

REVIEW

Pregnancy and Pediatrics / Policy

Newspaper media framing of obesity during pregnancy in the UK: A review and framework synthesis

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Summary

Two thirds of women report experiencing weight stigma during pregnancy. Newspaper media is powerful in framing health issues. This review synthesized UK newspaper media portrayal of maternal obesity. NexisUni was searched to identify newspaper articles, published January 2010 to May 2021, reporting content on obesity during pregnancy. Framework synthesis integrated quantitative and qualitative analysis of the content of articles. There were 442 articles included (59% tabloids and 41% broadsheets). Three overarching themes with interacting sub-themes were as follows: (1) Women were blamed for their weight, risks, and NHS impact. (2) Women were solely responsible for solving obesity, gendered from school age. (3) Women with obesity were a burden on individuals (e.g., themselves, their children, and health professionals), to society, and the NHS. Catastrophizing language framed the “problem,” “scale,” and “public health concern” of maternal obesity, emphasizing risk, and danger and was alarmist, aggressive, and violent as to elicit fear or devalue women. Articles platformed ‘expert’ voices rather than women's lived experiences. This review identified that UK newspaper media negatively frames and oversimplifies the topic of maternal obesity. Exposure to blaming and alarmist messaging could increase women's guilt, stigma, and internalized weight bias. The newspaper media should be harnessed to de-stigmatize maternal obesity and promote maternal well-being.

KEYWORDS

media, obesity, pregnancy, stigma

1 | INTRODUCTION

Obesity is described as being the last socially acceptable form of prejudice,¹ is widely featured in mainstream media in the form of fat humour, and is present in health campaigns.^{2,3} Weight discrimination (i.e., negative, unequal treatment due to weight status)

is reported to be up to nine-fold higher among people living with obesity than among those with a “normal” weight.⁴ A recent international study identified that 55.6% to 61.3% of participants enrolled in Weight Watchers International reported experiencing weight stigma, also indicating these experiences came from family members, classmates, doctors, co-workers, and friends.⁵ Weight

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discrimination is up to three times higher among women than men and is most prevalent among those aged under 45 years,⁴ making this an important area for maternal obesity research.

The implications of experiencing weight stigma are multiple, including individuals avoiding accessing healthcare and routine check-ups, poorer healthcare experiences and quality of care, and judgment from health professionals.⁶ Experiencing weight stigma increases physiological stress, food consumption, binge eating, and weight gain and reduces physical activity, therefore negatively impacting health.⁷ Experiencing weight stigma often results in weight bias internalization, whereby individuals apply negative weight-based stereotypes to themselves and engage in self-blame for their weight,⁸ which subsequently contributes to poorer health outcomes including body image concern, self-esteem, depressive symptoms,⁹ and disordered eating behaviors.¹⁰ In 2020, an international consensus statement was published in *Nature Medicine* for ending obesity stigma, which identifies that public health efforts on obesity prevention, treatment, and management need to target mitigation of stigma to be effective.¹¹

Women's bodies are a source of constant scrutiny, subjected to evaluation, and judgment by others. Women receive persistent instruction on how their bodies should look, function, and behave, from multiple sources including the media, medicine, and wider society.¹² During pregnancy, the maternal body is subject to further scrutiny, monitoring and control.¹² However, in the 1990s, Wiles¹³ described how pregnancy may provide some release from the societal pressure for thinness due to the greater social acceptability of having a larger body during this time. Therefore, pregnancy was posited as being a period when women might feel less negative about their size. There was limited subsequent focus on maternal obesity stigma in the academic literature, until recently. Prevalence of maternal pre-pregnancy obesity has been increasing over time; in the UK, 22% of women enter pregnancy with a BMI ≥ 30 kg/m².¹⁴ Alongside this, there has been increasing research focus on the health outcomes associated with maternal obesity. A resurgent interest in this topic has led to a body of literature demonstrating that weight stigma in pregnancy is pervasive and associated with several adverse behavioral and mental health indicators.^{15,16} For instance, approximately two thirds of women report experiencing some form of pregnancy-related weight stigma during or after pregnancy.¹⁷

Despite falling national circulation, newspapers (including online publications) still provide a platform for reaching the public and shaping opinions about what issues warrant attention.^{18–21} By giving prominence to certain topics or opinions in a debate, media outlets play a potentially powerful role in shaping the public agenda and determining how health issues are framed.²² Previous research has established the influence of news media framing in relation to obesity, demonstrating that attitudes toward obesity can influence the level of support for policy interventions.²³ The contested nature of obesity—as a risk factor or disease, as a product of complex causal factors or personal moral failing—complicates its presentations and perceptions. Several studies have examined media representations of obesity in general,^{24–29} but few have focused on pregnancy. Those that have, involved small numbers of US or Australian news outlets (three to five

newspapers) and stories published over relatively short time periods (3 months to 3 years).^{30–32} Given the importance of news media portrayal of obesity, and the limited evidence-base relating to maternal obesity, this review aimed to explore the UK newspaper media portrayal of obesity in the pregnancy context at a time of heightened awareness following publication of national maternal obesity guidelines.^{33,34}

2 | METHODS

We conducted a review of newsprint media drawing on similar methods used by Hilton et al.^{21,23} This relatively novel type of review involves using systematic methods to identify, select, and analyze relevant news media articles, synthesizing the data to offer new insights or critical perspectives that enhance the state of knowledge on a particular topic. We included all national UK newspapers in this review, including broadsheets (generally considered “serious” or upmarket) and tabloids (considered downmarket) along with their online and Sunday counterparts. The searches dated from 2010, which marked when the first UK national guidelines for maternal obesity were published.^{33,34} The NexisUni database³⁵ was searched in May 2021 for articles published within UK newspapers using search terms relating to pregnancy and obesity (Supporting Information S1). The retrieved articles were deduplicated and screened independently (by NH, EE, and SV). Articles were included if they reported content relating to maternal pre-existing obesity and pregnancy and excluded if they (i) did not relate directly to pre-existing obesity (e.g., focusing on weight gain rather than obesity); (ii) mentioned mothers weight status but not during pregnancy; (iii) were published in local/regional newspapers due to NexisUni not having comprehensive inclusion of these and the relatively low-influence of these news media beyond the UK media-market; (iv) were published outside the UK; and (v) were published in non-news sections of newspapers (e.g., letters, obituaries, film/book reviews, and TV listings). We also excluded duplicate articles published in the same newspaper (e.g., in the online and print editions); the longer version was included.

Framework synthesis provides a structured approach to organize and analyze data and to integrate quantitative and qualitative data.³⁶ An a priori framework can be modified to incorporate data driven elements informed by the dataset.³⁷ We followed five stages: familiarization, identification of a framework, indexing, charting, and mapping and interpretation.³⁸ Our a priori framework was informed by maternal obesity literature, obesity news media studies, and the research aim. The framework incorporated data driven themes during the familiarization, identification of a framework, and indexing stages of synthesis. The final framework (Table S1) was used (by NH, EE, TI, and AIR) to code all data in the articles. Headlines were analyzed separately due to the important role they play in capturing the reader's attention and influencing what they take away from an article.³⁹ We paid particular attention to differences by newspaper type, in recognition that tabloids tend to adopt a more a sensationalist approach to news headlines.⁴⁰ All authors independently pilot-coded a sample of

articles to identify any areas of inconsistency. One area was particularly subjective: tone of headline (i.e., positive/neutral/negative). We set criteria for coding tone of the headline to improve consistency in coding: negative-tone headlines included, for example, pejorative language, blame, and alarmist messaging; positive and neutral coding were merged to reflect, for example, calls for support for women, and those that did not explicitly have the features of the negative-tone headlines. A second reviewer validated all headline coding. Quantitative analysis of the coded dataset was carried out using SPSS.⁴¹ Where appropriate, the Chi square test of independence was used to compare tabloid and broadsheet reporting. Where pairwise post hoc testing was undertaken, following a significant Chi square test of independence, the Bonferroni Adjustment was applied to reduce the risk of Type I errors. A significance threshold of $p < 0.05$ was established a priori. The Chi square goodness of fit test was used to examine the null hypothesis that the articles would be equally distributed between categories. Each article was uploaded into Taguette⁴² for qualitative coding. The “tags” (i.e., codes) were defined using the framework themes. Pilot coding was carried out by all authors to check for consistency, and the tags were updated to include additional context following discussion of any discrepancies. Data were coded line by line to each relevant tag. The coded data for each tag were exported for synthesis. We used an interpretive synthesis approach⁴³ to explore patterns in the data and integrate the qualitative and quantitative data into the final overarching themes and sub-themes (i.e., the charting, mapping, and interpretation stages of framework synthesis). The final themes are described narratively with interpretation and supporting verbatim quotes from articles to illustrate key findings. Where quotes reflect direct voices of women, individuals portrayed as being experts or representing expert organizations, health professionals, or research teams rather than journalist narrative, we have specified whose voice is reported. The use of uppercase in the articles is maintained in quotes. Article dates are provided as DD/MM/YYYY.

3 | RESULTS

Searches identified 3,644 articles and 442 met the eligibility criteria and were included in the synthesis (Figure S1): 261 (59%) featured in tabloid newspapers and 181 (41%) in broadsheets (Table S2A,B). Three overarching themes were threaded throughout the results: the blame, responsibility, and burden of women living with obesity (Figure 1). Multiple subthemes were present including health outcomes for the mum and baby, the impact of maternal obesity on the NHS, obesity causes and solutions, and calls for action. There was a strong sense of blaming women for the increased risk of pregnancy complications (health outcome), for the impact of their obesity on NHS care requirements, costs and health professionals' health and well-being (NHS impact), and for their weight status (causes/solutions). The solutions to maternal obesity were framed as being the responsibility of women (causes/solutions; call to action) to reduce their weight and the weight of future generations, to prevent adverse pregnancy outcomes (health outcomes), and to alleviate the burden

on the NHS (NHS Impact). The burden of maternal obesity was ever-present: women were a burden on individuals (e.g., themselves, their children, and health professionals) (health outcomes; NHS Impact), to society by being a cause of the “epidemic” of obesity (causes/solutions), and on the NHS relating to increased costs and demands for care and compromising health professionals' own health and well-being (NHS Impact). Catastrophizing language (i.e., assuming the worst case scenario is inevitable or framing concepts as being disastrous) was used throughout articles, framing the “problem and scale” of maternal obesity, highlighting “public health concern,” and emphasizing risk, danger, pressure, and suffering: Such language was alarmist, aggressive, or violent. Finally, there were patterns in whose voice was present in the articles, with women's voices—the lived experience—predominantly absent. There were connections between all themes, sub-themes, and catastrophizing language. Throughout, these were underpinned by multiple “oversimplifications” relating to obesity development, weight management strategies, and the complex causal pathways between maternal obesity and health outcomes.

3.1 | Headlines

Among articles where headlines explicitly mentioned maternal obesity ($n = 242$), a significantly larger proportion (87%) had a negative tone than a neutral or positive tone ($\chi^2[2] = 133.89, p < 0.001$). A greater proportion of tabloid headlines had a negative tone than broadsheets ($\chi^2[2] = 4.05, p = 0.04$) (Table S3). The negative headlines reported health risks of maternal obesity (primarily to the baby). They also described “shocking,” “alarming,” or “record breaking” prevalence of maternal obesity, “strain” and “pressure” on the NHS, and women's responsibility to control their weight, and used stigmatizing puns. The headlines coded as positive or neutral tended to not be overtly negative, rather than being clearly positive. These headlines positioned weight loss as being the ultimate goal to achieve (leading to positive outcomes for the mother and baby), focused on interventions for weight loss, and called for support. They primarily framed obesity as being completely within women's control.

3.2 | Primary focus and content of the story

The articles predominantly focused on maternal obesity as the primary topic rather than a secondary topic or brief mention within a wider article on obesity or maternal health ($\chi^2[2] = 145.7, p < 0.001$), with no difference between newspaper types ($p = 0.11$) (Table S3). A greater proportion of articles featured research or data as the primary content of the story compared to articles primarily featuring editorials/journalists' opinions, case studies/lived experience, or policy/practice ($\chi^2[2] = 675.20, p < 0.001$), with a weakly significant association between newspaper type and content ($\chi^2[4] = 9.95, p = 0.041$). Overall, the majority of articles reported research to some extent, even if it was not the primary focus; this did not vary by newspaper type ($p = 0.31$).

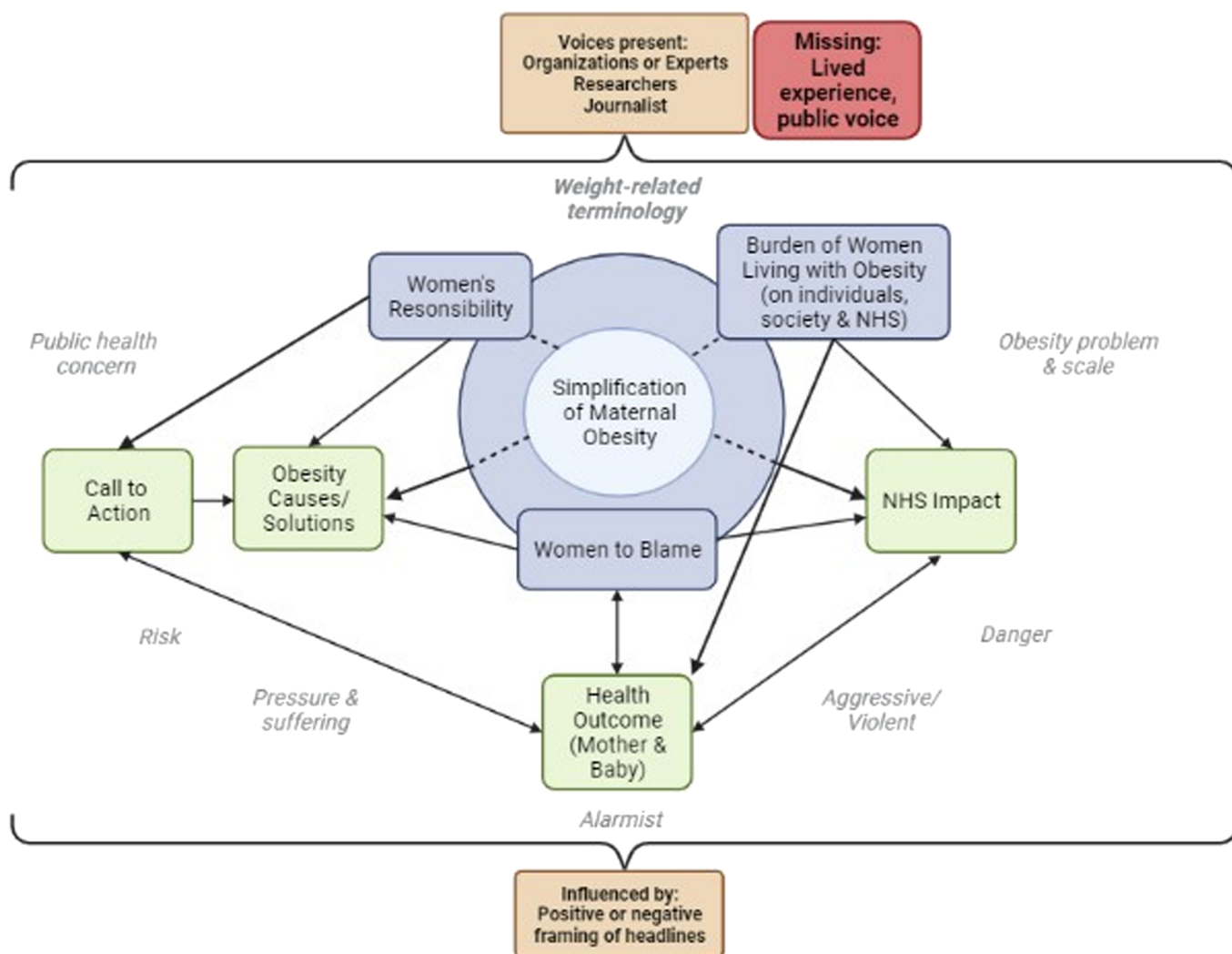


FIGURE 1 Visual representation of themes. Legend: Blue boxes reflect the main themes, green boxes sub-themes, and orange/red boxes the wider context. Gray text refers to catastrophizing language descriptors used throughout articles (this figure was created using biorender.com).

3.3 | Voices present

Broadsheets and tabloids did not differ in their inclusion of comments or opinions from research teams ($p = 0.61$), organizations or experts ($p = 0.57$), or journalists ($p = 0.30$) (Table S3). However, there was a significant association between newspaper type and the presence of patients or public voices (i.e., lived experiences); although rarely featured overall (6%), they were most likely present in tabloids ($\chi^2[1] = 5.39$, $p = 0.02$). The inclusion of women's voices was primarily in the context of reinforcing a central narrative around heightened risks during pregnancy, personal responsibility, and (self) blame using first-person accounts of humiliation and shame: "After giving birth I was hoisted over to a stretcher bed to be wheeled back to the ward. But it collapsed, leaving me in a heap. That was the final straw. I started cutting out the junk food" (Woman's voice, The Sun 20/12/2014). Women described negative emotions such as feeling "stupid," "guilty," and "my fault there might be a problem." When women

described their experiences, they blamed their weight and themselves, often on the basis of interactions with health professionals.

3.4 | Health outcomes

The frequency of articles reporting health outcomes for the mother, baby or both was not equally distributed ($\chi^2[3] = 287.65$, $p < 0.001$). When reported, health outcomes primarily related to the baby, with a minority focusing on the mother's health (Table S3), with no significant difference between newspaper type ($p = 0.698$). When health outcomes related to the baby were reported ($n = 1,119$ codes, Table S4), they fell into two broad categories: immediate and longer term. Most frequently cited immediate health outcomes were large-for-gestational age ($n = 145$ articles), stillbirth ($n = 99$), infant mortality ($n = 83$), miscarriage ($n = 60$), fetal anomalies ($n = 53$), and premature birth ($n = 41$). Longer term infant health outcomes included

cardiovascular or metabolic conditions ($n = 158$), development of child or adult obesity ($n = 121$), and general non-specific “threats” to later health ($n = 100$). Health outcomes were frequently included as long lists in articles to underscore the gravity of the message: “And other risks for the baby include birth defects, prematurity, stillbirth and neonatal death. There is also a connection with congenital abnormalities, including spina bifida, hydrocephalus, heart defects and cleft lip and palate” (The Mirror 06/12/2012). The mother's health outcomes were reported less frequently than for the child ($n = 541$ codes; Table S4) and mainly fell into two categories: pregnancy related and birth related. Pregnancy-related outcomes were most frequently gestational diabetes ($n = 114$ articles), hypertensive disorders ($n = 106$), maternal mortality ($n = 43$), and blood clots ($n = 36$). Birth-related outcomes included complex delivery modalities such as cesarean delivery ($n = 65$), obstetric complications ($n = 38$), and postpartum hemorrhage ($n = 21$). In contrast to the infant, maternal health outcomes beyond the pregnancy rarely featured with the exception of the persistence of obesity. However, similar to the baby, maternal health outcomes were often stated at length with a sense of catastrophe to the central story: “The list of risks for the obese mother is just as dramatic - diabetes, eclampsia, high blood pressure, pulmonary embolism, slow labour, emergency caesarean, excessive bleeding and wound infection” (The Mirror 06/12/2012).

3.5 | NHS impact

Data relating to impact of maternal obesity on the NHS related the obesity epidemic putting “more pressure on already struggling maternity units” (Health professionals voice, The Independent 17/12/2017). There was reference to the need for extra, more demanding, resource intensive, or specialist care and how maternal obesity put certain staff (e.g., sonographers) under physical strain. Articles highlighted how maternity units were unprepared to treat these more demanding patients. There was also emphasis on the financial burden of maternal obesity on the NHS: “In Lancashire, the University Hospitals of Morecambe Bay NHS Foundation Trust forked out £42,010 on seven giant birthing beds for obese mums-to-be” (The Sun 05/09/2011).

3.6 | Obesity causes and solutions

The underlying causes of maternal obesity were framed as being related to mothers excessive eating and not exercising. There was minimal reference to wider socio-economic or demographic inequalities “A lot of this is caused by people needing to simply overhaul their lifestyle, eating habits, being overweight and lack of exercise” (Expert/organization voice, The Mirror 26/07/2018). For solutions, the majority of articles emphasized how “Every woman has a duty to exercise and eat healthily before and during pregnancy - for her own good and the good of her unborn child” (Scottish Daily Mail 02/10/2014). There were several suggested solutions relating to managing preconception,

pregnancy, and postpartum weight. For preconception weight, the main solution was to lose weight to obtain a “healthy” or “normal weight” before pregnancy. During pregnancy, the focus was on managing gestational weight gain and for healthcare professionals to provide advice and medication. Postpartum focus was on weight loss to return to pre-pregnancy levels and breastfeeding. There was frequent emphasis on morality and judgment of women for their obesity, and assumptions about their behaviors that were perceived to have caused their obesity. There was also judgment on whether or when women living with obesity should be parents, with suggestions that they should defer pregnancy until they have solved their problem (i.e., lost weight) or not have children at all:

The fact that the figures have doubled is disgraceful and real effort must now be put in to advising obese women not to conceive in the first place. (Expert/organization voice, Scottish Daily Mail 01/05/2019)

MOST British women are not fit enough to have kids and need to overhaul their lifestyle before starting a family, experts warn. (Research team voice, The Sun 17/04/2018)

... know the health risks and can't recognise obesity when it's staring them in the face, then they shouldn't be having children in the first place, as they will no doubt pass on their bad eating habits, resulting in health problems (Scotsman 07/12/2014)

You wouldn't dream of standing on the starting line of a marathon having smoked 20 a day for the last couple of years, with a body mass index of 35. And diabetes. You'd try to get all those problems under control before you ran the marathon. Pregnancy is no different. (Research team voice, Daily Telegraph 11/02/2019)

3.7 | Call to action

Calls to action were for monitoring weight; improving diet and physical activity behaviors; health professionals' communication; and generally addressing maternal obesity. Calls to action regarding monitoring preconception weight were directed at healthcare professionals, society, and women of reproductive age, and framed as a social responsibility. Women were told they must “slim down,” “shape up,” and “shed the extra weight” prior to conceiving, with a focus on the impact on their child: “We need to ensure women go into pregnancy at a proper weight and produce children at a proper weight” (Expert/organization voice, Evening Standard [online] 14/08/2013). Health professionals were instructed to integrate weight monitoring into antenatal care and discuss weight management in pregnancy and postpartum. Calls to improve diet and physical activity described

women's responsibility to change to prevent maternal obesity and associated risks. There were frequent messages to "avoid eating for two" and follow national diet guidelines. Early intervention featured frequently and in particular a call to action for schools to integrate this message for adolescents. These articles emphasized that this was the "girl's" responsibility, further driving the gendered messaging: "The Government must rapidly ensure every secondary schoolgirl understands her obligation to stay in shape and look after her health so that, should she fall pregnant, she enters pregnancy fit" (Expert/organization voice, Scottish Star 15/03/2015).

Finally, there were general calls to action for individuals, organizations, and healthcare professionals to recognize that maternal obesity is increasing the risk for pregnancy complications and future chronic disease, including childhood obesity, and therefore needed to be addressed. Of note, articles specifically stated that maternal obesity needs to be "discouraged" or "stopped" implying individual agency, and health professionals were deemed responsible for passing this message on to their patients: "Women must be supported before conception, during pregnancy and after birth to ensure the healthiest possible outcome for both themselves and their child. With the right support, it is possible to stop this dangerous cycle from being repeated" (Expert/organization voice, Mail Online 12/09/2019).

3.8 | Weight-related terminology

There were 2,163 codes for the use of weight-related terminology (Table S5a). Most weight-related terms present in articles were categorized as clinical/scientific (87%, e.g., BMI, overweight, obese, weight, adiposity, healthy weight, normal weight, and underweight) rather than synonyms (13%). The majority of synonyms used were clearly pejorative (73%), including enormous, slob, flab, blubber, fat-ties, gargantuan, giant, chubby, podgy, roly-poly, super-sized, tubby and chunky: "PREGNANT women in Scotland are the third porkiest in the world - with more than half putting their unborn tots at risk by being too fat" (The Sun 13/12/2010). The other synonyms used less frequently (27%) were not viewed as being purposefully pejorative, including heavy, big, and large: "larger adults are more likely to have larger babies" (Scottish Daily Mail 02/06/2015). When comparing broadsheet and tabloid use of terminology, newspaper type was significantly associated with terminology use ($\chi^2[2] = 98.4, p < 0.001$), with a higher proportion of the terms used by broadsheets categorized as clinical/scientific than tabloids ($\chi^2[1] = 86.4, p < 0.001$), whereas the use of pejorative terms was more frequent in tabloids ($\chi^2[1] = 93.6, p < 0.001$) (Table S5A).

There were 1,362 codes for the use of weight-related terminology to directly describe women (Table S5B). Most (92%) did not reflect person first language (e.g., "obese mums-to-be" Metro 22/06/2017), with no difference by newspaper type ($p = 0.25$; Table S5B). When person first language was used (8%), it described women having a healthy weight or obesity or referred to BMI (e.g., "women [...] with a BMI higher than 35" The Guardian 30/07/2018).

3.9 | Catastrophizing language

This theme permeates throughout all themes and sub-themes and represents an overview of the framing of maternal obesity throughout the articles. Maternal obesity was described as a "public health concern" to be "dealt with." Language stressing "the scale of the problem" was frequently used: "An 'EPIDEMIC of obesity' among pregnant women is threatening the health of thousands of mothers-to-be and their babies" (Metro 28/07/2010). Maternal obesity risks (and blame for these) emphasized the "crisis," "seriousness," and "importance" of the subject. Health professionals, researchers and experts were "worried" and expressed "urgency" in the need for intervention, particularly in the context of the immediate and intergenerational risks to the child. Articles frequently described "alarming" and "shocking" rates of maternal obesity, health outcomes, and implications for maternity services. The terms "horrifying" and "tragic" described some of the health outcomes of maternal obesity for the baby, usually in the context of blaming the mother: "It is appalling that some 50 per cent of women are overweight or obese at the beginning of pregnancy and this research spells out new-found tragic consequences" (Expert/organization voice, Scottish Daily Mail 08/05/2018). This alarmist language was patterned among tabloid newspapers, although there was some presence in broadsheets.

Articles reporting research results on associations between maternal obesity and pregnancy outcomes were overwhelmingly framed using "risk" language, with fewer articles referring to increased chance or odds of health outcomes. There was frequent reference to multiple risks within one article, the severity of risks was emphasized, and there was a sense that risks were inevitable for all women and their babies. Risks were also framed as being a direct consequence of maternal obesity, and particularly in tabloids, that the mothers themselves were a risk to their babies: "Fat mums 'a risk to tots'" (The Mirror 28/02/2013). "Danger" language was used in the context of women's weight status (e.g., "One in five expectant mums was dangerously fat" The Sun 12/06/2015), and the potential health risks. This was present in both tabloids and broadsheets, although more frequently in tabloids and especially in the context of "life-threatening" or "fatal" risks, accompanied by "warnings" from doctors and researchers. Long-term "suffering" of children and health professionals was emphasized: "ULTRASOUND scan operators are suffering from fat mother syndrome, a repetitive strain injury caused by constantly having to press hard on the stomachs of overweight women" (The Sunday Express 06/02/2011).

The "pressure" and "burden" of maternal obesity on health and the NHS was emphasized. However, "pressure" was also placed on women's responsibility: "There has got to be a lot of pressure on women to go into pregnancy at the right weight" (Expert/organization voice, The Times [online] 28/02/2013). Finally, there was frequent use of aggressive or violent language used to describe maternal obesity as a "time-bomb," "criminal," and something that we need to "combat" or "fight": "OBESITY IN WOMEN AS DANGEROUS AS TERROR THREAT" (The Daily Mail and Mail on Sunday 11/12/2015).

4 | DISCUSSION

4.1 | Key findings

This review explored how the UK newspaper media portray maternal obesity, and identified three related overarching themes. Women were blamed for their weight status, for the increased risks to themselves and their child, and for the impact on NHS care and resources required. The solutions to maternal obesity were framed as the sole responsibility of women, and this was gendered from school age. Women with obesity were portrayed as being a burden on individuals, to society, and on the NHS. We found that the negative framing of maternal obesity was pervasive over the 11-year period investigated, demonstrating no improvement in news media reporting despite a growing body of literature reflecting the harms of weight stigma generally, and that this is also present during pregnancy. The catastrophizing language used emphasized the scale and risks of maternal obesity and was generally alarming, aggressive, and problem-centered. Few significant differences were noted in reporting of maternal obesity by newspaper type. Negative headlines and pejorative language to describe mothers experiencing obesity were more prevalent in tabloid articles (which comprised 59% of the total). Tabloids were also more likely to include lived experiences, which were principally used as examples to support the catastrophizing, blame, and personal responsibility narrative.

4.2 | Comparison with wider literature

The observed oversimplification of obesity echoes the global narrative that promotes the 'eat less, move more' dogma as sufficient to address all obesity-related concerns.¹¹ This oversimplification ignores the complex and inter-related physical, environmental, and social causal factors, many of which fall outside of individual control.⁴⁴ Although obesity's complexities are increasingly acknowledged in research, this progress is not reflected in media outlets; we identified no positive change in framing of causes and solutions over the time period studied. Baker et al.⁴⁵ found that between 2008–17, UK news outlets increasingly portrayed obesity as a biomedical problem caused by individual behavioral decisions and decreasingly addressed health systems, such as food production and government policies. Atanasova et al.⁴⁶ similarly identified that German and British newspapers framed 'self-control' as the solution to obesity. This review adds to the growing body of literature³² highlighting the media's pivotal role in framing pregnant women living with obesity as a public concern.

The mismatch between the evidence-based understanding of obesity causation and the portrayal of obesity in the media is problematic, especially as media portrayals of obesity directly influence public perception. A study exploring Facebook pages of UK newspapers between 2015 and 2020 identified that when articles framed childhood obesity as being complex and accounted for by social or medical causal factors, public comments were more positive and less

stigmatizing than when articles blamed individuals or families.⁴⁷ In our analysis, mothers were overwhelmingly blamed for their weight, for being responsible for long-term child health risks, and for being a burden on society. Exposure to weight stigmatizing messages negatively affects mental health: weight stigma contributes to increased risk for obesity-related co-morbidities, health inequities, and poor patient-provider relationships.^{11,48,49} In pregnancy, frequency of weight stigmatizing experiences is associated with negative outcomes including postpartum depression and maladaptive eating.^{50,51}

There is a persistent downstream framing of obesity in health policy targeting individual behavior, rather than addressing the wider upstream population-level and structural determinants. This framing was reflected in the news media included in this review in relation to maternal obesity. In this context, news media are a structural factor perpetuating the downstream narrative, with potential repercussions for the shaping of health policy and subsequent impact on health outcomes for women and their children. Further, this media messaging has probable negative downstream consequences by contributing to weight stigma before and during pregnancy. A US survey of pregnant and postpartum women's perceptions of on causal factors for weight stigma found that the media were a prominent source of stigmatizing messages such as the sentiment that they were inactive and disinterested in healthy behaviors.³² Notably, weight-stigmatizing media projections do not enhance health behaviors, but rather serve to normalize weight-stigmatizing societal perceptions.⁵² A randomized trial exposed more than 2,000 adults to news articles that were stigmatizing toward obesity or neutral; when obesity was negatively framed as a public health crisis, anti-fat attitudes and prejudice significantly increased.⁵³ The current findings highlight the overwhelming representation of maternal obesity as a public health crisis through alarmist, risk, and danger language. Media messages feasibly normalize blaming individuals for obesity in the preconception and pregnancy periods, which can reduce quality of life and healthcare seeking behaviors. Frequent exposure to weight stigma can increase the risk for weight bias internalization, potentially resulting in negative self-talk,⁵⁴ avoidance of health behaviors,⁵⁵ and strain to patient-provider communication due to distrust or fear of judgment.⁶ Recent Canadian adult obesity management guidelines emphasize that comprehensive obesity care includes measurement of, and support to mitigate, weight bias internalization.⁵⁶

In comparison to weight-stigmatizing messaging, inclusive messaging can have a positive effect on mental health and intended health behaviors. For example, in a sample of 483 US women, weight-positive messages that avoided blame or alarmist language significantly increased intentions for health behaviors, such as exercise.⁵⁷ By propagating weight-stigmatizing messaging, the media not only do harm, but also miss an opportunity to alter problematic social norms surrounding maternal obesity. To reverse this trend, as outlined by World Obesity, obesity-related language from the media should be person-first, positively-framed, and acknowledge wider causes of obesity beyond individual responsibility.⁵⁸ This was rarely the case in the articles included in our analysis: there was a general lack of person-first language, frequent pejorative synonyms for obesity (particularly

in tabloid press), and maternal obesity was framed as the women's responsibility with gendered framing starting from school age. Language also strongly relied on risk framing with limited acknowledgement of causal factors outside individual control. Communication about relative rather than absolute risk creates misconceptions that adverse outcomes are unavoidable, projecting the idea that maternal responsibility for obesity primarily concerns her duty to protect the child. Most proposed solutions related to pre-pregnancy weight loss or intrapartum reduction of weight gain, in an effort to protect fetal development and long-term child health. Consequently, if a mother does not successfully lose weight, she can be directly blamed for any neonatal or child complications, although causal mechanisms for adverse pregnancy outcomes are substantially more complex than this. Blame and guilt may further perpetuate weight-bias internalization and its adverse consequences.^{59,60} Therefore, media accountability structures are essential to ensure responsible reporting on maternal obesity that avoids reinforcing stigmatizing or shaming narratives.

Respectful and accurate reporting on maternal obesity should include women's voices, ideally reflecting a variety of lived experiences, which was largely absent in this review. This approach allows for identification of woman-centered outcomes, unique barriers, and preferred care strategies. This, in turn, empowers control over health-care. Importantly, including lived experiences also allows for recognition of stigma and biases and patient-directed strategies to mitigate stigma.⁶¹ Representation of lived experiences in newspaper media could support changing the negative narratives and improve health-care experiences. While the patient voice was rarely included, articles regularly incorporated expert opinions to support, substantiate, and lend authority to claims and amplify the alarming narrative. It is therefore crucial that expert opinions are not used to authenticate the promotion of stigma and blame. In aggregate, these features of the news articles analyzed in this work reveal that the UK media eschew best practices for discussing obesity without promoting stigma, which likely plays a definitive role in shaping and reinforcing societal perceptions of maternal obesity.

4.3 | Strengths and limitations

Limitations of this review include the sole focus on the text of the news articles without evaluating any images present. A previous visual news content analysis about obesity in general found that most images depicted people living with obesity in a negative and stigmatizing light.⁶² However, a news media analysis of articles about obesity and pregnancy found that images rarely portrayed women living with obesity.³² Nonetheless, images may augment the media's shaping of public perceptions and therefore should be examined more closely in future work, especially for potential tabloid vs broadsheet differences.⁶³ Additionally, while we draw on established literature documenting potential effects of stigmatizing news content, these results do not characterize pregnant women's reactions to these articles. Previous work shows that pregnant and postpartum women find media portrayals of pregnancy highly stigmatizing.³² Given accumulating

evidence of adverse consequences of weight stigma for maternal health,¹⁵ further research should explore the views of pregnant women in more depth. Despite these limitations, the results are supported by several strengths in the research design. A rigorous, systematic search and screening procedure was used across national UK media outlets. This methodology serves as a useful model for future research aiming to compare these trends in other countries or regions. At the same time, given the UK's high-impact, high-influence media market, it is likely that the implications of these media trends are far-reaching, both within the UK and globally. Another strength is the interdisciplinary, multi-national nature of the research team. The team included expertise in psychology, nutrition and physical activity, social and behavioral sciences, and mixed-methods expertise, which gave both qualitative and quantitative rigor to the analytic approach. This allowed us to integrate findings across analytic techniques and provide a rich perspective on overarching themes.

5 | CONCLUSION

Currently, the media purvey weight stigma toward maternal obesity, but they have potential to de-stigmatize maternal obesity and promote maternal well-being. While achieving change in news media reporting may be challenging and take time to achieve, this is a worthy goal considering the influence news media has on public discourse, and there are multiple responsible stakeholders who can be engaged. To make progress toward change, we provide two key recommendations. First, careful reporting is essential at all levels including those preceding the publication of the news story. The onus falls on (i) researchers to take care as they frame narratives for scientific publications; (ii) media relations offices to collaboratively work with researchers to craft press releases, so the message is unambiguous and faithful to the original science; and (iii) experts to communicate key points directly during interviews and try to ensure that they are preserved in final messages. Second, media outlets should adhere to clear ethical guidelines in their reporting, as recommended by World Obesity.⁵⁸ For instance, in addition to accurately representing research findings, articles on maternal obesity should include the patient voice when possible and draw on research and voices from representative populations. Finally, in all instances, it is essential to be aware of the propensity for oversimplification, blaming, and use of alarmist language so that these trends can be reversed. Through such a shift in reporting, the media can capitalize on a prime opportunity to reduce stigma and promote maternal-child health, rather than continue the present cycle of fuelling obesity stigma and undermining well-being.

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CONFLICT OF INTEREST

The authors do not have any conflict of interest.

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