



# BMJ Open Maternal responsibility and omission of complexity: an exploration of the portrayal of gestational diabetes mellitus in Danish written media

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## ABSTRACT

**Objectives** Gestational diabetes mellitus (GDM) has implications for the future health of both mother and offspring, and there is a risk that mothers are held responsible and blamed for their own and their offspring's long-term health. The media plays a significant role in shaping public perceptions of health. Therefore, our study aimed to investigate how GDM and women with GDM are portrayed in Danish written media.

**Design** We identified written newspaper articles reporting on GDM from 2018 to 2019 and analysed them using thematic network analysis and elements from critical discourse analysis.

**Results** In total, 130 articles were included in the analysis. Four themes emerged: (1) ways of introducing GDM, (2) descriptions of causes and prevention of GDM, (3) descriptions of consequences of GDM and (4) value-laden descriptions of GDM. GDM was often mentioned in relation to other conditions or factors and with lack of differentiation. Maternal responsibility was emphasised via oversimplified descriptions of causal relations, descriptions of individual agency and no emphasis on structural causes and preventive measures. GDM was positioned as resulting in 'bad pregnancies' using value-laden wordings.

**Conclusion** We identified various aspects of how GDM is portrayed in written media. The findings signal the importance of clear, nuanced and respectful communication on GDM, including conveying the complexity of the condition and the role of structural factors.

## INTRODUCTION

Cardiometabolic conditions in pregnancy, such as gestational diabetes mellitus (GDM), affect an increasing number of pregnant women. In Denmark, around 6% of women giving birth develop GDM.<sup>1</sup> The condition is associated with an elevated risk of various adverse maternal and neonatal outcomes, for example, preterm delivery and macrosomia.<sup>2–5</sup> The pathways leading to cardiometabolic conditions in pregnancy are complex and multifaceted including genetic,

## STRENGTHS AND LIMITATIONS OF THIS STUDY

- ⇒ The study focuses specifically on examining the portrayal of gestational diabetes mellitus in the media.
- ⇒ The data analysis had a strong methodological and theoretical grounding, employing thematic network analysis and using elements from critical discourse analysis.
- ⇒ The scope is limited to written media articles published in 2018–2019.
- ⇒ The study is limited to written media from only one country.

behavioural, psychosocial and structural factors.

There is growing evidence suggesting that GDM and other cardiometabolic conditions in pregnancy may also have long-term implications for the health of both mother and offspring in the form of adverse cardiometabolic risk profiles.<sup>6–10</sup> The discovery of such imprint on the health of the offspring and the implications for long-term health and disease has transformed the understanding of disease aetiology and prevention. It also entails a risk that mothers are increasingly held responsible and blamed for their own and their offspring's health in both the short and long term.<sup>11</sup> A recent review found that women with GDM experience stigma from various sources.<sup>12</sup> Research in other medical domains has linked blame and stigmatisation of living with a certain disease or condition to negative effects on mental well-being, healthcare-seeking behaviours, clinical outcomes, disordered eating, physical activity and a tendency towards social isolation.<sup>13–16</sup> While the concept of stigmatisation in relation to GDM remains relatively unexplored,<sup>12</sup> research on weight stigma in relation to pregnancy has identified the media as one of the most reported sources of stigma.<sup>17</sup> The media

plays an important role in creating awareness as well as influencing, reflecting and reinforcing social norms, attitudes and beliefs in the public.<sup>18</sup> This indicates that media discourses on GDM may be a particularly relevant focus for understanding stigmatisation related to various cardiometabolic conditions in pregnancy.

Therefore, the aim of this study was to investigate how GDM and women with GDM are portrayed in Danish media. While communication about a health condition like GDM can take many forms, that is, through TV shows and social media, we, in this study, focus on written news articles.

## METHODS

### Search strategy

The search for articles was conducted in the Infomedia database—an archive of Danish media articles. Articles for the database are retrieved daily from nationwide, local and niche media published online or in print.<sup>19</sup> Infomedia was searched and screened for web and print articles reporting on GDM. Synonyms for ‘pregnancy’ were combined with synonyms for ‘diabetes’, using the Boolean operators AND and OR. Danish synonyms commonly used for GDM were included, for example, ‘graviditetsdiabetes’ and ‘graviditetsukkersyge’.

The articles identified in the Infomedia database were screened using the following inclusion criteria: (1) mentioning GDM, (2) written in Danish, (3) targeting a general public readership rather than, for example, a specific profession, and (4) published in the period January 2018 to December 2019. The screening was conducted by one author (FRE) and a sample of articles (n=61) was assessed by at least one other author (ED, JBS or KKN). The exclusion of articles due to the target audience was discussed and collectively decided among the authors. When it was unclear if the article referred to GDM or other types of diabetes, the research team collectively determined if the article should be included by exploring wordings or searching for additional information.

### DATA ANALYSIS

An inductive, thematic network analysis was conducted to identify patterns in the data. The articles were first coded, and the codes were then grouped into broader themes.<sup>20</sup> The coding was performed by FRE. ED, JBS and KKN coded a subsample of articles (n=5), and the identified themes were then discussed among the research team, made up of social scientists and public health professionals

specialised in diabetes, GDM and stigma. The coding process was aided by using NVivo12. Parts of the analysis were inspired by critical discourse analysis (CDA). CDA is a branch of discourse analysis that views communication via language as a social practice, emphasising how power and interests are produced and reproduced by the use of language and discourses.<sup>21</sup> In CDA, there is thus a strong link between texts and social processes. This is a two-way connection where media discourses reflect public opinion, but also influence it by positioning particular issues in a certain way, setting the agenda, and priming the public and policy-makers.<sup>22</sup> In CDA, media is thereby viewed as a means of exercising power by articulating certain ideologies and leaving others out, thereby affecting the public’s perception of a given topic.<sup>21</sup> A specific focus of our analysis was to explore the articles’ discourses on GDM, as this can influence the readers’ perception of the condition and *mental models*. Mental models refer to individuals’ cognitive representations of reality, which can be affected by language and discourse.<sup>23</sup> Theories of cognition suggest that the shaping of world views usually proceeds unconsciously without intentional decision-making.<sup>24</sup> This highlights the persuasive effects of discourses given the unconscious effects of these on the recipients’ mental models.<sup>24</sup> To explore the discourses articulated in the included articles, we analysed wordings and focus, including key factors, for example, risk factors, which were *not* addressed or mentioned, since meaning of a given topic is communicated as much by what is excluded as included.<sup>25 26</sup>

When translating quotes from Danish to English, the research team collectively revised the translations to secure accuracy. All names of individuals appearing in quotes were pseudonymised. An example of the coding process is presented in [table 1](#).

### Patient and public involvement

None.

## RESULTS

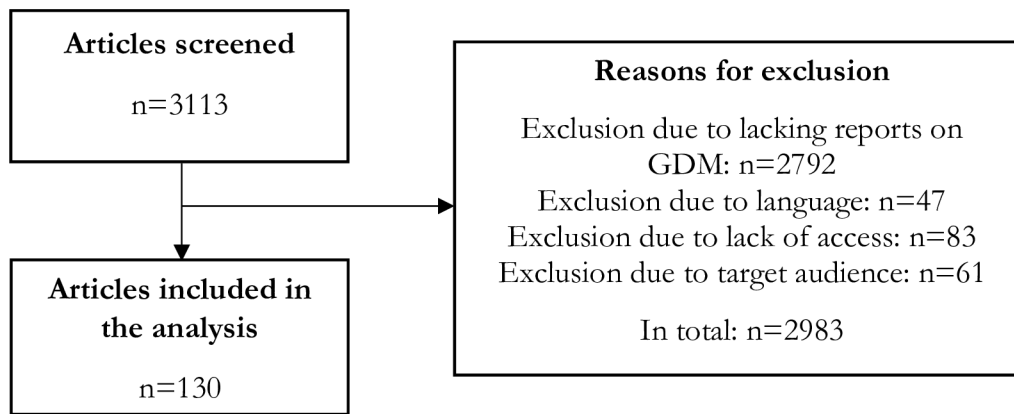
### Characteristics of included articles

Our search in the Infomedia database yielded a total of 3113 articles. After screening, a total of 130 articles were included in the study: 76 articles from 2018 and 54 articles from 2019. The process of article selection is presented in [figure 1](#). An overview of included articles is available in online supplemental materials.

Included articles varied substantially in their focus on GDM and the context in which it was presented. To what

**Table 1** Coding example

Text unit	Label	Theme
“Will a new screening method identify more pregnant women with diabetes?”	Lacking differentiation between types of diabetes	Ways of introducing GDM
GDM, gestational diabetes mellitus.		



**Figure 1** Article selection process.

extent and in which context GDM was mentioned in the articles were divided into seven categories: (1) GDM was the main focus of the article or in sections of the article (n=8); (2) GDM was mentioned in relation to research, grants and career milestones, often in the form of brief commentaries (n=37); (3) focus was on the benefits of physical activity with brief mentioning of how it can prevent the development of GDM and other conditions (n=24); (4) focus was on overweight, and GDM was briefly described as an outcome associated with being overweight (n=9); (5) personal narratives, often in relation to weight loss experiences, with brief mentioning of GDM (n=21); (6) GDM was mentioned briefly in connection with other topics, often related to other aspects of health, for example, pre-eclampsia (n=20); and (7) GDM was briefly mentioned in articles focusing on other types of diabetes (n=11), typically in an enumeration of different types of diabetes or listed as a risk factor for developing type 2 diabetes.

Our analysis of the articles identified four overriding themes: (1) ways of introducing GDM, (2) descriptions of causes and prevention of GDM, (3) descriptions of consequences of GDM and (4) value-laden descriptions of GDM.

### Ways of introducing GDM

It varied how GDM was introduced in the included articles. In the majority of articles (n=122), GDM was not the main or sole focus of the article, but it was mentioned as a secondary subject. GDM was often labelled as ‘sugar disease’ (n=25) (Danish: ‘sukkersyge’), a Danish layman’s term also used for type 1 and type 2 diabetes. Clear and consistent differentiation between different types of diabetes was lacking in many articles (n=60). GDM was also presented as ‘diabetes during pregnancy’ or simply ‘diabetes’, again with no further specification of type, as in the following excerpt from an article published in a women’s magazine:

“Malene regularly attends medical control to make sure that the diabetes she developed during her pregnancy will not return” (article 84)

In a few of the included articles (n=3), GDM was referred to as a ‘special type of diabetes’ or compared with the ‘most common types of diabetes’.

### Descriptions of causes and prevention of GDM

In most of the included articles, monocausal relations associated with developing GDM were depicted. Being overweight or obese was particularly highlighted as a cause of GDM, without balanced emphasis on other risk factors or without providing context to the associated risks (n=21). The following excerpt from a magazine targeting families illustrated this:

“Amalie is quite overweight. This can have an impact on her pregnancy since she has an increased risk of developing gestational diabetes, which can be damaging for herself as well as her unborn child” (article 105)

Other articles highlighted physical activity as the key means to prevent GDM (n=21); though without similarly highlighting other preventive or health-promoting measures, for example, dietary behaviours, or social or contextual factors. The following excerpt from a regional newspaper was illustrative of this tendency:

“The advantages of exercising during pregnancy are numerous. For the mother as well as the child. [...] Exercise can contribute to the prevention of elevated blood pressure and reduce the risk of developing sugar disease [diabetes] in pregnancy” (article 27)

By positioning overweight as the cause and physical activity as the measure to prevent GDM and not concurrently focusing on other possible causes and preventive measures, for example, societal, an individualistic mental model is cued where GDM is depicted as rooted in individual maternal choices and characteristics. Only one article described a societal or structural factor (air pollution) as a cause or contributing factor to the development of GDM. In nine of the identified articles, collective action plans were described. These focused mainly on community action plans aimed at enhancing the level of physical activity among pregnant women in general.

Here, the prevention of GDM was slightly collectivised since the role of the community was emphasised, but an individualistic mental model was still cued by focusing on the importance of the acts of the individual mother, that is, conducting physical activity.

### Descriptions of consequences of GDM

When emphasising potential consequences of GDM, most articles addressed the long-term consequences rather than the short-term risk of perinatal complications. The mother's and/or the offspring's risk of type 2 diabetes was often highlighted in the articles (n=38). Less frequently (n=6), articles focused on how GDM can lead to overweight in the offspring. Descriptions of long-term effects were evident in the headlines of a number of articles like in these two articles published by the Danish public-service broadcasting company:

“Pregnant women with diabetes pass on their disease to their children” (article 10)

“More pregnant women are diagnosed with sugar disease [diabetes]: ‘The child will get fat from it’” (article 76)

The mother's condition was here the sole factor juxtaposed with diabetes and overweight in the offspring. Thereby, these articles emphasised maternal responsibility for the long-term health of the offspring, simplified causality and cued a deterministic view on GDM by stating that it *will* affect the health of the offspring. The placement of responsibility on the mothers was also illustrated by descriptions of individual agency related to GDM specifically or lifestyle more broadly (n=9). This included descriptions suggesting that an individual's ability to act independently, according to one's will, and free from external factors, is the primary factor in shaping human behaviour. A description of individual agency was, for instance, visible in the following excerpt describing the lifestyle changes of a mother with GDM after a conversation with a dietician:

“Here, she found out that research shows that both mother and child have a higher risk of developing type 2 diabetes later in life after a pregnancy with diabetes. Therefore, it was not hard for her to change her diet. “It not only affects me. It also affects a little child. In that way, you get self-discipline much easier than if it only affected yourself”” (article 76)

Moreover, by highlighting examples of agency, the individual prevention of GDM was stressed. Some articles indicated that the perceptions of individual agency and maternal responsibility related to GDM were shared by women affected by the condition and that it sometimes resulted in self-devaluation and self-blame:

“It was hard for Cecilie to be diagnosed with diabetes. [...] “I am a part of a group on Facebook where many write that they are really sad about being diagnosed and that they have been crying for days. I believe that

some think it is embarrassing because you quickly think that you have done something to cause it yourself”” (article 51)

“When I became pregnant at 28, my weight exploded. [...] Afterwards, I scolded myself. Why could I not stay away from fatty food and sweets? I mean, I was not so stupid that I could not figure out that it was what had caused my body to become enormous, was I? And now I even exposed my unborn child to diabetes!” (article 102)

As these quotes suggest, the emphasis on individual agency and maternal responsibility for the health of the child was shared by women with GDM in the articles, who devaluated and blamed themselves for the condition and held themselves accountable for the long-term health of their unborn children.

### Value-laden descriptions of GDM

In the majority of articles, GDM was mentioned as a secondary subject, that is, related to other topics or in enumerations. Here, the mentioning of GDM was brief, and wordings were often neutral or descriptive. However, in some articles with a greater focus on GDM, value-laden wordings or phrases were prevailing. An example of this was that some articles associated pregnancies affected by GDM with ‘bad’ or ‘complicated’ pregnancies (n=9). This was illustrated by the following quote from an article about a contestant on a TV show about baking, who had developed GDM during her pregnancy:

“Something seems to suggest that Gitte's body was not designed to have ‘a cake in the oven’ [be pregnant]. Because concurrent with increased body fluids, she was struck by pregnancy sugar disease [diabetes]” (article 115)

By stating that a body with GDM was not designed to be pregnant, pregnancies affected by GDM were depicted in a negative manner as something malfunctioning. Consequently, being diagnosed with GDM was described as ‘bad news’ and something that would ruin an otherwise happy pregnancy:

“When the belly starts bulging, and the expecting parents can feel small, kicking feet, for more parents bad news awaits. Because an increasing number of pregnant women develop gestational diabetes” (article 76)

This quote appeals to the readers' emotions when describing the happiness associated with feeling the baby's kicking feet. Afterward, this is contrasted with the bad news of being diagnosed with GDM. This description thereby associates a pregnancy affected by GDM with an unhappy pregnancy. Similarly, when describing an action plan aimed at children, pregnant women and vulnerable citizens to impede the increasing prevalence of diabetes, an article published in a regional newspaper juxtaposed having diabetes with having a ‘poor life’:

“If we can just save one or two people from being exposed to a poor life, it is worth all the money” (article 51)

Thus, through the use of value-laden descriptions, the discourse articulated in these excerpts portrayed GDM as something resulting in a bad pregnancy.

## DISCUSSION

In this study, we investigated how GDM and women affected by GDM were portrayed in Danish written media in the period 2018–2019. Few articles focused specifically on GDM, rather GDM was often mentioned in relation to other conditions or factors. Using thematic network analysis and the perspective of CDA, we identified four prevailing themes. GDM was typically introduced as a secondary topic and not clearly differentiated from other types of diabetes. Maternal responsibility regarding causes, prevention and consequences of GDM was emphasised by presenting oversimplified causal relations, leaving out descriptions of structural causes and preventive measures, and highlighting examples of individual agency. Finally, we found that in some articles with a greater focus on GDM, the condition was positioned as resulting in ‘bad pregnancies’ through the use of value-laden wordings.

To the best of our knowledge, ours is the first conducted analysis with a distinctive focus on examining the portrayal of GDM in the media. However, two previous studies have investigated media reports on various types of diabetes, which also included GDM. In their analyses of the framing of diabetes in New York Times articles and New Zealand metropolitan newspapers, respectively, Stefanik-Sidener<sup>27</sup> and Gounder and Ameer<sup>28</sup> also documented a recurring lack of differentiation between different types of diabetes. While a lower coverage of GDM compared with type 2 diabetes may be understandable, given that more people are living with type 2 diabetes, the limited differentiation means that complexity is not conveyed. This may lead to confusion among readers,<sup>27</sup> while ignoring the diversity of the different types of diabetes.

In line with our findings, the studies by Stefanik-Sidener and Gounder and Ameer also found a lack of emphasis on structural causes and preventive measures, as well as an emphasis on the individual’s responsibility.<sup>27 28</sup> Our study adds to these findings as the media puts an emphasis on maternal responsibility for the development of GDM and the resulting imprint on the health of the offspring. This was reinforced by descriptions of self-devaluation and self-blame among women with GDM. Several qualitative studies have documented that women with GDM may experience internalised stigma.<sup>12</sup> Our study suggests that the media may be a source in facilitating this. In addition, the articles included in our study frequently used the term ‘sugar disease’ synonymously with diabetes. Such wording can also result in stigma related to GDM since the term reduces the complexity of diabetes by

reducing the condition to an ‘illness due to sugar’. In this way, a mental model related to the condition’s cause is cued, here as ‘something related to sugar intake’, and stereotypes may thereby be invoked.<sup>29</sup> Instead, the use of precise terminology could contribute to the depiction of GDM in a non-stigmatising way, signalling the complexities related to the condition. Similarly, the one-sided accounts of overweight as the cause of GDM might also lead to labelling and stereotypification of mothers with GDM as overweight or inactive.<sup>29</sup> The positioning of GDM as leading to ‘bad pregnancies’ also reinforced a stereotypical view of the condition, which may result in stigmatisation. Existing studies demonstrate that experiences of stigma can lead to adverse psychological as well as physical outcomes.<sup>30 31</sup> These findings signal the importance of sensible reporting on GDM, given the potential effect of the public discourse on GDM on the self-perception and health of women affected by the condition.

The emphasis on maternal responsibility has been indicated in media analyses focusing on other cardiometabolic conditions in pregnancy and early life. For instance, Maher *et al* analysed Australian media reports on childhood obesity<sup>32</sup> and Warin *et al* analysed Australian media reports on scientific studies of fetal overnutrition.<sup>33</sup> Both studies documented a recurring emphasis on maternal responsibility. Emphasis on maternal responsibility and even mother blame in reports on how early life factors affect health across generations has previously prompted researchers to warn about the public discourse on these conditions and instead suggest a range of strategies to use in such reporting.<sup>11 34</sup> This includes efforts to cue mental models that move beyond prior understandings of causation to instead consider a range of causal factors and prevention options, not only related to the mothers’ actions but also structural causes.<sup>11 34</sup> GDM is a multifaceted condition with a range of known and potentially interacting risk factors and social determinants. Oversimplifications of causality and risk, determinism and emphasis on the influence of the individual mother without emphasising complexity, the role of the family level, for example, social support, and societal factors entails a risk of agony, social condemnation and stigmatisation. Moreover, in high-income countries, lower socioeconomic position has been shown to be associated with a higher risk of GDM,<sup>35 36</sup> and recently, Field *et al* documented that women living in the so-called ‘food deserts’ have higher odds of developing GDM.<sup>37</sup> Such findings emphasise the importance of structural interventions to address social determinants of health at the community level. Yet, when societal factors are left out of the media’s portrayal of GDM, readers unfamiliar with the condition might not grasp the importance of these factors; hence, possibly decreasing the public support for collective initiatives and policies.<sup>27</sup> Thus, our findings warrant journalists, researchers and clinicians to carefully consider the ramifications of their reporting on GDM. Importantly, our intention is not to suggest that GDM does not have an impact on the health of both the mother and



the child. Rather, we call for clear, accurate, nuanced and respectful communication, which avoids oversimplifications, conveys complexity and emphasises the role of societal and structural factors. This is not only likely to reduce feelings of blame, shame and stigmatisation, but it is also more likely to lead to change, which will actually improve the health of women diagnosed with GDM as well as their children.

### Strengths and limitations

Our study addresses a previously under-researched area of GDM, namely the media's portrayal of the condition. The CDA perspective allowed us to focus on the media's discourse on GDM, the possible negative effects of this on the public understanding of the condition as well as the self-perceptions of women with GDM, and therefore highlight the importance of sensible reporting. Furthermore, our study yields new perspectives related to the ways in which GDM is valued and associated with 'bad pregnancies' in some articles, and how maternal responsibility is emphasised. Our study focused on Danish media, but since similar results have been documented in previous research in other geographical contexts, it is likely that at least aspects of our findings are transferable to other contexts.

Nevertheless, our findings should be interpreted in light of some study limitations. Despite several attempts to achieve them, full-text versions of some articles (n=83) could not be acquired and were not included in the analysis. Therefore, we may have missed relevant viewpoints. However, based on the headlines, we assess that the far majority of these articles were not reporting on GDM and most likely would not have been included in our final analysis had we obtained the full-text versions. Second, the limited number of articles with GDM as the primary topic complicated a rich investigation of the discourse solely on GDM. Yet, we perceive it as a finding in its own right that GDM was most frequently mentioned in the context of other conditions or phenomena. However, the contexts in which GDM was mentioned might have had particular effects on the findings, for example, leading to a greater emphasis on physical activity as a preventive measure or being overweight as a cause of GDM, since many articles focused specifically on the positive effects of conducting physical activity or the outcomes associated with being overweight. Yet, in articles focusing specifically on GDM in the entire article or sections of the article, a focus on physical activity as a preventive measure or being overweight as a risk factor was also prevailing. Third, we limited our search to 2018 and 2019. Our study, thus, provides an analysis of the media's portrayal of GDM in this period. Given that the prevalence of GDM and research in the area has increased substantially in the last decades and considering the emergence of the COVID-19 pandemic, it is possible that the portrayal of GDM in the media prior to or after this period would have been slightly different. Finally, the inclusion of content from other types of media other than online and

written, for example, TV shows or content from social media, could also have furthered the understanding of the public discourse on GDM, for example, due to differences related to target groups or usage of other linguistic tools. Future research focusing on visual presentations of GDM might add further insights to the discourse on the condition and would be welcomed.

### CONCLUSIONS

This study investigated the portrayal of GDM, and women affected by GDM in Danish written media in 2018–2019. Using thematic network analysis and elements of CDA, we found that a main focus on GDM was rare in included articles and that the media reports often lacked clear and consistent differentiation between the different types of diabetes. The reports often emphasised maternal responsibility related to the causes, prevention and consequences of GDM, and in some cases, value-laden descriptions juxtaposing GDM with 'bad pregnancies' were prevalent. The simplified explanations of GDM highlighting maternal responsibility may contribute to scapegoating and stigmatisation of women with GDM. The conceptual framework of CDA suggests that media reports on a given topic affect recipients' understanding of this. This signals the significance and need for precise, nuanced and respectful reporting on GDM to counterbalance the tendency to depict GDM in a simplified and stigmatising manner, solely highlighting maternal responsibility.

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**Contributors** ED, JBS and KKN conceived the study. FRE performed the analysis with contributions from ED, JBS and KKN. FRE and KKN wrote the first draft of the manuscript. All authors provided substantial revisions to the manuscript and approved the final version. KKN is the guarantor of the study.

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**Ethics approval** Not applicable.

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**Data availability statement** Data may be obtained from a third party and are not publicly available. The data that support the findings of this study are available from the various media houses who have published the articles, but restrictions apply to the availability of these data, which were used under license for the current study, and so are not publicly available. Data are however available from the authors upon reasonable request and with permission of the media houses.

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