

Escalating Coverage of Obesity in UK Newspapers: The Evolution and Framing of the “Obesity Epidemic” From 1996 to 2010

Shona Hilton¹, Chris Patterson¹ and Alison Teyhan¹

Obesity is one of the fastest growing and most serious public health challenges facing the world in the 21st century. Correspondingly, over the past decade there has been increased interest in how the obesity epidemic has been framed by the media. This study offers the first large-scale examination of the evolution and framing of the obesity epidemic in UK newspapers, identifying shifts in news coverage about the causal drivers of and potential solutions to the obesity epidemic. Seven UK newspapers were selected and 2,414 articles published between 1 January 1996 and 31 December 2010 were retrieved from electronic databases using keyword searches. The thematic content of articles was examined using manifest content analysis. Over the 15-year period there was an increase in media reporting on obesity and in particular on childhood obesity. There was evidence of a trend away from a focus on individuals towards a greater level of reporting on societal solutions such as regulatory change, with the greatest shift in reporting occurring in mid-market and serious newspapers. Given that the media have a huge influence in shaping public opinion, this shift in reporting might be an early indicator to policymakers of a growing public discourse around a need for regulatory change to tackle the obesogenic environment.

Obesity (2012) **20**, 1688–1695. doi:10.1038/oby.2012.27

INTRODUCTION

Obesity is one of the fastest growing and most serious public health challenges facing the world in the 21st century. Over the past decade media interest in what has been coined the “obesity epidemic” has increased (1–3). Much media interest stemmed from concerns raised by the World Health Organisation which, using data from worldwide surveys, issued a global health warning that: “obesity’s impact is so diverse and extreme that it should now be regarded as one of the greatest neglected public health problems of our time” (4). In the intervening years the WHO spearheaded a series of expert consultations to sensitize policymakers, academics, and experts to the problem, estimating that more than 400 million adults (9.8%) are obese worldwide (5). The prevalence of obesity in the UK is higher than most other parts of north-west Europe (6). In 2007 the UK government commissioned the Foresight Report on obesity, which highlighted the UK’s escalating weight problem. The authors estimate that obesity rates doubled in Britain over the last 25 years, with nearly a quarter of adults now obese, and warned that if no action is taken 60% of men, 50% of women, and 25% of children will be obese by 2050, cautioning that: “Britain could be a mainly obese society” (p11) (7). Recent English data (8) indicates that the number of cases of overweight and obesity (BMI \geq 25) increased significantly in women, men, and

children over the period 1993–2009 (Figure 1). Although the increase in incidence in women and men seems to have been relatively constant, the incidence of overweight and obesity in children increased sharply between 2000 and 2004, and fell between 2005 and 2009. It is too early to tell if this decrease in childhood overweight and obesity is the beginning of a long-term trend (8).

There is general agreement that obesity’s high medical, psychological, and social costs, its multiplicity of causes, and its persistence from childhood into adulthood make the case for early prevention (9). However, less agreement exists on the optimum prevention strategies for tackling the problem. Obesity is generally agreed to be primarily linked to increased energy intake and decreased energy expenditure facilitated by environmental influences that favor energy-dense diets and sedentary lifestyles (6). As such, it has been argued that successful prevention strategies need to address both individual and societal factors so that individuals develop strategies to control their weight and policies are enacted that provide support for individuals while eliminating environmental barriers to healthy food choice and active lifestyles (9).

The media are integral to constructions of the obesity epidemic through communicating stories about the nation’s expanding waistlines to the public. In recent years there has

¹CSO/MRC Social and Public Health Sciences Unit, Glasgow, UK. Correspondence: Chris Patterson (cpatterson@sphsu.mrc.ac.uk)

Received 20 October 2011; accepted 26 January 2012; advance online publication 15 March 2012. doi:10.1038/oby.2012.27

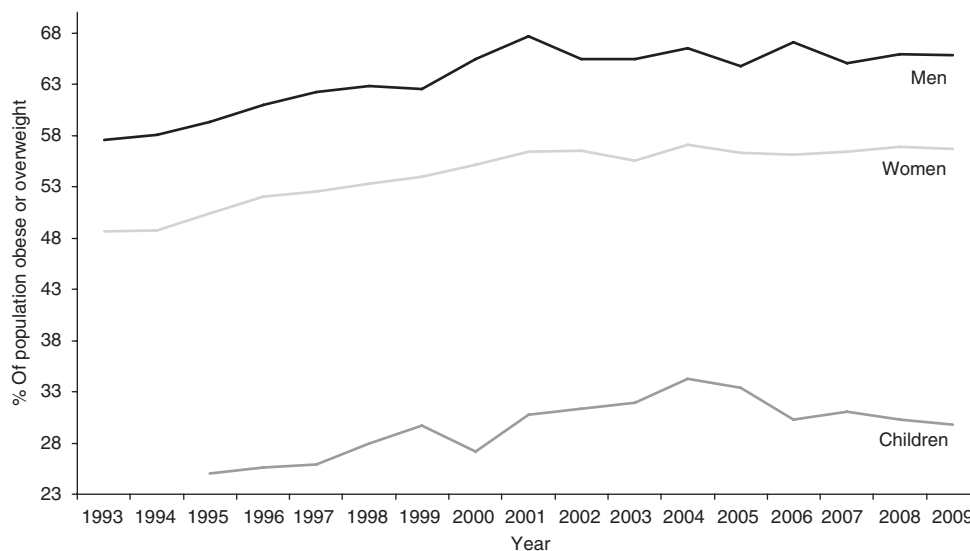


Figure 1 Proportion of obese and overweight adults (16+ years) and children (2–16 years) in England. Source: The Health Survey for England 2009.

been debate about the value of calling the obesity problem an epidemic. Some social researchers argue that it is a socially constructed “postmodern epidemic” which generates images of a society out of control, creating an “emotional maelstrom” (10) and moral panic unlikely to lead to a more knowledgeable public (11). Indeed, far from addressing both individual and societal factors that facilitate obesity, it has been suggested that this moral panic may overburden individuals with personal responsibility while masking the broader sociopolitical influences behind the obesity epidemic (12). In this respect, Lawrence (13) argues that the assignment of blame and burden in public debates can usefully be analyzed in terms of “individual” vs. “systemic” frames, with systemic frames assigning responsibility and action to government, business, and larger social forces requiring regulatory change (13).

We identified four research studies examining the news media’s framing of the obesity problem. Lawrence’s (13) content analysis of the framing of obesity in American newspapers and television news between 1985 and 2004 demonstrates growth in overall coverage accompanied by a shift in the identification of causes of obesity from the individual to the environmental. She suggests that in examining media constructions of the obesity epidemic it is important to identify how the problem has been defined, whether there are any causal interpretations, moral evaluations, recommendations or solutions to the problem of obesity. Kim and Willis (14) conducted an analysis of American newspaper articles and television news reporting of obesity over a 10-year period from 1995–2004 and found that over this period there was a growing trend away from mentions of individual solutions towards a greater focus on societal causes and solutions to the obesity problem. They observed that when societal drivers of obesity are mentioned the news media rarely present societal solutions and that the individual framing greatly outnumbered societal framing in terms of causes and solutions. Another analysis of American media coverage of obesity is presented by Barry *et al.* (15),

whose content analysis of US newspaper, magazine, and television news framing of childhood obesity between 2000 and 2009 found that the number of stories reporting on childhood obesity rose significantly from 2001 to 2003, and then remained at a high level until 2007 before decreasing substantially. Similarly to the findings of Kim and Willis (14), Barry *et al.* (15) found that news stories tended to mention individual solutions more often than system-level solutions. Further, they found that system-level solutions were more likely to be mentioned in newspaper articles than in magazine articles or television news items. Holmes (2) investigated one Canadian newspaper’s framing of the obesity epidemic between 1996 and 2006, identifying a steady increase in overall coverage during that period. Both Lawrence (13) and Holmes (2) observed an increasing focus on childhood obesity during their respective periods of analysis.

Examining media constructions of the obesity epidemic is not only important for understanding the emerging public debate on obesity but also in identifying popular discourses. Popular views on issues can draw on stereotypes and present simplified descriptions of problems which do not always reflect the current state of scientific evidence (7). While public understandings of health and illness cannot be attributed solely to the media since audiences filter what they read, see, and hear through personal knowledge and experiences, it is widely recognized that the media influence people’s beliefs and health-related behaviors (10,16). The recent controversy over the safety of the MMR vaccine, in which the media’s biased reporting of evidence of a link between bowel disease, autism, and the MMR vaccine undermined confidence and uptake in the vaccine, is testimony to the agenda-setting influence of the media in telling readers what to think about (17). Kitzinger notes that the level of media attention “correlates with the degree of salience of these issues for the public...public concern and policy attention rises and falls in response to shifts in media coverage (rather than changes in the actual size of the problem in the real

world)” (18). Thus, the more news coverage an issue receives, the more important the issue may become (19). In this way the news media play an important role in propagating and shaping public understandings about the obesity epidemic.

To our knowledge, this is the first large-scale study of newspapers’ framing of the obesity epidemic in the UK. In this study, we aim to examine the evolution and framing of the obesity epidemic over the past 15 years in British newspapers to identify any shifts in news coverage about the causal drivers of, and potential solutions to, the obesity epidemic.

METHODS AND PROCEDURES

We selected seven UK daily newspapers (including each daily newspaper’s corresponding Sunday newspaper) with high circulation figures and a range of readership profiles (<http://www.abc.org.uk>, <http://www.nrs.co.uk>). The newspapers represented three genres: serious, mid-market tabloids, and tabloids. Our sample consisted of three “serious” newspapers (The Guardian & The Observer; The Independent & The Independent on Sunday; The Daily Telegraph & The Sunday Telegraph), two “mid-market tabloid” newspapers (The Daily Mail & The Mail on Sunday; The Express & The Sunday Express), and two “tabloids” (The Sun & The News of the World; The Mirror & The Sunday Mirror). This typology has been used in other analyses of print media discourses to select a broad sample of newspapers with various readership profiles and political orientations (20,21). The serious genre includes broadsheet and formerly broadsheet newspapers, which are serious in tone, represent a relatively diverse range of political ideologies, and tend to be associated with a middle-class readership. Middle-market tabloids are tabloid-format newspapers that tend to be more serious in tone than those of the tabloid genre, and tend to be associated with a middle-class, right-wing readership. Tabloid newspapers, also referred to as “red tops”, can be less serious and more sensationalist in content. They represent a relatively diverse range of political ideologies, and tend to be associated with a working-class readership (20,21).

Our search period was from 1 January 1996 to 31 December 2010. We selected this period to include a short period leading up to the global health warning issued by the WHO in 1997. Incorporating articles published within the year before the global health warning allows a baseline level and tone of reporting to be gauged. Relevant articles from target publications were identified using the electronic databases Nexis UK and Newsbank, adopting the search terms “obesity”, “obese”, “fat nation”, “fatty”, “fatties” or “lardy” in the headline. This search identified 3,878 articles which were exported into text files. Each article was printed and scrutinized by one researcher from a team of three to establish whether it met two inclusion criteria. The first criterion was that human obesity be the primary focus of article, specifically that obesity was the primary topic of at least 50% of the article. The second criterion was that the article must have been published in the news, comment, feature, business, city, sport, travel or home section of the newspaper; all letters mentioning obesity or mentions of it in TV guides or reviews were excluded. Based on these criteria 1,464 articles were classed as ineligible, leaving 2,414 eligible articles for detailed coding and analysis.

To develop a coding frame a random selection of 100 articles were read through to identify the key discourses around obesity. These discourses became thematic categories in an initial coding frame. Using the principles of grounded theory further batches of 20 articles were read and coded until no new categories emerged from the newspaper articles. At this point, we assessed we had reached “saturation”, which grounded theory suggests is a sense of closure that occurs when data collection ceases to provide new information, and when patterns in the data become evident (22). The coding of the articles was conducted over a 10-week period by three coders who worked together in close collaboration with the first author checking and validating each other’s coding.

Newspapers’ manifest content was analyzed (23). Manifest content refers to that which is explicitly stated, and draws on the objective and replicable qualities of quantitative methods. To systematically quantify manifest content, every article was read line by line and coded to indicate whether each of the thematic categories in the coding frame was mentioned. The key thematic categories examined newspaper framing of biological, individual or societal drivers and solutions. The coding framework recorded the publication, date, page, and article word count. To test the inter-rater reliability of all aspects of coding, a random sample of just over 10% ($n = 280$) of the 2,414 eligible articles were double coded. Using Cohen’s κ -coefficient, we determined the inter-rater agreement for the scoring of each thematic category. This ranged from a fair level of agreement ($\kappa = 0.304$) to an almost perfect level of agreement ($\kappa = 0.871$), based on Landis and Kochs’ (24) “benchmarks” for interpreting and discussing κ .

Data were analyzed using SPSS 15 and Stata 10 (SPSS, Chicago, IL and Stata, College Station, TX). We used χ^2 tests to determine whether constructions of the obesity problem (i.e., how the problem had been defined, key drivers and solutions) were differentially reported in the three different genres of publication (serious, mid-market, and tabloid). We visually examined trends over time in the reporting of drivers and solutions by plotting the proportion of articles mentioning drivers/solutions. Three-year moving averages were plotted to smooth out short-term fluctuations i.e., for 2007 we plotted the average proportion of 2006, 2007, and 2008; for 2008 we plotted the average of 2007, 2008, and 2009 etc. Trends over time were formally tested using logistic regression (where the binary outcome was the presence or absence of a given driver/solution). A systematic model building strategy was used: initially only year was included as a covariate, quadratic and cubic year terms were then added to detect any departures from linearity and were retained in the model where significant. Genre and word count were then included to determine if trends remained significant after adjustment for these potential confounders. Finally, an interaction term between newspaper genre and year (and year squared/cubed where appropriate) was tested to establish whether trends over time differed significantly by genre. Where significant interactions were found, models were re-run stratified by genre. Throughout this paper, statistical significance is defined as $P < 0.05$.

RESULTS

Between 1996 and 2010 a total of 2,414 articles on obesity were published in the seven newspapers included in this study (Table 1). Few of these articles were printed on front pages (<4%), although the proportion varied by publication (from none in The Mirror to 9% of The Telegraph). Article length ranged from 15 to 4,402 words, with an overall median count of 381 words. The distribution of article word length was positively skewed; a large number of articles were short (64% with fewer than 500 words). Tabloid newspaper articles had markedly lower median word counts (162 words) than those of the mid-market (419) and serious (482) publications.

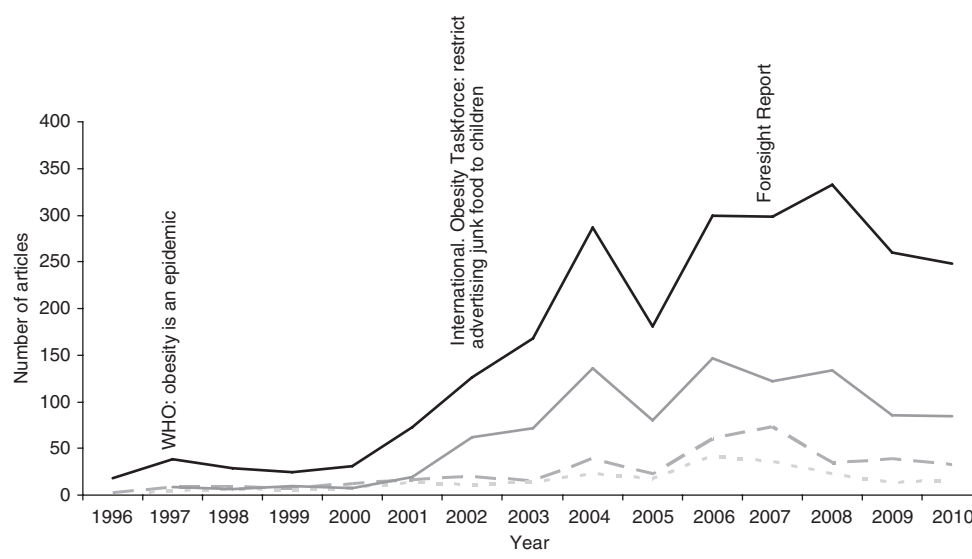
Before 2000 there were less than 40 newspaper articles per year published on obesity. Between 2001 and 2004 this number rapidly increased; in 2004 there were 287 articles. In addition, there was a substantial increase in the total yearly word count of obesity articles, from <20,000 words in 2000 to over 151,000 in 2004. There was a temporary dip in the number of articles in 2005, and a slight decline from 2008 (Figure 2).

Overall, the obesity articles were significantly more likely to report on children (40.4%, 95% confidence interval 38.4–42.4%) than women (16%, 14.6–17.5%) or men (9.4%, 8.2–10.6%). Before 2001 a similar number of articles mentioned men, women, and children in relation to obesity, however, in

Table 1 Summary of articles in sample

Genre	Title	Total articles		Front page articles		Word count		
		<i>n</i>	% (95% CI)	<i>n</i>	% (95% CI)	Lower quartile	Median (50%)	Upper quartile
Serious	Guardian & The Observer	402	16.7 (15.2–18.1)	20	4.98 (2.84–7.10)	343	566	786
	Independent & Independent on Sunday	318	13.2 (11.8–14.5)	7	2.20 (0.58–0.38)	261	477	684
	Daily Telegraph & Sunday Telegraph	315	13 (11.7–14.4)	29	9.21 (6.00–12.42)	235	407	598
Mid-market	Daily Mail & Mail on Sunday	392	16.2 (14.8–17.7)	18	4.59 (2.52–6.67)	310	487	660
	Express & Sunday Express	367	15.2 (13.8–16.6)	15	4.09 (2.05–6.12)	198	338	482
Tabloid	Mirror & Sunday Mirror	304	12.6 (11.3–13.9)	0	0	105	224	494
	The Sun & News of the World	316	13.1 (11.7–14.4)	4	1.27 (0.02–2.50)	77	126	234
Total		2,414	100.0	93	3.85 (3.08–4.62)	180	381	610

CI, confidence interval.

**Figure 2** Number of articles reporting on obesity over time.

subsequent years the reporting of childhood obesity increased (Figure 2). Before 2001, 24.1% (17.0–31.2%) of articles mentioned childhood obesity, compared to 44.2% (40.8–47.6%) from 2001–2005 and 39.9% (37.3–42.4%) from 2005–2010.

Many of the articles reported obesity rates, and those that did were more likely to include UK obesity rates (39.2%, 37.1–41.0%) than obesity rates outwith the UK (9.6%, 8.4–10.7%). A higher proportion of serious (38.7%, 35.8–41.7%) and mid-market (47.6%, 44.0–51.1%) articles reported obesity rates than tabloid articles (29.0%, 22.35–29.26%). A rise in obesity prevalence (either past, present or future) was mentioned in 37.7% of articles (35.8–39.7%), with tabloid articles (25.8%, 22.4–29.2%)

significantly less likely to report rising rates than mid-market (39.1, 35.7–42.6%) and serious (43.9%, 40.8–46.9%) articles.

Problems caused by obesity, both to individuals and society, were reported in many of the articles (Table 2). The most commonly reported problem was the risk to health, mentioned by more than half of articles (52.5%, 50.5–54.5%). Mid-market and serious articles were significantly more likely to mention risks to health than tabloid articles. Articles also reported that obesity was a burden to the National Health Service (NHS) (17.0%, 15.5–18.5%) and was an economic cost to society (14.6%, 13.2–16.0%); mid-market articles were significantly more likely to mention these economic implications of obesity

Table 2 Newspaper reporting on problems of obesity, drivers of obesity, and solutions to obesity, overall and by newspaper genre

	Overall		Tabloid		Mid-market		Serious		χ^2 P value ^a
	n	% (95% CI)	n	% (95% CI)	n	% (95% CI)	n	% (95% CI)	
Problem definitions									
Obesity as a risk to health	1,268	52.5 (5.05–54.5)	269	43.4 (39.5–48.3)	456	60.1 (56.6–63.6)	543	52.5 (49.4–55.5)	<0.0005
Obesity as a cosmetic problem	79	3.3 (2.6–4.0)	20	3.2 (1.8–4.6)	30	4.0 (2.6–5.3)	29	2.8 (1.8–3.8)	0.399
Obesity as a burden to the NHS	410	17.0 (15.5–18.5)	69	11.1 (8.6–13.6)	166	21.9 (18.9–24.8)	175	16.9 (14.6–19.2)	<0.0005
Obesity as an economic cost to society	353	14.6 (13.2–16.0)	62	10.0 (7.6–12.4)	141	18.6 (15.8–21.4)	150	14.5 (12.3–16.6)	<0.0005
Drivers of obesity									
Overall drivers									
Any drivers mentioned	1,467	60.8 (58.8–62.7)	321	51.8 (47.8–55.7)	490	64.6 (61.1–68.0)	656	63.4 (60.4–66.3)	<0.0005
Any biological/genetic driver mentioned	231	9.6 (8.4–10.7)	39	6.3 (4.4–8.2)	82	10.8 (8.6–13.0)	110	10.6 (8.7–12.5)	0.006
Any individual driver mentioned	1,138	47.1 (45.1–49.1)	244	39.4 (35.5–43.2)	398	52.4 (48.9–56.0)	496	47.9 (44.9–51.0)	<0.0005
Any societal driver mentioned	831	34.4 (32.5–36.3)	162	26.1 (22.7–29.6)	268	35.3 (31.9–38.7)	401	38.7 (35.8–41.7)	<0.0005
Individual drivers									
Mentions poor diet, overeating	734	30.4 (28.6–32.2)	158	25.5 (22.0–28.9)	269	35.4 (32.0–38.9)	307	29.7 (26.9–32.4)	<0.0005
Lack of exercise, sedentary lifestyle	596	24.7 (23.0–26.4)	114	19.0 (15.3–21.4)	206	27.1 (24.0–30.3)	276	26.7 (24.0–29.4)	<0.0005
Identifies a lack of parenting	217	9.0 (7.8–10.1)	45	7.3 (5.2–9.3)	76	10.0 (7.9–12.2)	96	9.3 (7.5–11.0)	0.188
Societal drivers									
Identifies poor food labelling, education	104	4.3 (3.5–5.1)	19	3.1 (1.7–4.4)	23	3.0 (1.8–4.3)	62	6.0 (4.5–7.4)	0.002
Abundance of processed/fast food	457	18.9 (17.4–20.5)	78	12.6 (10.0–15.2)	164	21.6 (18.7–24.5)	215	20.8 (18.3–23.2)	<0.0005
Lack of health services, facilities ^b	81	3.4 (2.6–4.1)	10	1.6 (0.6–2.6)	29	3.8 (2.5–5.2)	42	4.1 (2.9–5.3)	0.019
Identifies food/drink advertising, promotions	225	9.3 (8.2–10.5)	23	3.7 (2.2–5.2)	66	8.7 (6.7–10.7)	136	13.1 (11.1–15.2)	0.019
Technological changes, modern living ^c	229	9.5 (8.3–10.7)	38	6.1 (4.2–8.0)	72	9.5 (7.4–11.6)	119	11.5 (9.6–13.4)	0.001
Solutions to obesity									
Any solution mentioned	1,607	66.6 (64.7–68.5)	359	57.9 (54.0–61.8)	557	73.4 (70.2–76.5)	691	66.8 (63.9–69.6)	<0.0005
Biological	462	19.1 (17.6–20.7)	97	15.7 (12.8–18.5)	168	22.1 (19.2–25.0)	197	19.0 (16.6–21.4)	0.01
Individual	865	35.8 (33.9–37.7)	198	31.9 (28.2–35.6)	332	43.7 (40.2–47.3)	335	32.4 (29.5–35.2)	<0.0005
Societal	928	38.4 (36.5–40.4)	173	27.9 (24.4–31.4)	311	41.0 (37.5–44.5)	444	42.9 (39.9–45.9)	<0.0005

CI, confidence interval; NHS, National Health Service.

^a χ^2 test of whether proportions differed between genres. ^bIncludes a lack of weight loss and fitness interventions offered by health services, and a lack of good fitness facilities such as parks and leisure centres. ^cIncludes technological developments and changes in modern life that reduce energy expenditure, such as sedentary working lives and the use of motorized transport.

than tabloid or serious articles. The term “obesity epidemic” was used in 444 of the articles (18.4%, 16.81–19.9%), and first occurred in serious newspaper articles in 1996, tabloids in 1998, and mid-markets in 1999.

The majority (60.8%, 58.8–62.7%) of articles mentioned at least one causal driver of obesity, but tabloid articles were significantly less likely to report causal drivers than those of the other genres. Individual drivers were the most commonly mentioned (47.1%, 45.2–49.1%), ahead of societal drivers (34.4%, 32.5–36.3%), and biological/genetic drivers (9.6%, 8.4–10.7%). Individual drivers were most likely to be mentioned in mid-market articles (52.4%, 48.9–56.0%) while societal drivers were most frequently mentioned in serious articles (38.7%, 35.8–41.7%). Specific individual drivers mentioned included poor diet and over-eating (30.4%, 28.6–32.2%); lack of exercise and sedentary lifestyle (24.7%, 23.0–26.4%); and a lack of parenting (9.0%, 7.8–10.1%). Societal drivers included an abundance of processed food and fast food (18.9%, 17.4–20.5%); food and drink advertising and promotions (9.3%, 8.2–10.5%); poor food labelling and education (4.3%, 3.5–5.1%); technological changes and changes to modern living (9.5%, 8.3–10.7%); and a lack of health services, interventions, and facilities (3.4%, 2.6–4.1%).

Two-thirds of the articles mentioned one or more solutions to obesity. Many mentioned societal solutions (38.4%, 36.5–40.4%), such as improving education and regulating food labelling. A similar proportion mentioned individual solutions (35.8%, 33.9–37.7%) such as changing individual eating and exercise behaviors. Biological solutions, such as pharmaceutical or surgical treatment, were reported by 19.1% (17.6–20.7%) of articles. Mid-market articles were most likely to mention any solutions, as well as biological and individual solutions specifically. However, serious articles were slightly more likely to mention societal solutions than mid-market articles.

Trends over time in the reporting of drivers and solutions were examined (Figure 3). There was a significant decline in the proportion of articles which mentioned individual drivers of obesity between 2001 and 2010; in the earlier years there appears to have been a slight rise but small numbers make it difficult to draw firm conclusions. The trend in individual drivers differed slightly by genre (there was a significant interaction between the cubic term for year and genre, $P = 0.031$); the decline was greatest for the mid-market articles. By 2010 the proportion of articles mentioning individual drivers was similar in all three genres, and adjustment for article word count did not alter these findings. The trend in reporting of societal drivers was fit best by a quadratic effect; there was a slight increase in reporting from 1996 to 2002/03 followed by a decline. This trend did not differ by genre. A slight but significant linear increase in reporting of individual solutions was identified after adjusting for genre and word count. This trend did not differ by genre. There was a nonlinear trend in the reporting of societal solutions, characterized by a significant increase from 1996 to 2006 followed by a gradual decline. Adjustment for genre and word count did not alter this finding, and the trend did not differ by genre.

DISCUSSION

Much attention is focused on obesity by the news media. As a health risk obesity is recognized as a contributing factor to many health problems; over half of the articles analyzed reported on the health implications of obesity, and many reported on the economic cost to the NHS and to society as a whole. Over the past decade studies examining the media coverage of obesity have all reported a rise in coverage (13–15), with some research identifying a sharp 20-fold increase over a 5-year period from 1999 to 2004 (3). This concurs with our findings that increasing numbers of newspaper articles reported on obesity from

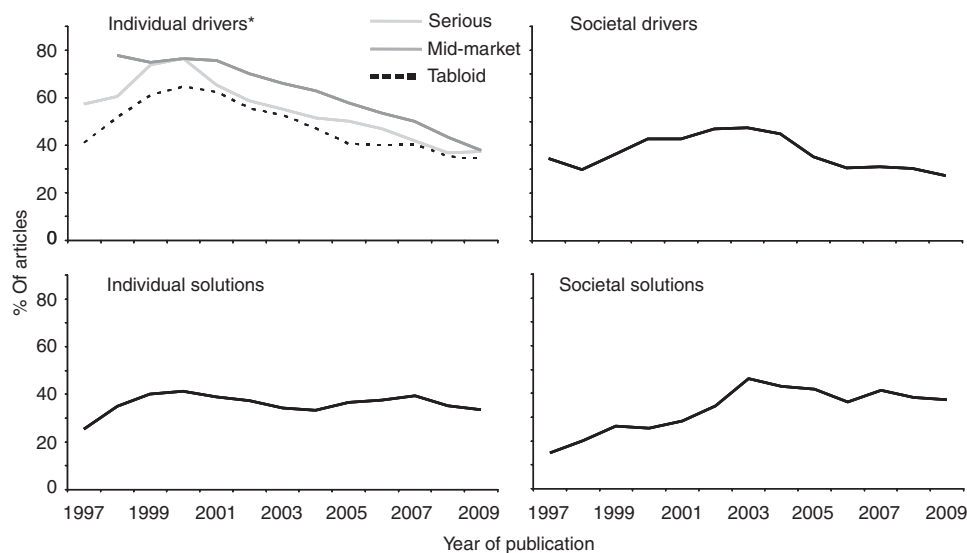


Figure 3 Trends in the reporting of drivers and solutions (observed values, 3-year moving averages shown). *Trends presented by genre for individual drivers as interaction between year cubed and genre was significant ($P = 0.03$).

1996 to 2010, with a sharp increase leading up to 2004, when there was much newspaper coverage surrounding the WHO Task Force Report (25). This rise in media reporting on obesity also corresponds with the steady global rise in obesity rates and with increasing efforts to identify causal drivers of, and potential solutions to, the obesity problem. In this respect, the WHO has adopted a strong stance in warning the world of the dire consequences for global health posed by the escalating problem (4) and in identifying responsibility for solving the problem, stating that “it is no longer acceptable to blame individuals for obesity” (25).

In contrast to the fears expressed about the use of the word “epidemic” leading to a sense of moral panic and overly burdening individuals with responsibility for the obesity problem (12), Holmes (2) argues that framing the problem as an “epidemic” helps to define it as a societal problem based on the argument that, while obesity as an illness can be framed as a risk to the individual, an epidemic always presents a threat to populations and therefore needs to be addressed at the population level. The UK’s Foresight Report on obesity highlights the need to go beyond targeting messages to individuals to eat less and exercise more, and to tackle the causal drivers of the obesogenic environment (7). How the obesity problem is framed and whom is held responsible by experts in key reports is important because these discourses are often reported by the media, who in turn play a critical role in defining the scale of the obesity problem and in telling the public what is important to know about the issue.

Our analysis identified a slight shift away from a focus on individuals to a greater level of reporting of societal solutions (Figure 3). The most pronounced element of these changes was the decline in the proportion of articles reporting on individual drivers, such as poor diet and lack of exercise, which is consistent with the findings of other studies in this area. Kim and Willis (14) also found an increase in news reporting on obesity and a growing trend away from mentions of individual solutions towards a greater focus on societal causes and solutions to the obesity problem. Similarly, Lawrence (13) identified a trend towards a greater focus on the role societal factors have played in obesity in the United States, and asserts that this overall trend was accompanied by an increase in the number of political and public debates about taxing junk food and lawsuits filed against fast food restaurants. On the 28 April 2011, Margaret Chan, Director-General of the WHO, was reported in the media calling for the multinational corporations who, driven by commercial interests, aggressively advertise cheap food and drinks laden with fat and sugar, to share the responsibility for the obesity epidemic (26).

By analyzing the frequency of mentions of different types of drivers of obesity, we observed that articles reporting on individual drivers frequently acknowledged the role of both poor diet and sedentary lifestyles in causing obesity, while articles reporting on societal drivers were more likely to identify those drivers related to diet (i.e., energy intake) than those related to sedentary lifestyles (i.e., energy expenditure). As such, it could be that the shift in media reporting (and

the likely corresponding shift in public understandings) from individual to societal drivers is accompanied by a tendency to view obesity as being disproportionately caused by excess energy intake rather than insufficient energy expenditure. It may be pertinent for public health campaigns to focus on the importance of exercise to rebalance public perceptions. Conversely, policymakers may strategically choose to focus on structural solutions that seek to improve diet instead of increasing activity on the basis that those solutions are more likely to be seen as legitimate.

The finding that newspapers of the serious genre are more likely to report on both societal drivers and societal solutions than those of the other genres is perhaps predictable, but this evidence may be useful in informing the design and targeting of public health promotion campaigns. Positive correlations between low socioeconomic status and vulnerability to obesity are well-established and as such educators and policymakers must take into account that the newspapers targeted at the most vulnerable group are doing the least to foster attitudes receptive to structural solutions.

Coinciding with the recent indications from the Health Survey for England that the upward trend in obesity may have slowed in recent years, we found a decline in the number of newspaper articles published about obesity between 2008 and 2010 (Figure 2). Barry *et al.* (15) identified a similar decline in US media reporting on obesity over the same period. We are unsure why there was a temporary dip in newspaper coverage of obesity in 2005, but a potential explanation is that other news events were dominating media attention (e.g., the aftermath of the 2004 Indian Ocean tsunami and the 7 July 2005 London bombings).

Our analysis identified a substantial rise in the proportion of articles reporting on obesity in children in the mid-2000s. Moffat (27) suggests that there has been a sharp rise in interest in childhood obesity since 2000. This is consistent with Holmes and Lawrence’s findings and accompanies an increased incidence of factual and fictional television programmes about overweight children in the UK in recent years, such as: “Honey, we’re killing the kids” “Jamie’s school dinners” “Supersize vs. superskinny kids” and “Fat families”. The focus on children and obesity may be the result of a general acknowledgement that children are most vulnerable to the effects of food advertising (28). In 2003, the UK Office of Communications found advertisers of fast food, soft drinks, and restaurant chains spent £522 million promoting their products on television (29), creating a “toxic environment” in which the food industry promotes inexpensive, high-convenience, high-density and low-nutrient food, and in which physical activity is low because of a reliance on cars as a result of poor urban planning and neighborhoods perceived to be unsafe (27).

There may be a relationship between the increased media focus on child obesity and the shift from individual to societal causes and solutions. Schneider and Ingram (30) argue that social constructions of populations influence the choices of policymakers, and children as defined as dependents: a powerless, positively-viewed group who are not expected to be responsible

for their own well-being. Portraying the obesity epidemic as a problem that affects children creates an atmosphere in which policy-based solutions to obesity are more easily justified than they might otherwise be.

The study's findings should be viewed in light of several limitations. First, our findings represent discourse in newspapers exclusively, not those in wider mass media, as such the trends identified cannot be generalized to the broader media. Second, the range of κ -values of inter-rater agreement indicated that some categories were more consistently coded than others, and finally that by using manifest coding we may have overlooked more nuanced aspects of reporting, for example an article may mention children and societal drivers, but our method does not allow scrutiny of how the article relates these two categories to each other. Further analysis of the sample using qualitative methods is planned, and will be valuable in shedding light on such gaps. Limitations aside, our study has a number of strengths. It is the first large-scale examination of UK newspapers covering a relatively long period, and our approach to coding each article by hand was highly rigorous compared to the quicker method of computer-aided word searches.

In conclusion, examining media coverage of issues sheds light on how ideas develop, gain credibility and become part of public discourse. Numerous studies have shown that the public identify the media as their primary source of science and medical information (31) and that the agenda-setting function of the media is highly influential in telling readers what to think about. As obesity continues to escalate and each generation becomes heavier than the last, it seems little progress has been made in halting the obesity epidemic since the WHO's early warnings were issued. From this analysis, it seems that over the past 15 years, although there has been a steady increase in obesity rates, there has been a much sharper increase in news stories reporting obesity, suggesting it has become higher on the news agenda. There is also some evidence of a slight shift away from framing the problem around individual drivers, which tend to focus on voluntary approaches to individual change, to viewing the epidemic as one best tackled by regulatory change at the population level. This changing public discourse carries some promise for reframing the scope of the problem, and might be an early indicator to policymakers of a growing public discourse calling for regulatory change aimed at tackling the obesogenic environment.

DISCLOSURE

The authors declared no conflict of interest.
See the online ICMJE Conflict of Interest Forms for this article.

© 2012 The Obesity Society

REFERENCES

- Gard M, Wright J. *The Obesity Epidemic: Science, Morality and Ideology*. Routledge: Abingdon, 2005.
- Holmes BJ. Media coverage of Canada's obesity epidemic: illustrating the subtleties of surveillance medicine. *Crit Pub Health* 2009;19:223–233.
- Campos P. *The Obesity Myth: Why America's Obsession With Weight is Hazardous to Your Health*. Penguin: New York, 2004.

- World Health Organisation. Obesity epidemic puts millions at risk from related diseases (press release WHO/46.12 June 1997) available at: <<http://www.who.int/archives/inf-pr-1997/en/pr97-46.htm>>.
- World Health Organisation. *Obesity: Preventing and Managing the Global Epidemic*. WHO: Geneva, 2000.
- Jebb S. Obesity: causes and consequences. *Women's Health Medicine* 2004;1:38–41.
- UK Government's Foresight Programme Government Office for Science. *Foresight Tackling Obesities: Future Choices Project report*. London.
- The NHS Information Centre. In: Craig RH (ed). *Health Survey for England 2009: Health and Lifestyles (summary of key findings)*. The NHS Information Centre: Leeds, 2010.
- Nestle M, Jacobson MF. Halting the obesity epidemic: a public health policy approach. *Public Health Rep* 2000;115:12–24.
- Gwyn R. *Communicating Health and Illness*. Sage Publications: London, 2002.
- Boero N. All the news that's Fat to Print: The American "Obesity Epidemic" and the media. *Qual Sociol* 2007;30:41–60.
- Maher J, Fraser S, Lindsay J. Between provisioning and consuming?: Children, mothers and 'childhood obesity'. *Health Sociol Rev* 2010;19:3726.
- Lawrence RG. Framing obesity: the evolution of news discourse on a public health issue. *Press/Politics* 2004;9:56–75.
- Kim SH, Willis LA. Talking about obesity: news framing of who is responsible for causing and fixing the problem. *J Health Commun* 2007;12:359–376.
- Barry CL, Jarlenski M, Grob R, Schlesinger M, Gollust SE. News media framing of childhood obesity in the United States from 2000 to 2009. *Pediatrics* 2011;128:132–145.
- Kline KN. A decade of research of health content in the media: the focus on health challenges and sociocultural context and attendant informational and ideological problems. *J Health Commun* 2006;11:43–49.
- Hilton S, Petticrew M, Hunt K. Parents' champions vs. vested interests: who do parents believe about MMR? A qualitative study. *BMC Public Health* 2007;7:42.
- Kitzinger J. *Framing Abuse: Media Influence and Public Understandings of Sexual Violence Against Children*. Pluto: London, 2004.
- McCombs ME, Shaw DL. The agenda setting function of the mass media. *Pub Opin Quar* 1972;36:176–187.
- Williams SJ, Seale C, Boden S, Lowe P, Steinberg DL. Medicalization and beyond: the social construction of insomnia and snoring in the news. *Health (London)* 2008;12:251–268.
- Hilton S, Hunt K, Langan M, Bedford H, Petticrew M. Newsprint media representations of the introduction of the HPV vaccination programme for cervical cancer prevention in the UK (2005–2008). *Soc Sci Med* 2010;70:942–950.
- Glaser BG, Strauss AL. *The Discovery of Grounded Theory*. Aldine: Chicago, IL, 1967.
- Altheide D. *Creating Fear: News and the Construction of Crisis*. Aldine de Gruyter: Hawthorne, New York, 2002.
- Landis JR, Koch GG. The measurement of observer agreement for categorical data. *Biometrics* 1977;33:159–174.
- World Health Organization FAO Report. *Expert Consultation on diet, nutrition and the prevention of chronic diseases*. WHO: Geneva, 2002.
- Adams S, Beckford M. British men among the fattest in Europe. *The Telegraph*. 28 April 2011.
- Moffat T. The "childhood obesity epidemic": health crisis or social construction? *Med Anthropol Q* 2010;24:1–21.
- Kline S. Countering children's sedentary lifestyles: and evaluative study of a media-risk education approach. *Childhood* 2005;12:239–258.
- Ofcom. Childhood obesity: Food advertising in context. URL <<http://stakeholders.ofcom.org.uk/binaries/research/tv-research/report2.pdf>>. Accessed March 2011.
- Schneider A, Ingram H. Social constructions of target populations: implications for politics and policy. *Am Pol Sci Rev* 1993;87:334–336.
- Hargreaves I, Lewis J, Speers T. *Towards a Better Map: Science, the Public and the Media*. Cardiff University: Cardiff, 2003.



This work is licensed under the Creative Commons Attribution-NonCommercial-NoDerivative Works 3.0 Unported License. To view a copy of this license, visit <http://creativecommons.org/licenses/by-nc-nd/3.0/>