A Survey of Canadian Websites Providing Information About Female Urinary Incontinence

Karen D. Farrell, MA (HEED),[1] Lynne M. Robinson, PhD,[1] Sandra A. Baydock, MD, FRCSC,[2] Scott A. Farrell, MD, FRCSC,[3] Linda E. Irving, RN,[4] Colleen M. O'Connell, PhD[5]

[1]School of Health and Human Performance, Dalhousie University, Halifax NS

[2]Department of Obstetrics and Gynecology, University of Alberta, Edmonton AB

[3]Department of Obstetrics and Gynaecology, Dalhousie University, Halifax NS

[4]Urogynaecology Clinic, IWK Health Centre, Halifax NS

[5]Perinatal Epidemiology Research Unit, Dalhousie University, Halifax NS

Abstract

Objective: Urinary incontinence (UI) is a prevalent health issue that has significant detrimental effects on quality of life. The Internet offers a unique vehicle for incontinent women to access information that could facilitate conservative self-help therapy. An evaluation of Canadian websites offering female UI information was conducted to determine their quality and readability.

Methods: We evaluated websites using published general quality criteria for health sites and a quality assessment tool compiled by the authors for specific UI information derived from published, peer-reviewed clinical practice guidelines. Three health care professionals reviewed sites for quality, Canadian content, and interactivity. The readability of health information was also evaluated.

Results: Fifty-six Canadian sites (18 professional, 22 organizational, 16 commercial) were evaluated. Significant agreement was found among the raters' evaluations on all measures. For all sites, the mean scores were general quality, 9/14; specific UI quality, 30/122; reading ease, 37/100; grade level, 10.9. The median score for Canadian content was high, but for interactivity it was low. The only significant difference between site types was for general quality ($F [2,165] = 3.38$, $P = 0.036$). Post hoc Tukey's tests showed a significant difference between organizational and commercial sites, with organizational sites having higher general quality.

Conclusion: Canadian websites providing female UI information have moderately high general quality, low specific UI information quality, minimal interactivity, and more than minimal Canadian content. The reading level of most sites is too high for average consumers. A webliography of the best sites has been developed to guide patients.

Résumé

Objectif : L'incontinence urinaire (IU) est un problème de santé prévalent qui entraîne des effets nuisibles considérables en matière de qualité de vie. Internet offre aux femmes incontinentes un moyen unique d'avoir accès à des renseignements qui pourraient faciliter la mise en œuvre d'une autothérapie conservatrice. Une évaluation des sites Web canadiens offrant des renseignements sur l'IU chez les femmes a été menée afin d'en déterminer la qualité et la lisibilité.

Méthodes : Nous avons évalué les sites Web au moyen des critères de qualité générale publiés en ce qui concerne les sites sur la santé, ainsi qu'au moyen d'un outil d'évaluation de la qualité compilé par les auteurs et visant des renseignements propres à l'IU tirés de directives cliniques publiées et soumises à l'examen collégial. Trois professionnels de la santé se sont penchés sur les sites afin d'en évaluer la qualité, le contenu canadien et l'interactivité. La lisibilité des renseignements sur la santé a également fait l'objet d'une évaluation.

Résultats : Cinquante-six sites canadiens (18 professionnels, 22 organisationnels, 16 commerciaux) ont été évalués. Les évaluateurs se sont dans une large mesure entendus quant aux résultats de leurs évaluations, et ce, pour toutes les mesures. Pour tous les sites, les scores moyens étaient de 9/14 pour la qualité générale; de 30/122 pour la qualité des renseignements propres à l'IU; de 37/100 pour la lisibilité; et de 10,9 pour le niveau de langue. Le score médian était élevé pour ce qui est du contenu canadien, mais faible en ce qui a trait à l'interactivité. La seule différence significative entre les types de sites concernait la qualité générale ($F [2,165] = 3,38$, $P = 0,036$). Les tests de Tukey *a posteriori* ont indiqué une différence considérable entre les sites organisationnels et commerciaux, les sites organisationnels présentant une qualité générale plus élevée.

Conclusion : Les sites Web canadiens offrant des renseignements sur l'IU chez les femmes présentent une qualité générale modérément élevée, des renseignements propres à l'IU de faible qualité, une interactivité minimale et un contenu canadien plus que minimal. Le niveau de langue de la plupart des sites est trop élevé pour les consommateurs moyens. Une webliographie des meilleurs sites a été élaborée en vue de guider les patientes.

J Obstet Gynaecol Can 2006;28(8):700–712

Key Words: Internet, urinary incontinence, female, health education, webliography

Competing Interests: See Acknowledgments.

Received on February 5, 2006

Accepted on May 1, 2006

INTRODUCTION

Urinary incontinence (UI) is a prevalent health issue that afflicts more than 50 million individuals world-wide and 25% to 30% of women.[1,2] Prevalence

of UI increases with age, and the median age of Canada's population is rising.[3,4] Left untreated or unmanaged, UI can adversely affect women's work, daily lives, recreational and social activities, interpersonal relationships, and physical and psychological health.[5–25] It is a risk factor for institutionalization of the elderly and can create considerable cost for the individual and the health care system.[2,26–35]

Urinary incontinence is a highly sensitive, somewhat taboo medical issue.[36] Many women feel stigmatized and embarrassed by the problem and do not seek help for it.[8,11,37–39] Help, when it is desired, is not always easily accessible. There are few UI specialists (urogynaecologists) in Canada, and most practise in urban areas. Family physicians are in short supply and overworked, and research has shown that family physicians do not feel prepared to treat female UI even though they report it to be a common problem in their practices.[40–43] Physicians appear reluctant to discuss this taboo topic with their patients.[8,44,45] Despite their reluctance to seek professional help, incontinent individuals commonly voice a need for health information and education about UI.[34,37,39,46]

The Internet and the health websites on it provide a unique vehicle for overcoming barriers to continence care. According to Statistics Canada, Canadians are turning to the Internet for health information in increasing numbers.[47–49] Women are more likely than men to use the Internet for this purpose.[48] Provision of care options via websites addresses women's preference for self-care of this problem.[50] Conservative therapy for UI is advocated as a primary intervention, and evidence for the efficacy of behavioural interventions is strong.[51–54] Incontinent women could access Internet resources and, if so inclined, begin conservative management of their UI. Reliable continence care information on Internet health websites could also address the educational needs of health professionals in a convenient, timely manner.

Unfortunately, the Internet has significant limitations. The huge number of health websites available on the Internet makes accessing high quality, reliable information difficult.[55–61] Some sites provide conventional, good quality health information, but others provide misleading or inaccurate information that may be dangerous to patient health.[57,62–67] Guidance to specific high quality Internet health sites is something both patients and health care professionals endorse.[66,68]

Sandvik reported that UI information on the Internet may be hard to find.[69] He evaluated three kinds of websites for female UI: "professional", "organizations," [sic] and "commercial," and found "few [of the 75] sites provided comprehensive information, but the information actually provided was mostly correct." However, his evaluations of the UI information were not based on a replicable tool, and the clinical practice guidelines underlying his research were not explicit. Boyington, Dougherty, and Liao conducted a more recent examination of Internet websites, but only 13 "interactive-with-feedback" sites were included in their analysis.[70] These sites were judged to be informative, but they may not fully represent the types of sites users are accessing. Givron et al.[71] used an eight-item, author-compiled assessment scale based on practice guidelines for the management of female UI to rate information about female UI on French-language websites. In this study, two physicians evaluated the UI information on websites and found it to be of poor quality, with only four out of 24 sites being highly recommended.

The present study was exploratory in nature. Its purpose was to use published, peer-reviewed clinical practice guidelines[72–76] to evaluate the quality of a large sample of English-language websites providing female UI information and to explore, as Sandvik[71] did, whether there were differences in quality amongst three categories of websites: professional, organizational, and commercial. Since 70% of Canadians think it is "very or somewhat important" to have Canadian content available on the Internet, this study included only Canadian websites.[77] The research results were used to generate a "webliography" guide to high quality Internet sites.

MATERIALS AND METHODS

For the evaluations, we used established, well-recognized general quality criteria for health websites[78,79] and specific UI information quality criteria compiled by the primary author and derived from published, peer-reviewed clinical practice guidelines.[74–78] The evaluations were conducted independently by three urogynaecology health professionals (two physicians, one nurse) over a period of five months. Canadian content and interactivity were also evaluated using author-compiled assessment tools. Readability of the UI information was assessed by the primary author using Microsoft Word. Three kinds of websites (professional, organizational, commercial) were evaluated.

Sample

Included in this study were 56 Canadian websites providing UI information. Sites were categorized as professional, organizational, or commercial on the basis of the source (i.e., provider) of the website. Professional websites were provided by clinics, hospitals, universities, physicians, and other health care specialists such as nurses and physiotherapists (e.g., Sunnybrook and Women's College Health Sciences Centre, www.womenshealthmatters.ca). Organizational websites were provided by societies, foundations,

associations, journals, or government agencies (e.g., The Canadian Continence Foundation, www.continence-fdn.ca). Commercial websites were sponsored by companies and designed for the purpose of promoting or selling a product or service but also provided health education information about female UI (e.g., www.depend.com).

Since the study did not involve the assessment of human participants, ethics review was not required.

Study Inclusion Criteria

Sites were selected using inclusion and exclusion criteria based on previous evaluations of health websites.[60,66,69,70,80] To be included, sites had to provide a minimum of 300 words of educational information about UI, be written in English, and come from a source that could be clearly identified as Canadian (including but not limited to Canadian authors, corporate sponsors, foundations, hospitals, associations). Sites were excluded if they required a subscription or payments to use, or if they provided information about UI only in males, children, or animals.

Instruments

General Website Quality Assessment Tool. This measure is a replication of the general web quality tool used by Sandvik.[69] The seven items used in this tool are common, published quality criteria (ownership, authorship, source, currency, interactivity, navigability, balance) for health websites.[78,79] A three-point Likert-type response scale ranging from 0 (no indication of criterion) to 2 (criterion met explicitly) was used. The maximum possible General Quality Score is 14.

Specific UI Information Quality Assessment Tool (Appendix A). This author-compiled tool was derived from published, peer-reviewed clinical practice guidelines for UI care.[72–76] The content validity of the tool was addressed by having two urogynaecologists review the appropriateness of the type of items, the completeness of the item sample, and the way in which the items assess the content of the UI care domain. The urogynaecologists were also asked to use their clinical judgement and experience to assess the construct validity of the tool, that is, how well the items in the tool relate to theoretical constructs of urogynaecology care. All recommended adjustments, additions, or deletions were made before any website evaluations were undertaken.

The first six sections (39 items) use a Likert-type response scale ranging from 0 (not mentioned) to 3 (described and illustrated) to indicate the degree to which a website has included information about UI. The maximum possible UI Information Score is 117. The seventh section of the tool asks the expert evaluator to rate the overall quality of the website as an accurate source of information about female UI using a five-point Likert-type response scale ranging from 0 (serious or extensive shortcomings) to 5 (minimal or no shortcomings).[81] The score on this single item gives an "Accuracy Rating" that is added to the UI Information Score to give an overall Specific UI Information Quality Score out of a total possible score of 122.

Canadian Content and Interactivity Assessment Tool (Appendix B). This tool consists of two single-item questions with three-point Likert-type response scales. Canadian content is rated using a scale ranging from 0 (no Canadian content) to 2 (more than minimal content). Interactivity is rated using a scale ranging from 0 (no interactive capability) to 2 (more than minimal interactive capability).

Readability of UI Information. The "Readability Statistics" option of the "Spelling and Grammar" function of Microsoft Word (Version 10) was used to calculate two readability measures for each website. The Flesch Reading Ease Score ranges from 0 (most difficult to read) to 100 (most easy to read). The Flesch-Kincaid score provides a grade level estimate of readability (e.g., a score of 8.7 = grade 8, 7th month reading level).

Procedure

Training Session for Evaluators. Before the study began, four training sessions were held with the three evaluators to promote consistent evaluation. The evaluators practised using the evaluation tools on non-Canadian health websites for UI.

Selection of Websites. To select the sites for the formal evaluations, an Internet search was conducted using the search engine Google, the "web pages from Canada" option on the search engine, and the search terms "urinary incontinence," "urine loss," and "bladder problem." These terms were chosen based on previous research. Sandvik[69] used the medical term "urinary incontinence" in his study. Boyington et al.[70] used the lay terms "urine loss" and "bladder problem," citing them as terms women themselves use to describe their bladder symptoms. All searches were performed in English. Google was used because it has consistently been ranked amongst the top search engines used by consumers,[82,83] it has won the "Outstanding Search Service" award four years in a row,[84,85] and research has shown consumers do not tend to use medical portals when searching for medical information on the Internet.[61] The search produced 12 100 "hits" or matches with the search terms. As in previous professional evaluations of websites, the Internet search results were not altered or redefined, regardless of the websites identified.[66,86] All sites in the search results were reviewed to see if they met the study inclusion criteria. Fifty-nine sites met the criteria and were selected for the formal evaluations. Sites were then categorized as professional, organizational, or commercial.

Website Evaluation Process. A list of the 59 selected website addresses (URLs) was sent to each evaluator as an email attachment. This allowed the evaluators to click on the URL for each site and reduced the likelihood of web address errors. The order of websites on each evaluator's list was randomized and unique to reduce the likelihood of order effects in the evaluation results. The evaluators were advised to complete the evaluations in the order given on their own list. The type of site was not identified. As in previous research, the evaluators were asked to evaluate the health information on each site without following links to other sites.[66,86] To prevent cross-contamination of the evaluations, the evaluators were asked not to communicate with one another regarding their evaluations until the study was complete. The evaluators used their own personal computers to conduct the research over a five-month period. The readability assessments of the 59 sites were conducted during the same time period by the primary author.

Annotated Webliography Inclusion Criteria. Two factors were considered to be of primary importance in selecting sites for the annotated webliography. First, websites had to rank in the top ten for specific UI information quality. The webliography is designed as a resource for UI; therefore, the UI information that consumers use to effect changes in their health is the most critical aspect of a site. Second, websites had to have a mean score for general quality of at least 7 (i.e., 50% of the total possible score for the scale). This was considered important because 79% to 83% of respondents in the 2001 Health on the Net (HON) survey expressed concerns about the trustworthiness of Internet information.[58]

Data Analysis. SPSS Version 11 (SPSS Inc., Chicago) statistical software was used.[87] An alpha level of 0.05 was used for all statistical tests. Scores for the three evaluators on the two quality scales (general and specific) were submitted to one-way analysis of variance (ANOVA) to determine whether data from the raters could be combined to form one score for further analysis. Scores for the three evaluators on the two single-item scales (Canadian content and interactivity) were submitted to Kendall's W to determine whether data could be collapsed across the rater variable to form one score for further analysis.

Descriptive statistics were calculated for all websites and for categories of specific UI information. One-way, between-subjects analysis of variance (ANOVA) was used to determine whether site types were significantly different on the quality measures (general and specific) and readability. Tests of difference between means were two-tailed. Wherever significant F-values were found for the main effect of site type, post-hoc tests (Tukey's) were carried out to determine where the differences between groups lay. The Kruskal-Wallis test of differences between groups was used to determine whether site types were significantly different on the two single-item measures (Canadian content and interactivity).

RESULTS

Final Sample

Of the 59 sites selected for formal evaluation, three sites were inaccessible or ineligible at the time of the formal evaluations. One was "dead," one no longer allowed access to the UI information, and one no longer had a sufficient amount of UI information on the site to meet the study inclusion criteria of 300 words. This left 56 sites (18 professional, 22 organizational, 16 commercial) in the final sample.

Effect of Rater on Ratings

Results indicated that there was no significant effect of rater on general quality ratings ($F [2,165] = 2.515$, $P = 0.084$); or specific quality ratings ($F [2,165] = 1.645$, $P = 0.196$). There was a significant level of agreement among the raters on their evaluations for Canadian content (Kendall's $W = 0.632$, $P = 0.000$) and interactivity (Kendall's $W = 0.541$, $P = 0.002$). Since there was no significant difference between raters, ratings were collapsed across this variable for all further analysis.

Descriptive Statistics—All Sites

The mean general quality score was moderately high (64.3% of the total possible score for this scale). Mean scores for specific quality were low. The median score for Canadian content was high; interactivity had a modest median score.

The reading ease scores had a mean of 37.48 (standard deviation [SD] $\pm$ 12.84), and a range of 9.40–59.40. The grade level scores had a mean of 10.97 (SD $\pm$ 1.26), and a range of 7.30–12.00 (Table 1).

Categories of Specific UI Quality Criteria—All Sites

The mean score for each category of UI information on the tool was less than 50% of the total possible score for that category. "Overview of the problem" and "Types of UI" were the categories most comprehensively described on websites, and the category "Supplementary investigations" (i.e., quantification of the urine loss and record of dietary intake and bowel patterns) was the one most poorly described. The overall accuracy of websites was poor, with a mean score of 1.92 out of a possible 5 (Table 2).

Differences Between Types of Website

The only significant difference between site types was found for general quality ($F [2,165] = 3.38$, $P = 0.036$). Post hoc tests (Tukey's) showed that organizational sites had

Table 1. Descriptive statistics for all sites

Outcome Measure	Mean	SD	Range	Maximum score possible
General quality	9.02	2.37	3.00–14.00	14.00
Specific quality	30.04	16.84	6.00–95.00	122.00
Outcome measure	median			
Canadian content	2.00			2.00
Interactivity	1.00			2.00

Descriptives are based on 168 evaluations across 3 raters.

SD: standard deviation.

Table 2. Descriptive statistics for categories of specific UI quality criteria for all sites

Outcome Measure	Mean	SD	Range	Maximum score possible	%
Overview of UI	5.99	2.82	0–11.00	15.00	39.93
Types of UI	5.02	2.64	0–10.00	12.00	41.83
Basic investigations	4.25	4.84	0–22.00	24.00	17.71
Supplementary investigations	0.19	0.59	0–4.00	6.00	3.17
Advanced investigations	1.14	1.87	0–8.00	9.00	12.67
Treatment/ management	11.52	7.06	1–38.00	51.00	22.59
Accuracy	1.92	1.16	1–5.00	5.00	38.40

Descriptives are based on 168 evaluations across 3 raters.

SD: Standard deviation; UI: urinary incontinence.

%: percentage of the total possible score for each category represented by the mean score in each category.

higher general quality than commercial sites (HSD = 1.1174, $P = 0.034$).

Webliography of Recommended Sites

After websites had been ranked according to their mean score for specific quality, a "webliography" or guide to Internet sites providing information about female UI was developed by the evaluators using the previously described inclusion criteria and their clinical expertise in women's continence care. They recommended only nine sites (Table 3).

DISCUSSION

Site Selection and Evaluation Process

The search engine Google[88] identified a very large number of matches to the search terms, and reviewing the entire list of sites to determine which were eligible for inclusion was time-consuming. Many sites had little or no educational information about female UI.

The site evaluators also encountered some challenges. Some sites were under construction, making access to the UI information difficult. Several URLs lead to pdf files. As stand-alone documents, pdf files do not always provide the basic quality information Silberg et al.[79] argue is necessary for informed decision-making. These difficulties in the selection and evaluation process confirm the belief of some authors that health education via the Internet may be risky, and patients may reach misleading or unconventional sites if not guided to reliable resources.[56,66,89,90]

On average, the websites in this research adhered moderately well to the recommended core standards for web quality[78,79] embodied in the general quality tool. This is encouraging, although the mean score was only 9 out of 14. Professional organizations could encourage education about the general quality criteria and patient use of the Internet by including this information in professional certification programs.

We found few sites that provided comprehensive coverage of UI information, which is consistent with previous reports.[69,71] This is discouraging and bodes poorly for use of the Internet

Table 3. Webliography of Internet sites for female urinary incontinence

Website address (URL)	Website type	Mean general quality score (/14)	Mean UI information quality score (/122)	Canadian content	Interactivity	Reading grade level
Recommended for consumers and health care providers						
www.womensbladdershealth.com	P	13.67	89.67	> minimal	good	9.2
www.bchealthguide.org	O	12.67	74.67	> minimal	good	12.0
www.continence-fdn.ca	O	11.33	61.33	> minimal	good	12.0
www.womenshealthmatters.ca	P	11.00	50.00	> minimal	good	12.0
www.phac-aspc.gc.ca	O	11.00	49.00	minimal	minimal	12.0
www.depend.com	C	8.67	41.33	none	good	12.0
Recommended for health care providers only						
http://preventdisease.com	O	7.00	58.00	none	minimal	11.0
www.stacommunications.com	O	11.00	50.00	minimal	minimal	12.0
www.howtocare.com/incontinence.htm	C	8.33	42.33	> minimal	good	12.0

UI: urinary incontinence; P: professional; O: organizational; C: commercial.

to foster education about UI. Fortunately, at least three sites had high mean scores for specific UI information quality, indicating better coverage of UI information (www.womensbladderhealth.com, www.continence-fdn.ca, and www.bchealthguide. org). Two of these sites are dedicated to UI.

In its final report, a national forum on Canadian content on the Internet recommends that "qualified organizations be encouraged to index and evaluate Internet sites in terms of quality of content."[91(p31)] "Non-government refereeing processes by Canadian scholars or by scholarly associations" are included in a list of "several institutions and organizations having responsibility for developing way-finding and for information authentication."[91(p10)] With the examination of Canadian Internet resources for UI information and the generation of a consumer guide to high quality Canadian websites, this study has addressed this recommendation.

Since having Canadian content on the Internet is important to most Canadians,[77] it was encouraging to find that most sites had more than minimal Canadian content. However, the single-item assessment tool addressed only the level of Canadian content on a site. A more comprehensive study is needed to determine what Canadians want on websites, what type of Canadian content is present, and how Canadian UI sites compare with non-Canadian sites. This is especially important because relatively few Canadian sites had high quality UI information.

Interactive health communication via the Internet has the potential to facilitate change in health behaviour because of its convenience and flexibility and the opportunity it affords the consumer to tailor health promotion programs to personal needs and to communicate with health professionals and peers.[92,93] In this study, minimal interactive capability was found for the majority of websites, but few sites had more than that, suggesting that the full interactive potential of the Internet is not being realized. This is particularly discouraging as UI is especially amenable to conservative management via changes in health behaviour,[51–54] and websites with good interactive capabilities could facilitate this.

Reading levels for UI information found in this study are consistent with previous research for a variety of health issues on the Internet that found mean Flesch-Kincaid reading grade levels at or above the grade 10 level.[60,94,95] As Estey et al.[96] found that patients understand material written at a grade 5 level more easily than material written at a grade 9 level, it appears UI information on websites in this research may be beyond the comprehension of many consumers. Indeed, the mean reading ease level for UI information in this study was even lower than that found by Graber et al.,[97] who found a reading ease level of 47.1 for patient information on the web and concluded it was "on the difficult to read side…and not at a reading level that is comprehensible to many patients."[97(p59)] Individuals with basic literacy skills must be considered when developing health information for the Internet, and web providers must try to simplify their materials. At the very least, readability levels and names of the methods used to calculate the reading levels could be provided on websites as Kusec et al.[95] recommend so that patients can decide which websites would benefit them.

Of the different site types, Sandvik found that organizational sites had the highest mean total (general + specific) quality score, and commercial sites had the lowest.[69] The current study found significant differences between site types on general quality, with organizational sites demonstrating higher general quality than commercial sites. Taken together, these studies suggest that organizational sites that have education as a key mandate may tend to have higher quality than commercial sites designed to sell a product or service.

The ideal number of resources to include in a webliography is not known. Lindbergh[98] suggests 20 to 50 sources is a manageable number of references. Eysenbach and Kohler[61] found that most consumers do not look beyond the first page of web search results. The number of sites in this webliography was limited because so few sites scored highly on UI information quality.

Ideally, websites should provide educational materials that lay consumers are able to read and understand. However, most sites in this research had reading levels that were too high for the average consumer; therefore, the reading levels for each site were provided on the webliography to enable consumers to choose sites that suit them.

The research findings from this study, in particular the webliography, may address the information gap about UI that exists amongst family practitioners in Canada.[42,43,99] The webliography may be used by health care providers themselves for their own education, or provided to patients as a source of information about UI so that the pitfalls of inaccurate or misleading UI information on the Internet may be avoided.

There are several key issues to be considered when referring women to specific websites for UI information by handing out a webliography. First, some incontinent women may not have access to the Internet, and some may not want to access UI information online. Second, the same website may not suit all incontinent women. Third, a patient's level of education must be considered when providing the webliography, as it may not be suitable for those with less education. In this study the average reading level of UI information was high (grade 10, 10th month). Fourth, the Internet is not a static medium, and websites may disappear or change over time. Health professionals providing a webliography should be familiar with the state of the websites on it. Fifth, physicians recommending websites are not responsible for the health information provided on sites, and the information can vary greatly in quality. Sixth, websites and the UI information on them must not be considered as a substitute for professional help.

Recommendations for Future Research

In this study, evaluations were conducted by health care professionals. Consumers may have quite different needs and interests regarding UI information. Additional research should be conducted with incontinent women to find out what they seek on UI sites.

The current study examined only the quality of information on websites. The assumption is that if patients are directed to good quality UI information they will benefit from exposure to the educational material. A meta-analysis of the effectiveness of web-based interventions on behavioural change outcomes by Wantland et al.[100] showed improved outcomes for individuals using web-based interventions to achieve behaviour change. Future studies might look at the effect of exposure to Internet UI information on patient understanding and behavioural management of UI.

CONCLUSION

The nature of the Internet makes governance and editorial control to ensure validity of health information an impossible task. Individuals must be empowered and educated to find and recognize valid health information so that the Internet meets its full potential to inform health care decisions. This survey should give health care professionals and incontinent women the guidance they need to use the Internet wisely and safely when educating themselves to make informed health care decisions about UI.

ACKNOWLEDGEMENTS

This research was funded by a student research award #PSO-SRA-2004–7060 from the Nova Scotia Health Research Foundation.

Ms Karen Farrell and Dr Scott Farrell are co-authors of a website about UI that was included in this research. The health care professionals were instructed to perform the website evaluations independently and without communication among themselves. They were advised that data entry would be blind to all evaluators. All analyses for the study were run with and without Dr Farrell's web evaluations for this site. Results were unchanged when this site was removed from the analysis. The results reported in this paper include all of Dr Farrell's website evaluations.

REFERENCES

1. Boehringer-Ingelheim. Stress urinary incontinence and women: discovering the truth. Stress urinary incontinence (SUI): A problem for many women of all ages. Presented at: International Continence Society (ICS) 33rd Annual Meeting. Florence, Italy, 2003. Available at: www.boehringeringelheim.com / corporate/asp/news/nprint.asp?ID=1274 Accessed April 4, 2004.
2. Milsom I. The prevalence of urinary incontinence. Acta Obstet Gynecol Scand 2000;79
3. Campbell AJ, Reinken J, McCosh L. Incontinence in the elderly: prevalence and prognosis. Age Ageing 1985;14:65–70.

4. Denton F, Spencer BG. Population aging and the maintenance of social support systems. Can J Aging 1997;16:485–98.

5. Brocklehurst JC. Urinary incontinence in the community—analysis of a MORI poll. Br Med J 1993;306:832–4.

6. McGrother CW, Castleden CM, Duffin H, Clarke M. Do the elderly need better incontinence services? Community Med1987;9:62–7.

7. Wyman JF, Harkins SW, Choi SC, Taylor JR, Fantl JA. Psychosocial impact of urinary incontinence in women. Obstet Gynecol 1987;70:378–81.

8. Diokno AC, Burgio K, Fultz NH, Kinchen KS, Obenchain R, Bump RC. Medical and self-care practices reported by women with urinary incontinence. Am J Manag Care 2004;10:69–78.

9. Norton C. The effects of urinary incontinence in women. International Journal of Rehabilitation Medicine 1982;4:9–14.

10. Brown WJ, Miller YD. Too wet to exercise? Leaking urine as a barrier to physical activity in women. J Sci Med Sport 2001;4:373–8.

11. Mitteness LS, Barker JC. Stigmatizing a "normal" condition: urinary incontinence in late life. Med Anthropol Q 1995;9:188–210.

12. Wyman JF, Harkins SW, Fantl JA. Psychosocial impact of urinary incontinence in the community-dwelling population. J Am Geriatr Soc 1990;38:282–8.

13. Grimby A, Milsom I, Molander U, Wiklund I, Ekelund P. The influence of urinary incontinence on the quality of life of elderly women. Age Ageing 1993;22:82–9.

14. Sutherst JR. Sexual dysfunction and urinary incontinence. Br J Obstet Gynaecol 1979;86:387–8.

15. Norton PA, MacDonald LD, Sedgwick PM, Stanton SL. Distress and delay associated with urinary incontinence, frequency, and urgency in women. Br Med J 1988;297:1187–9.

16. Hilton P. Urinary incontinence during sexual intercourse: a common, but rarely volunteered, symptom. Br J Obstet Gynaecol 1988;95:377–81.

17. Barber MD, Visco AG, Wyman JF, Fantl JA, Bump RC. Sexual function in women with urinary incontinence and pelvic organ prolapse. Obstet Gynecol 2002;99:281–9.

18. Field SM, Hilton P. The prevalence of sexual problems in women attending for urodynamic investigation. Int Urogynecol J Pelvic Floor Dysfunct 1993;4:212–5.

19. Temml C, Haidinger G, Schmidbauer J, Schatzl G, Madersbacher S. Urinary incontinence in both sexes: prevalence rates and impact on quality of life and sexual life. Neurourol Urodyn 2000;19:259–71.

20. Bogner HR, Gallo JJ, Swartz KL, Ford DE. Anxiety disorders and disability secondary to urinary incontinence among adults over age 50. Int J Psychiatry Med 2002;32:141–54.

21. Herzog AR, Fultz NH. Urinary incontinence in the community: prevalence, consequences, management, and beliefs. Topics in Geriatric Rehabilitation 1988;3:1–12.

22. Hunskaar S, Vinsnes A. The quality of life in women with urinary incontinence as measured by the sickness impact profile. J Am Geriatr Soc 1991;39:378–82.

23. Yu LC. Incontinence stress index: measuring psychological impact. J Gerontol Nurs 1987;13:18–25.

24. Meade-D'Alisera P, Merriweather T, Wentland M, Fatal M, Ghafar M. Depressive symptoms in women with urinary incontinence: a prospective study. Urol Nurs 2001;21:397–9.

25. Bogner HR, Gallo JJ, Sammel MD, Ford DE, Armenian HK, Eaton WW. Urinary incontinence and psychological distress in community-dwelling older adults. J Am Geriatr Soc 2002;50:489–95.

26. Wyman JF. The 'costs' of urinary incontinence. Eur Urol 1997;32:13–9.

27. Cummings V, Holt R, van der Sloot C, Moore K, Griffiths D. Costs and management of urinary incontinence in long-term care. J Wound Ostomy Continence Nurs 1995;22:193–8.

28. Cassells C, Watt E. The impact of incontinence on older spousal caregivers. J Adv Nurs 2003;42:607–16.

29. Flaherty JH, Miller DK, Coe RM. Impact on caregivers of supporting urinary function in noninstitutionalized, chronically ill seniors. Gerontologist 1992;32:541–5.

30. Langa KM, Fultz NH, Saint S, Kabeto MU, Herzog AR. Informal caregiving time and costs for urinary incontinence in older individuals in the United States. J Am Geriatr Soc 2002;50:733–7.

31. Wilson L, Brown JS, Shin GP, Luc KO, Subak LL. Annual direct cost of urinary incontinence. Obstet Gynecol 2001;98:398–406.

32. Hu TW, Wagner TH, Bentkover JD, Leblanc K, Zhou SZ, Hunt T. Costs of urinary incontinence and overactive bladder in the United States: a comparative study. Urology 2004;63:461–5.

33. Hu TW. The economic impact of urinary incontinence. Clinics in Geriatric Medicine 1986;2:673–687.

34. Griffiths D. The needs of people suffering from incontinence and the barriers encountered: a review of research and publications related to the Canadian situation. Obtained from: Bringing incontinence out of the closet, exploring innovative partnerships. summary of workshop proceedings. Toronto, ON: The Canadian Continence Foundation, 1998. Available at: www.continence-fdn.ca/hp-bringing.htm Accessed June 15, 2004.

35. Wagner TH, Hu TW. Economic costs of urinary incontinence in 1995. Urology 1998;51:355–61.

36. Voelker R. International group seeks to dispel incontinence 'taboo.' JAMA 1998;280:951–3.

37. Shaw C, Tansey R, Jackson C, Hyde C, Allan R. Barriers to help seeking in people with urinary symptoms. Fam Pract 2001;18:48–52.

38. MacKay K, Hemmett L. Needs assessment of women with urinary incontinence in a district health authority. Br J Gen Pract 2001;51:801–4.

39. Bush TA, Castellucci DT, Phillips C. Exploring women's beliefs regarding urinary incontinence. Urol Nurs 2001;21:211–8.

40. Canadian Broadcasting Corporation. CMA discusses doctor shortage in Canada: CBC News, 1999. Available at: www.cbc.ca/story/canada/national/1999/08/23/doctors990823.html Accessed August 23, 1999.

41. Romanow RJ. Building on values: The future of health care in Canada—final report. Saskatoon: Health Care Commission, 2002. Cat. No. CP32–85/2002E-IN. Available at: www.hc-sc.gc.ca/english/pdf/romanow/pdfs/HCC_final_Report.pdf Accessed May 12, 2004.

42. Schulz JA, Klag M, Drutz HP. A survey of Canadian family physicians' training in incontinence and pelvic floor dysfunction. Toronto (ON): The Canadian Continence Foundation, 1999. Presented at: Partners in Continence Conference. Toronto, ON: The Canadian Continence Foundation, 1999.

43. Swanson JG, Skelly J, Hutchison B, Kaczorowski J. Urinary incontinence in Canada. National survey of family physicians' knowledge, attitudes and practices. Can Fam Physician 2002;48:86–92.

44. Cohen SJ, Robinson D, Dugan E, Howard G, Suggs PK, Pearce KF, et al. Communication between older adults and their physicians about urinary incontinence. J Gerontol A Biol Sci Med Sci 1999;54A:M34-M37.

45. Vapnek JM. Urinary incontinence. Screening and treatment of urinary dysfunction. Geriatrics 2001;56:25–9.

46. Kirkland VL, Palmer MH, Fitzgerald ST. Incontinence in a manufacturing setting: women's perceptions and responses. Public Health Nurs 2001;18:312–7.

47. Dickinson P, Ellison J. Plugging in: the increase of household internet use continues into 1999. In: Sciadas G, ed. Connectedness Series. Ottawa, ON:

Ministry of Industry, Science, Innovation and Electronic Information Division, 2000 (vol 1). Statistics Canada Cat. No. 56F0004MIE, 2000.

48. Statistics Canada. General social survey: Internet use 2000. Ottawa, ON, 2000. Statistics Canada, 2000:The Daily. Cat. No. 11–0001E.

49. Statistics Canada. Household Internet Use Survey: Erratum, 2001. Available at: www.statcan.ca/Daily/English/020726/d020726a.htm Accessed July 26, 2002.

50. Milne J. The impact of information on health behaviors of older adults with urinary incontinence. Clin Nurs Res 2000;9:161–76.

51. Diokno AC, Sampselle CM, Herzog AR, Raghunathan TE, Hines S, Messer KL, et al. Prevention of urinary incontinence by behavioral modification program: a randomized, controlled trial among older women in the community. J Urol 2004;171:1165–71.

52. Dougherty MC, Dwyer JW, Pendergast JF, Boyington AR, Tomlinson BU, Coward RT, et al. A randomized trial of behavioral management for continence with older rural women. Res Nurs Health 2002;25:3–13.

53. Gumley A. A behavioural management for continence intervention reduced urinary incontinence symptoms in older rural women. Evid Based Ment Health 2002;5:79.

54. Subak LL, Quesenberry CP, Posner SF, Cattolica E, Soghikian K. The effect of behavioral therapy on urinary incontinence: a randomized controlled trial. Obstet Gynecol 2002;100:72–8.

55. Murray E, Lo B, Pollack L, Donelan K, Catania J, White M, et al. The impact of health information on the internet on the physician-patient relationship: patient perceptions. Arch Intern Med 2003;163:1727–34.

56. Hochler A. Making important health information available: Internet sites for women. Clin Excell Nurse Pract 2000;4:52–4.

57. Meyer CR. A search for medical information on the Internet turned up good information — as well as some that's questionable. What patients need now is a guide to tell the difference. Minn Med 2000;83:13–8.

58. Health on the Net Foundation. Evolution of Internet use for health purposes: HON, 2001. Available at: www.hon.ch/Survey/FebMar2001/survey.html Accessed: July 15, 2002.

59. Fox S, Fallows D. Internet Health Resources. Health searches and email have become more commonplace, but there is room for improvement in searches and overall Internet access: Pew Internet & American Life Project, Princeton Survey Research Associates, 2003.Available at: www.pewinternet.org/reports/toc.asp?Report=95. Accessed: April 12, 2004.

60. Berland GK, Elliott MN, Morales LS, Algazy JI, Kravitz RL, Broder MS, et al. Health information on the Internet: accessibility, quality, and readability in English and Spanish. JAMA 2001;285:2612–21.

61. Eysenbach G, Kohler C. How do consumers search for and appraise health information on the World Wide Web? Qualitative study using focus groups, usability tests, and in-depth interviews. BMJ 2002;324:573–6.

62. Impicciatore P, Pandolfini C, Casella N, Bonati M. Reliability of health information on the World Wide Web: systematic survey of advice on managing fever in children at home. BMJ 1997;314:1875–9.

63. Kunst H, Groot D, Latthe PM, Latthe M, Khan KS. Accuracy of information on apparently credible Websites: survey of five common health topics. BMJ 2002;324:581–2.

64. Latthe M, Latthe PM, Charlton R. Quality of information on emergency contraception on the Internet. Br J Fam Plann 1999;26:39–43.

65. Tamm EP, Raval BK, Huynh PT. Evaluation of the quality of self-education mammography material available for patients on the Internet. Acad Radiol 2000;7:137–141.

66. Hellawell GO, Turner KJ, Le Monnier KJ, Brewster SF. Urology and the Internet: an evaluation of Internet use by urology patients and of information available on urological topics. BJU Int 2000;86:191–4.

67. Eysenbach G, Powell J, Kuss O, Sa ER. Empirical studies assessing the quality of health information for consumers on the World Wide Web: a systematic review. JAMA 2002;287:2691–700.

68. Christian SM, Kieffer SA, Leonard NJ. Medical genetics and patient use of the Internet. Clin Genet 2001;60:232–6.

69. Sandvik H. Health information and interaction on the internet: a survey of female urinary incontinence. BMJ 1999;319:29–32.

70. Boyington AR, Dougherty MC, Liao YM. Analysis of interactive continence health information on the Web. J Wound Ostomy Continence Nurs 2003;30:280–6.

71. Givron P, Coudeyre E, Lopez S, Mares P, Herisson C, Pelissier J. Quality assessment of information about female urinary incontinence from French speaking websites. Ann Readapt Med Phys 2004;47:217–23.

72. The Canadian Continence Foundation. Promoting a collaborative consumer-focused approach to continence care in Canada. Montreal (QC): The Canadian Continence Foundation, 2001. Available at: www.continence-fdn.ca/hp-guidelines3.htm Accessed: July 6, 2002.

73. Dougherty MC, Burns PA, Campbell D, Johnson CS, Wyman JF. Evidence-Based Clinical Practice Guideline: Continence for Women: Association of Women's Health, Obstetric and Neonatal Nurses, 2000.

74. Fantl JA, Newman DK, Colling J, DeLancey, JOL, Keeys C, Loughery R, et al. Urinary Incontinence in Adults: acute and Chronic Management. Rockville, MD: U.S. Department of Health and Human Services, 1996.

75. Farrell SA, Epp A, Flood CG, Lajoie F, MacMillan B, Mainprize T, et al. The evaluation of stress incontinence prior to primary surgery. J Obstet Gynaecol Can 2003;127:313–8.

76. Stenchever M. Clinical updates in women's health care: care of aging women, 2004.

77. Dickin J, Mitchell D, Pannekoek F, Martin C, Bernard P, Martin KB. Surveying the information deficit: a background report for 'Information Deficit: Canadian Solutions' a national forum on Canadian content on the Internet: InterNet Consulting Group, University of Calgary and Université de Montreal, 2001. Available at: www.ucalgary.ca/idcs-disc/eng/home.html Accessed: October 4, 2004.

78. Health on the Net Foundation. HON code of conduct (HONcode) for medical and health Web sites, 1995. Available at: www.hon.ch / HONcode/Conduct.html Accessed: April 4, 2004.

79. Silberg WM, Lundberg GD, Musacchio RA. Assessing, controlling, and assuring the quality of medical information on the Internet: caveant lector et viewor — Let the reader and viewer beware. JAMA 1997;277:1244–5.

80. Maloney S, Ilic D, Green S. Accessibility, nature and quality of health information on the Internet: a survey on osteoarthritis. Rheumatology 2005;44:382–5.

81. Charnock D, Shepperd S, Needham G, Gann R. DISCERN: an instrument for judging the quality of written consumer health information on treatment choices. J Epidemiol Community Health 1999;53:105–11.

82. Neilsen/Net Ratings Inc. Google accounts for half of all U.S. searches in April, according to Neilsen/Net Ratings: Net Ratings Inc., 2006. Available at: www.nielsen-netratings.com/news.jsp?section=new_pr Accessed: May 31, 2006.

83. Neilsen/Net Ratings Inc. 55 million Europeans using Google online: NetRatings, Inc., 2004a. Available at: www.nielsen-netratings.com/news.jsp?section=new_pr Accessed: Mar.19, 2004.

84. Sullivan D. Major search engines and directories: SearchEngineWatch.com, 2004. Available at: http://searchenginewatch.com/links/article.php/2156221 Accessed: May 8, 2004.

85. Sullivan D, Sherman C. 4th annual search engine watch awards: Search Engine Watch.com, 2004. Available at: http://searchenginewatch.com/awards/print.php/34671_3309841 Accesseed: March 19, 2004.

86. Biermann JS, Golladay GJ, Greenfield M-LVH, Baker LH. Evaluation of cancer information on the Internet. Cancer 1999;86:381–90.

87. SPSS. Chicago, 2001.

88. Google, 2004.

89. Diaz JA, Griffiths RA, Ng JJ, Reinhert SE, Friedmann PD, Moulton AW. Patients' use of the internet for medical information. J Gen Intern Med 2002;17:180–5.

90. Meric F, Bernstam EV, Mirza NQ, Hunt KK, Ames FC, Ross MI, et al. Breast cancer on the World Wide Web: cross sectional survey of quality of information and popularity of Websites. BMJ 2002;324:577–81.

91. Dickin J, Mitchell D, Bernard P, Pannekoek F, Martin C. The Internet as a site of citizenship. The Final Report of the Information Deficit: Canadian Solutions Conference: University of Calgary and Université de Montreal, 2002. Available at: www.ucalgary.ca/idcs-disc/eng/home.html Accessed: October 5, 2004.

92. Marcus BH, Nigg CR, Riebe D, Forsyth LH. Interactive communication strategies. Implications for population-based physical-activity promotion. Am J Prev Med 2000;19:121–6.

93. Fotheringham MJ, Owies D, Leslie E. Interactive health communication in preventive medicine. Internet-based strategies in teaching and research. Am J Prev Med 2000;19:113–20.

94. Friedman DB, Hoffman-Goetz L, Arocha JF. Readability of cancer information on the internet. J Cancer Educ 2004;19:117–22.

95. Kusec S, Brborovic O, Schillinger D. Diabetes websites accredited by the Health On the Net Foundation Code of Conduct: readable or not? Stud Health Technol Inform 2003;95:655–60.

96. Estey A, Musseau A, Keehn L. Patient's understanding of health information: a multihospital comparison. Patient Educ Couns 1994;24:73–8.

97. Graber MA, Roller CM, Kaeble B. Readability levels of patient education material on the World Wide Web. J Fam Pract 1999;48:58–61.

98. Lindberg DAB. The National Library of Medicine's Web site for physicians and patients. JAMA 2001;285:806.

99. Flood CG, Drutz HP. Physicians' perception of urinary incontinence as a health care problem in women. International Urogynecology Journal and Pelvic Floor Dysfunction 1995;6:89–94.

100. Wantland DJ, Portillo CJ, Holzemer WL, Slaughter R, McGhee EM. The effectiveness of web-based vs. non-web-based interventions: A meta-analysis of behavioral change outcomes. J Med Internet Res 2004;6(4):e40. Available at: www.jmir.org/2004/4/e40 Acc e ssed: February 3, 2005.

Appendix A

Specific UI Information Quality Assessment Tool

(Based Upon Clinical Practice Guidelines for Urinary Incontinence)

(U.S. DHHS, 1996; AWHONN, 2000; TCCF, 2001; SOGC, 2003; ACOG, 2004)

Date of Evaluation: _____(d/m/yr) Evaluator_____

Name of Website: _____

URL: _____

Please check those boxes that best reflect the Web site you are evaluating. Score

I. Overview of Problem

	Not Mentioned (0)	Mentioned (1)	Described (2)	Described and Illustrated (3)	Total
Definition of UI	❑	❑	❑	❑	
Prevalence of UI	❑	❑	❑	❑	
Effect of UI on quality of life	❑	❑	❑	❑	
Risk factors associated with UI	❑	❑	❑	❑	
Assertion UI treatable in most cases	❑	❑	❑	❑	
II. Description of Types of UI—Common Symptoms/Pathophysiology:					
Stress incontinence	❑	❑	❑	❑	
Urge incontinence	❑	❑	❑	❑	
Mixed incontinence	❑	❑	❑	❑	
Overflow incontinence	❑	❑	❑	❑	

	Not Mentioned (0)	Mentioned (1)	Described (2)	Described and Illustrated (3)	Total
III. Investigations for UI—Basic Evaluation:					
Urine Testing (U/A +/or C/S)	❑	❑	❑	❑	
Medical history— (including meds that may cause UI)	❑	❑	❑	❑	
Impact of UI on QOL	❑	❑	❑	❑	
Bladder diary (urolog)	❑	❑	❑	❑	
Pelvic examination	❑	❑	❑	❑	
Cough stress test	❑	❑	❑	❑	
Bladder neck mobility assessment	❑	❑	❑	❑	
Postvoid residual volume	❑	❑	❑	❑	
IV. Investigations for UI—Supplementary Evaluations:					
Quantification of urine loss (e.g., pad test)	❑	❑	❑	❑	
Urodynamics	❑	❑	❑	❑	
Record of dietary intake & bowel patterns	❑	❑	❑	❑	
V. Investigations for Incontinence—Advanced Evaluations:					
Endoscopic test (e.g., Cystoscopy, Urethroscopy)	❑	❑	❑	❑	
Other imaging tests (e.g., bladder +/or urethra ultrasound)	❑	❑	❑	❑	
VI. Treatment/Management of Urinary Incontinence:					
Behavioural/Lifestyle Modifications:					
Fluid/dietary management	❑	❑	❑	❑	
Weight loss	❑	❑	❑	❑	
Clothing modification	❑	❑	❑	❑	
Constipation	❑	❑	❑	❑	
Smoking	❑	❑	❑	❑	
Access to toilets/mobility	❑	❑	❑	❑	
Bladder training (bladder drill)	❑	❑	❑	❑	
Prompted/scheduled voiding	❑	❑	❑	❑	
Pelvic muscle exercises (kegels)	❑	❑	❑	❑	
Pelvic physio (vaginal cones)	❑	❑	❑	❑	
Pelvic physio (biofeedback)	❑	❑	❑	❑	
Pelvic muscle electrical stimulation (FES)	❑	❑	❑	❑	

	Not Mentioned (0)	Mentioned (1)	Described (2)	Described and Illustrated (3)	Total
Mechanical support of urethra (e.g., devices, pessaries)	❑	❑	❑	❑	
Medications for the urethra +/or bladder	❑	❑	❑	❑	
Surgical treatments (including bulking agents)	❑	❑	❑	❑	
Absorbent products (e.g., pads, underwear)	❑	❑	❑	❑	
Intermittent self-catheterization:	❑	❑	❑	❑	
			Website Score—UI Health Information:		**/117**

VII. Website UI Information—Accuracy Rating (Shepperd & Charnock, 1997)

Based on the answers to all of the above questions, please rate the overall quality of the website as an accurate source of information about female urinary incontinence, using the scale below

Low		Moderate		High
Serious or extensive shortcomings		Potential important but not serious shortcomings		Minimal or no shortcomings
1	2	3	4	5

*Website UI Information—Accuracy Rating:*_____**/5**

*Overall Specific UI Information Quality Score:*_____**/117** + _____**/5** = _____**/122**

Appendix B

Canadian Content and Interactivity Assessment Tool

Date of Evaluation: _____(d/m/yr) Evaluator:_____

Name of Website: _____

URL: _____

Please check those boxes that best reflect the Web site you are evaluating. *Score*

I. "Canadian Content" is defined as:

References/information about Canadian web sites, societies, foundations, organizations, healthcare providers/researchers, or institutions (clinics, universities, hospitals) involved in the provision of health information and/or continence care for women with urinary incontinence (names, links, addresses, e-mail addresses, or phone numbers)

Site had:

❑	no Canadian content:	0
	no Canadian educational information	
	no references to Canadian web sites, organizations, etc.	
	no Canadian UI healthcare providers, etc.	
❑	minimal Canadian content:	1
	mentions Canadian resources are available but no further information provided	
❑	more than minimal content	2
	educational information developed by/for Canadians	
	specific names/links to Canadian organizations/web sites	
	names of Canadian UI healthcare providers	

II. "Interactive Capability" defined as the presence of any of these capabilities:

Site had:

❑	e-mail	
❑	contact phone numbers for healthcare providers, educators, +/or health institutions	
❑	self-assessment tools	
❑	list serv	
❑	chat room	
❑	chat room moderated by health professional	
❑	video	
❑	site assessment—requesting feedback/comments/questions about site	
❑	discussion board	
	Score: no interactive capability (none of above)	0
	good interactive capability (> 2 items above)	1
	minimal interactive capability (1–2 items above)	2