Article details: 2013-0070	
Title	Willingness to use different types of information technology among patients with chronic non-communicable disease
Authors	Ehteshami-Afshar, Arash (contact); Weaver, Robert; Lin, Meng; Allan, Gary; Ronksley, Paul; Sanmartin, Claudia; Lewanczuk, Richard; Rosenberg, Mark; Manns, Braden; Hemmelgarn, Brenda; Tonelli, Marcello
Reviewer 1	**Patterson, Victor**
Institution	
General comments	This is a paper which gives useful insights into an important patient group which is likely to become even more important in the future. There is a big sample with reasonable completion and the results are well expressed I have some comments on the heavy use of statistics which I think detracts from the paper's findings- - there are too many numbers in the tables and I suggest the information given is reduced and possibly the decimal point sacrificed - "designer weights" and "bootstrapping" need explained for a general audience - I can't read the figure legends - would they be presented better as horizontal bars with the text on the left?
Reviewer 2	**Shaw, Ryan**
Institution	Duke University , School of Nursing
General comments	Thank you for allowing me to read this manuscript. It is well written and will be an important contribution to the literature. This is a timely topic as technology is being increasingly used as both a care delivery mechanism and a mode for self-care, particularly in chronic disease. I have few comments up until the discussion. My only suggestion is to 1) please reference the BCPCHC and CCHS scales and provide reports on validity/reliability if available. The discussion however needs major revision, added references, and updated references. Here are more specific thoughts: 2. In your discussion when you talk about differences in age for willingness to use different information technologies, please compare this to the existing literature. References are needed to support your findings in other populations as well. The Pew foundation and their reports from the US would be a good comparison. 3. Discussion third paragraph. You need to talk about how respondents tended to be older and that SMS messaging may be more appropriate for younger people. I would include references on the adoption of text messaging being higher among younger populations. 4. Discussion 4th paragraph last sentence. There are current systematic reviews on the use of mobile health and text messaging for the management of chronic disease. There is some evidence that it is effective and I would reference these. Your current references are outdated. 5. Discussion paragraph 5. To the contrary, there is literature on patients' willingness to use technology for the management of chronic disease. Your 1997 reference is outdated. A quick search on Google Scholar shows quite a few references. 6. There are also theories including the Unified Theory of Acceptance and Use of Technology (UTAUT) among others that have been used to measure willingness to use technology. As part of your discussion you should include the use of theoretical models for future research. 7. Discussion paragraph 5. You briefly talk about privacy measures and state that they were rarely cited by participants in your study. What does the literature say? And what is happening in the current healthcare arena around privacy concerns? This is a big topic and needs a few sentences with more detail. 8. Discussion: you need to briefly talk about differences in income and how we may need different approaches to target those of lower income. There is literature showing that SMS may be an appropriate method.
Reviewer 3	**Goel, Vivek**
Institution	Ontario Agency for Health Protection and Promotion
General comments	This is a clearly written paper. The STROBE checklist for observational studies requirements are met. In the coding this paper is classified as a cohort, but it is a cross-sectional study. It would be helpful to provide the response rate for the CCHS - the response rate that is shown is for the respondents to the follow-up survey among those who responded to the CCHS.
Reviewer 4	**Sood, Manish**
Institution	University of Manitoba, Medicine, Nephrology
General comments	Ehteshami-Afshar et al present results from a survey study examining the willingness of individuals with chronic disease to use electronic communications for management of care. They found a significant proportion of patients were willing to use email and patients who resided further from medical resources were more willing to use electronic communications. This study answers a simple but important question with a very high response rate and adds to the literature. I

	think this study is especially important in a Canadian context as we have large rural and geographically isolated population and the burden of individuals living with co-morbid illness is increasing. I think a few revisions will aid in clarification for the reader. Specific Comments: 1) Other limitations to discuss:language barriers, Aboriginal population; the study population was very homogeneous (>85% white) whereas the Western provinces do have large off reserve, Aboriginal populations. 3)was this question designed a priori to the survey being conducted? or was it post-hoc?were the investigators involved in the survey design? it isnt clear from the methods as written 4)for the unfamiliar reader (myself included), please describe briefly Stats Canada's calibrated weight designs and bootstrap weights 5)less than 1% used information technologies in the last month is a very surprising finding; could the authors speculate on why this was so low and how to overcome barriers
Author response	**Editors' comments to Author:** **1. More detail is required about the respondents of the CCHS survey, as this would explain the demographics of the current study. The CCHS survey should be referenced, preferably with a publication that describes its methodology and validation/reliability.** We have added a brief description of the CCHS and its respondents to page 4, along with two relevant references. **2. Please clarify the involvement of the authors in the survey discussed (Barriers to Care for People with Chronic Health Conditions). Please provide a reference to a publication that describes its methodology in detail, along with validation/reliability.** We have clarified that our group designed the survey. The detailed methods paper has not yet been published. We added additional detail on the BCPCHC to the manuscript on page 4. **3. Please clarify if the research question was designed a priori to the survey being conducted, or if it was a post hoc analysis.** We have clarified that the current manuscript describes results from analyses that were designed *a priori* (page 4). **4. Please use a format other than a bar graph to present the data in Figure 1. This is not the most effective presentation** Despite our best efforts we could not identify a more effective graphical method for presenting these data. We have revised this graph to make it clearer but have left it as a bar graph. **5. A comment is required in the discussion on the aggregation of quite different forms of technology. Videoconferencing can be viewed as separate from email and text because the onus to set up and coordinate is primarily on the health care provider instead of the patient.** We have added a statement to this effect on page 10. **6. Please include some mention in the discussion about why this is relevant to physicians. This could include a mention of how technologies can help build an ongoing relationship with patients to provide better health care at a lower cost. Please reference as appropriate.** We have added a statement to this effect on page 8. **Other minor points:** **1. Please ensure your final word count is below 2500 words and the abstract is about 250 words.** Done. **2. Abbreviations: For only the most standard abbreviations (i.e., 95% CI, SD, OR, RR, HR), please spell out at first mention and include the abbreviation in parentheses. The abbreviations may be used throughout the remainder of the manuscript. Please remove all other abbreviations.** "SMS" is commonly used in conversation to describe text messages, so has been retained. We have retained the acronyms "BCPCHC" and "CCHS" to keep the article within the specified word limit but have otherwise complied with this request. **3. Please include up to 1 academic and 1 professional degree after each author's name.** Done. **4. Please structure the abstract into 4 main sections:** **a. Background: Provide the context for the study. Explain the problem or issue (the reason you decided to conduct your study) in the first sentence. State the objective of your study (the question you set out to answer) in the second sentence.** **b. Methods: Include 4 elements: setting, patients, study type or design, and key measurements or outcomes.** **c. Results: Provide data for the key measurements. Describe the data in absolute and relative terms, if applicable. Give confidence intervals for differences where appropriate, or other measures of statistical significance.** **d. Interpretation: Begin with a sentence that answers your research question (What did the study show?). The second sentence should be a brief statement about implications for practice or research (What do the findings mean?). Avoid speculation and generalization.** Done.

5. Please structure the Interpretation section (discussion) into the following 4 main categories: Main findings; explanation and comparison with other studies; limitations; and conclusions and implications for practice and future research.
Done.

6. Please use plain numbers in brackets for your references and do not use automatic numbering of field codes as these do not carry over well into our publishing software.
Done.

Reviewer(s)' Comments to Author:

Reviewer 1: Dr. Victor Patterson
Belfast, United Kingdom

Comments to the Author
1. I have some comments on the heavy use of statistics which I think detracts from the paper's findings-
- there are too many numbers in the tables and I suggest the information given is reduced and possibly the decimal point sacrificed
- "designer weights" and "bootstrapping" need explained for a general audience
[Editor's comment: The CMAJ editors were not convinced this was a major issue or limitation]

- I can't read the figure legends - would they be presented better as horizontal bars with the text on the left?
[Editor's comment: This will be dealt with at the manuscript editing stage.]

Reviewer 2: Dr. Ryan Shaw
Duke University
School of Nursing

Methods:
1. I have few comments up until the discussion. My only suggestion is to 1) please reference the BCPCHC and CCHS scales and provide reports on validity/reliability if available.
Done. Please see our response to the Editors' comments above.

Discussion:
1. The discussion however needs major revision, added references, and updated references. Here are more specific thoughts:
Please see below.

2. In your discussion when you talk about differences in age for willingness to use different information technologies, please compare this to the existing literature. References are needed to support your findings in other populations as well. The Pew foundation and their reports from the US would be a good comparison.
Done (page 8).

3. Discussion third paragraph. You need to talk about how respondents tended to be older and that SMS messaging may be more appropriate for younger people. I would include references on the adoption of text messaging being higher among younger populations.
Done (page 8).

4. Discussion 4th paragraph last sentence. There are current systematic reviews on the use of mobile health and text messaging for the management of chronic disease. There is some evidence that it is effective and I would reference these. Your current references are outdated.

5. Discussion paragraph 5. To the contrary, there is literature on patients' willingness to use technology for the management of chronic disease. Your 1997 reference is outdated. A quick search on Google Scholar shows quite a few references.

6. There are also theories including the Unified Theory of Acceptance and Use of Technology (UTAUT) among others that have been used to measure willingness to use technology. As part of your discussion you should include the use of theoretical models for future research.
Due to space limitations we have not addressed these theoretical considerations.

7. Discussion paragraph 5. You briefly talk about privacy measures and state that they were rarely cited by participants in your study. What does the literature say? And what is happening in the current healthcare arena around privacy concerns? This is a big topic and needs a few sentences with more detail.
We agree that this is an important topic that could be the subject of its own article. Again, due to space limitations we are unable to discuss this in detail. We have added one sentence with a supporting reference (page 9).

8. Discussion: you need to briefly talk about differences in income and how we may need different approaches to target those of lower income. There is literature showing that SMS may be an appropriate method.

	Done (page 8). **Reviewer 3: Dr. Vivek Goel** **Ontario Agency for Health Protection and Promotion** **Comments to the Author** **1. This is a clearly written paper. The STROBE checklist for observational studies requirements are met. In the coding, this paper is classified as a cohort, but it is a cross-sectional study.** We agree. We have specified that this is a cross-sectional study in the abstract. **2. It would be helpful to provide the response rate for the CCHS - the response rate that is shown is for the respondents to the follow-up survey among those who responded to the CCHS.** The response rate and other salient features of the CCHS are provided in the new reference that was added in response to the Editors' comments above. **Reviewer 4: Dr. Manish Sood** **University of Manitoba** **Medicine, Nephrology** **Specific Comments:** **1) Other limitations to discuss: language barriers, Aboriginal population; the study population was very homogeneous (>85% white) whereas the Western provinces do have large off reserve, Aboriginal populations.** These limitations are now mentioned on pages 9-10. **2)was this question designed a priori to the survey being conducted? or was it post-hoc?were the investigators involved in the survey design? it isnt clear from the methods as written** Please see our response to the Editor's comment above. **3)for the unfamiliar reader (myself included), please describe briefly Stats Canada's calibrated weight designs and bootstrap weights** ***[Editor's note: This should be very brief, perhaps to indicate the purpose of using these techniques.]*** We have added a statement to page 6 to indicate why these techniques are used. **4)less than 1% used information technologies in the last month is a very surprising finding; could the authors speculate on why this was so low and how to overcome barriers?** We have clarified that this prevalence indicates the number of participants who used these technologies to interact with health care providers. We do not consider this a surprising finding: our clinical experience is that these technologies are infrequently used, which is why we designed the current study.