

Headless, Hungry, and Unhealthy: A Video Content Analysis of Obese Persons Portrayed in Online News

REBECCA M. PUHL, JAMIE LEE PETERSON,
JENNY A. DEPIERRE, AND JOERG LUEDICKE

Rudd Center for Food Policy and Obesity, Yale University,
New Haven, Connecticut, USA

The news media has substantial influence on public perceptions of social and health issues. This study conducted a video content analysis to examine portrayals of obese persons in online news reports about obesity. The authors downloaded online news videos about obesity (N = 371) from 5 major news websites and systematically coded visual portrayals of obese and nonobese adults and youth in these videos. The authors found that 65% of overweight/obese adults and 77% of overweight/obese youth were portrayed in a negative, stigmatizing manner across multiple obesity-related topics covered in online news videos. In particular, overweight/obese individuals were significantly more likely than were nonoverweight individuals to be portrayed as headless, with an unflattering emphasis on isolated body parts, from an unflattering rear view of their excess weight, eating unhealthy foods, engaging in sedentary behavior, and dressed in inappropriately fitting clothing. Nonoverweight individuals were significantly more likely to be portrayed positively. In conclusion, obese children and adults are frequently stigmatized in online news videos about obesity. These findings have important implications for public perceptions of obesity and obese persons and may reinforce negative societal weight bias.

As obesity rates have consistently increased over the past several decades (Ogden & Carroll, 2010a, 2010b), so has stigmatization and prejudice toward obese individuals. The prevalence of weight discrimination has increased by 66% among overweight and obese adults in the last decade (Andreyeva, Puhl, & Brownell, 2008) and is now on par with rates of racial discrimination, especially in women (Puhl, Andreyeva, & Brownell, 2008). Weight stigma has also worsened among youth in the past 40 years (Latner & Stunkard, 2003). In addition, expressions of weight stigma are not limited to nonoverweight individuals; research has indicated that self-stigma exists among overweight and obese persons (Li & Rukavina, 2009; Puhl, Moss-Racusin, & Schwartz, 2007; Quinlan, Hoy, & Costanzo, 2009; Wang, Brownell, & Schwartz, 2004) who also endorse some degree of biased attitudes toward obese persons (Crandall, 1994).

Prejudice and discrimination toward obese individuals have been consistently documented in a wide range of settings including health care, education, employment, and interpersonal relationships (Puhl & Heuer, 2009), leading to short- and long-term

Address correspondence to Rebecca Puhl, Rudd Center for Food Policy and Obesity, Yale University, 309 Edwards Street, New Haven, CT 06511, USA. E-mail: rebecca.puhl@yale.edu

consequences for emotional and psychological health (e.g., depression, self-esteem; Benas & Gibb, 2008; Carr & Friedman, 2005; Hatzenbuehler, Keyes, & Hasin, 2009; Puhl & Brownell, 2006; Puhl et al., 2007) and physical health (e.g., exercise avoidance, disordered eating; Annis, Cash, & Hrabosky, 2004; Benas & Gibb, 2008; Haines, Neumark-Sztainer, Eisenberg, & Hannan, 2006; Neumark-Sztainer et al., 2007; Vartanian & Novak, 2010; Vartanian & Shaprow, 2008). With two thirds of Americans now overweight or obese (Ogden & Carroll, 2010b), the majority of the population may be vulnerable to stigmatization and unequal treatment and because of their weight.

One of the most pervasive sources of weight stigmatization is the mass media (Ata & Thompson, 2010; Puhl & Heuer, 2009). Previous research has documented weight stigmatization toward obese persons in print media (Boero, 2007; Campo & Mastin, 2007; Kim & Willis, 2007; Lawrence, 2004; Malkin, Wornian, & Chrisler, 1999; Sandberg, 2007), and in popular television shows and films that frequently stigmatize obese characters (Greenberg, Eastin, Hofshire, Lachlan, & Brownell, 2003; Herbozo, Tantleff-Dunn, Gokee-Larose, & Thompson, 2004; Himes & Thompson, 2007; Stein, 2007) who are more often ridiculed and negatively stereotyped compared with their average weight or thin counterparts (Fouts & Burggraf, 1999, 2000; Fouts & Vaughan, 2002; Herbozo et al., 2004; Himes & Thompson, 2007; Klein & Shiffman, 2005, 2006; Robinson, Callister, & Jankoski, 2008; White, Brown, & Ginsburg, 1999). The negative stereotypes frequently communicated in these forms of media serve to perpetuate the social acceptability of weight stigmatization. Given the high consumption of media in American culture (Pew Research Center Publications, 2008a, 2008b, 2008c), it is not surprising that weight bias toward obese persons worsens with increasing exposure to television, film, and print media (Geier, Schwartz, & Brownell, 2003; Harrison, 2000; Latner, Rosewall, & Simmonds, 2007; McClure, Puhl, & Heuer, 2011).

The news media also has substantial influence on public perceptions of important social and health issues, and, in doing so, can even shape decisions of policy makers (McCombs & Shaw, 1972). Given the unprecedented media attention to obesity in recent years, it is critical to examine how the news media may affect public attitudes and perpetuate weight stigmatization toward obese children and adults. Research demonstrates that news coverage of obesity often blames overweight individuals for their weight and disproportionately emphasizes individual behavior and personal responsibility as solutions for weight issues, while placing little or less emphasis on broader societal and environmental contributors and solutions for obesity (Boero, 2007; Bonfiglioli, Smith, King, Chapman, & Holding, 2007; Kim & Willis, 2007; Lawrence, 2004; Rich & Evans, 2005). Studies have consistently demonstrated that attributions of blame and personal responsibility for body weight perpetuate stigma and prejudice toward obese individuals (Crandall, 1994; Crandall & Reser, 2005; Weiner, Perry, & Magnusson, 1988).

While most research in this area has analyzed written content of news reports about obesity, recent evidence indicates that weight stigmatization is also conveyed through visual news content, such as photographs that accompany news articles. Negative or stereotypical portrayals of obese people in news photographs can communicate bias, independent of the written content of the article. A recent content analysis of photographs accompanying online news stories related to obesity on popular news websites found that 72% of photographs portrayed overweight and obese individuals in a stigmatizing manner (Heuer, McClure, & Puhl, 2011). Experimental research further indicates that exposure to these types of stigmatizing images can increase subsequent negative attitudes about obese people, even if the accompanying written news content about obesity is neutral (McClure et al., 2011).

Examining visual portrayals of obese persons in online news media seems especially warranted given that millions of Americans now rely on the Internet for their news (Pew Research Center Publications, 2008b). Recent estimates suggest that 61% of American adults report accessing most of their national and international news online, and two thirds of those watch video news stories (Pew Research Center Publications, 2008a). Rates of online and cable television news consumption are rapidly increasing (Pew Research Center Publications, 2008b), and more people are being exposed to stories about obesity (Evans, Renaud, & Kamerow, 2006; Rich & Evans, 2005). Furthermore, recent research suggests that 46% of people who use television and print media for their main sources of information report that “seeing pictures and videos, rather than reading or hearing the facts, gives them the best understanding of (news) events” (Pew Center Research Publications, 2008c), and viewers often accept visual images as reality while being unaware of the influence of how images are framed (Messaris & Abraham, 2001).

Online news reports are typically presented either as written news articles or as short videos (e.g., clips of news stories previously broadcasted by major television networks) which are posted on news websites for public viewing. Although recent work has examined photographs accompanying online news articles about obesity on popular news websites (Heuer et al., 2011), no research has analyzed the visual content of video depictions of obese persons in the news. Thus, the present study aimed to conduct a visual content analysis to examine portrayals of obese persons in online news videos about obesity. Video content analyses have been frequently used to examine how images can communicate stereotypes and bias, as well as attitudes toward numerous health topics (e.g., smoking, diabetes, opinions about immunizations, and other public health issues; Babamiri & Nassab, 2010; Chin et al., 2010; Conrad, Dixon, & Zhang, 2009; Greenberg et al., 2003; Herbozo et al., 2004; Himes & Thompson, 2007; Keelan, Pavri-Garcia, Tomlinson, & Wilson, 2007; Kim & Willis, 2007; Kyongseok, Paek, & Lynn, 2010; Molyneaux, Gibson, O'Donnell, & Singer, 2008; Steinberg et al., 2010; White et al., 1999). Thus, this method was selected for the present study to examine the prevalence and types of stigmatizing portrayals of obese persons in online news videos about obesity topics from websites representing the major broadcasting networks on television and cable.

Method

Sample

Videos were obtained from five major news websites—ABCnews.com, CBSnews.com, CNN.com, FOXnews.com, and MSNBC.com—using the search term *obesity*. Several search terms were initially tested (e.g., *weight*, *overweight*, *fat*, *obese*) and after examining the types of videos produced by each website, it was determined that the search term *obesity* produced the most videos relevant for analysis. A total of 1,322 video web links were available using this search term (ABCnews.com: $n = 229$; CBSnews.com: $n = 421$; CNN.com: $n = 170$; FOXnews.com: $n = 398$; and MSNBC.com: $n = 104$). All web links were collected in a single search, and all videos were downloaded on a single day: September 8, 2010.

Every video obtained by the search results was initially screened to determine whether or not the primary topic (or a major topic) of the video was about obesity. Topics included obesity prevalence, health consequences of obesity, childhood obesity,

weight loss treatments (e.g., diet, pharmacotherapy, surgery), contributors to obesity (e.g., genetics/heredity, television/computer time, food/diet, exercise/fitness), local/state/national initiatives to address obesity, public health policies to address obesity (e.g., taxes on sugared sweetened beverages), weight stigma and discrimination, or other timely and relevant obesity topics. Videos were excluded from analysis if obesity was not the primary topic of the video ($n = 488$), if the weblink to the video did not open a video file or work correctly ($n = 115$), if the video was a repeat of an identical video already screened in the database ($n = 40$), or if the video depicted only one person or no visible content (e.g., voiceover radio shows, speeches, blogs; $n = 48$). These criteria resulted in 52% of the videos being excluded from additional analysis. With the remaining sample of videos ($n = 633$), a subset of approximately 75 videos was randomly selected from each of the five websites, comprising a final sample of 371 videos. If the obesity-related story was featured within a full-length news program, only the obesity-related portion of the video was examined and subsequently coded.

Measures

Each news video about obesity was analyzed using a comprehensive coding tool (Heuer et al., 2011), which aimed to document demographic characteristics of individuals appearing in news videos and to identify ways in which portrayals of individuals may be stigmatizing or stereotypical. First, the news source, original posting date, and time length of each video was recorded. Video content was then coded to identify individuals appearing in the video as adults and/or youth, to identify their weight category (nonoverweight versus overweight/obese), sex (female or male), and to describe their race/ethnicity. Youth were defined as individuals who appeared to be 18 years old or younger. We initially coded body weight categories as *nonoverweight*, *overweight*, *obese*, and *very obese*, but because of relatively small percentages of individuals who were coded as overweight or very obese, these were collapsed into one overweight/obese category. When a person's age group, weight category, or race was not easily identifiable, video context was reassessed and coders consulted to reach consensus.

Several additional variables were coded to obtain more detailed information about how individuals were visually portrayed in each age and weight group (nonoverweight versus overweight/obese adults and youth). In particular, coders identified how individuals' bodies were portrayed in the video (e.g., headless [shown only from the neck down]; portrayed from the rear, isolated body parts, bare abdomens, head/face); and whether fit of clothes was appropriate or inappropriate (e.g., distinctly too tight).

Individuals were further coded according to all activities and roles they were portrayed engaging in throughout the video (e.g., eating and/or drinking; shopping for, serving, and/or cooking food; exercising; being an expert, researcher, advocate, or journalist; being a patient; being a health professional; being the feature of a weight loss success story; portrayed as a person on the street; engaging in sedentary behavior (e.g., watching television, playing a video game); being featured in a personal interest story related to obesity; and other activities). If individuals were portrayed eating food or drinking (or depicted in the proximity of food or beverages), coders assessed whether these items were healthy (e.g., fruit, vegetables, water) or unhealthy (e.g., potato chips, fast food, soda). Last, all adults portrayed in videos were coded according to their profession (e.g., journalist, politician, expert, advocate, health professional, patient, teacher, celebrity) and whether they were wearing professional attire.

All videos were systematically evaluated by a team of two trained coders. Interrater reliability was assessed by each coder independently coding a subsample of 50 (13.5%) randomly selected videos (Bernacchia & Pigolotti, 2011). Coders received 86.9% agreement in this subsample, with an average interrater reliability of 0.57, as measured using Cohen's kappa (Cohen, 1960). In terms of quartiles, 75% of coefficients are larger than 0.42, 50% are larger than 0.58, and 25% are larger than 0.79. Following existing guidelines (Landis & Koch, 1977), kappa values of 0.41 to 0.6 can be regarded as moderate and values between 0.61 and 0.8 as substantial.

Before coding all remaining videos, coders arbitrated in order to resolve any outstanding coding inconsistencies (e.g., for race, distinctions between Latino versus other, whether all types of skirts should be classified as professional attire, and nonoverweight versus overweight/obese classifications for infants and very young children).

Statistical Analysis

To test differences in the proportions between groups of videos (e.g., videos in which overweight/obese adults were shown versus videos in which normal weight adults were shown), we used z tests. Chi-square tests were applied to test differences within a group of videos. In addition, Poisson regression models were estimated to predict the count of different kinds of stigmatizing portrayals in the videos. Since the main purpose of these models was to predict the exposure to stigmatizing portrayals in absolute terms, rather than in relative terms, an offset was not included. Different exposure times (i.e., differences in length among videos) are accounted for, and the models also controlled for the specific year a video was originally posted. All analyses were carried out using Stata (version 11.2).

Results

Sample Characteristics

Of the 371 videos analyzed, 95% ($n = 352$) were originally broadcasted on major television network news programs. The average length of video was 187 s ($SD = 145$) with a median of 149 s (25th percentile = 94 s; 75th percentile = 252 s). The shortest video had a length of 8 s and the longest video of 1,507 s. However, 95% of the videos were 403 s or less. Of the videos, 58% were originally broadcasted in 2009–2010, 34% in 2006–2008, and 8% in 2004–2005. Each of the five news websites accounted for 20% of the videos included in the final sample. Table 1 shows the demographic characteristics of overweight/obese and nonoverweight individuals portrayed in the videos.

Among adults, there were no gender differences among the percentage of overweight and nonoverweight adults portrayed in videos, but there was a significantly higher percentage of Caucasian normal weight adults compared with overweight adults ($z = -4.79, p < .001$), and a higher percentage of overweight adults were African American compared with normal weight adults ($z = 2.96, p = .003$). Asians were also more likely to be portrayed as normal weight than overweight among both adults ($z = -6.18, p < .001$) and youth ($z = -3.00, p = .003$). Among youth, there was a higher percentage of normal weight girls compared with overweight girls portrayed in videos ($z = -2.00, p = .046$).

Nineteen different categories of obesity-related topics were identified as main or major themes of the news videos. Topics addressed in videos included childhood

Table 1. Sample characteristics of individuals portrayed in online news videos about obesity ($N = 371$)

Variable	Overweight/ obese adults	Nonoverweight adults	Overweight/ obese youth	Nonoverweight youth
Present in videos	67%	97%	35%	39%
How many				
1 person	28%	11%	15%	8%
2–3 persons	21%	40%	19%	13%
4 or more persons	51%	49%	66%	79%
Sex				
Male	72%	78%	82%	88%
Female	81%	87%	86%	93%
Race				
White	82%	95%	76%	82%
Black	41%	29%	54%	52%
Latino	15%	10%	39%	34%
Asian	2%	19%	3%	13%
Other	1%	2%	2%	2%

obesity (50%), food/diet issues related to obesity (41%), the prevalence of obesity (34%), health consequences of obesity (31%), contributors to obesity (28%), state and national initiatives to address obesity (23%), exercise/fitness to reduce/prevent obesity (19%), diabetes (17%), health care spending related to obesity (12%), food/beverage industry (9%), school-based initiatives to address obesity (9%) and weight stigma and discrimination against obese individuals (8%). The least common topics included weight loss surgery (6%), weight loss success stories (5%), instructional weight loss strategies (5%), exposure to television/computer/video games and obesity (5%), genetics of obesity (5%), beverage and food taxes (5%), and weight loss drugs (1%).

Video Portrayals of Overweight/Obese Versus Nonoverweight Individuals

Overall, of the 250 videos containing overweight/obese adults, 65% portrayed overweight/obese individuals in at least one of the following ways: headless, unflattering rear view, isolated body parts (e.g., stomach, buttocks), bare abdomen, eating unhealthy food, engaging in sedentary behavior, or dressed in inappropriately fitting clothing, and 48% of these videos portrayed overweight/obese adults with at least two of these seven negative characteristics. Table 2 compares the percentage of overweight/obese versus nonoverweight adults and youth who were portrayed with positive (nonstereotypical) and negative characteristics. For adults, results show that compared with nonoverweight people, overweight/obese adults were significantly more likely to be portrayed as headless, with an unflattering emphasis on isolated body parts (e.g., stomach, buttocks), from an unflattering rear view of their excess weight, eating unhealthy foods, engaging in sedentary behavior, and dressed in inappropriately fitting (too tight) clothing. In contrast, nonoverweight adults were significantly more likely to be portrayed in professional roles (e.g., health professional, journalist, reporter,

Table 2. Portrayals of overweight/obese and nonoverweight adults and youth in online news videos

	Overweight/obese	Nonoverweight	z	p
<i>Adults</i>				
Negative characteristics				
Headless	47%	4%	12.74	.00
Unflattering portrayal from the rear view	40%	6%	10.49	.00
Eating unhealthy food	32%	16%	4.66	.00
Unflattering emphasis on isolated body parts	24%	9%	5.10	.00
Engaging in sedentary behavior	16%	4%	5.16	.00
Showing bare abdomen	4%	4%	-0.12	.91
Dressed in inappropriately fitting clothing	4%	1%	2.41	.02
Positive (nonstereotypical) characteristics				
Dressed in professional apparel	58%	93%	-10.34	.00
Eating healthy food	14%	13%	0.17	.87
Engaging in exercise	17%	15%	0.70	.48
Health professional	16%	43%	-7.10	.00
Journalist/reporter	14%	77%	-15.25	.00
Topic expert/advocate	10%	35%	-7.01	.00
<i>Youth</i>				
Negative characteristics				
Headless	46%	10%	6.55	.00
Unflattering portrayal from the rear view	37%	15%	4.29	.00
Eating unhealthy food	42%	35%	1.09	.28
Unflattering emphasis on isolated body parts	28%	17%	2.24	.03
Engaging in sedentary behavior	28%	17%	2.09	.04
Showing bare abdomen	11%	4%	2.12	.03
Dressed in inappropriately fitting clothing	9%	0%	3.58	.03
Positive (nonstereotypical) characteristics				
Eating healthy food	22%	34%	-2.26	.02
Engaging in exercise	56%	42%	2.34	.02

expert, advocate) and dressed in professional apparel compared with overweight/obese adults.

The lower panel of Table 2 presents the percentage of overweight/obese versus nonoverweight youth portrayed in a stigmatizing manner. In total, of the 129 videos containing overweight/obese youth, 77% were negatively portrayed in at least one of the seven characteristics outlined earlier, and 50% with at least two of these seven negative characteristics. The findings for youth were very similar to those for adults, demonstrating that overweight/obese youth were significantly more often depicted in stigmatizing ways compared with nonoverweight youth, with several exceptions. First, unlike findings for adults, obese youth were significantly more often portrayed with bare abdomens compared with normal weight youth, but not significantly more likely to be portrayed consuming an unhealthy food or beverage compared with normal weight youth. In addition, overweight/obese youth were significantly more often portrayed exercising compared with normal weight youth, whereas the latter were shown more often eating healthy food.

Comparisons between adults and youth demonstrated several significant differences in portrayals of overweight/obese adults versus overweight/obese youth. In particular, compared with overweight/obese adults, a higher percentage of overweight/obese youth were depicted eating unhealthy food ($z = -1.98, p = .047$), portrayed with bare abdomens ($z = -2.60, p = .009$), and shown in inappropriately fitting clothing ($z = -2.03, p = .042$).

Examining gender differences in portrayals of overweight/obese versus nonoverweight individuals was not possible using the total sample of videos because characteristics of females and males were not coded separately in videos where multiple individuals were present. However, there were a subset of videos portraying only women ($n = 44$) and only men ($n = 68$), which allowed for potential gender differences to be examined. Chi-square analyses showed that there were no significant differences in the percentage of these videos with stigmatizing portrayals of overweight/obese women and men, with the exception that a higher percentage of overweight/obese men (68%) were portrayed in professional clothing compared with overweight/obese women (37%), $\chi^2(1, 112) = 10.55, p = .001$. This comparison was not significant among non-overweight men and women, suggesting that such portrayals may be unique to weight rather than a reflection of gender bias.

Table 3 presents the percentage of stigmatizing portrayals of overweight/obese adults and youth across the ten most frequent obesity-related topics addressed in the news videos. Videos were defined as stigmatizing if the people shown in the video were portrayed in at least two out of the seven negative manners depicted in Table 2. News videos about health consequences associated with obesity contained the highest percentage of stigmatizing portrayals of overweight/obese adults (61%, $p < .05$), whereas videos addressing childhood obesity and government initiatives to address obesity had the lowest percentage of stigmatizing portrayals (27–31%, $p < .05$). In addition to these bivariate chi-square tests, a multiple regression using a Poisson model was conducted, with the number of different stigmatizing portrayals in a video (ranging from 0 to 7) as the dependent variable, accounting for different exposure time across videos and controlling for the year a video was posted. Videos addressing the topics of health consequences of obesity showed a 64% increase in the number of stigmatizing portrayals of obese adults (incident rate ratio = 1.64, $p < .001$). Among youth, stigmatizing portrayals of overweight/obese youth occurred more often in videos that addressed topics of contributors to obesity (70%, $p < .05$) and childhood obesity (55%,

Table 3. Negative portrayals of overweight/obese adults and youth across top 10 story topics

	Overweight/ obese adults			Overweight/ obese youth		
	<i>n</i>	%*	IRR	<i>n</i>	%	IRR
Topics addressed in news videos	250	48.4		129	50.4	
Childhood obesity	95	27.4	0.378	107	55.1	1.543
Food/diet	100	47.0	0.808	55	52.7	0.855
Obesity prevalence	84	53.6	1.194	50	60.0	0.716
Health consequences	90	61.1	1.640	42	47.6	1.010
Contributors to obesity	67	50.7	1.056	30	70.0	1.169
Community/state/national initiatives	52	30.8	0.952	33	60.6	1.449
Exercise/fitness	40	35.0	1.051	30	46.7	0.663
Diabetes	52	59.6	0.867	15	46.7	0.492
Health care spending	33	63.6	1.038	11	63.6	1.359
Food/beverage industry	25	44.0	1.122	12	50.0	0.967

Note. Values in bold indicate significance at $p < .05$. IRR = incident rate ratios from a Poisson regression model with all variables included; dependent variable is the count of different kinds of negative portrayals in a video; models accounted for exposure time (length of a video) and controlled for year (dummies) in which a video was posted.

*Percentage refers to the proportion of overweight/obese adults or youth portrayed in at least two of the seven negative characteristics as described in Table 2.

$p < .05$). Results from the Poisson regression showed that the number of different kinds of stigmatizing portrayals of overweight/obese persons was approximately one and a half times as high in videos addressing the topic of childhood obesity compared with other topics, although this effect was only marginally significant (incident rate ratio = 1.543, $p = .089$), and 45% higher when community, state, or national initiatives were addressed (incident rate ratio = 1.449, $p < .05$). Of note, 8% of the videos in the present sample addressed weight stigmatization and discrimination as a major topic, but overweight/obese individuals portrayed in these videos were neither more nor less likely to be depicted in a stigmatizing manner compared with other videos.

Last, stigmatizing portrayals of individuals across the five news websites were assessed (see Table 4). Results indicated that ABCnews.com contained the highest percentage of stigmatizing portrayals of overweight/obese adults. CNN.com and FOXnews.com contained fewer stigmatizing portrayals compared with the average across websites, whereas MSNBC.com and CBSnews.com did not differ significantly from the baseline percentage of stigmatizing portrayals. Among videos portraying overweight/obese youth, MSNBC.com contained higher than average proportions of stigmatizing portrayals of obese youth, whereas there were no significant effects for ABCnews.com. No clear pattern was detectable for the remaining websites. Of note, ABCnews.com had an increased tendency to portray individuals with unhealthy food. Normal weight youth, normal weight adults, and overweight/obese adults were all shown with unhealthy foods more often on this website compared with others.

Table 4. Negative portrayals of overweight/obese and nonoverweight adults and youth across sources

Source	<i>n</i>	Headless	Unflattering		Eating unhealthy food	Unflattering		Engaging in sedentary behavior	Showing		Inappropriately fitting clothing	
			portrayal from the rear view	emphasis on isolated body parts		bare abdomen	Showing bare abdomen					
<i>Overweight/obese adults</i>												
Total	250	47.2%	40.0%	24.4%	31.6%	16.0%	4.0%	3.6%				
MSNBC.com	50	44.0%	38.0%	32.0%	32.0%	22.0%	6.0%	6.0%				
CBSnews.com	50	52.0%	46.0%	32.0%	28.0%	18.0%	0.0%	4.0%				
ABCnews.com	56	64.3%	53.6%	14.3%	48.2%	17.9%	3.6%	1.8%				
CNN.com	43	30.2%	34.9%	25.6%	18.6%	20.9%	2.3%	2.3%				
FOXnews.com	51	41.2%	25.5%	19.6%	27.5%	2.0%	7.8%	3.9%				
<i>Nonoverweight weight adults</i>												
Total	358	3.9%	5.6%	9.2%	15.6%	3.9%	4.2%	0.8%				
MSNBC.com	73	2.7%	4.1%	12.3%	13.7%	5.5%	6.8%	1.4%				
CBSnews.com	68	5.9%	7.4%	2.9%	11.8%	1.5%	1.5%	1.5%				
ABCnews.com	69	2.9%	5.8%	15.9%	26.1%	4.4%	4.3%	0.0%				
CNN.com	73	4.1%	8.2%	9.6%	9.6%	6.9%	5.5%	0.0%				
FOXnews.com	75	4.0%	2.7%	5.3%	17.3%	1.3%	2.7%	1.3%				

<i>Overweight/obese youth</i>									
Total	129	45.7%	37.2%	41.9%	27.9%	27.9%	10.9%	8.5%	
MSNBC.com	33	57.6%	54.5%	51.5%	27.3%	33.3%	27.3%	24.2%	
CBSnews.com	25	40.0%	16.0%	44.0%	44.0%	36.0%	4.0%	0.0%	
ABCnews.com	30	46.7%	40.0%	43.3%	23.3%	16.7%	6.7%	10.0%	
CNN.com	20	45.0%	30.0%	15.0%	15.0%	35.0%	0.0%	0.0%	
FOXnews.com	21	33.3%	38.1%	47.6%	28.6%	19.1%	9.5%	0.0%	
<i>Nonoverweight youth</i>									
Total	144	10.4%	14.6%	35.4%	17.4%	16.7%	4.2%	0.0%	
MSNBC.com	34	11.8%	11.8%	23.5%	14.7%	29.4%	2.9%	0.0%	
CBSnews.com	20	10.0%	20.0%	15.0%	15.0%	10.0%	5.0%	0.0%	
ABCnews.com	37	5.4%	16.2%	59.5%	21.6%	8.1%	5.4%	0.0%	
CNN.com	27	11.1%	3.7%	22.2%	22.2%	29.6%	3.7%	0.0%	
FOXnews.com	26	15.4%	23.1%	46.2%	11.5%	3.9%	3.8%	0.0%	

Note. Percentages in bold indicate significance at $p < .05$, Pearson chi-square test.

Discussion

To our knowledge, this is the first study to examine portrayals of obese individuals in online news videos. Our findings indicate that overweight/obese adults and youth are portrayed in a negative, stigmatizing manner across multiple obesity-related topics covered in online news videos. In particular, overweight/obese individuals were significantly more likely than nonoverweight individuals to be portrayed in videos as headless, with an unflattering emphasis on isolated body parts (e.g., stomach, buttocks), from an unflattering rear view of their excess weight, eating unhealthy foods, engaging in sedentary behavior, and dressed in inappropriately fitting (too tight) clothing. In contrast, nonoverweight persons were much more likely to be portrayed positively in professional attire, and in professional or expert roles. Given that 65% of news videos of overweight/obese adults and 77% of videos of overweight/obese youth involved this negative visual content, the present findings suggest that the public is highly exposed to stigmatizing depictions of obese persons in online news media. These findings parallel recent research (Heuer et al., 2011) demonstrating that obese individuals are frequently stigmatized in photographic images accompanying online news reports, which similarly found that 72% of images that depicted an overweight or obese person were portrayed in a stigmatizing manner. Recent experimental research further indicates that stigmatizing images of obese persons accompanying news stories about obesity lead to higher levels of weight bias compared with images of obese persons that are positive and nonstigmatizing (McClure et al., 2011). Thus, given the high percentage of Americans relying on the internet for their news (Pew Research Center Publications, 2008b), it is likely that the negative depictions of obese persons in online news videos also contribute to weight bias and negative societal attitudes toward obese persons.

It should be noted that some critics have defended the use of headless obese persons in images and videos with assertions that people's heads are omitted in order to maintain the individual's anonymity, or for fear of liability by the photographer or news source publishing the image. However, headless images of obese persons most often place an unflattering, negative emphasis on particular body parts or excess body weight for the purpose of intentionally evoking reactions of disgust or disapproval, rather than simply depicting an obese person in a neutral, respectful way with their identity concealed. As a result, obese people are dehumanized and portrayed as symbols of an obesity epidemic, rather than valued members of society who deserve respect and dignity.

The fact that overweight/obese youth were so frequently portrayed in a stigmatizing manner (and in some cases more often than obese adults) is cause for particular concern, especially given the prevalence of weight-based victimization already present toward obese youth (Puhl & Latner, 2007). There has been considerable medical and media attention to childhood obesity in recent years (Ebbeling, Pawlak, & Ludwig, 2002; Lobstein, Bauer, & Uauy, 2004), and although efforts to bring public attention to this issue in the news are warranted, the current findings suggest that online news media tend to portray obese children in a negative, stereotypical manner, reinforcing stigma toward the very population that is in need of help. Childhood obesity was the most common topic addressed in news videos in the present sample, and while it is encouraging that obese youth were frequently depicted engaging in exercise (which can help challenge weight-based stereotypes that obese youth are lazy and lacking in self-discipline; Greenleaf, Chambliss, Rhea, Martin, & Morrow, 2006; Greenleaf & Weiller, 2005), the prevalence of unflattering, stereotypical characteristics in video portrayals of obese youth may primarily serve to reinforce stigma.

The lack of positive or neutral depictions of overweight/obese persons in video portrayals documented in the present study is also noteworthy. Without positive, respectful portrayals of obese persons, it is difficult to challenge and change prevalent weight-based stereotypes that are communicated with negative depictions of obese persons. Some critics have suggested that positive, nonstigmatizing portrayals of obese persons could potentially “normalize” obesity and in turn reduce incentives to achieve a healthy weight (Holtreman, 2007; McKay, 2010). However, research suggests that weight stigma is not an effective method for motivating health behaviors, and instead increases risk of unhealthy eating behaviors, binge-eating, avoidance of physical activity, impaired weight loss efforts, and decreased use of preventive health services (Amy, Aalborg, Lyons, & Keranen, 2006; Ashmore, Friedman, Reichmann, & Musante, 2008; Carels et al., 2009; Puhl & Brownell, 2006; Vartanian & Shaprow, 2008). Although stigma is counterproductive to public health (Puhl & Heuer, 2010), the media can call attention to public health issues without promoting stigmatizing beliefs (e.g., acknowledge the diversity of people and etiologies within groups of people with certain health conditions, avoid fear tactics and oversimplifications of health issues in public communications; Wang, 1998). Rather than perpetuating stigma and shame, efforts to provide support to obese persons to help them cope with stigmatizing experiences have been demonstrated to be more effective strategies to promote healthy lifestyle behaviors (Lillis, Hayes, Bunting, & Masuda, 2009).

Several limitations of the present study should be noted. First, the sample of videos analyzed were online news clips addressing obesity-related topics. It is not known whether portrayals of obese persons would be similar in news reports about other public health conditions or on topics unrelated to body weight. Second, analyzing links between portrayals of obese persons and characteristics of race, sex, and age were beyond the scope of this study, and additional work is needed with more diverse samples of videos to better examine these characteristics. A subset of videos in the present sample allowed for gender comparisons, which suggested a lack of gender differences in portrayals of overweight/obese persons. However, caution is warranted in this interpretation of the results in the absence of a larger sample. Other weight-related issues may be associated with stigma (e.g., eating disorders), and the media may play a role in perpetuating this stigma. Future research should examine this issue given that stereotypes associated with eating disorders (Roehrig & McLean, 2010) differ significantly from stereotypes associated with obesity (Puhl & Heuer, 2009). In addition to perpetuating weight bias, stigmatizing video portrayals documented in the present study may also have implications for obese children and adults themselves who view online news media. Increasing research has documented internalization of weight stigma by obese youth and adults (Li & Rukavina, 2009; Puhl et al., 2007; Quinlan et al., 2009; Wang et al., 2004), which can increase vulnerability to a range of negative psychological and physical health consequences (e.g., lower self-esteem, increased depressive and anxiety symptoms, binge eating). Given the tendency for people to accept visual images as reality (Messaris & Abraham, 2001), and the high percentage of the public reporting that pictures and videos provide them with a better understanding of news events than written content or hearing facts (Pew Research Center Publications, 2008c), obese individuals who view stigmatizing portrayals in the news media may be at risk for internalizing negative weight-based stereotypes and blaming themselves for negative societal attitudes.

Last, the present findings are important to consider in the broader context of public health policies to address obesity. The power of the news media to influence public

perceptions about health issues is significant, and its influence on public views about obesity and obese persons is no exception. When news videos portray obese persons in distasteful ways, depict obese individuals as lazy, sedentary, and eating unhealthy foods, or fail to portray obese persons in positive or professional roles, obesity becomes reinforced as an individual failing, and deserving of personal blame rather than public health interventions. In this context, the broader societal and environmental contributors and solutions for obesity are absent, and the need to address obesity within a public health framework is lost.

Instead of disseminating persistent negative portrayals of obese persons, the news media can instead use its power to correct weight bias in visual news content, and reduce stigma by portraying obese persons in more positive ways that challenge pervasive weight-based stereotypes. Professional news media organizations are often guided by established codes of ethics to ensure that journalists, reporters, editors, and photographers avoid stereotyping individuals and groups on the basis of characteristics such as race, gender, ethnicity, age, disability, and sexual orientation (Associated Press, 2006; National Press Photographers Association, 2009; Society of Professional Journalists, 1996). It seems both reasonable and warranted for body weight to be included among these characteristics, so that children and adults, regardless of their body weight, are depicted with dignity and respect.

References

- Amy, N. K., Aalborg, A., Lyons, P., & Keranen, L. (2006). Barriers to routine gynecological cancer screening for White and African-American obese women. *International Journal of Obesity, 30*, 147–155.
- Andreyeva, T., Puhl, R. M., & Brownell, K. D. (2008). Changes in perceived weight discrimination among Americans: 1995–1996 through 2004–2006. *Obesity, 16*, 1129–1134.
- Annis, N. M., Cash, T. F., & Hrabosky, J. I. (2004). Body image and psychosocial differences among stable average weight, currently overweight, and formerly overweight women: The role of stigmatizing experiences. *Body Image, 1*, 155–167.
- Ashmore, J. A., Friedman, K. E., Reichmann, S. K., & Musante, G. J. (2008). Weight-based stigmatization, psychological distress, & binge eating behavior among obese treatment-seeking adults. *Eating Behaviors, 9*, 203–209.
- Associated Press. (2006). *The Associated Press statement of news values and principles*. Retrieved from <http://www.ap.org/newsvalues/index.html>
- Ata, R. N., & Thompson, J. K. (2010). Weight bias in the media: A review of recent research. *Obesity Facts, 3*(1), 41–46.
- Babamiri, K., & Nassab, R. N. (2010). The availability and content analysis of melanoma information on YouTube. *Plastic and Reconstructive Surgery, 126*, 51e–52e.
- Benas, J. S., & Gibb, B. E. (2008). Weight-related teasing, dysfunctional cognitions, and symptoms of depression and eating disturbances. *Cognitive Therapy Research, 32*, 143–160.
- Bernacchia, A., & Pigolotti, S. (2011). Self-consistent method for density estimation. *Journal of the Royal Statistical Society: Series B (Statistical Methodology), 73*, 407–422.
- Boero, N. (2007). All the news that's fat to print: the American "obesity epidemic" and the media. *Qualitative Sociology, 30*(1), 41–60.
- Bonfiglioli, M. F., Smith, B. J., King, L. A., Chapman, S. F., & Holding, S. J. (2007). Choice and voice: obesity debates in television news. *Medical Journal of Australia, 187*, 442–445.
- Campo, S., & Mastin, T. (2007). Placing the burden on the individual: Overweight and obesity in African American and mainstream women's magazines. *Health Communication, 22*, 229–240.

- Carels, R. A., Young, K. M., Coit, C. B., Harper, J., Gumble, A., Hobbs, M. W., ... Clayton, A. M. (2009). Internalized weight stigma and weight loss treatment outcomes in treatment-seeking adults. *Annals of Behavioral Medicine*, 37, 350–355.
- Carr, D., & Friedman, M. A. (2005). Is obesity stigmatizing? Body weight, perceived discrimination, and psychological well-being in the United States. *Journal of Health and Social Behavior*, 46, 244–259.
- Chin, A., Keelan, J., Tomlinson, G., Pavri-Garcia, V., Wilson, K., & Chignell, M. (2010). Automated delineation of subgroups in web video: A medical activism case study. *Journal of Computer-Mediated Communication*, 15, 13.
- Cohen, J. (1960). A coefficient of agreement for nominal scales. *Educational and Psychological Measurement*, 20(1), 37–46.
- Conrad, K., Dixon, T. L., & Zhang, Y. (2009). Controversial rap themes, gender portrayals, and skin tone distortion: A content analysis of rap music videos. *Journal of Broadcasting and Electronic Media*, 53(1), 134–156.
- Crandall, C. S. (1994). Prejudice against fat people: Ideology and self-interest. *Journal of Personality and Social Psychology*, 66, 882–894.
- Crandall, C. S., & Reser, A. H. (2005). Attributions and weight-based prejudice. In K. D. Brownell, R. M. Puhl, M. B. Schwartz, & L. Rudd (Eds.), *Weight bias: Nature, consequences, and remedies* (pp. 83–96). New York, NY: Guilford Press.
- Ebbling, C. B., Pawlak, D. B., & Ludwig, D. S. (2002). Childhood obesity: Public-health crisis, common sense cure. *The Lancet*, 360(9331), 473–482.
- Evans, W. D., Renaud, J. M., & Kamerow, D. B. (2006). News media coverage, body mass index, and public attitudes about obesity. *Social Marketing Quarterly*, 12, 19–33.
- Fouts, G., & Burggraf, K. (1999). Television situation comedies: Female body images and verbal reinforcements. *Sex Roles*, 40, 473–481.
- Fouts, G., & Burggraf, K. (2000). Television situation comedies: Female weight, male negative comments, and audience reactions. *Sex Roles*, 42, 925–932.
- Fouts, G., & Vaughan, K. (2002). Television situation comedies: Male weight, negative references, and audience reactions. *Sex Roles*, 46, 439–442.
- Geier, A. B., Schwartz, M. B., & Brownell, K. D. (2003). “Before and after” diet advertisements escalate weight stigma. *Eating and Weight Disorders*, 8, 282–288.
- Greenberg, B. S., Eastin, M., Hofshire, L., Lachlan, K., & Brownell, K. D. (2003). Portrayals of overweight and obese persons in commercial television. *American Journal of Public Health*, 93, 1342–1348.
- Greenleaf, C., Chambliss, H. O., Rhea, D. J., Martin, S. B., & Morrow, J. R. (2006). Weight stereotypes and behavioral intentions toward thin and fat peers among White and Hispanic adolescents. *Journal of Adolescent Health*, 39, 546–552.
- Greenleaf, C., & Weiller, K. (2005). Perceptions of youth obesity among physical educators. *Social Psychology of Education*, 8, 407–423.
- Haines, J., Neumark-Sztainer, D., Eisenberg, M. E., & Hannan, P. J. (2006). Weight teasing and disordered eating behaviors in adolescents: Longitudinal findings from Project EAT (Eating Among Teens). *Pediatrics*, 117, 209–215.
- Harrison, K. (2000). Televisions viewing, fat stereotyping, body shape standards, and eating disorder symptomatology in grade school children. *Communication Research*, 27, 617–640.
- Hatzenbuehler, M. L., Keyes, K. M., & Hasin, D. S. (2009). Associations between perceived weight discrimination and the prevalence of psychiatric disorders in the general population. *Obesity*, 17, 2033–2039.
- Herbozo, S., Tantleff-Dunn, S., Gokee-Larose, J., & Thompson, J. K. (2004). Beauty and thinness messages in children’s media: A content analysis. *Eating Disorders*, 12(1), 21–34.
- Heuer, C. A., McClure, K., & Puhl, R. M. (2011). Obesity stigma in online news: A visual content analysis. *Journal of Health Communication*, 0, 1–12.
- Himes, S. M., & Thompson, J. K. (2007). Fat stigmatization in television shows and movies: A content analysis. *Obesity*, 15, 712–718.

- Holtzman, V. (2007, November 11). *Not enough fat people on TV (apparently)*. Retrieved from <http://screenrant.com/not-enough-fat-people-on-tv-apparently-vic-830/>
- Keelan, J., Pavri-Garcia, V., Tomlinson, G., & Wilson, K. (2007). YouTube as a source of information on immunization: A content analysis. *Journal of American Medical Association, 298*, 2482–2484.
- Kim, S.-H., & Willis, L. A. (2007). Talking about obesity: News framing of who is responsible for causing and fixing the problem. *Journal of Health Communication, 12*, 359–376.
- Klein, H., & Shiffman, K. S. (2005). Thin is “in” and stout is “out”: What animated cartoons tell viewers about body weight. *Eating and Weight Disorders, 10*, 107–116.
- Klein, H., & Shiffman, K. S. (2006). Messages about physical attractiveness in animated cartoons. *Body Image, 3*, 353–363.
- Kyongseok, K., Paek, H., & Lynn, J. (2010). A content analysis of smoking fetish videos on YouTube: Regulatory implications for tobacco control. *Health Communication, 25*(2), 97–106.
- Landis, J. R., & Koch, G. G. (1977). The measurement of observer agreement for categorical data. *Biometrics, 33*(1), 159–174.
- Latner, J. D., Rosewall, J. K., & Simmonds, M. B. (2007). Childhood obesity stigma: Association with television, videogame, and magazine exposure. *Body Image, 4*, 147–155.
- Latner, J. D., & Stunkard, A. J. (2003). Getting worse: The stigmatization of obese children. *Obesity Research, 11*, 452–456.
- Lawrence, R. G. (2004). Framing obesity: The evolution of news discourse on a public health issue. *The International Journal of Press/Politics, 9*(3), 56–75.
- Li, W., & Rukavina, P. (2009). A review on coping mechanisms against obesity bias in physical activity/education settings. *Obesity Reviews, 10*(1), 87–95.
- Lillis, J., Hayes, S. C., Bunting, K., & Masuda, A. (2009). Teaching acceptance and mindfulness to improve the lives of the obese: A preliminary test of a theoretical model. *Annals of Behavioral Medicine, 37*(1), 58–69.
- Lobstein, T., Bauer, L., & Uauy, R. (2004). Obesity in children and young people: A crisis in public health. *Obesity Reviews, 5*(Suppl. 1), 4–85.
- Malkin, A. R., Wornian, K., & Chrisler, J. C. (1999). Women and weight: gendered messages on magazine covers. *Sex Roles, 40*, 647–655.
- McClure, K., Puhl, R. M., & Heuer, C. A. (2011). Obesity in the news: Do photographic images of obese persons influence anti-fat attitudes? *Journal of Health Communication, 16*, 359–371.
- McCombs, M. E., & Shaw, D. L. (1972). The agenda-setting function of mass media. *Public Opinion Quarterly, 36*, 176–187.
- McKay, H. (2010). Do shows focusing on overweight characters further obesity problems? *Fox News.com*. Retrieved from <http://www.foxnews.com/entertainment/2010/09/16/shows-focusing-overweight-characters-obesity-problem>
- Messariss, P., & Abraham, L. (2001). The role of images in framing news stories. In S. Reese, O. Gandy, & A. Grant (Eds.), *Framing public life* (pp. 215–226). Mahwah, NJ: Erlbaum.
- Molyneaux, H., Gibson, K., O'Donnell, S., & Singer, J. (2008). *New visual media and gender: A content, visual, and audience analysis of YouTube vlogs*. Paper presented at the Proceedings of the International Communication Association Annual Conference, Montreal, Quebec, Canada.
- National Press Photographers Association. (2009). *NPPA code of ethics*. Retrieved from http://www.nppa.org/professional_development/business_practices/ethics.html
- Neumark-Sztainer, D. R., Wall, M. M., Haines, J., Story, M., Sherwood, N. E., & Van den Berg, P. (2007). Shared risk and protective factors for overweight and disordered eating in adolescents. *American Journal of Preventive Medicine, 33*, 359–369.
- Ogden, C. L., & Carroll, M. (2010a). *Prevalence of obesity among children and adolescents: United States, trends 1963–1965 through 2007–2008*. Atlanta, GA: Centers for Disease Control and Prevention.
- Ogden, C. L., & Carroll, M. (2010b). *Prevalence of overweight, obesity, and extreme obesity among adults: United States trends 1976–1980 through 2007–2008*. Atlanta, GA: Centers for Disease Control and Prevention.

- Pew Research Center Publications. (2008a). *How media consumption has changed since 2000*. Retrieved from <http://www.pewinternet.org/Presentations/2010/Jun/How-Media-Consumption-Has-Changed-Since-2000.aspx>
- Pew Research Center Publications. (2008b). *Internet overtakes newspapers as news outlet*. Retrieved from <http://pewresearch.org/pubs/1066/internet-overtakes-newspapers-as-news-source>
- Pew Research Center Publications. (2008c). *Key news audiences now blend online and traditional sources*. Retrieved from <http://pewresearch.org/pubs/928/key-news-audiences-now-blend-online-and-traditional-sources>
- Puhl, R. M., Andreyeva, T., & Brownell, K. D. (2008). Perceptions of weight discrimination: Prevalence and comparison to race and gender discrimination in America. *International Journal of Obesity*, 32, 992–1000.
- Puhl, R. M., & Brownell, K. D. (2006). Confronting and coping with weight stigma: An investigation of overweight and obese adults. *Obesity*, 14, 1802–1815.
- Puhl, R. M., & Heuer, C. A. (2009). The stigma of obesity: A review and update. *Obesity*, 17, 941–964.
- Puhl, R. M., & Heuer, C. A. (2010). Obesity stigma: Important considerations for public health. *American Journal of Public Health*, 100, 1019–1028.
- Puhl, R. M., & Latner, J. D. (2007). Stigma, obesity, and the health of the nation's children. *Psychological Bulletin*, 133, 557–580.
- Puhl, R. M., Moss-Racusin, C. A., & Schwartz, M. B. (2007). Internalization of weight bias: Implications for binge eating and emotional well-being. *Obesity*, 15(1), 19–23.
- Quinlan, N. P., Hoy, M. B., & Costanzo, P. R. (2009). Sticks and stones: The effects of teasing on psychosocial functioning in an overweight treatment-seeking sample. *Social Development*, 18(4), 978–1001.
- Rich, E., & Evans, J. (2005). 'Fat ethics'—The obesity discourse and body politics. *Social Theory and Health*, 3, 341–358.
- Robinson, T., Callister, M., & Jankoski, T. (2008). Portrayal of body weight on children's television sitcoms: A content analysis. *Body Image*, 5, 141–151.
- Roehrig, J. P., & McLean, C. P. (2010). A comparison of stigma toward eating disorders versus depression. *International Journal of Eating Disorders*, 43, 671–674.
- Sandberg, H. (2007). A matter of looks: The framing of obesity in four Swedish daily newspapers. *Communications*, 32, 447–472.
- Society of Professional Journalists. (1996). *Code of ethics*. Retrieved from <http://www.spj.org/ethicscode.asp>
- Stein, K. (2007). When overweight and obesity become “reality.” *Journal of the American Dietetic Association*, 107, 1706–1710.
- Steinberg, P. L., Wason, S., Stern, J. M., Deters, L., Kowal, B., & Seigne, J. (2010). YouTube as a source of prostate cancer information. *Urology*, 75, 619–622.
- Vartanian, L. R., & Novak, S. A. (2010). Internalized societal attitudes moderate the impact of weight stigma on avoidance of exercise. *Obesity*, 19, 757–762.
- Vartanian, L. R., & Shaprow, J. G. (2008). Effects of weight stigma on exercise motivation and behavior: A preliminary investigation among college-aged females. *Journal of Health Psychology*, 13(1), 131–138.
- Wang, C. C. (1998). Portraying stigmatized conditions: Disabling images in public health. *Journal of Health Communication*, 3, 149–159.
- Wang, S. S., Brownell, K. D., & Schwartz, M. B. (2004). The influence of the stigma of obesity on overweight individuals. *International Journal of Obesity*, 28(1), 1333–1337.
- Weiner, B., Perry, R. P., & Magnusson, J. (1988). An attributional analysis of reactions to stigmas. *Journal of Personality and Social Psychology*, 55, 738–748.
- White, S. E., Brown, N. J., & Ginsburg, S. L. (1999). Diversity of body types in network television programming: A content analysis. *Communication Research Reports*, 16, 386–392.