

THE STRATEGIC ROLE OF VISUALS AND EMOTICONS IN CULTURALLY TAILORED
DEPRESSION CAMPAIGNS: ENGAGING CHINESE IMMIGRANTS IN DEPRESSION
COMMUNICATION ON SOCIAL MEDIA

by

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(Under the Direction of Yan Jin)

ABSTRACT

This study investigated effects of depression campaign Facebook posts (DCFPs) using framing, visuals, cultural appeals, and social support strategies on intention to provide depression support; examined effects of post features on their affective and cognitive evaluation; and explored the moderating roles of mental health literacy and acculturation. Two online experimental studies were conducted to test the proposed research questions and hypotheses. In the first online experimental study, a 2 (framing: gain vs. loss) x 2 (visuals: photograph of real people vs. cartoon graphic) x 2 (cultural appeal: present long-term future reward vs. absent long-term future reward) between-subjects experiment with a representative sample of 320 Chinese immigrants in the United States was used. In the second online experimental study, a 2 (comment link: present vs. absent) x 2 (visuals: group photo vs. photo of individual) x 3 (reaction emoticons: positive vs. mixed vs. negative) between-subjects experiment with a representative sample of 500 Chinese immigrants in the United States was used.

First, photographs elicited greater intention to provide depression support than cartoon graphics. Second, sequential mediation models reveal that loving emotion and perceived self-

efficacy in depression identification served as two sequential mediators for the relationship between DCFPs using a group photo and absent long-term future reward and the intention to provide depression support. Optimism and perceived self-efficacy in providing support resources served as two sequential mediators for the relationship between DCFPs using either a group photo or positive-reaction emoticons and the intention to provide depression support. Third, moderated mediation models suggest that the effect of DCFPs on intention to provide depression support through perceived self-efficacy in depression identification is congruent with higher mental health literacy. However, the effect of DCFPs on intention to provide depression support through perceived self-efficacy in providing support resources is incongruent with higher mental health literacy. Fourth, acculturation plays a potential moderating role: acculturation in affinity to ethnic identity and food preference might increase intention to provide depression support, but acculturation in language ability/entertainment preference and parental identity might reduce that intention. This study offers practical recommendations for health-communication and public-relations professionals to implement effective depression help-support campaigns.

INDEX WORDS: Visuals, Cultural appeals, Social support, Depression, Health communication, Strategic communication.

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DEDICATION

I gratefully dedicate this dissertation to my parents and my brother. Thank you for always giving me support, strength, edification, and encouragement every step of the way.

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CHAPTER 1

INTRODUCTION

Depression has become a serious public health concern worldwide. According to recent research, the burden of depression has risen globally (World Health Organization, 2018). In 2017, Asians became one of the top three foreign-born populations in the United States (Radford & Noe-Bustamanet, 2019). The foreign-born population includes anyone who is not a U.S. citizen at birth, including naturalized U.S. citizens, lawful permanent residents, temporary migrants, humanitarian migrants, and unauthorized migrants (United States Census Bureau, 2016). Within the 5.7% of the U.S. population that is identified as Asian American or Pacific Islander (United States Census Bureau, 2016), over 2.2 million Asian Americans (approximately 13% of that population group) have been diagnosed with mental illness in the past year (Mental Health America, 2016). These reports indicate that depression among Asian immigrants, such as Chinese immigrants, has become a public health threat in the United States.

Moreover, the conflict of cultural values, the taboo against discussing mental illness, and lack of awareness are three factors identified as influencing the Asian immigrant population's decisions to seek help (e.g., Mental Health America, 2016; Nishi, 2016). These findings indicate that Chinese immigrants are a high-risk and understudied population threatened by depression and other mental health issues in the United States. More importantly, these reports address the question of how health organizations can design efficient, culturally tailored health messages to increase Chinese immigrants' awareness of and attention to health message content about depression issues, which can motivate them to seek and provide support. These reports also

address the important mission of strategic health communication scholars in helping health organizations design effective health campaign messages and identify efficient channels through which to motivate the targeted public to change behavior over time. These reports also draw researchers' attention to the conflict of cultural values during the process of acculturation that can result in serious depression health issues among Chinese immigrants.

Health organizations often design and disseminate health message posts that embed a variety of features across different social media platforms to reach the target public and persuade them to change their attitude and behavior. Framing is one of the most effective strategies for persuasive health communication messages and helps researchers and health organizations understand how to frame health consequences effectively. One issue that emerged from a review of framing studies was the inconsistent findings regarding the effects of framing on attitude and intention health outcomes. For instance, research has found effects of gain-framed health messages on intention to quit smoking (Mollen, Engelen, Kessels, & van den Putte, 2017), to receive the flu vaccine (Lee, Jin, & Nowak, 2018), and to provide social support in depression (Detweiler-Bedell, Detweiler-Bedell, Baugher, Cohen, & Robertson, 2013). In contrast, studies have found an effect of loss-framed and balance-framed health messages on the intention to reduce indoor tanning (May & Evans, 2017). A limited number of studies have used gain and loss framing to examine depression health issues among Chinese immigrants. One of the reasons behind such issues is the self-stigma that challenges help-seeking campaign messages using the framing strategy to discuss the issue of depression (Lienemann, Siegel, & Crano, 2013; Lueck, 2017), which indicates that researchers should use framing to emphasize the consequences of benefit ("gain") or loss ("loss") if people take or do not take actions such as providing support.

Social media platforms are a popular media channel through which members of the public can receive and search for health information. Visual imagery is an important feature for health campaign message posts on social media, and different types of visual images play a role in triggering emotional responses that cause people to approach or avoid the content of health campaign posts and to accept or reject behavioral changes. Visual images can increase recall and attention to health campaign messages, improve message comprehension and adherence to recommendations, and enhance the speed of information processing (Barry, 2004; Houts, Doak, Doak, & Loscalzo, 2006; Mansoor & Dowse, 2003). Variation of photo images in health campaign message posts resulted in different perceptions of risk and of the importance of health issues (Gibson & Zillmann, 2000; Zillmann, Gibson, & Sargent, 1999), which indicates the influence of emotional response and cognitive interpretation on health outcomes. Most visual image studies have focused on the effects of individual photos or infographics on strategic health communication, but a limited number of studies have examined the effect of cartoons on health outcomes. Health campaign message posts with animation such as cartoons have become popular on social media. The smaller distance between viewers and cartoon characters allows health campaign messages using cartoons to increase viewers' sense of self-efficacy and health literacy as well as their feeling of connection with the characters and messages and can reduce the sense of stigma and embarrassment over sensitive health topics (Kennedy, Rogers, Blickem, Daker-White, & Bowen, 2014; Kennedy & Rogers, n.d.; Rozario & Sriram, 2015). Therefore, using cartoons may be a better strategy to reduce sensitivity and barriers, such as language and self-stigma, to the depression health issue among Chinese immigrants.

Another issue arising from the review of visual image studies is that most existing studies only compared messages with present and absent visual images, making these studies less close

to reality (Katz, Kripalani, & Weiss, 2006; Lazard et al., 2016; McWhirter & Hoffman-Goetz, 2015; Seo et al., 2013; Seo & Shen, 2009; Sprague et al., 2012). Individual photos and animated graphics are popular visual image strategies for health campaign message posts on social media to draw attention to message content and health issue that can then persuade audience members to change their attitude and behavior. Therefore, it is necessary to examine how health campaign messages with individual photos and cartoons impact people's behavioral intention outcomes. Moreover, regarding the in-group advantage (Matsumoto, Olide, Schug, Willingham, & Callan, 2009), while Chinese immigrants may observe the individual photos and cartoons in the depression health campaign messages, they could have different levels of identification with the ethnic groups between themselves, individual photos, and cartoons, which can influence their decision to seek and provide support.

Cultural appeals are a strategy for persuading audiences to undertake health behavioral changes among different ethnic groups. To effectively reach and persuade a variety of targeted publics in health communication, health organizations often tailor the content of health campaign messages based on the characteristics of targeted publics, such as race and gender. Huang and Shen (2016) conducted a meta-analysis and found that culturally tailoring messages was persuasive specifically for Asian Americans. This finding provides evidence that cultural values represent life experience and influence how people perceive the importance of health issues, pay attention to health campaign messages, and behave in different ways. Depression prevention or depression treatment is related to long-term rewards to self and others if people follow the recommendations, so people may see imagery of future reward to themselves and others after viewing depression health campaign posts that emphasize the long-term reward strategy. Thus, Hofstede's (1980, 1991) time orientation – long-term versus short-term reward orientation – may

be an effective cultural appeal strategy for depression health campaign posts among Chinese immigrants. Moreover, Hofstede (2007) mentioned that some researchers have incorporated a new dimension for national cultures in scales such as the Big Five personality scale; thus, Hofstede's national culture has the potential to integrate different perspectives to examine the effect of culture on health communication, such as message framing. However, the studies combining framing and time orientation have usually adopted the temporal distance from the psychological perspective to examine the interaction effects of messages on the health outcomes among different ethnic groups (e.g., Wen & Shen, 2016). These studies might miss important insights into the influence of cultural values on health communication among different ethnic groups since culture influences people to think and behave in different ways. Time orientation is constructed by life experience, which can exert a powerful influence on people's perceptions of the consequences of present actions (Graham, 1981). Regarding this statement, two arguments are proposed. First, Chinese immigrants experience two different cultural lives, so the perception of long-term and short-term reward orientation can result in different outcomes for depression. Second, a match between existing cultural values and the cultural tailoring strategy exerts a more persuasive effect on depression communication. For instance, the Chinese immigrants with cultural values that prioritize long-term rewards may be more willing to provide social support to individuals suffering from depression when they see depression campaign posts including the long-term reward strategy.

When individuals view health campaign posts, the content of posts with suggested links and "Like" emoticons can serve as functional and emotional support for depression health issues. Some studies examining social support have suggested that instrumental and emotional support jointly impact human wellbeing and reduce depression for elderly Asian immigrants (Morelli,

Lee, Arnn, & Zaki, 2015; Mui & Kang, 2006). These findings address the question of how instrumental and emotional supports are used on social networking sites (SNSs) such as Facebook and how these supports lead to behavioral intention outcomes for the depression issue by operationalizing instrumental support as a suggested link in depression message posts and operationalizing emotional support as a response emoticon. The findings can contribute to social support and health communication by providing a new strategy for combining the subcategories of social support. Moreover, Han et al. (2008) found a benefit of the combination of positive and negative expressions for helping women with breast cancer in coping. Regarding this finding, this dissertation argues how mixed emotional expression via the nonverbal cues of emoticons can facilitate the effect of depression health campaign posts and can increase the behavioral intention of providing support among Chinese immigrants.

From the perspective of cultural psychology, cultural values influence people's emotional recognition and emotional expression. Previous studies have found that cultural differences not only influence people's emotional expression through the use of emoticons but also impact their attention to and recognition of emotional expression from a different set of emoticons (e.g., Matsumoto, Olide, Schug, Willingham, & Callan, 2009; Yuki, Maddux, & Masuda, 2007). Therefore, different emotional expressions and recognition of emoticons lead different ethnic groups to experience different levels of perceived emotional support. However, the emoticons on Facebook are standardized, and each emoticon has a different nonverbal characteristic: "Like" is represented by a hand gesture making a thumbs-up sign; "Love" by a heart symbol; "Wow" by a surprised facial expression; "Haha" by a laughing facial expression; "Sad" by a crying facial expression; and "Anger" by a reddened, angry facial expression. Thus, the question arises as to how Chinese immigrants recognize and perceive emotional support from

the use of Facebook emoticons and how these emoticons play a role in their intention to provide support, which should be examined, both because Facebook is a popular social media platform for health organizations to disseminate health messages and because Chinese immigrants experience two different cultures.

Acculturation is a process of involving adjustment, adoption, and change in the new cultural environment as well as conflict management between the original and new cultures. This process of negotiation and adjustment between the original and new cultural environments results in psychological distress, acculturation stress, and depression. Research has found that after an average of 5 or 6 years in the United States, Asian immigrants showed only a moderate level of acculturation to the host cultural society because their language use, interpersonal relationships, identity, and cultural practices were still more oriented toward their original culture than the host culture (Oh, Koeske, & Sales, 2002). Thus, the length of stay in the United States is an indicator of acculturation that can result in different levels of depression. Studies of acculturation on health communication and mental health have demonstrated that people with low levels of acculturation had higher likelihoods of smoking and felt more depressed (Black, Markides, & Miller, 1998; Falcón & Tucker, 2000; González, Hann, & Hinton, 2001; Hovey, 2000; Kim, Ziedonis, & Chen, 2007). These findings explain why Chinese immigrants are a population at high risk of depression. Due to the negative relationship between acculturation and depression, the question of how acculturation impacts Chinese immigrants' attention to the content of depression health campaign message posts and their behavioral intention to provide support must be examined by considering acculturation as a moderator. In addition, Mui and Kang (2006) found that different subgroups of Asian immigrant elders had different rates of depression. This finding indicates that Chinese immigrants differently value their traditional

culture and cultural identity compared with how other Asian immigrants relate to theirs. Thus, compared with other Asian immigrants, Chinese immigrants may have different perceptions and judgments of depression that impact their intention to provide support for individuals suffering from depression.

Regarding Lazarus's (1982) argument that affect determines cognition, this dissertation proposes a sequential mediating model to examine how discrete emotion and perceived self-efficacy in identifying depression and in providing support and support resources mediate the relationship between the characteristics of depression health campaign message posts and behavioral intention to provide support. First, regarding discrete emotion, Nabi (2003) demonstrated that people's emotional responses to message content can serve as an additional message-framing mechanism for content via "repeated pairing of certain emotions with particular ideas or events eventually shapes the way which one interprets and responds to those events" (p. 227). People have a certain type of emotional response to match the meaning of the message content. Moreover, as Nabi's (1999) cognitive-functional model study reveals, discrete negative emotion plays a significant role in information seeking, attitude change, and behavior. Thus, discrete emotion not only reflects the interpretation of the campaign message content but is also an important mediator for the relationship between messages and behavioral outcome. Discrete emotional response can also benefit health communication researchers' understanding of how people react to health promotion messages (Myrick, 2015). Given the negative relationship between acculturation and depression for Chinese immigrants and their different level and process of acculturation, understanding their discrete emotional response can help health communication researchers better understand their psychological distress situation. Because of the characteristics of health campaign message posts on social media, such as image

and emoticon use, this dissertation focuses on discrete emotional response to better understand how Chinese immigrants react to depression health campaign messages that result in different cognitive and behavioral health outcomes.

Second, this dissertation considers perceived self-efficacy in identifying depression and providing support and support resources as a cognitive factor for the sequential mediating model. Self-efficacy is defined as individuals' confidence in the ability to perform varied levels of action and then produce a specific outcome (Bandura, 1997). Previous depression studies have found that depression news using the strategy of news framing and responsibility attribution influences the feeling of sympathy among U.S. college students (Jin, Zhang, Lee, Martin, & Smith, 2015) and impacts self-efficacy in identifying self and others' depression among Chinese college students (Jin, Zhang, Lee, & Tang, 2018). These findings indicate that cultural experience can influence the effects of perceiving depression news and health campaign messages on emotional response and the belief in one's ability to identify depression. These findings also imply that different emotional responses and perceived self-efficacy play a sequential role to mediate the relationship between the characteristics of health campaign message posts and intentional outcomes for Chinese immigrants.

Mental health literacy is defined as "people's knowledge and beliefs about mental disorders which aid their cognition management or prevention" (Jorm et al., 1997, p. 182). Mental health literacy is thus knowledge about mental health that can increase the public's ability to identify depression in themselves or others when people receive depression health campaign message posts. Some previous depression studies (Jin et al., 2015 & 2018) have defined mental health literacy as self-efficacy in depression identification and only examine self-efficacy, so these studies did not really identify the determinant for self-efficacy in depression

communication. Given these findings, this dissertation argues that mental health literacy can impact Chinese immigrants' ability to perceive their self-efficacy in identifying depression and in providing support and support resources that can further impact their intention to provide social support to individuals suffering from depression.

To examine the effect of depression health campaign posts with certain features (e.g., framing, visual images, cultural appeals) and social support strategies (e.g., comment links and emoticons) on providing support among Chinese immigrants, first, this dissertation conducts an online experiment study using framing, visual images, Hofstede's time orientation, and social support (e.g., instrumental and emotional support) to discover the influence of these posts on providing support to people who suffer from depression. Second, this dissertation investigates how acculturation moderates the relationship between depression campaign posts on Facebook and the intention to provide support. Third, this dissertation also discovers the mediating roles of discrete emotion and self-efficacy in identifying depression and in providing support and support resources on the relationship between depression campaign posts on Facebook and the intention to provide support. Fourth, this dissertation examines the moderating role of mental health literacy in the relationship between depression campaign Facebook posts and self-efficacy in identifying depression, providing support, and providing support resources that further impacts the intention to provide social support.

CHAPTER 2

LITERATURE REVIEW

Features of Depression Campaign Posts

Gain versus loss framing. Prospect theory (Kahneman & Tversky, 1979) revolves around the concept of the potential values of losses and gains for decision-making. Framing, which recognizes that different messaging strategies can be used to present the same or similar information, is one way that heuristics is linked to prospect theory. When individuals evaluate the benefits or risks associated with health threats or health recommendations for reducing those threats, different frames for the same risks and health issues, such as potential benefits (often termed “gains”) and costs (i.e., “losses”), can result in different persuasive outcomes (Tversky & Kahneman, 1981).

Extending the idea of prospect theory to recommended health behaviors by distinguishing between “prevention” and “detection” (Rothman & Salovey, 1997), studies have found the effects of gain-framed messages on increasing engagement in recommended preventive behaviors, such as sunscreen use for skin cancer prevention (Detweiler, Bedell, Salovey, Pronin, & Rothman, 1999; Latimer et al., 2008; O’Keefe & Jensen, 2007; Steward, Schneider, Pizarro, & Salovey, 2003). However, loss-framed messages are often more effective to persuade people to engage in detective behaviors, such as mammography or HIV testing (Apanovitch, McCarthy, & Salovey, 2003; Latimer et al., 2008; O’Keefe et al., 2007; Rivers, Salovey, Pizarro, Pizarro, & Schneider, 2005). To enhance the understanding and knowledge about this relationship between message framing and health orientation, Rothman, Bartels, Wlaschin, and Salovey (2006)

conducted a meta-analysis and concluded that people's prevention orientation mindset can be elicited while processing gain-framing messages; in contrast, individuals' detection orientation mindset can be elicited while processing loss-framing messages.

Studies examining framing have emphasized how health campaign messages frame the desired and undesired consequences or benefits and harmful effects of a health issue or behavior to persuade individuals to adopt recommended health behaviors. Regarding the emphasis on consequences and/or effects, studies have found that gain-framed messaging is a better strategy to motivate individuals to pursue safe or less risky outcomes, and loss-framed messaging is a better strategy to motivate individuals to choose uncertain or higher-risk outcomes while cognitively processing the framed messages (Gray & Harrington, 2011; Salovey, Schneider, & Apanovitch, 2002). Additionally, to persuade individuals to perform the advocated behavior, gain-framed messages should strategically emphasize the benefits of taking actions or reducing the undesirable consequences, but loss-framed messages should strategically address the harmful effects or increase undesirable consequences of not taking actions (Arora, Stoner, & Arora, 2006). These studies indicate that health organizations can design health campaign messages using the framing strategy to elicit individuals' risk perception for health issues that can then motivate them to adopt the recommended health behavior.

Nevertheless, framing studies have resulted in inconsistent findings regarding attitude and intention outcomes. For instance, gain-framed messaging is the best strategy to increase positive attitude and intention to quit smoking (Mollen et al., 2017), intention to receive the flu vaccine (Lee, Jin, & Nowak, 2018), and intention to provide social support for depression (Detweiler-Bedell et al., 2013). However, the effect of loss-framed and balanced-framed messaging on reducing the intention to engage in indoor tanning has also been found (May &

Evans, 2017). Although the effect of framing on providing social support for people who suffer from depression has been found (Detweiler-Bedell et al., 2013), there remain few framing studies on depression health issues. Additionally, challenges for help-seeking campaign messages related to depression have been found. For instance, self-stigma and the matching of framing message and depressed cognition influence the effect of framing on intention to seek help for depression (Lienemann et al., 2013; Lueck, 2017). However, little is known about the effect of framing message on providing support to individuals suffering from depression. Therefore, there is a need for strategic health communication researchers to identify the efficient features that can reduce the barriers to the persuasive effects of depression health campaign messages on intention to provide support.

Some studies suggest including potential cognitive or affective moderators or mediators to examine the framing effect (e.g., Gallagher & Updegraff, 2012; O’Keefe & Jensen, 2006). The first trend of framing studies considers cognitive factors as moderators or mediators of the effects of framing on health outcomes. For instance, the level of risk perception and perceived self-efficacy have been incorporated as moderators to examine the effect of framing on health outcomes (Hull, 2012; Updegraff & Rothman, 2013). The second trend is to consider users’ emotional state; studies taking this approach have found that individual emotional state leads to different effects of gain- and loss-framed messages on behavioral outcomes (Gerend & Maner, 2011). Third, some studies have focused on the influence of individual differences on the relationship between message framing and health outcomes, particularly the relationship between disease and gender. For instance, Nan (2012) found that gender exerted different levels of influence on the effect of gain- and loss-framed messages on health outcomes and getting the HPV vaccine. This finding indicates that self-relevance of diseases can be a potential influencing

factor. Another trend for framing studies examines how the combined strategy of using visual and textual content influences the effect of message framing and health outcomes. For instance, Seo, Dillard, and Shen (2013) found that the combination of loss-framed messaging and images increase people's receptivity to the messages. These studies indicate that the effect of health message framing on the health outcome is a complex process rather than a simple direct effect. This process could involve affective reaction and cognitive evaluation sequentially.

Compared to the amount of research conducted to assess the effectiveness of media news framing about depression for audiences, very little research testing gain- and loss-framed messages about depression has been conducted. For instance, studies have found that gain-framed depression messages played a significant role in influencing people's intention to provide social support (Detweiler-Bedell et al., 2013) and to increase the attention to positive information among individuals with low levels of depression (Lueck, 2017). Thus, compared with loss-framed message posts, gain-framed depression message posts on social media play a stronger role in increasing Chinese immigrants' intention to provide social support to people who suffer from depression. Framing studies about the behavior of providing support in depression is also lacking; however, regarding framing and the concept of the boomerang effect (Lienemann et al., 2013), this dissertation argues that gain-framed message posts are a better strategy than loss-framed message posts to reduce the boomerang effect and increase Chinese immigrants' intention to provide support while they process depression campaign message posts on social media.

H1: Depression campaign Facebook posts using the gain-framed strategy result in a significantly greater intention among Chinese immigrants to provide support than the loss-framed strategy.

Modality of visuals. Visual framing encompasses the use of visuals to define and address problems and their causes, evaluate them for a moral standpoint, or provide solutions via the use of depictions, symbols, or metaphors (Entman, 1993) to graphically capture the significance of an issue or event (Rodriguez & Dimitrova, 2011). Thus, visual framing is defined as a salient imagery framework that is used to construct meaning (Rodgers, Kenix, & Thorson, 2007), as message themes (Borah & Bulla, 2006; Patridge, 2005), and as ideological representations conveyed by the visuals in the messages (Griffin, 2004; Pieterse, 1992; Rodriguez & Dimitrova, 2011). Rodriguez and Dimitrova (2011), reviewing visual framing studies, identify and define four types of visual frames, including denotative, stylistic-semiotic, connotative, and ideological representations. Denotative representations refer to visuals that are framed to represent specific themes that organizations attempt to deliver and cover issues or events. Denotative meanings can be found in the textual descriptions that accompany the visual (Rodriguez & Dimitrova, 2011). Stylistic-semiotic representations refer to how photographic techniques, such as camera shooting angles, pictorial expression, color, actions, and poses, convey social meanings (Rodriguez & Dimitrova, 2011). Connotative frames refer to the use of visual symbols to convey meanings involving common social and cultural understanding and interpretation (Rodriguez & Dimitrova, 2011). Ideological representations refer to the use of visual frames that convey certain ideas to shape public consciousness and historical imagination (Rodriguez & Dimitrova, 2011). The visual images studied in this dissertation are framed to make certain social ideas (i.e., about a specific health behavior) salient and to represent abstract concepts (i.e., outcomes of an implied health behavior), thus fitting into Rodriguez and Dimitrova's (2011) ideological and connotative representation categories of visual frames.

Visuals play an increasingly important role in strategic health communication because they can increase recall and attention to health campaign messages, improve message comprehension and adherence to recommendations, and enhance the speed of information processing (Barry, 2004; Houts et al., 2006; Mansoor & Dowse, 2003). According to exemplification theory (Zillmann, 2006), messages that present visual images and individual stories have a stronger impact on audience reactions to the messages than messages that present data and statistical reports. Thus, visual imagery is an efficient strategy to enhance the persuasiveness of health prevention and promotion campaigns. Furthermore, images can also lead to greater recall for image content than textual content (e.g., Defeyter, Russo, & McPartlin, 2009; Evans et al., 2015; Paivio, Rogers, & Smythe, 1968), and social media posts with images lead to greater liking and sharing engagement (Rus & Cameron, 2016). Images of familiar objects are also processed nearly instantaneously (Thorpe, Fize, & Marlot, 1996) and facilitate the understanding of semantic meanings from the images faster than words through the process of translation (Hockley & Bancroft, 2011).

Moreover, according to David (1998), pictures or images can serve decorative or representative roles in the news media. The functions of decorative images serve to draw attention or create interest because they have little or no relevance to the text of the news content. In contrast, representative images make the text more concrete because they capture events that were presented in the text of the news content. David (1998) further demonstrated that graphics and infographics can help make news text more coherent or comprehensible and can facilitate higher-level cognitive functions in audiences. To further investigate the effects of varied types of images on health campaign message posts, this dissertation focuses on the representative functions of visual images, including photographs and animations.

Visuals such as infographics have specifically been used as a strategy to increase people's awareness and persuade them to change their behavior in a variety of health campaign messages. In addition to persuasion and information sharing, infographics can serve as visual explanations (Krum, 2014; Lankow, Ritchie, & Crooks, 2012; Smiciklas, 2012), which can be pivotal aids in a socially mediated communication strategy (Parrish, Jones, & Fuller, 2015). The study also found that infographics (e.g., bar charts) help people more easily and better understand risk information and attain better risk perception communication (Edwards, Elwyn, & Mulley, 2002; Sprague, Russo, Lavallie, & Buchwald, 2012). However, Garcia-Retamero and Cokely (2011) found that infographics eliminate the effects of message framing on increasing the intention to use condoms and get STD screenings.

The function of images provides clear and direct information cues that construct people's perception of social reality (Messaris, 1994; Rodgers et al., 2007), so images play a clear role in guiding people to communicate with others and interpret the world in a certain and rapid way. Images can be processed more quickly and more universally than text. Varying the photo images used in health-related news has been shown to have a substantial impact on individuals' perceptions of their own risk (Gibson & Zillmann, 2000) and the importance of perceived safety issues (Zillmann et al., 1999). Moreover, studies have found effects of photo images on health prevention communication. For instance, McWhirter and Hoffman-Goetz (2015) found that photo images of the negative consequences of sun exposure positively impacted knowledge, attitudes, and behaviors related to UV exposure and UV protection. Schneider et al. (2001) also found the superior effects of gain-framed visual formats on smoking cessation. In contrast, studies have found effects of graphic warning labels on thoughts about quitting smoking (Andrews, Netemeyer, Kees, & Burton, 2014) and effects of negative photographs on negative

attitudes toward obese people (McClure, Puhl, & Heuer, 2011) and healthy behavioral intentions for people of normal weight (Young, Subramanian, & Hinnant, 2016). Moreover, positive images that include information similar to that identified in the reviews were more successful in persuading Korean American parents to adopt the recommendation of preteen vaccines for their children (Inokuchi, Ramakrishnan, Sapsis, & Friedman, 2009). Regarding these findings, strategically using photographic images can help persuade audiences regarding health outcomes. Such findings also indicate that the features of photographic images (e.g., ethnicity and gender) play a significant role in influencing health outcomes.

Animation-style images, such as cartoons, embedded in health campaign message posts on social media have also become popular. Cartoons are simple by nature and always have a clear focus on ideas and concepts (Rozario & Sriram, 2015). Using cartoons to convey health messages can transform complex ideas into an easily understandable form, trigger viewers' emotions and make them feel connected with the characters and message, broach topics about which people are reluctant to talk, and increase viewers' sense of self-efficacy and health literacy, thereby motivating them to follow the recommendations (Kennedy et al., 2014; Kennedy & Rogers, n.d.; Rozario & Sriram, 2015). Studies have examined the effects of cartoons in the fields of advertising, healthy eating, smoking cessation, cancer prevention, and patient communication. For instance, studies have found that cigarette advertising using cartoons in magazines was a better strategy for promoting the products among younger readers (Kelly, Slater, Karan, & Hunn, 2000); cartoon media characters could increase the pursuit of a healthy diet, such as fruit and vegetable consumption, as compared to no cartoon use (Kraak & Story, 2015); tobacco warning labels with cartoons increased people's acceptance of messages about the health issues caused by smoking compared with plain warning labels (Duffy & Burton,

2000); health digital news packages with animated graphics elicited greater believability, negative attitude toward risks, and positive outcomes of cancer prevention behavior (Sontag & Barnes, 2017); and instructional messages with cartoons effectively increased patients' health literacy about vaccines (Leiner, Handal, & Williams, 2004). In these studies, cartoons play a significant role in reducing barriers to information and increasing health messages' persuasive effects. However, these studies only compared messages with present and absent cartoon conditions, which might be less in line with reality. At present, in social media, health campaign message posts often include individual photos or animated graphics to draw people's attention and then motivate them to change their attitudes and behaviors. Therefore, it is necessary to examine how the messages with these characteristics impact people's behavioral intention outcomes.

Only a few studies have examined the effects of visuals in depression messages. The benefits of visuals have been shown to reduce stigma related to those receiving treatment and to language barriers, while increasing individuals' comfort in being around someone with mental illness, the willingness to share social media posts with images on Instagram, attention to messages, comprehension, memory, positive attitude toward the mental illness, and self-efficacy in identifying symptoms (Andalibi, Ozturl, & Forte, 2015; Broussard, Radkins, & Compton, 2014; Cabassa, Molina, & Baron, 2012; Lazard, Bamgbade, Sontag, & Brown, 2016; Sieff, 2003; Unger, Cabassa, Molina, Contreras, & Baron, 2013). These studies indicate that health promotion and prevention campaign messages about depression that embed visual images on social media play two important roles. First, the images can trigger viewers' emotional reaction to and engagement with people who suffer from depression, increasing their willingness to provide support to these people. Second, seeing depression messages with images can help

people with depression feel less isolation, shame, and guilt, which can motivate them to seek help. However, the question of how different types of images in social media campaign messages, such as individual photos and cartoons, play a role in prompting individuals to seek help and provide support must be further examined. Moreover, Seiff (2003) mentioned that only a few media outlets frame mental health using positive images that can increase people's positive attitude toward mental health. To research positive outcomes for depression messaging, this dissertation only focuses on the different modalities of positive images and examines their effects.

Research has found that how information is presented – for example, the combination of images and text, images only, or text only – also matters (McWhirter & Hoffman-Goetz, 2015; Seo et al., 2013; Seo & Shen, 2009; Sprague et al., 2012). Studies have found positive effects of messages combining images with text on individuals' comprehension of risk information (Sprague et al., 2012); people's knowledge, attitudes, and behaviors about ultraviolet (UV) light (i.e., sun) exposure and protection (McWhirter & Hoffman-Goetz, 2015); and comfort in being around someone with mental illness (Lazard et al., 2016). Additionally, health messages combining animated pictorial aids with text have been found to increase patients' comprehension of medical instructions (Katz, Kripalani, & Weiss, 2006). These studies indicate that health campaign messages incorporating images (e.g., photos and cartoons) with text can strengthen the persuasive effect of depression campaign message posts. However, these studies manipulated the images by comparing images and non-images. This approach can miss the opportunity to comprehensively understand how the presentation of health messages with varied images and text plays a role in the persuasive outcomes and is less akin to the real situations characteristic of health campaign messages on social media, because most health campaign message posts include

either individual photos or animated images. To fill this gap from previous studies, this dissertation further examines how combining different types of images with the text plays a role in the effectiveness of depression posts on social media. Moreover, as previous framing studies have shown, gain-framed messages play a significant role in preventive behavior. However, limited studies have examined how depression campaign posts with visual modality and gain-framed text impact depression communication among Chinese immigrants.

RQ1: How, if such an effect exists, does visual modality such as photos of real people and cartoons elicit intention among Chinese immigrants to provide support for depression?

Cultural appeals. To effectively reach and persuade diverse targeted publics in health communication, health organizations often tailor health campaign message content based on the characteristics of targeted publics, such as race and gender. Therefore, cultural values can be considered as a predictor that influences how people perceive health issues, pay attention to health messages, and choose to behave differently. Cultural values can also be considered as a strategy for designing health campaign messages to persuade individuals to change their attitudes, intentional behavior, and behavioral outcomes. For instance, research has found that people from collectivistic cultures were more sensitive to negative outcomes and displayed more willingness to act on disease prevention compared to people from individualistic cultures, who paid more attention to the presence or absence of positive outcomes and were motivated by promotion-focused messages (Lee, Aaker, & Gardner, 2000). Research has also found effects of cultural appeals as a strategy for culturally tailored messages on facilitating persuasive effects through a heuristic and/or peripheral process and effectively reaching diverse audiences from different ethnic groups (Huang & Shen, 2016; Kreuter, Lukwago, Bucholtz, Clark, & Sanders-

Thompson, 2003; Niederdeppe, Bigman, Gonzales, & Gollust, 2013). Moreover, Huang and Shen (2016) conducted a meta-analysis that found that culturally tailored messages were especially persuasive for Asian Americans. In light of these studies, this dissertation argues that cultural appeals are a persuasive strategy for culturally tailored depression campaign messages, which can effectively persuade Chinese immigrants to take positive actions in depression communication, particularly when the existing cultural values and cultural appeals match. For instance, if Chinese immigrants have a strong existing collectivistic cultural value, they will more easily be persuaded to provide social support to individuals suffering from depression when they receive depression campaign messages with collectivistic cultural appeals.

Hall's (1976) high and low cultural contexts and Hofstede's (1980) individualism and collectivism cultural value dimensions have been used to examine the effect of cultural characteristics in health communication by comparing two different cultural values between two countries. For instance, Paek, Yu, and Bae (2009) conducted content analysis to examine the roles of Hall's (1976) high and low cultural contexts and Hofstede's (1980) individualism and collectivism cultural value dimensions in online health promotion antismoking websites. The results showed that antismoking websites implemented cultural context rather than cultural values to persuade Koreans and Americans to quit smoking. In another study, Yu and Shen (2013) conceptualized cultural appeals as representing individualism and collectivism and examined the effects of cultural appeals and message framing on adopting the preventive health behavior of receiving the influenza vaccination among individuals in U.S. and Hong Kong. The findings showed that gain-framed messaging using the cultural appeal of individualism and loss-framed messaging using collectivism were the best strategies to enhance influenza vaccination messages' influence on the acceptance of influenza vaccination. These results provide evidence

for the effect of health campaign messages' cultural appeals on health communication persuasiveness among different ethnic groups, because cultural appeals can arouse viewers' emotional and cognitive resonance, particularly when the audience's existing cultural values and the health campaign messages' cultural appeals are matched.

Graham (1981) stated that individuals' time orientation is constructed by their life experiences and is the most powerful influence on people's perceptions of the consequences of present actions. Moreover, Hofstede's (1980, 1991) cultural value dimensions, including power distance, uncertainty avoidance, individualism versus collectivism, masculinity versus femininity, and short-term versus long-term orientation, reflect the impacts of cultural values on individuals' lives and differently shape individuals' perceptions of the consequences of present or future rewards, which in turn impact people's immediate or delayed actions.

Building on the perspective of cultural values for the time orientation, Hofstede and Bond (1988) added a fifth dimension of cultural values, the short-term versus long-term orientation. Short-term orientation is defined as valuing stable individuals, respect of tradition, and present-based rewards for oneself, because people with short-term orientation expect immediate gratification of their desires (Hofstede, 1991, 2001, 2007; Hofstede & Minkov, 2010). Short-term orientation is found in Western countries and Africa (Hofstede, 1991, 2001, 2007). In contrast, long-term orientation is defined as valuing persistence, thrift, and future-based rewards, because people with long-term orientation tend to be forward-looking and do not expect immediate gratification of their desires (Hofstede, 1991, 2001, 2007; Hofstede & Minkov, 2010). Long-term orientation is closely related to Confucian values and is found in Asian countries (Hofstede, 1991, 2001, 2007). People with long-term orientation focus on the importance of relationships with their family and close loved ones, as well as future gratification and rewards,

while people with short-term orientation focus on self-accomplishment as well as present gratification and rewards. To investigate how the time orientation of cultural value influences the depression issue among Chinese immigrants, this dissertation focuses on the cultural appeal implementing the long-term orientation and conceptualizes the long-term orientation as a future reward for oneself, family, and close loved ones if people provide support to individuals suffering from depression.

Several studies have found effects of short-term versus long-term orientation of cultural values on advertising and health communication. For instance, Lee and Heo (2016) found that long-term orientation was a more effective advertising strategy than short-term orientation for people with collectivistic values. Studies have also found an association between cultural backgrounds and promotion and/or prevention focuses (Brown & Segal, 1996; Uskul, Sherman, & Fitzgibbon, 2009). Compared with short-term or present orientation, people with long-term or future orientation had higher susceptibility to the presentation of the consequences of uncontrolled hypertension and had more belief in obscure future events (Brown & Segal, 1996), were motivated to achieve future ends and actively seek opportunities for self-improvement (Bergadaa, 1990), and were more likely to engage in health-promoting behaviors (Harwood, 1981). These findings indicate that short-term versus long-term, or present versus future, time orientations of cultural values can result in different perceptions of the present or future rewards of health consequences for oneself and for others, through which people can be further motivated to change their behavior. In addition, compared to health campaign messages embedding present rewards, health campaign messages embedding future rewards for oneself and for others have a stronger impact on people from collectivistic cultures. However, Chinese immigrants experience two different sets of cultural values, so there is a need to further examine whether long-term

future reward orientation still plays a significant role in influencing the health consequences of depression among Chinese immigrants.

Hofstede (2007) also mentioned that some researchers have added other new dimensions to represent national culture, such as with the Big Five personality scale, indicating that Hofstede's national culture has the potential to integrate other perspectives to examine the effect of culture on health communication such as message framing. Few studies have used framing and cultural time orientation to examine health communication outcomes; on the contrary, most studies have used the psychological perspective of temporal distance with framing to examine the effect of health campaign messages on health outcomes in different ethnic groups. For instance, Wen and Shen (2016) used framing and temporal distance to test the effect of HPV vaccine messaging for young Chinese adults, finding that gain-framed messaging with short-term benefit as well as loss-framed messaging with long-term cost were the best strategies for HPV vaccine message design. The authors stated that Hofstede's (2007) long-term orientation was a factor in these findings among young Chinese adults. Moreover, regarding cultural values and mental health, Sheikh and Furnham (2000) found that the relationship between culture and attitude toward seeking professional help was mediated by determined causal beliefs, sex, and education. These studies provide evidence that cultural values influence how people pay attention to health campaign message content and how they evaluate the values of rewards with different time framing, which can result in different actions.

Overall, these studies imply that Hofstede's long-term time orientation, or future rewards, should be used to persuade Chinese immigrants to provide support to others suffering from depression. However, few studies have conducted health campaign messaging with a cultural appeal focus, especially Hofstede's time orientation, with a population of Chinese immigrants.

Thus, it remains unknown how long-term or future orientation influences behavioral intention outcomes for depression among Chinese immigrants who experience two sets of cultural values. Moreover, few studies of depression campaign messages have jointly examined the effects of the interaction among cultural values, message framing, and visual modality on depression communication among Chinese immigrants. To examine the effective features of depression campaign messages in terms of the literature of framing, visual modality, and cultural values, this dissertation proposes one research question and one hypothesis to investigate how features of campaign message content jointly and individually impact Chinese immigrants regarding depression communication.

H2: Depression campaign Facebook posts using a long-term future reward strategy result in significantly greater intention among Chinese immigrants to provide social support than without using a long-term future reward strategy.

RQ2: How, if such an effect exists, do framing, visual modality, and cultural appeals jointly increase the intention among Chinese immigrants to provide social support?

The Strategy of Using Comment Links and Emoticons in Depression Campaign Posts

Social support. Social media provides a virtual environment in which people can engage in interactive and supportive communication by posting messages and comments as well as reading posts and comments. Burleson and MacGeorge (2002) defined supportive communication as “verbal and nonverbal behavior produced with the intention of providing the assistance to others perceived as needing that aid” (p. 374). When people see posts that use verbal and nonverbal cues, they perceive support from and feel a sense of belonging to the supportive communities on social media. In other words, these verbal and nonverbal cues from

others not only convey the importance of the messages but also increase viewers' perceived support of those messages.

Social support through supportive communication plays a significant role in the public's wellbeing. Goldsmith and Albrecht (2011) defined social support as "an umbrella term for various theories and concepts that link involvement in social relationships to health and well-being" (p. 335). In addition, Kim et al. (2012) defined social support as "verbal and nonverbal behavior that influences how providers and recipients view themselves, their situations, the other, and their relationship" (pp. 2-3). The positive effects of social support on human health and wellbeing have been found for computer-mediated communication and social media (Kim et al., 2012; Phua, 2013).

Since social support is an umbrella term covering a number of benefits to human health and wellbeing, several scholars have further defined and investigated subcategories of social support, including informational support (e.g., giving advice), emotional support (i.e., expressing empathy, sympathy, and compassion), esteem support (i.e., reassuring the individual of her/his competence and self-efficacy), tangible aid support (e.g., providing service or money), and social network support (e.g., promoting a sense of belonging and having similar interests and concerns) (Cutrona, Cohen, & Igram, 1990). Studies have found effects of each type of social support on physical and psychological wellbeing (Cutrona, Russell, & Rose, 1986; Cutrona & Suhr, 1994). Morelli and colleagues (2015) found that instrumental and emotional support interdependently impacted human wellbeing. Furthermore, Mui and Kang (2006) found that instrumental and emotional support can help elderly Asian immigrants reduce acculturation stress and depression. These studies provide evidence that the effects of subcategories of social support on individuals'

wellbeing need to be further identified on online social networking sites (SNSs) and the communities they host.

Due to the anonymity offered by virtual online settings, individuals may be more willing to express support to people in need, especially emotional support. Therefore, the audience of such messages may perceive higher emotional support from others' expression of emotional support. Kim et al. (2011) defined emotional support as "(a) comments that acknowledged or validated others' emotional reaction and feelings or (b) comments that provided reassurance and encouragement" (p. 1108). Regarding the functions of emotional support, Yoo et al. (2014) demonstrated that emotional support can be conceptualized as having four distinct functions:

(1) facilitates empathic and sympathetic responding, including cognitive understanding for the suffering of others; (2) provides encouragement and reassurance, bolstering the recipient's hope and confidence; (3) offers caring and physical affection, including hugs, kisses, hand-holding, and shoulder patting; (4) includes universality to emphasize the importance of closeness, bonding, and community. (p. 3)

Emotional support with verbal and nonverbal content plays a significant role in increasing perceived emotional support that can motivate viewers' behavioral changes. Emotional support is the most frequent type of support offered on SNSs (Preece & Ghoati, 2001), and studies have found an effect of perceived emotional support in decreasing perceived stress on Facebook (Wright, 2012). These studies indicate that expressing emotional support with verbal and nonverbal content not only facilitates the effect of health campaign posts on SNSs but also increases the intention to follow recommendations and behavioral changes.

Viewers' perceived emotional support through SNSs can arise from others' expression of emotional support, and thus, the presentation of emotional expressions can result in viewers'

differing feelings of emotional support in SNSs. Namkoong et al. (2013) found that expressional emotional support benefited cancer patients' coping strategies, and Han et al. (2008) found that combinations of positive and negative words benefited women with breast cancer for coping. Moreover, Morelli et al. (2015) found that instrumental and emotional support interdependently impacted human wellbeing. These studies indicate that health campaign posts expressing mixed emotions and providing advice on social media can achieve the most persuasive effect on health outcomes. However, the question of whether positive and negative nonverbal emotional expressions on Facebook (e.g., emoticons) result in similar or different health outcomes, especially for depression, must be further examined.

As a reflection of the relationship between culture and emotional expression, the use of emoticons is a trend in studies of cultural psychology and emotion. Emoticons are defined as “graphic representations of facial expressions” (Walther & D’Addario, 2001, p. 324). Emoticons in text-based computer-mediated communication (CMC) not only serve important social functions during the interaction (Part, Baek, & Cha, 2014; Provine, Spencer, & Mandell, 2007) but also assist people to interpret nuances of meaning, understand attitudes of the conversational partner, and incorporate levels of emotion that are not captured by verbal elements alone (Gajadhar & Green, 2005; Part et al., 2014). With the development of technology, emoticons have become a popular way to express emotions and play a significant role in directly increasing people’s experience of emotions (Provine, Spencer, & Mandell, 2007; Walther & D’Addario, 2001). Some studies have found that different cultural backgrounds not only influence how people display their emotions via emoticons but also impact the results of weighting facial cues from emoticons as people interpret the emotional expression (Matsumoto, Olide, Schug, Willingham, & Callan, 2009; Yuki, Maddux, & Masuda, 2007). These studies have shown the

influence of culture on visual emotional expression and perception in online settings. However, the question of how people with different cultural experiences perceive emotional support from the six universal emoticons on Facebook should be further examined. For example, Walther and D’Addario (2001) state that “the face is particularly important in judging positivity, because receivers associate the smile with positivity” (p. 328). This statement indicates that people’s judgment of positive or negative emotional support from visual cues can be impacted by culture. However, the characteristics of the six emoticons on Facebook – including “Like” with a thumbs-up hand gesture, “Love” with a heart symbol, and four other emoticons with different facial expressions – are universal. Therefore, the role these six universal emoticons play in perceiving and feeling emotional support when viewers see depression health campaign posts with these emoticons on Facebook should be further investigated.

In sum, in light of the previous studies about the benefits of instrumental and emotional support on depression as well as the relationship between culture and emoticons (Han et al., 2008; Matsumoto et al., 2009; Morelli et al., 2015; Mui & Kang, 2006; Yuki et al., 2007; Walther & D’Addario, 2001), this dissertation investigates how combinations of instrumental and emotional support as well as the varied emotional expression of emoticons facilitate the effectiveness of depression campaign posts and impact the intention among Chinese immigrants to provide support for individuals suffering from depression by operationalizing instrumental support as providing a comment link along with the campaign post content and operationalizing emotional support as using emoticons. Therefore, this dissertation proposes three hypotheses:

H3(a): Depression campaign Facebook posts with comment links result in a significantly greater intention among Chinese immigrants to provide support than those without comment links.

H3(b): Depression campaign Facebook posts with mixed reaction emoticons (like and sad) result in a significantly greater intention among Chinese immigrants to provide support than positive or negative reaction emoticons.

H3(c): Depression campaign Facebook posts with comment links and mixed reaction emoticons result in the significantly greatest intention among Chinese immigrants to provide support.

Moreover, given the findings of the positive effect of visuals on reducing stigma and in increasing individuals' attention to messages, level of comfort in being around depressed individuals, and positive attitude toward mental illness (Andalibi et al., 2015; Broussard et al., 2014; Cabassa et al., 2012; Lazard et al., 2016; Sieff, 2003; Unger et al., 2013), this study argues that depression campaign posts that use different types of visuals, such as supportive images and help-seeking images, can lead people to pay attention to the message content and comment links in different ways. However, little is known about how different types of visuals in depression campaign posts on Facebook impact the outcomes of depression communication among Chinese immigrants. Additionally, visuals can strengthen the effect of emoticons, which can in turn impact people's emotional responses, the feeling of emotional support, and intention to provide support to individuals suffering from depression. To examine the above questions, this study proposes a research question:

RQ3: How, if such an effect exists, do comment links, reaction emoticons, and visual modality jointly increase the intention among Chinese immigrants to provide social support?

Moderating Role of Acculturation for Strategic Message and Supporting Outcomes

Acculturation. The process of immigration is stressful because people experience changing and adjusting to the new environment and new culture while also managing the conflict between the new culture and their original culture. Due to the different philosophies between Eastern and Western culture, including those involving social structures, interpersonal relations, core belief systems, and cognitive processing (Nisbett, 2003; Shim & Schwartz, 2008), immigrants adjust, change, and adapt between the original and new cultural values when they move into a new environment. These adjusting processes are collectively called acculturation.

There are a variety of definitions of acculturation. The classical definition of acculturation is the process “when groups of individuals having different cultures come into continuous first-hand contact with subsequent changes in the original culture patterns of either or both group” (Redfield, Linton, & Herskovits, 1936, p. 149). The process of acculturation involves experiencing cultural differences between the original and new societies, gradually adopting attitudes and behaviors from the host society, and changing the cultural attitudes, values, and behaviors of either or both cultural groups (Anderson, 2004; Gordon, 1964; Harmon, Castro, & Coe, 1997). Berry (1997) defined acculturation as having two dimensions: cultural maintenance and cultural contact and participation. Cultural maintenance considers the importance of cultural identity and characteristics that should be maintained. Cultural contact and participation mean that individuals either become involved in other groups or remain primarily among themselves. Based on these two dimensions of acculturation, four acculturation strategies have been posited, including assimilation, separation, integration, and marginalization, for different processes and outcomes of acculturation (Berry, 1997). Therefore, acculturation is a

process of negotiation and decisions about whether to change or maintain cultural identity and values, selecting between the dominant group and the nondominant group.

Graves (1967) distinguished acculturation between the group and individual levels to point out that individuals within a group could experience acculturation at different levels. Group-level acculturation refers to a change in the culture of the group; individual-level acculturation, also called psychological acculturation, refers to a change in the psychology of the individual (Graves, 1967). Since several studies have found effects of acculturation on the health-related behaviors among ethnic minorities living in the United States (Abraido-Lanza, Chao, & Florez, 2005; Chan, Sun, Xu, & McLaughlin, 2017; Hahm, Lahiff, & Guterman, 2004; Hendershot, MacPherson, Myers, Carr, & Wall, 2005; Kim et al., 2007), the effect of acculturation on health communication is often examined at the individual level.

The study of acculturation on health communication among Asian immigrants often conceptualizes acculturation as language proficiency, place of birth, length of residency in the United States, cultural identity, friendship choice, generational history, and traditional cultural attitude (Chan et al., 2017; Hahm et al., 2004; Kimbro, Gorman, & Schachter, 2012; Marfani, Rimal, & Juon, 2013; Shim & Schwartz, 2008). To better understand how acculturation influences the outcomes of intentional behavior with depression, such as providing support to people who suffer from depression, this dissertation includes the dimensions of language proficiency, length of residency in the United States, cultural identity, friendship choice, generational history, and traditional cultural attitude when considering acculturation.

Studies examining acculturation and health behavior among Asian immigrants have found that acculturation negatively influences smoking behaviors (Kim et al., 2007) while positively impacting alcohol and condom use (e.g., Chan et al., 2017; Hahm et al., 2004;

Hendershot et al., 2005) and increasing the likelihood of seeking information about breast cancer and intention to obtain a clinical breast exam (Marfani et al., 2013). These findings indicate that acculturation plays a significant role in health behavioral intention.

Studies examining acculturation and mental health emphasize the influence of acculturation on psychological adjustment, depression, and suicide among different ethnic groups, such as Hispanic and Asian immigrants with different age and gender groups. For instance, the acculturation of orientation toward U.S. identification was positively associated with the depressive symptoms in young Hispanic females but not in males (Lorenzo-Blanco, Unger, Ritt-Olson, Soto, & Baezconde-Garbanati, 2011). However, studies have found that elderly Hispanic immigrants who were less acculturated felt more depressed (Black et al., 1998; Falcón & Tucker, 2000; González et al., 2001; Hovey, 2000). Moreover, during the acculturation process, including the processes of physical, psychological, financial, spiritual, social, language, and family adjustment, acculturation stress might be more likely to occur with elderly immigrants in the United States (Mui & Kang, 2006), which can mediate the relationship between acculturation and depression.

Regarding acculturation and depression among Asian immigrants, elderly Asian immigrants with higher acculturation stress experienced higher depression (Mui & Kang, 2006), and elderly Asian immigrants with higher acculturation to the host society had better mental health status (Pang, 1998; Stokes, Thompson, Murphy, & Gallagher-Thompson, 2002). Mui and Kang (2006) also found that different subgroups of Asian immigrant elders experienced different rates of depression, which indicated that different subgroups of Asian immigrants also had different levels of acculturation.

The dimensions of acculturation also influence psychological distress and depression among different subgroups of Asian immigrants. For instance, studies have found that Korean Americans with high behavioral acculturation and low Asian values tended to experience more psychological distress and adjustment issues (Shim & Schwartz, 2008), Chinese people with low acculturation displayed more psychological symptoms (Wang & Mallinckrodt, 2006), and Asian adolescents who felt marginalization in their acculturation felt more depressed (Kim, Gonzales, Stroh, & Wang, 2006). Additionally, some dimensions of acculturation help increase depression. For instance, Oh, Koeske, and Sales (2002) found that Korean immigrants with stronger cultural identity, more attachment to traditions and values, and greater assimilation into U.S. culture had higher depression. These findings show that internal and external cultural conflicts between two cultures increase the risk of feeling depressed. These results also indicate that acculturation includes a variety of dimensions and is a complex process and that cultural values should not be generalized for subgroups of Asian immigrants.

In sum, most acculturation studies have conducted surveys to investigate the influence of acculturation on attitudinal and behavioral outcomes for various health topics. Since acculturation involves the process of adjusting, changing, and adapting the cultural values between one's original and new cultural environment, acculturation might influence how people perceive and interpret health messages and emotional, cognitive, and behavioral intention outcomes. In addition, language fluency and preference are dimensions of acculturation that can limit Asian immigrants' health literacy skills, which can, in turn, increase the barriers to health persuasion (Marfani et al., 2013). This finding indicates that images might play a more significant role for Chinese immigrants because images can enhance health literacy. Moreover, acculturation can moderate the relationship between the characteristics of depression campaign

message posts (e.g., framing, visuals, cultural appeal, comment link, and emoticons) and behavioral intention to provide support to people who suffer from depression. To address this relationship, the following research questions were posed:

RQ4(a): Does acculturation moderate the relationship between the features of depression campaign Facebook posts (e.g., framing, visuals, and cultural appeal) and the intention among Chinese immigrants to provide support?

RQ4(b): Does acculturation moderate the relationship between depression campaign Facebook posts with comment links, reaction emoticons, and visuals, and the intention among Chinese immigrants to provide support?

Mediating Role of Discrete Emotions and Self-Efficacy

The studies of the effects of affect and cognition on information processing in terms of psychological perspective generally take one of two approaches. One approach focuses on the influence of cognition on affect, which might lead to different outcomes for different processes, such as short-term memory, long-term memory, and attentional mechanisms (Simon, 1979). Moreover, Murry and Dacin (1996) found that cognition, such as perceived real and personal relevance, plays an ongoing role in eliciting negative emotion. The second approach focuses on the influence of affect/emotion on cognition, which from a psychological perspective includes information processing, attitude, and recall. Lazarus (1982) argued that affect determines cognition and that cognition and affect should be considered as relatively independent subsystems. Regarding the effect of emotion on information processing, studies have found the influence of positive and negative emotions on information processing and cognitive memory of information (Bagozzi, Gopinath, & Nyer, 1999; Bless, 2000) as well as on motivation and information processing (Simon, 1967; Wyer, Clore, & Isbell, 1999). Moreover, some studies

have focused on the effect of different types of media content (e.g., television and print advertising) and different display formats (e.g., size, static versus moving messages) on emotional arousal, which results in differing information processing (Chaudhuri & Buck, 1995; Detenber & Reeves, 1996). Positive emotion has also been shown to increase positive attitude (Cacioppo & Petty, 1989) and recall information (Booth-Butterfield & Booth-Butterfield, 1990). These studies indicate that the sequential mediators of emotion and cognition play a role in health information processing, decision-making, and intentional behavioral change in the public. Due to the characteristics of health campaign posts on social media, such as image and emoticon use, this dissertation focuses on the second approach to investigate how discrete emotions and cognition play a sequential role in the relationship between health message posts and behavioral intention to provide support.

Discrete emotions. Emotions are considered internal mental states that are related to evaluative-valenced reactions to events, agents, or objects (Nabi, 2010). In addition, emotion is defined as “a mental state of readiness that arises from cognitive appraisals of events or thoughts; has a phenomenological tone; is accompanied by physiological process; is often expressed physically; and may result in specific actions to affirm or cope with emotion, depending on its nature and meaning for the person having it” (Bagozzi et al., 1999, p. 184). Lazarus (1991) noted four classes of observable variables relevant to emotion, including action, physiological reaction, what people say, and environmental events and contexts. These processes also form either positive or negative emotion. Thus, emotion is considered a trigger for the following serial reactions as well as processes, and emotion is a process, not a static mental state.

Nabi (2003) demonstrated that individuals’ emotional responses to message content can serve as an additional message framing mechanism for that content via the “repeated pairing of

certain emotions with particular ideas or events eventually shapes the way which one interprets and responds to those events” (p. 227). Emotion helps shape the allocation of mental and physical resources that help people interact with the world around them (Lazarus, 1991; Nabi, 2003). According to Nabi’s (1999) cognitive-functional model study, discrete negative emotion plays a significant role in information seeking, attitude change, and behavior. As these studies show, emotion is a strategy for health campaign messaging and is also an important determinant of the outcomes of behavioral intention. Furthermore, understanding discrete emotional response can provide a better and more comprehensive picture of how the public responds to the health campaign message content that health organizations create.

Since emotional response plays a significant role in the persuasiveness of health campaign message content on attitude, intention, and behavioral changes, the effects of emotional response on health crisis and risk as well as health promotion communication have been examined. Regarding the effect of emotion on health risk and crisis communication, emotional response is considered an indicator of the effectiveness of strategic communication messages on decision-making among the public (Catellier & Yang, 2012). For example, regarding emotional response and health risk communication, the positive effects of positive emotions on trust in health information (Catellier & Yang, 2012) and behavioral intention toward potential health risks (Yang et al., 2012) were found. Some studies found that negative emotions, such as worry and regret, had direct or mediated influence on risk perceptions of vaccines (Chapman & Coups, 2006; Setbon & Raude, 2010) and influenced behavioral intentions regarding potential health risks through their effects on attitudes (Yang et al., 2012).

Discrete emotional response has been shown to be of importance to health risk and crisis situations. For example, Jin, Pang, and Cameron (2012) identified anger, fright, anxiety and

sadness as primary discrete emotions felt by individuals in crisis and risk situations. Jin, Liu, Anagondahalli, and Austin (2014) further expanded the inventory of emotions in crisis and risk contexts, including sympathy as a positive emotion in crises. Research also found the mediating effects of discrete emotions, such as anxiety, detachment, and optimism, on the relationship between the features of Zika health crisis messaging and behavioral intention to take protective actions recommended by federal health agencies (Jin et al., 2016). These findings indicate that emotional response is a determinant for the public's decision-making when facing health risk and crisis situations and as they process health risk and crisis information.

The purpose of emphasizing emotions in health messaging is also to increase people's awareness of health diseases and to motivate people to seek health information and behavioral changes through the emotional and cognitive process, which can benefit health communication researchers' understanding of how people react to health promotion messages (Myrick, 2015). Therefore, the study of emotion's impact on health communication often examines the effect of emotional appeals or emotional responses on health promotion outcomes. Studies have identified that emotional appeals can be useful devices for public health agencies to manage relationships with the public and to help reduce public fear and anger about health issues (Mikula, Scherer, & Athenstaedt, 1998; Vaughan & Tinker, 2009). People's emotional responses, such as fear and anger, can also result in different outcomes for information accessibility, desired information seeking, and policy preference (Nabi, 2003). Moreover, studies have identified a mediating effect of emotions, such as fear and anger, on attitudes and behaviors among the public (Donohew, Lorch, & Palmgreen, 1998; Lang, 1995; Rimer & Kreuter, 2006; Witte & Allen, 2000). These studies indicate that emotional response is an important factor for people to decide whether they

want to follow recommendations and take action for the prevention and detection of health issues.

The impact of framing on emotions, including through its interaction with health images, has been much less examined. Some studies have found that pictures trigger emotional responses that, in turn, influence individuals to experience positive or negative affect toward health-related objects (Evans et al., 2015; Houts et al., 2006). Marfani et al. (2013) found that anxiety can facilitate the seeking of breast cancer information among immigrant Asian Indian women. Han et al. (2008) found that the mixed valence of text content played a significant role in coping among women with breast cancer. These studies imply that discrete emotional response plays a mediating role in the relationship between the characteristics of depression health campaign posts and the behavioral intention to provide support. In addition, in alignment with Lazarus's (1982) affect and cognition argument, this dissertation argues whether and how discrete emotions impact cognitive factors that can further motivate people to provide support to individuals suffering from depression.

Self-efficacy in depression help and support communication. Bandura (1997) defined self-efficacy as an individual's confidence in his or her ability to perform varied levels of action and then produce a specific outcome. Self-efficacy has been identified as a determinant of the effect of framing on health communication, but studies have shown inconsistent results. For instance, compared to people with low self-efficacy, the framing strategies of messages about detecting skin cancer symptoms had more influence on people with high self-efficacy (van 't Riet, Ruiter, Werrij, & Vries, 2010). In contrast, framing strategies about vaccination had a stronger impact on people with low self-efficacy (Nan, Xie, & Madden, 2012).

Extending Bandura's definition of self-efficacy to mental health issues, self-efficacy increases the capability to identify depression symptoms, which increases the persuasive effect of depression prevention messaging. For instance, a positive relationship among feelings of self-efficacy about the detection of depression, knowledge of depressive symptoms, and identification of depression was found (Agapidaki et al., 2013). Lua and Khairuzzaman (2014) reported that individuals' depression symptoms were reduced when they felt higher self-efficacy in identifying their own depression. In addition to detecting one's own depression, researchers have also begun to note the importance of increasing one's ability to detect depression symptoms among others.

In discussing self-efficacy in a health context, Egbert, Miraldi, and Murniadi (2014) posited two types of knowledge, actual and perceived knowledge, both affecting efficacy (Egbert & Parrott, 2001). Bandura (1986) proposed that perceived knowledge affects perceived self-efficacy, which has been shown to have a significant effect on behavioral intentions and behavior. Jin et al. (2018) also found that news framing and responsibility attribution results in different outcomes between male and female Chinese college students for identifying depression in oneself, one's family, and one's friends. Cartoon images increased people's sense of self-efficacy in following recommendations (Kennedy et al., 2014; Kennedy & Rogers, n.d.; Rozario & Sriram, 2015). In line with these findings, this dissertation defines self-efficacy as perceived efficacy in identifying sufferers of depression, including oneself, family, and friends; self-efficacy as perceived efficacy in providing support to sufferers of depression, including family and friends; and self-efficacy as perceived efficacy in providing support resources to suffers of depression, including family and friends. Additionally, this dissertation argues that the features of depression health campaign posts on social media play a significant role in increasing

individuals' self-efficacy in identifying depression symptoms, which can motivate individuals to provide support. This dissertation also argues that the depression health campaign posts with comment links and reaction emoticons on social media play a significant role in increasing individuals' self-efficacy in identifying depression symptoms, providing support, and providing support resources, which can motivate individuals to provide support to individuals suffering from depression.

In sum, in line with Lazarus's (1982) argument that affect determines cognition, this dissertation conceptualizes the affect factor as discrete emotion and conceptualizes the cognitive factor as perceived self-efficacy, considering that discrete emotions impact perceived self-efficacy sequentially. Specifically studying depression, Lee, Zhang, Jin, Kim, Martin, and Smith (forthcoming, 2019) found that sympathy and self-efficacy in depression identification were sequential mediators of the impact of depression coverage with episodic framing and societal attribution on social support willingness, providing evidence for Lazarus's (1982) affect-cognition argument. Aligned with Lazarus's affect-cognition argument and that of Lee et al. (forthcoming, 2019), this study operationalizes perceived self-efficacy as identifying depression in loved ones (e.g., family and friends) and oneself and also operationalizes perceived self-efficacy as providing support and support resources to loved ones (e.g., family and friends). Furthermore, the study investigates how and what types of discrete emotion and types of self-efficacy in identifying depression, providing support, and providing support resources play a sequential role in influencing the behavioral intention outcomes of depression communication among Chinese immigrants. To examine how discrete emotions and perceived self-efficacy play a sequential, mediating role in impacting Chinese immigrants' intention to provide support after

viewing depression campaign posts on social media, this dissertation proposes research questions to test this argument.

RQ5(a): How, if such an effect exists, do the features of depression campaign Facebook posts (e.g., message framing, visuals, and cultural appeals) elicit discrete emotions in Chinese immigrants?

RQ5(b): How, if such an effect exists, do depression campaign Facebook posts with comment links, reaction emoticons, and visuals elicit discrete emotions in Chinese immigrants?

RQ6(a): How, if such an effect exists, do the features of depression campaign posts (e.g., message framing, visuals, and cultural appeals) on Facebook influence perceived self-efficacy among Chinese immigrants in identifying depression?

RQ6(b): How, if such an effect exists, do depression campaign Facebook posts with comment links, reaction emoticons, and visuals influence perceived self-efficacy among Chinese immigrants 1) in identifying depression, 2) in providing support, and 3) in providing support resources?

RQ7(a): How, if such an effect exists, do discrete emotion and perceived self-efficacy in identifying depression mediate the relationship between features of depression campaign Facebook posts (e.g., framing, visual images, and cultural appeals) and the intention among Chinese immigrants to provide social support?

RQ7(b): How, if such an effect exists, do discrete emotion and 1) perceived self-efficacy in identifying depression, 2) perceived self-efficacy in providing support, and 3) perceived self-efficacy in providing support resources mediate the relationship between

depression campaign Facebook posts with comment links, reaction emoticons, and visuals, and the intention among Chinese immigrants to provide social support?

Moderating Role of Mental Health Literacy in Self-Efficacy

Mental health literacy. Mental health literacy has been defined as “the ability to gain access to, understand, and use information in ways which promote and maintain good mental health” (Lauber, Nordt, Falcato, & Rössler, 2003, p. 248) and as “people’s knowledge and beliefs about mental disorders which aid their cognition management or prevention” (Jorm et al., 1997, p. 182). Mental health literacy consists of several components, including

- (a) the ability to recognize specific disorders or different types of psychological distress;
- (b) knowledge and beliefs about risk factors and causes; (c) knowledge and beliefs about self-help interventions; (d) knowledge and beliefs about professional help available; (e) attitudes which facilitate recognition and appropriate help-seeking; and (f) knowledge of how to seek mental health information. (Jorm, 2000, p. 396)

Mental health literacy, therefore, is related to a cognitive factor involving the knowledge and belief required to recognize symptoms of the mental illness, identify its causes, seek help, provide support and help, and seek mental health information. Mental health literacy is also a key influence on the consequences of people’s attitudes and behaviors regarding mental health communication.

It is widely believed that mental health literacy plays a role in motivating depressed individuals to seek help (Goldney, Fisher, Wilson, & Cheok, 2002; Jorm, 2000), reducing the misconceptions and stigma that present significant barriers for individuals to receive timely and effective treatment for depression (Chang, 2008; Corrigan, 2004; Jorm et al., 2000), and encouraging individuals to provide effective support to depressed individuals (Chang, 2008).

Since mental health literacy includes several components (Jorm, 2000), there is a need to investigate how these components of mental health literacy independently play roles in identifying depression and in providing support and support resources, as well as motivating individuals to provide effective support to those suffering from depression. The findings of this study can thus provide better insights to health organizations seeking to improve mental health literacy.

To increase the public's mental health literacy, health organizations design messages to educate the public and build knowledge about different health issues. Research has shown that the characteristics of health messages and instructional messages, such as cartoons, have increased people's health literacy, which motivates them to follow health recommendations (Kennedy et al., 2014; Kennedy & Rogers, n.d.; Leiner et al., 2004; Rozario & Sriram, 2015). Furthermore, Jorm et al. (2005) found that cultural values influenced people from different cultural backgrounds to accept different beliefs about treatment for mental disorders. Wong, Lam, Poon, and Chow (2011) found an effect of campaigns on improving mental health literacy and suggested that campaigns should consider gender differences for Chinese-speaking Australians. These findings indicate that cultural values and features of health campaign messages play a role in people's mental health literacy.

Actual and perceived knowledge can affect self-efficacy, which has been shown to have a significant effect on behavioral intentions and behavior (Bandura, 1986; Egbert et al., 2014; Egbert & Parrott, 2001). These statements imply that mental health literacy can enhance people's perceived self-efficacy when receiving and viewing depression campaign posts. Moreover, mental health literacy is related to knowledge and beliefs about seeking help for oneself and providing support to others (Jorm, 2000), such that people with higher mental health literacy

have higher perceived self-efficacy, which leads to greater intention to provide support. Additionally, Jin and colleagues (2015) found a positive relationship between perceived self-efficacy in identifying depression in oneself and others and intention to provide support. However, this study defined mental health literacy as self-efficacy in the identification of depression. This conceptualization may therefore miss the importance of how knowledge helps influence people's perception of the ability to manage their health, which can further impact the outcome of behavioral intention. To answer these questions, this dissertation proposes the following research questions:

RQ8(a): Does mental health literacy moderate the mediating effect of the features of depression campaign Facebook posts (framing, visuals, and cultural appeal) on intention to provide support to depressed individuals through perceived self-efficacy in depression identification among Chinese immigrants?

RQ8(b): Does mental health literacy moderate the mediating effect of the depression campaign Facebook posts with the comment link, reaction emoticons, and visuals on intention to provide support to depressed individuals through 1) perceived self-efficacy in depression identification, 2) perceived self-efficacy in providing support, and 3) perceived self-efficacy in providing support resources among Chinese immigrants?

Research Questions and Hypotheses for Study 1 and Study 2

In sum, this dissertation investigates how the features of depression campaign posts on Facebook influence the intention among Chinese immigrants to provide support to individuals suffering from depression. Additionally, this dissertation seeks to discover the mediating role of discrete emotion, perceived self-efficacy in identifying depression, perceived self-efficacy in providing support, and perceived self-efficacy in providing support resources in the relationship

between the characteristics of depression campaign posts on Facebook and intention outcomes. Moreover, this dissertation examines how mental health literacy moderates the relationship between depression campaign Facebook posts and perceived self-efficacy in identifying depression, providing support, and providing support resources, which can further impact the intention to provide support. This dissertation also examines the moderating role of acculturation in the relationship between the features of depression campaign Facebook posts and intention outcomes. To answer all these questions and test the models, the following research questions and hypotheses are proposed:

Main online experimental study 1.

H1: Depression campaign Facebook posts with the gain-framed strategy result in a significantly greater intention among Chinese immigrants to provide support than the loss-framed strategy.

RQ1: How, if such an effect exists, does the modality of visuals such as real people photos and cartoons elicit the intention among Chinese immigrants to provide support?

H2: Depression campaign Facebook posts using a long-term future reward strategy result in a significantly greater intention among Chinese immigrants to provide social support than those without using long-term future reward strategy.

RQ2: How, if such an effect exists, do framing, visual modality, and cultural appeal jointly increase the intention among Chinese immigrants to provide social support?

RQ4(a): Does acculturation moderate the relationship between the features of depression campaign Facebook posts (e.g., framing, visuals, and cultural appeals) and the intention among Chinese immigrants to provide support?

RQ5(a): How, if such an effect exists, do the features of depression campaign Facebook posts (e.g., message framing, visuals, and cultural appeals) elicit discrete emotions in Chinese immigrants?

RQ6(a): How, if such an effect exists, do the features of depression campaign posts (e.g., message framing, visuals, and cultural appeals) on Facebook influence perceived self-efficacy among Chinese immigrants in identifying depression?

RQ7(a): How, if such an effect exists, do discrete emotion and perceived self-efficacy in identifying depression mediate the relationship between features of depression campaign Facebook posts (e.g., framing, visual images, and cultural appeals) and the intention among Chinese immigrants to provide social support?

RQ8(a): Does mental health literacy moderate the mediating effect of the features of depression campaign Facebook posts (framing, visuals, and cultural appeal) on intention to provide support to depressed individuals through perceived self-efficacy in depression identification among Chinese immigrants?

Main online experimental study 2.

H3(a): Depression campaign Facebook posts with comment links elicit a significantly greater intention among Chinese immigrants to provide support than those without comment links.

H3(b): Depression campaign Facebook posts with mixed reaction emoticons (Like and Sad) elicit a significantly greater intention among Chinese immigrants to provide support than those with positive or negative reaction emoticons.

H3(c): Depression campaign Facebook posts with comment links and mixed reaction emoticons elicit the significantly greatest intention among Chinese immigrants to provide support.

RQ3: How, if such an effect exists, do comment links, reaction emoticons, and visual modality jointly increase the intention among Chinese immigrants to provide social support?

RQ4(b): Does acculturation moderate the relationship between depression campaign Facebook posts with comment links, reaction emoticons, and visuals, and the intention among Chinese immigrants to provide support?

RQ5(b): How, if such an effect exists, do depression campaign Facebook posts with comment links, reaction emoticons, and visuals elicit discrete emotions in Chinese immigrants?

RQ6(b): How, if such an effect exists, do depression campaign Facebook posts with comment links, reaction emoticons, and visuals influence perceived self-efficacy among Chinese immigrants 1) in identifying depression, 2) in providing support, and 3) in providing support resources?

RQ7(b): How, if such an effect exists, do discrete emotion and 1) perceived self-efficacy in identifying depression, 2) perceived self-efficacy in providing support, and 3) perceived self-efficacy in providing support resources mediate the relationship between depression campaign Facebook posts with comment links, reaction emoticons, and visuals, and the intention among Chinese immigrants to provide social support?

RQ8(b): Does mental health literacy moderate the mediating effect of the depression campaign Facebook posts with comment links, reaction emoticons, and visuals on

intention to provide support to depressed individuals through 1) perceived self-efficacy in depression identification, 2) perceived self-efficacy in providing support, and 3) perceived self-efficacy in providing support resources among Chinese immigrants?

CHAPTER 3

METHODS

Two separate main online experimental studies, conducted sequentially, examined the effects of features of depression campaign Facebook posts on behavioral intention. The main online experimental study 1 assessed the effect of depression campaign Facebook posts using the strategies of framing, visuals, and cultural appeals on the intention to provide support. Based on the findings from the main online experimental study 1, which identified the most persuasive strategies for depression campaign posts, the main online experimental study 2 further examined the effect of depression campaign Facebook posts using visuals and social support strategies, such as comment links and response emoticons, on the intention to provide support. Both studies also examined the sequential mediators of discrete emotions and perceived self-efficacy in identifying depression, providing support, and providing support resources for the depression help and support intentions. Moreover, both studies examined a moderator, mental health literacy, of the relationship between the features of depression campaign posts on Facebook and perceived self-efficacy in identifying depression, providing support, and providing support resources, which further impacts the intentional outcome. Both studies also investigated another moderator, acculturation, of the relationship between the features of depression campaign posts on Facebook and the intention to provide support. To control the impact of the language barrier, both studies included three language versions: English, traditional Chinese, and simplified Chinese. Participants chose the language version based on their language preference and their level of language confidence. To achieve conceptual equivalence, which refers to words, ideas,

and concepts retaining similar meanings in these three languages (English, Traditional Chinese, and Simplified Chinese) after being translated (Chang, Cahu, & Holroyd, 1999), all stimuli and questionnaires were translated into the native language of non-English samples, such as Traditional Chinese and Simplified Chinese, using translation/back translation procedures (Brislin, 1970). Any concerns about comprehension, translatability, and accuracy were flagged and addressed during the translation process.

Main Online Experimental Study 1

An online experiment with a 2 (framing: gain vs. loss) x 2 (modality of visuals: real people vs. cartoon) x 2 (cultural appeal: present long-term future reward vs. absent long-term future reward) between-subjects, full-factorial design was conducted to examine the effect of framing, visuals, and cultural appeals on intention to provide support to individuals suffering from depression. In addition, a sequential mediation analysis was conducted to examine how discrete emotion and perceived self-efficacy in identifying depression sequentially mediated the relationship between the features of depression campaign posts on Facebook and intentional outcomes. This dissertation also conducted a moderated mediation model to examine how mental health literacy moderated the relationship between the features of depression campaign posts on Facebook and perceived self-efficacy in identifying depression, which further impacted the intention to provide support. Last, moderation analysis was conducted to examine the potential moderating effect of acculturation on the relationship between the features of depression campaign posts on Facebook and the intention to provide support.

Participants and procedures. A total of 320 Chinese immigrants, recruited via a random national sample, completed the study online in March and April 2018. A leading survey research firm: Qualtrics survey panel was hired to recruit Chinese immigrants and administer the online

experiment. Since the stimuli were developed modeling the form of visual social media posts on Facebook, the recruitment process ensured that all participants had at least one Facebook social media account and used it regularly. In addition, since the participants were Chinese immigrants who experienced two different cultures, the recruitment process ensured that all participants had immigrated to the United States from different countries (e.g., China, Taiwan, Hong Kong, and Singapore). After answering the questions about their feelings of depression, participants were randomly assigned to one of the eight experimental conditions. They then completed a series of questions assessing their discrete emotion, self-efficacy in depression identification, mental health literacy, acculturation, and intention to provide support.

The participants' average age was 42.90 ($SD = 13.60$). There were 214 females (66.9%), 105 males (32.8%), and 1 participant refusing to answer (0.3%). In terms of education level, 17 participants (5.3%) had a high-school degree, 20 participants (6.3%) had some college studies, 18 participants (5.6%) had a two-year college degree, 58 participants (18.1%) had a four-year college degree, 72 participants (22.5%) had a bachelor's degree, 98 participants (30.6%) had a master's degree, and 37 participants (11.6%) had a professional or doctoral degree. In terms of the length of stay in the U.S., 275 participants (85.9%) had lived for 10 years or more in the U.S., 29 participants (9.1%) had lived more than five years but fewer than 10 years in the U.S., and 16 participants (5.0%) had lived fewer than five years in the U.S. Regarding immigration status, 79.7% of participants were American citizens, 11.6% of participants were permanent residents, 3.8% of participants were H1B work visa holders, 2.5% of participants were F-1 student visa holders, and 2.5% of participants held another immigration status. Among the 307 participants who had health insurance, 38.8% of participants were a member of group insurance, 37.8% of

participants were the owner or policyholder, 17.9% of participants were the spouse of the policyholder, and 5.5% of participants were the children of the policyholder.

Experimental stimuli. Eight depression campaign Facebook posts were created, consisting of a Facebook page banner, health organization source, headline, and like, comment, and share response icons. Each participant was randomly assigned to one of the following conditions: 1) gain framing, cartoon visuals, and present long-term future reward; 2) gain framing, cartoon visuals, and absent long-term future reward; 3) gain framing, photo of real people, and present long-term future reward; 4) gain framing, photo of real people, and absent long-term future reward; 5) loss framing, cartoon visual, and present long-term future reward; 6) loss framing, cartoon visual, and absent long-term future reward; 7) loss framing, photo of real people, and present long-term future reward; and 8) loss framing, photo of real people, and absent long-term future reward. Regarding the framing, the gain-framing content included the following statements: “With your support, your loved ones are more likely to recover from depression. They are more likely to feel that they are gaining hope of fighting depression. They are more likely to see professional help and medical treatment immediately.” In contrast, the loss-framing content included the following statements: “Without your support, your loved ones are more likely to suffer more from depression. They are more likely to feel that they are losing hope of fighting depression. They are more likely to give up the chances of seeking professional help and medical treatment immediately.” Regarding the visuals, the photo of real people and the cartoon graphic showed a supportive hug gesture. Regarding the cultural appeal, the present long-term future reward content in the gain-framed condition included the following statement: “In at least 10 years, depression suffers who receive social support from family and friends are more likely to avoid the occurrence of suicidal crises.” In contrast, the present long-term future

reward content in the loss-framed condition included the following statement: “In at least 10 years, depression suffers who do not receive social support from family and friends are more likely to give up the changes of avoiding the occurrence of suicidal crises” (see Appendix A, Figures 1 and 2).

Dependent measures. The measures in this study included intention to provide support, discrete emotions, self-efficacy in identifying depression, mental health literacy, and acculturation.

Intention to provide support. Intention to provide support was assessed using six items from Seigel et al. (2012) on a seven-point Likert-type scale, ranging from 1 = “Extremely unwilling” to 7 = “Extremely willing.” Participants responded to the following items: “I would be willing to help this person if they wanted to talk about their private feelings,” “...they wanted someone to point out their good qualities,” “...they needed someone to tell them they were loved by others,” “...they needed advice,” “...they felt lonely,” and “...they needed someone to make them feel better.” An index with averaging items was created for intention to provide support ($\alpha = .91$, $M = 5.83$, $SD = 1.01$).

Discrete emotions. To gauge participants’ emotional responses to depression campaign posts, participants were asked to rate the extent to which they experienced emotions while reading their assigned post about depression on a seven-point Likert-type scale, ranging from 1 = “Not at all” to 7 = “Extremely.” Participants rated the extent to which they felt each of 13 emotions, identified from risk and health communication literature (Dillard & Peck, 2000; Richins, 1997): surprise, as manifested in feeling “surprised, startled, or astonished” ($\alpha = .93$, $M = 3.00$, $SD = 1.54$); anger, as manifested in feeling “angry, irritated, or annoyed” ($\alpha = .93$, $M = 2.14$, $SD = 1.29$); fear, as manifested in feeling “fearful, afraid, or scared” ($\alpha = .97$, $M = 2.43$, SD

= 1.43); sadness, as manifested in feeling “sad, dreary, or dismal” ($\alpha = .89$, $M = 2.90$, $SD = 1.46$); guilt, as manifested in feeling “guilty or ashamed” ($\alpha = .94$, $M = 2.02$, $SD = 1.34$); contentment, as manifested in feeling “contented, peaceful, mellow, or tranquil” ($\alpha = .94$, $M = 2.68$, $SD = 1.37$); happiness, as manifested in feeling “happy, elated, cheerful, or joyful” ($\alpha = .99$, $M = 1.85$, $SD = 1.23$); discontent, as manifested in feeling “discontent, unfulfilled, or discontented” ($\alpha = .96$, $M = 2.65$, $SD = 1.51$); anxiety, as manifested in feeling “worried, nervous, or tense” ($\alpha = .92$, $M = 2.88$, $SD = 1.53$); shame, as manifested in feeling “shamed, embarrassed, or humiliated” ($\alpha = .98$, $M = 1.90$, $SD = 1.30$); love, as manifested in feeling “loving, sentimental, or warm-hearted” ($\alpha = .94$, $M = 2.91$, $SD = 1.52$); optimism, as manifested in feeling “optimistic, encouraged, or hopeful” ($\alpha = .96$, $M = 3.23$, $SD = 1.59$); and sympathy, as manifested in feeling “sympathetic, pity, or compassionate” ($\alpha = .85$, $M = 4.33$, $SD = 1.47$).

Perceived self-efficacy in identifying depression. A three-item measure of efficacy in identifying depression in others (Chang, 2008) and oneself was presented for participants to respond to, measured on a 7-point Likert-type scale where 1 = “Not at all capable” and 7 = “Extremely capable” ($\alpha = .84$, $M = 4.61$, $SD = 1.38$). The three items asked participants, after reading the depression campaign Facebook posts, to rate how capable they felt identifying “friends with depression” ($M = 4.21$, $SD = 1.57$), “family members with depression” ($M = 4.54$, $SD = 1.62$), and “yourself with depression” ($M = 5.07$, $SD = 1.57$).

Mental health literacy. Mental health literacy was assessed using 10 items from Kim, Lee, Lee, Simms, and Park (2017) on a 7-point Likert-type scale, ranging from 1 = “Not at all” to 7 = “Always.” The items included the following: “after viewing the depression campaign Facebook posts, I am capable of recognizing my own mental health problems,” “I am capable of solving my mental health problems,” “I know what mental health resources and services are

available to us,” “I know how to access all the resources, services and treatments available in this community,” “I understand all the terms my service providers use,” “I know some of the benefits of the treatments recommended by our providers,” “I know how to find treatment options for my mental health problems when necessary,” “I understand how to obtain the information we need for our care/wellbeing,” “I understand how to obtain the services/resources we need,” and “I am able to decide when my family needs mental health help, assistance or services.” An index with averaging items was created for mental health literacy ($\alpha = .94$, $M = 4.74$, $SD = 1.27$).

Acculturation. The Suinn-Lew Asian Self-Identity Acculturation Scale (SL-ASIA) was used to measure participants’ acculturation using a 21-item multiple-choice questionnaire, adapted from Suinn, Ahuna, and Khoo (1992). Scores could range from a low of 1.00, indicating low acculturation (or high Asian identity), to a high of 5.00, indicating high acculturation (or high Western identity). Since the SL-ASIA scale covered different topics, factor analysis was conducted to identify the components in terms of items, using principal component factor analysis with the oblique rotation method and considering eigenvalues above 1.00 and factor loadings above .50 as criteria for interpretation of factors (Suinn et al., 1992). The results of factor analysis showed 17 items and six factors, including language ability and entertainment preference (accounting for 33.78% of the variance), affinity to ethnic identity (9.64% of the variance), parental identity (7.70% of the variance), food preference (6.21% of the variance), pride in involvement identity (5.45% of the variance), and self-identity (5.08% of the variance). The language ability and entertainment preference factor included the following questions: “What language can you speak?” “What language do you prefer?” “What is your music preference?” “What is your movie preference?” “Where were you raised?” “Do you read...?” and “Do you write...?”. The affinity to ethnic identity factor included the following questions:

“With whom do you now associate in the community?” and “If you could pick, with whom would you prefer to associate in the community?” The parental identity factor included the questions “Which identification does (did) your mother use?” and “Which identification does (did) your father use?” The food preference factor included the questions “What is your food preference at home?” and “What is your food preference in restaurants?” The pride in involvement identity factor included the questions “If you consider yourself a member of the Asian group (Oriental, Asian, Asian American, Chinese American, etc., whatever term you prefer), how much pride do you have in this group?” and “Do you participate in Asian occasions, holidays, traditions, etc.?” The self-identity questions included “What generation are you?” and “What contact have you had with Asia?”

Regarding the results of factor analysis, an index with 17 averaging items was created for acculturation ($\alpha = .85$, $M = 2.78$, $SD = .54$). Additionally, six separate indexes with averaging items were created for language ability and entertainment preference ($\alpha = .88$, $M = 3.36$, $SD = .81$), for affinity to ethnic identity ($\alpha = .79$, $M = 2.79$, $SD = .86$), for parental identity ($\alpha = .93$, $M = 2.38$, $SD = .93$), for food preference ($\alpha = .72$, $M = 2.44$, $SD = .79$), for pride in involvement identity ($\alpha = .43$, $M = 3.56$, $SD = .79$), and for self-identity ($\alpha = .22$, $M = 1.60$, $SD = .71$). Since the alpha values for pride in involvement identity and self-identity were lower than .70, these indexes were not used for further data analysis.

Covariate. A negative association between depression and social support has been identified among different ethnicities (e.g., Ellis, Nixon, & Williamson, 2009; Seffren et al., 2018; Yang, Zhang, Liang, & Hu, 2016). For instance, Ellis et al. (2009) found that social support was negatively associated with depression symptoms in children and adolescents. Seffren et al. (2018) found that women living with HIV/AIDS in Uganda who had greater family

support showed fewer depression symptoms. Yang et al. (2016) conducted a meta-analysis and found that perceived social support was negatively correlated with depression among Chinese college students. They also found that social support and depression can be impacted by individual characteristics such as gender. These findings indicate that gender and depression symptoms can potentially impact the outcome of intention to provide support to individuals suffering from depression. To control for these potential influences on the relationship between depression campaign Facebook posts and the intention to provide support, this study considered gender and depression symptoms as covariates.

Depression symptoms. Depression symptoms were assessed using 16 items from Rodloff's (1977) Center for Epidemiologic Studies Depression Scale (CES-D Scale). The items of the scale were symptoms associated with depression. The participants were asked to select the answers that best indicated their feelings during the last week, ranging from 1 = "Rarely or none of time (less than 1 day)" to 4 = "Most or all of the time (5-7 days)." The items included the following: "I was bothered by things that usually do not bother me," "I did not feel like eating; my appetite was poor," "I felt that I could not shake off the blues even with help from my family or friends," "I had trouble keeping my mind on what I was doing," "I felt depressed," "I felt that everything I did was an effort," "I thought my life had been a failure," "I felt fearful," "My sleep was restless," "I talked less than usual," "I felt lonely," "People were unfriendly," "I had crying spells," "I felt sad," "I felt that people dislike me," and "I could not get 'going.'" An index with 16 averaging items was created for depression ($\alpha = .91$, $M = 1.47$, $SD = .46$).

Manipulation checks. This study included three sets of manipulation check items to determine whether the participants perceived message framing, modality of visuals, and cultural appeals as successfully manipulated in the stimuli.

Message framing. Participants were asked to respond to the statement “The depression campaign Facebook post I just read...” with checked items using the semantic scale 1 = “Completely focuses on the negative consequences of lacking social support” and 7 = “Completely focuses on the positive consequences of providing social support.” ANOVA found significant differences, $F(1,318) = 16.26, p \leq .001$. Therefore, the manipulation of message framing was successful.

Modality of visuals. Participants were asked to respond to the statement “The depression campaign Facebook post I just read based on...” with checked items using the semantic scale 1 = “A picture of real people” and 7 = “A picture of cartoon characters (i.e., not real people).” ANOVA found significant differences, $F(1,318) = 486.69, p \leq .001$. Therefore, the manipulation of modality of visuals was successful.

Cultural appeals. Participants were asked to respond to the statement “The depression campaign Facebook post mentioned what will happen in at least 10 years” with checked items using the Likert-type scale 1 = “Strongly disagree” and 7 = “Strongly agree.” ANOVA found significant differences, $F(1,318) = 5.31, p \leq .05$. Therefore, the manipulation of cultural appeals was successful.

Main Online Experimental Study 2

Study 2 further examined one of the independent variables, visuals, based on the findings of Study 1. An online experiment with a 2 (comment link: absence vs. present) x 2 (visual modality: one person vs. group people) x 3 (reaction emoticons: negative (sad) vs. mixed (sad and like) vs. positive (like)) between-subjects, full-factorial design was conducted to examine the effect of comment links, emoticons, and visuals on intention to provide support to individuals suffering from depression. In addition, moderation analysis was conducted to examine the

potential moderating effect of acculturation on the relationship between the features of depression campaign posts on Facebook and the intention to provide support. This study also conducted a sequential mediation analysis to examine how discrete emotion and perceived self-efficacy in identifying depression/providing support/providing support resources sequentially mediated the relationship between the features of depression campaign posts on Facebook and intentional outcomes. This dissertation also conducted a moderated mediation model to examine how mental health literacy moderated the relationship between the features of depression campaign posts on Facebook and perceived self-efficacy in identifying depression/providing support/providing support resources which further impacted the intention to provide support.

Participants and procedures. A total of 500 Chinese immigrants, recruited via a random national sample, completed the study online from June to September 2018. A leading survey research firm: Qualtrics survey panel was hired to recruit Chinese immigrants and administer the online experiment. Regarding the recruitment process, three screening questions ensured that all participants were regular users of Facebook, had immigrated to the United States from different Asian countries (e.g., China, Taiwan, Hong Kong, and Singapore), and had all experienced two different cultural experiences. After answering the questions about their feelings of depression, participants were randomly assigned to one of the 12 experimental conditions. They then completed a series of questions assessing their discrete emotion, self-efficacy in depression identification, self-efficacy in providing support, self-efficacy in providing support resources, mental health literacy, acculturation, and intention to provide support.

The participants' average age was 37.06 ($SD = 13.25$). There were 342 females (68.4%), 154 males (30.8%), 3 participants refusing to answer (0.6%), and 1 participant preferring not to describe (0.2%). In terms of education level, 1 participant (0.2%) had less than high school, 55

participants (11.0%) had a high-school degree, 39 participants (7.8%) had some college studies, 31 participants (6.2%) had a two-year college degree, 76 participants (15.2%) had a four-year college degree, 152 participants (30.4%) had a bachelor's degree, 105 participants (21.0%) had a master's degree, and 41 participants (8.2%) had a professional or doctoral degree. In terms of the length of stay in the U.S., 426 participants (85.2%) had lived for 10 years or more in the U.S., 49 participants (9.8%) had lived more than five years but fewer than 10 years in the U.S., and 25 participants (5.0%) had lived for fewer than five years in the U.S. Regarding immigration status, 78.6% ($n = 393$) of participants were American citizens, 14.8% ($n = 74$) of participants were permanent residents, 2.8% ($n = 14$) of participants were H1B work visa holders, 2.2% ($n = 11$) of participants were F-1 student visa holders, and 1.6% ($n = 8$) of participants held another immigration status. Among the 440 participants who had health insurance, 35.9% of participants were a member of group insurance, 35.2% of participants were the policyholder, 15.0% of participants were the children of the policyholder, and 13.9% of participants were the spouse of the policyholder. Regarding marital status, 48.8% ($n = 244$) of participants were married, 45.8% ($n = 229$) of participants were single, 4.4% ($n = 22$) of participants were divorced, 0.6% ($n = 3$) of participants were widowed, and 0.4% ($n = 2$) of participants were separated.

Experimental stimuli. Twelve depression campaign Facebook posts were created, consisting of a Facebook page banner, health organization source, headline, the number of likes next to the reaction emoticon, and like, comment, and share response icons. The comment link, types of reaction emoticons, and visuals were manipulated. One of the visuals, a photo of a group of people, was used in Study 2 due to the results from Study 1. Each participant was randomly assigned to one of the following conditions: 1) present comment link, positive emoticons (like), and a photo of a group; 2) present comment link, negative emoticons (sad), and photo of a group;

3) present comment link, mixed emoticons (like and sad), and photo of a group; 4) absent comment link, positive emoticons (like), and photo of a group; 5) absent comment link, negative emoticons (sad), and photo of a group; 6) absent comment link, mixed emoticons (like and sad), and photo of a group; 7) present comment link, positive emoticons (like), and a photo of a single person; 8) present comment link, negative emoticons (sad), and a photo of a single person; 9) present comment link, mixed emoticons (like and sad), and a photo of a single person; 10) absent comment link, positive emoticons (like), and a photo of a single person; 11) absent comment link, negative emoticons (sad), and a photo of a single person; and 12) absent comment link, mixed emoticons (like and sad), and a photo of a single person. Regarding instrumental support, the stimuli of present comment links included the content “Here are seven ways you can help” and then provided a link. Regarding emotional support, the emoticons used were the same as those on Facebook and also in the same number. Positive emoticon used “Like”; negative emoticon used “Sad”; and mixed emoticon used “Like” and “Sad.” Regarding the visuals, the photo of a group of people showed a supportive hug and the photo of a single person showed a person who needed other people’s support and help (see Appendix B, Figures 3 - 6).

Dependent measures. The measures in this study included intention to provide support, discrete emotions, self-efficacy in identifying depression, self-efficacy in providing support, self-efficacy in providing resources, mental health literacy, and acculturation.

Intention to provide support. Intention to provide support was assessed using six items from Seigel et al. (2012) on a seven-point Likert-type scale, ranging from 1 = “Extremely unwilling” to 7 = “Extremely willing.” The items were included as follows: “I would be willing to help this person if they wanted to talk about their private feelings,” “...if they wanted someone to point out their good qualities,” “...if they needed someone to tell them they were

loved by others,” “...if they needed advice,” “...if they felt lonely,” and “...if they needed someone to make them feel better.” An index with averaging items was created for intention to provide support ($\alpha = .96$, $M = 6.01$, $SD = 1.17$).

Discrete emotions. To gauge participants’ emotional responses to depression campaign posts, participants were asked to rate the extent to which they experienced emotions while reading their assigned post about depression on a seven-point Likert-type scale, ranging from 1 = “Not at all” to 7 = “Extremely.” Participants rated the extent to which they felt each of 13 emotions, identified from risk and health communication literature (Dillard & Peck, 2000; Richins, 1997): surprise, as manifested in feeling “surprised, startled, or astonished” ($\alpha = .91$, $M = 3.03$, $SD = 1.56$); anger, as manifested in feeling “angry, irritated, or annoyed” ($\alpha = .93$, $M = 2.05$, $SD = 1.30$); fear, as manifested in feeling “fearful, afraid, or scared” ($\alpha = .97$, $M = 2.27$, $SD = 1.43$); sadness, as manifested in feeling “sad, dreary, or dismal” ($\alpha = .87$, $M = 3.18$, $SD = 1.51$); guilt, as manifested in feeling “guilty or ashamed” ($\alpha = .92$, $M = 1.97$, $SD = 1.37$); contentment, as manifested in feeling “contented, peaceful, mellow, or tranquil” ($\alpha = .93$, $M = 2.54$, $SD = 1.39$); happiness, as manifested in feeling “happy, elated, cheerful, or joyful” ($\alpha = .98$, $M = 1.81$, $SD = 1.27$); discontent, as manifested in feeling “discontent, unfulfilled, or discontented” ($\alpha = .95$, $M = 2.53$, $SD = 1.47$); anxiety, as manifested in feeling “worried, nervous, or tense” ($\alpha = .90$, $M = 2.85$, $SD = 1.51$); shame, as manifested in feeling “shamed, embarrassed, or humiliated” ($\alpha = .96$, $M = 1.81$, $SD = 1.25$); love, as manifested in feeling “loving, sentimental, or warm-hearted” ($\alpha = .93$, $M = 2.79$, $SD = 1.63$); optimism, as manifested in feeling “optimistic, encouraged, or hopeful” ($\alpha = .96$, $M = 2.95$, $SD = 1.70$); and sympathy, as manifested in feeling “sympathetic, pity, or compassionate” ($\alpha = .83$, $M = 4.04$, $SD = 1.51$).

Perceived self-efficacy in identifying depression. Participants were asked to respond to a three-item measure of efficacy in identifying depression in others (Chang, 2008) and oneself, measured on a 7-point Likert-type scale where 1 = “Not at all capable” and 7 = “Extremely capable” ($\alpha = .83$, $M = 4.60$, $SD = 1.30$). The three items asked participants, after they read the depression campaign Facebook post, how capable they felt of identifying “friends with depression” ($M = 4.22$, $SD = 1.45$), “family members with depression” ($M = 4.61$, $SD = 1.50$), and “yourself with depression” ($M = 4.97$, $SD = 1.56$).

Perceived self-efficacy in providing support. A two-item measure of self-efficacy in providing support was created on a 7-point Likert-type scale where 1 = “Strongly disagree” and 7 = “Strongly agree” ($\alpha = .92$, $M = 5.10$, $SD = 1.36$). The two items included “after reading the depression campaign post on Facebook, I am capable of providing support to my friends with depression when they need” ($M = 5.04$, $SD = 1.41$) and “I am capable of providing support to my family members with depression when they need” ($M = 5.16$, $SD = 1.43$).

Perceived self-efficacy in providing support resources. A two-item measure of self-efficacy in providing support resources was created on a 7-point Likert-type scale where 1 = “Strongly disagree” and 7 = “Strongly agree” ($\alpha = .92$, $M = 4.75$, $SD = 1.40$). The two items included “after reading the depression campaign post on Facebook, I am capable of providing support resources (e.g., community support, online support groups) to my friends with depression when they need” ($M = 4.76$, $SD = 1.43$) and “I am capable of providing support resources (e.g., community support, online support groups) to my family members with depression when they need” ($M = 4.73$, $SD = 1.48$).

Mental health literacy. Mental health literacy was assessed using 10 items from Kim, Lee, Lee, Simms, and Park (2017) on a 7-point Likert-type scale, ranging from 1 = “Not at all” to

7 = “Always.” The items included the following: “after viewing the depression campaign post on Facebook, I am capable of recognizing my own mental health problems,” “I am capable of solving my mental health problems,” “I know what mental health resources and services are available to us,” “I know how to access all the resources, services and treatments available in this community,” “I understand all the terms my service providers use,” “I know some of the benefits of the treatments recommended by our providers,” “I know how to find treatment options for my mental health problems when necessary,” “I understand how to obtain the information we need for our care/wellbeing,” “I understand how to obtain the services/resources we need,” and “I am able to decide when my family needs mental health help, assistance or services.” An index with averaging items was created for mental health literacy ($\alpha = .94$, $M = 4.81$, $SD = 1.21$).

Acculturation. The Suinn-Lew Asian Self-Identity Acculturation Scale (SL-ASIA) was used to measure participants’ acculturation using a 21-item multiple-choice questionnaire, adapted from Suinn, Ahuna, and Khoo (1992). Scores could range from a low of 1.00, indicating low acculturation (or high Asian identity), to a high of 5.00, indicating high acculturation (or high Western identity). Since the SL-ASIA scale covered several different topics, factor analysis was conducted to identify the components in terms of items, using a principal component factor analysis with oblique rotation method and considering eigenvalues above 1.00 and factor loadings above .50 as criteria for interpretation of factors (Suinn et al., 1992). The results of factor analysis showed 17 items and six factors, including language ability and entertainment preference (accounting for 36.93% of the variance), parental identity (9.18% of the variance), affinity to ethnic identity (6.90% of the variance), self-identity (5.41% of the variance), pride in involvement identity (4.91% of the variance), and food preference (4.82% of the variance). The language ability and entertainment preference factor included the following questions: “What

language can you speak?” “What language do you prefer?” “What is your music preference?” “What is your movie preference?” “Do you read...?” and “Do you write...?” The parental identity factor included the following questions: “How do you identify yourself?” “Which identification does (did) your mother use?” and “Which identification does (did) your father use?” The affinity to ethnic identity included the following questions: “With whom do you now associate in the community” and “If you could pick, with whom would you prefer to associate in the community?” The self-identity questions included “What was the ethnic origin of the friends and peers you had, as a child from 6 to 18?” and “What contact have you had with Asia (e.g., China, Taiwan, Hong Kong, and Singapore)?” The pride in involvement identity factor included the questions “If you consider yourself a member of the Asian group (Oriental, Asian, Asian-American, Chinese-American, etc., whatever term you prefer), how much pride do you have in this group?” and “Do you participate in Asian occasions, holidays, traditions, etc.?” The food preference factor included the questions “What is your food preference at home?” and “What is your food preference in restaurants?”

After factor analysis, an index with 17 averaging items was created for acculturation ($\alpha = .88$, $M = 2.96$, $SD = .61$). Additionally, six separate indexes with averaging items were created for language ability and entertainment preference ($\alpha = .91$, $M = 3.57$, $SD = .83$), for parental identify ($\alpha = .80$, $M = 2.72$, $SD = .90$), for affinity to ethnic identity ($\alpha = .67$, $M = 2.98$, $SD = .76$), for self-identity ($\alpha = .42$, $M = 2.20$, $SD = 1.07$), for pride in involvement identity ($\alpha = .49$, $M = 2.50$, $SD = .84$), and for food preference ($\alpha = .77$, $M = 2.67$, $SD = .73$). Since the alpha values for the affinity to ethnic identity, self-identity, and pride in involvement identity were lower than .70, these indexes were not used for further data analysis.

Covariate. Previous studies found a negative association between depression and social support among individual with different cultural (e.g., Ellis, Nixon, & Williamson, 2009; Seffren et al., 2018; Yang, Zhang, Liang, & Hu, 2016). For example, Ellis et al. (2009) found children and adolescents who had greater social support reported fewer depression symptoms. A similar finding from Seffren et al.'s study (2018) reported women living with HIV/AIDS in Uganda had fewer depression symptoms when they had greater family support. Moreover, Yang et al. (2016) conducted a meta-analysis and found that Chinese college students showed fewer depression when they perceived greater social support. In Yang et al.'s meta-analysis study (2016), gender played a role in impacting the outcomes of social support and depression. Gender and depression symptoms can thus potentially impact the outcome of intention to provide support to individuals suffering from depression. To control for these potential influences on the relationship between depression campaign Facebook posts and the intention to provide support, this study considered gender and depression symptoms as covariates.

Depression symptoms. Depression symptoms were assessed using 16 items from Rodloff's (1977) Center for Epidemiologic Studies Depression Scale (CES-D Scale). The items of the scale were symptoms associated with depression. The participants were asked to select the answers that best indicated their feelings during the last week, ranging from 1 = "Rarely or none of time (less than 1 day)" to 4 = "Most or all of the time (5-7 days)." The items included the following: "I was bothered by things that usually do not bother me," "I did not feel like eating; my appetite was poor," "I felt that I could not shake off the blues even with help from my family or friends," "I had trouble keeping my mind on what I was doing," "I felt depressed," "I felt that everything I did was an effort," "I thought my life had been a failure," "I felt fearful," "My sleep was restless," "I talked less than usual," "I felt lonely," "People were unfriendly," "I had crying

spells,” “I felt sad,” “I felt that people dislike me,” and “I could not get ‘going.’” An index with 16 averaging items was created for depression ($\alpha = .92$, $M = 1.69$, $SD = .55$).

Manipulation checks. This study included three sets of manipulation check items to determine whether the participants perceived comment links, visuals, and emoticons as successfully manipulated in the stimuli.

Comment links as instrumental social support. Two sets of manipulation checks were used to examine whether the participants perceived comment links as instrumental social support as successfully manipulated in stimuli. First, participants were asked to respond to the statement “The campaign about depression on Facebook I just read...” with checked items using the nominal scale 1 = “Included a comment link that provides more advice on depression support” and 2 = “Did not include any comment link.” The chi-square result showed a significant difference, $\chi^2(1) = 91.95$, $p \leq .001$. Second, participants who checked the answer “Included a comment link that provides more advice on depression support” from the first question were asked to respond to this second question, “The comment link that I just saw on the content of depression campaign Facebook post was...” with checked items using a semantic scale where 1 = “Not informative at all” and 7 = “Very informative.” ANOVA revealed a significant difference, $F(1,498) = 112.11$, $p \leq .001$. Therefore, the manipulation of comment links as an instrumental social support was successful.

Modality of visuals. Two sets of manipulation checks were used to examine whether the participants perceived the different types of visuals differently on providing support depression communication as successfully manipulated in stimuli. First, participants were asked to respond to the statement “The depression campaign Facebook post I just read showed a picture of...” with checked items using the nominal scale 1 = “A group of people (more than one person)” and

2 = “Only one person.” The chi-square result showed a significant difference, $\chi^2 (1) = 431.29, p \leq .001$. Second, participants were asked to respond to the second statement, “I think the picture I just saw on the depression campaign Facebook post ...” with checked items using a semantic scale where 1 = “Not providing support to someone with depression at all” and 7 = “Providing support to someone with depression.” ANOVA revealed a significant difference, $F(1,498) = 95.14, p \leq .001$. Therefore, the manipulation of visual modality was successful.

Emoticons as emotional social support. Two sets of manipulation checks were used to examine whether the participants perceived emoticons as emotional social support and as successfully manipulated in stimuli. First, participants were asked to respond to the statement “The depression campaign Facebook post I just read showed...” with checked items using the nominal scale 1 = “Positive emoticon (like) only,” 2 = “Negative emoticon (sad) only,” and 3 = “Both positive (like) and negative (sad) emoticons.” The chi-square result showed a significant difference, $\chi^2 (4) = 348.53, p \leq .001$. Second, participants were asked to respond to the second statement, “In the depression campaign Facebook post I just read, there is/are emoticon(s) that was/were responded to by others on the post next to the number. Based on what I saw, the emoticon(s) made me feel...” with checked items using nominal scale where 1 = “Negative emotional support only,” 2 = “Positive emotional support only,” and 3 = “A mix of both positive and negative emotional support.” The chi-square result showed a significant difference, $\chi^2 (6) = 105.80, p \leq .001$. Therefore, the manipulation of emoticons as emotional social support was successful.

CHAPTER 4

RESULTS

In both two studies, analysis of covariance (ANCOVA) and multivariate analysis of covariance (MANCOVA) tests were conducted to examine the effects of depression campaign Facebook posts using framing, visuals, cultural appeals, and social support strategies on participants' intention to provide help and support for depression, their felt discrete emotions, and self-efficacy in identifying depression, in providing support, and in providing support resources. This study also tested moderation models as post-hoc analyses centering on the role of significant types of acculturation as a moderator for the relationship between depression campaign posts (using framing, visuals, cultural appeals, and social support strategies) and behavioral intentional outcomes (such as intention to provide support) through a multiple regression analysis using the PROCESS macro (Hayes, 2017, 2018). Moreover, this study examined serial mediation models as post-hoc analyses centering on the role of significant emotional response and self-efficacy in identifying depression, in providing support, and in providing support resources as a function of depression campaign posts, connecting types of framing, visuals, cultural appeals, and social support strategies and behavioral intentional outcomes such as intention to provide support through a multiple regression analysis using the PROCESS macro (Hayes, 2017, 2018). Last, through a multiple regression analysis using the PROCESS macro (Hayes, 2017, 2018), this study also investigated a moderated mediation model with post-hoc analyses centering on the role of significance of mental health literacy as a moderator for the indirect effect of depression campaign Facebook posts using framing, visuals,

cultural appeals, and social support strategies on intention to provide help/support for depression mediated through perceived self-efficacy in identifying depression, in providing support and in providing support resources.

Main Online Experimental Study 1

H1 sought to determine whether the depression campaign Facebook posts with a gain-framed strategy elicited a significantly greater intention to provide support than a loss-framed strategy after controlling for depression symptoms and gender. ANCOVA results showed that gain-framed and loss-framed strategies showed no difference on intention to provide support [$F(1,316) = 1.89, p = .17, \text{partial } \eta^2 = .01$]. Thus, H1 was not supported (see Table 1).

RQ1 examined how visual modality, such as photos of real people and cartoon graphics, elicited intention to provide support after controlling for depression symptoms and gender. The ANCOVA results revealed a significant main effect of visual modality on intention to provide support [$F(1,316) = 4.34, p \leq .05, \text{partial } \eta^2 = .01$]. Specifically, participants indicated a greater intention to provide support when exposed to the depression campaign posts using photos of real people ($M = 5.95, SE = .08$) than when exposed to the depression campaign posts using cartoon graphics ($M = 5.72, SE = .08$) (see Table 2).

H2 sought to determine whether the cultural appeal using a long-term future reward strategy elicited greater intention to provide support than that not using a long-term future reward strategy after controlling for depression symptom and gender. ANCOVA results showed that present and absent long-term future reward strategy showed no difference on intention to provide support [$F(1,316) = .74, p = .39, \text{partial } \eta^2 = .002$]. Thus, H2 was not supported (see Table 3).

RQ2 examined how framing, visual modality, and cultural appeals interacted to impact individuals' intention to provide support after controlling for depression symptoms and gender.

ANCOVA results revealed no significant three-way interaction effect [$F(1,310) = .67, p = .42$, partial $\eta^2 = .002$] on intention to provide support. In addition, the results showed no significant two-way interaction effect between framing and visuals [$F(1,310) = .49, p = .48$, partial $\eta^2 = .002$], no significant two-way interaction effect between framing and cultural appeals [$F(1,310) = .33, p = .57$, partial $\eta^2 = .001$], and no significant two-way interaction effect between visuals and cultural appeal [$F(1,310) = .03, p = .86$, partial $\eta^2 = .000$] on intention to provide support. A main effect of visuals on intention to provide support was found [$F(1,310) = 4.31, p \leq .05$, partial $\eta^2 = .014$], in which a photo of real people ($M = 5.95, SE = .08$) elicited greater intention to provide support than a cartoon graphic ($M = 5.72, SE = .08$) (see Table 4).

Through the post-hoc analyses, RQ4(a) sought to examine how overall acculturation and types of acculturation moderated the relationship between the features of depression campaign Facebook posts and participants' intention to provide support after controlling for depression symptoms and gender. A hierarchical multiple regression analysis was conducted. To avoid potential high multicollinearity, each variable was centered and entered into model 3 of the hierarchical regression. The hierarchical regression results showed that only acculturation in parental identity ($\Delta R^2 = .01, \Delta F(1,312) = 4.29, p \leq .05$) and in affinity to ethnic identity ($\Delta R^2 = .03, \Delta F(1,312) = 8.34, p \leq .01$) were potential moderators.

To further examine how acculturation in parental identity and in affinity to ethnic identity moderated the relationship between the features of depression campaign Facebook posts and intention to provide support, the PROCESS macro for SPSS (Hayes, 2017 & 2018), across 1,000 bootstrap samples, was run on the centered terms to examine the moderation effect. The results revealed that acculturation in parental identity was a significant moderator [$\beta = -.36, t(314) = -2.13, 95\% \text{ CI } [-.69, -.03], p \leq .05$] for the relationship between depression campaign Facebook

posts using gain framing, real people photos, and absent long-term future reward and the intention to provide support. In addition, results showed acculturation in affinity to ethnic identity as a significant moderator [$\beta = .50$, $t(314) = 2.87$, 95% CI [.16, .83], $p \leq .01$] for the relationship between depression campaign Facebook posts using gain framing, cartoon graphics, and absent long-term future reward and the intention to provide support. In sum, acculturation in parental identity is a negative moderator, but acculturation in affinity to ethnic identity is a positive moderator for the relationship between the features of depression campaign Facebook posts and the intention to provide support (see Figure 7 & 8).

RQ5(a) examined how the features of depression campaign Facebook posts elicited people's discrete emotions after controlling for depression symptoms and gender. MANCOVA results showed no significant multivariate interaction or main effects of the features of depression campaign Facebook posts on discrete emotions for the overall test. Analyses of covariance (ANCOVA) on discrete emotions were conducted as follow-up tests to the MANCOVA. ANCOVA results showed a significant two-way interaction effect. Because the four separate planned contrast tests increased the number of Type I errors, the Bonferroni correction procedure was used (Bland & Altman, 1995). Consequently, an adjusted alpha level of .01 (overall α /number of tests = $.05/4 = .0125$) was used for further testing. A significant interaction effect of visual modality and cultural appeals was obtained for loving emotion [$F(1,310) = 8.26$, $p \leq .01$, partial $\eta^2 = .03$], in which a photo of real people and absent long-term future reward elicited the greatest loving emotion ($M = 3.25$, $SE = .17$), followed by a cartoon graphic and present long-term future reward ($M = 3.07$, $SE = .17$), a photo of real people and long-term future reward ($M = 2.83$, $SE = .17$), and a cartoon graphic and absent long-term future reward ($M = 2.51$, $SE = .17$) (see Figure 9).

RQ6(a) examined how the features of depression campaign Facebook posts impacted people's overall perceived self-efficacy in identifying depression, perceived self-efficacy in identifying their family's depression, perceived self-efficacy in identifying their friends' depression, and perceived self-efficacy in identifying their own depression after controlling for depression symptom and gender. MANCOVA results showed no significant multivariate interaction or main effects of the features of depression campaign Facebook posts on perceived self-efficacy in depression identification overall, nor in perceived self-efficacy in identifying friends' depression, family's depression, and one's own depression for the overall test. Analysis of covariance (ANCOVA) tests on perceived self-efficacy in identifying depression overall and perceived self-efficacy in identifying friends' depression, family's depression, and one's own depression were conducted as follow-up tests to the MANCOVA. ANCOVA results showed a significant main effect. Because the two separate planned contrast tests increased the number of Type I errors, the Bonferroni correction procedure was used (Bland & Altman, 1995). Consequently, an adjusted alpha level of .03 (overall α /number of tests = $.05/2 = .025$) was used for further testing. A significant univariate main effect of visuals was obtained for perceived self-efficacy in identifying one's own depression [$F(1,310) = 4.62, p \leq .03$, partial $\eta^2 = .02$], in which a photo of real people elicited greater perceived self-efficacy in identifying one's own depression ($M = 5.26, SE = .12$) than a cartoon graphic ($M = 4.88, SE = .12$) (see Table 5).

Through the post-hoc analyses, RQ7(a) sought to examine whether participants' emotional responses to depression campaign Facebook posts and their perceived self-efficacy in identifying depression sequentially mediated the relationships between features of depression campaign Facebook posts (framing, visuals, and cultural appeals) and their intention to provide support after controlling for gender and depression symptoms. The mediation results were

analyzed using serial linear regression with PROCESS macro model 6 (Hayes, 2017, 2018).

Below is a significant serial mediation model, according to the significant features of depression campaign Facebook posts interactions as evidenced in RQ5(a) and RQ6(a), using emotional response (loving emotion) and perceived self-efficacy in identifying one's own depression as the two sequential mediators.

First, regarding message visuals and cultural appeal, this study tested a model that examined how dummy-coded image type (1 = photo of real people, 0 = cartoon graphic) and dummy-coded cultural appeal (1 = absent long-term future reward, 0 = present long-term future reward) and a term representing their interaction serially influence the intention to provide support through two mediators, loving emotion and perceived self-efficacy in identifying one's own depression. A significant serial mediation was found [point estimate = .03, SE = .02, 95% CI = (.01, .08)], as the bootstrapping CI did not straddle zero. The model explained 5.04% of the variance in loving emotion. The depression campaign Facebook posts using a photo of real people and absent long-term future reward as a potential predictor yielded a significant coefficient ($b = .97, p \leq .01$). The model explained 4.46% of the variance in perceived self-efficacy in identifying one's own depression. The depression campaign Facebook posts using a photo of real people and absent long-term future reward were not a significant predictor for perceived self-efficacy in identifying one's own depression. However, loving emotion ($b = .16, p \leq .01$) was a significant predictor. Finally, the model explained 14.40% of the variance in intention to provide support. The depression campaign Facebook posts using a photo of real people and absent long-term future reward and loving emotion were not significant predictors. However, perceived self-efficacy in identifying one's own depression ($b = .22, p \leq .001$) was a significant predictor for the intention to provide support. In sum, the findings suggest that the

relationship between the interactive effect of a photo of real people and absent long-term future reward on intention to provide support is fully mediated by loving emotion and, in turn, perceived self-efficacy in identifying one's own depression (see Figure 10).

Through the post-hoc analyses, RQ8(a) sought to examine how mental health literacy moderates the relationship between the features of depression campaign Facebook posts (framing, visuals, and cultural appeals) and perceived self-efficacy in identifying depression, which further influenced the intention to provide support after controlling for depression symptoms and gender. The moderated mediation model results were analyzed using serial linear regression with PROCESS macro model 7 (Hayes, 2017 & 2018). First, after dummy codes for message framing (1 = gain framing, 0 = loss framing), visuals (1 = cartoon graphic, 0 = photo of real people), and cultural appeals (1 = present long-term future reward, 0 = absent long-term future reward), as well as an interaction term (dummy-coded message framing, visuals, and cultural appeals x mental health literacy), were created, a hierarchical multiple regression analysis was conducted. To avoid potential high multicollinearity, each variable was centered and entered into model 3 of the hierarchical regression. The regression results showed that in model 3, which examined the interaction between the depression campaign Facebook posts using message framing/visuals/cultural appeals and mental health literacy, there was significantly more variance than the effect of depression campaign Facebook posts using message framing/visuals/cultural appeals and mental health literacy by themselves on self-efficacy in identifying friends' depression (R^2 change = .02, $p \leq .01$), indicating that there was potentially significant moderation between the features of depression campaign Facebook posts and mental health literacy on perceived self-efficacy in identifying friends' depression.

Second, to further assess how mental health literacy moderated the relationship between the features of depression campaign Facebook posts and perceived self-efficacy in identifying friends' depression, which influenced intention to provide support, the PROCESS macro model 7: moderated mediation model was conducted (Hayes, 2017, 2018). A significant moderated mediation model was found, in which mental health literacy was a significant moderator for the mediation model of perceived self-efficacy in identifying friends' depression [Index = .07, SE = .03, 95% CI = (.02, .12)], as the bootstrapping CI did not straddle zero. The model explained 27.03% of the variance in perceived self-efficacy in identifying friends' depression, and the results revealed that mental health literacy significantly moderated the relationship between depression campaign Facebook posts using the strategies of gain framing, cartoon graphics, and present long-term future reward and perceived self-efficacy in identifying friends' depression [$b = .44, p \leq .01, 95\% \text{ CI} = (.09, .80)$]. Finally, the model explained 7.61% of the variance in intention to provide support. No significant direct effect of depression campaign Facebook posts using gain framing, cartoon graphics, and present long-term future reward on intention to provide support was found. However, perceived self-efficacy in identifying friends' depression was a significant predictor for the intention to provide support [$b = .16, p \leq .001, 95\% \text{ CI} = (.09, .23)$]. In sum, the findings suggest that the indirect effect of depression campaign Facebook posts using the strategies of gain framing, cartoon graphics, and present long-term future reward on intention to provide help/support for depression mediated through perceived self-efficacy in identifying friends' depression is moderated by mental health literacy. In particular, the impact of depression campaign Facebook posts on intention to provide help/support for depression through perceived self-efficacy in depression identification is congruent with higher mental health literacy (see Figure 11).

Main Online Experimental Study 2

H3(a) sought to determine whether depression campaign Facebook posts using comment links elicited a significantly greater intention to provide support than those without comment links after controlling for depression symptoms and gender. ANCOVA results showed that depression campaign Facebook posts with comment links and those without comment links showed no difference on intention to provide support [$F(1,496) = .23, p = .63, \text{partial } \eta^2 = .00$]. Thus, H3(a) was not supported (see Table 6).

H3(b) sought to determine whether depression campaign Facebook posts using mixed reaction emotions (Like and Sad) elicited a significantly greater intention to provide support than those posts using positive and negative reaction emoticons after controlling for depression symptoms and gender. ANCOVA results showed that depression campaign Facebook posts using mixed reaction emoticons, positive reaction emoticons, and negative reaction emoticons showed no difference on intention to provide support [$F(1,495) = .11, p = .88, \text{partial } \eta^2 = .00$]. Thus, H3(b) was not supported (see Table 6).

H3(c) sought to determine whether depression campaign Facebook posts using comment links and mixed reaction emoticons elicited the significantly greatest intention to provide support compared to those using positive and negative reaction emoticons after controlling for depression symptoms and gender. ANCOVA results showed no significant interaction effect of comment links and reaction emoticons on intention to provide support [$F(2,492) = 1.07, p = .34, \text{partial } \eta^2 = .004$]. Thus, H3(c) was not supported (see Table 6).

RQ3 examined how comment links, reaction emoticons, and visuals jointly increased Chinese immigrants' intention to provide support after controlling for depression symptoms and gender. The ANCOVA results revealed no significant three-way interaction effect on intention to

provide support [$F(2,486) = 1.72, p = .18, \text{partial } \eta^2 = .007$]. In addition, the results showed no significant two-way interaction effect between comment links and images on intention to provide support [$F(1,486) = .002, p = .97, \text{partial } \eta^2 = .000$], no significant two-way interaction effect between comment links and reaction emoticons on intention to provide support [$F(2,486) = 1.09, p = .34, \text{partial } \eta^2 = .004$], and no significant two-way interaction effect between images and reaction emoticons on intention to provide support [$F(2,486) = 1.45, p = .24, \text{partial } \eta^2 = .006$]. Moreover, the results showed no significant main effect of comment links on intention to provide support [$F(1,486) = .23, p = .63, \text{partial } \eta^2 = .000$], no significant main effect of visuals on intention to provide support [$F(1,486) = .77, p = .38, \text{partial } \eta^2 = .002$], and no significant main effect of reaction emoticons on intention to provide support [$F(2,486) = .11, p = .89, \text{partial } \eta^2 = .000$] (see Table 7).

Through the post-hoc analyses, RQ4(b) sought to examine how overall acculturation and the types of acculturation moderated the relationship between depression campaign Facebook posts (using comment links, reaction emoticons, and visuals) and participants' intention to provide support after controlling for depression symptoms and gender. A hierarchical multiple regression analysis was conducted. To avoid potential high multicollinearity, each variable was centered and entered into model 3 of the hierarchical regression. The hierarchical regression results showed that only acculturation in language ability and entertainment preference ($\Delta R^2 = .01, \Delta F(1,492) = 5.21, p \leq .05$), parental identity ($\Delta R^2 = .01, \Delta F(1,492) = 3.61, p \leq .05$), and food preference ($\Delta R^2 = .01, \Delta F(1,492) = 4.30, p \leq .05$) were potential moderators.

To further examine how these types of acculturation moderated the relationship between depression campaign Facebook posts and intention to provide support, the PROCESS macro for SPSS (Hayes, 2017 & 2018), across 1,000 bootstrap samples, was run on the centered terms to

examine the moderation effect. The results revealed that acculturation in language ability and entertainment preference [$\beta = -.38$, $t(494) = -2.35$, 95% CI $[-.70, -.06]$, $p \leq .01$] and in parental identity were significant moderators [$\beta = -.33$, $t(494) = -2.03$, 95% CI $[-.65, -.01]$, $p \leq .05$] for the relationship between depression campaign Facebook posts using no comment links, a photo of one person, and mixed reaction emoticons and the intention to provide support. In addition, acculturation in food preference [$\beta = .41$, $t(494) = 2.05$, 95% CI $[.02, .81]$, $p \leq .05$] was a significant moderator for the relationship between depression campaign Facebook posts using no comment links, a photo of one person, and negative reaction emoticons and the intention to provide support. In sum, acculturation in language ability and entertainment preference and in parental identity are negative moderators, but acculturation in food preference is a positive moderator for the relationship between depression campaign Facebook posts and intention to provide support (see Figures 12, 13 and 14).

RQ5(b) examined how depression campaign Facebook posts using comment links, reaction emoticons, and visuals elicited people's discrete emotions after controlling for depression symptoms and gender. First, MANCOVA results showed the main effect of visuals [Wilks' $\lambda = .91$, $F(13,474) = 3.57$, $p \leq .001$, partial $\eta^2 = .09$] on discrete emotional responses in an overall test. To further investigate the main effect, subsequent contrast tests were conducted for each group. Because the two separate planned contrast tests increased the number of Type I errors, the Bonferroni correction procedure was used (Bland & Altman, 1995). Consequently, an adjusted alpha level of .03 (overall α /number of tests = $.05/2 = .025$) was used for further testing. A significant univariate main effect of visuals was obtained for loving emotional response [$F(1,486) = 17.92$, $p \leq .001$, partial $\eta^2 = .04$], in which a photo of a group of people elicited greater loving emotional response ($M = 3.09$, $SE = .10$) than a photo of only one person ($M =$

2.48, $SE = .10$). Moreover, a significant univariate main effect of visuals was obtained for optimistic emotional response [$F(1,486) = 25.91, p \leq .001$, partial $\eta^2 = .05$], in which a group photo elicited greater optimistic emotional response ($M = 3.32, SE = .10$) than a photo of only one person ($M = 2.57, SE = .10$).

Second, MANCOVA results showed a main effect of reaction emoticons [Wilks' $\lambda = .92, F(26,948) = 1.55, p \leq .05$, partial $\eta^2 = .04$] on discrete emotional responses in the overall test. To further investigate the main effect, subsequent contrast tests were conducted for each group. Because the three separate planned contrast tests increased the number of Type I errors, the Bonferroni correction procedure was used (Bland & Altman, 1995). Consequently, an adjusted alpha level of .02 (overall α /number of tests = $.05/3 = .016$) was used for further testing. A significant univariate main effect of reaction emoticons was obtained for optimistic emotional response [$F(2,486) = 8.29, p \leq .001$, partial $\eta^2 = .03$], in which positive reaction emoticons elicited significantly greater optimistic emotional response ($M = 3.30, SE = .13$) than negative reaction emoticons ($M = 2.57, SE = .13$) (see Table 8).

RQ6(b) examined how depression campaign Facebook posts using comment links, reaction emoticons, and visuals impacted people's 1) perceived self-efficacy in identifying depression, 2) perceived self-efficacy in providing support, and 3) perceived self-efficacy in providing support resources after controlling for depression symptoms and gender. MANCOVA results showed no significant multivariate interaction or main effects for comment links, reaction emoticons, and visuals on perceived self-efficacy in depression identification and perceived self-efficacy in providing support in overall tests. However, MANCOVA showed a significant main effect of comment links on perceived self-efficacy in providing support resources in the overall test [Wilks' $\lambda = .98, F(2,485) = 4.00, p \leq .05$, partial $\eta^2 = .02$]. To further investigate the main

effect, subsequent contrast tests were conducted for each group. Because the two separate planned contrast tests increased the number of Type I errors, the Bonferroni correction procedure was used (Bland & Altman, 1995). Consequently, an adjusted alpha level of .03 (overall $\alpha/\text{number of tests} = .05/2 = .025$) was used for further testing. A significant univariate main effect of comment links was obtained for perceived self-efficacy in providing support resources to family members with depression [$F(1,486) = 5.80, p \leq .02$, partial $\eta^2 = .01$], in which posts with comment links significantly elicited greater perceived self-efficacy in providing support resources to family members with depression ($M = 4.89, SE = .09$) than those posts with no comment links ($M = 4.57, SE = .09$) (see Table 9).

Through the post-hoc analyses, RQ7(b) sought to examine whether participants' emotional responses to depression campaign Facebook posts and their self-efficacy 1) in identifying depression, 2) in providing support, and 3) in providing support resources sequentially mediated the relationships between depression campaign Facebook posts (using comment links, reaction emoticons, and visuals) and their intention to provide support after controlling for gender and depression symptoms. The mediation results were analyzed using serial linear regression with PROCESS macro model 6 (Hayes, 2017 & 2018). Below is a significant serial mediation model, according to the significant findings as evidenced in RQ5(b) and RQ6(b), using emotional response (loving and optimistic emotions) and perceived self-efficacy in providing support resources to family members with depression as the two sequential mediators.

First, regarding the visuals, this study tested a model that examined how dummy-coded image type (1 = photo of a group of people, 0 = photo of an individual) serially influenced the intention to provide support through two mediators, loving emotion and perceived self-efficacy

in providing support resources to family members with depression. A significant serial mediation was found [point estimate = .02, SE = .01, 95% CI = (.001, .041)], as the bootstrapping CI did not straddle zero. The model explained 5.34% of the variance in loving emotion. The depression campaign Facebook posts using a group photo as a potential predictor yielded a significant coefficient ($b = .61, p \leq .001$). The model explained 2.34% of the variance in perceived self-efficacy in providing support resources to family members with depression. The depression campaign Facebook posts using a group photo were not a significant predictor for perceived self-efficacy in providing support resources to family members with depression. However, loving emotion ($b = .09, p \leq .05$) was a significant predictor. Finally, the model explained 21.82% of the variance in intention to provide support. The depression campaign Facebook posts using a group photo and loving emotion were not significant predictors. However, perceived self-efficacy in providing support resources to family members with depression ($b = .32, p \leq .001$) was a significant predictor for the intention to provide support. In sum, the findings suggest that the relationship between the visuals and intention to provide support is fully mediated by loving emotion and, in turn, perceived self-efficacy in providing support resources to family members with depression (see Figure 15).

Second, regarding the visuals, this study tested a model that examined how dummy-coded image type (1 = photo of a group of people, 0 = photo of an individual) serially influenced the intention to provide support through two mediators, optimistic emotion and perceived self-efficacy in providing support resources to family members with depression. A significant serial mediation was found [point estimate = .04, SE = .01, 95% CI = (.015, .067)], as the bootstrapping CI did not straddle zero. The model explained 5.71% of the variance in optimistic emotion. The depression campaign Facebook posts using a group photo as a potential predictor

yielded a significant coefficient ($b = .75, p \leq .001$). The model explained 4.44% of the variance in perceived self-efficacy in providing support resources to family members with depression. The depression campaign Facebook posts using a group photo were not a significant predictor for perceived self-efficacy in providing support resources to family members with depression. However, optimistic emotion ($b = .16, p \leq .001$) was a significant predictor. Finally, the model explained 21.81% of the variance in intention to provide support. The depression campaign Facebook posts using a group photo and optimistic emotion were not significant predictors. However, perceived self-efficacy in providing support resources to family members with depression ($b = .32, p \leq .001$) was a significant predictor for the intention to provide support. In sum, the findings suggest that the relationship between the visuals and intention to provide support is fully mediated by optimistic emotion and, in turn, perceived self-efficacy in providing support resources to family members with depression (see Figure 16).

Third, regarding reaction emoticons, this study tested a model that examined how dummy-coded reaction emoticon type (1 = positive reaction emoticons, 0 = negative and mixed reaction emoticons) serially influenced the intention to provide support through two mediators, optimistic emotion and perceived self-efficacy in providing support resources to family members with depression. A significant serial mediation was found [point estimate = .03, SE = .01, 95% CI = (.008, .050)], as the bootstrapping CI did not straddle zero. The model explained 3.06% of the variance in optimistic emotion. The depression campaign Facebook posts using positive reaction emoticons as a potential predictor yielded a significant coefficient ($b = .53, p \leq .001$). The model explained 4.49% of the variance in perceived self-efficacy in providing support resources to family members with depression. The depression campaign Facebook posts using positive reaction emoticons were not a significant predictor for perceived self-efficacy in

providing support resources to family members with depression. However, optimistic emotion ($b = .15, p \leq .001$) was a significant predictor. Finally, the model explained 21.69% of the variance in intention to provide support. The depression campaign Facebook posts using positive reaction emoticons and optimistic emotion were not significant predictors. However, perceived self-efficacy in providing support resources to family members with depression ($b = .32, p \leq .001$) was a significant predictor for the intention to provide support. In sum, the findings suggest that the relationship between reaction emoticons and intention to provide support is fully mediated by optimistic emotion and, in turn, perceived self-efficacy in providing support resources to family members with depression (see Figure 17).

Through the post-hoc analyses, RQ8(b) sought to examine how mental health literacy moderated the relationship between depression campaign Facebook posts using comment links, reaction emoticons, and visuals and 1) perceived self-efficacy in identifying depression, 2) perceived self-efficacy in providing support, and 3) perceived self-efficacy in providing support resources, which further influenced participants' intention to provide support after controlling for depression symptoms and gender. The moderated mediation model results were analyzed using serial linear regression with PROCESS macro model 7 (Hayes, 2017 & 2018). First, after dummy codes for comment links (1 = comment links, 0 = no comment links), reaction emoticons (1 = negative emoticons, 0 = positive and mixed emoticons), visuals (1 = photo of a group of people, 0 = photo of one person), as well as an interaction term (dummy-coded comment links, reaction emoticons, and visuals x mental health literacy), were created, a hierarchical multiple regression analysis was conducted. To avoid potential high multicollinearity, each variable was centered and entered into model 3 of the hierarchical regression. The results from regression analysis showed that in model 3, the interaction between depression campaign Facebook posts

(using comment links, reaction emoticons, visuals) and mental health literacy displayed marginally significant differences from depression campaign Facebook posts (using comment links, reaction emoticons, visuals) and mental health literacy by themselves on self-efficacy in providing support resources to friends (R^2 change = .01, $p \leq .06$). This result indicates that mental health literacy could be a potential moderator for the relationship between depression campaign Facebook posts (using comment links, reaction emoticons, and visuals) and self-efficacy in providing support resources to friends.

Second, to further assess how mental health literacy moderated the relationship between depression campaign Facebook posts using comment links, reaction emoticons, and visuals and perceived self-efficacy in providing support resources to friends, which influenced intention to provide support, the PROCESS macro model 7: moderated mediation model was conducted (Hayes, 2017 & 2018). A significant moderated mediation model was found, in which mental health literacy was a significant moderator for the mediation model of perceived self-efficacy in providing support resources to friends [Index = -.14, SE = .08, 95% CI = (-.31, -.01)], as the bootstrapping CI did not straddle zero. The model explained 21.09% of the variance in perceived self-efficacy in providing support resources to friends. The results revealed that mental health literacy significantly moderated the relationship between depression campaign Facebook posts using comment links, negative reaction emoticons, and a photo of a group of people and perceived self-efficacy in providing support resources to friends [$b = -.45$, $p \leq .05$, 95% CI = (-.82, -.08)]. Finally, the model explained 19.71% of the variance in intention to provide support. No significant direct effect of depression campaign Facebook posts using comment links, negative reaction emoticons, and a group photo on intention to provide support was found. However, perceived self-efficacy in providing support resources to friends was a significant

predictor for the intention to provide support [$b = .31, p \leq .001, 95\% \text{ CI} = (.25, .38)$]. In sum, the findings suggest that the indirect effect of depression campaign Facebook posts using comment links, negative reaction emoticons, and a group photo on intention to provide help/support for depression mediated through perceived self-efficacy in providing support resources to friends is moderated by mental health literacy. In particular, the impact of depression campaign Facebook posts on intention to provide help/support for depression through perceived self-efficacy in providing support resources is incongruent with higher mental health literacy (see Figure 18).

CHAPTER 5

DISCUSSION

The purpose of this dissertation was to assess how depression campaign posts about providing support using different messaging and social support strategies on Facebook significantly influenced depression communication among Chinese immigrants. Two online experiments were conducted to test the effects of message framing, visuals, cultural appeals, instrumental support, and emotional support to demonstrate which features of campaign posts, cultural appeal strategies, and social support strategies were more likely to influence healthy behavior. Results from these studies can be used to inform health organizations and health public relations professionals about how to make key concepts more salient through visuals and text so that campaign messages can more effectively persuade Chinese immigrants to provide support when they notice someone suffering from depression symptoms.

Summary of Findings from Study 1

Study 1 investigated the strategies of messaging framing, visual modality, and cultural appeals to determine whether and how these strategies demonstrated greater potential than others in maximizing the effectiveness of depression campaign posts on social media to encourage support-providing behavior among Chinese immigrants. Study 1 also further investigated the mediating roles of discrete emotions and perceived self-efficacy in identifying depression and the moderating roles of mental health literacy and acculturation for depression communication and support-providing behavior among this targeted immigrant public.

The results from Study 1 revealed an effect of visual modality on intention to provide support; in particular, a photograph of real people elicited a greater effect than a cartoon graphic on intention to provide support, although no effect of message framing or cultural appeals was found on intention to provide support. Second, regarding the effect of strategies of framing, visuals, and cultural appeals on emotional and cognitive responses, the results from Study 1 showed the interaction effect of visuals and cultural appeal on loving emotional response and a main effect of visuals on perceived self-efficacy in identifying one's own depression. The findings revealed that Chinese immigrants experienced greater loving feelings while looking at depression campaign Facebook posts using a photo of real people and absent long-term future reward. Chinese immigrants also experienced greater perceived self-efficacy in identifying their own depression while looking at the depression campaign posts using a photo of real people.

Moreover, Study 1 further examined whether and how the strategies of message framing, visuals, and cultural appeals sequentially impacted affect and cognitive reaction among Chinese immigrants. The results from a mediation analysis of Study 1 revealed loving emotion and perceived self-efficacy in identifying one's own depression as sequential positive mediators for the relationship between depression campaign posts using visuals and cultural appeals and the intention to provide support. This finding indicates that while looking at the depression campaign posts on Facebook using a photo of real people and absent long-term future reward, Chinese immigrants experienced greater loving emotion, which in turn increased their perceived self-efficacy in identifying their own depression, thereby eliciting the intention to provide support.

Furthermore, regarding the moderated mediation model for mental health literacy and perceived self-efficacy in depression identification, the results from Study 1 revealed that the indirect effect of depression campaign Facebook posts using gain framing, cartoon graphics, and

present long-term future reward on intention to provide help/support for depression, mediated through perceived self-efficacy in identifying friends' depression, is moderated by mental health literacy. In particular, the impact of features of depression campaign posts on intention to provide help/support for depression through perceived self-efficacy in identifying friends' depression is highly congruent with higher mental health literacy. This finding indicates that the effect of the features of depression campaign posts on intention to provide support was positively mediated by perceived self-efficacy in identifying friends' depression when Chinese immigrants had higher mental health literacy.

Study 1 also investigated the moderator of acculturation for depression support-providing behavior. The results from Study 1 revealed that acculturation in parental identity was a negative moderator for the relationship between the features of depression campaign posts (e.g., gain framing, a photo of real people, and absent long-term future reward) and the intention to provide support. This finding indicates that the effect of the features of depression campaign posts on Facebook on the intention to provide support was reduced when Chinese immigrants had a higher degree of acculturation in parental identity. However, acculturation in affinity to ethnic identity was a positive moderator for the relationship between the features of depression campaign posts (e.g., gain framing, cartoon graphics, and absent long-term future reward) and the intention to provide support. This finding indicates that the effect of the features of depression campaign posts on Facebook on the intention to provide support was increased when Chinese immigrants had a higher degree of acculturation in affinity to ethnic identity.

Summary of Findings from Study 2

Study 2 investigated comment links, emoticons, and visuals to determine whether and how the strategies of social support and visual modality demonstrated greater potential than

others in maximizing the effectiveness of depression campaign posts on social media to encourage support-providing behavior among Chinese immigrants. Study 2 also further investigated the mediating roles of discrete emotions and perceived self-efficacy in identifying depression, providing support, and providing support resources. Additionally, Study 2 examined the moderating roles of mental health literacy and acculturation in depression communication and support-providing behavior among this targeted immigrant public.

The results from Study 2 revealed no significant interaction effect or main effect on intention to provide support. However, regarding the effect of strategies of social support and visuals on emotional and cognitive responses, a main effect of visuals and reaction emoticons on discrete emotions was found. The results showed the main effect of visuals on loving and optimistic emotional responses, in which a group photo elicited greater loving and optimistic emotional reactions than a photo of just one person. These findings indicate that Chinese immigrants experienced greater loving and optimistic reactions when viewing depression campaign Facebook posts using a photo of a group of people as compared to a photo of just one person. In addition, the results showed a main effect of reaction emoticons on discrete emotional response, in which positive reaction emoticons (e.g., like) elicited greater optimistic emotion than negative reaction emoticons (e.g., the sad-face emoticon). This finding indicates that Chinese immigrants felt greater optimism when they saw depression campaign Facebook posts using positive reaction emoticons compared to those using negative reaction emoticons. Moreover, the results revealed a main effect of comment links on perceived self-efficacy in providing support resources to family members with depression, in which posts with comment links elicited greater perceived self-efficacy in providing support resources to family members with depression than posts with no comment links. This finding indicates that Chinese

immigrants experienced higher levels of perceived self-efficacy in providing support resources to family members with depression when they saw depression campaign Facebook posts with comment links as compared to those without comment links.

Moreover, Study 2 further investigated whether and how the strategies of social support and visuals sequentially influenced affect and cognitive reaction among Chinese immigrants. First, the results from mediation analysis of Study 2 revealed loving emotion and perceived self-efficacy in providing support resources to family members with depression as sequential positive mediators for the relationship between depression campaign Facebook posts using visual strategies and the intention to provide support. This finding indicates that when viewing the depression campaign posts using a group photo, Chinese immigrants experienced greater loving emotion, which increased their self-efficacy in providing support resources to family members with depression, which consequently elicited intention to provide support. Second, the results of mediation analysis showed optimistic emotion and perceived self-efficacy in providing support resources to family members with depression as positive sequential mediators for the relationship between depression campaign Facebook posts using visual strategies and the intention to provide support. This finding indicates that Chinese immigrants experienced greater optimism when viewing depression campaign posts using a group photo, which increased their self-efficacy in providing support resources to family members with depression, which consequently elicited intention to provide support. Third, the results of mediation analysis revealed optimistic emotion and perceived self-efficacy in providing support resources to family members suffering from depression as sequential positive mediators for the relationship between depression campaign Facebook posts using positive reaction emoticons (e.g., like) and the intention to provide support. This finding indicates that Chinese immigrants experienced greater optimism when

viewing depression campaign posts using positive reaction emoticons such as “Like,” which increased their self-efficacy in providing support resources to family members suffering from depression, which consequently elicited intention to provide support.

Furthermore, regarding the moderated mediation model for mental health literacy and perceived self-efficacy in identifying depression and providing support and support resources, the results from Study 2 revealed that an indirect effect of depression campaign Facebook posts using comment links, negative reaction emoticons, and group photos on intention to provide help/support for depression mediated through perceived self-efficacy in providing support resources to friends is moderated by mental health literacy. In particular, the impact of features of depression campaign posts on intention to provide help/support for depression through perceived self-efficacy in providing support resources is highly incongruent with higher mental health literacy. This finding indicates that the effect of depression campaign posts on intention to provide support was positively mediated by perceived self-efficacy in providing support resources to friends suffering from depression when Chinese immigrants had lower mental health literacy.

Study 2 also investigated the moderator of acculturation for depression support-providing behavior. The results from Study 2 revealed that acculturation in language ability and entertainment preference and in parental identity were negative moderators for the relationship between depression campaign Facebook posts using no comment links, mixed reaction emoticons, and photos of just one person and the intention to provide support. This finding indicates that the effect of depression campaign Facebook posts using the strategies of social support and visuals on the intention to provide support was reduced when Chinese immigrants had a higher degree of acculturation in language ability and entertainment preference and in

parental identity. However, acculturation in food preference was a positive moderator for the relationship between depression campaign Facebook posts using no comment links, negative reaction emoticons, and photos of one person and the intention to provide support. This finding indicates that the effect of depression campaign Facebook posts using the strategies of social support and visuals on the intention to provide support was increased when Chinese immigrants had a higher degree of acculturation in food preference.

Theoretical Implications from Study 1 and Study 2

This dissertation provides important implications for depression help and support communication among Chinese immigrants. The findings also provide implications regarding the roles of messaging strategies using visuals and cultural appeals and social support strategies on affect, cognition, and behavioral intention in health communication and strategic communication. Several important implications for the theories and practices are discussed in the following sections.

Visual strategy for intention to provide help/support for depression. Regarding the intentional behavior of depression help and support, the findings from Study 1 and Study 2 indicate that visual strategy plays a significant role in increasing Chinese immigrants' intention to provide support to individuals suffering from depression. In particular, photographs of groups of real people played a significant role in intention to provide help/support for depression when Chinese immigrants viewed depression campaign Facebook posts. These findings are in line with the conceptual definition of visuals serving a representative function (David, 1998) and as a connotative system of ideological representations (Rodriguez & Dimitrova, 2011). More importantly, the findings provide further important evidence that using photographs of real people with similar identifying information, such as the same ethnicity, as the targeted public is a

superior strategy to convey the ideas of depression help and support and to shape public awareness and intention about depression communication; such visual approaches also shorten the distance between viewers and the visuals used to convey the sensitive health topic of depression.

Second, the findings of the effect of visuals on intention to provide help/support for depression indicate that positive images play a significant role in intention to provide help/support for depression, which corresponds with previous studies about the effects of positive images on positive attitude toward mental health (Seiff, 2003) and on taking the recommended health actions for vaccination (Inokuchi et al., 2009). More importantly, this dissertation provides evidence regarding which characteristics of positive images can effectively persuade the targeted public in communication about depression help and support. For instance, this dissertation suggests that health organizations and health public relations practitioners should include characteristics such as hugging and similar ethnicity to the target public in positive images to increase the targeted immigrant public's intention to provide support to individuals suffering from depression. These characteristics of positive images also contribute to the visual framing theory (Entman, 1993) on depression communication, which argues that using the characteristics of positive images as visual framing strategies can help address the health issue of depression, increase depression awareness, and provide health recommendations.

Messaging, cultural, and social support strategies for emotion and cognition. First, regarding the emotional responses to help and support depression campaign posts, individuals' positive emotional responses are triggered by the visual strategy in terms of the results from Study 1 and Study 2. These findings are in line with earlier work that demonstrates that pictures trigger people's emotional responses, thereby impacting their positive or negative affect toward

health-related objects (Evans et al., 2015; Houts et al., 2006). More importantly, the findings of this dissertation provide strong empirical evidence for the study of visual framing and discrete emotions on depression communication. Specifically, photos of groups of real people and loving and optimistic positive emotions are key to enhancing the persuasiveness of depression communication among Chinese immigrants. The findings of this dissertation suggest that depression help and support campaign posts should include photographs of groups of real people and supportive gestures (e.g., hugging) to elicit loving/warm-hearted and optimistic/hopeful positive emotions, which can consequently motivate Chinese immigrants to provide support to individuals suffering from depression.

Moreover, the findings from Study 1 indicate that cultural appeals are not only a persuasive strategy but can also combine with visual strategy to elicit positive emotional responses among Chinese immigrants. In particular, absent long-term future reward and photos of real people significantly elicit loving/warm-hearted emotional responses. The findings regarding long-term and short-term reward framing in this dissertation contradict those of previous studies about the effects of long-term strategy on advertising effectiveness for individuals with collectivistic values (Lee & Heo, 2016) and the effects of framing and temporal distance on HPV vaccine communication for young Chinese adults (Wen & Shen, 2016). However, the findings in this dissertation provide significant evidence to support findings from a previous study that culturally tailored messages are persuasive for Asian Americans (Huang & Shen, 2016). More importantly, the findings in this dissertation provide significant evidence that Hofstede's (1980, 1991) time orientation of short-term and long-term rewards combined with photos of real people form a persuasive strategy for culturally tailored messages to elicit emotional responses about depression communication. The findings also imply that their

bicultural experience and their Western host culture encourage Chinese immigrants to pay more attention to the posts using a short-term reward (e.g., your loved ones with depression are more likely to seek professional help and treatment immediately) with a depiction of a real group of people, which produces loving/warm-hearted and optimistic/hopeful responses that depression can be treated.

Second, regarding the cognition of self-efficacy in identifying depression, the findings from Study 1 indicate that visual strategies increase Chinese immigrants' self-efficacy in identifying their own depression, which corresponds to findings of previous studies on the benefits of visuals for self-efficacy in depression symptom identification (Broussard et al., 2014; Unger et al., 2013). The findings suggest that depression campaign posts incorporating photos of real people on social media are more effective in reducing uncertainty and increasing self-control in understanding, identifying, and detecting depression symptoms among Chinese immigrants.

In addition, with regard to the cognition of self-efficacy in providing support resources to loved ones, the findings from Study 2 indicate that only the instrumental support strategy plays a significant role for self-efficacy in providing support resources to family members with depression, which partially corresponds to findings from previous studies on the interactive effect of instrumental and emotional support on human wellbeing (Morelli et al., 2015; Mui & Kang, 2006). One reason for such findings is that Asian cultural values encourage Chinese immigrants to have greater willingness to provide social support to their friends and family members, including emotional support, because Chinese immigrants consider close friends and family members as members of an ingroup. A second reason is that individuals need to know more concrete, specific, and direct ways to assist others with depression so that they can evaluate their ability to provide support resources to their loved ones with depression. The findings also

imply that depression campaign posts using concrete, specific, and direct links on social media can increase Chinese immigrants' awareness of how to provide support to their family members and can enhance their confidence in their ability to provide support when their family members need it.

Psychological process behind campaign posts for depression help and support communication. The serial mediation models further reveal the underlying psychological process connecting depression campaign posts on social media to help and support communication outcomes in terms of Lazarus's (1982) argument that affect determines cognition and Myrick's (2015) assertion that emotional and cognitive processes help understand viewers' reaction to health messages. Overall, the findings of serial mediation models from Study 1 and Study 2 suggest that positive emotions such as loving/warm-hearted and optimistic/hopeful responses, self-efficacy in depression identification, and self-efficacy in providing support resources serve as sequential mediators for the effects of the most effective depression campaign Facebook posts on intention to provide help/support for depression. These overall findings correspond with Lazarus's (1982) argument about how affect determines cognition and Weiner's (1980a, 1980b) statement regarding the effect of perceived self-efficacy on social support outcomes. These overall findings also further provide significant evidence of the significant role that positive discrete emotions such as loving/warm-hearted and optimistic/hopeful responses play in psychological processes connecting depression campaign Facebook posts to help and support communication outcomes.

In addition, the findings from Study 1 indicate that loving/warm-hearted emotion and self-efficacy in identifying one's own depression serve as sequential mediators for the effects of photos of real people and absent long-term future reward strategy on intention to provide

help/support for depression. The photo of real people depicting a hug and the immediate reward strategy are more effective in evoking Chinese immigrants' loving/warm-hearted feelings than other strategies, which implies that the loving/warm-hearted feeling increases the sense of belonging as an in-group member between the viewers and others. This sense of belonging and in-group feeling can further impact Chinese immigrants' self-efficacy in depression identification and, consequently, their intention to provide help/support for depression. This finding also implies that their bicultural experience impacts how Chinese immigrants perceive and process depression campaign posts on social media. This dissertation also suggests, based on this finding, that visual strategy and cultural appeal strategy should be used in combination for depression campaign Facebook posts to effectively trigger Chinese immigrants' positive emotional responses and increase their level of self-efficacy in depression identification, thereby effectively persuading Chinese immigrants to provide support.

Furthermore, findings from Study 2 indicate that loving/warm-hearted and optimistic/hopeful emotions and self-efficacy in providing support resources to family serve as sequential mediators for the effects of group photos on intention to provide help/support for depression, which are in line with previous studies about the effect of images on emotional response and the effect of positive images on positive attitude toward mental health (Evans et al., 2015; Houts et al., 2006; Seiff, 2003). Additionally, another finding from Study 2 indicates that optimistic/hopeful emotional response and self-efficacy in providing support resources to family members serve as sequential mediators for the effect of positive reaction emoticons on intention to provide help and support, which is in line with previous studies showing the effect of emotional support on health communication (Yoo et al., 2014) and the impact of culture on emotional expression and interpretation via emoticons (Matsumoto et al., 2009; Yuki et al.,

2007). These findings imply that supportive, warm-hearted, and hopeful feelings and a sense of belonging are key points for depression communication among Chinese immigrants. These feelings not only increase their level of confidence in providing support resources but can also reduce the stigma of depression. Thus, to effectively motivate Chinese immigrants to provide support to others with depression, this dissertation suggests, based on these findings, that depression campaign Facebook posts should incorporate either visual strategies (e.g., a group photo of real people showing supportive gestures) or emotional support strategies (e.g., positive reaction emoticons) to trigger positive emotions (e.g., loving or optimistic feelings) that can further increase the level of self-efficacy in providing support resources.

Mental health literacy for depression help and support communication. Overall, the moderated mediation models for these two studies reveal that mental health literacy is a moderator for the indirect relationship between depression campaign Facebook posts and intention to provide help/support for depression, which is mediated by self-efficacy in depression identification and self-efficacy in providing support resources. The findings from Study 1 indicate that mental health literacy is a positive moderator for the relationship between the features of depression campaign posts using gain framing, cartoon graphics, and present long-term future reward and intention to provide help/support for depression, which is positively mediated by self-efficacy in identifying friends' depression. This finding is in line with those of previous studies that have shown that mental health literacy facilitates individuals' provision of support (Chang, 2008; Jorm, 2000) and impacts self-efficacy, which consequently influences behavioral intentions (Bandura, 1986; Egbert et al., 2014; Egbert & Parrott, 2001). This finding indicates that Chinese immigrants with a higher degree of mental health literacy have a higher

degree of self-efficacy in identifying friends' depression, which increases their intention to provide help/support for depression.

In contrast, the findings from Study 2 indicate that mental health literacy is a negative moderator for depression campaign posts using comment links, negative reaction emoticons, and group photos and intention to provide help/support for depression, which is positively mediated by self-efficacy in providing support resources to friends. This finding provides evidence that mental health literacy impacts self-efficacy, which in turn influences behavioral intentions (Bandura, 1986; Egbert et al., 2014; Egbert & Parrott, 2001). This finding indicates that Chinese immigrants with a higher degree of mental health literacy have a lower degree of self-efficacy in providing support resources to friends, which decreases their intention to provide help/support for depression.

These findings from Study 1 and Study 2 imply that mental health education is important for depression help and support communication among Chinese immigrants and can reduce misconceptions and misinformation about depression and treatment. Moreover, these findings imply that cultural values can impact Chinese immigrants' different beliefs about the treatment of mental disorders (Jorm et al., 2005); such values can pose barriers to people receiving and understanding corrective knowledge and information about depression and treatment and evaluating their confidence in providing support resources. The stigma of depression and treatment myths about depression that are formed by cultural and social values can also explain why people with higher levels of mental health literacy show lower levels of self-efficacy in providing support resources. Furthermore, these findings imply that people often receive corrective information and misinformation about depression and its treatment that actually

increase confusion and conflict about depression, resulting in individuals feeling less confident when they need to provide support resources to someone who suffers from depression.

The findings of mental health literacy also imply the importance of perceived knowledge of mental health for depression communication. For instance, perceived mental health knowledge about depression facilitates the impact of depression campaign messaging content and increases the level of confidence in identifying depression and providing effective support among Chinese immigrants, which provides evidence supporting previous studies about the effect of mental health literacy on increasing self-efficacy (Bandura, 1986; Egbert et al., 2014; Egbert & Parrott, 2001) and encouraging individuals to provide effective support to depressed individuals (Chang, 2008). Moreover, the findings provide significant insights that the characteristics of depression campaign messaging, such as using cartoon graphics and emphasizing long-term positive consequences, can play a significant role in increasing people's perceived mental health knowledge about depression. These findings also indicate that the strategy employing gain framing, cartoon graphics, and long-term future reward can facilitate the comprehension of the messaging content among Chinese immigrants, which can further increase their level of knowledge and confidence in being a supporter and helper of depression suffers.

Acculturation for depression help and support communication. Overall, the findings from Study 1 and Study 2 reveal that acculturation is a moderator of the relationship between depression campaign Facebook posts and intention to provide help/support for depression. Specifically, acculturation in affinity to ethnic identity and in food preference are positive moderators, indicating that Chinese immigrants who have stronger identification with Western culture and prefer to associate with Western communities and lifestyles are likely to show more willingness to provide support. In contrast, acculturation in parental identity and in language

ability and entertainment preference are negative moderators, indicating that Chinese immigrants who have stronger perception of Asian cultural identification in their family/generational history and have a higher level of Asian cultural identification in language use and entertainment consumption show more willingness to provide support. These findings also indicate the bicultural impact on depression communication among Chinese immigrants. Moreover, the findings from these two studies not only provide evidence for language proficiency, cultural identity, friendship choice, generational history, and traditional cultural attitude as important concepts in acculturation (Chan et al., 2017; Hahm et al., 2004; Kimbro et al., 2012; Marfani et al., 2013; Shim & Schwartz, 2008) but also provide a new perspective on traditional or host cultural lifestyle preference that should be considered as another acculturation concept. More importantly, these findings provide significant evidence for the various impacts of different types of acculturation on Chinese immigrants' intention to provide help and support.

In addition, the findings of the positive moderators of acculturation in ethnic identity and in food preference of the intention to provide help/support for depression are in line with those of previous studies on the positive association between acculturation to the host society and mental health status among elderly Asian immigrants (Pang, 1998; Stokes et al., 2002). These findings also provide significant evidence that experiences with different cultures and cultural adjustment stress can not only impact immigrants' mental health status but can also influence immigrants' intention to provide help/support when they know their friends or family members are suffering from depression.

Moreover, the findings that acculturation in language ability and in entertainment preference are negative moderators of the intention to provide help/support for depression indicate that the host cultural norms about privacy might impact the willingness to provide

support among Chinese immigrants who have higher acculturation to U.S. culture. This finding also addresses the gap that Chinese immigrants may experience between language proficiency and mental health knowledge, which can pose challenges to finding help and support and depression information and evaluating whether the information is correct or incorrect when parsing a large amount of information on social media and discussion forums even when immigrants have a high level of English proficiency.

Practical Implications from Study 1 and Study 2

The findings of this dissertation can be useful to health organizations and health public relations practitioners. Since depression will become a top-three serious global health issue in the future (World Health Organization, 2018), local, national, and international health organizations have begun to design and disseminate a large number of depression and mental health campaign posts across social media platforms to reach and persuade numerous targeted publics to maintain or enhance human wellbeing. However, the effects of depression and mental health campaign posts on social media still remain unknown, particularly whether and how the strategies of depression campaign posts play a significant role in health persuasion outcomes among targeted publics. The findings of this dissertation suggest that tailoring depression campaign posts using visuals, cultural appeals, and social support strategies can significantly facilitate depression communication, such as intention to provide help/support for depression, among Chinese immigrants.

First, the current study suggests that health organizations and health public relations practitioners should design culturally tailored campaign messages about depression help and support to effectively reach targeted immigrant publics (Huang & Shen, 2016). In particular, health organizations and health public relations practitioners should select group photographs of

real people that display positive non-verbal characteristics (e.g., hugging, happy facial expressions) to trigger Chinese immigrants' positive emotional response and intention to provide help/support for depression. Moreover, a culturally tailored campaign about depression help and support should include people with characteristics similar to the targeted public, such as Chinese immigrants or Asians, as main characters in photos to draw immigrants' attention to the depression campaign and trigger their feelings of belonging.

Second, health organizations and health public relations practitioners should include a cultural time-orientation strategy in culturally tailored campaigns about depression help and support. Previous studies have suggested that a long-term future orientation strategy is the most effective strategy for promoting healthy behaviors through advertising among individuals with collectivistic cultures (Harwood, 1981; Lee & Heo, 2016); however, the current study suggests that the short-term present orientation strategy is best for depression health communication among Chinese immigrants who experience two cultures. In particular, depression help and support campaigns should include benefits framed as immediate or attainable in the short term to trigger Chinese immigrants' emotional response and increase their intention to take the recommended actions.

Third, instrumental and emotional support are important for depression help and support campaigns. The current study not only provides evidence to support previous studies about the effect of instrumental and emotional support on reducing acculturation stress and depression among elderly Asian immigrants (Mui & Kang, 2006) but also further demonstrates how instrumental and emotional support strategies influence Chinese immigrants' psychological processes and intention to provide help/support for depression. The current study suggests that health organizations and health public relations practitioners should provide concrete, specific,

and direct ways to assist others who suffer from depression in depression help and support campaigns, with a link for people to seek further information. This strategy can also reduce the language proficiency barrier among Chinese immigrants. Additionally, the current study suggests that health organizations and health public relations practitioners should include positive images that can generate positive emotional responses (via clicking positive reaction emoticons on the campaigns) to effectively persuade Chinese immigrants to provide support.

Fourth, the current study recommends that health organizations and health public relations practitioners should become a major and credible source for targeted immigrant publics when such individuals want and need to learn more about depression and how to find accurate support resources. The current study supports the findings from previous studies about the effects of health literacy on self-efficacy and providing support (Bandura, 1986; Chang, 2008; Egbert et al., 2014; Egbert & Parrott, 2001; Jorm, 2000). The current study also further provides evidence that cultural values can impact people's beliefs and knowledge about the treatment of mental health disorders (Jorm et al., 2005). To increase the level of knowledge with corrective information and support resources for depression among Chinese immigrants, this study suggests that health organizations and health public relations practitioners should design depression help and support campaigns that post one supportive tip in detail instead of including several tips in one campaign. These campaigns should be disseminated regularly across social media platforms. Additionally, health organizations and health public relations practitioners can create webinars and workshops to further encourage interaction with the targeted immigrant publics and provide help and support tips. These strategies can also reduce the risk of misinformation and misconceptions about depression and treatment among Chinese immigrants.

Limitations and Future Research

Like all research, this study is limited by several factors that also point to future research directions. First, because of the online experimental method used for this study, participants were exposed to depression campaign Facebook posts only once on a computer screen or a mobile device, so the exposure to campaign posts and their presence on only one type of social media platform do not fully reflect real-world circumstances. Thus, future studies should conduct research via repeating campaign posts over time across different social media platforms.

Second, this study only recruited first-generation Chinese immigrants who immigrated from China, Taiwan, Hong Kong, and Singapore, so the results cannot be generalized to other Asian immigrants. In addition, the number of female participants was higher than male participants in both studies, so this unequal gender ratio could potentially impact the results, although this dissertation controlled for gender as a covariate. Thus, future studies should continue to investigate other Asian immigrants who have emigrated from different Asian countries with an equal balance of gender and different generations (e.g., first and second generations) to ensure that the findings can provide full understanding of how Asian culture and two different cultural experiences impact depression communication.

Third, this dissertation did not set criteria to recruit participants who have had or currently have experience with depression or participants who have never experienced depression, although this dissertation did measure participants' experience with depression symptoms and their own and their family's experience with counseling and/or psychiatric services. To avoid the results being impacted by this variance, this dissertation controlled for participants' depression symptoms as a covariate. Future studies should examine the effect of experience with depression on depression communication among Chinese immigrants by

comparing participants with past experience with depression and participants with no experience with depression.

Fourth, this dissertation measured emotional responses via a survey, so the results cannot reflect participants' real emotional responses. As this dissertation found that emotional responses play a significant role in self-efficacy in identifying depression and providing support resources, which significantly increases participants' intention to provide help and support, future research should conduct psychophysiological studies to determine how real emotional responses impact depression communication among Chinese immigrants. Moreover, regarding the study of cultural psychology and emotional expression, people from different cultures display emotions differently and also have different ways of attending to and weighting facial cues from emoticons (Matsumoto et al., 2009; Yuki et al., 2007). Research has also found that people find it easier to pay attention to and recognize emotional expressions when they see similar cultural characteristics to their own in photos, which can be explained by the in-group advantage concept (Matsumoto et al., 2009). Thus, future research should conduct eye-tracking studies to examine how targeted immigrant publics pay attention to visuals, emoticons, and social support strategies in depression campaign posts on social media.

Fifth, this dissertation only focuses on perceived self-efficacy in identifying depression, providing support, and providing support resources. The findings from the two studies provide significant insight into how people evaluate their ability differently when it comes to depression help and support communication. More importantly, these findings suggest that future studies should further identify the types of self-efficacy in depression communication and also develop a self-efficacy scale for measuring depression communication.

Sixth, this dissertation did not measure the visuals of similarity between viewers and message content before conducting the experimental studies. Although this study used Asian physical characteristics as the main criterion for creating visual content, the results can be impacted by varied feelings of similarity among participants. Thus, future studies should conduct pre-tests to measure perceived image similarity between the targeted publics and visuals.

Conclusion

The purpose of this dissertation is to understand how depression campaign Facebook posts using the strategies of framing, visuals, cultural appeals, and social support drive Chinese immigrants' intention to provide help/support for depression on social media. First, this study suggests that visuals impact Chinese immigrants' intention to provide help/support for depression on social media, particularly when group photos convey positive and supportive gestures, which increases this targeted immigrant public's intention to provide support to others who suffer from depression. Second, this study further identifies how depression campaign Facebook posts impact the intention to provide help/support for depression through psychological processes such as discrete emotions and perceived self-efficacy. This study suggests that depression campaign Facebook posts using the strategies of visuals and cultural appeal impact the intention to provide help/support for depression through the psychological process of loving/warm-hearted emotional response and perceived self-efficacy in depression identification. This study also suggests that depression campaign Facebook posts that use either visual strategies or emotional support strategies impact the intention to provide help/support for depression through the psychological processes of optimistic/hopeful emotional response and perceived self-efficacy in providing support resources. Third, this study also suggests that Chinese immigrants with higher mental health literacy have higher levels of perceived self-

efficacy in depression identification, which increases intention to provide help/support for depression; however, when it comes to perceived self-efficacy in providing support resources, Chinese immigrants with higher mental health literacy have lower levels of perceived self-efficacy in providing support resources, which increases intention to provide help/support for depression. Lastly, this study also suggests that Chinese immigrants with higher levels of acculturation in affinity to ethnic identity and food preference have higher intention to provide support, but Chinese immigrants with higher levels of acculturation in parental identity and in language ability and entertainment preference have lower intentions to provide support.

In line with recent insights that underscore the importance of features of depression campaign posts and social support strategies in the dissemination of depression help and support campaign posts on social media, this study contributes a clear understanding of the roles of visuals, cultural appeals, the valence of visual reaction emoticons, and the instrumental comment links on intention to provide help/support for depression. This study also further identifies how mental health literacy and acculturation impact the intention to provide help/support for depression. The findings of this study present considerable practical implications for health organizations and health public relations practitioners' decisions in terms of image selection, positive or negative consequence framing according to cultural values, visual reaction emoticons, and comment links. Additionally, the findings of this dissertation encourage researchers to build a compelling body of literature and develop more nuanced theoretical models and measurements in the interdisciplinary area incorporating health communication, visual communication, cultural psychology, and strategic communication on social media platforms.

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APPENDIX A

EXPERIMENTAL STIMULI – STUDY 1



Figure 1. Gain framing with two types of visuals (real people vs. cartoon) and cultural appeals (present long-term vs. absent long-term reward).

Note. Gain framing with cartoon and present long-term reward (top left); gain framing with cartoon and absent long-term reward (top right); gain framing with real people and present long-term reward (bottom left); gain framing with real people and absent long-term reward (bottom right).

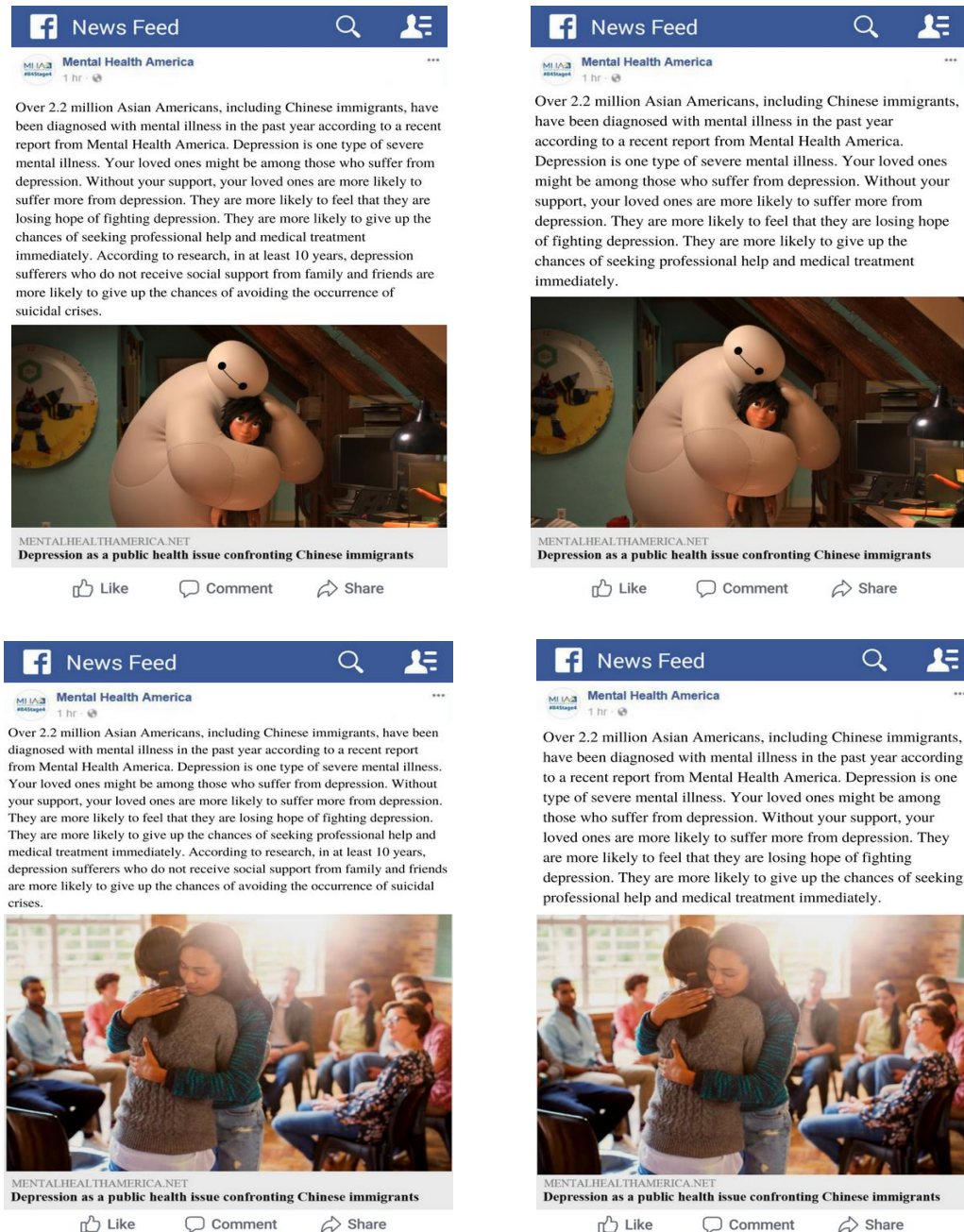


Figure 2. Loss framing with two types of visuals (real people vs. cartoon) and cultural appeals (present long-term vs. absent long-term reward).

Note. Loss framing with cartoon and present long-term reward (top left); loss framing with cartoon and absent long-term reward (top right); loss framing with real people and present long-term reward (bottom left); loss framing with real people and absent long-term reward (bottom right).

APPENDIX B

EXPERIMENTAL STIMULI – STUDY 2

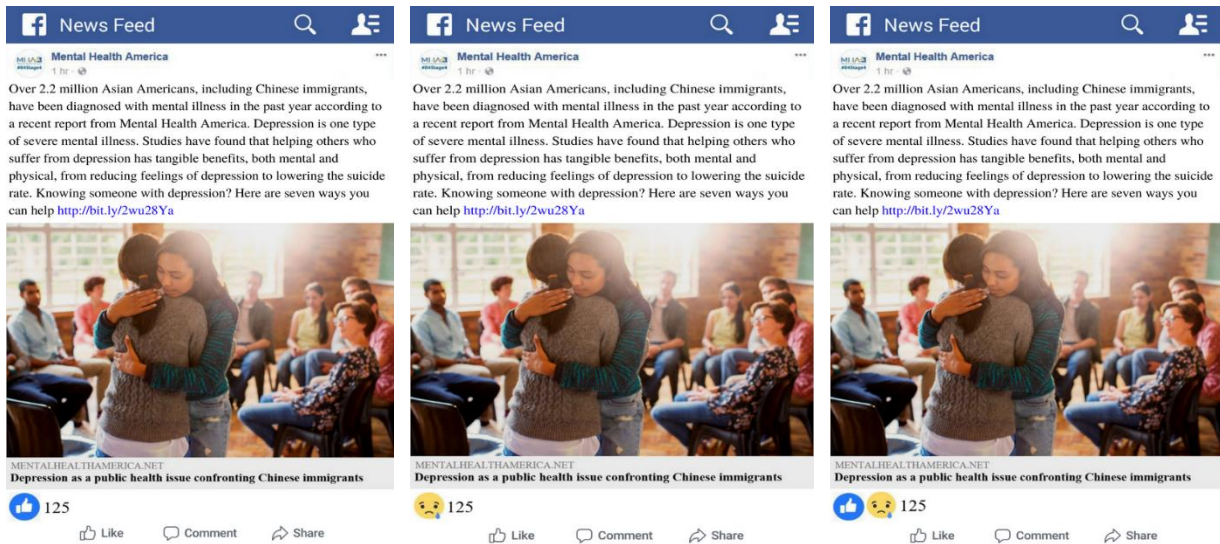


Figure 3. Comment link and a group photo with three types of reaction emoticons (positive vs. negative vs. mixed).

Note. Comment link and a group photo with positive reaction emoticon (left); comment link and a photo of group with negative reaction emoticon (middle); comment link and a photo of group with mixed reaction emoticon (right).

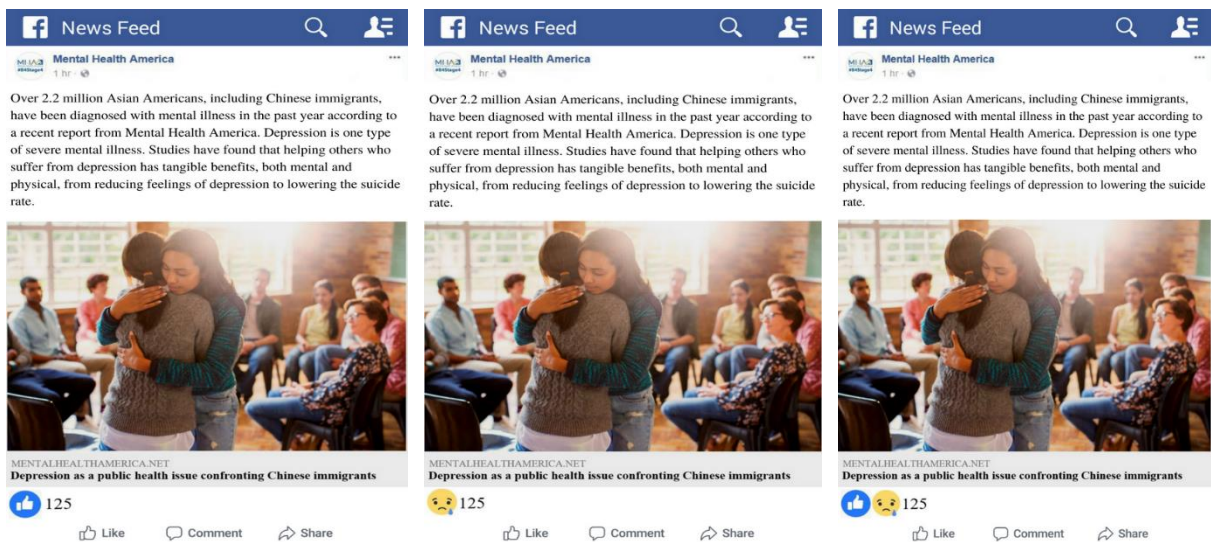


Figure 4. No comment link and a group photo with three types of reaction emoticons (positive vs. negative vs. mixed).

Note. No comment link and a group photo with positive reaction emoticon (left); no comment link and a group photo with negative reaction emoticon (middle); no comment link and a group photo with mixed reaction emoticon (right).

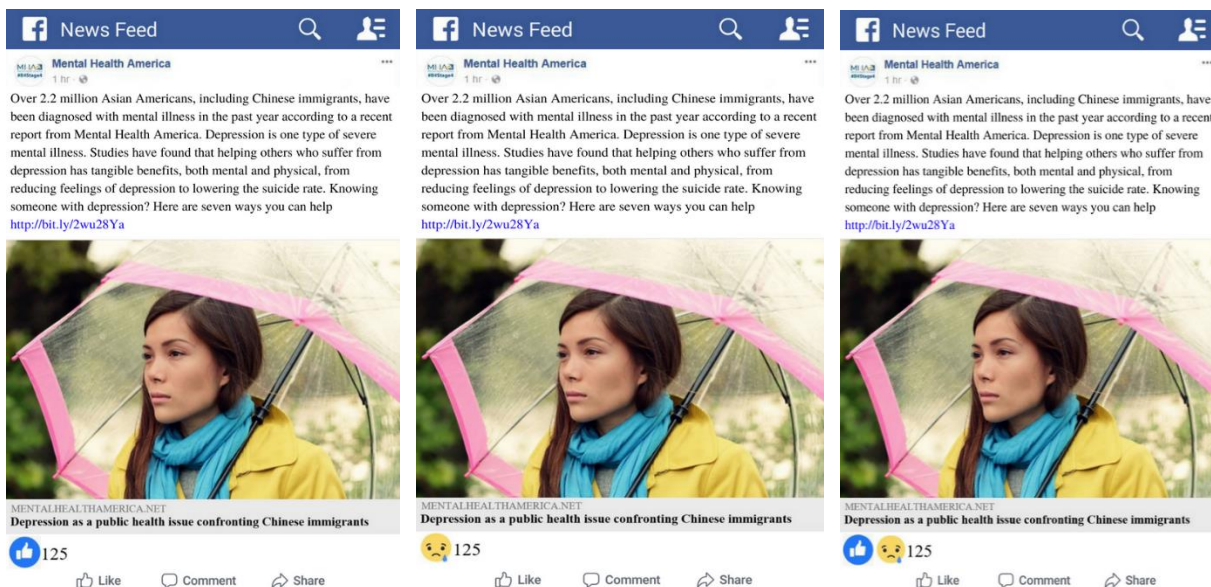


Figure 5. Comment link and a photo of single person with three types of reaction emoticons (positive vs. negative vs. mixed).

Note. Comment link and a photo of single person with positive reaction emoticon (left); comment link and a photo of single person with negative reaction emoticon (middle); comment link and a photo of single person with mixed reaction emoticon (right).

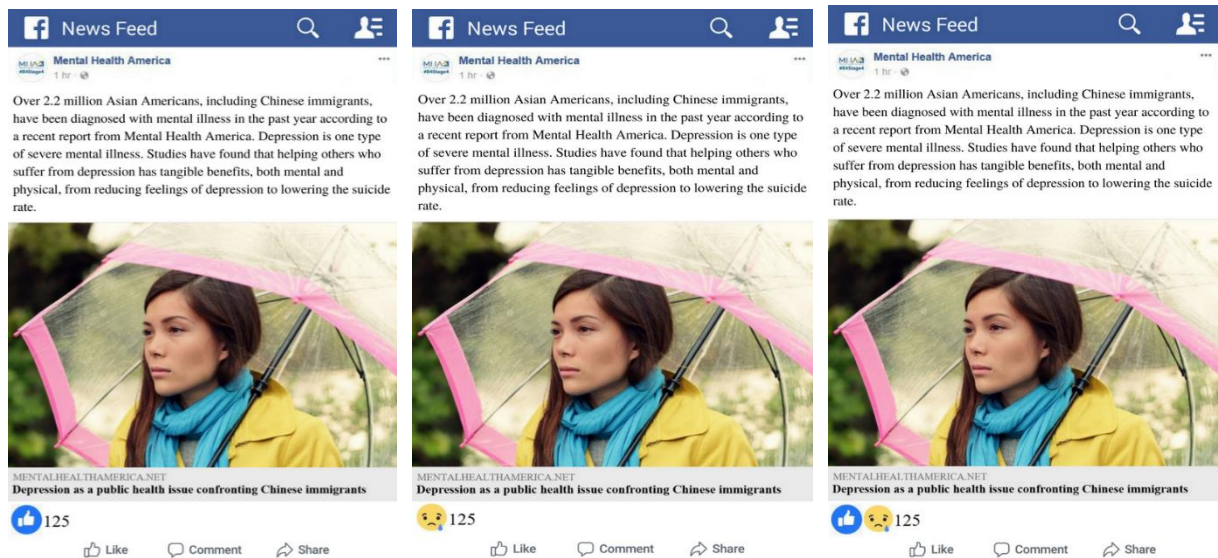


Figure 6. No comment link and a photo of single person with three types of reaction emoticons (positive vs. negative vs. mixed).

Note. No comment link and a photo of single person with positive reaction emoticon (left); no comment link and a photo of single person with negative reaction emoticon (middle); no comment link and a photo of single person with mixed reaction emoticon (right).

APPENDIX C

TABLES FOR RESULTS

Table 1

ANCOVA for Framing on Intention to Provide Support (H1)

	<i>df</i>	<i>F</i>	<i>p</i>	<i>M (SD)</i>
Framing	(1,316)	1.89	.17	
Gain Framing				5.76 (1.05)
Loss Framing				5.91 (.97)

Table 2

ANCOVA for Visuals on Intention to Provide Support (RQ1)

	<i>df</i>	<i>F</i>	<i>p</i>	<i>M (SD)</i>
Visuals	(1,316)	4.34	.04	
Photo of Real People				5.96 (.97)
Cartoon Graphic				5.71 (1.04)

Table 3

ANCOVA for Cultural Appeals on Intention to Provide Support (H2)

	<i>df</i>	<i>F</i>	<i>p</i>	<i>M (SD)</i>
Cultural Appeals	(1,316)	.74	.39	
Present Long-term Future Reward				5.88 (.98)
Absent Long-term Future Reward				5.79 (1.05)

Table 4

ANCOVA for Framing, Visuals, and Cultural Appeals on Intention to Provide Support (RQ2)

	<i>df</i>	<i>F</i>	<i>p</i>	<i>M (SE)</i>
Framing	(1,310)	1.89	.17	
Gain Framing				5.76 (.08)
Loss Framing				5.92 (.08)
Visuals	(1,310)	4.31	.04	
Photo of Real People				5.92 (.08)
Cartoon Graphic				5.72 (.08)
Cultural Appeals	(1,310)	.75	.39	
Present Long-term Future Reward				5.88 (.08)
Absent Long-term Future Reward				5.79 (.08)
Framing x Visuals	(1,310)	.49	.48	
Gain Framing x Photo of Real People				5.83 (.11)
Gain Framing x Cartoon Graphic				5.68 (.11)
Loss Framing x Photo of Real People				6.07 (.11)
Loss Framing x Cartoon Graphic				5.76 (.11)
Framing x Cultural Appeals	(1,310)	.33	.57	
Gain Framing x Present Long-term Future Reward				5.77 (.11)
Gain Framing x Absent Long-term Future Reward				5.74 (.11)
Loss Framing x Present Long-term Future Reward				5.99 (.11)
Loss Framing x Absent Long-term Future Reward				5.83 (.11)
Visuals x Cultural Appeals	(1,310)	.03	.86	
Photo of Real People x Present Long-term Future Reward				5.91 (.11)
Photo of Real People x Absent Long-term Future Reward				5.91 (.11)
Cartoon Graphic x Present Long-term Future Reward				5.78 (.11)
Cartoon Graphic x Absent Long-term Future Reward				5.66 (.11)
Framing x Visuals x Cultural Appeals	(1,310)	.67	.42	
Gain Framing x Photo of Real People x Present Long-term Future Reward				5.80 (.16)
Gain Framing x Photo of Real People x Absent Long-term Future Reward				5.87 (.16)
Gain Framing x Cartoon Graphic x Present Long-term Future Reward				5.75 (.16)

Gain Framing x Cartoon Graphic x Absent Long-term Future Reward	5.61 (.16)
Loss Framing x Photo of Real People x Present Long-term Future Reward	6.18 (.16)
Loss Framing x Photo of Real People x Absent Long-term Future Reward	5.95 (.16)
Loss Framing x Cartoon Graphic x Present Long-term Future Reward	5.80 (.16)
Loss Framing x Cartoon Graphic x Absent Long-term Future Reward	5.71 (.16)

Table 5

MANCOVA for Visuals on Perceived Self-Efficacy in Identifying One's Own Depression (RQ6a)

	<i>df</i>	<i>F</i>	<i>p</i>	<i>M (SE)</i>
Visuals	(1,310)	4.62	.03	
Photo of Real People				5.26 (.12)
Cartoon Graphic				4.88 (.12)

Table 6

ANCOVA for Comment Links and Reaction Emoticons on Intention to Provide Support (H3a & H3b & H3c)

	<i>df</i>	<i>F</i>	<i>p</i>	<i>M (SD)</i>
Comment Links	(1,496)	.23	.63	
Present Comment Links				6.02 (1.19)
Absent Comment Links				6.01 (1.57)
Reaction Emoticons	(2,495)	.11	.90	
Positive Emoticons				6.02 (1.08)
Negative Emoticons				6.03 (1.18)
Mixed Emoticons				6.00 (1.25)
Comment Links x Reaction Emoticons	(2,492)	1.07	.34	
Comment Links x Positive Emoticons				6.06 (1.05)
Comment Links x Negative Emoticons				5.96 (1.31)
Comment Links x Mixed Emoticons				6.04 (1.20)
No Comment Links x Positive Emoticons				5.97 (1.12)
No Comment Links x Negative Emoticons				6.10 (1.04)
No Comment Links x Mixed Emoticons				5.95 (1.30)

Table 7

ANCOVA for Comment Links, Reaction Emoticons, and Visuals on Intention to Provide Support (RQ3)

	<i>df</i>	<i>F</i>	<i>p</i>	<i>M (SE)</i>
Comment Link	(1,486)	.23	.63	
Present Comment Link				6.04 (.07)
Absent Comment Link				5.99 (.07)
Reaction Emoticons	(2,486)	.11	.89	
Positive Emoticons				6.02 (.09)
Negative Emoticons				6.04 (.09)
Mixed Emoticons				5.98 (.09)
Visuals	(1,486)	.77	.38	
A Group Photo				6.06 (.07)
A Photo of Only One Person				5.97 (.07)
Comment Links x Reaction Emoticons	(2,486)	1.09	.34	
Comment Link x Positive Emoticon				6.10 (.13)
Comment Link x Negative Emoticon				5.96 (.13)
Comment Link x Mixed Emoticon				6.06 (.13)
No Comment Link x Positive Emoticon				5.94 (.13)
No Comment Link x Negative Emoticon				6.13 (.13)
No Comment Link x Mixed Emoticon				5.91 (.13)
Comment Link x Visuals	(1,486)	.00	.97	
Comment Link x A Group Photo				6.08 (.10)
Comment Link x A Photo of Only One Person				6.00 (.10)
No Comment Link x A Group Photo				6.04 (.10)
No Comment Link x A Photo of Only One Person				5.94 (.10)
Reaction Emoticons x Visuals	(2,486)	1.45	.24	
Positive Emoticon x A Group Photo				5.95 (.13)
Negative Emoticon x A Group Photo				6.10 (.13)
Mixed Emoticon x A Group Photo				6.13 (.13)
Positive Emoticon x A Photo of Only One Person				6.08 (.13)
Negative Emoticon x A Photo of Only One Person				5.99 (.13)
Mixed Emoticon x A Photo of Only One Person				5.84 (.13)
Comment Links x Reaction Emoticons x Visuals	(2,486)	1.72	.18	

Comment Link x Positive Emoticon x A Group Photo	5.89 (.18)
Comment Link x Negative Emoticon x A Group Photo	6.07 (.18)
Comment Link x Mixed Emoticon x A Group Photo	6.28 (.18)
Comment Link x Positive Emoticon x A Photo of Only One Person	6.30 (.18)
Comment Link x Negative Emoticon x A Photo of Only One Person	5.85 (.18)
Comment Link x Mixed Emoticon x A Photo of Only One Person	5.84 (.18)
No Comment Link x Positive Emoticon x A Group Photo	6.00 (.18)
No Comment Link x Negative Emoticon x A Group Photo	6.13 (.18)
No Comment Link x Mixed Emoticon x A Group Photo	5.98 (.18)
No Comment Link x Positive Emoticon x A Photo of Only One Person	5.87 (.18)
No Comment Link x Negative Emoticon x A Photo of Only One Person	6.12 (.18)
No Comment Link x Mixed Emoticon x A Photo of Only One Person	5.84 (.18)

Table 8

ANCOVA for Visuals and Reaction Emoticons on Discrete Emotional Response (RQ5b)

DVs	IVs	<i>df</i>	<i>F</i>	<i>p</i>	<i>M (SE)</i>
Loving Emotion	Visuals	(1,486)	17.92	.000	
	Group Photo				3.09 (.10)
	Photo of Only One Person				2.48 (.10)
Optimistic Emotion	Visuals	(1,486)	25.91	.000	
	Group Photo				3.32 (.10)
	Photo of Only One Person				2.57 (.10)
Optimistic Emotion	Reaction Emoticons	(2,486)	8.29	.000	
	Positive Emoticon				3.30 (.13)
	Negative Emoticon				2.57 (.13)
	Mixed Emoticon				2.97 (.13)

Table 9

MANCOVA for Comment Links on Perceived Self-Efficacy in Providing Support Resources to Family Members with Depression (RQ6b)

	<i>df</i>	<i>F</i>	<i>p</i>	<i>M (SE)</i>
Comment Links	(1,486)	5.80	.02	
Present Comment Link				4.89 (.09)
Absent Comment Link				4.57 (.09)

APPENDIX D

FIGURES FOR RESULTS

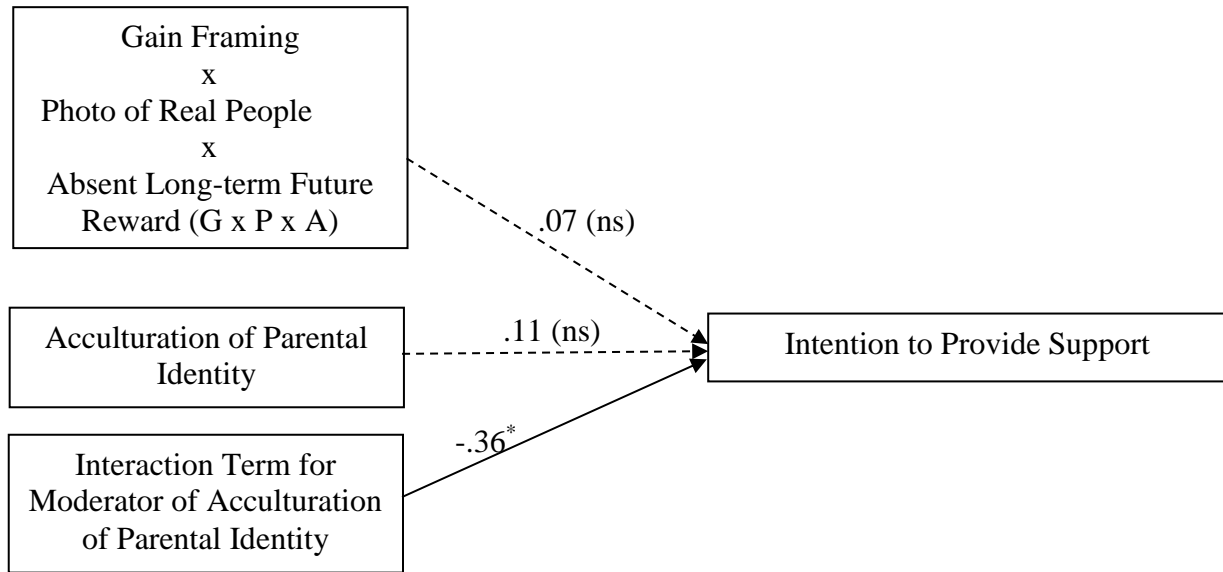


Figure 7. Acculturation of parental identity for intention to provide support (RQ4a).

Note. Statistically significant at * $p \leq .05$, ** $p \leq .01$, or *** $p \leq .001$.

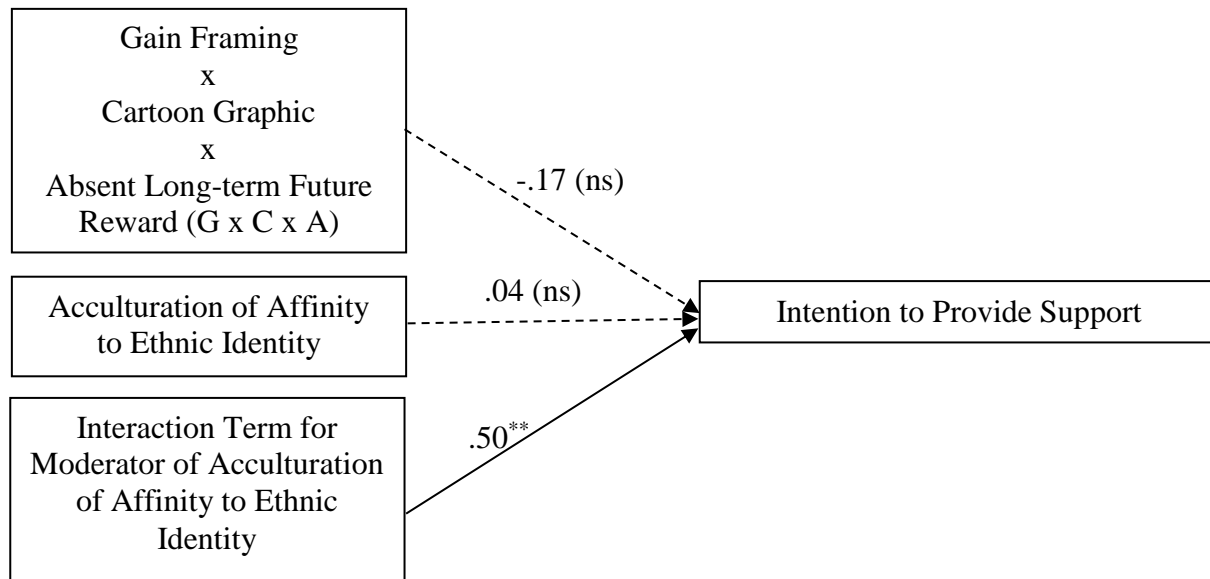


Figure 8. Acculturation of affinity to ethnic identity for intention to provide support (RQ4a).
Note. Statistically significant at $*p \leq .05$, $**p \leq .01$, or $***p \leq .001$.

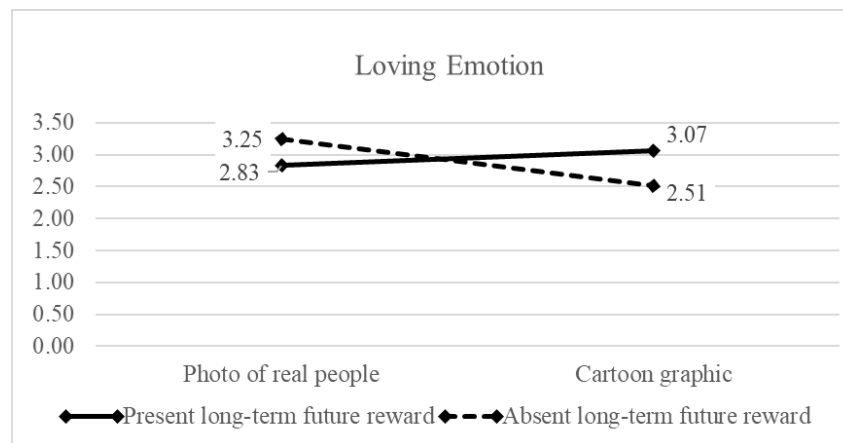


Figure 9. Loving emotional response by depression campaign post with visual and cultural appeals strategy (RQ5a).

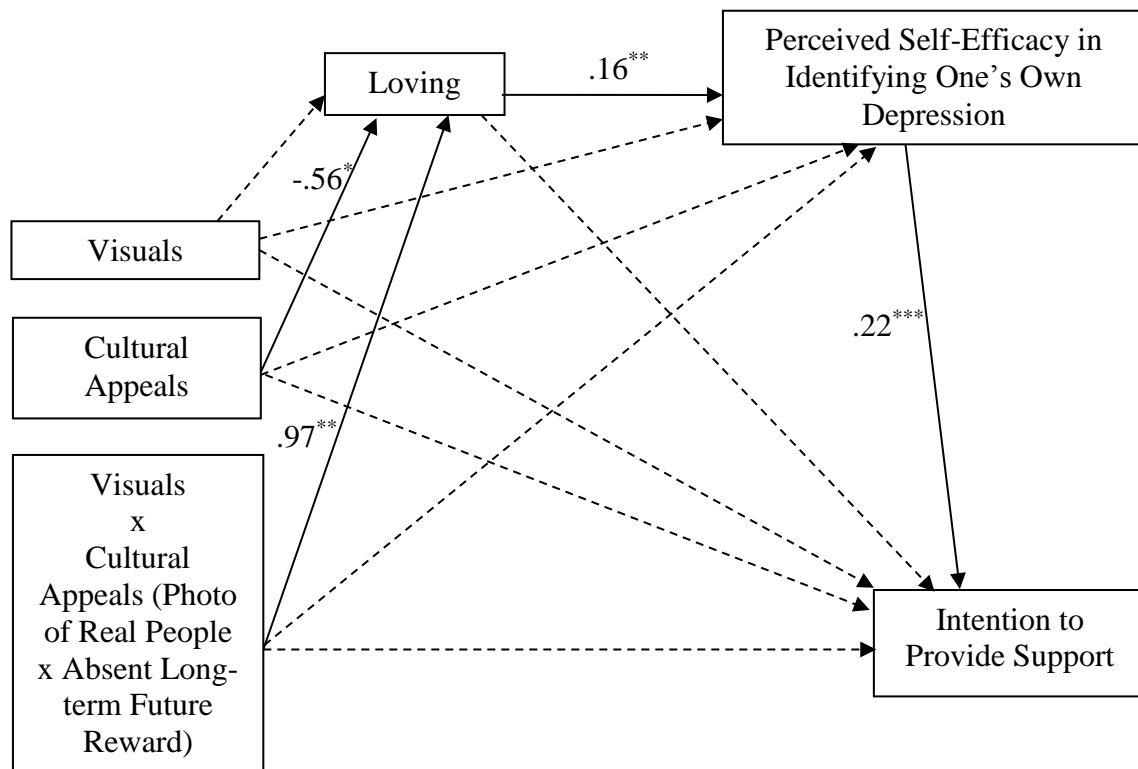


Figure 10. Sequential mediators of loving emotion and perceived self-efficacy in depression identification for intention to provide support (RQ7a).

Note. Statistically significant at $*p \leq .05$, $**p \leq .01$, or $***p \leq .001$.

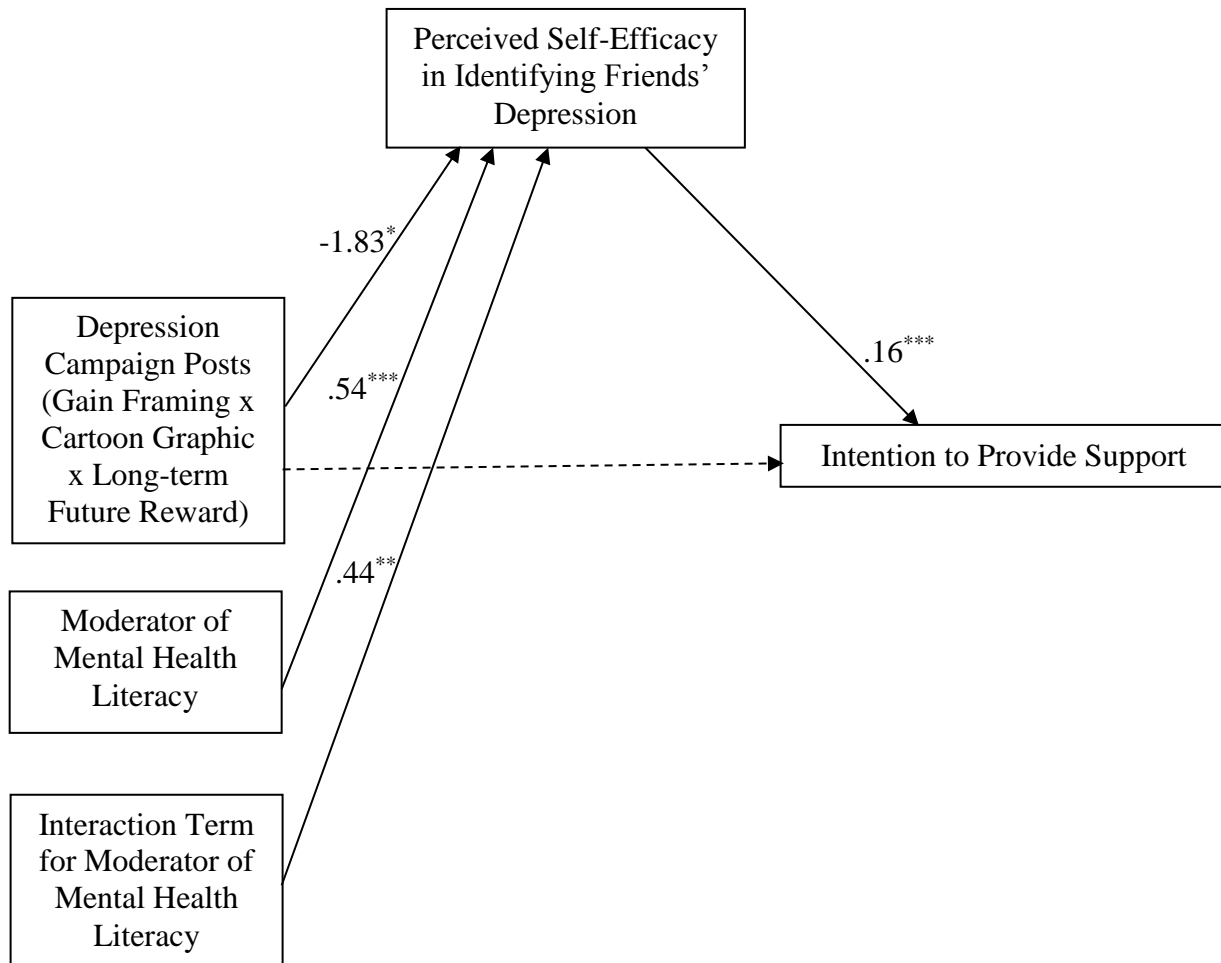


Figure 11. Moderated mediation model of mental health literacy and perceived self-efficacy in depression identification for intention to provide support (RQ8a).

Note. Statistically significant at $*p \leq .05$, $**p \leq .01$, or $***p \leq .001$.

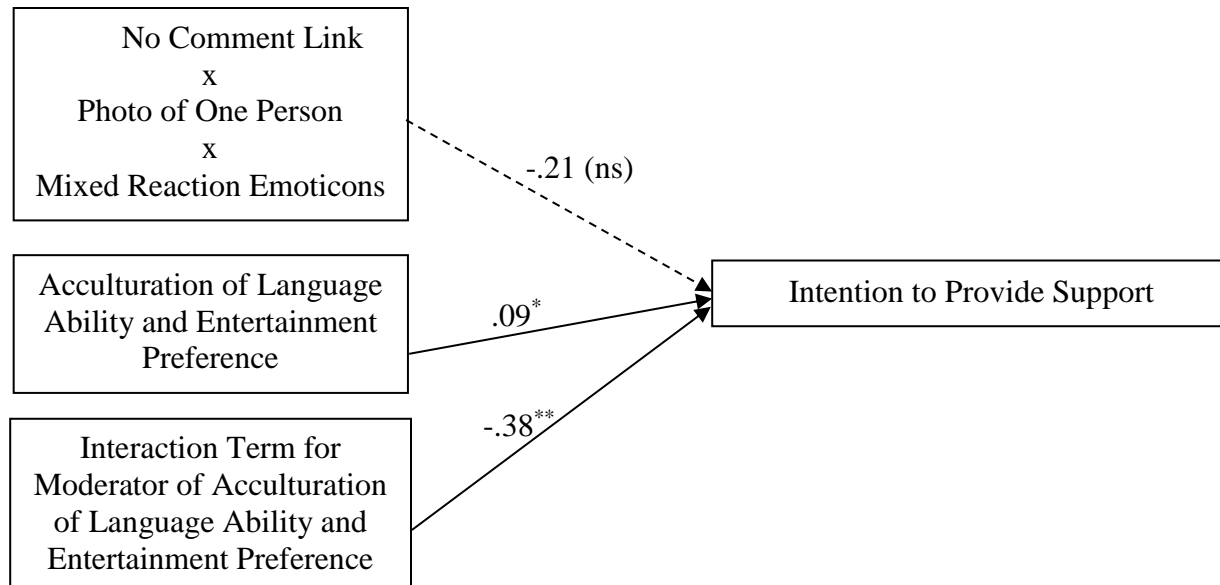


Figure 12. Acculturation of language ability and entertainment preference for intention to provide support (RQ4b).

Note. Statistically significant at * $p \leq .05$, ** $p \leq .01$, or *** $p \leq .001$.

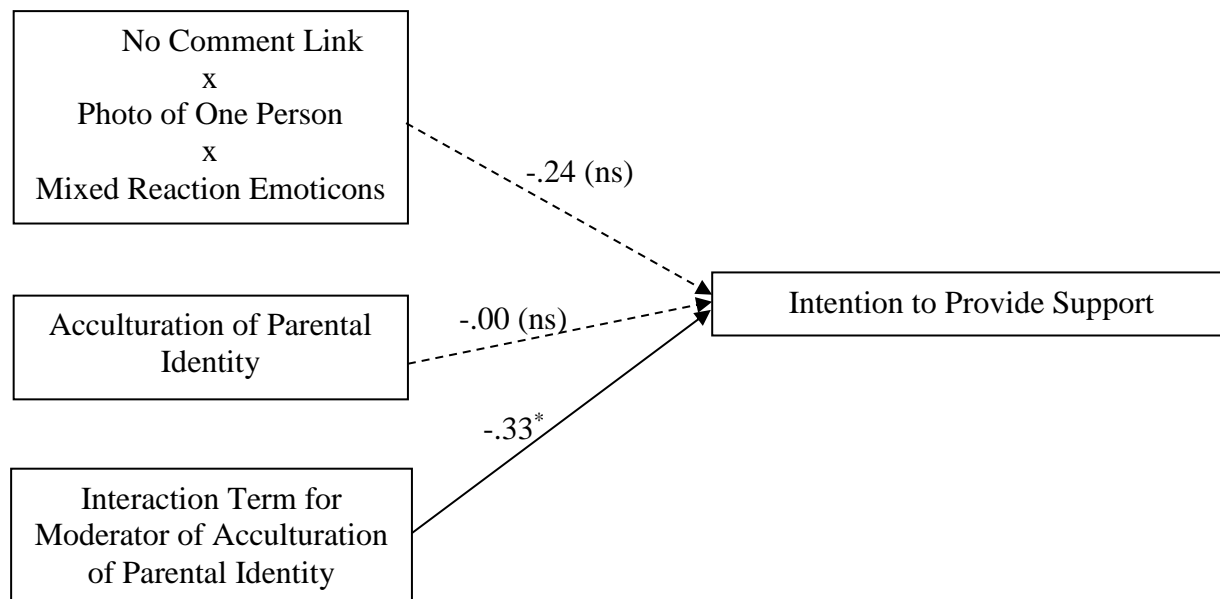


Figure 13. Acculturation of parental identity for intention to provide support (RQ4b).

Note. Statistically significant at * $p \leq .05$, ** $p \leq .01$, or *** $p \leq .001$.

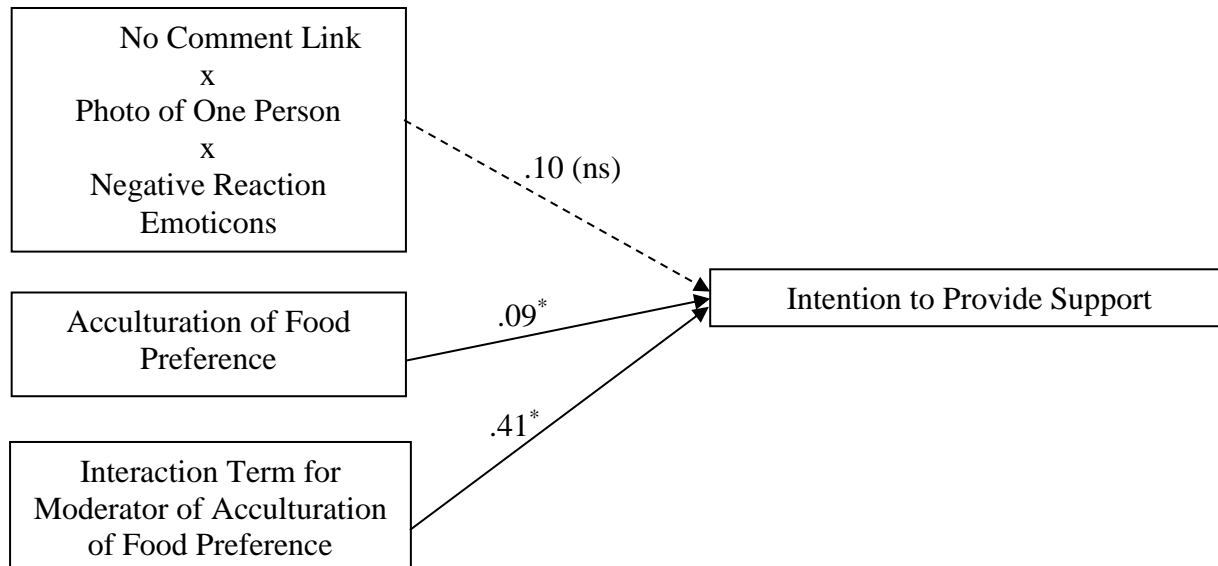


Figure 14. Acculturation of food preference for intention to provide support (RQ4b).

Note. Statistically significant at * $p \leq .05$, ** $p \leq .01$, or *** $p \leq .001$.

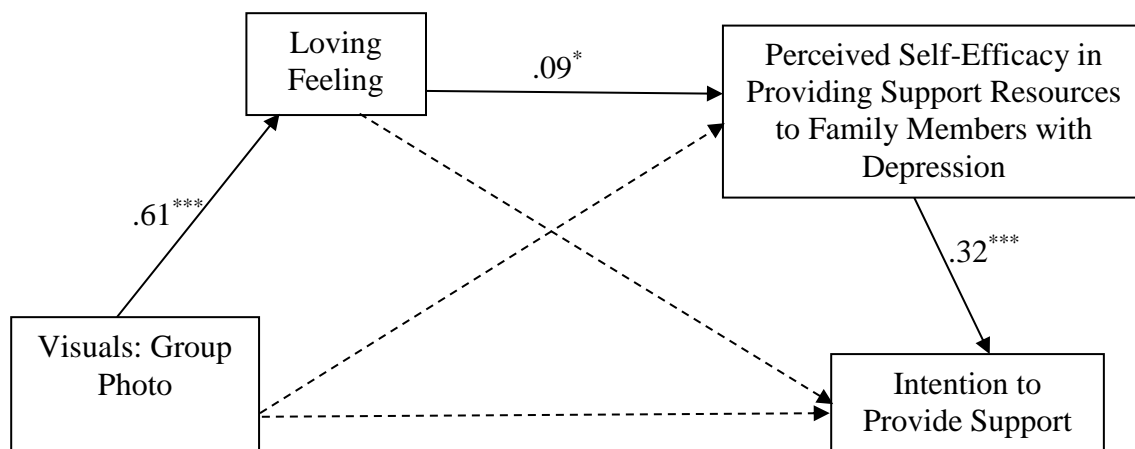


Figure 15. Sequential mediators of loving emotion and perceived self-efficacy in providing support resources for intention to provide support (RQ7b).

Note. Statistically significant at * $p \leq .05$, ** $p \leq .01$, or *** $p \leq .001$.

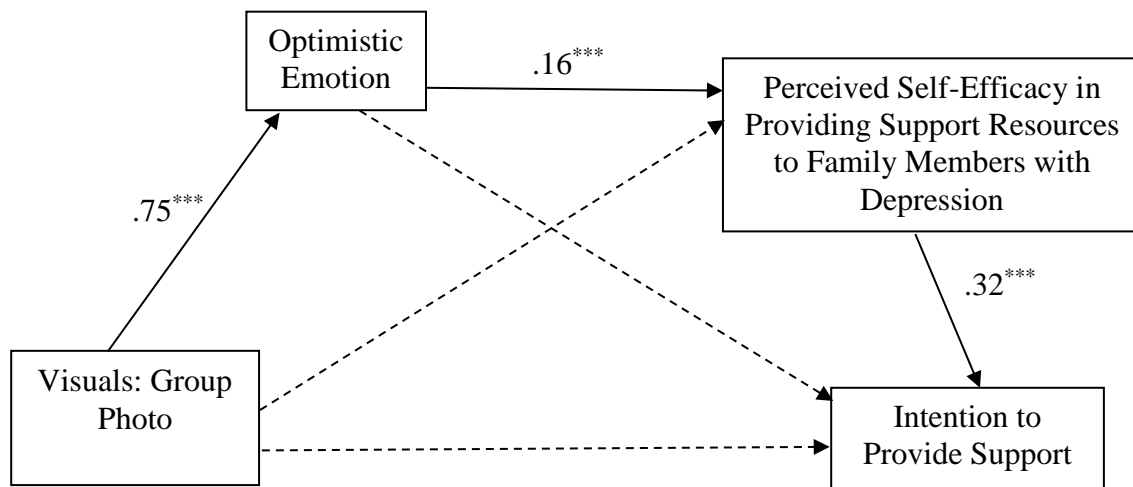


Figure 16. Sequential mediators of optimistic emotion and perceived self-efficacy in providing support resources for intention to provide support: group photo (RQ7b).

Note. Statistically significant at $*p \leq .05$, $**p \leq .01$, or $***p \leq .001$.

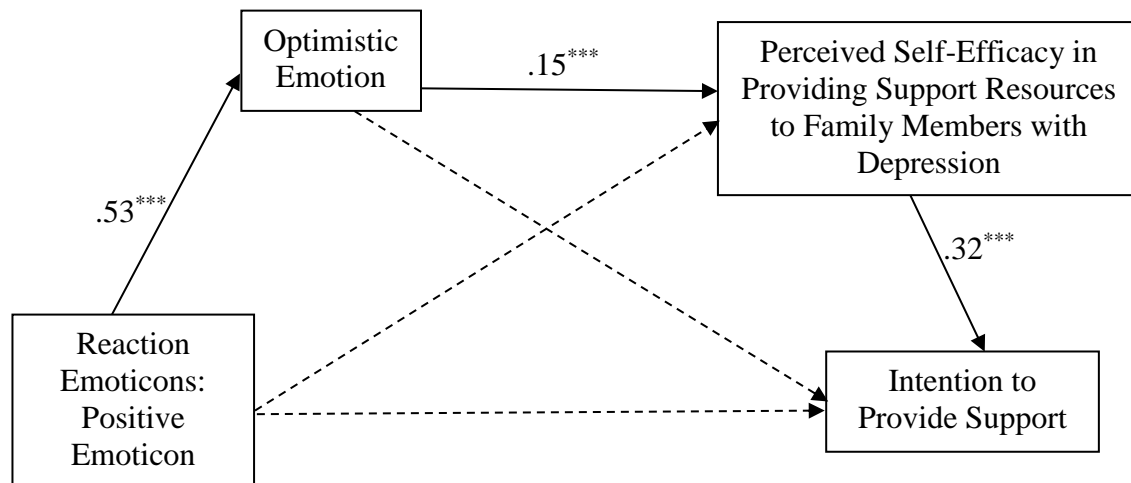


Figure 17. Sequential mediators of optimistic emotion and perceived self-efficacy in providing support resources for intention to provide support: reaction emoticons (RQ7b).

Note. Statistically significant at $*p \leq .05$, $**p \leq .01$, or $***p \leq .001$.

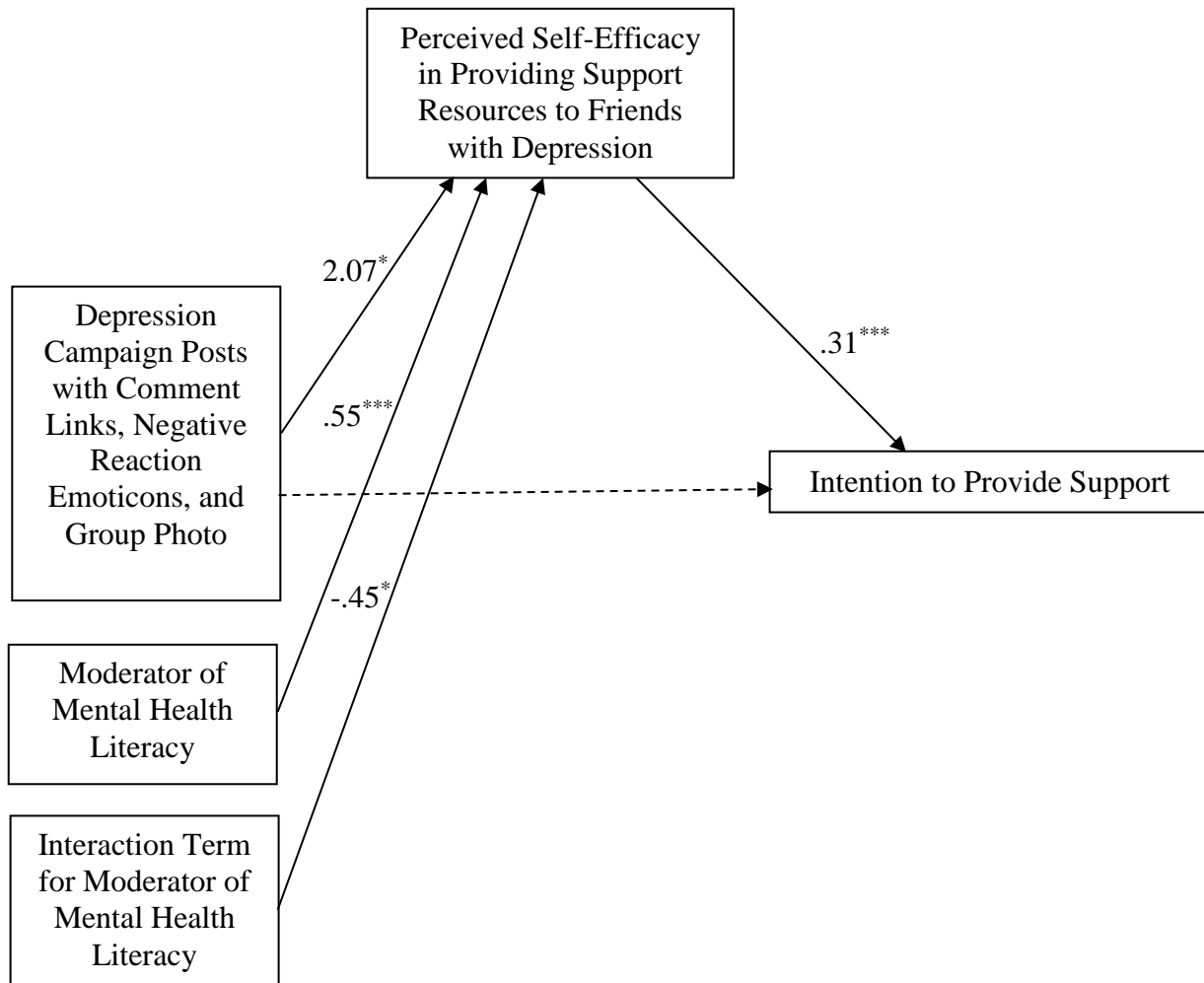


Figure 18. Moderated mediation model of mental health literacy and perceived self-efficacy in providing support resources for intention to provide support (RQ8b).

Note. Statistically significant at $*p \leq .05$, $**p \leq .01$, or $***p \leq .001$.