# A media advocacy intervention linking health disparities and food insecurity

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## Abstract

**Media advocacy is a well-established strategy for transmitting health messages to the public. This paper discusses a media advocacy intervention that raised issues about how the public interprets messages about the negative effects of poverty on population health. In conjunction with the publication of a manuscript illustrating how income-related food insecurity leads to disparities related to the consumption of a popular food product across Canada (namely, Kraft Dinner®), we launched a media intervention intended to appeal to radio, television, print and Internet journalists. All the media coverage conveyed our intended message that food insecurity is a serious population health problem, confirming that message framing, personal narratives and visual imagery are important in persuading media outlets to carry stories about poverty as a determinant of population health. Among politicians and members of the public (through on-line discussions), the coverage provoked on-message as well as off-message reactions. Population health researchers and health promotion practitioners should anticipate mixed reactions to media advocacy interventions, particularly in light of new Internet technologies. Opposition to media stories regarding the socio-economic determinants of population health can provide new insights into how we might overcome challenges in translating evidence into preventive interventions.**

## Introduction

Media advocacy can assist in increasing public awareness and in mobilizing political will for policy change [1, 2]. Nevertheless, engaging journalists is a challenge when it comes to transmitting messages about the determinants of population health other than clinical practices [3–5]. Exposure to messages regarding the social determinants of health does not necessarily persuade people to endorse preventive policies; exposure can actually heighten resistance to redressing inequities [6]. Indifference, in addition, is a form of opposition [1].

Mindful of these issues and in an effort to increase public awareness about the negative effects of poverty on health, we designed and implemented a media advocacy intervention in conjunction with the publication of a study comparing the perspectives of food-insecure and food-secure Canadians. In this study, we contrasted what food-insecure and food-secure Canadians said about a popular food product, Kraft Dinner® [7]. Kraft Dinner® is sold as a cardboard box containing pasta and a packet of powdered

cheese. The instructions direct consumers to cook the pasta and then add powdered cheese, butter or margarine and milk. Canadians in all regions of the country and across socio-economic strata regularly consume Kraft Dinner® [7]. Often, it is thought of as a 'comfort food' with positive associations to familiarity and satiety. A similar product, Kraft Mac & Cheese®, has a comparable status in the United States [8]. These food products include some key nutrients but contain little dietary fiber and can contribute to excess sodium, especially if consumed routinely. Nutritional value is compromised whenever Kraft Dinner® is prepared without milk.

In contrast to this 'comfort food' perception, food-insecure households tend to associate Kraft Dinner® with discomfort, as we reported in a study hereafter referred to as 'Discomforting' [7]. Food-insecure Canadians are often obliged to consume Kraft Dinner® or an imitator product because it is one of the few things that they can purchase, for about CAD$1, near the end of the month when they have all but run out of money. In fact, it is often kept aside in food-insecure households for the end of the month, when there will be no more money left to buy food, because it is cheap and non-perishable. In addition, as a non-perishable and popular food product, Kraft Dinner® is frequently donated to food banks for charitable redistribution. While some food banks collect and redistribute fresh milk and other perishables, most do not, and many food banks limit the number of times per year that a given client can receive a food hamper [9, 10]. Especially toward the end of the month, food-insecure Canadians are often obliged to eat Kraft Dinner® prepared without milk, a phenomenon that is outside the experience of food-secure Canadians [7, 11].

To reduce food insecurity and health inequity, emotional as well as physical needs must be taken into account [11, 12]. Food insecurity in Canada affects about 10% of Canadian households and takes the form of a gradient, 'ranging from worrying about running out of food to children not eating for a whole day' ([13], Appendix B). Persistent anxiety with respect to food quality and food access is, in other words, integral to 'feeling poor' in Canada [14, 15]. Furthermore, to the extent that the food insecurity gradient mirrors and contributes to the socio-economic gradient in population health [16–18], even modest improvements in the emotional or physical dimensions of food security could result in improved well-being and overall population health [19, 20].

Keeping in mind the available evidence on food insecurity and population health, we took seriously the finding that food-insecure Canadians associate Kraft Dinner® with physical and emotional discomfort—particularly whenever Kraft Dinner® must be prepared without fresh milk [7]. Accordingly, our media intervention sought to convey that the entire spectrum of food insecurity—from worrying about food access and food quality, through to children going hungry—and its importance for the health of the Canadian population as a whole. In the present article, we reflect on our media advocacy intervention, on the coverage that it garnered and on reactions to the coverage. We do so because we hope that our experience can be of value in designing, implementing and assessing media advocacy strategies as population health interventions [21].

## Methods

We developed and implemented a media strategy, tracked media coverage, monitored reactions to the coverage and examined the media coverage and reactions to the coverage in order to discern explicit and implicit messages. Below, we describe these steps in greater detail.

### Media strategy—development and implementation

A seasoned media relations specialist (K.T.) developed a media strategy in consultation with the two main investigators (M.R. and L.M.). Several weeks before the on-line publication of Discomforting, K.T. wrote a media relations plan and circulated it for feedback. This planning document identified our objectives, background information, strategic considerations (e.g. issues related to timing for a news conference), key findings, key messages, target audiences, people who needed to know in

advance about our publication and news conference (even if they were not key partners), speaking agenda for the news conference and supporting materials.

One week before our news conference, K.T. sent a media advisory via e-mail to reporters in our local area as well as to journalists who cover social and health issues for media outlets with a national and international reach. The advisory was carefully worded to provide sufficient detail to interest journalists but not enough information for them to pre-empt (scoop) our news conference. In the 3 days prior to our news conference, K.T. telephoned newsrooms in our local area and across the country in an effort to persuade journalists to report on our research. Key considerations in these 'pitch' calls included: confirming receipt of the invitation to the news conference, timing the calls to avoid deadline pressures, reaching out to national reporters first (prior to local newsrooms), adjusting the pitch to fit the culture of different news organizations and highlighting elements that would allow reporters to readily prepare engaging news stories (e.g. the enduring interest of Canadians in Kraft Dinner®). Interestingly, several of the assignment editors and health journalists on the 'pitch list' did not initially regard food insecurity as a health issue. News producers and editors initially expressed a preference to put this research into the lifestyle or food section/ segment of their newspapers/newscasts rather than categorizing it within the health/medical beat. In order for assignment editors to grasp, the key finding from Discomforting—that food-secure Canadians tend to regard Kraft Dinner® as a comfort food while food-insecure Canadians most emphatically do not—it was necessary for K.T. to educate these journalists about the basic facts of food and income insecurity. K.T. and M.R. conferred about how to persuade the assignment editors that the publication of Discomforting was newsworthy as a health story, albeit not as a medical one. This consideration led us to place even greater emphasis on the health implications of pervasive food insecurity—including the less severe forms of this problem involving worrying about food access and food quality—in the preparation of background materials, in the keynote presentation at the news conference and in follow-up interviews with reporters.

To provide reporters with visual imagery, background information on how food insecurity negatively impacts on population health, and the perspective of someone who had experienced food insecurity first-hand, we created a video news release (VNR). Our VNR featured a local woman who was employed at the time by a non-governmental organization that supplies food and other services to food-insecure households and who had personally accessed food hampers in the past. This approach allowed us to include the authentic testimony needed by reporters to craft a story without putting someone in the uncomfortable position of fielding questions about their personal experience with poverty at a news conference. Key elements of the VNR were M.R. outlining key findings; cover shots of food hampers being prepared; Kraft Dinner® being prepared; rows and rows of boxes of Kraft Dinner® and imitator products on food bank shelves; interview clips conveying the emotional struggle of being food insecure. We made the VNR available via satellite feed to television stations across Canada, for download from a designated website and also on digital video discs (DVDs) at the news conference—in formats useable by broadcast, print and Internet journalists.

On the day of the news conference, we widely distributed a media release and backgrounder written in a journalistic style (see [22]). The media release included direct quotes from two people for whom food and income insecurity are a daily reality: the local woman featured in our VNR and the chief executive officer of the largest local food bank. We also quoted an external academic in a leadership position with the Canadian Institutes of Health Research, to highlight the study's importance in the national research context and to emphasize how food insecurity erodes population health. For reporters wanting to write a more comprehensive story and to engage Internet journalists (who need links), we included URLs for related public health studies in the backgrounder as well as a link to the Discomforting paper.

Through the media release and during a formal presentation by M.R. at the news conference, we linked the physical and emotional discomfort associated with Kraft Dinner® in food-insecure households to the socio-economic gradient phenomenon in population health. This topic is complicated and almost never reported by Canadian media [4] because journalists find it difficult to convey simply, quickly and convincingly as news [23]. Thus, the written media release (see [22]) and the oral presentation at the news conference began with the comfort/discomfort food status of Kraft Dinner® and then contextualized our qualitative findings with existing quantitative evidence about the nature and extent of food insecurity in Canada.

## Tracking media coverage and reactions to the media coverage

We required journalists to sign in at the news conference and we kept track of requests for one-on-one interviews. All interview requests were accommodated. As routine follow-up, we tracked media coverage as well as reactions to the coverage. To monitor the impact of our media intervention, we registered with Google® for alerts in order to rapidly track new Internet content arising from our media intervention and we saved e-mail queries to the authors, telephone contacts to the authors, notes on face-to-face conversations, visits to the lead author's blog and visits to the website of the research funder that coordinated the media release and news conference. This funder also engaged a commercial media-tracking service, which prepared a report listing all the television, radio, print and Internet media outlets that covered our story. Within the team, we shared observations about the coverage and reactions to the coverage face-to-face and via e-mail. We did not initially track media coverage and responses to the coverage for research purposes, *per se*, but as the story began to generate a significant number of responses posted on-line by members of the public, we realized that the media coverage and reactions to the coverage warranted formal investigation. After notifying our research ethics office of an intent to extend the Discomforting study, we systematically collected media coverage and audience responses posted on-line from 27 August until 1 October 2008. On-line coverage and reactions to the coverage were identified using search engines Google®, Yahoo® and MSN® with a variety of keywords: 'KD', 'Kraft Dinner', 'Discomforting Comfort Foods', 'Food Insecurity', 'Mac and Cheese', 'Hunger', 'Food Bank', 'Calgary' and/or references to the authors. We saved the text from each website that carried a story or responses to the story and to assist with analysis, we imported these stories into NVivo® [24]. By the end of September 2008, daily responses had dwindled to none. In January 2009, to identify any transcripts or electronic copies of news stories or reactions (e.g. letters to the editor) that might have been missed, we searched the full-text of two databases (Canadian Newsstand® as well as Canadian Business and Current Affairs®) using the lead author's name as a search term. No additional items were found.

## Analysis of message frames

We used a framing analysis approach to discern explicit and implicit messages, in the media coverage and reactions to the coverage. Our dataset for the analysis of message frames comprised all the media coverage of which we were able to obtain a printed copy or transcript ($n = 11$ unique stories, excluding duplicates); all the reactions to the media coverage that members of the public had posted on-line ($n = 285$); e-mails documenting reactions from government representatives and social service providers who wrote to M.R., K.T. or L.M. ($n = 5$) and an excerpt from 'Hansard' documenting reactions from elected politicians during Question Period in the Alberta Legislature ($n = 1$). In a framing analysis, documents such as media stories or interview transcripts are classified in terms of how they define problems, attribute causality, suggest remedies and convey moral judgments [3, 25–27]. Our written media plan and a set of notes, prepared to guide M.R.'s participation as lead author in the news conference and in subsequent interviews, served as a starting place for articulating three 'intended' message frames (see Table I). The speaking notes, written mainly in point form, served as reminder of

**Table I.** *Intended message frames and sample quotes from media coverage and from public reactions to the media coverage*

| Problem definition | Attributed causes | Suggested remedies | Moral judgments |
|---|---|---|---|
| 1) Poverty is a public health problem | Many different policies and socio-economic trends contribute to income inadequacy | Policy measures are needed to improve income adequacy | Low-income people are not to blame, as individuals or as a group, for food insecurity |

Sample media quotes

'This important research can help inform public policy strategies related to food and income insecurity,' says Nancy Edwards, PhD, Scientific Director, CIHR's Institute of Population and Public Health. 'There is a need to monitor the problem of food insecurity and its effects on the health of Canadians, to identify policy drivers and to investigate options for effective policy reforms.' (Ewing, 2008)

'When people are worried that they're going to run out of food, when they have to make nutritional compromises, we have a state of food insecurity. We have a real public health problem,' said Melanie Rock, an assistant professor at the University of Calgary.' (CBC.ca, 2008)

Sample quotes from the public

How many of you know that, in the poorer neighborhoods, there isn't a decent grocery store for miles around? And that, if you're poor, you probably don't have a car to go shopping? And if you're poor, if you ride the bus to go shopping, there's a good chance you'll get mugged and robbed of your groceries on the way home? I would venture an educated guess that the majority of poor folk don't choose to be poor. (posted on CBC.ca, 2008)

Poverty robs individuals of their choice. So having macaroni and cheese while hiking in the mountains does not indicate that you are robbed of your nutritional choices. (posted on CBC.ca, 2008)

I'd be in very bad shape if it weren't for my family's help, but lots of people in my situation don't have family who can help them out with groceries or whatnot. I can't imagine how they get by. It doesn't take much to fall into poverty but it's extremely hard to climb back out. (posted on CBC.ca, 2008)

| Problem definition | Attributed causes | Suggested remedies | Moral judgments |
|---|---|---|---|
| 2) Many Canadians live with food insecurity | Many different policies and socio-economic trends contribute to income inadequacy | Policy measures are needed to improve income adequacyWhen giving to food banks, consider cash donations because they go farther and can be used to purchase fresh products like milk for redistribution | Low-income people are not to blame for food insecurity Food-secure people should donate and should think carefully about what to donate |

**Table I.** *Continued*

| Problem definition | Attributed causes | Suggested remedies | Moral judgments |
|---|---|---|---|

*Sample media quotes*

'Having no money for food is really scary. As my cupboards got more and more empty, I remember that feeling of not knowing where to turn,' says Calgarian Lorrie Herrick . …'The Herrick family's story is one we hear too often. That's why we appreciate the insights offered by studies like this,'' says James McAra, CEO of the Calgary Food Bank. 'Almost half of the clients receiving Emergency Food Hampers in Calgary are the working poor. They have a wage but they are unable to fully provide the necessities of life for themselves and their families. In fact, over 40% of our clients are children.' (Ewing, 2008)

'For many of us, Kraft Dinner is a comfort food, but what we heard very clearly from low-income Canadians is that Kraft Dinner is not comforting when you cannot always afford basics like milk and butter,'' said Rock. (CBC.ca, 2008)

*Sample quotes from the public*

It makes sense that KD isn't appealing when it's a frequent meal and sometimes the only option. Not to mention that the addition of milk and butter or margarine may be impossible when on a fixed income. (posted on CBC.ca, 2008)

''When I donate to the food bank, I do it as cash. Hopefully then the food bank will buy real food for those in need.'' (posted on CBC.ca, 2008)

It really is a sad fact that many people can't afford to eat and having to buy milk for KD is sometimes too expensive. This is why whenever I donate food (as opposed to the better choice, money), I donate food that does not need anything else to prepare it (such as canned spaghetti or ravioli, which I do eat myself). (posted on CBC.ca, 2008)

| Problem definition | Attributed causes | Suggested remedies | Moral judgments |
|---|---|---|---|
| 3) Ignorance of poverty exists in mainstream society | Social distance and stigma surrounding poverty obstruct comprehensive understanding | Public education must be improved, to promote a more reflective response to poverty | Low-income people are not to blame for food insecurity Food-secure people should donate, but also should think carefully about what to donate. |

*Sample media quotes*

A study published today finds that Kraft Dinner means different things to Canadians, depending on whether they are food-secure or food-insecure. (Ewing, 2008)

The study, which interviewed people in Montreal and in Atlantic Canada, found higher income Canadians believe Kraft Dinner is an acceptable donation to food banks because it is convenient as a meal in a box, easy to prepare and tasty. Respondents also said because their own children liked the taste, they felt kids in lower income families would as well. In contrast, those on lower incomes said they bought or ate Kraft Dinner as a last resort, usually near the end of the month when money has run out. The study also pointed out that fresh milk, necessary to prepare Kraft Dinner, is the most precious commodity in many food-insecure households, which often can't afford it. (CBC.ca, 2008)

*Sample quotes from the public*

This story informed me that my best intentions, while good, are misguided. I will be looking up what my local food bank needs before blindly donating next time. (posted on CBC.ca, 2008)

And trust me, after about the 20th box of the stuff in a month, you do get heartily tired of it. I can totally see where they're coming from. (And it doesn't say they're not eating it, just that they don't LIKE it.) (posted on CBC.ca, 2008)

The ones donating are donating something they see as cheap, quick and easy for them to prepare. It is not what is needed in general for the intended recipients. They need staples and things they can use to make complete meals. (posted on CBC.ca, 2008)

our original intentions; they were not nearly as elaborate as shown in Table I. We applied this framework 'deductively' to on-message media coverage and reactions. In other words, the analytic process involved comparing the coverage with the three message frames to identify instances of concordance with our theoretically informed suppositions about how food insecurity relates to health in human populations ([28], pp. 8–11).

As we had not formally anticipated off-message coverage or reactions in advance, we identified 'unintended' message frames 'inductively' ([28], pp. 8–11). More specifically, in an approach consistent with the crystallization of insights through immersion and reflection [29–31], M.R. and S.P. independently examined a sub-sample of off-message reactions. (S.P. had not been involved in the original study or in the media intervention, so brought a fresh perspective.) We began with a set of observations or findings that did not fit with our theoretically informed suppositions about how food insecurity relates to health in human populations and continually compared off-message instances with one another until similarities and differences became apparent. As we found cases that did not fit with our emerging framework, we created a new category or message frame until all 'outliers' were eventually accommodated ([28], pp. 392–393, 400). M.R. and S.P. drafted detailed descriptions of four unintended message frames, including problem definition, attributions of causality, proposed remedies and moral judgments that were sometimes explicit but usually implicit. Two more rounds of refinement among team members led to the final version of five unintended message frames (see Table II).

## Results

### Overview of the media coverage and reactions to the coverage

Two national television networks, three regional television stations, four regional radio news and current affairs programs and three regional newspapers carried a story based on our media release.

Both public and private broadcasters picked up the story. The national and local television stories were rebroadcast multiple times in the days following our media intervention. Most of the television coverage of which we could obtain an electronic copy or transcript had integrated footage from our VNR (four of five television reports, including two national television news stories), and a drive-home radio show played a VNR clip featuring the (formerly) food insecure woman to set up a live interview with M.R. Television and print media outlets posted reports and video feeds on-line for a limited time and the Canadian Broadcasting Corporation's national website (CBC.ca) carried a report. The CBC.ca story fed into three additional on-line news services and thirty-six independent blogs. Two days following the media release, the CBC.ca story was among the 10 most-viewed and most-blogged on the CBC website. In all, CBC.ca's on-line coverage generated 141 responses from people using 81 different user-names on its website, and re-posts of the CBC.ca report on other websites led to an additional 41 responses from people using 33 different user-names. Meanwhile, through e-mail, telephone and face-to-face communication, we learned that the media coverage had also generated interest within the Government of Canada, the Government of Alberta and among local providers of food relief and other social services.

### Media messages

Not one media story in our dataset was off-message. All carried our main message, 'Poverty is a public health problem, and most (7 of 11 sources) also carried our other two key messages, 'Many Canadians live with food insecurity' and 'Ignorance of poverty exists in mainstream society'. As shown in Table I, these three frames are distinct when it comes to problem definition but overlap somewhat for causes, solutions and moral stance. Table I also provides examples of how the media reported this story.

### Reactions from members of the public

On examination of comments posted on-line in reaction to the media coverage, we found all three

**Table II.** *Unintended message frames and sample quotes from public reactions to the media coverage*

| Problem definition | Attributed causes | Suggested remedies | Moral judgments |
|---|---|---|---|
| 1) There is no problem with Kraft Dinner® | People who complain about Kraft Dinner® are not truly hungry | Kraft Dinner® is an adequate meal | People who complain lack moral fiber |

Sample quotes

I personally don't mind macaroni and cheese once in awhile and also like many Canadians, I was in a place in life where I had to eat it almost every day. I never complained or thought that the people barbecuing steak down the block were greedy and I deserved what they had. I may have had a little envy going on but I wasn't about to blame them for my situation. (posted on CBC.ca, 2008)

I love to eat all the weird cheap crappy poor-folk stuff we used to eat when I was a kid. I didn't know any different then, even if I was 'food-insecure,' and it doesn't bother me any now. Also, this business of kids 'refusing' to eat KD because they have to eat it so often strikes me maybe as kids who aren't truly hungry, or don't have much in the way of competition around the table anyway. (posted on CBC.ca, 2008)Can't afford 'luxuries' like butter and milk? Use powdered milk with water and forego the butter. (posted on CBC.ca, 2008)

| 2) Food security is a personal responsibility | Individuals are responsible for meeting the food needs of themselves and their families | Poor people should seek employment and should spend their money on basics like food rather than on luxuries. Food banks are a humane response to hunger | People should be self-sufficient and look after their family members |

Sample quotes

Tonight, sushi for me. I'm helping employ someone else and stimulating the food commodity economy. Zero guilt for me. Except for the guilt I feel for not eating so well every day. (posted on CBC.ca, 2008)Today, I work, contribute and still enjoy the stuff every so often. My spouse adds beef or lamb along with other stuff and then bakes it in the oven. Just killer. If the food bank recipients don't like it or think we are just emptying out our cupboards, then I say, 'Hey Dude/Dudette: GET A JOB.' (posted on CBC.ca, 2008)I would agree that most poor people these days have some priorities in the wrong place. Most have cable, big screens and cell phones while their children go hungry. (posted on CBC.ca, 2008)

| 3) Poor nutrition results from personal deficits | People do not know enough or practice what they know about nutrition | People need to be educated to eat a more balanced diet | Personal deficits account for poor nutrition |

Sample quotes

I wonder if these people were given a communal kitchen and instruction on how to make nutritious meals for next to nothing what would happen. I'm not talking 'forced to'—I'm talking 'invited guest' style. I think there is a major problem today mainly because we have forgotten the skill of survival that comes from knowing how to cook. (posted on CBC.ca, 2008)

I've never bought it, but if I did, I'd be sure to add plenty of meat and vegetables to it. Unfortunately, many people do not. And some people seem to think it not even necessary, which leads to disease like diabetes if they fall into a habit of eating such 'instant' foods often. (posted on CBC.ca, 2008)

If you're willing to actually work at it and add some things, and you're trying to use the mac and cheese to save money, it can be made into a quite a meal. (posted on CBC.ca, 2008)

| 4) A sense of entitlement is a social problem | People have become accustomed to being taken care of, rather than taking care of themselves and teaching their children to do the same | People need to take care of themselves and to practice self-sufficiency | People should not be allowed to lean on others, including publicly funded programs or other forms of state intervention. |

**Table II.** *Continued*

| Problem definition | Attributed causes | Suggested remedies | Moral judgments |
|---|---|---|---|
| Sample quotes | | | |
| They have culture that is permeating our society, and it is becoming quite sickening because the certain reality is that people should be glad that they have something to eat in the first place. Tonight I am having a steak, just because I can and I won't feel guilty about it. (posted on CBC.ca, 2008) | | | |
| Sounds like kids that have not only never been hungry but never been given the choices we in another era used to get … eat it or starve. (posted on CBC.ca, 2008) | | | |
| ''I think there are countless problems today because we have forgotten many skills of survival. Call it the cancer of the nanny-state.'' (posted on CBC.ca, 2008) | | | |
| 5) Social research is a problem | Social researchers mismanage public funds | Public money should not be spent on social research | Many or perhaps all social researchers are irresponsible |
| Sample quotes | | | |
| I feel that if we spent money regarding social issues like cooking lessons for lower income families, we would be spending our money wisely. Instead, however, we spend money on the study of the social diversity of food perspective. What a waste. (posted on CBC.ca, 2008) | | | |
| What I would like to know is: a) How this study could possibly help the people in question? and b) How many needy families could have been fed with money wasted on this study? (posted on CBC.ca, 2008) | | | |
| We can afford these stupid studies but now can't afford to do anything about it because we wasted a whole wack of money on studying it. Doh! (posted on CBC.ca, 2008) | | | |

intended messages, including several responses indicating that our intervention had prompted some members of the public to reflect on poverty in new ways. We also found five unintended messages frames. Similar to the intended message frames, the unintended message frames in our sample are distinct when it comes to problem definition but overlap somewhat for causes, solutions and moral stance. The first of these unintended message frames, 'There is no problem with Kraft Dinner®' suggests that anyone who objects to obligatory consumption of Kraft Dinner® cannot be truly hungry or deserving of assistance. The second unintended message frame, 'Food security is a personal responsibility', also intimates that many individuals behave irresponsibly. 'Poor nutrition results from personal deficits', the third unintended message frame, portrays educational interventions and individual will-power as keys to food security. The fourth unintended message frame, 'A sense of entitlement is a social problem', framed objections about obligatory consumption of Kraft Dinner® as symptomatic of a more general cultural malaise. The fifth and final unintended message frame, 'Social research is a problem', depicted publicly funded programs that support research that is not curative or clinical in orientation as competing directly with ameliorative interventions. See Table I for examples of on-message reactions, and Table II for examples of off-message reactions from the public.

## Reactions from social service agencies, government agencies and politicians

Our media intervention stimulated discussion at the board level in at least two local food relief agencies (reported by their respective executive directors in face-to-face conversations with M.R.), while staff from another local agency began to purchase milk for redistribution with Kraft Dinner® donations as a direct result of the media coverage (reported by a front-line staff member in a face-to-face conversation with M.R.). The media strategy also sparked an inquiry from the Senate Committee on Social Affairs Subcommittee on Cities (documented in an e-mail sent to M.R.), an inquiry from a political

staff member (documented in an e-mail sent to K.T. and forwarded to M.R.) and discussion in the Alberta Legislature (documented in 'Hansard'). The inquiry from a Conservative politician's staff may have been motivated by concern that our research had wasted public funds (i.e. 'Can you please let our office know whether Alberta taxpayers paid for this research?') as per the 'Social research is a problem' unintended message frame. The questions posed by a Liberal opposition politician to Alberta's Minister of Health reflected our key message i.e. 'Poverty is a public health problem'. The reply from Alberta's Minister of Health (a member of the Legislative Assembly from the Progressive Conservative Party of Alberta) to this question was off-message, suggesting that 'Food security is a personal responsibility'. In 'a province that has opportunity for everyone', he said, 'the government is not responsible for what each one of 3.2 million Albertans eats' (cited in [32]).

## Discussion

Our results demonstrate a willingness on the part of mainstream Canadian media to consider poverty as an important contributor to ill health when a story is packaged to meet journalistic needs. Hayes *et al.* [4], in contrast, found only nine items of a sample of 4732 drawn from Canadian daily newspapers that dealt with income as a determinant of health. A related study reported that Canadian journalists regard stories about poverty as a cause of ill health to be lacking in novelty and newsworthiness [23]. Such results have led to a suggestion that most if not all efforts to engage mainstream media outlets in translating evidence on the socio-economic determinants of health waste time and energy [5]. Yet our intervention led to considerable media coverage, and all the media coverage available for analysis was on-message. In other words, reporters did not turn to detractors for the sake of appearing balanced, as has been found in Canadian media coverage on other health topics [33].

Health promotion strategies are often powered by stories [34, 35], and authentic voices and familiar things have been associated with media and public receptivity to poverty as a determinant of population health [1, 2, 36]. In conjunction with a peer-reviewed qualitative publication and existing quantitative evidence, we used a strategy of personal narratives and visual imagery (Kraft Dinner®, milk) to convey links between poverty and health as a newsworthy story. The VNR facilitated media coverage of structural barriers to health and of food security as both a physical and emotional experience, while also mitigating the risk of objectification or exploitation of people living in poverty by the media. The Kraft Dinner® 'pitch' permitted journalists to present the connection between poverty and population health problems in an original way, while the publication of an academic article provided an element of timeliness.

We did not initially set out to document our media advocacy efforts or the responses sparked by the media coverage for the purposes of academic publication, and there exist limitations to our analysis arising from the *post hoc* nature of data collection. Tracing on-line posts to their authors would have exceeded the limits of our research ethics certificate, thus we also do not know how many posted comments came from 'regulars' or how many were drawn into conversation by this particular media story. Neither could we identify which groups were most likely to evoke which frames when blogging in response to the media coverage. We realize that personal blogs or responses posted on-line reacting to media coverage are unlikely to serve, statistically speaking, as a barometer of public opinion. We also recognize that, with time, bloggers were increasingly in dialogue with one another, and the degree to which they were responding directly to our media strategy varied. For these reasons, we have not reported on the frequency of the various intended and unintended messages in public reactions to our media intervention. The range of responses sparked by our media strategy does, however, highlight various perceptions about the relationship between poverty and health, which we have shared in this paper so as to be of assistance to other teams. Future research might fruitfully combine qualitative content analysis along the lines of this paper with

quantitative content analysis (e.g. frequency of intended and unintended message frames, trends over time), particularly if combined with an adaptation the techniques of conversation analysis [37] to on-line interactions (e.g. turn-taking, ways of changing the topic or subject of conversation) so as to discern the kinds of posts that seem to generate opposition or support for interventions to improve population health and health equity. Insights might also be gained from interviews with members of the public who post on-line in response to mainstream media coverage of the socio-economic influences on population health or follow-along interviews as members of the public read and respond to media coverage in either 'real-life' or laboratory situations.

By systematically collecting and analyzing on-line responses, we have codified alternative frames spontaneously evoked by members of the public in opposition to our position that poverty is a population health problem in need of redress, including through income-related public policies. While the 'personal responsibility' and 'personal deficit' problem frames reflect a distinction between the deserving and undeserving poor that is all too familiar, our analysis has been helpful to team members in teaching, in planning other media interventions, in on-going research and when speaking about population health to non-researchers. For example, in light of the remarks by Alberta's Minister of Health, we now emphasize that equality of opportunity does not exist when it comes to health outcomes. We had not foreseen the 'social research' problem frame, but this sentiment is not uncommon, even among health scientists [38]. This finding did not emerge in previous survey-based research related to poverty as a determinant of population health [6, 39, 40].

In keeping with calls for greater attention to how members of the public react to different ways of representing health issues [36, 41], two US-based research teams recently published results from controlled experiments designed to test audience perceptions of media coverage related to the social determinants of population health. In a survey-based study, Rigby *et al.* [40] found that support for government programs to redress health dispar-

ities tended to vary depending on which groups were described as advantaged and which were described as disadvantaged (Black versus White, college-educated versus not, poor versus middle-class). Support for government intervention also varied with political orientation (Democrat versus Republican). Gollust *et al.* [6] tested reactions to several versions of a hypothetical Internet news story. Exposure to a 'poverty as a health determinant' message made Democrats even more likely to endorse preventive social policies, but the opposite was found for Republicans. Gollust *et al.* [6] warn that media coverage on the social determinants of health could further polarize public opinion and potentially undermine support for public policies to redress health inequity.

We have no reason to think that resistance to social determinants framings is any less of an issue in Canada than in the United States, particularly in politically conservative parts of the country such as Alberta. Indeed, while most Albertan adults endorse structural (67.4%) over behavioral (16.8%) explanations for why poor people tend to have worse health outcomes, those who endorse a behavioral explanation, such as the Minister of Health, tend to support conservative parties and to oppose government spending on non-clinical determinants of health [39].

Websites have become important venues for public discussion and are not constrained by 'carrying capacity' in the same way as radio, television or print media [42]. Bloggers draw on conventional media sources and are influencing public opinion, furthermore, in ways that are only beginning to be explored [43–45]. Recent and on-going shifts in Internet communication not only apply to the marketing of health-related products and services [46] but also to the promotion of ideas relevant to social inequalities in population health. Just as our media intervention marshaled personal experience in an effort to persuade, so did many members of the public who reacted negatively to on-message media coverage. Yet off-message reactions are not necessarily persuasive and could become more pronounced as population health agendas gain support. In the wake of evidence-informed media

interventions, it can be difficult or even impossible for researchers to enter on-line debates without compromising the credibility and 'moral high ground' of a scientific expert (cf. [47]). Thus, researchers and allied organizations need to be wary of over-reacting.

## Conclusions and recommendations

Few studies of interventions exist in the food insecurity literature, and yet, as [48] observe, 'a solution-oriented research paradigm is required to identify effective interventions and policies to enhance food security.' We believe that communication research and media advocacy belong in the solution-oriented paradigm. Our experience confirms that message framing, narratives and visual imagery [36] are all important in persuading journalists and media outlets to carry stories about poverty as a determinant of population health. On-message coverage, nevertheless, will provoke divergent reactions. Consequently, the effectiveness of health promotion communication strategies regarding poverty as a determinant of population health will hinge on activating and reinforcing what people sometimes regard as plausible or true. We suggest that researchers and media relations specialists working with them should anticipate unintended messages, support allied organizations in responding and incorporate what is learned through trial and error into future plans.

Receptivity among journalists to stories about non-clinical determinants of health is but a starting point toward overcoming the challenges in translating population health evidence into policy interventions. We recommend collaboration between population health researchers and experienced media relations specialists. This combination of expertise is useful in building toward best practices in media advocacy for population health. A broader range of research studies on opposition to action on poverty as a determinant of health is part of what is needed so that media advocacy interventions can be more persuasive [49].

## Conflict of interest statement

None declared.

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