

Predictors of Mental Health Professionals' Perceptions of Patient Portals

Gillian Strudwick, RN PhD^{1,2}; Carrie Clark, MA OT Reg.(Ont.)^{1,2}; Marcos Sanches, MSc^{1,2}; John Strauss, MS MD FRCP(C)^{1,2}

¹Centre for Addiction and Mental Health, Toronto, Ontario, Canada; ²University of Toronto, Toronto, Ontario, Canada

Abstract

Mental healthcare settings have lagged behind other care areas in their adoption of patient portals. One of the commonly cited reasons for this lower adoption rate is the perceptions and comfort level of mental health professionals in sharing their clinical notes with this population. The purpose of this study was to identify predictors of mental health professionals' perceptions of a) whether mental health patients should have access to a patient portal; b) whether their documentation might change as a result of mental health patients having access to a patient portal, and c) whether access to a patient portal by mental health patients makes them feel uncomfortable. A cross-sectional survey was administered to 250 health professionals employed in a mental health teaching hospital in Toronto, Canada. Multiple linear regression and content analysis were performed.

Introduction

In recent years, there has been a tremendous increase in the adoption of patient portals by health care organizations as a way of providing patients with easier access to part of their medical record such as clinical notes¹⁻⁴. In some cases, patient portals offer additional functions such as booking an appointment, communicating with a health professional, or obtaining educational materials¹. This form of technology may be used as a way to further engage patients in their own care, and in some cases, be able to take more control over the management of their health condition(s). To date, more than 20 million patients have access to their clinical notes through patient portals¹. Documented benefits of patient portals to patients have included decreases in missed appointments², improved quality of care, improved communication and engagement, better medication adherence³, improved ability to manage chronic illness, support for caregivers, and safer care delivery⁴. Commonly, patients find it difficult to remember the entire content of what was discussed during clinical interactions, particularly when difficult news (e.g., a poor prognosis) is delivered. Patient portals allow people to obtain and review this pertinent information at a later time, so they are more able to understand their health condition, plan of care, and any follow-up actions required of them.

Although available for many years and despite the many benefits of patient portals in non-mental health settings, patient portal use within mental health contexts only began in 2014^{5,6}. This delay in providing a service to mental health patients that is already available to other patient populations is stigmatizing as mental health patients are treated differently. Since 2014, increases in patient portal adoption have not occurred at the same rate as in other clinical care settings generally because of the perceived sensitive nature of providing people who have mental health challenges with access to their own health record⁶⁻⁸. As stated by Kahn et al:

“Inviting patients to read what clinicians write about their feelings, thoughts, and behaviors does seem different from sharing assessments of their hypertension or diabetes. Bringing transparency into mental health feels like entering a minefield, triggering clinicians' worst fears about sharing notes with patients”⁴

Previous studies have indicated that mental health professionals are deeply uncomfortable with the idea of sharing their clinical notes with patients^{6,7}, and thus may not allow, or be open to the idea of patient portals entering their practice environments. Specifically, some mental health professionals are worried that their patients will not agree with what is written; patients will want changes to be made to their record; errors will be found within the record; and that the notes may be confusing for patients to read². In addition, some health professionals believe that providing patients with access to their notes will force them to modify their documentation in ways that may not be helpful to other health professionals who require the content from these notes to deliver proper care¹. Health professionals may also be worried that what patients read in their notes is devastating rather than helpful³. However, evidence on the use of patient portals in mental health settings indicates these fears have not materialized⁴⁻⁶.

Nonetheless, these fears prevent many health professionals from allowing patient portals to enter their organizations or from being receptive to using patient portals with their own patient population. In organizations where patient

portals are already present in other contexts, these fears may prevent health professionals from discussing the use and potential benefits of patient portals with mental health patients. Given this deep discomfort by health professionals, patient portals in mental health settings are not yet common, and many with mental health problems are not able to benefit from the technology.

Purpose

The purpose of this study was to identify predictors of mental health professionals' perceptions of: a) whether mental health patients should have access to a patient portal; b) whether their documentation might change as a result of mental health patients having access to a patient portal, and c) whether access to a patient portal by mental health patients makes them feel uncomfortable. More specifically, the research questions were:

- 1) Are the variables clinical program, area, profession, age and technology use, predictors of mental health professional's perceptions of whether mental health patients should have access to a patient portal?
- 2) Are the variables clinical program, area, profession, age and technology use, predictors of mental health professional's perceptions of whether their documentation might change as a result of mental health patients having access to a patient portal?
- 3) Are the variables clinical program, area, profession, age and technology use, predictors of mental health professional's perceptions of whether access to a patient portal by mental health patients makes them feel uncomfortable?

Understanding predictors of mental health professionals' perceptions on these three topics will allow the study site to reduce adoption risks for the patient portal implementation by being able to directly address challenges with groups of mental health professionals with more negative perceptions. In other words, strategies to support mental health professionals in improving their comfort in the use of patient portals in their clinical care settings can be targeted to those who may require support most.

Methods

Design

This study was conducted using a quantitative cross-sectional survey, consisting of both closed and open-ended questions.

Sample

Participants in this study consisted of psychiatrists; nurses (registered nurses, registered practical nurses, nurse practitioners); allied health professionals (e.g. occupational therapists, social workers); and all other health professional groups (e.g. pharmacists, psychologists) employed at the study site. Only those who provide direct care to patients were included in the analyses described in this paper.

Setting

The study site is Canada's largest mental health and addictions hospital. In 2016, the organization provided care to 34,380 unique patients through both inpatient and outpatient services. Patients cared for at this organization range from child to geriatric populations, and have a variety of diagnoses including schizophrenia spectrum and other psychotic disorders (31.6%), substance-related and addictive disorders (27.5%), bipolar and related disorders (15.3%), depressive disorders (14.3%), personality disorders (3.9%), trauma and stress-related disorders (1.8%), anxiety disorders (1.7%) and other mental health disorders (3.9%)⁷. The study site recently achieved Stage 7 on the Healthcare Information Management Systems Society Electronic Medical Record Adoption Model (HIMSS EMRAM)⁸, and at the time of data collection was planning to implement a patient portal in the following year.

Data Collection

Between November 2017 and January 2018, the survey was sent via email to health professionals employed at the study site. In addition, an article asking health professionals to complete the survey was posted on the organizations intranet site. Participants were also asked to participate in the survey during face-to-face meetings such as during nursing practice, clinical team, and general staff meetings. The survey was self-administered using an electronic survey platform. No incentives were provided for participating in this survey.

Survey

The survey was developed based on:

- 1) Questions used for assessing health professional perceptions of patient portals pre-implementation of patients being able to see their clinical notes (OpenNotes). This survey was developed by the OpenNotes group in Boston, USA ^{1,2,5}.
- 2) Questions used in a pre-implementation patient portal survey administered to a non-mental health population at a local hospital in Toronto, Canada ⁹.

Permission was obtained from OpenNotes and the local hospital to use and/or modify the survey questions as required. Modifications to the original surveys were made by members of the research team who have experience providing clinical care as a health professional in mental health settings, experience in health information technology adoption, and have conducted similar approaches to research in the past. The final survey consisted of 23 questions.

The first five questions in the survey were related to demographics. Participants were asked to indicate the clinical program they were associated with, the area of the organization they work (outpatient, inpatient, emergency department), their profession, age, and what technologies they use in their personal life (social media, messaging platform, live video, patient portal, none, other). Each question allowed the participant to select one answer with the exception of the question related to which area of the organization they work, and technology, which allowed participants to make multiple selections. Following the demographic questions, were 17 questions that asked health professionals about their perceptions of patient portals in mental health settings, as well as which functions of the portal that they perceived would be valued by the patients they cared for. These questions used a Likert scale with five options ranging from strongly agree to strongly disagree. The final question in the survey was open-ended and asked participants to provide any additional comments about the patient portal.

The five predictor variables in this study were clinical program, area of the organization they work, profession, age, and technologies used. The outcomes of interest in this study were the level of agreement on the following statements: 1) whether mental health patients should have access to a patient portal; 2) whether their documentation might change as a result of mental health patients having access to a patient portal, and 3) whether access to a patient portal by mental health patients makes them feel uncomfortable. Variables are shown in Table 1.

Table 1. Variables

Predictor Variables	Outcomes of Interest
1. Clinical program (e.g. acute care program)	1. Whether mental health patients should have access to a patient portal
2. Area (e.g. inpatient unit)	2. Whether their documentation might change as a result of mental health patients having access to a patient portal, and
3. Profession (e.g. nurse)	3. Whether access to a patient portal by mental health patients makes them feel uncomfortable
4. Age (e.g. 40-59 years old)	
5. Technology use (e.g. social media)	

Data Analysis

Quantitative data analyses were conducted using IBM SPSS Statistics Version 24.0. An initial descriptive analysis of the sample was conducted where proportions and sample sizes were calculated for the five predictor variables. Next, a bivariate descriptive non-parametric Kruskal-Wallis test was conducted to assess how the three outcomes of interest differed across the predictor variables. In order to assess the association of the predictor variables with the outcomes of interest while accounting for the association among the predictor variables themselves, a linear regression model was adjusted for each of the outcomes of interest. This analysis is more consistent with the real world where all individual's demographic characteristics interact. In this way, a linear regression model may give a more 'pure' measure of the association between these demographic characteristics and mental health professionals' perceptions of patient portals.

The variables 'area' and 'technology use' allowed participants to select multiple responses. Findings related to these variables are presented in the descriptive analysis, but the high multicollinearity between them creates problems for the regression analysis and its precision. For that reason, two variables ("Area - inpatient", "Use - none") were excluded from the regression models since they are highly negatively associated with two other variables ("Area - outpatient" and "Use - Social media, message, other").

Findings from the comments section of the survey were subject to an inductive content analysis ¹⁰⁻¹² using a qualitative descriptive approach ¹³. Each comment was reviewed by two independent reviewers. Once each reviewer had read the comments, a coding hierarchy was agreed upon. Next, the two independent reviewers assigned participant responses

to the agreed upon codes. Percentage agreement was calculated and was determined to be 91%. Member checking was completed to ensure the trustworthiness of the results by asking two health professionals who participated in the survey to review the coding hierarchies and results¹⁴.

Ethical Considerations

All health professionals were surveyed voluntarily and remained anonymous. Implied consent was assumed. Ethical approval was obtained from the Quality Project Ethics Review process at the study site. Despite five demographic questions being asked, anonymity of participants was ensured by not asking participants to identify the specific clinic or unit they work in, and by providing participants with an option to select a range for age, or to not report their age if preferred.

Results

Characteristics of the participants in this study are shown in Table 2. This table also shows univariate statistical tests of association between the predictors and outcomes of interest.

Table 2. Description of the sample and univariate tests

				Q1		Q2		Q3		P-value Q1+	P-value Q2+	P-value Q3+
		N	(%)	Mean	SD	Mean	SD	Mean	SD			
Clinical Program	Total	250	100.0%	3.55	1.18	3.72	1.10	3.13	1.19	0.155	0.207	0.006*
	Acute Care	80	32.0%	3.36	1.16	3.90	1.03	3.49	1.14			
	Complex Care & Recovery	119	47.6%	3.60	1.23	3.59	1.19	2.96	1.22			
	Other	51	20.4%	3.75	1.07	3.73	0.98	2.98	1.10			
Area++	Inpatient	111	44.4%	3.54	1.15	3.54	1.17	3.01	1.19	0.825	0.036	0.132
	Outpatient	164	65.6%	3.52	1.25	3.87	1.05	3.17	1.22	0.765	0.002	0.453
	Emergency Department	25	10.0%	3.40	1.29	4.16	0.75	3.64	1.25	0.551	0.049*	0.022*
Profession	Psychiatrist	61	24.4%	3.15	1.40	4.38	0.82	3.77	1.23	0.085	0.000*	0.000*
	Nurse	69	27.6%	3.65	1.07	3.46	1.11	3.06	1.24			
	Allied	75	30.0%	3.60	1.10	3.52	1.16	2.91	1.04			
	Other	45	18.0%	3.87	1.04	3.53	1.01	2.76	1.00			
Age	Less than 39	108	47.4%	3.47	1.17	3.79	1.11	3.25	1.20	0.519	0.225	0.312
	40 to 59	107	46.9%	3.56	1.21	3.62	1.12	3.08	1.20			
	Prefer not to answer (PNA)	13	5.7%	3.46	1.27	3.69	0.85	3.23	1.24			
Use of Technology ++	Social Media, Message, Other	215	86.0%	3.53	1.18	3.80	1.06	3.16	1.21	0.449	0.007*	0.360
	Patient Portal+++	61	24.4%	3.57	1.19	3.85	1.05	3.18	1.18	0.853	0.322	0.670
	Don't use any of the above	30	12.0%	3.67	1.27	3.13	1.25	3.03	1.16	0.490	0.006*	0.605

Q1: The organization should provide patients access to their personal health record through a patient portal.

Q2: Patients having access to their health record via the patient portal will influence my clinical documentation.

Q3 Patient access to their health record makes me feel uncomfortable.

+ p-value from non-parametric Kruskal-Wallis test

++ Multiple Response Variables. Each level is tested against the combination of all others.

+++ Used in their personal life

*p<0.05

Significant associations identified at the confidence level of 0.05 are:

- 1) Acute care health professionals are more uncomfortable with patients having access to their personal health record through the patient portal than health professional groups practicing in non-acute settings.
- 2) Emergency department health professionals perceive that changes will occur in their documentation as a result of patient portal implementation, followed by health professionals in outpatient settings, and then in inpatient settings.
- 3) Emergency department staff are more uncomfortable with patients having access to a patient portal than health professionals working in other care settings.
- 4) Health professionals that do not use technology in their personal lives are less concerned that their documentation will change following the implementation of a patient portal.
- 5) Age did not show any significant associations, although in general younger health professionals were less agreeable with patients having access to their personal health record through the patient portal.
- 6) The overall agreement with patients having access to their personal health record through the patient portal was not highly associated with any predictor, except profession, where psychiatrists were less agreeable ($p = 0.085$).

Linear regression coefficients are shown in Table 3. Although the results of the regression models with all predictors are presented, a sensitivity analysis was conducted by manually eliminating predictors starting from the least significant. This analysis resulted in the same conclusions as the analysis with all predictors, showing evidence for the robustness of the findings.

Table 3. Linear regression coefficients

	Q1	Q2	Q3
Intercept	4.06 (0.44)***	2.95 (0.38)***	2.75 (0.43)***
Clinical Program = Acute care	-0.50 (0.24)*	0.06 (0.21)	0.52 (0.23)*
Clinical Program = Complex care and recovery	-0.23 (0.22)	-0.01 (0.19)	-0.01 (0.22)
Clinical Program = Other (Ref.)	0.00		
Profession = Psychiatrist	-0.78 (0.26)**	0.67 (0.22)**	1.03 (0.25)***
Profession = Nurse	-0.15 (0.26)	0.01 (0.23)	0.36 (0.25)
Profession = Allied	-0.20 (0.24)	-0.05 (0.20)	0.12 (0.23)
Profession = Other (Ref.)	0.00		
Age = Less than 39 years old	0.20 (0.36)	-0.32 (0.31)	-0.13 (0.34)
Age = 40 to 59 years old	0.28 (0.36)	-0.49 (0.31)	-0.25 (0.35)
Age = Prefer not to answer	0.00		
Area = Outpatient settings	-0.12 (0.18)	0.45 (0.16)**	0.08 (0.18)
Area = Emergency department	0.35 (0.28)	0.16 (0.25)	-0.17 (0.27)
Use = Social media, message, other	-0.18 (0.26)	0.76 (0.22)***	0.03 (0.25)
Use = Patient portal	-0.05 (0.19)	-0.03 (0.17)	0.03 (0.19)

Q1: The organization should provide patients access to their personal health record through a patient portal.

Q2: Patients having access to their health record via the patient portal will influence my clinical documentation.

Q3: Patient access to their health record makes me feel uncomfortable.

* p-value in [0.01;0.05]

** p-value in [0.001; 0.01]

*** p-value < 0.001

Results Related to Outcome of Interest #1

Profession was the only predictor that was significant in explaining “the organization should provide patients access to their personal health record through a patient portal” (p -value = 0.014, $F(3,216) = 3.626$), with psychiatrists having lower agreement scores as compared to other professions. Results also indicate that health professionals working in acute care settings are significantly less agreeable, however this is a low level of evidence given that clinical program was not significant in the omnibus test (p -value = 0.103, $F(2,216) = 2.301$).

Results Related to Outcome of Interest #2

“Patients having access to their health record via the patient portal will influence my clinical documentation” was significantly associated with profession only (p -value = 0.002, $F(3,216) = 5.153$), with psychiatrists being more

concerned about the influence of patient portals on their documentation. Health professionals in outpatient settings tended to agree more with outcome of interest #2 (p-value = 0.005, F (1,216) =8.117). Use of Social Media was found to be associated with higher agreement with outcome of interest #2 (p-value = 0.001, F (1,216) =11.759).

Results Related to Outcome of Interest #3

Both clinical program (p-value = 0.011, F (2,216) = 4.326) and profession (p-value < 0.001, F (3,216) = 7.440) were found to be significant in explaining “patient access to their health record makes me feel uncomfortable”. Psychiatrists and health professionals in acute care settings tended to agree more with outcome of interest #3.

Qualitative Results

Results of the qualitative content analysis of the open-ended question on the survey revealed 11 themes from 226 participants (Table 4). A range of comments were identified that varied in their tone (negative, neutral and positive).

Table 4. Content analysis findings

Theme	Sample Quotes
Influence on therapeutic relationship	<p>“This will not facilitate discussion, it will facilitate additional burden of work, confusion, medico legal issues, and distrust between physicians and patients”</p> <p>“The patient portal will allow the relationship between health care professional and patient to become more transparent.”</p>
Influence on documentation	<p>“I am concerned that notes will be 'sanitized' in a fashion that could compromise the integrity of the content”</p> <p>“Will help shift the discourse toward more person-centered language”</p>
Workload	<p>“Initially there will be confusion for staff and clients which may create more work and frustration”</p>
Agreement/ disagreement with the patient portal	<p>“This has great potential; The patient portal is a great idea. Good job for [name of organization] to join other organizations who have started this”</p> <p>“Great initiative- also some things to consider”</p>
Desire for educational support	<p>“There will be a need to teach both healthcare professionals and clients the ‘rules of engagement’ and how to appropriately and respectfully communicate with one another using a patient portal”</p>
Case by case identification of patients to use portal	<p>“Client access to their files should be discussed with their care team and made on a case by case basis, with necessary informed consent”</p>
Patient response	<p>“Clients could be frustrated at having access to information that is challenging to understand without interpretation”</p> <p>“Overall, the advantages of accessing their health information will allow clients to make informed choices, if they are capable, and take responsibility for their treatment path because they have this information.”</p>
Technology access /assistance for patients	<p>“I am concerned about accessibility of the patient portal - particularly in regards to access to computers and computer literacy”</p> <p>“The benefits for our clients are not equally dispersed- it benefits our most literate, educated and affluent clients, client who can afford computers/ have access to computers, who are literate, and especially those who are in the health care field, have knowledge of medical jargon etc”</p>
Patient access to health information	<p>“I strongly feel that there should be a limit to as to what information could be accessed by clients, especially around the area of [specific documentation form]”</p> <p>“Messages should not be able to be sent to healthcare provider - this raises issues about safety issues and could open possibilities of liability. Furthermore, patients will send messages when they should be attending appointments/clinics.”</p>
Security	<p>“Security issues are a major concern and participants might be hesitant to use this feature for that reason”</p>
Suggestions	<p>“Recommend starting with viewing medications, labs and appointments. Evaluate the process and then introduce clinical notes and messaging”</p>

The findings of the content analysis provide insights into the results of the quantitative portion of this study by giving potential rationale for why a mental patient portal may be positively or negatively perceived by groups of health professionals. For example, those health professionals who perceived that their notes would need to be modified in a way that would negatively influence their utility, likely had less positive perceptions of the portal.

Discussion

The main goal of completing this study was to understand the predictors of mental health professionals' perceptions of patient portals so that targeted education and interventions could be developed to support health professionals with more negative perceptions of the technology than others. Additionally, findings may be used to provide insights into possible predictors that may be relevant to other mental health organizations planning to implement patient portals. Results of this study indicate that not all mental health professionals perceive patient portals in the same way. Psychiatrists in this study reported more negative perceptions of patient portals than other health professionals. This may be related to the perception of the role that psychiatrists have in providing care to mental health patients, and the content of psychiatrist clinical documentation that may be included in a patient portal. It may be perceived that aspects of assessments, diagnosis, treatment, and care planning that may not always be agreed upon by patients, may be present in psychiatrist documentation², perhaps more so than other health professional groups. Similarly, it is not surprising that mental health professionals practicing in acute care settings had more negative perceptions of patient portals. It may be perceived that clinical documentation in this setting is more sensitive given that patients may not be as easily able to digest the information given their acute mental health condition, or may not agree with what is written³.

The findings of the content analysis are similar to other studies conducted before the implementation of a patient portal^{1,2}. For example, some participants in this study described how they were concerned that their documentation may not be easy for patients to read given the use of medical terminology. This finding is congruent with a previous survey conducted among mental health professionals in Sweden². Additionally, the content analysis revealed that some mental health professionals are concerned about unhelpful modifications to their documentation as a result of patients having access to their notes. This finding is also in alignment with findings of a survey conducted among mental health professionals regarding OpenNotes in the USA¹. Resources have been developed to support health professionals in writing their notes in ways that patients are able to understand^{6,15}.

Implications for Mental Health Organizations

The findings of this study have several implications for mental health organizations implementing patient portals. In particular, this study identified that psychiatrists and those who work in acute care settings had more negative perceptions of patient portals than other health professionals and those who work in less acute care settings. Thus, providing additional support to psychiatrists and health professionals working in acute care settings is warranted during the initial stages of patient portal planning, implementation and use. However, further research exploring the specific discomforts and concerns of these groups are needed to identify what supports may be most helpful. The content analysis of the open-ended question in this survey provides some initial ideas about the potential influencers of mental health professionals' perceptions and thus opportunities to provide additional supports. This support may include sharing the results of previous studies exploring the use of patient portals in mental health settings; arranging to have a mental health professional already using a patient portal to discuss their experiences in doing so, and; providing relevant education and training⁶.

Mental health organizations may also consider conducting a phased implementation, where the technology is first introduced into clinical settings where mental health professionals with more positive perceptions of patient portals practice. In this study, health professionals working in outpatient settings had more positive perceptions of patient portals and therefore could be considered first when implementing the technology.

Similar to the introduction of other types of technologies, engaging mental health professionals in the selection of the patient portal technology, design, implementation and evaluation is recommended¹⁶, along with taking into account mental health professional perceptions when developing any training and educational materials. Specifically, engaging mental health professionals who are interested and have positive perceptions from user groups that might be expected to have more negative perceptions, could be considered. In this study, this would mean identifying psychiatrists and mental health professionals in acute care settings with more positive perceptions of a patient portal to support the

diffusion of the technology among their colleagues. The use of champions and peer influencers to support the diffusion of technologies and innovations is supported in the literature ¹⁷.

Implications for Research

There are numerous implications of the study findings for research. For example, this study identified a number of predictors of the perceptions of mental health professionals toward patient portals, however did not seek to understand the predictors at a deeper level. Future qualitative research aimed at better understanding the predictors identified in this study may allow for more tailored supports and interventions to be developed, implemented and evaluated. In addition, this study did not evaluate patient portal usability, how the portal could be incorporated into clinical conversations and encounters, and how to best manage any conflicts. Future research on these topics should be considered. Additionally, research that aims to understand the perspective of patients on this topic would provide additional insights into how patient portals can best be implemented and used in this setting. There is currently research underway at the study site on this topic among a group of more than 100 mental health patients.

Limitations

The present study has limitations that must be considered. This study was conducted in a single academic mental health hospital. Studies conducted at multiple mental health hospitals, and in general hospitals with mental health inpatient units, would test the generalizability of the findings. Although open-ended survey responses were subject to analysis, future studies may wish to use interviews or focus groups to gain a better understanding of the predictors of mental health professionals' perceptions of patient portal use. In doing so, relevant interventions and/or supports can best be identified and implemented. Additionally, participants in this study had not yet used a patient portal in their practice, and thus the results found here are most applicable to mental health organizations before they implement patient portal technology. As well, mental health patient populations are not homogenous and therefore research specific to a particular patient population may result in different findings. Lastly, the study was conducted during a time of the year when many health professionals take holidays (December), and therefore conducting the study at a different time of the year may result in a larger number of survey respondents.

Conclusion

This study improves our understanding of the predictors of mental health professionals' perceptions of patient portals. The findings of the study suggest that psychiatrists and those who work in acute care settings have more negative perceptions of patient portals than other health professional groups. When patient portals are planned to be implemented in mental health settings, additional resources may need to be directed towards supporting psychiatrists in their adoption of the technology. Future research that aims to better understand the factors that influence psychiatrists negative perceptions of patient portals, and what interventions would best support them in adopting the technology, is required. In addition, research is required that evaluates whether the discomforts expressed by participants in this study are realized when patient portals are implemented and used within mental health settings. As well, organizations may consider a phased approach to implementation, starting with less acute units initially, and adding more acute units at a later implementation stage.

Acknowledgements

The authors would like to acknowledge Heather Sulkers, Ryan Pundit, Ashlee Bramwell, Ian Brunton, Madison Friesen, Nicole Verni, Kevin Leung and Harkiran Sidhu for their involvement in this study.

References

1. Dobscha SK, Denneson LM, Jacobson LE, Williams HB, Cromer R, Woods S. VA mental health clinician experiences and attitudes toward OpenNotes. *Gen Hosp Psychiatry* [Internet]. 2016;38:89–93. Available from: <http://dx.doi.org/10.1016/j.genhosppsych.2015.08.001>
2. Petersson L, Erlingsdóttir G. Open Notes in Swedish Psychiatric Care (Part 1): Survey Among Psychiatric Care Professionals. *JMIR Ment Heal* [Internet]. 2018;5(1):e11. Available from: <http://mental.jmir.org/2018/1/e11/>
3. Kahn M., Bell S., Walker J., Delbanco T. Let ' s Show Patients Their Mental Health Records. *J Am Med Assoc*. 2014;311(13):1291–2.
4. Kipping S, Stuckey MI, Hernandez A, Nguyen T, Riahi S. A web-based patient portal for mental health

- care: Benefits evaluation. *J Med Internet Res.* 2016;18(11):1–9.
5. Open Notes. Open Notes Mental Health [Internet]. 2017 [cited 2017 Nov 8]. Available from: <https://www.opennotes.org/tools-resources/for-health-care-providers/mental-health/>
 6. Open Notes. Mental Health Toolkit [Internet]. 2017 [cited 2017 Sep 20]. Available from: <https://www.opennotes.org/tools-resources/for-health-care-providers/mental-health/>
 7. Centre for Addiction and Mental Health. CAMH Annual Report [Internet]. 2017 [cited 2017 Oct 25]. Available from: http://www.camh.ca/en/hospital/about_camh/annual_reports_to_the_community/ar20162017/Documents/CAMH_AnnualReport2016-17_web.pdf
 8. Centre for Addiction and Mental Health. CAMH Achieves Highest Standing for its Electronic Medical Record – HIMSS Stage 7 [Internet]. [cited 2017 Jul 27]. Available from: http://www.camh.ca/en/hospital/about_camh/newsroom/news_releases_media_advisories_and_backgrounders/current_year/Pages/CAMH-Achieves-Highest-Standing-for-its-Electronic-Medical-Record—HIMSS-Stage-7.aspx
 9. University Health Network. About myUHN Patient Portal [Internet]. 2017 [cited 2018 Mar 8]. Available from: <http://www.uhn.ca/PatientsFamilies/myUHN>
 10. Elo S, Kyngas H. The qualitative content analysis process. *J Adv Nurs.* 2007;62(1):107–15.
 11. Cole F. Content Analysis: Process and Application [Internet]. Vol. 2, *Clinical Nurse Specialist.* 1988. p. 53–7. Available from: http://journals.lww.com/cns-journal/Abstract/1988/00210/Content_Analysis__Process_and_Application.25.aspx
 12. Hsieh H-F, Shannon SE. Three approaches to qualitative content analysis. *Qual Health Res.* 2005;15(9):1277–88.
 13. Sandelowski M. Whatever Happened to Qualitative Description? *Res Nurs Health.* 2000;23:334–40.
 14. Shenton AK. Strategies for ensuring trustworthiness in qualitative research projects. *Educ Inf.* 2004;22:63–75.
 15. Klein JW, Jackson SL, Bell SK, Anselmo MK, Walker J, Delbanco T, et al. Your Patient Is Now Reading Your Note: Opportunities, Problems, and Prospects. *Am J Med.* 2016;129(10):1018–21.
 16. Ching JM, Williams BL, Idemoto LM, Blackmore CC. Using lean automation with a human touch to improve medication safety: A step closer to the perfect dose. *Jt Comm J Qual Patient Saf.* 2014;40(8):341–AP3.
 17. Greenhalgh T, Robert G, Macfarlane F, Bate P, Kyriakidou O. Diffusion of innovations in service organizations: systematic review and recommendations. *Milbank ...* [Internet]. 2004;82(4):581–629. Available from: <http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=2690184&tool=pmcentrez&rendertype=abstract%5Cnhttp://onlinelibrary.wiley.com/doi/10.1111/j.0887-378X.2004.00325.x/full>