The Content and Quality of Canadian Trauma and PTSD Websites

Joelle Schaffer[1,2], Deziray De Sousa[2,3], Marie-Jeanne Leonard[3], Michelle Lonergan[2,4], Ram P. Sapkota[2,5],
Erika Di Paola[2], Gloria Leblond-Baccichet[1,2], Daniel Saumier[2], and Alain Brunet[2,6]

[1] Department of Psychology, Toronto Metropolitan University
[2] Clinical Research Division, Douglas Mental Health University Institute
[3] Department of Psychology, Université du Québec à Montréal
[4] School of Psychology, University of Ottawa
[5] Online Therapy Unit, University of Regina
[6] Department of Psychiatry, McGill University

Searching for mental health resources online has become a common practice among individuals who have experienced traumatic stress. However, little is known about the quality of the information available online. This can have important implications from a knowledge dissemination and treatment perspective. This descriptive analysis explores the content and quality of Canadian trauma and posttraumatic stress disorder (PTSD) websites available on Google.ca. Data were collected between 2018 and 2020 using a systematic search algorithm that consisted of 14 traumatic events, four trauma-related phrases, and 14 Canadian geographic regions. Each website's content was evaluated using the Trauma Website Content Checklist. The DISCERN Handbook was used to determine website quality. A total of 964 websites were included in the analysis. Content and quality varied considerably across websites and between regions. Notably, only 10% of websites included information on the diagnostic criteria of PTSD, whereas 69% of websites included information on treatments for PTSD. The average DISCERN score was 2.92 out of 5, with 53% of websites falling below a "fair" rating, as indicated by a DISCERN score of 3. Crucial information is absent from the majority of Canadian trauma and PTSD-related websites, particularly regarding diagnostic criteria and risks and benefits of treatments. Gaps in the trauma-related resources available on Google.ca are discussed, and the necessity for improved content and quality of Canadian trauma-related websites is presented.

Public Significance Statement
The findings of this review indicate that most Canadian trauma-related websites are missing important trauma-related content, and that the overall quality of these websites is fair to low. These findings communicate a need for comprehensive websites on trauma and trauma-related disorders in Canada, especially given the popularity of using Google to learn about mental health concerns. Professionals should consider the importance of publishing comprehensive, accessible online resources on trauma and posttraumatic stress disorder, and the public should be wary of the extensiveness and accuracy of trauma-related information they may find online.

Posttraumatic stress disorder (PTSD) is a chronic and debilitating disturbance characterized by intrusions, avoidance, negative cognitions and mood, and hyperarousal symptoms that can result from life-threatening trauma exposure (American Psychiatric Association, 2013). Over 75% of Canadians report trauma exposure, and approximately 9% develop PTSD (Van Ameringen et al., 2008). Despite the pervasiveness of trauma exposure in Canada, multiple factors may prevent individuals from seeking treatment, including stigma, cost, waiting lists, and a general lack of accessibility (Amstadter et al., 2009; Fikretoglu et al., 2010; Smith et al., 2020; Waterman & Cooper, 2020). Faced with these barriers, many individuals turn to the internet, which has revolutionized information-seeking by providing a platform through which people can research any topic in a private and accessible way. Recent reports suggest that over half of Canadians search for health-related information online, and these rates may be higher for information related to mental health, possibly due to increased stigma (Horgan & Sweeney, 2010; Lam-Po-Tang & McKay, 2010; Morahan-Martin, 2004; Prestin et al., 2015; Wang et al., 2021). Internet searches can provide a variety of resources, including psychoeducation, the supply of diagnostic tools, or even self-help interventions and online psychotherapy; online health information also promotes self-efficacy and empowerment, in addition to reducing social inequities concerning access to health

Joelle Schaffer ⓘD https://orcid.org/0000-0001-5747-8644
Alain Brunet ⓘD https://orcid.org/0000-0003-2185-1704
Correspondence concerning this article should be addressed to Alain Brunet, Clinical Research Division, Douglas Mental Health University Institute, 6875 Boulevard Lasalle, Perry Pavillion, Montréal, QC H4H 1R3, Canada. Email: alain.brunet@mcgill.ca

care (Link & Baumann, 2020; Tan & Goonawardene, 2017). However, not every online resource is of good quality, and navigating many websites can be a daunting task for a person seeking help. Given the prevalence of trauma exposure and related distress in Canada and the widespread use of online resources to access information, we sought to examine the content and quality of Canadian trauma and PTSD websites. We are not aware of any research that has investigated this issue thus far.

Individuals in psychiatric contexts frequently use the internet to obtain information on symptoms and diagnoses, as well as on treatment options and their potential side effects (Balhara et al., 2020; Horgan & Sweeney, 2010; Lam-Po-Tang & McKay, 2010). To meet these needs, many websites providing information on mental health disorders, including PTSD, have been developed in recent years (Amstadter et al., 2009). Previous studies in other countries have investigated the content and quality of websites specific to bipolar disorder (Barnes et al., 2009), alcohol use disorder (Khazaal et al., 2009), and depression (Ferreira-Lay & Miller, 2008), all of which report high variability in website quality. Killip et al. (2020) examined PTSD-related websites for firefighters on Google.ca and reported a lack of evidence-based treatment recommendations and overall "fair" website quality. However, to our knowledge, no previous research has focused on trauma-related websites aimed at the broader Canadian population, nor have any existing studies examined trauma-related websites across geographic locations in Canada. Due to the lack of regulation over what can be published online (Freeman et al., 2018; Grohol et al., 2014) and against a backdrop of inconsistent quality of websites for other mental health disorders (Ferreira-Lay & Miller, 2008; Khazaal et al., 2009; Killip et al., 2020), concern over the quality of online resources for trauma-related disorders is warranted.

The present study addressed two main questions regarding Canadian websites on trauma and PTSD: (a) What are the characteristics and content of such resources? and (b) What is the quality of the information provided in online trauma and PTSD resources? Findings from this review will offer insight into the quality of content included on Canadian websites, identify gaps, inform public mental health institutions and professionals of the content and quality of the information their clients may access online, and draw attention to suggestions regarding how the quality of Canadian PTSD resources generated from internet searches may be improved.

Method

Study Design

A search of trauma- and PTSD-related websites on Google.ca was conducted as part of a mandate to provide the Traumatic Stress Section of the Canadian Psychological Association (CPA) with a list of online resources for lay individuals impacted by trauma and PTSD. Websites culled from this search were descriptively analyzed in order to ascertain their content and quality.

Data Sources and Search Strategy

Online searches were conducted on Google.ca (Google Inc., California, USA) between October 2018 and April 2020. Google was specifically chosen to emulate the search strategy most employed by lay Canadians or Canadian consumers seeking trauma- and PTSD-related information online, as it is the most common search engine used by the public to find mental health information (Deka & Lahkar, 2010; Lam-Po-Tang & McKay, 2010; Purcell et al., 2012). To optimize the number of websites found and replicate a typical search by a lay Canadian, each search followed a set textual algorithm. The algorithm included combinations of the following components: a potentially traumatic event, a trauma-related key phrase that served as a search constant (i.e., keywords that were combined with other search terms), and a geographic location (see Supplement, for a detailed illustration of the search algorithm). Potentially traumatic events included 14 words describing various incidents (e.g., "natural disaster," "sexual assault"). The search items included in the algorithm were selected to reflect common events experienced by the Canadian general population (Van Ameringen et al., 2008). They were guided by the Life Events Checklist for the *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition* (*DSM-5*; American Psychiatric Association, 2013) and by a team of trauma experts (MJL, DS, AB), which were validated by members of the CPA Traumatic Stress Section. The "constant" consisted of key words or phrases that are likely to be used by lay Canadians ("trauma," "trauma counselling," "trauma resources," and "PTSD") and were also determined by the group of trauma experts in collaboration with the CPA Traumatic Stress Section. Though overlapping words are included in these phrases (e.g., "trauma"), each phrase led to differing Google.ca results. The geographic locations included all Canadian provinces and territories, as well as "Canada" more generally. Boolean operators were not used, as our goal was to replicate Google searches that lay Canadians may use as closely as possible. An example of a search used is natural disaster [potentially traumatic event] trauma [trauma-related key phrase] British Columbia [geographic location]. This search strategy was then entirely repeated in French. Since most individuals limit themselves to searching the first two pages of any Google search result (Barnes et al., 2009), only the first two pages (20 sources) of each search result were reviewed.

Website Selection

To be included in the review, websites were required to be in English and/or French and targeted towards lay Canadians. Included websites could be affiliated with either of the following: private, public, or semipublic sponsors; online publishers of mental health information services; Canadian federal or provincial government websites; nonprofit organizations; mental health institutes, associations, or societies that promote advocacy for victims of trauma; universities; and hospitals. Included websites could also cover a broad range of topics, including trauma and/or PTSD, and provide a directory or database of mental health facilities, services, help, and support. Websites were excluded if they had not been updated since January 2015, only offered training for professionals, or if they were news or academic articles from peer-reviewed journals. See Supplemental Material 1, for additional eligibility criteria. Each Google search and website screening and analysis were completed once by one of nine research assistants. All research assistants were trained in the search strategy and instruments used by the project coordinators (JS, MJL). Uncertainties regarding website inclusion or scale ratings were discussed as a group with all coauthors.

Data Extraction

Website Content: Trauma Website Content Checklist

The Trauma Website Content Checklist (TWCC), a 17-item scale developed by trauma experts from the Douglas Mental Health University Institute in Montreal, QC, and in collaboration with the CPA Traumatic Stress Section, was used to assess website characteristics and content. The items were developed to encompass the content deemed necessary by trauma experts for an informative website on trauma or PTSD aimed at a lay audience. This checklist includes eight questions related to website characteristics (affiliation, target population, language, use of multimedia resources, diagnostic tool cited, advertisements, ease of use, year of last update), and nine questions assessing website content (signs and symptoms, coping mechanisms, PTSD definition, definition of trauma, who can be affected by trauma, diagnostic criteria, description of treatment, comorbidities of PTSD, therapeutic services; see Supplemental Table 2). Questions were coded as either yes/no or by using a drop-down list of possible responses (see Supplemental Table 2).

Quality Assessment

The DISCERN Instrument (Charnock et al., 1999) was used to assess the quality of information available online regarding trauma and/or PTSD. This measure was chosen as it is commonly used in descriptive analyses of online health information (Barnes et al., 2009; Killip et al., 2020). Questions 1–8 were used to evaluate the trustworthiness of the website's information (e.g., Is the website up to date? Are its resources clear?), and Questions 9–13 were used to assess the quality of the information (e.g., Does it describe how treatments work? Does it describe the benefits and risks of treatment?). Each question is answered on a 5-point Likert scale (1 = *low trustworthiness/quality*, 5 = *high trustworthiness/quality*). The DISCERN Instrument has shown satisfactory internal consistency and interrater reliability and is commonly used to evaluate the quality of health-related online resources (Ademiluyi et al., 2003; Barnes et al., 2009; Killip et al., 2020). The average DISCERN score (mean of all items) was used as a measure of overall quality for each source (see Supplemental Figure 1). The DISCERN had an acceptable internal consistency (Cronbach's $\alpha = 0.71$) in this study.

Statistical Analysis

Microsoft Excel (Version 16.44, 2020) and SPSS (Version 28, 2022; IBM) were used to tabulate and calculate frequency data for the TWCC and descriptive statistics (means and standard deviations) for the DISCERN. In order to determine if website characteristics were related to quality, an ad hoc Classification and Regression Trees (CART; Breiman et al., 1984) analysis was conducted.

Ethics Approval

As this study did not include human participants, no approval from an ethics board was required.

Results

In total, 1,568 Google searches were conducted, and 31,360 websites (including duplicates) were assessed for eligibility (1,568 searches × 20 websites per search); 964 individual websites met all inclusion criteria and were subsequently assessed for content and quality.

Characteristics and Overall Content and Quality of Websites

Under half of the websites included the content information assessed by the TWCC (Supplemental Table 2). Notably, 10% of websites included the diagnostic criteria for PTSD per the definitions in the *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition* (*DSM-5*; 1) or the *International Classification of Disorders–Eleventh Revision* (ICD-11; World Health Organization, 2018). While most websites included information on treatment options (69%), approximately half offered therapeutic services (e.g., hotlines, support groups).

The DISCERN items with the highest average scores were: 1 ("Are the aims clear?"; $M = 4.27$, $SD = 1.04$), 2 ("Does it achieve its aims?"; $M = 4.29$, $SD = 0.96$), and 6 ("Is it balanced and unbiased?"; $M = 3.97$, $SD = 1.18$). The items with the lowest average scores were: 8 ("Does it refer to areas of uncertainty?"; $M = 1.84$, $SD = 1.11$), 11 ("Does it describe the risks of each treatment?"; $M = 1.14$, $SD = 0.52$), and 12 ("Does it describe what would happen if no treatment was used?"; $M = 1.86$, $SD = 1.23$). The average overall DISCERN score was 2.92, indicating fair to low quality of the Canadian trauma-related websites (Barnes et al., 2009). Average DISCERN scores did not markedly differ by location (range = 2.65–3.05; see Supplemental Figure 1).

Frequency analyses were conducted to further examine differences in website characteristics and content across Canadian provinces and territories, which were combined into regions to simplify data readability (Supplemental Table 2). Website affiliations (e.g., nonprofit, private companies) were similar across locations, though the territories included a higher proportion of governmental resources. Language varied considerably by province; the majority of websites were in English, whereas Quebec included a larger proportion of French (34%) and bilingual (40%) websites than the other locations. Additionally, 40% of federal websites were bilingual. Websites in the West Coast, the Prairies, and Central Canada included more content than websites in Atlantic Canada and the Territories (as measured by the TWCC). Federal websites included diagnostic information more often, and treatment information less often, than websites in specific provinces or territories.

TWCC Characteristics and Content by DISCERN Quality

Websites were split into two groups based on their overall DISCERN score for further analysis; any website that scored ≥ 3 was considered moderate/high quality, and any website that scored <3 was considered of low quality (Barnes et al., 2009). This allowed for frequency analyses of website characteristics and content (as measured with TWCC) according to website quality (see Table 1). There was a similar percentage of websites aimed at the general population within both DISCERN groups, whereas the

Table 1

TWCC Characteristics and Content by DISCERN Quality Cut-Off Score

TWCC variables	DISCERN score cut-off	
	<3 ($n = 515$)	≥3 ($n = 449$)
Website characteristics		
Authoritativeness		
Other	73 (14.7%)	48 (10.7%)
Governmental	148 (28.7%)	108 (24.1%)
Private company	96 (18.6%)	97 (21.6%)
Nonprofit	170 (33.0%)	155 (34.5%)
University	19 (3.7%)	20 (4.5%)
Hospital	5 (0.0%)	14 (3.1%)
Personal	4 (0.0%)	7 (1.6%)
Target population		
General	390 (75.7%)	352 (78.4%)
Specific	104 (20.2%)	73 (16.2%)
Children	21 (4.1%)	24 (5.3%)
Language		
English	353 (68.5%)	348 (77.5%)
French	62 (12.0%)	30 (6.7%)
Both	100 (19.4%)	71 (15.8%)
Multimedia resources		
Other websites	114 (22.1%)	176 (39.2%)
Videos	18 (3.5%)	10 (2.2%)
Books	3 (0.0%)	2 (0.0%)
Articles	18 (3.5%)	38 (8.4%)
Other	11 (2.1%)	13 (2.9%)
None	351 (68.2%)	210 (46.8%)
DSM or ICD cited		
DSM-IV	3 (0.0%)	22 (4.9%)
DSM-IV-TR	0 (0.0%)	3 (0.0%)
DSM-5	23 (4.5%)	44 (9.8%)
ICD-11	0 (0.0%)	1 (0.0%)
None	489 (95.0%)	379 (84.4%)
Free of ads		
Yes	397 (77.1%)	310 (69.0%)
No	118 (22.9%)	139 (31.0%)
Easy to use		
Yes	457 (88.7%)	410 (91.3%)
No	58 (11.3%)	39 (8.7%)
Year of last update		
Unknown	156 (30.3%)	90 (20.0%)
2020	51 (9.9%)	69 (15.4%)
2019	121 (23.5%)	90 (20.0%)
2018	64 (12.4%)	64 (14.3%)
2017	62 (12.0%)	74 (16.5%)
2016	35 (6.8%)	35 (7.8%)
2015	26 (5.0%)	27 (6.0%)
Website content		
Signs and symptoms		
Yes	172 (33.4%)	250 (55.7%)
No	343 (66.6%)	199 (44.3%)
Coping mechanisms		
Yes	79 (15.3%)	197 (43.9%)
No	436 (84.7%)	252 (56.1%)
PTSD definition		
Yes	123 (23.9%)	179 (39.9%)
No	392 (76.1%)	270 (60.1%)
Defines traumatic event		
Yes	210 (40.8%)	254 (56.6%)
No	305 (59.2%)	195 (43.4%)
Defines who can be affected		
Yes	223 (43.3%)	270 (60.1%)
No	292 (56.7%)	179 (39.9%)

(table continues)

Table 1 (*continued*)

TWCC variables	DISCERN score cut-off	
	<3 ($n = 515$)	≥3 ($n = 449$)
Diagnostic criteria		
Yes	24 (4.7%)	70 (15.6%)
No	491 (95.3%)	379 (84.4%)
Treatment		
Treatment	257 (49.9%)	406 (90.4%)
No treatment	258 (50.1%)	43 (9.6%)
Comorbidities		
Yes	90 (17.5%)	192 (42.8%)
No	425 (82.5%)	257 (57.2%)
Therapeutic services		
Yes	188 (36.5%)	269 (59.9%)
No	327 (63.5%)	180 (40.1%)

Note. Websites that scored <3 are considered low quality; websites that scored ≥3 are considered moderate-high quality. TWCC = Trauma Website Content Checklist; *DSM-5 = Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition*; ICD-11 = International Classification of Disorders–Eleventh Revision; *DSM-IV = Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition*; *DSM-IV-TR = Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision*; PTSD = posttraumatic stress disorder.

majority (59%) of websites targeting specific populations (e.g., children) scored <3. Websites in English were distributed equally between DISCERN groups, whereas most French (67%) and bilingual (58%) websites scored <3. Less than half of governmental websites (42%) scored ≥3 on the DISCERN, whereas websites affiliated with nonprofit organizations, companies, or universities had relatively equal distributions between the <3 and ≥3 groups (nonprofit organizations = 53.3% < 3, 47.7% ≥ 3; companies = 49.7% < 3, 50.3 ≥ 3; universities = 48.7% < 3, 51.3% ≥ 3). The affiliative body with the largest percentage of websites scoring ≥3 were hospitals (74% ≥ 3), though they made up few of the websites overall ($n = 19$).

Chi-squared (χ^2) tests revealed that the quality of the website did not differ by province (includes Canada), $\chi^2(13, N = 964) = 11.34$, $p > .05$, and by affiliation, $\chi^2(6, N = 964) = 12.51$, $p > .05$. Therefore, we conducted an ad hoc CART analysis to explore if any hidden associations between website characteristics and quality can be found. Through recursive partitioning, CART analysis can uncover complex interactions (Breiman et al., 1984; Lemon et al., 2003). The dichotomized DISCERN (Yes ≥ 3, No < 3) variable was used as a dependent variable, whereas affiliation (e.g., government, nonprofit, company) and location (provinces) were used as predictor variables. The CART algorithm with the Gini impurity index was used to construct the decision tree, and growth limits of 50 and 30 were set for parent and child nodes, respectively. The accuracy achieved by the CART model was 58.3%. Affiliation was associated with website quality through location. In Newfoundland and Northwest Territories, nonprofit and other (e.g., university, hospital, private) affiliations were associated with higher quality websites, whereas companies were associated with higher quality websites in the rest of the country (see Supplemental Figure 2). Moreover, in British Columbia, government and other affiliations were associated with higher quality (64.9%) compared to nonprofit organizations (58.5%).

Discussion

The present review aimed to analyze the characteristics, content, and quality of Canadian trauma and PTSD websites available to lay Canadians across all provinces and territories. Overall, the present study assessed 964 Canadian websites for content and quality. Content information assessed by the TWCC (e.g., signs and symptoms, coping mechanisms, PTSD definition) was included in under half of the websites. More specifically, websites in Atlantic Canada and the Territories comprised less content than those in the West Coast, the Prairies, and Central Canada. Federal websites included more general diagnostic information, however, compared to specific provinces and territories, they lacked information on treatment. Overall, the average DISCERN score was 2.92, indicating low quality of the Canadian trauma-related websites included in this analysis. Websites that scored higher on the DISCERN included more TWCC content and were most often hospitals. In terms of language, more than half of both French and bilingual websites received a low score on the DISCERN.

This review is the first to examine the characteristics, content, and quality of trauma- and PTSD-related online resources in Canada. Findings highlight substantial variability in the quality and content of trauma-related websites available to Canadians, which is in line with previous research on online mental health resources for other disorders, such as bipolar disorder and PTSD in firefighters (Barnes et al., 2009; Killip et al., 2020). Websites were most commonly affiliated with nonprofit organizations, federal and provincial governments, and private companies. Trauma-related content deemed relevant for psychoeducational purposes (e.g., signs and symptoms of PTSD, diagnostic criteria, common comorbid disorders) was missing from the majority of websites, with the exception of information on treatments. However, the benefits and risks of the various treatment options were commonly absent. Moreover, while websites with a DISCERN score ≥3 tended to include more content as measured by the TWCC, more than half of the included websites were rated below "fair" quality according to the DISCERN, with an average overall score of 2.92 (Charnock et al., 1999). This finding mirrors previous research in which higher DISCERN scores were associated with increased content on mental health websites (Zermatten et al., 2010).

Results concerning the organizational affiliations of websites are in line with previous research, which suggests that nonprofit organizations and private companies tend to represent a large proportion of online mental health resources (Barnes et al., 2009; Zermatten et al., 2010). In contrast with previous research, the present results demonstrate that resources affiliated with private companies had a higher proportion of websites that scored ≥3 on the DISCERN than those affiliated with nonprofit organizations (Ferreira-Lay & Miller, 2008; Lissman & Boehnlein, 2001; Zermatten et al., 2010). Given that previous research suggests that mental health outpatients find "personal" mental health websites, such as blogs, to be the least helpful, our findings that personal websites were uncommon may indicate a trend that is beneficial for individuals searching for trauma-related information online (Lam-Po-Tang & McKay, 2010).

Included websites contained information on symptoms and diagnostic criteria at a lower frequency than found by Killip et al. (2020). However, findings reflect those of Killip et al. (2020) and suggest that most websites discuss treatments more generally while overlooking their risks and benefits, which can be critical components for informed treatment decisions. Furthermore, previous research suggests that mental health outpatients attending group psychiatric practices tend to be more interested in online information regarding symptoms, diagnoses, treatment options, and side effects (Lam-Po-Tang & McKay, 2010). Thus, results from the present review suggest that these needs may not be met by the majority of trauma resources found on Google.ca, especially for treatment side effects and diagnostic criteria. However, Lam-Po-Tang and McKay's (2010) sample of mental health outpatients may not be representative of the general public nor the interests of those searching for trauma-related information specifically.

Implications

Findings from this study have notable implications for individuals in the community and mental health service providers alike. Considering that numerous individuals may use the internet in an attempt at (self)diagnosis or to understand their experience (Fox & Duggan, 2013), websites that do not provide accessible and complete information on common psychoeducational components of trauma and related distress may perpetuate misinformation and confusion. Moreover, some authors have argued that confusion over one's emotional and psychological states can contribute to maintaining or exacerbating psychopathology (Vine & Aldao, 2014), which in turn, can impact treatment-seeking behaviours. Conversely, others have found that individuals who are exposed to accessible trauma-related content that includes a comprehensive model of illness and recovery report gaining a degree of insight and validation into their experience (e.g., Lonergan et al., 2021). Indeed, failure to present the risks and benefits of the various treatment options for trauma-related distress can preclude help-seeking individuals from making fully informed decisions concerning their treatment needs, potentially putting them at risk for engaging in inappropriate interventions. Finally, informing mental health service providers on the content and quality of the information that their clients are accessing online can provide greater insight into their clients' lived experiences and decision-making processes. In sum, findings from this study point to the key features of Canadian online trauma-related content that urgently need improvement.

Limitations and Future Directions

Considering that 1,568 Google searches were conducted for this review across multiple personnel, it was not feasible to implement interrater reliability measures for the present study. However, the instruments used to extract data, including the reliable and validated DISCERN Handbook (Charnock et al., 1999), likely minimized subjectivity in data extraction. The DISCERN tool is well-known and commonly used in contemporary health-related website quality analyses (e.g., Killip et al., 2020), with good interrater reliability (Ademiluyi et al., 2003), justifying its use in the present descriptive analysis. Although unavailable at the time of the conception of the present study, the Web Resource Rating Tool (Dobbins et al., 2018), which is reported to have higher interrater reliability than the DISCERN tool and is easy to use by common raters, may be alternatively used in future studies. As well, it is possible that Canadians may use trauma-related terms that fall outside our search algorithm to search for trauma-related information on Google.ca (e.g., specific intervention-related words). Although our "constant" words were selected to capture a breadth of searchers and led to

a multitude of results, there may be websites that were inevitably missed due to the limitations of our algorithm. Additionally, though the DISCERN and TWCC (developed by PTSD experts) were used to assess the content and quality of information provided on websites, an additional assessment of information accuracy was not conducted by a trauma expert; future research should consider a more thorough assessment of information accuracy of Canadian trauma-related websites. When searching the internet, Canadians are able to access websites without consideration for national borders, and websites from other countries likely also provide Canadians with trauma-related information. Therefore, our sample does not capture all websites that Canadians may encounter when searching the internet for trauma-related information; however, our goal was to assess the content and quality of Canadian websites specifically, which can more pointedly translate to recommendations for improvements in the Canadian context. Finally, as we aimed to provide a quantitative description of the content and quality of trauma-related websites in Canada, no thematic content analysis was conducted. A qualitative investigation of the thematic content of trauma-related websites may be considered in future research. Such an investigation may also permit a more thorough analysis of how the content and quality of trauma and PTSD-related online resources for lay Canadians are reflective of diversity and relevant cultural factors (e.g., refugee status, sexual orientation, gender identity).

Several gaps in the trauma-related websites available to Canadians on Google.ca were identified. Given that individuals with mental health disorders predominantly search online for accurate information on symptoms, treatments, side effects, and diagnoses (Lam-Po-Tang & McKay, 2010), the finding that these important psychoeducational components were missing from most websites suggests a need for improvement. Thorough and up-to-date information on how different treatment options work, including their associated risks and benefits, is especially important, given that concerns over side effects and a more limited understanding of the intricacies of service provision can represent barriers to treatment-seeking among individuals with PTSD (Smith et al., 2020). Results from this review also revealed much geographical variability in terms of the quantity of PTSD online resources available to the public. In terms of future directions for research, assessment of the changes in the accessibility, content, and quality of trauma-related mental health resource websites over time is recommended, as this will indicate whether the content and quality improve in the coming years.

Conclusion

Canadian trauma-related online mental health resources include varying levels of content and are of moderately low quality overall, and thus are in urgent need of improvement. Websites must include the most fundamental psychoeducational components of trauma and related disorders, including the PTSD diagnostic criteria and the risks and benefits associated with various treatments. Given that most individuals struggling with mental health issues do not discuss their online information-seeking with their mental health care providers (Lam-Po-Tang & McKay, 2010), findings from this study can enlighten health professionals on the quality and accuracy of the information their clients may be accessing online for trauma-related concerns. Additionally, findings from this review indicate a need to pursue this line of research in other mental health domains in

Canada. In the age of "Google" being a primary source of health and mental-health-related information, particularly within the context of the current "traumatogenic" zeitgeist due to the COVID-19 pandemic and influx of refugees from war-torn countries, it is imperative that the content and quality of online resources for trauma-related stress be accurate and high. A list of high-quality websites derived from this study will be published in the CPA's Traumatic Stress Section to contribute to this effort (see Supplemental Table 3).

Résumé

La recherche de ressources en santé mentale en ligne est devenue une pratique courante chez les personnes ayant vécu un stress traumatique. Cependant, on sait peu de choses sur la qualité des informations disponibles en ligne. Cela peut avoir des implications importantes du point de vue de la diffusion des connaissances et du traitement. Cette analyse descriptive explore le contenu et la qualité des sites Web canadiens sur les traumatismes et les troubles de stress post-traumatique (TSPT) disponibles sur Google.ca. Les données ont été collectées entre 2018 et 2020 à l'aide d'un algorithme de recherche systématique composé de 14 événements traumatiques, de quatre expressions liées aux traumatismes et de 14 régions géographiques canadiennes. Le contenu de chaque site Web a été évalué à l'aide de la liste de contrôle du contenu des sites Web sur les traumatismes. L'outil DISCERN a été utilisé pour déterminer la qualité des sites Web. Un total de 964 sites Web ont été inclus dans l'analyse. Le contenu et la qualité variaient considérablement d'un site Web à l'autre et d'une région à l'autre. Notamment, seuls 10 % des sites Web contenaient des informations sur les critères de diagnostic du TSPT, tandis que 69 % des sites Web contenaient des informations sur les traitements du TSPT. Le score DISCERN moyen était de 2,92 sur 5, 53 % des sites Web se situant en dessous de la cote « passable », indiquée par un score DISCERN de 3. La majorité des sites Web canadiens sur les traumatismes et le TSPT ne contiennent pas d'informations cruciales, notamment en ce qui concerne les critères de diagnostic et les risques et avantages des traitements. Les lacunes dans les ressources liées aux traumatismes disponibles sur Google.ca sont discutées, et la nécessité d'améliorer le contenu et la qualité des sites Web canadiens sur les traumatismes est présentée.

Mots-clés : trouble de stress post-traumatique, ressources canadiennes en ligne, évaluation de la qualité, internet, DISCERN

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