



Media coverage of harm reduction, 2000–2016: A content analysis of tone, topics, and interventions in Canadian print news

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ABSTRACT

Background: Harm reduction interventions reduce mortality and morbidity for people who use drugs (PWUD), but are contentious and haphazardly implemented. This study describes volume and content of Canadian newspaper coverage of harm reduction produced from 2000 to 2016.

Methods: Searches of 54 English-language newspapers identified 5681 texts, coded for type (news reports, opinion pieces), tone (positive, negative, or neutral/balanced coverage), topic (health, crime, social welfare, and political perspectives on harm reduction), and seven harm reduction interventions.

Results: Volume of coverage doubled in 2008 (after removal of harm reduction from federal drug policy and legal challenges to Vancouver's supervised consumption program) and quadrupled in 2016 (tracking Canada's opioid emergency). Health perspectives on harm reduction were most common (39% of texts) while criminal perspectives were rare (3%). Negative coverage was over 10 times more common in opinion pieces (31%) compared to news reports (3%); this trend was more pronounced in British Columbia and Alberta, a region particularly affected by Canada's opioid emergency. Supervised drug consumption accounted for 49% of all newspaper coverage.

Conclusions: Although federal policy support for harm reduction waxed and waned over 17 years, Canadian newspapers independently shaped public discourse, frequently characterizing harm reduction positively/neutrally and from a health perspective. However, issue framing and agenda setting was also evident: supervised drug consumption offered in a single Canadian city crowded out coverage of all other harm reduction services, except for naloxone. This narrow sense of 'newsworthiness' obscured public discourse on the full spectrum of evidence-based harm reduction services that could benefit PWUD.

1. Introduction

International evidence confirms that harm reduction services (e.g., needle distribution, supervised drug consumption) effectively prevent overdose mortality, infectious disease transmission, and other deleterious health outcomes among people who use drugs (PWUD; Kimber et al., 2010; Ritter and Cameron, 2006). However, access to harm reduction interventions does not require PWUD to discontinue substance use. This, combined with other issues such as stigmatized attitudes

toward drug users, has contributed to the contentious nature of these services. Implementation, scale-up, and policies supporting harm reduction are thus highly variable around the world (Cooper et al., 2012; MacNeil and Pauly, 2010; Parker et al., 2012; Stone and Shirley-Beavan, 2018; Tempalski and McQuie, 2009).

Haphazard implementation of harm reduction can be understood from the perspective of *morality policy*, i.e., policy-making that must reconcile conflicting values over the legitimacy of providing health or social services to a target population (Bowen, 2012; Euchner et al.,

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2013). Policy scholars propose that in these situations, decision makers adopt "...a strategic approach to framing policy issues" (Knill, 2013, p. 311) that downplays instrumental governance in favor of policies created to serve rhetorical and symbolic functions (Ferraiole, 2014; Mucciaroni, 2011). This phenomenon was documented in recent analyses of policy frameworks governing Canadian harm reduction services from 2000 to 2015, confirming that they were written largely for rhetorical purposes. Policies often avoided specific governance statements (e.g., timelines, funding arrangements, endorsements from government, references to legislation), did not name or endorse specific evidence-based harm reduction interventions, and did not acknowledge or endorse international tenets of harm reduction, i.e., abstaining from drug use is not required to receive health services; PWUD often face stigma and discrimination and should be legitimate participants in policy making (Hyshka et al., 2017; Wild et al., 2017).

Decision makers must of course consider public views in formulating policy. This raises the issue of whether public discourses also reflect conflicting values over the legitimacy of providing harm reduction services to PWUD. In this paper, we consider this issue by analyzing newspaper coverage of harm reduction. Political scientists and communication scholars propose that media coverage can reflect and shape public discourses (Altschull, 1995; Cook, 1998; Bou-Karroum et al., 2017; Kingdon, 1984; Lancaster et al., 2011; Scheufele and Tewksbury, 2007; Phillips et al., 1991). Media reflects public views by reporting the positions and preferred solutions of decision makers, advocates, researchers, and other elites that formulate responses to complex health and social problems (Zaller, 1992). Media also shapes public views and actions via issue framing (i.e., highlighting particular views on problems, target populations, and solutions) and agenda setting (i.e., selecting particular topics for public consumption; Lancaster et al., 2011; McGinty et al., 2016a; Scheufele and Tewksbury, 2007). For example, McGinty et al. (2016b) analyzed 673 US news reports on opioid misuse and found that media framed this as a criminal issue (e.g., illegal drug dealing) more often than as a health issue; evidence-based prevention and treatment interventions were rarely mentioned. Borwein et al. (2013) reported that negative media coverage describing extended-release oxycodone as a 'street drug' was associated with reduced physician prescribing. An analysis of stigmatizing terms (e.g., "addict", "substance abuser") in 6399 news stories on the US opioid epidemic found that almost half used one or more of these pejorative terms for PWUD (McGinty et al., 2019). Kennedy-Hendricks et al. (2019) analyzed 300 randomly-sampled US news stories of pharmacotherapies for opioid use disorder and reported that media coverage of these interventions increased dramatically in 2015–2016, tracking the emerging opioid crisis in that country.

There is a small media analysis literature on harm reduction. Törrönen (2004) analyzed 133 Finnish drug policy editorials and found that despite evidence for a 'moral panic' in reporting of drug trafficking, editorial boards advocated for greater support for harm reduction concurrently with support for criminal justice responses. Eversman (2013) analyzed discursive use of the term 'harm reduction' in 296 editorials, op-eds, columns, and letters to the editor published in 130 US newspapers between 1990 and 2012. Although 75% of texts supported harm reduction, criminal justice perspectives were the most frequently mentioned topics, and specific harm reduction interventions (e.g., naloxone) were rarely mentioned. Several qualitative studies analyzed media coverage of needle distribution program closures and prescription heroin trials, concluding that negative media coverage contributed to discontinuing these programs (Broadhead et al., 1999; Ekendahl, 2012; Körner and Treloar, 2003; Lawrence et al., 2000).

1.1. Objectives

Extant work in this area is limited in two ways. First, no research to date has attempted to comprehensively describe media coverage of harm reduction over time and at both national and regional levels.

Second, although informative, in-depth qualitative analyses often sample media texts purposively to coincide with events related to the development or delivery of harm reduction services (e.g., Broadhead et al., 1999; Ekendahl, 2012; Körner and Treloar, 2003). Findings using this approach may be limited because of selection bias, i.e., inability to contextualize coverage of those events in relation to everyday media reporting on harm reduction (cf. Hughes et al., 2011). This issue has been addressed in media analyses of substance use issues that used probabilistic sampling of texts (e.g., Kennedy-Hendricks et al., 2019; McGinty et al., 2016b). However, those studies did not adjust reporting rates for total volume of media texts produced across all topics. As such, changes in coverage rates may be artefacts of total publishing volume rather than genuine changes in the substance-related issue(s) of focal interest. All of these limitations were addressed in the present study, which assembled a corpus of everyday news coverage on harm reduction in Canada in order to describe the volume and content of harm reduction published in newspapers across the country. Our objectives were to determine whether the volume and content of media texts on harm reduction were (1) systematically related to changes over time in federal policies toward harm reduction and in emerging public health issues affecting PWUD and (2) heterogeneous among regions differentially affected by Canada's opioid emergency. As this was a descriptive study, we were interested in documenting trends in volume and content of newspaper coverage as opposed to explaining those trends, and no hypotheses were proposed *a priori*.

2. Material and methods

2.1. Cases and scope

This study is a component of the Canadian Harm Reduction Policy Project (CHARPP), a mixed-method, multiple-case study drawing on four data sources (policy documents, key informant interviews, media texts, and a national public opinion survey) describing how policies governing harm reduction services are positioned within and across the 13 Canadian provinces and territories. Policy case studies may be executed at different levels of analysis (e.g., countries, provinces, municipalities, institutions; Deber and Mah, 2014; Gerring, 2004). Because Canadian health services for PWUD are primarily the responsibility of provinces and territories (Marchildon, 2006), we defined cases at the provincial/territorial level. Thus, our scope was English language harm reduction media articles produced from 2000 to 2016 in the 13 Canadian provinces ($n = 10$) and territories ($n = 3$) as cases for the study, which is consistent with Stake's (2006) recommendation of a minimum of four cases for multiple case study comparisons. The 17-year study period replicated the timeline used in the policy document analysis component of CHARPP (Wild et al., 2017), and we extended the media analysis component to 2016 to accommodate a change in federal government policy regarding harm reduction as well as Canada's emerging opioid emergency.

2.2. Newspaper article identification and retrieval

The Canadian Newspaper Association website was queried to identify circulation counts for newspapers in each province/territory. A total of 54 newspapers having the highest circulation counts within their respective province or territory were selected (Supplementary file 1). Newspaper circulation counts were unavailable in the Northwest Territories and Nunavut; online and other print media sources for those cases were identified. Three databases (*Canadian Newsstand Complete* [now known as *Canadian News Stream*], *Eureka*, and *Factiva*) were used to retrieve texts; collectively, these covered the 54 selected newspapers.

A professional research librarian assisted in developing our search strategy. Controlled search vocabularies were developed iteratively using a set of search terms synonymous with harm reduction interventions for illegal drug use (Supplementary File 2*). CHARPP media

working group members (MA, LBI, AH, DM, EH, TCW) reviewed terms and synonyms in these vocabularies to confirm that they covered the harm reduction concepts and interventions relevant to this study. For each database, searches were limited to English-language print media produced between 2000 and 2016, which identified 42,720 unique texts.

2.3. Screening

2.3.1. Inclusion and exclusion criteria

Texts were included if they discussed harm reduction services for PWUD, policy proposals, and/or policy changes related to harm reduction programs and services as either the main topic of the article or as a secondary topic. To maintain continuity with other CHARPP data sources, harm reduction services for alcohol and/or tobacco were excluded. Texts were also excluded if (a) harm reduction was not a primary or secondary topic of the article (e.g., brief mentions of harm reduction in the context of other reporting), (b) they did not report on harm reduction and illicit drug use, and/or (c) were not formatted as texts (e.g., figures). The final inclusion and exclusion criteria above were developed and refined iteratively (Supplementary File 3). Two research assistants independently screened random samples of 500 articles to test, evaluate, and refine the inclusion/exclusion criteria, which were then validated by CHARPP's media working group. After validation, research assistants independently screened ~21,000 texts for possible inclusion into the final corpus. Periodic interrater reliability checks were conducted after the two RAs each screened batches of 1000 articles (i.e., one RA randomly sampled 200 articles from batches of 1000 articles, which was sent to the other RA for verification). Disagreements regarding inclusion/exclusion were discussed and resolved via consensus.

2.3.2. Reliability of screening

Reliability of screening was assessed using multiple statistical indices (Neuendorf, 2002; Lombard et al., 2002). Commonly-used measures (i.e., percentage agreement, Scott's π , Cohen's κ , and Krippendorff's α) are unduly affected by marginal distributions and exhibit abnormally inverse relationships between chance agreement and coding difficulty. We therefore supplemented these reliability indices with Gwet's AC1, which addresses these limitations (Feng, 2014). All five indices were used to assess interrater reliability using the "irr" and "rel" packages in R (Gamer et al., 2015; Martire, 2017); confidence level was set at 95% for all interrater reliability measures, with no bootstrap replicates for Krippendorff's α and no weights added to Cohen's κ , Scott's π , and Gwet's AC1 measures. Verification of screening decisions throughout this process was conducted until agreement on all five measures of interrater reliability exceeded 0.90. Fig. 1 describes the search, screening and verification process. Of 42,720 unique newspaper articles retrieved, 6034 texts were included. During document coding (section 2.4), an additional 353 were excluded from the corpus using the same inclusion/exclusion criteria, leaving a corpus of 5681 texts for analysis.

2.4. Document coding

Content analysis was performed (Feng, 2014; Krippendorff, 2013; Lombard et al., 2002; Neuendorf, 2002). The coding framework was drafted using procedures described by Matthes and Kohring (2008) and David et al. (2011) and was refined iteratively through pilot testing. A final face validation procedure was conducted by asking CHARPP's media working group to provide expert judgment on whether the codes were appropriate for answering the research questions.

2.4.1. Document characteristics

For texts retrieved from the *Canadian Newsstand Complete* repository, year, month and province of publication was extracted by the

research team. Articles contained in the *Eureka* and *Factiva* repositories did not include those variables, so we engaged an IT consultant with expertise conducting media analyses using those repositories to develop an algorithm that searched those databases to recover those variables. For texts published in the *Canadian Newsstand Complete* repository, texts were pre-categorized as *news reports* or *opinion pieces* (i.e., *editorials*, *columns*, *op-eds*, or *letters*). *Eureka* and *Factiva* did not pre-categorize articles in this manner, and so our IT consultant used another text processing algorithm to search those databases and classify articles as news reports versus opinion pieces.

2.4.2. Tone

Tone was coded as *positive* if the author was in favor of or expressed support for harm reduction and *negative* if they were opposed. Texts providing either a balance of supportive and opposing positions or that did not express an opinion for or against were coded as *neutral*.

2.4.3. Topics

Four perspectives on harm reduction were coded. *Crime* coverage discussed illegal drug consumption and/or trafficking, either as a by-product or consequence of the harm reduction intervention(s) discussed in the article, or where drug use and/or PWUD were characterized as engaging in an illegal activity (e.g., harm reduction services characterized as breaking the law by facilitating illicit drug use). *Social welfare* coverage discussed impacts of harm reduction services on communities, community members' perceptions and/or concerns about harm reduction services, moral or ethical dilemmas in delivery of harm reduction services, and/or other social issues (e.g., the need for harm reduction services to address stigma and isolation experienced by PWUD). *Political* coverage described governmental involvement in facilitating or hindering harm reduction services and/or a political actor's position on harm reduction (e.g., provincial government efforts to increase access to naloxone kits; Vancouver's supervised drug consumption program's political/legal battle with the federal government). Finally, *health* coverage discussed harm reduction within the context of health care and health outcomes of drug users, including harm reduction as facilitating access for PWUD into healthcare systems, improving their quality of life, and/or reporting on research findings investigating health outcomes (e.g., health coverage of harm reduction in relation to Canada's opioid emergency). In cases where texts discussed two or more topics, articles were coded as *multiple*, with sub-codes for each applicable topic.

2.4.4. Interventions

Texts were coded for the presence or absence of seven specific harm reduction interventions, including: *harm reduction* (i.e., conceptual discussions of the rationale and/or general principles underlying this approach to substance use), *needle/syringe distribution*, *naloxone*, *supervised injection/drug consumption*, *opioid agonist treatment*, *street-level outreach*, *drug checking*, and *safer inhalation kits*. Some interventions (supervised consumption, opioid agonist treatment, needle distribution, and harm reduction [general reference] contained multiple variations within the respective intervention (e.g., articles describing opioid agonist treatment that also discussed low-threshold methadone provision or heroin prescription). Coders were instructed to code for the dominant intervention (i.e., the one most extensively discussed). For articles where there were discussions of multiple interventions at equal length, coders categorized them as "Multiple" followed by sub-codes for the specific interventions covered.

2.4.5. Interrater reliability of coding

Four research assistants, working in pairs, evaluated coding reliability on batches of 100 randomly-selected texts until agreement on all five interrater reliability measures exceeded 0.90 for each coded variable (tone, topic, interventions) for each pair of coders. Once this criterion was achieved, coding teams were switched until each coder had

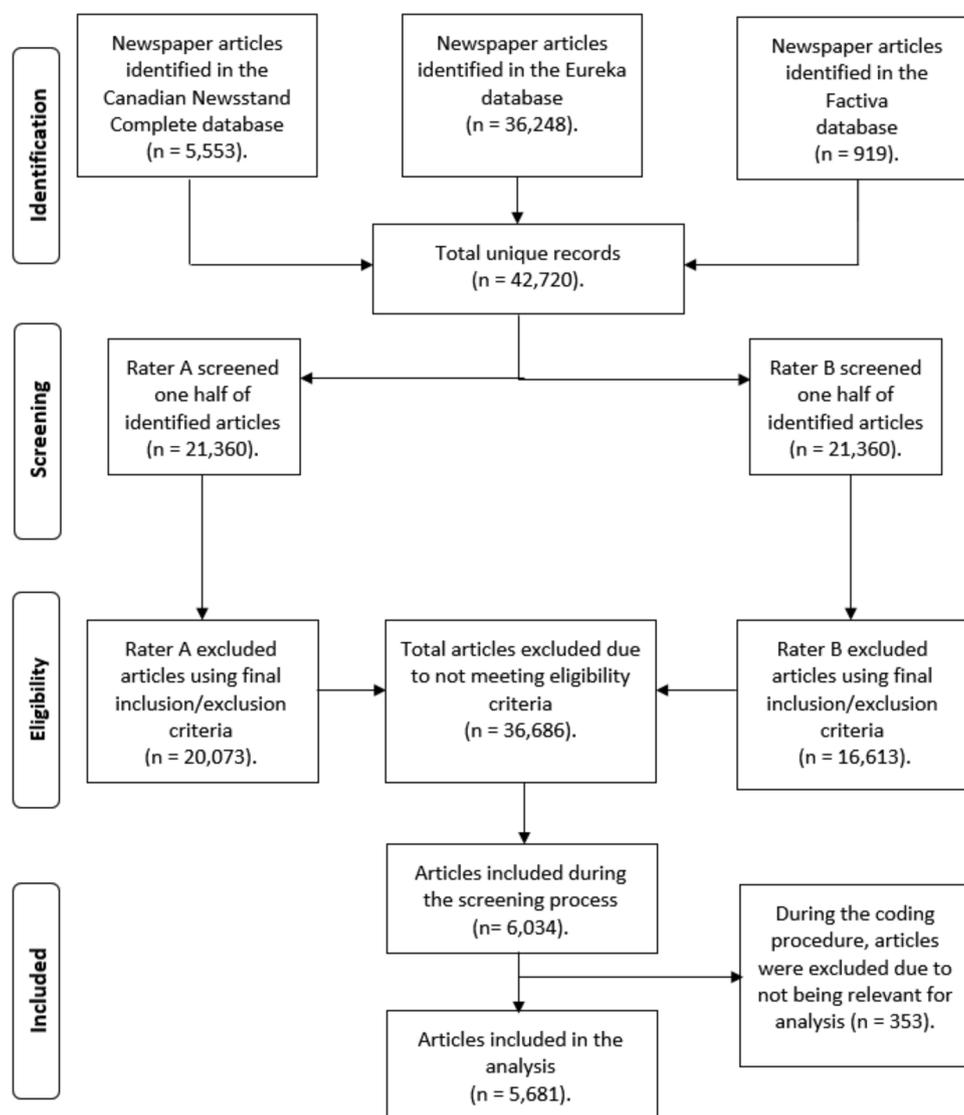


Fig. 1. Search, screening, and verification process.

the opportunity to assess reliability with every other coder. Throughout the coding process, weekly checks were conducted on 50 randomly-selected articles to ensure consistency, using the same criteria.

3. Analyses

3.1. Volume and content of media coverage

Meaningful era analyses (Section 3.2) required us to demonstrate that changes in volume of harm reduction media coverage were not artefacts of total volume of media produced over the study period. Standardized coverage rates were used to describe yearly changes in volume of harm reduction media coverage. For any of the 54 selected newspapers that published one or more harm reduction texts in a study year, we obtained the total number of newspaper articles published on all topics by those papers using the electronic databases described earlier. We then computed standardized rates of harm reduction reporting relative to the total volume of media texts produced by those newspapers in each year of the study period.

Content of media coverage was described by calculating the proportion of included media texts expressing positive, neutral/balanced, and negative tone toward harm reduction separately for news reports and opinion pieces, and the proportion of texts that mentioned each

topic and intervention, aggregated across news reports and opinion. Rates and proportions were calculated for each study year and at both case (provincial/territorial) and national (Canada-wide) levels.

3.2. Era and geographic comparisons

All included texts received a categorical code representing date of publication in three distinct eras across the study period. Each era corresponded to a change in federal government– accompanied by distinct policy environments for harm reduction– and to specific events affecting harm reduction services for PWUD (Fig. 2). *Era 1* (January 1, 2000 – February 5, 2006) included two successive Liberal governments that endorsed harm reduction as part of federal drug policy. During this era, North America’s first supervised drug consumption services were opened at two Vancouver sites in 2003. *Era 2* (February 6, 2006 – November 3, 2015) included three successive Conservative governments, which campaigned on and adopted ‘tough on drugs’ policies, removed harm reduction from the federal drug policy (renamed the National Anti-Drug strategy) and sought to close supervised drug consumption services (for further historical context, see Dawe and Goodman, 2017; Hyshka et al., 2012; Webster, 2013). The latter was the subject of a legal battle between stakeholders representing Vancouver’s Insite program and the federal government, culminating in a

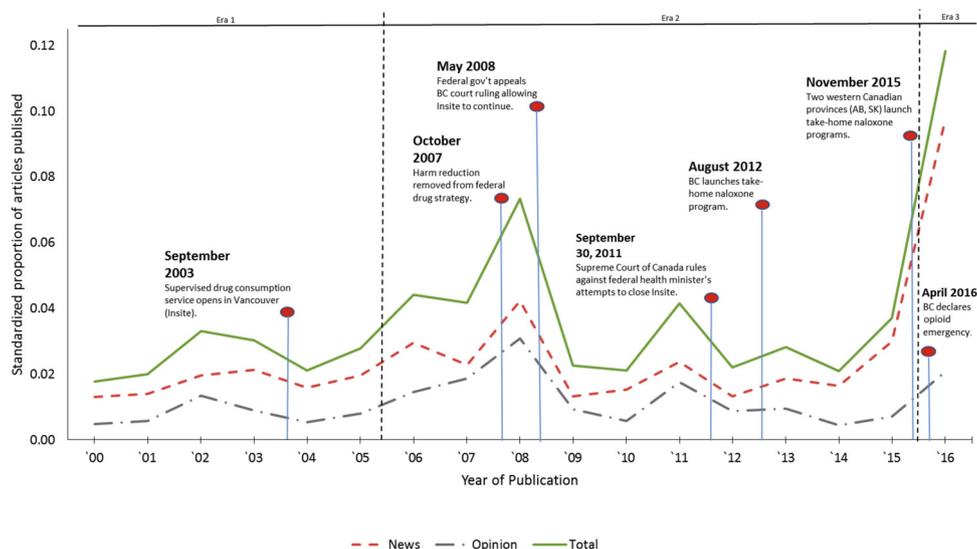


Fig. 2. Volume of Canadian newspaper coverage produced on harm reduction.2000–2016.

series of court cases and a unanimous Supreme Court of Canada ruling that the federal health minister’s attempts to close Insite contravened the country’s Charter of Rights and Freedoms (Hyshka et al., 2013). Canada’s opioid emergency also emerged during era 2, with western Canadian provinces responding by opening publicly-funded take-home naloxone programs in 2012 (British Columbia) and 2015 (Alberta, Saskatchewan). In Era 3 (November 4, 2015 – December 31, 2016), harm reduction was reinstated as a component of federal drug policy in the current Liberal government. In addition, an opioid-related public health emergency was declared on April 14, 2016 by the British Columbia government.

Texts also received a categorical code reflecting newspaper reports and opinion pieces produced in two Canadian geographic regions. The first region included the provinces of British Columbia and Alberta; the second region included all other Canadian provinces and territories. Our rationale for comparing these two regions was that (a) British Columbia and Alberta accounted for a disproportionate population burden of Canada’s opioid emergency over the study period, reporting the highest per-capita overdose death rates in the country by 2016 (Belzak and Halverson, 2018; Table 1), and (b) these two provinces were early adopters of innovative services (i.e., North America’s first

supervised drug consumption program in Vancouver, BC; Canada’s first naloxone program in Edmonton, Alberta); (c) previous CHARPP analyses of Canadian harm reduction policy frameworks indicated that British Columbia and Alberta accounted for almost half (45%) of all policy documents produced in Canada from 2000 to 2015 (Wild et al., 2017) and were ranked first and fourth in the country, respectively, on a measure of harm reduction policy quality as of 2015 (Hyshka et al., 2017; Table 1); and (d) BC and Alberta produced over half (54%) of all harm reduction media coverage in the current study (Table 1).

Differences in newspaper content over eras and geography were estimated with Pearson’s chi-square tests with era treated as a trichotomous variable. To adjust for multiple tests conducted across families of codes, Bonferroni corrections were used to adjust the overall significance level ($\alpha = .05$) for each family of tests such that comparisons across 3 codes for tone (news reporting), 3 codes for tone (opinion pieces), 4 coded topics, and 6 coded interventions used $\alpha < .017, .017, .013$, and $.008$, respectively.

Table 1

Case information.

Case	Harm reduction media coverage, 2000–2016			Contextual information on cases	
	# of texts produced	% news reports	% opinion pieces	Opioid-related mortality per capita, 2016 ^a	Quality of harm reduction policies, 2015 (rank) ^b
British Columbia	2080 (38.9%)	55.6	44.4	20.7	1
Alberta	801 (15.0%)	81.5	18.5	14.3	4
Saskatchewan	411 (7.7%)	71.8	28.2	7.3	2
Manitoba	124 (2.3%)	54.8	45.2	6.7	6
Ontario	763 (14.3%)	61.2	38.8	6.2	7
Quebec*	129 (2.4%)	72.9	27.1	3.0	5
Nova Scotia	393 (7.3%)	85.8	14.2	5.6	3
New Brunswick	229 (4.3%)	81.2	18.8	4.3	8
Prince Edward Island	182 (3.4%)	72.0	28.0	3.4	9
Newfoundland	160 (3.0%)	90.0	10.0	3.4	10
North**	81 (1.5%)	88.9	11.1	n/a ^c	n/a ^d
Canada***	5681 (100%)	67.5	32.5	8.4	n/a

Notes. ^aRates per 100,000 population reported. Data accessed from <https://health-infobase.canada.ca/datalab/national-surveillance-opioid-mortality.html#t3>. ^bRankings taken from analyses of publicly-available policies governing harm reduction services in each Canadian province/territory as of 2015 (Hyshka et al., 2017; Figure 3). *English-language newspapers only. **Includes North West Territories and Yukon only. ^cTerritorial mortality rates were 18.2 and 11.2/100,000 for Yukon and Northwest Territories, respectively; data suppressed for Nunavut. ^dRankings not available for all Northern Territories. ***Number of provincial texts do not sum to 5681 as 328 articles were national in scope and were not coded to a specific case.

4. Results

4.1. Document characteristics

Of 5681 included texts, most ($n = 5353$) were produced in newspapers published in 12 Canadian provinces and territories (no articles were produced in Nunavut), while a subset ($n = 328$) were printed in newspapers with national circulation. Most texts were news reports (67.5%), while the rest were opinion pieces (32.5%) including editorials, columns, op-eds, and letters (Table 1). Newspapers in two cases (British Columbia, Alberta) produced over half (54%) of all media coverage of harm reduction across the study period (39% and 15%, respectively; Table 1). In contrast, 6 cases (Manitoba, New Brunswick, Prince Edward Island, Newfoundland, Quebec [English language texts only], and the Northern territories) each produced less than 5% of total Canadian newspaper content on harm reduction.

4.2. Volume of media coverage, 2000–2016

Over the 17-year study period, 0.036% of all articles published by the 54 newspapers included in the study addressed harm reduction specifically. Fig. 2 presents standardized rates of news reporting and opinion pieces across study years and eras. Coverage rates doubled and quadrupled (0.07% and 0.12%) relative to this average 17-year rate during 2008 (era 2) and 2016 (era 3), respectively, suggesting that increased volumes of harm reduction media coverage in these eras were not artefacts of total newspaper output over the study period and that meaningful era comparisons could be conducted.

4.3. Aggregated national content across eras

No associations were observed between study era and tone of news reporting or opinion pieces (Table 2). News reports consistently expressed either positive (39.9%) or neutral/balanced (57.2%) coverage of harm reduction. However, negative characterizations of harm reduction were over 10 times more frequent in opinion pieces (31.4%) compared to news reports (2.9%). Topical coverage of harm reduction was also consistent throughout the study period, i.e., no era associations were observed. Health perspectives on harm reduction most

commonly appeared (38.9% of all texts published from 2000 to 2016), followed by political coverage (28.7%) and social welfare coverage (21.2%). Criminal perspectives on harm reduction were extremely rare, accounting for 2.5% of all texts published from 2000 to 2016.

Supervised drug consumption consistently dominated coverage of all other harm-reduction interventions throughout our study period (49.1% of all texts published from 2000 to 2016; Table 2), with no differences in these high coverage rates across eras. Several other interventions demonstrated stable, low coverage rates across eras, including harm reduction (general, conceptual pieces, accounting for 10.6% of all texts published from 2000 to 2016) and opioid agonist treatments (6.3%). Newspaper coverage of the other coded harm reduction interventions (i.e., drug checking, safer inhalation, street outreach) were so infrequent that we aggregated them; these collectively accounted for 7.0% of all coverage of specific interventions. We observed significant associations between study era and media coverage of two particular harm reduction interventions. Specifically, naloxone coverage increased significantly across eras (from 0% of texts in era 1 to 37% of texts in era 3), while coverage of needle distribution significantly decreased across eras from 21% in era 1 to 3% in era 3.

4.4. Geographic comparisons across eras

We observed associations between geographic region and study eras for tone (news reporting), tone (opinion pieces), topics, and interventions (Table 3). In era 1, significantly less positive coverage of harm reduction was produced in British Columbia and Alberta (27% of texts) compared to other parts of the country (45% of texts). BC and Alberta also produced significantly less coverage of harm reduction from a health perspective in era 1 (34%) compared to the rest of Canada (53%). Regional differences were also observed in coverage of interventions during era 1 such that texts describing supervised consumption programs occurred two times more frequently in BC and Alberta (57%) compared to the rest of Canada (28%). In contrast, coverage of needle distribution programs was reduced in BC and Alberta (13%) compared to the rest of Canada (34%) during the same time period. No geographic differences were observed in study era 2, but by the end of the study period (era 3), opinion pieces published in BC and Alberta were significantly more likely to characterize harm reduction

Table 2
Media coverage of harm reduction across eras, Canada.2000–2016.

	All 2000-2016 (N = 5681)	Era 1 1/1/2000-6/2/2006 (n = 1425)	Era 2 7/2/2006-3/11/2015 (n = 3306)	Era 3 4/11/2015-31/12/2016 (n = 950)	χ^2
<i>Tone – News reporting (n = 3835)</i>					
Positive	39.9%	35%	41%	43%	1.45
Neutral/balanced	57.2%	62%	55%	56%	1.17
Negative	2.9%	4%	3%	1%	1.80
<i>Tone – Opinion pieces (n = 1846)</i>					
Positive	56.1%	43%	61%	57%	7.19
Neutral/balanced	12.5%	19%	10%	16%	3.29
Negative	31.4%	39%	29%	27%	3.82
<i>Topics^a</i>					
Health	38.9%	42%	34%	51%	5.92
Politics	28.7%	25%	32%	21%	3.22
Social welfare	21.2%	24%	21%	17%	1.51
Crime	2.5%	3%	3%	1%	1.17
<i>Interventions^b</i>					
Supervised consumption	49.1%	46%	54%	39%	4.53
Needle distribution	15.1%	21%	16%	3%	14.94***
Harm reduction (general)	10.6%	13%	10%	10%	0.61
Naloxone	8.3%	0%	3%	37%	73.10***
Opioid agonist treatments	6.3%	8%	6%	4%	1.42
All other interventions ^c	7.0%	7%	8%	3%	2.48

Notes. Era comparisons were conducted on all provincial and national texts. ^a Proportions do not equal 100% due to removal of the “multiple” category (8.7% of texts). ^b Proportions do not equal 100% due to removal of the “multiple” category (3.5% of texts). ^c Includes drug checking, safer inhalation, and street outreach. *** $p < .001$; Bonferroni correction applied to adjust for multiple comparisons within tone, topic, and intervention codes.

Table 3
Media coverage of harm reduction across geographic regions and eras, Canada.2000–2016.

	All ^a (2000-2016)			Era 1 ^a (1/1/2000-6/2/2006)			Era 2 ^a (7/2/2006-3/11/2015)			Era 3 ^a (4/11/2015-31/12/2016)		
	British Columbia, Alberta	Other Canadian provinces	χ ²	British Columbia, Alberta	Other Canadian provinces	χ ²	British Columbia, Alberta	Other Canadian provinces	χ ²	British Columbia, Alberta	Other Canadian provinces	χ ²
<i>Tone – News reporting (n = 3604)</i>												
Positive	33%	47%	4.08	27%	45%	7.88*	35%	47%	2.98)	38%	52%	3.96
Neutral	64%	50%	4.00	70%	51%	7.55*	61%	50%	2.45	62%	48%	3.96
Negative	3%	3%	0.00	3%	4%	0.15	3%	3%	0.00	1%	1%	0.00
<i>Tone – Opinion pieces (n = 1749)</i>												
Positive	51%	62%	2.46	38%	54%	5.15	57%	64%	1.03	46%	63%	5.83*
Neutral	12%	14%	0.18	20%	16%	0.54	9%	12%	0.48	12%	19%	1.87
Negative	37%	24%	3.99	42%	30%	3.13	34%	23%	2.97	42%	17%	15.03***
<i>Topics (N = 5353)^b</i>												
Health	35%	44%	1.69	34%	53%	7.34*	32%	37%	0.55	50%	54%	0.32
Politics	28%	29%	1.69	28%	22%	0.96	30%	34%	0.37	17%	21%	0.52
Social	25%	18%	1.45	27%	18%	2.32	25%	18%	1.45	19%	16%	0.31
Crime	3%	2%	0.21	4%	2%	0.69	3%	2%	0.21	1%	1%	0.00
<i>Interventions^c</i>												
Supervised consumption	52%	43%	1.62	57%	28%	17.7***	54%	50%	0.32	32%	43%	2.58
Needle distribution	12%	20%	0.48	13%	34%	12.3***	14%	20%	1.28	1%	5%	2.75
Harm reduction	12%	9%	0.48	15%	11%	0.71	11%	9%	0.22	11%	9%	0.22
Naloxone	9%	8%	0.06	1%	–	n/a	5%	2%	1.33	42%	34%	1.36
OAT	6%	7%	0.08	7%	10%	0.58	5%	7%	0.35	5%	3%	0.52
All other interventions	6%	9%	0.65	4%	12%	4.35	8%	9%	0.06	2%	4%	0.69

Notes. ^a328 texts were written for national coverage and were removed. ^b Proportions do not equal 100% due to removal of the “multiple topics discussed categories” (8.6% of texts out of 5353 articles). ^c Proportions do not equal 100% due to removal of the “multiple interventions discussed categories” (3.5% of texts out of 5353 articles). ***p < .008; *p < .017; Bonferroni correction applied to adjust for multiple comparisons within tone, topic, and intervention codes.

negatively (42% of those texts) compared to the rest of Canada (17% of opinion pieces published in that era).

5. Discussion

A central issue at the intersection of media research, communication, political science, and policy studies is the extent to which media coverage merely reflects the views of elites or plays an independent role in shaping public views on contentious social issues (Althaus, 2003). Results from this study indicate that Canadian media coverage of harm reduction reflected and shaped public discourses on these contentious services but in different ways. Volume of newspaper coverage reflected elite views by tracking federal policy changes, legal challenges, epidemiologic realities, and service innovations affecting harm reduction services for PWUD. Coverage volume increased dramatically in late 2007 (after the federal government removed harm reduction from the national drug strategy) through spring of 2008 (after a provincial court decision supporting Insite’s continued operations was rendered in 2008) and again in 2011 in the run-up to the Supreme Court of Canada’s ruling against the federal government on appeal of that case in 2011. Coverage volume dramatically increased again starting in 2015 following implementation of publicly-funded naloxone programs in three western provinces and British Columbia’s declaration of an opioid public health emergency in April 2016. All of these events were geographically localized in western Canada; not surprisingly, the provinces of BC and Alberta produced over half (54%) of the total national media coverage of harm reduction over the 17-year study period. These results confirm and are consistent with our first research objective, i.e., Canadian newspaper coverage of harm reduction did indeed increase during periods when relevant federal policies changed, when legal challenges to the legitimacy of supervised consumption were being decided, and again when service innovations (naloxone) were implemented and an opioid-related public health emergency was

declared.

Canadian newspapers also shaped public discourses on harm reduction services. This inference is supported by our results documenting considerable independence and autonomy in the content of newspaper coverage. Despite two changes in federal government policy– including a 10-year period of federal policy opposition to harm reduction– newspaper reporting was consistently positive or neutral/balanced across study eras with less than 3% of those texts characterizing harm reduction negatively. Opinion pieces were about ten times more likely to express negative opinion toward harm reduction services, and regional comparisons indicated that negative opinion pieces were most likely to be produced in BC and Alberta in study eras 1 and 3. However, even negative media opinion pieces were less likely to be produced (34% overall) than were opinion pieces adopting positive or neutral/balanced tone toward harm reduction (56.1% and 12.5%, respectively).

Further evidence that Canadian newspapers independently and positively shaped public discourses toward harm reduction emerged in our results on topical coverage. Contrary to results of US harm reduction coverage (Eversman, 2013), we found that criminal justice perspectives were extremely rare in Canadian newspapers, accounting for only 3% of all harm reduction texts published from 2000 to 2016. Consistent with empirical evidence on effectiveness of these interventions in reducing mortality, morbidity and connecting PWUD with other services (Kimber et al., 2010; Ritter and Cameron, 2006), health perspectives on harm reduction were most commonly published throughout the study period. This occurred even in study era 2, a period during which enhanced political reporting would have been expected due to policy opposition to harm reduction and a number of political and legal challenges to Vancouver’s Insite program launched by federal governmental actors.

Our study also revealed that Canadian newspapers selectively prioritized certain harm reduction services for public consumption.

Specifically, despite its limited population impact (i.e., availability only in the city of Vancouver), supervised drug consumption was covered in almost half of all media texts produced and was the most commonly reported harm reduction intervention in each study era. Other interventions (e.g., drug checking, safer inhalation) were infrequently covered, even during the development of Canada's opioid emergency (opioid agonist treatments). Low coverage rates for certain harm reduction interventions observed in this study replicate research reported by Eversman (2013) who also documented low mentions of specific evidence-based interventions in a sample of US harm reduction media articles. Era analyses indicated that media coverage of needle distribution services—a longstanding harm reduction intervention that predated supervised consumption services by many years—significantly decreased from 21% in era 1 to 3% in 2016. This shift was accompanied by a significant increase in naloxone coverage from 0% to 37%. Combined with our finding that only 11% of all Canadian newspaper texts discussed general concepts and principles underlying harm reduction, our results suggest that Canadian media shaped public discourses through agenda setting, i.e., by prioritizing supervised consumption and naloxone for public consumption at the expense of other evidence-based services. Other Canadian research indicates that such agenda-setting had an impact on public views. Specifically, population survey data obtained from two provinces over our study period confirmed greater knowledge of, and public support for, supervised consumption programs compared to other harm reduction interventions in British Columbia (Tzemis et al., 2013) and Ontario (Strike et al., 2016).

Geographic analyses provided some evidence that Canadian regions differentially impacted by Canada's opioid emergency also differed in harm reduction newspaper coverage (research objective 2). Specifically, in era 1, when harm reduction was endorsed at the federal level and supervised consumption was implemented in Vancouver, news reporting in BC and Alberta was significantly more neutral in tone compared to the rest of Canada, which was more positive in tone (Table 3). Also in era 1, regional coverage in BC and Alberta more frequently covered supervised consumption and was less likely to cover needle distribution and health perspectives on harm reduction compared to the rest of Canada. In era 3, BC and Alberta opinion pieces were more likely to be negative toward harm reduction compared to the rest of the country (see Table 3, p. 35). These differences imply that newspaper texts produced in those two provinces critically scrutinized harm reduction to a greater extent than in other parts of Canada during periods of federal policy support.

5.1. Strengths and limitations

The present results demonstrate the value of systematically describing representative reporting trends in newspaper coverage of harm reduction. Extant research often uses texts purposively sampled in relation to specific events, such as the closing of harm reduction services (e.g., Broadhead et al., 1999; Körner and Treloar, 2003; Lawrence et al., 2000). In-depth analyses of these texts have concluded that negative tone regarding harm reduction expressed by the media influenced decision-making regarding services, but contrary to those studies, we found that everyday coverage of harm reduction in Canadian newspapers was very rarely negative in tone and was consistently focused on health perspectives on harm reduction. Other strengths of the present study were (a) a long temporal study period, which allowed for systematic descriptions of changes in the volume and content of coverage in relation to national events (e.g., changes in federal drug policies; an opioid-related public health emergency), and (b) our use of standardized coverage rates, which eliminated an alternative explanation that changes in volume of newspaper coverage could be attributed to increases in overall newspaper production during those years. These strengths lend themselves well to within-country analyses, as demonstrated here, and also international comparative studies designed to describe trends in media reporting of harm reduction across nations and

over time.

Despite these strengths, the present study is limited because we omitted French-language newspaper coverage. This is problematic because French is an official language in two cases (Quebec and New Brunswick), and Canada has a bilingual federal government. It is unknown whether our findings would be replicated in high circulation French-Canadian newspapers. We also described print news articles only. This is problematic because of documented shifts in media consumption habits in Canada away from print news to online sources (Statistics Canada, 2016). Further research is needed to replicate and extend our findings to online media sources. Third, our sampling strategy emphasized high circulation news outlets, which are primarily located in urban Canadian areas. This prevented us from comparing the volume and content of harm reduction media reporting in rural versus urban areas. Fourth, era analyses focused on federal-level political and health events rather than within-case (i.e., within-province/territory) or municipal activities, which precluded fine-grained analyses of trends in media coverage in relation to health and policy events at the case level. Fifth, limited Canadian public opinion data precluded us from more fully documenting whether trends in coverage of specific harm reduction interventions were associated with changes in public opinion toward those interventions and their roles in protecting the health of PWUD. Further research (e.g., documenting online information-seeking on harm reduction) is required to understand the impact of media reporting on public attitudes. Sixth, we were not able to compare media texts produced in regions or cases with greater or lesser reach of harm reduction services (e.g., needle distribution vs. safe inhalation services) due to a lack of consistent provincial and national-level surveillance data on implementation. Further research is needed to systematically correlate media content with the reach of harm reduction interventions into target populations. Finally, although we documented that Canadian harm reduction coverage tracked changes over time in federal policies toward harm reduction and in emerging public health issues affecting PWUD, other factors not considered in this study could explain trends in volume and content of newspaper coverage of these services (e.g., changes in HIV and or HCV rates, trends in the use of other drugs such as fentanyl, stimulants). Future research should move beyond the descriptive focus of this study toward developing explanatory accounts of coverage trends.

6. Conclusions

To our knowledge, this is the first study to provide a systematic and comprehensive description of everyday media coverage of harm reduction over time and at national and regional (i.e., provincial/territorial) levels of analysis. Contrary to previous CHARPP research, which documented the extent to which Canadian decision makers adopted rhetorical, symbolic policy frameworks for these contentious services (Hyshka et al., 2017; Wild et al., 2017), we found little evidence that Canadian newspaper coverage reflected conflicting values over the legitimacy of providing harm reduction services to PWUD during the same time period. Indeed, Canadian newspaper texts on harm reduction produced from 2000 to 2016 were rarely negative and most often discussed these services from a health perspective. Nonetheless, media coverage selectively prioritized a single politically and legally contentious harm reduction intervention (supervised consumption) being implemented in a single city (Vancouver). Media attention on this intervention, combined with increased naloxone coverage during Canada's opioid emergency, appeared to crowd out the 'newsworthiness' of all other harm reduction interventions being offered to PWUD. Underreporting of other harm reduction services may have contributed to continuing problems in legitimizing and institutionalizing those evidence-based services for PWUD among decision makers and the Canadian public. Further research is required to determine whether increased visibility of harm reduction in recent Canadian media coverage documented in this study will be associated with a transition from

rhetorical policymaking toward more robust governance and instrumental support for these life-saving services.

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Contributors

TCW, EH, JK, MA, LBI, AH, and DM designed the study and provided methodological oversight. JK, JAB, JH, AM, & XX developed and executed the article retrieval and data extraction procedures. All authors contributed to production of the manuscript, reviewed and edited drafts for intellectual content, and approved the final submitted version.

Declaration of Competing Interest

The authors have no competing interests to declare.

Appendix A. Supplementary data

Supplementary material related to this article can be found, in the online version, at doi:<https://doi.org/10.1016/j.drugalcdep.2019.107599>.

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