HPC		MPC		LPC	
	Mean	SD	Mean	SD	Mean	SD
Emotional improvement						
Mild stress	5.37	1.21	4.93	1.08	4.38	1.58
Moderate stress	5.71	0.79	5.18	1.23	4.74	1.54
Attitude toward the message						
Mild stress	5.81	0.99	5.47	1.01	4.73	1.43
Moderate stress	6.28	0.65	5.50	1.17	5.19	1.53
Behavioral intention						
Mild stress	5.62	0.85	5.50	0.76	5.19	1.13
Moderate stress	5.73	0.91	5.41	0.85	5.60	1.22

Table 2: Skewness and Kurtosis for all variables

Variable	Skewness	SE	Kurtosis	SE
Level of stress	-0.85	0.12	-0.43	0.25
Person-centeredness	0.91	0.13	1.17	0.25
Emotional improvement	1.42	0.12	1.98	0.25
Attitude toward the message	-0.88	0.15	-0.70	0.25
Behavioral intention	-0.78	0.13	-0.19	0.25

Table 3: Correlational Matrix (Pearson's *r*)

Variable	Level of stress	Person-centeredness	Emotional improvement	Attitude toward the message	Behavioral intention
Level of stress	–	.221***	.324***	.302***	.358***
Person-centeredness		–	.635***	.640***	.242***
Emotional improvement			–	.856***	.611***
Attitude toward the message				–	.628***
Behavioral intention					–

*** $p < .001$, ** $p < .01$

Table 4: Example of the coding process on open-ended data

Open-ended data	Open coding <i>What is happening here?</i>	Axial coding <i>What is found in common?</i>	Selective coding <i>What is salient?</i>
“I have also worried about these types of issues myself so it was interesting to think about this as a realistic scenario” (Participant 22, Female)	<ul style="list-style-type: none"> - She has worries about these issues - She finds it interesting to think about this scenario as realistic 	<ul style="list-style-type: none"> - Concerns about weight or diabetes - Believability of the scenario 	Participants’ relatedness to stressful scenarios
“I am currently trying to lose weight on doctor's orders so this newsletter was very relevant to me” (Participant 43, Male)	<ul style="list-style-type: none"> - He is trying to loose weight - He finds the newsletter to be very relevant 	<ul style="list-style-type: none"> - Concerns about weight or diabetes - Relevance of the newsletter 	
“I am actually overweight and I have been told by a doctor that if I don't lose weight and improve my diet I will increase my chance of diabetes. So this newsletter is great for me, and gives me a sense of personal support” (Participant 178, Male)	<ul style="list-style-type: none"> - She is having weight issues and needs to improve her diet - She finds the newsletter to be great and supportive 	<ul style="list-style-type: none"> - Concerns about weight or diabetes - Supportiveness of the newsletter 	