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Is Information Enough? eGovernment and the Information Response for Women Experiencing Domestic Violence

Abstract: This paper reports on a recently completed study that examines the Canadian eGovernment response to providing information to women exposed to domestic violence (DV). Our overarching question was “*if an abused woman went to her province’s government website for information and help and used common search strategies, what would she find?*”

Résumé: Cet article présente les résultats d'une étude récemment complétée sur les moyens pris par les gouvernements en ligne au Canada pour informer les femmes victimes de violence conjugale. Notre principale question était la suivante: «*Si une femme victime d'abus se rendait sur le site Web du gouvernement de sa province pour obtenir de l'information et de l'aide et qu'elle utilisait des stratégies de recherche courante, que trouverait-elle?*»

1. Background

Despite its identification almost two decades ago as a significant public health problem (AMA, 1992), statistics on the prevalence (Statistics Canada, 2002), consequences (Campbell et al., 2002; Golding, 1999; Cokkinides et al., 1999; Murphy et al., 2001) and costs (Centers for Disease Control and Prevention, 2005; Ulrich et al., 2003; Wisner et al., 1999) of domestic violence (DV) against women attest to its persistent and devastating impact on the lives of women and their children, and on society. While a number of social, legal and healthcare services are available for abused women, the first steps to accessing most of these services requires women to somehow learn of their existence, then decide which, if any, of these services meet their specific immediate and longer-term needs.

Abused women are active help seekers (Harris & Dewdney, 1994), however a chief concern for women suffering partner violence is to remain safe while seeking help. A number of contexts have been identified as instrumental for providing information regarding resources for women exposed to DV, including health care (AMA, 1992; McNutt et al., 2002; McFarlane et al., 1997; 2004), libraries and community information services (Westbrook 2007; Dewdney et al., 1996; Gordon 1996), and more recently, online environments (Davenport et al., 2008). The main advantages of these types of sources are said to be the ability for a woman to visit without undue interference or oversight from her abuser, access to experts with specialized knowledge in some (but rarely all) of violence and its impacts, and/or referral to specific types of services to address women’s immediate, short and longer-term needs.

In Canada, the majority of services for abused women are delivered locally, through programs funded either by municipalities and charitable donations and/or by the province (for example, through health services, legal/court services, etc.). The Government of Canada maintains some presence in this area, directing funds through federal agencies (e.g. Canada Mortgage and Housing Corp.) that might support provincial and local efforts (Public Health Agency of Canada, 2008); the federal government, under the mandate of the Public Health Agency of Canada, also maintains the National Clearinghouse on Family Violence (<http://www.phac-aspc.gc.ca/ncfv-cnivf/index-eng.php>). A guiding question for the current project in considering the information landscape for abused women has been “*what is the province’s presence in this area?*”

Research question

Our overarching research question was “*if an abused woman went to her province’s government website for information and help and used common search strategies, what would she find?*” Specific questions addressed by the data presented in this paper include:

1. If a keyword search was performed from the homepage of a province’s or territory’s government website:
 - What percentage of web pages retrieved within a subset of the first 50 results would contain *valuable* DV content?
 - How many of the first 10 web pages retrieved and displayed would contain the 16 DV “content domains” that have been identified?
 - Which government agencies are providing these individual “content domains” within the first 10 web pages retrieved?
 - What percentage of web sites would retrieve each of the individual “content domains” within the first 10 web pages?
2. Beginning from a government agency’s homepage, approximately how many mouse clicks does it take to reach critical DV content?

2. Methods

2.1 Approach and definitions

From the user’s perspective, there are two important aspects of an online information seeking experience that significantly contribute to “success” in the searching task. First, information that is useful must be located by keyword searching. Second, it must be able to be located in a nominally efficient manner. This study, therefore, investigated these two aspects of retrieving online DV content. The target websites were Canada’s 10 provincial and three territorial official government Web sites, including analysis in French-only of Quebec’s site, and in French and English of New Brunswick’s site, for a total of 14 sites.

Following Davenport et al. (2008), we used a specific set of definitions of domestic violence content: 16 discrete types of information (“content domains”) identified from the DV research literature were considered valuable for a survivor to move towards a safer life. These 16 content domains are: a definition of violence by one partner against another, warning signs of domestic violence, an escape plan, shelters, hotlines, protection orders, legal resources/assistance, child support, child custody, employment or job training, medical facilities, mental health, substance abuse, general statistics/facts about

DV, province/territory-specific statistics/facts about DV and cyber safety. Each of the content domains had to appear in the context of DV in order to be counted as DV content in this study. Content prone to becoming outdated such as news items, message board postings and planning documents were excluded from the analysis.

The second approach to retrieving DV content that we studied involved an exploration of navigational pathways (click paths) leading to content domains. Warning signs, escape plans, shelter information and protection information (what Davenport et al., 2008 termed “critical escape process” information) were selected to investigate click paths.

This study also investigated, also following Davenport et al. (2008), where the DV content resided on each website. Provincial and territorial departments and agencies were categorized into the following four service “arenas”: *Legal/Law Enforcement, Health, Social Services* and *Combination of Health and Social Services*, with a fifth arena, *Other*, to ensure that the arenas are exhaustive. Examples of “*Other*” departments and agencies include: *Citizenship and Immigration, Labour, Employment, Education, Tourism and Culture, Agriculture, Food and Rural Affairs*, as well as general government portals. Cross-referrals among government departments were analyzed for web pages containing the four critical escape process items.

2.2. Data collection

A content and coding scheme was developed and revised through two pilot tests, each involving three trained searchers coding the same randomly selected government web site. Once an inter-coder reliability of 90% was established (Miles & Huberman, 1994), the 14 web sites were assigned to one of the trained searchers for formal coding. Searching and coding occurred over a maximum of two consecutive days between late July and mid-August 2008.

Keyword searches for *domestic violence* were performed from the homepage of government web sites containing a search function. Quotations were not used to search the two words adjacent to one another because searchers may not know how to do an exact phrase search (Davenport et al., 2008). Selected results from these searches were examined. Web pages containing DV content were coded in an Excel worksheet noting the type of DV content retrieved (according to the 16 content domains) and the service arena where it was found. Twenty-one web pages from the first 50 results were recorded in total, including the first 10 hits as well as eleven randomly selected pages as follows: five pages from results 11 to 20, three pages from results 21 to 30, two pages from results 31 to 40, and one page from results 41 to 50. This ensured complete representation of the most highly ranked pages (1-10) and proportionally weighted representation from subsequent sets of results. Web pages that were not authored by the provincial or territorial government of the website were excluded because it was not possible to know which department or ministry provided the link to the external information.

To investigate click paths on each government web site that retrieved critical escape process items, the homepage of each department or agency became the starting point for recording the number of clicks to locate this content. The first direct click path encountered that lead to DV content was recorded; alternate click paths to the same Web page (with the same URL) were not explored. There was no maximum limit to the

number of clicks required to locate and report DV content because this preliminary study aimed to locate and report all of the DV content available from provincial and territorial government web sites. Domestic violence content provided through links to outside sources were included if the government site explicitly stated the type of information that users could expect to find if they were to link to the outside source.

After a thorough exploration of click paths within these departments and agencies, an *Advanced Google Search* was performed for each department and agency from the five arenas (Legal, Health, Social Services, Health & Social Services, Other) to help ensure that all DV content was located. We used Google’s “search within a site” function, searching for any combination of (domestic or family) and (violence or abuse) within each department and agency’s site. The click path to any additional DV content found from performing the *Advanced Google Search* was deduced from the web page’s URL, and the number of clicks from the department or agency’s homepage was noted. All pages/documents containing DV information were reviewed. Web pages meeting the criteria for DV content were coded, noting: the type of DV content retrieved, the arena the DV content was retrieved from and the number of clicks it took to locate the information.

3. Results

Of the 14 provincial and territorial government web sites examined in this study, 13 had a search function available from their home page. Most of the web pages (80%) retrieved from keyword searching were not pertinent to the information needs of DV survivors and their immediate support network. As indicated in Figure 1, in the first 10 pages of results, approximately 27% of pages 1-10 contained relevant content, and this percentage decreased as pages were further down the order of retrieval. Common examples of Web pages not coded for DV content included annual reports, legislature notes, planning documents, news items and research reports.

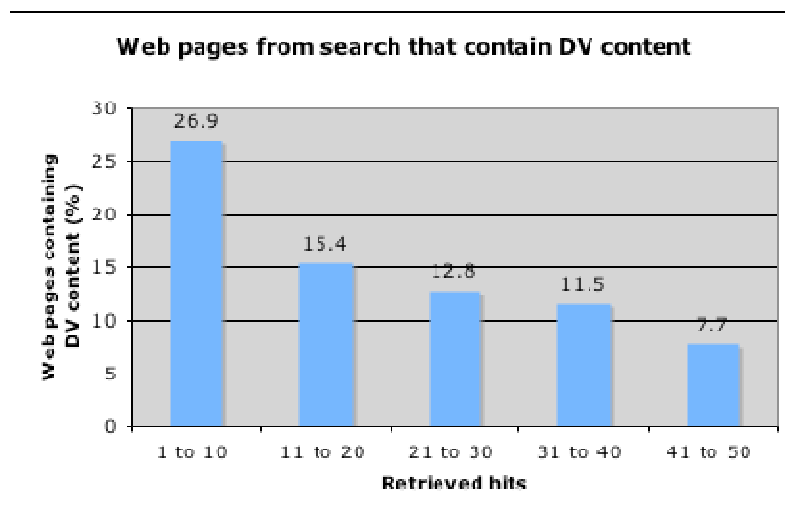


Figure 1. Percentage of web pages containing DV content domains retrieved from keyword searching.

Table 1 shows the breakdown of results from the first 10 pages of content retrieved from the keyword searches. The majority of coded DV content retrieved from these searches was from the Legal/Law enforcement arena (50%, or 42/84 items); followed by health, then other, then social services. Very few items were located in the combined health and social services arena (2/84). The content domains appearing most often within the first 10 web pages retrieved were hotline/referral information and legal help (a total of 13 web pages across all web sites for each), followed by information on shelters, mental health, warning signs and protection information.

<i>Content element</i>	<i>Service Arena</i>					<i>Total</i>
	<i>Law</i>	<i>Health</i>	<i>Social Services</i>	<i>Health & Social Services</i>	<i>Other</i>	
Hotline/referral service	6	4	1		2	13
Legal resources or assistance	9	2			2	13
Shelter information	1	3	5		1	10
Mental health	4	2	3		1	10
Warning signs	4	2	1	1	1	9
Protection orders	8	1				9
General statistics/facts about DV	2	1		1	2	6
Definition of DV	3		1		1	5
Escape plan	3	1				4
Medical facilities		2				2
Province/territory-specific statistics/facts about DV	1				1	2
Child support	1					1
Child custody						0
Job information or training						0
Substance abuse						0
Cyber safety						0
Total	42	18	11	2	11	84

Table 1: Total number of web pages retrieving the 16 content domains within the first 10 results by service arena.

Table 2 shows how many of the sites returned each of the 16 content domains in the first 10 pages retrieved by the basic search. In no case did more than half of the sites provide these specific content domains; the most retrieved items – warning signs of DV, hotline/referral information and legal help were only returned, in the top 10 hits, by 6 of the 13 sites. For the last four content domains (child custody, job information, substance use, and cyber safety), none of the sites provided this information in the first 10 pages returned.

<i>Content element</i>	<i>% of sites (n of 13)</i>
Warning signs	46 (6)
Hotline/referral service	46 (6)
Legal resources/assistance	46 (6)
Shelter information	38 (5)
Protection orders	38 (5)
Mental health	38 (5)
General statistics/facts about DV	31 (4)
Definition of DV	23 (3)
Escape plan	23 (3)
Provincial/territory specific statistics/facts about DV	15 (2)
Child support	8 (1)
Medical facilities	8 (1)
Child custody	0
Job information/training	0
Substance abuse	0
Cyber safety	0

Table 2: Percentage of web sites retrieving the 16 content domains within the first 10 web pages retrieved

In terms of how long it would take women to arrive at potentially urgent information, Table 3 presents the length of the click paths, by service arena, to each of the four critical escape process items (warning signs, protection orders, shelter information, escape plan). The navigational pathways leading to critical escape process items were a range of different lengths from 1 to 8 clicks away from the department or agency's homepage; keeping in mind that arriving at a department or agency's homepage takes at least one or two clicks. Almost 70% of the navigation paths leading to the critical escape process items were found within 3 clicks, with the majority of web pages (41%) being 3 clicks away. Only 4 of the 248 click paths leading to critical escape process items across all of the web sites were found more than 5 clicks away from the department or agency's homepage. The average length of click paths leading to critical DV content were longest in the combined *Health & Social Services* arena.

Other findings of note related to the accessibility of information include the fact that the overwhelming majority of DV content was only available in English and French. Of the 14 provincial and territorial web sites, eight were available in both English and French versions, five were available in an English version only, and one was available in four language versions, including English and French. Sometimes a department of the government would make their web pages available in additional languages outside of the language version(s) of the web site, for example, before entering the homepage of a *Health & Social Services* arena from a government web site that is available in an English-only version, users are prompted to choose between different language versions. Some DV content domains were offered in additional languages outside of the language version(s) of the government's web site, for example, government web sites available in an English-only version provided phone numbers to English and French language hotlines.

In terms of how well departments and/or Ministries linked with one another to provide coherent and consistent information without undue duplication, we noted that only two of the analyzed sites provided any cross-department links between the four critical escape process items. Another issue of note was that 13 (of the 14) web sites provided some type of DV content in PDF format.

Content element	Organizational arena					Total
	Law	Health	Social Services	Health & Social Services	Other	
Warnings signs						
1-click path	-	1	-	-	-	1
2-click path	2	2	1	-	7	12
3-click path	4	2	6	3	10	25
4-click path	3	1	1	5	4	14
5-click path	-	-	-	1	2	3
>5-click path	-	-	-	-	-	0
Mean	3	3	3	4	3	
Subtotals	9	6	8	9	23	55
Injunction order						
1-click path	1	-	-	-	-	1
2-click path	11	-	-	-	5	16
3-click path	16	-	1	-	6	23
4-click path	3	-	1	-	3	7
5-click path	7	-	-	4	2	13
>5-click path	-	-	-	-	-	0
Mean	3	-	4	5	3	
Subtotals	38	0	2	4	16	60
Shelter information						
1-click path	2	1	2	-	1	6
2-click path	5	1	8	-	7	21
3-click path	8	1	13	3	11	36
4-click path	2	-	4	-	10	16
5-click path	2	-	1	3	4	10
>5-click path	-	-	3	1	-	4
Mean	3	2	3	4	3	
Subtotals	19	3	31	7	33	93
Escape plan						
1-click path	-	-	-	-	-	0
2-click path	5	-	1	-	7	13
3-click path	8	1	3	1	4	17
4-click path	-	-	2	2	1	5
5-click path	-	-	1	2	2	5
>5-click path	-	-	-	-	-	0
Mean	3	3	3	4	3	
Subtotals	13	1	7	5	14	40

Table 3. Length of click paths leading to the four critical escape process items by service arena.

4. Discussion

This preliminary study reports what a DV victim or their immediate support network *could* encounter if they attempted a keyword search or explored various click paths on a province or territory's government web site. The information-seeking behavior of DV victims was not taken into account in this study and whether DV victims actually *would* find the DV content that exists on these government web sites is another question that warrants future research. In addition, although the second part of this study reports the length of the first direct click paths we found that led to critical escape process items within a web site, there was often more than one direct click path leading to the same web page with the same URL. It is therefore not possible to know, from this study, which click path a searcher would follow or how many clicks it would take them to locate critical DV content.

The results of this study provide evidence regarding not only how key social service information is currently provided on government websites, but also how, from the user's perspective, these services could be improved. The findings reported here indicate that keyword searching is not necessarily an effective or efficient method for DV victims to locate valuable information on a province or territory's government web site and that exploring navigational pathways may be a more effective way of locating this content. Considering DV victims may have a limited amount of time apart from their abusers to try and locate DV content electronically, search functions within government web sites have the potential to make locating DV content easier and more time efficient. A successful keyword search could eliminate the need to investigate numerous different click paths to find DV content. Keyword searching also highlights the entered search terms in the excerpt of the results retrieved, which can make finding relevant text on a web page faster than having to skim over numerous web pages encountered when navigating through a web site by click paths. Knowing the algorithm being used to rank and retrieve results from a search query can be utilized, when creating web pages, to improve the likelihood that pages retrieved from a keyword search will contain information that is valuable to DV victims.

Accessing DV content on e-government web sites needs to be addressed on a few levels. The language most often spoken at home in Canada is neither English nor French for approximately 12% of the population (Statistics Canada, 2006). Although some government web sites available in English or English and French versions only do provide some DV content in other languages, a searcher would have to be able to read English or French well enough to actually find the DV content that is available in other languages. This would presumably lengthen the time it would take for a searcher to find valuable DV information; time a DV victim may not have to spare if they have an opportunity to seek helpful information electronically. We did not undertake an assessment of the readability of the content, per se, but our impression is that a fairly high degree of literacy would be required to understand and use the information provided.

Having to download DV content as a PDF file can also lengthen the amount of time it takes for a searcher to retrieve information. Content that is available in PDF format presents other access issues as well, for example, Adobe Acrobat Reader is required to view these files. More importantly though, if a DV victim is successful in downloading

PDF files on their computer they could increase the risk of their abuser finding out if they do not completely delete the files after viewing them.

A major barrier for a victim trying to access the critical escape process items from a province or territory's government web site is the lack of inter-connectivity between the government agencies providing the information. Information on warning signs, escape plans, shelters and protection orders was located in more than one service arena in 13 of the 14 government web sites and yet only two web sites provided cross-links to critical escape process items provided by different departments. An investigation of state web resources for DV survivors also found that government agencies tend to address this social problem in isolation (Davenport et al., 2008). Future research is needed to investigate the best way for government web sites to provide information about issues that need to be addressed by different governmental agencies. In discussing ways to create citizen-focused government services, it has been suggested that: "*Web sites need to be categorized by the function of the service rather than the agency administering them. A well designed portal to all online federal information will make citizen government interaction more efficient and effective*" (Fang, 2002, 17). The concept of 'one-stop shopping' for domestic violence information has been suggested (Davenport et al., 2008).

More broadly, however, these results, set in the context of other responses to woman abuse from government and non-government service providers at multiple levels, provide an opportunity to consider how the information landscape is evolving in the context of online tools, and whether this evolution (planned or serendipitous) is happening in a way that will ultimately benefit women exposed to violence.

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