Diabetes Portrayals in North American Print Media: A Qualitative and Quantitative Analysis

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Objectives. This study investigated how media coverage has portrayed diabetes as newsworthy.

Methods. The quantitative component involved tabulating diabetes coverage in 2 major Canadian newspapers, 1988–2001 and 1991–2001. The qualitative component focused on high-profile coverage in 2 major US magazines and 2 major Canadian newspapers, 1998–2000.

Results. Although coverage did not consistently increase, the quantitative results suggest an emphasis on linking diabetes with heart disease and mortality to convey its seriousness. The qualitative component identified 3 main ways of portraying type 2 diabetes: as an insidious problem, as a problem associated with particular populations, and as a medical problem.

Conclusions. Overall, the results suggest that when communicating with journalists, researchers and advocates have stressed that diabetes maims and kills. Yet even when media coverage acknowledged societal forces and circumstances as causes, the proposed remedies did not always include or stress modifications to social contexts. Neither the societal causes of public health problems nor possible societal remedies automatically received attention from researchers or from journalists. Skilled advocacy is needed to put societal causes and solutions on public agendas. (*Am J Public Health.* 2005;95:1832–1838. doi:10.2105/AJPH.2004.049866)

Type 2 diabetes mellitus is a serious public health problem in developed countries and increasingly in developing countries too.[1] Yet only a handful of peer-reviewed articles have examined mass media coverage of type 1 or type 2 diabetes.[2–5] This study examined how print media coverage portrayed diabetes as a newsworthy problem. The results suggest that public health advocacy needs to take into account the roles played by journalists but also by expert sources in influencing portrayals of health problems in the mass media and thereby influencing how members of the public understand health problems.

The premise underlying this mixed-method study is that discourses highlight some diseases, health risks, and approaches to intervention—while obscuring others—by influencing how people think, express themselves, and act.[6–11] Problem framing can be understood as a social process that involves the selection of some aspects of a perceived reality and making them seem more apparent or salient so as to promote particular definitions, causal interpretations, moral evaluations, or possible remedies.[12] This article's emphasis on media portrayals resonates with the "public arenas" model of how problems achieve social recognition.[13] Unlike the "natural history" model of problem recognition,[2] which emphasizes how bona fide harms achieve visibility, the public arenas model does not assume that objective harms become socially recognized problems. Instead, the public arenas model underscores that the mass media, public policy, scientific publications, and other discursive domains interact with one another to confer recognition or to obscure harm.

METHODS

Quantitative Methods

The quantitative component aimed to establish the extent to which mass media coverage has portrayed diabetes as problematic. To do so, the amount and select key features of diabetes coverage were tabulated longitudinally in 2 newspapers, *The Toronto Star* and *The Globe and Mail. The Toronto Star* is the largest-circulation newspaper in Canada, and *The Globe and Mail* was the only newspaper distributed across Canada throughout the 1990s. LexisNexis was used to access the full-text electronic archives of *The Toronto Star,* for all available years: 1988–2001. The data for *The Globe and Mail* were obtained from InfoGlobe for all available years: 1991–2001.

The search term "diabet!" (the "!" denotes a wild card search. In the case of "diabet!" items with the word "diabetic" and "diabetics" would be included, as well as those using the word "diabetes") was used to identify references dealing with diabetes, and the search strategy "heart disease, heart attack, heart association, heart failure, cardiac OR cardiol!" was used to identify references dealing with heart disease.[2] Combining these 2 sets yielded the number of references related to both diabetes and heart disease. The combined set was searched for mentions of death ("death, dead, dies, dying OR obit!"). To establish how often coverage focused attention on diabetes, rather than merely mentioning this condition, the search term "diabet!" was used to retrieve items mentioning diabetes in obituaries, headlines, or lead paragraphs. All items found were tablulated.

Qualitative Methods

The qualitative component focused on identifying the framing devices[12] used in recent print media coverage of type 2 diabetes. First and foremost, the analysis examined how the print media portrayed type 2 diabetes as a problem by asking: What is it about this condition that is made to seem problematic? Related questions included: Which dimensions and causes of the problem are highlighted? Who or what is blamed? What remedies are endorsed?

Two large-circulation US magazines (*Time* and *Newsweek*), *The Globe and Mail,* and *The Toronto Star* were monitored prospectively, 1998–2000. (Both *Time* and *Newsweek* are sold on Canadian newsstands.) Only stories

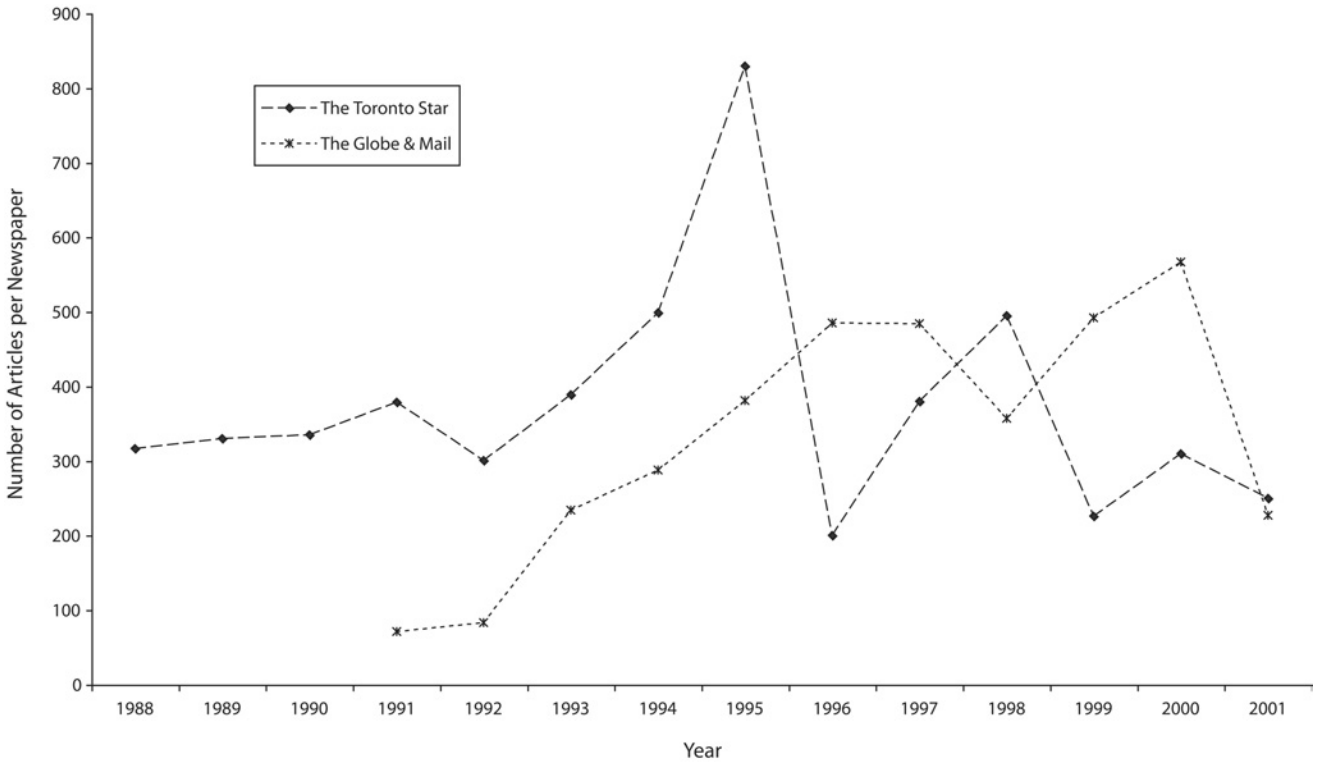

FIGURE 1—Mentions of diabetes in Canadian newspapers.

profiling type 2 diabetes in the first section of the newspaper or magazine cover stories were selected for analysis. To identify any items fitting these criteria that had been missed during prospective monitoring, I searched the following databases: InfoGlobe (for *The Globe and Mail*), Canadian Newstand (for *The Toronto Star*), and Business Source Premier (for *Newsweek* and *Time*).

RESULTS

Quantitative Results

The number of *Globe and Mail* references mentioning diabetes increased nearly fivefold between 1991 and 2000 and then dropped off in 2001. Meanwhile, the number of articles mentioning diabetes in *The Toronto Star* did not increase overall from 1988 through 2001 but spiked dramatically in 1995, and again in 1998 (Figure 1). I hypothesized that these spikes might correlate to the publication in 1993 and 1995 of landmark clinical trial results showing that tight blood glucose control can curb the incidence of microvascular and macrovascular complications.[14,15] The University of Toronto is home to Bernard Zinman, one of the investigators in these trials, so this international story would have a strong local "angle." Three articles were published in 1993 that contained interviews with Zinman that focused attention on these results, but searching the 1995 and 1998 diabetes coverage for mentions of Zinman did not retrieve any items.

The number of *Toronto Star* articles mentioning diabetes as well as heart disease and death spiked in 1995 and again in 1998 (Figure 2), and the number of articles in *The Globe and Mail* mentioning both of these health problems increased most from 1991 through 2001 (Figure 3). The number of times that diabetes was mentioned in *Toronto Star* obituaries, headlines, and lead paragraphs did not increase overall from 1988 (75) through 2001 (55), but the number of times that diabetes appeared in *Globe and Mail* obituaries, headlines, and lead paragraphs more than tripled from 1991 (19) to 2001 (61).

Qualitative Results

In the time period studied, *The Globe and Mail* published 14 items that met the inclusion criteria, *The Toronto Star* published 9 items, *Newsweek* published 2, and *Time* published none. All 25 articles that met the inclusion criteria were found to exhibit at least 1 of 3 frames, and 6 exhibited more than 1 (Table 1).

Type 2 diabetes is an insidious problem. Each article in the sample that portrayed type 2 diabetes as an insidious problem provided at least 1 of the following 2 reasons: (1) modern comforts and conveniences contribute to this public health problem and (2) individual cases often escape detection for years; meanwhile, complications such as impaired vision, loss of sensation in the limbs, kidney damage, and heart disease often set in. These articles listed the following as possible remedies for preventing complications or for reducing the incidence of type 2 diabetes, or both: intensive clinical treatment, lifestyle changes, improved disease surveillance, increased public awareness, and more public funding.

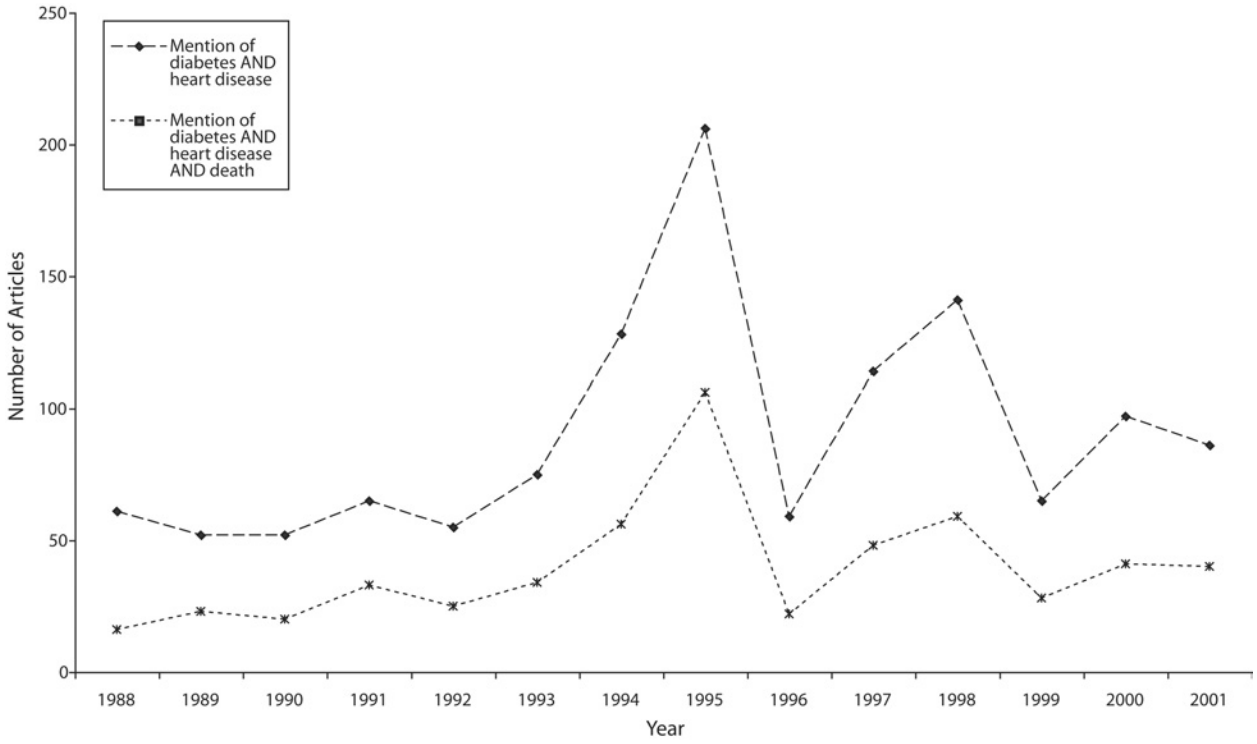

FIGURE 2—Mention of diabetes, heart disease, and death in *The Toronto Star.*

This frame was particularly prominent in 2 lengthy feature articles that appeared in 2000 and whose titles included the phrase *silent killer*. A September 4, 2000, *Newsweek* cover story (Table 1: NW2. For the remainder of the article, news and news magazine articles will be followed by a bracketed referent to allow easy location in Table 1) bore the title "An American epidemic: diabetes, the silent killer," whereas "Forgotten communities stalked by silent killer: Lost People" was the front-page headline of an April 30, 2000, *Toronto Star* feature article (TS7). It is difficult to imagine that a contemporary report might bear a title like "Cancer: a serious disease," or "AIDS: a public health problem." But in 2000, the Centers for Disease Control and Prevention released "Diabetes: a serious public health problem,"[16] which sparked the *Newsweek* cover story. Note that diabetes was called "serious" in the Centers for Disease Control and Prevention report title, and then *Newsweek* reframed it for a broader public as insidious or sinister.

It is also useful to compare the September 4, 2000, *Newsweek* "silent killer" cover story on type 2 diabetes (NW2) with an issue from a year earlier (September 27, 1999 [NW1]), whose cover featured the title, "Where health begins," placed over a photograph of a fetus. The subtitle for the earlier cover story announced, "Obesity, cancer and heart attacks: how your odds are set in the womb." The lead paragraph of that story profiled a 73-year-old man who was diagnosed with type 2 diabetes as well as hypertension in his early 50s. Although diabetes figures in the "typical case" mobilized in the lead paragraph to personify the lifelong impact of embryonic and fetal development, the editorial board apparently did not consider type 2 diabetes sufficiently dramatic for the cover page. But within a year, *Newsweek* dramatized type 2 diabetes as a cover story by portraying it as an insidious problem whose human costs are unevenly distributed across different social groups and whose financial costs burden American society as a whole.

Type 2 diabetes is associated with certain groups. This frame emphasized that type 2 diabetes and related complications are not randomly or evenly distributed. Articles deploying this frame emphasized 1 or more of the following: (1) type 2 diabetes is more prevalent in some groups than others; (2) type 2 diabetes has spread to hitherto unaffected groups; (3) type 2 diabetes is more prevalent overall than it used to be across the United States or Canada; (4) type 2 diabetes incidence is expected to increase further; and (5) type 2 diabetes is costly, in human and financial terms. Articles using this frame portrayed modern lifestyles as the main cause. Proposed remedies included intensive clinical management, community-level interventions, lifestyle changes, increased public funding for health and social programs, improved disease surveillance, and further medical research. In articles rooting causation in the societal conditioning of lifestyle, the proposed remedies sometimes stressed informed individual choice (e.g., *The Toronto Star,* October 20, 1999 [TS4]).

This frame emerged as the most common in the sample. All the articles that portrayed type 2 diabetes as an insidious problem also

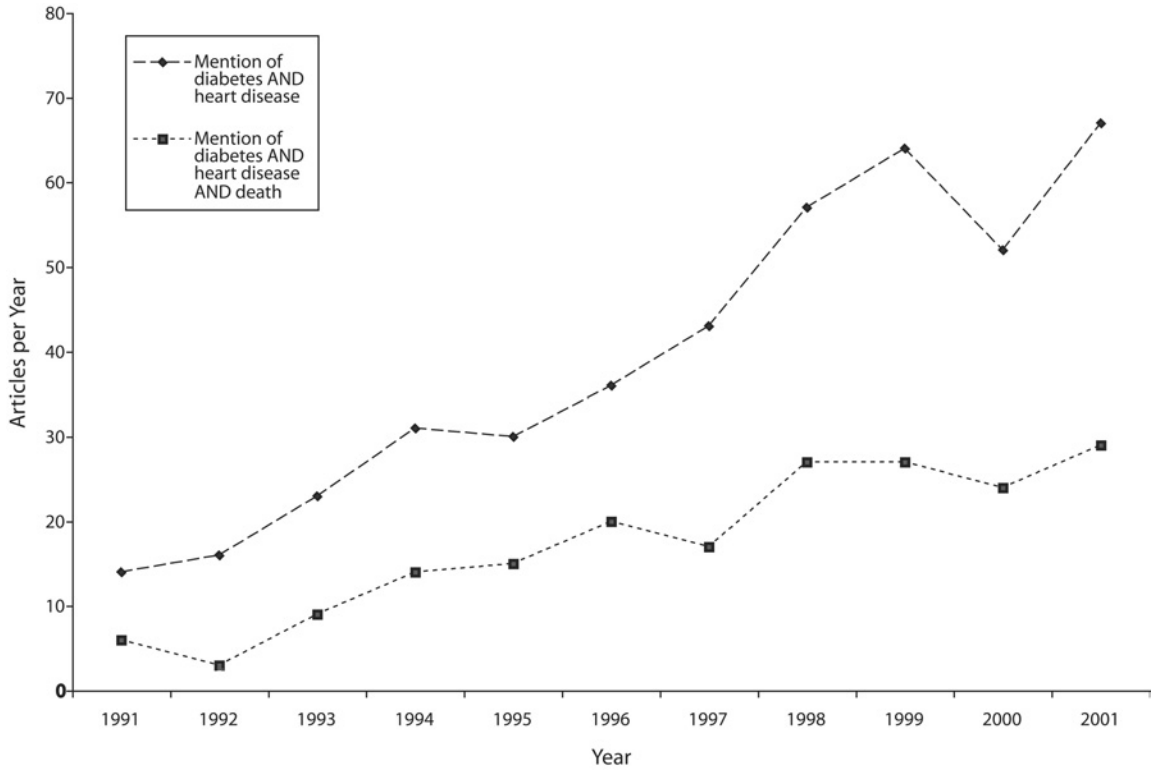

FIGURE 3—Mention of diabetes, heart disease, and death in *The Globe and Mail.*

used the group association frame. The disproportionate impact of type 2 diabetes on Aboriginal people across Canada was the most common topic. Other groups associated with type 2 diabetes in the sample included people older than 40 years (*The Toronto Star,* October 20, 1999 [TS4], and August 25, 2000 [TS5]), people of African or Latin American descent (*The Globe and Mail,* May 3, 2000 [GM13]; *The Toronto Star,* August 25, 2000 [TS5]; *Newsweek;* September 4, 2000 [NW2]) and—an alarming new development—youths (*The Globe and Mail,* June 28, 1999 [GM4]; *The Toronto Star,* August 25, 2000 [TS5]; *Newsweek,* September 4, 2000 [NW2]).

Type 2 diabetes is a medical problem. This frame presents type 2 diabetes as a problem requiring medical treatment, rather than a problem stemming mainly from societal forces and circumstances. Portraying type 2 diabetes as a medical problem underscores that type 2 diabetes is truly a serious disease mainly because of its complications. For instance, one article in *The Toronto Star* (March 5, 1999 [TS2]) noted that "the disease remains a major factor in blindness, kidney disease and heart disease." The remedies to reduce complications among people who already have type 2 diabetes explicitly endorsed in this portrayal included pharmaceuticals (e.g., *The Globe and Mail,* March 26, 1998 [GM1]) or lifestyle changes (e.g., *The Globe and Mail,* September 11, 1998 [GM2]), and articles employing this frame all explicitly or implicitly endorsed further medical research.

One article featuring the insidious problem and associated group frames made clear reference to a competing medical problem frame in quoting an expert source as saying: "The question is: is diabetes a problem of biology or a problem of sociology?" (*The Globe and Mail,* June 28, 1999 [GM4]). Yet the distinction between framing type 2 diabetes as a problem rooted in society or a medical problem could be subtle. Consider the article entitled "Couch potatoes more likely to get diabetes" (*The Globe and Mail,* June 28, 1999 [GM5]). Although the article stressed that type 2 diabetes is common today because of sedentary lifestyles, it did not report on the social distribution of TV watching, physical activity, or type 2 diabetes, and it did not present lifestyle change as a process mediated by social norms and circumstances. By comparison, another article in the sample (*The Toronto Star,* October 20, 1999 [TS4]), reporting on a similar study led by the same investigator, framed type 2 diabetes as a problem associated with particular groups. It did so in 2 ways, by noting that type 2 diabetes is mainly found in people aged more than 40 years and by noting that the research focused on whether walking can reduce type 2 diabetes risk because walking is the most common form of physical activity among people middle-aged and older.

DISCUSSION

As is common among studies of the popular press in public health,[17,18] previous studies of diabetes media coverage[2–5] assessed

TABLE 1—Frames Deployed by Coverage Included in the Qualitative Analysis

Periodical	References	Frames		
		Insidious Problem	Associated Groups	Medical Problem
The Globe and Mail	**GM1.** Diabetes drugs work together. *Globe and Mail.* March 26, 1998:A19.			√
	GM2. Fat cited as villain in diabetes. *Globe and Mail.* September 11, 1998:A19.			√
	GM3. Let's make a DNA deal. Sandy Lake has the third-highest diabetes rate in the world. The gene hunters pay to find out why. *Globe and Mail.* December 7, 1998:A1.		√	√
	GM4. 'Adult' version of diabetes afflicting children. *Globe and Mail.* June 28, 1999:A8.		√	
	GM5. Couch potatoes more likely to get diabetes. *Globe and Mail.* June 28, 1999:A8.			√
	GM6. Diabetes outbreak hits Quebec Crees. *Globe and Mail.* May 5, 1999:A2.	√	√	
	GM7. Genetic link found to natives' diabetes. *Globe and Mail.* March 11, 1999:A10.		√	
	GM8. Genetic trait for diabetes uncovered. *Globe and Mail.* March 9, 1999:A11.		√	
	GM9. Ottawa to target diabetes. *Globe and Mail.* May 18, 1999:A5.		√	
	GM10. Ottawa to spend $115 million to fight diabetes. *Globe and Mail.* November 20, 1999:A12.	√	√	
	GM11. Pharmaceuticals: diabetes drug approved. *Globe and Mail.* October 14, 1999:A8.			√
	GM12. Research traces gene for obesity, diabetes. *Globe and Mail.* March 5, 1999:A12.			√
	GM13. Diabetes hits black women worst: study. *Globe and Mail.* May 3, 2000:A6.		√	
	GM14. Heart disease on increase for natives. Smoking, obesity and epidemic of diabetes in aboriginal community contributing. *Globe and Mail.* June 26, 2000:A2.		√	
The Toronto Star	**TS1.** Hot tub therapy helps diabetics, study suggests. *Toronto Star.* September 16, 1999:1.			√
	TS2. Mice tests offer hope in the war on diabetes; crucial enzyme discovery made by Montreal team. *Toronto Star.* March 5, 1999:1.			√
	TS3. Mutated gene behind diabetes rate; Ontario doctor finds why Ojibwa-Cree are at a much higher risk. *Toronto Star.* March 10, 1999:1.		√	
	TS4. Walking cuts risk of diabetes: research; Harvard study followed health of 70 000 women. *Toronto Star.* October 20, 1999:1.		√	
	TS5. Diabetes 'epidemic' looming; no exercise, bad diet blamed for expected doubling of cases. *Toronto Star.* August 25, 2000:A.02.	√	√	
	TS6. First Nations need help to fight diabetes. *Toronto Star.* May 15, 2000:A.19.		√	
	TS7. Forgotten communities stalked by silent killer: Lost People. *Toronto Star.* April 30, 2000:1.	√	√	
	TS8. The Lost People Natives' plight sparks outrage; readers react to *Star* series on reserve conditions. *Toronto Star.* May 1, 2000:A.01.		√	
	TS9. Natives to get update on diabetes. *Toronto Star.* June 1, 2000:A.23.		√	
Newsweek	**NW1.** Shaped by life in the womb. *Newsweek*; September 27, 1999:50-53.			√
	NW2. An American epidemic: diabetes, the silent killer. *Newsweek*; September 4, 2000:40-47.	√	√	

reporting accuracy. The evaluation of reporting accuracy presumes that there is a correct way for the media to convey health information to the public: not only should accurate information be provided about diseases and health risks, but the allocation of coverage should reflect (presumably accurate) epidemiological survey data. Indeed, the contrasting conclusions reached in previous studies of diabetes mass media coverage—with 2 studies concluding that the coverage generally reflects mortality rates[2,5] and 2 studies concluding that coverage tends to distort its impact on mortality[3,4]—stem largely from differences in the epidemiological data used as

the standard against which to evaluate reporting accuracy. Public health researchers and advocates certainly have an interest in ensuring that the health information transmitted to the public is accurate. But it is also important to understand why some health issues receive more attention than do others and to understand how these issues are defined as socially significant. In adopting a framing analysis, this study did not disregard accuracy, but it focused on meaning.

The status of the terms *diabetes* and *type 2 diabetes* differs when emphasizing meaning rather than content accuracy. When emphasizing content accuracy, the question is whether the terms are used correctly in describing health problems and risks. Emphasizing meaning presumes that such terms and their definitions constitute part of the framing process.[9,11,19] Naming is part of framing, and that brings into view some limitations and strengths of this study. Because the term *diabetes* is commonly used to refer to all types of diabetes mellitus, searching LexisNexis and InfoGlobe to tabulate references to diabetes likely retrieved references dealing with type 1 diabetes or type 2 diabetes or both. Yet the qualitative results suggest that even with a detailed analysis of each and every instance of mass media coverage included in a study such as this, completely isolating type 2 diabetes coverage from type 1 diabetes coverage would be impossible, because the high-profile newspaper items analyzed qualitatively for this study sometimes explicitly discussed how type 2 diabetes differs from type 1 diabetes (e.g., *Newsweek,* September 4, 2000 [NW2]).

Moreover, the qualitative results show that portraying type 2 diabetes as insidious or unevenly distributed or both brought into focus the societal nature of this health problem. Through these framing processes, the term *type 2 diabetes* acquired fresh significance, beyond that connoted by the medical problem frame. Yet even when societal forces and circumstances were acknowledged as causes, the proposed remedies did not always include or stress social interventions, and that may reflect media interviews with expert sources: health professionals and researchers.[8] In other words, by conducting a framing analysis, this study highlights that mass media coverage reflects careful packaging, not only of facts, but of interpretations. This study also underscores the role played by a journalist's expert sources in packaging interpretations and transmitting meaning.

When I adopted a framing analysis, I designed the qualitative and quantitative components to detect whether mass media coverage attended to links between diabetes and related complications, notably heart disease. In other words, the analysis sought to reveal whether these links were "framed in" or "framed out" in problem naming and definition. *The Toronto Star* and *The Globe and Mail* quantitative results each provide some support for increased emphasis on a link between diabetes and heart disease. The qualitative results, meanwhile, included several instances of heart disease and other complications being evoked to portray type 2 diabetes either as a serious medical problem or as a serious problem rooted in societal organization and norms. These results are particularly noteworthy because prevalence and mortality data often underestimate the overall impact of diabetes for 2 main reasons. First, about one third of all type 2 diabetes cases in Canada and the United States remain undiagnosed and untreated.[20–23] Undiagnosed type 2 diabetes surely tends to hasten death, but other causes will be recorded, usually cardiovascular disease. In addition, surveys based on self-report data cannot capture undiagnosed cases. Second, even when diabetes is diagnosed, physicians often do not record diabetes on death certificates. Instead, the deaths of people diagnosed with diabetes are often attributed to cardiovascular disease.[24,25] Using frame analysis to investigate meaning rather than a conventional content analysis to assess reporting accuracy did not presume that available national or international statistics fully capture the impact of diabetes.[2–5] Indeed, for the insidious problem frame, undiagnosed cases emerged as pivotal. Nevertheless, consistent with the current medical definition of diabetes, which pivots on hyperglycemia, but not necessarily with how members of disadvantaged populations in particular develop and perceive hyperglycemia,[26] high-profile type 2 diabetes media coverage did not consider community mental health as a possible etiologic factor and intervention target. Overall, the qualitative and quantitative results suggest that when communicating with journalists, researchers and advocates have lobbied for greater recognition of diabetes by stressing that diabetes maims and kills.

The results therefore fit the public arenas model better than the natural history model of how health problems achieve media coverage and other forms of social recognition. Although the natural history model uses individualistic biological metaphors (birth, development, maturation, death) and often stresses correspondence with population trends,[2] the public arenas model argues that the definition and relative status of social problems never mirror objective harms, so this model proposes evolutionary metaphors (carrying capacity, competition, selection) to help explain why some problems and problem dimensions receive more recognition than others.[13] The key point is that newspapers and other public arenas have only limited space or time available, so public recognition is a scarce resource for which problems and their advocates compete, through social selection processes that often hinge on framing.[27,28] Although the present study suggests that the amount and emphasis of recent media coverage have taken into account the changing socioeconomic distribution of type 2 diabetes, neither increased prevalence nor the related impact on mortality has translated directly into media coverage; instead, garnering media coverage for public health issues always requires careful thought and organized effort.[27] Understanding how the mass media continually frame and reframe health-related phenomena can enhance public health's capacity to advocate for due attention to societal causes and possible societal solutions. ■

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