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Framing Obesity: How News Frames Shape Attributions and Behavioral Responses

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Based on a public health model of obesity, this study set out to examine whether a news article reporting the obesity issue in a societal versus individual frame would increase perceptions of societal responsibilities for the obesity problem and motivate responsibility-taking behaviors. Responsibility-taking behaviors were examined at 3 levels: personal, interpersonal, and societal. Data from a Web-based experiment revealed significant framing effects on behaviors via causal and treatment responsibility attributions. The societal frame increased societal causal and treatment attribution, which led to greater likelihoods of interpersonal and social responsibility-taking behaviors as well as personal behaviors. Our findings suggest that news framing can be an effective venue for raising awareness of obesity as a societal issue and mobilizing collective efforts.

Obesity has become an increasing threat to public health in the United States over the past few decades. According to the 2011–2012 National Health and Nutrition Examination Survey data, more than one third of adults and 17% of youth in the United States are obese (Ogden, Carroll, Kit, & Flegal, 2014). Despite the call in Healthy People 2010 to keep the obesity rate under 15% in all states, 41 states in 2013 reported obesity rates of more than 25% (Trust for America’s Health, 2013). The annual medical cost of the obesity epidemic is estimated to be $190.2 billion and rising (Cawley & Meyerhoefer, 2012). In the past 30 years, the obesity rate has doubled among children and quadrupled among adolescents (Centers for Disease Control and Prevention, 2014). About 1 in 5 adolescents ages 12–19 suffer from obesity and related health problems (Freedman et al., 2009). More than 5 million college students in the United States are reported to be obese (Miller, 2011).

As with most other public health issues, the dominant frame of the national discourse on obesity is one of individualism and personal responsibility. Eating too much, consuming too many calories, being a couch potato, and other individual-centric causes have been frequently cited as the main culprits behind the problem. This individual-centered approach, however, has been “a well-traveled but unproductive path” (Brownell, Schwartz, Puhl, Henderson, & Harris, 2009, p. S14). Health professionals are increasingly identifying the myriad upstream causes that impact obesity. Awareness of these causes dictates a need to think strategically about mobilizing collective efforts to enact social change.

Previous research has demonstrated the dominance of individual frames in the media coverage of obesity and lamented the underuse of societal frames (e.g., Kim & Wills, 2007). More empirical evidence, however, is needed to establish the relationship between news frames and the public’s perceptions and actions regarding obesity (e.g., Major, 2009; Niederdeppe, Bu, Borah, Kindig, & Robert, 2008). This article presents a study on the news framing effects of the obesity issue in regard to personal as well as social actions. Specifically, the study examines whether and how an individual versus societal frame of obesity shapes perceptions of what causes the problem (i.e., causal attribution) and what is responsible for solving the problem (i.e., treatment attribution), which in turn lead to personal, interpersonal, and social responsibility-taking behaviors. Data from a Web-based experiment were collected from a college student sample to address these questions.

A Public Health Model of Obesitiy

The popular discourse surrounding public health issues has been dominated by a rhetoric of personal responsibility. One’s physical and emotional well-being is largely discussed as a product of his or her health-related knowledge, attitude, motivation, and ability to adopt healthier habits. Such an individualistic conception of health is tied to deeply ingrained values in Western culture, such as independence, free choice, and self-governance (Howell & Ingham, 2001). “It is not uncommon in American culture,” as Lawrence (2004, p. 58) pointed out, “to readily blame individuals—the most proximate cause—for their own health afflictions.” In the case of obesity, individual lifestyle factors such as a poor diet and lack of physical exercise are often listed as the major culprits.

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Yet individual choices are situated within larger social surroundings. Human agency is constrained and compromised by the external environment. Focusing solely on individual responsibility for weight control, for example, is misguided and misleading when the media is saturated with advertisements for junk food. McDonald’s restaurants are located every few blocks in a neighborhood, and gyms are expensive and difficult to access (Lawrence, 2004). Research has documented massive global marketing campaigns that promote food options to children consisting almost entirely of nutrient-poor, calorie-dense ingredients (Harris, Pomeranz, Lobstein, & Brownell, 2009). In addition, high-sugar diets lead to addictive processes, which then reinforce and exacerbate poor diet choices (Gearhardt, Corbin, & Brownell, 2009). Such social and environmental factors, labeled as “suboptimal defaults” by Brownell and colleagues (2009), “compromise or even hijack biological and psychological regulatory systems that govern eating and weight” (Brownell et al., 2010, p. 381) and should be an integral part of discussions about obesity.

In contrast to the more prevalent individually oriented medical model, Brownell and colleagues (2009) proposed a public health model of obesity. The public health model emphasizes environmental and population factors over personal choices and public, government, and corporate responsibility as opposed to individual responsibility in combating the obesity problem. Concurring with this model and previous research that challenges an individualistic approach to the obesity problem, we base our study on the premises that preventing obesity should be conceived of and treated as a public health issue instead of as a mere personal matter and that collective action and government interventions should be pursued as effective solutions.

Reframing Obesity

In the public discourse on obesity, a market justice frame (Dorfman, Wallack, & Woodruff, 2005) has been widely and effectively used by the food industries (Jenkin, Signal, & Thomson, 2011). Such industries, when facing critiques about pursuing profit at the cost of public health, often evoke values of free choice and individual responsibility, emphasize consumers’ rights to make their own choices, and argue that health is under an individual’s volition and control.

Within the news media, unfortunately, journalistic practices on reporting obesity serve to reinforce such a personal responsibility frame, as has been documented in a series of content analyses. Analyzing newspaper articles and television news from 1995 to 2004, Kim and Willis (2007) found that news stories using an individual frame (i.e., highlighting individual causal and solution responsibility) greatly outnumbered those using a societal frame (i.e., societal causal and solution responsibilities). News coverage on childhood obesity also exhibited such an imbalance, with more newspaper articles attributing obesity to individual rather than social causes (Hawkins & Linvill, 2010). A content analysis study on YouTube videos about obesity showed that, similar to findings in traditional media, individual causes and solutions for obesity were evoked much more than social responsibilities (Yoo & Kim, 2012). Despite some indication of increasing use of a societal frame in reporting obesity (Lawrence, 2004), the larger picture still remains one in which “social responsibilities are largely ignored, whereas individual causes and solutions are repeatedly emphasized” (Kim & Wills, 2007, p. 361).

Given the prevalence of the individualistic frame on the issue of obesity, the social causes of as well as potential social solutions to obesity problems are sidelined in public opinion. Focus group studies revealed that participants viewed personal factors as primary causes of obesity and were either unaware of, or unfavorable toward, policy changes as a solution to health issues (Lundell, Niederdeppe, & Clarke, 2013; Niederdeppe, Robert, & Kindig, 2011). A representative population-based survey of 1,000 participants showed that more than 70% of participants identified overeating and physical inactivity as causes of obesity, whereas only slightly more than 20% of the participants regarded the lack of an environment for physical activity as an important cause (Hilbert, Rief, & Braehler, 2008).

A shift to a social-environmental framework of thinking and talking about obesity needs to occur in the popular discourse. Wallack and Lawrence (2005) advocated strongly for a switch from “the first language of America,” one that highlights individual freedom and personal responsibility, to “the second language of America,” one that emphasizes interdependence instead of independence, interconnections among individuals, and collective responsibilities. This switch is essentially a task of reframing health. To accomplish this task, health professionals and journalists need to align their goals in articulating to the public the societal causes and responsibilities underlying health issues such as obesity. Such discursive changes are a precursor to changing public opinion and mobilizing collective efforts toward building an environment more conducive to healthy options.

Calls for such reframing efforts have been made. Dorfman and colleagues (2005) suggested promoting the social justice frame, which recognizes social, environmental, and political conditions contributing to health status, over the market justice logic. Niederdeppe and colleagues (2008) also highlighted framing as one of the three message strategies (the other two being narrative and visual imagery) for raising awareness of social determinants of health. Despite such calls, there has been limited strategic research specifically designed to test such message framing effects on attitudinal or behavioral outcomes. As Niederdeppe, Shapiro, and Porticella (2011) lamented, “Little work has tested message strategies to raise public support for external (beyond the individual) solutions to improve population health” (p. 295). Niederdeppe and his colleagues explored the effects of narratives on changing attributions of obesity and increasing support for public policies (e.g., Lundell et al., 2013; Niederdeppe, Robert, & Kindig, 2011). In one such example, Niederdeppe, Shapiro, Kim, Bartolo, and Porticella (2014) examined news story conditions in which personal responsibility for a character’s weight was high, moderate,
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or not acknowledged. As acknowledgment of personal responsibility decreased in the story, emphasis on environmental factors increased, and readers were more likely to identify societal causal attributions for obesity.

This study seeks to contribute to this line of research by looking into the effects of reframing obesity in terms of changing individuals’ perceptions about the issue and subsequent behavioral responses. Specifically, we examine whether individual versus societal news frames of obesity have any bearing on how individuals attribute the cause and treatment responsibilities of obesity problems and in turn their inclination to take up more responsible behaviors. We outline our hypotheses and research question in the next section.

Exploring Framing Effects of News Coverage on Obesity

Framing

The concept of framing, which can be traced back to Goffman (1974), provides a venue for understanding how individuals make sense of, and render structure to, their social lives. Either as “a central organizing idea or story line that provides meaning” (Gamson & Modigliani, 1987, p. 143) or as a template of formulation of equivalent information (Tversky & Kahneman, 1981), framing involves transferring a symbolic representation of a given realm of reality to its readers so as to structure their cognitive perceptions.

Druckman (2001) proposed a conceptual distinction between equivalency framing effects and emphasis-framing effects to categorize the vast array of frames studied in different branches of framing research. Equivalency framing refers to framing operations adapted from Tversky and Kahneman’s (1981) research, in which objectively equivalent information is cast in positive versus negative and certainty versus probability terms. The invariance of the factual information across framing conditions is the defining feature of this type of framing effect. Emphasis framing (later referred to as issue framing in Druckman, 2004) designates framing practices by highlighting different sets of potentially relevant considerations in the portrayal of issues. In this type of framing, frames give salience to some aspects or perspectives of the issue, making certain interpretations more relevant and applicable in subsequent judgment making.

In health communication, most framing research has so far focused on examining the effects of equivalence framing (i.e., gain vs. loss frames) on compliance with recommended health behaviors (see meta-analytical reviews in O’Keefe & Jensen, 2007, 2008). The purpose of this line of framing research is to examine the persuasive efficacy of gain versus loss frames on different types of desired health behaviors (i.e., prevention and detection behaviors). As argued earlier, health issues, obesity included, are also the battleground of competing values and conflicting interests (Dorfman et al., 2005; Jenkin et al., 2011). Thus, emphasis framing should also be examined and used as a tool of meaning construction in health contexts, as foregrounding different sets of considerations in a message may shape how individuals construe a given health issue and take actions accordingly. In this study, we focus on the strategic use of emphasis framing, operationalized as societal versus individual frames of obesity, in influencing the public’s issue understanding and behaviors. In other words, instead of presenting identical information in positively versus negatively valenced language (as in gain vs. loss framing), the two frames (individual vs. societal frames) in our study bring forth different perspectives in constructing the issue of obesity. The societal frame of obesity, by highlighting social conditions and collective responsibilities, constitutes a rival issue package against the prevailing marketing logic on individual freedom and culpability. Compared to the individual frame, the societal frame may help redefine the issue of obesity for the public—what/who is culpable for the problem, what/who is responsible for fixing the problem, and what courses of actions are in order. The key questions explored in this study revolve around the effects of emphasis framing on individuals’ responsibility attributions as well as responsibility-taking behavioral intentions regarding obesity.

Attributions of Responsibility

Attribution of responsibility is a form of social knowledge (Iyengar, 1989, 1990) or social attitude (Brownell et al., 2009) that shapes individuals’ issue opinions, political attitudes, and behaviors. As such, it is an important target of change in the contested arena of media frames. Framing, in Iyengar’s (1989) line of research, is a powerful social tool for shaping perceptions of responsibility assignment. His research showed that when a social issue such as poverty was portrayed via a thematic frame (i.e., depicting the general context and conditions of an issue), government and society at large were seen as at fault and consequently held accountable. When an episodic frame (i.e., presenting an issue through individual stories) was used to feature a personal story, individuals were blamed for their own situations. In his work, Iyengar also differentiated causal responsibility, which “focuses on the origin of the problem,” from treatment responsibility, which is about “who or what has the power either to alleviate or to forestall alleviation of the problem” (p. 879).

Brownell and colleagues (2009) suggested that addressing the obesity problem requires first of all changing “social attitudes about the causes of obesity and perceptions of those inflicted” (p. S14). Framing effects on responsibility attributions have thus far only been examined in a handful of health communication studies. A recent experimental study on perceptions of Type 2 diabetes showed that the social causality frame had a significant, though small, effect on participants’ acknowledgment of social determinants of Type 2 diabetes (Gollust, Lantz, & Ubel, 2009). In Major’s (2009) study, the societal frame of obesity and lung cancer, when combined with the loss frame, had a greater effect on societal attribution of responsibility. Her study showed that the combination of a loss- and societally framed message was more effective in increasing awareness of social determinants of health problems like obesity (Major, 2009).
Responsibility-Taking Behaviors

Attributions of responsibilities undergird and shape individuals’ issue opinions, political attitudes, and behaviors. The ultimate goal of changing attribution perceptions is to promote desired behaviors. In this study, we examine obesity-related responsibility-taking behaviors in an integrative, multilevel framework. We broadly define responsibility-taking behaviors as actions that an individual takes to prevent or redress the obesity problem. As a more holistic approach to addressing the obesity issue, we conceptualize and differentiate responsibility-taking behaviors at three levels based on the multilevel models of public health (Abroms & Maibach, 2008; Malmström, Sundquist, & Johansson, 1999). Personal responsibility taking refers to behaviors performed to maintain or enhance one’s own health status, such as keeping a good diet and exercise routine. Interpersonal responsibility taking designates behaviors with the intention of helping other individuals in one’s social circles, such as sharing health information with family, friends, or colleagues. Social responsibility taking refers to civic, participatory actions taken to improve the sociopolitical environment and benefit a larger community or population. Such actions could include volunteering for a health communication campaign and signing petitions demanding policy changes. To most effectively address the obesity problem, health communication scholars need to find out how to best mobilize all three types of responsibility-taking behaviors.

Weiner’s (2006) theory of perceived responsibility and social motivation posits a process model wherein causal attributions lead to corresponding treatment attributions, which then function as the basis for action (or inaction). This process was tested and confirmed in Niederdeppe, Shapiro, & Porticella’s (2011) study of the effect of narrative support for policy change regarding obesity. They showed that societal treatment attribution mediated the relationship between societal causal attribution and support for public policies. Following the model of perceived responsibility and social motivation (Niederdeppe, Shapiro, & Porticella, 2011; Weiner, 2006), our study examines a process model from message frames to three types of responsibility-taking behaviors via causal attribution and treatment attribution as two sequential mediators. Figure 1 depicts this model. Corresponding to the model, the following hypotheses are examined:

Hypothesis 1: There is a message framing effect on causal attribution beliefs regarding obesity such that the individual frame leads to greater individual causal attribution (Hypothesis 1a) and the societal frame leads to stronger societal causal attribution (Hypothesis 1b).

Hypothesis 2: Treatment attribution mediates the relationship between causal attribution and responsibility-taking behaviors such that individual treatment attribution mediates the relationship between individual causal attribution and personal responsibility-taking behaviors (Hypothesis 2a) and societal treatment attribution mediates the relationship between societal causal attribution and social responsibility-taking behaviors (Hypothesis 2b).

Based on the theory of perceived responsibility and social motivation, we also expect that individual attribution will be a stronger predictor of personal behaviors compared to societal attribution. Likewise, societal attribution will be a stronger predictor of socially oriented behaviors. We therefore hypothesize the following:

Hypothesis 3: Each type of responsibility assignment is a stronger predictor of the corresponding behavior such that individual treatment attribution is a stronger predictor of personal responsibility-taking behaviors than societal treatment attribution (Hypothesis 3a) and societal treatment attribution is a stronger predictor of social responsibility-taking behaviors than individual treatment attribution (Hypothesis 3b).

Hypotheses 2 and 3 specify predictions regarding personal and social responsibility-taking behaviors as outcome variables. It is less clear how individual or societal attribution predict interpersonal responsibility-taking behaviors, which reside at a mesolevel between personal and societal behaviors. Considering that such behaviors are communicative in nature, typically with the intention of helping others and thus inherently more social than personal, societal attributions might be a better predictor of such behaviors than individual attribution. Given the lack of previous research, however, we examine the relationships involving attributional beliefs and interpersonal behaviors via the following research question:

Research Question 1: Are interpersonal responsibility-taking behaviors better predicted by individual or societal attributional beliefs?
Method

Procedure and Stimuli

Data were collected using a Web-based survey on Qualtrics. Undergraduate students from the communication department at a large western university were recruited to participate in the survey for a small amount of extra credit. Data reported in this study were from the first section of the survey, which task participants with reading a news article on obesity (the experimental stimulus) and completing subsequent measures on causal and treatment attributions as well as behavioral intention measures. The news article was modified from a local newspaper article on obesity, formatted to resemble a Web version of a news article. The two versions were equal in length and number of sources and quotes used. For all participants, the news article contained equivalent factual information about the obesity epidemic at the national and state levels, followed by a success story about overcoming obesity in which the framing manipulation was embedded. In the individual frame condition, the success story focused on a man who successfully overcame obesity through his own efforts—namely, through an improved diet and a dedicated physical exercise routine to lose weight and stay in shape. In the societal frame condition, the article focused on successful efforts from the local health department in combating obesity by making healthy choices easier for members of the local community. Different quotes were included to reinforce the frame. For example, the individually framed article included the following quote from the featured individual emphasizing individual responsibility in fighting obesity: “We need to make people realize that they themselves need to work hard at making healthy choices. They can be healthy if they choose to.” In the societally framed article, a quote from the communication manager of a local health organization highlighted the role of the community environment: “One of the things that we’ve really been working hard on is trying to change the environment, to make the healthy choice the easy choice.”

Participants

After duplicate survey entries were deleted, data from 414 participants were retained. As the entire survey was estimated to take 10–15 minutes to complete, participants who spent less than 5 minutes completing the survey (thus potentially not spending time reading the news article) were removed, leaving a sample size of 377 for the analyses reported here. Of the retained participants, 169 (44.8%) were male. The average age was 23.48 (SD = 5.62). Study participants were predominantly Caucasian (n = 305, 81.3%), with Hispanics (n = 27, 7.2%) and Asians (n = 19, 5.1%) being the two largest minority groups.

Key Measures

Measures of causal responsibility attributions, treatment responsibility attributions, and behavioral intentions were developed based on previous studies (Niederdeppe, Shapiro, & Porticella, 2011; Oliver & Lee, 2005). Confirmatory factor analyses were conducted to validate each measurement model before indices were constructed. The final measurement models all exhibited satisfactory model fit indices.

Causal Responsibility Attributions

To measure causal responsibility attributions regarding obesity, we asked the participants to “tell us to what extent you think these are important causes of obesity” (1 = not at all important, 5 = very important). Eight items that addressed individual or societal causes were originally included. Confirmatory factor analysis showed that two items on societal causal attribution (“Healthy food is too expensive for most people to afford on a regular basis” and “Marketers and advertisers promote unhealthy foods and create a junk food culture”) had weak factor loadings (lower than .30), and these were thus excluded. The final measurement model consisted of two factors: individual causal attribution measured with four items (“People eat too much,” “People make poor choices of diet,” “People lack the willpower to keep fit,” and “People do not exercise as much as they should”) and societal causal attribution measured with two items (“Our society provides very limited access to outdoor activities” and “There are not enough accessible exercise facilities in most neighborhoods”). Indices were then created for individual causal attribution (α = .70, M = 4.34, SD = 0.61) and societal causal attribution (r = .53, p < .001, M = 2.62, SD = 1.11).

Treatment Responsibility Attributions

Treatment responsibility attributions were measured by asking participants how much responsibility they thought a list of actors, including individuals, advertisers, and government officials, should bear for addressing the obesity problem (1 = hardly any responsibility, 5 = a lot of responsibility). Six items measuring treatment responsibility attributions loaded clearly on two factors. Individual treatment attribution was measured by three items (“individual’s choice of diet,” “forming a good exercise routine,” and “learning more about how to prevent obesity”). Societal treatment attribution was also measured by three items (“marketers and advertisers promoting more healthy foods,” “government creating a more positive environment for healthy choices,” and “fast food industry in regulating unhealthy foods”). These items were averaged into two indices: individual treatment attribution (α = .73, M = 4.47, SD = 0.61) and societal treatment attribution (α = .74, M = 3.48, SD = 0.92).

Responsibility-Taking Behaviors

To estimate participants’ behavioral intentions, we asked the question, “If given a chance, how likely are you to do each of the following?” (1 = very unlikely, 5 = very likely). The items included were intended to cover the range of individual-level, interpersonal-level, and society-level behaviors. Except for one item (“plan to exercise three times a week”), which had too low a loading on the intended factor, all items loaded clearly on three dimensions: personal behavior (“improving diet,” “learning more about how to prevent obesity”), interpersonal information-sharing behavior (“sharing this article on Facebook, Twitter, or other social media platforms,” “e-mailing this article to other friends or family members”), and participatory behaviors (“signing a petition on having zoning laws...to include sidewalks and...”)
other safe paths to encourage physical activity,” “signing a petition on regulating fast food industries,” “volunteering for a government-funded public education campaign on healthy eating and exercise”). Indices were created to represent each dimension: personal behavior ($r = .38$, $p < .001$, $M = 3.62$, $SD = 0.98$), sharing behavior ($r = .81$, $p < .001$, $M = 1.99$, $SD = 1.12$), and participatory behavior ($r = .75$, $M = 3.09$, $SD = 1.16$).

Results

The model depicted in Figure 1 was tested via the SEM package in STATA 12. The model showed a good fit to the data, $\chi^2(15) = 36.11$, $p = .002$, root mean square error of approximation (RMSEA) = .061 (90% confidence interval [.036, .087]), $p = .214$, comparative fit index = .947, standardized root-mean-square residual = .051. Correlated errors between the three behavioral intention variables were included in the model estimation but are not depicted in this figure. Attr = attribution. “p < .01. “**”p < .001.

Indirect effects of the model

Table 1 reports the indirect effects of the model. Individual causal attribution had a significant indirect effect on taking up personal responsibility-taking behaviors ($\beta = .05$, $p < .01$).

<table>
<thead>
<tr>
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<th>Individual treatment attribution</th>
<th>Societal treatment attribution</th>
<th>Personal behaviors</th>
<th>Sharing behaviors</th>
<th>Participatory behaviors</th>
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<td>—</td>
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<td>.092*** (.011)</td>
<td>.016*** (.002)</td>
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<td>attribution</td>
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<tr>
<td>Societal causal</td>
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<td>—</td>
<td>.056*** (.013)</td>
<td>.048*** (.011)</td>
<td>.110*** (.025)</td>
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<td>attribution</td>
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<tr>
<td>Frame</td>
<td>-.004 (.024)</td>
<td>.057* (.024)</td>
<td>.015 (.024)</td>
<td>.045* (.023)</td>
<td>.033* (.015)</td>
</tr>
</tbody>
</table>

Note: Data are standardized coefficients (standard errors). $N = 377$.

*p < .05. **”p < .001.
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p < .001) but a negative indirect effect on sharing behaviors ($\beta = -0.09, p < .001$) and participatory behaviors ($\beta = 0.02, p < .01$). Societal causal attribution, in contrast, had significant positive indirect effects on all three kinds of behaviors ($\beta = 0.06, 0.05, 0.11, p < .001$). Message frame had a positive indirect effect on societal treatment attribution ($\beta = 0.06, p < 0.05$) but not on individual treatment attribution ($\beta = -0.004, ns$). The societal frame, compared to the individual frame, increased self-reported likelihood of engaging in interpersonal-level information-sharing behaviors ($\beta = 0.05, p < 0.05$) and societal-level participatory behaviors ($\beta = 0.03, p < 0.05$) but had no significant effect on personal responsibility-taking behaviors ($\beta = 0.02, ns$).

Discussion

Though an individualist conception of health has dominated public health discourse, there have been critical reflections and increased calls for a broader, ecological understanding of health problems. Scholars have advanced ecological models of health, acknowledging multiple levels of factors that contribute to health consequences (e.g., Abroms & Maibach, 2008) and placing individual choice in social, environmental, and political contexts. In the case of obesity, the larger social environment that encourages overconsumption of unhealthy food and discourages physical activity makes it difficult for individuals to adopt a healthy lifestyle. Obesity as a public health issue requires social solutions. To make bold action toward obesity prevention possible, efforts by examining whether a news article on obesity with takings is needed. This study sought to contribute to such message effects on social perceptions and behavioral undertakings.

Our results confirmed that a news article with a societal frame indeed made participants more likely to attribute the obesity problem to social conditions, which in turn led to stronger beliefs in the responsibility of the government, food industry, and marketing sector to solve the problem. The individual frame did not have any effect on individual causal attributions, perhaps because of the deeply ingrained value of personal responsibility in Western culture. The individual responsibility frame may be the default frame for thinking about obesity, which may be why participants exposed to it experienced no change in their beliefs.

The process from causal responsibility attribution to behavioral responses via treatment responsibility attribution (Weiner, 2006) was confirmed in this study for both societal pathways (Niederdeppe, Shapiro, & Porticella, 2011) and individual pathways. To whom (or what) an individual attributes the cause of a problem significantly influences what he or she sees as the solution, which in turn motivates behavioral undertakings. Our results showed that when proximal, personal lifestyle factors were perceived as the cause of obesity, personal responsibility taking was seen as the solution. Such attribution to individual responsibility, however, discouraged individuals from engaging in interpersonal behaviors, such as sharing the report on obesity with others. However, with increasing recognition of upstream causes of obesity, individuals were more likely to perceive the government and corporations as accountable for solving the problem, which then motivated collective, participatory behaviors aimed at pushing policy change and improving community well-being and interpersonal-level, information-sharing behaviors. Worth noting is that societal attribution also had a positive effect on personal responsibility-taking behaviors, thus suggesting that increasing recognition of societal causes and responsibility would not necessarily result in excepting individuals of personal responsibility. Rather, our results showed that societal attribution could trigger a more integrative behavioral pattern, motivating individuals to be more proactive in personal, interpersonal, as well as socially oriented behaviors.

An obvious limitation of our study is that our data were from a convenience sample of college students. In a way, our sample was part of an important segment of the target audience in the battle over obesity. The obesity rate among adolescents (ages 12–19) increased from 5% in 1980 to 21% in 2012 (Centers for Disease Control and Prevention, 2014). Adolescents who are obese are more likely to experience obesity and related health problems in adulthood (Freedman et al., 2009). How obesity-related messages impact college students’ perceptions and behaviors, therefore, yields important insights for public health professionals. Despite such justifications, using the convenience sample of college students limits the generalizability of our findings. Whether the processes observed in our study could be replicated in other population segments should be examined in future research.

Another important limitation to acknowledge lies in our measures related to societal responsibility. The societal causal attribution measures, after the removal of two items based on the confirmatory factor analysis results, focused solely on lack of access to physical exercise, whereas the societal treatment attribution measures, designed to tap societal sectors responsible for the obesity problem (the government, the fast food industry, and marketers and advertisers), put more weight (with two out of the three items) on healthy food options as the solution. Our societal responsibility-taking behaviors then described specific actions, such as signing a petition on zoning laws and volunteering for a campaign, for the purpose of building a healthy community. At the global level, these measures were all intended to tackle a health-inducing environment, consisting of easy access to healthy food and physical activity, which the government and corporate sectors should contribute to via policy changes and responsible corporate practices. Yet on close inspection, the content of the items used in these scales seemed to have different foci, which causes concerns about a lack of measurement correspondence. Earlier research on the attitude–behavior relationship in the persuasion literature revealed that low levels of measurement correspondence regarding the four entities of attitudinal and behavioral measures (target, action, context, and time; Ajzen & Fishbein, 1977; Weigel & Newman, 1976)
would lead to an attenuated empirical relationship (Kim & Hunter, 1993). Although our results confirmed the predicted relationship among societal causal attribution, treatment attribution, and social responsibility-taking behaviors, future research should look into how levels of measurement correspondence could impact the mediated relationships among causal attribution, treatment attribution, and responsibility-taking behaviors. Researchers should also borrow insights from the persuasion research on measurement correspondence, identify key measurement entities for causal and solution attributions and behavioral outcomes, and enhance measurement correspondence in terms of these entities.

Despite these limitations, the present study provides evidence for the effectiveness of using news media framing as an approach to raising awareness of obesity as a social issue and motivating collective actions to fight obesity. This study adds to the relatively small repertoire of empirical studies that aim to use message strategies to change individuals’ perceptions of and behaviors toward the obesity problem (e.g., Gollust et al., 2009; Major, 2009; Niederdeppe, Shapiro, & Porticella, 2011). Our model tested the process from message manipulation to attributional beliefs to behavioral outcomes, which allowed us to have a more holistic picture of the processes from message frames to behavioral effects. It also examined responsibility-taking behaviors at personal, interpersonal, and social levels at the same time. Our approach allowed us to better capture a wider spectrum of behaviors needed to combat the obesity problem and contributes additional insights to the previous literature (Gollust et al., 2009; Niederdeppe, Shapiro, & Porticella, 2011; Oliver & Lee, 2005). Reframing obesity as a societal issue in public health messages can be an effective strategy for engaging and mobilizing the public in collective efforts to fight obesity.

References


