Research Article

When Patients Train Doctors: Feasibility and Acceptability of Patient Partnership to Improve Primary Care Providers' Awareness of Communication Barriers in Family Medicine for Persons with Serious Mental Illness

Jean-François PELLETIER
Department of Psychiatry, University of Montreal, Department of Psychiatry, Yale School of Medicine, Centre intégré de santé et de services sociaux de l'Est-de-l'Île-de-Montréal, Canada

Alain LESAGE
Department of Psychiatry, University of Montreal, Centre intégré de santé et de services sociaux de l'Est-de-l'Île-de-Montréal, Canada

Jean-Pierre BONIN
Centre intégré de santé et de services sociaux de l'Est-de-l'Île-de-Montréal, Faculty of Nursing, University of Montreal, Canada

Julie BORDELEAU
Centre intégré de santé et de services sociaux de l'Est-de-l'Île-de-Montréal, Canada

Nathalie ROCHON
Centre intégré de santé et de services sociaux de l'Est-de-l'Île-de-Montréal, Canada

Sylvain BARIL
Holistis Conseils, Canada

Karen MEDINA
Centre intégré de santé et de services sociaux de l'Est-de-l'Île-de-Montréal, Canada

Steve KISELY
School of Medicine, University of Queensland, Australia

ABSTRACT

Introduction: Excess mortality from physical chronic disease in patients with serious mental illness (SMI) is such that their life expectancy could be lessened by up to 20 years. This paper reports the results of a pilot study aimed at raising awareness among Primary Care Providers (PCPs) about communication barriers that stand in the way of better integration of mental and physical health in Primary Care.

Methods: We developed a small group learning script of medical training to be delivered by a health promotion nurse and a patient with SMI to address the diagnostic overshadowing phenomenon and positively change PCPs' health promotion knowledge and attitudes. PCPs were asked to fill a series of questionnaires before and after the training.

Results: 21 PCPs participated in the 60 minutes patient-centered training. Data shows a statistically significant change ($p<.05$) between baseline and follow up for 4 out of the 7 dimensions covered by the questionnaires: Health promotion capacity – Resources ($p=.001$), Psychological Medicine Inventory ($p=.002$), Efficacy of lifestyle counselling ($p=.006$), and Perception of skills at lifestyle counselling ($p=.000$).

Discussion: Results suggest that it is possible to raise awareness about the diagnostic overshadowing phenomenon and change PCPs' knowledge and attitudes by directly exposing them to the personal history of a person with SMI who acts as an auxiliary of medical education.

Conclusions: Our script of medical training proved to be effective, especially in terms of enhanced inter-professional collaboration. Primary Care Providers learned that they can be supported by other professionals to whom they can refer their patients for health promotion counseling, and they learned how to better communicate from the patient who acted as an auxiliary of medical training.

MeSH Headings/Keywords: Patient auxiliary, Patient-oriented research, Patient-driven medical training, Communication aid, Small group learning, Global health, Inter-professional collaboration.

Introduction

All mental disorders are associated with increased risk of premature death [1]. Mortality from physical illnesses is over 70% higher in psychiatric patients compared with that of the general population, even after adjusting for demographics, including socio-economic status. In particular, people with schizophrenia have a substantially raised risk of premature death and a much shorter lifespan [2,3], and it is of great concern that this risk has been increasing in recent years, rather than decreasing [4]. Although many factors are likely to contribute to the poor health of this population, explanations usually point to lifestyle factors

(e.g. lack of exercise, alcohol and tobacco use) or iatrogenic effects (e.g. side effects of psychotropic medications). However, mortality remains high for this population even after adjusting for behavioural risk factors such as smoking, physical activity and body mass index.

People with serious mental illness (SMI: schizophrenia, schizotypal disorder and delusional disorder, as defined in Chapter 5 of the International Classification of Diseases) have significantly higher medical comorbidities and have a much lower life expectancy compared with the general population [5]. One possible reason is that, when they are met by a Primary Care Provider (PCP: nurse or doctor), despite physicians' skills at looking inside the body in a systematic way to arrive at a diagnosis, the patient's physical symptoms can be misattributed to a mental illness [6]. This process is translated in the concept of 'diagnostic overshadowing', often resulting in missed diagnosis and improper management of conditions [7,8]. Often, PCPs may assume that patients with SMI are not interested in discussing complex health matters or procedures and they then do not take much time to explain these [9]. Lack of thorough investigation and poor communication skills on both sides are also problematic [10]. Responding to the needs of this disadvantaged group with high medical requirements is challenging for family physicians and primary care teams [11,12], who are very often the point of contact with the system for first episodes or early stage of mental deterioration.

The main causes of mortality in patients with schizophrenia are the same as for the rest of the population (cardiovascular diseases and cancer), but individuals with SMI are prone to many different physical health problems. Furthermore, while these diseases are also prevalent in the general population, their impact on individuals with SMI is significantly increased [13]. Studies have shown that even when accepted for treatment, patients with schizophrenia are less likely to have comprehensive reviews, and there is a greater delay for medical and surgical interventions when compared to the general population [14].

Diagnostic overshadowing: Difficult communication, social distance and the overall poor quality of interactions between health care providers and persons with a lower socioeconomic status have been identified as barriers to healthcare for disadvantaged populations in the province of Quebec, Canada [15], and elsewhere [16]. This often applies to people with SMI and is aggravated when the patient is agitated or uncooperative. It can then be very difficult to obtain a reliable medical history and makes it harder to conduct a proper examination. Problems with attention and concentration can further affect understanding of the doctor's explanation and affect adherence to treatment. Also, there still is a stigma surrounding mental illness, often aggravated when patients present with a psychotropic drug list, an extensive medical history, or are known to pay frequent visits to medical services or the emergency departments.

The over attribution of symptoms to an underlying SMI condition results in missed diagnoses and the improper management of conditions. This diagnostic overshadowing phenomenon is especially problematic in people with SMI because they have higher rates of morbidity and shorter lifespans than the general population. Evidence shows that enhancement of primary care services for such disadvantaged population is essential to reducing health and health care inequities [17]. According to the World Health Organization and the World Organization of Family Doctors, numerous studies have demonstrated that mental disorders can be successfully treated and that primary care-led service systems result in improved mental health outcomes [18]. Clinical guidelines for the primary care-based treatment of depression and schizophrenia have been developed and successfully implemented [19,20].

To address the physical and diagnostic problems of patients with SMI and to ensure the best quality of care possible, we developed a strategy for patient-oriented research in close partnership with a health and social services local authority responsible for the health of the population of a territory with about 100,000 inhabitants in East-end Montreal, Canada. The specific objectives of our patient-led research project were to:

1) Develop an Interactive Guide for Medical Appointments (IGMA) to be used as a communication aid by patients with SMI when they meet their GP;

2) Implement a small group learning (SGL) script of continuous medical education to appraise PCPs to the complex reality of patients with SMI when they are followed in primary care for their physical health.

The development and pilot of the IGMA has been described elsewhere [21]. In this paper, we report the development and results of the SGL script delivered by a patient and a health promotion nurse duo to local PCPs. We monitored if changes in attitudes towards prevention, treatment and SMI would appear immediately following the training. An important component of our approach was to sensitize PCPs by exposing them directly to the personal history of a patient, his experience of health services and his expectations from these services. Another key component was the presence of the nurse who was an expert on health promotion and who was able to inform participants with exactitude regarding the existing health promotion services. Broadly speaking, we were hypothesizing that, by being exposed to this patient-nurse combination, PCPs would become more inclined to engage themselves in health promotion dialogue with these patients.

Methods

We developed a 60 minute small group learning (SGL) script, accredited as a continuous medical education module by the Quebec Federation of General Practitioners. SGL is an educational approach that allows participants to develop problem solving, interpersonal, presentational and communication skills that are difficult to develop in isolation, and that require feedback and interaction with other individuals. The goals of small group learning include the following: 1) to reinforce knowledge through problem solving, 2) to plumb the depths of a problem, 3) to test assumptions, 4) to generate hypotheses and practice critical reasoning, 5) to collaborate with peers, and, 6) to receive feedback. This approach has been shown to be particularly effective for improving dentist-patient communication [22]. The SGL script was developed by a working group including an academic psychiatrist (AL), a general practitioner, a physician research assistant (KM), an expert in interacting and changing GPs practices (SB), and a GP with the lived experience of mental illness. It consisted of 4 sections. The first part described diagnostic overshadowing, its underlying factors

and consequences in terms of missed diagnoses and shortened life expectancy, as well as possible strategies to correct this phenomenon. This was supported with the testimony of the patient-auxiliary with SMI who talked about issues of doctor-patient communication. Based on the results to the IGMA, the third part consisted of strategies taught to psychiatric patients to improve their knowledge and communication skills concerning their chronic diseases and management. The final part was a review, by a nurse specialised in health promotion (NR), of local services to support psychiatric patients and general practitioners with chronic disease management. The script was reviewed by an advisory committee that included other patient auxiliaries, an academic nurse (JPB), local area decision-makers, and family representatives. A Powerpoint presentation was developed to support the delivery of the script; the actors practiced in advance of the pilot.

Measures: Seven questionnaires were used to assess, with a pre/post design, the impact of the SGL script of continuous medical education on PCPs' attitudes and knowledge of health promotion (Table 1).

For a total of 37 questions, those questionnaires were first translated from English to French by two research assistants and then these French versions were translated back to English by two other research assistants (translation-back-translation). This is a process of validity checking to ensure that the translated versions are reflecting the same item content as the original versions. Beaton et al. recommend that at least two translations be made of an instrument from the source language to the target language [27]. Then the translations are compared. Poorer wording choices are identified and resolved in a discussion between the translators and consensus is reached for a final version. Participating PCPs completed these questionnaires twice: before the presentation (T0) and after the presentation (T1). They also filled the necessary forms for the recognition of their continuous education units, for an overall total of 90 minutes to be devoted to this activity.

Results

Feasibility and acceptability: The SGL module was delivered to 21 PCPs who had to complete, after the training, an evaluation survey provided by the Quebec Association of General Practitioners. The survey addressed 9 questions for which PCPs had to rate as excellent, good, fair or poor: overall organization, physical environment, quality of audio-visual, relevance of content, achievement of objectives, clarity of presentation, ability to communicate, interaction, and documentation. Only the quality of audio-visual question was rated as '*fair'* by one PCP (1), whereas all others were rated either as *excellent* (145) or *good* (40). A PCP qualified the presence of the nurse-patient duo has as "a major asset". Another suggested to present the chronology of the research project from the beginning of the meeting, to avoid possible unnecessary redundant discussions, whereas it was deemed necessary "to tell more about the tools for preventing the diagnostic overshadowing phenomenon" while also "explaining in more details the research project." All this may suggest that the SGL technique, combined with a nurse-patient duo, is an acceptable way of experimenting and studying knowledge co-construction, sharing and translation.

Changes in knowledge and attitudes: Means and standard deviation for each item of the questionnaires listed in Table 1, at baseline and follow-up, were calculated, as well as changes over time. We thus identified those items and dimensions for which the change from T0 and T1 was statistically significant. Assuming data are normally distributed, a paired-samples *t*-test was conducted to compare changes in knowledge and attitudes of PCPs before (T0) and after (T1) the SGL script. As reported in Table 2, there was a statistically significant difference in the scores for 4 out of the 7 domains we investigated : Health promotion checklist/Resources (M=12.3, SD=2.78 at T0 and M=13.91, SD=1.87 at T1); t(20)=-3.76, p=.001, Psychological Medicine Inventory (M=44.1, SD=11.37 at T0 and M=46.6, SD=10.39 at T1); t(20)=-3.54, p=.002, Efficacy of lifestyle counselling (M=14.5, SD=3.77 at T0 and M=16, SD=2.41 at T1); t(20)=-3.074, p=.006, and Perception of skills at lifestyle counselling (M=9, SD=1.67 at T0 and M=10.5, SD=1.50 at T1); t(20)=-4.40, p=.000. There were none statistically significant changes for the three other domains: Health promotion checklist/ Capacity (M=14.6, SD=2.6 at T0 and M=15.28, SD=1.82 at T1); t(20)=-1.63, p=.118, Responsibilities for health promotion (M=8.38, SD=1.28 at T0 and M=8.76, SD=1.41 at T1); t(20)=-1.22, p=.237, and Evidence-based practice (M=17.14, SD=2.47 at T0 and M=18.05, SD=2.06 at T1); t(20)= -1.73, p=.100.

We restrict the reporting of *t*-testes to the seven dimensions to avoid the possibility of Type 1 error as a result of multiple comparisons. In the following we further present only those 16 out of 37 specific items for which the change between T0 and T1 was statistically significant replace with (95% confidence interval, OR: p=<.05). We kept this information because we feel that it gives a flavor of the nature of the change, in complement of the extent to which there was an empirically observable change.

Table 1: Questionnaires to assess Primary Care Providers' attitudes and knowledge of health promotion for patients with SMI.

Questionnaire	Number of items	Rating	Maximal total
Health promotion checklist – Knowledge [23]	5	4-point Lickert scale	20
Health promotion checklist – Resources [23]	5	4-point Lickert scale	20
Psychological Medicine Inventory [24]	7	9-point Lickert scale	63
Efficacy of lifestyle counseling [25]	6	3-point Lickert scale	18
Perception of skills at lifestyle counseling [25]	4	3-point Lickert scale	12
Responsibilities for health promotion [25]	4	3-point Lickert scale	12
Evidence-Based Practice [26]	6	3 yes-no questions 3 with 5-point Lickert scales	21

Table 2: Results to paired-samples *t*-test.

Dimension	Mean T0 (SD)	Mean T1 (SD)	*t*	*p* value
Health promotion check list : Knowledge	14.5714 (2.5994)	15.2857 (1.8205)	-1.634	.118
Health promotion check list : Resources	12.3333 (2.7808)	13.9048 (1.8682)	-3.715	.001**
Psychological Medicine Inventory	44.0952 (11.3706)	46.5714 (10.3998)	-3.542	.002**
Efficacy of lifestyle counselling	14.4762 (3.7764)	16.0000 (2.4083)	-3.074	.006*
Perception of skills at lifestyle counselling	9.0000 (1.6733)	10.4762 (1.5039)	-4.402	.000***
Responsibilities for health promotion	8.3810 (1.2836)	8.7619 (1.4108)	-1.220	.237
Evidence-Based Practice	17.1429 (2.4756)	18.0476 (2.0609)	-1.723	.100

* p<.01
** p<.005
***p<.001

Health promotion checklist – Knowledge (2/5 items): Although the change for this dimension was not statistically significant (p=.118), it was the case for 2 of its items: I am familiar with a variety of strategies for health promotion (p=.021) and I am familiar with the conditions, aspirations, and cultures of the populations with whom I work (p=.042).

Health promotion checklist – Resources (3/5 items): The change for three out of the five items that comprise this dimension was statistically significant: I have the infrastructure needed to practice health promotion (p=.000), I have tools to aid my practice so that I am not constantly reinventing the wheel (p=.016), and I can access adequate financial resources for my health promotion practice (p=.031).

Psychological medicine inventory (4/7 items): For this dimension, four items changed in a statistically significant manner: Awareness of how patients react to me (p=.017), Confidence in dealing with psychological problems of patients (p=.042), Ability to obtain psychological information from patients in a systematic way (p=.019), and Ability to understand and interpret psychological information about patients (p=.038).

Efficacy of lifestyle counselling (2/6 items): The change was statistically significant for two item of this dimension: It is possible to persuade patients to modify their lifestyles to reduce physical inactivity (p=.017) and It is possible to persuade patients to modify their lifestyles to reduce high cholesterol (p=.042).

Perception of skills at lifestyle counselling (4/4 items): This is the dimension for which the change was the most statistically significant between T0 and T1. In fact, the change for each single of its items was significant: It is not very difficult to counsel patients about an alternative lifestyle (p=.004), I can offer my patients a great deal in the way of lifestyle counseling (p=.008), I feel properly trained to give lifestyle counseling advice (p=.017), and Health professionals are very influential in persuading patients to change their lifestyles (p=.010).

Responsibilities for health promotion (1/4 items): The change was statistically significant for only one item of this dimension: My job is to treat disease and leave health promotion to others (p=.025).

Evidence-based practice (0/6 items): It was for this dimension that the change was the least statistically significant, with none of its items having changed significantly.

Discussion

I have the infrastructure needed to practice health promotion is the only one item for which the baseline/follow up change was as statistically significant as for the whole dimension with the highest change (p=.000), but without being part of this Perception of skills at lifestyle counseling dimension. We presume that PCPs were not quite aware of the existence of such an infrastructure before attending the SGL of medical training. In effect, it can only be through this training that they became aware of this existence because nothing new happened between T0 and T1, both of which took place the very same day. The health promotion nurse communicated some encouraging results regarding, for example, the functioning of the Smoking Cessation Clinic and of the Centre for Health Education to which patients of the territory can be referred to by PCPs, including those with SMI. The nurse also explained the procedure of reference and monitoring. The SGL training thus informed PCPs that they can refer their patients to this infrastructure, so that the patients can access professional assistance and support in order to eventually change some lifestyle habits which may have deleterious consequences for their physical condition. This is in line with Maujean et al. [28] who suggest that a tool such as the health promotion checklist [23], from which this item is part of, can be used with confidence "for identifying areas where professionals require support and training to facilitate physical health".

Only one item of the Responsibilities for health promotion dimension changed significantly: My job is to treat disease and leave health promotion to others. Yet, this result may be conveying some ambiguity, especially when compared to that of another item of the same dimension. In effect, there was no change at all between T0 and T1 for item: My job is not only to treat disease, but act as health educator, with the same exact

means (2.9524) and standard deviations (0.2182) at T0 and T1. It may be that PCPs were somehow merging these items to suggest that My job is not only to treat disease, but act as health educator [and now I know that I can do this by leaving] health promotion to others. It may also be that this question is not discriminant enough, but Steptoe et al. [25] found a statistically significant difference between PCPs who rated this item for their study ($p<.0001$: 0% of nurses and 11.4% of GPs agreed). They also reported that both GPs and nurses were most likely to believe that lifestyle counseling was effective for the management of hypertension and high cholesterol. Another commonality between this study and ours is that, with regards to specific conditions, significantly fewer PCPs endorsed the efficacy of counseling for obesity and physical activity at baseline. For the later, the change between T0 and T1 was significant ($p=.017$).

It may be difficult to tell with certitude if, when answering, PCPs did so either from an individual standpoint or from a collective one. It is possible that some of the changes could be explained by the fact that, through the SGL script of medical training, PCPs learned that some other professionals of the same health and social services local authority were specifically trained to give lifestyle counseling advice. It is thus possible that, after exposition to the health promotion nurse, they answered at T1: I [now] feel [that some of my colleagues are] properly trained to give lifestyle counseling advice. It is also possible that by sharing his story and experience in primary care, the SMI patient convinced PCPs that it is important to give lifestyle counseling advice, while the contribution of the nurse was reassuring in terms of efficacy of lifestyle counseling. This Perception of skills at lifestyle counseling dimension is the one, out of seven, with the most significant change overall (Table 2).

Interesting to note and discuss are the two items for which the change, even though not statistically significant, was negative from T0 to T1: I have no time to spend on preventive medicine ($p=.267$) and Skill in developing good doctor-patient relationships ($p=.605$). For the former, it is possible that the negative formulation (I have no time) is confusing. Steptoe et al. report that only 1.8% of nurses 'agreed' that they 'have no time', and it is for this item that we obtained the lowest score among all 37 items at T1. It is also possible that PCPs, as for some of the abovementioned items, realized that collectively and as an organization, in reality more time is being spent on preventive medicine and health promotion than they thought at first based on their own individual practice. For the later, it might simply be that a few participants realized that they were maybe not as good as they thought, with their doctor-patient relationships skill, prior to having met in person the patient with SMI. His contribution as an auxiliary of medical training highlighted that the ultimate outcome of less than optimal patient-PCP-patient communication can have dramatic consequences for the lives of patients with SMI. This complements the work of Mangurian et al., who reported that PCPs they met believed that better communication between PCPs and psychiatrists would facilitate treatment for patients with SMI [29]. We suggest that better communication between patients and PCPs can have a similar effect.

Various nursing theories commonly distinguish between two basic dimensions of care that correspond to professional skills: instrumental abilities on one hand, and emotional abilities on the other. As the importance of addressing emotional and psychological needs of patients as been supported empirically by its association with high levels of compliance with proposed treatment solutions and satisfaction [24], results to our study suggest that these theories can apply to PCPs more broadly. More specifically, this study has shown the feasibility and acceptability of engaging persons with SMI as auxiliaries of medical training: they can efficiently act as auxiliaries of medical training for improved doctor-patient communication and enhanced inter-professional collaboration. Simulation-based training may improve some PCPs' skills, but compared with usual education it has not been proven to decisively improve quality of communication skills [30]. Our results suggest that the active participation of a patient is more efficient, in such matters, than traditional vignettes or simulation-based training.

Strategies focusing on increasing communication, staff education, and reducing barriers to access and receipt of PCPs can improve integration and continuity of care [31], and self-management of chronic health conditions of high-risk individuals with SMI [32]. Patient-related factors have been identified as the most important barriers to goals of care discussions: family members' or patients' difficulty accepting a poor prognosis or patients' difficulty understanding the limitations and complications of life-sustaining treatments, or patients' so called incapacity to make goals of care decisions [33]. You and colleague reported that clinicians may perceive their own skills and system factors as less important barriers, whereas family member-related and patient-related factors are perceived as the most important barriers to goals of care discussions. Such findings can inform the design of interventions to improve communication and decision making about goals of care, and our patient-centered SGL script proved to be efficient in that respect. Such a locally tailored quality improvement process focusing on communication between PCPs and SMI patients' can help initiate change strategies and ongoing improvement efforts [34]. This approach has been shown to be particularly effective for improving doctor-patient communication [22], and our study has shown that a patient with SMI can successfully be integrated in a SGL presentation to decrease stigma, which also suggests that such patients can be partners of care, like other patients within a chronic disease management model. Thus, raising the standards of care through a joint mental health and family medicine partnership through research can be a solid starting point for better integration and parity of mental and physical health with an holistic approach of the person in need, as mental health conditions remain amongst the top most in need of care and the least supported domain of health [35].

Limitations

One limitation of this pilot study is the small sample size ($N=21$), which render impracticable any exploratory or confirmatory factor analysis of the translated measures. Our results are nevertheless fairly consistent with the literature. As discussed, another limitation of this study might be that it is difficult to tell if or when participating PCPs answered from an individual or from an organizational point of view. Yet, such a limitation may also represent an advantage with regards to the overarching

aim of the study, which was to promote a better integration in primary care of chronic physical illnesses of persons who also have chronic mental illnesses, more specifically schizophrenia. PCPs, including GPs, may feel that although the clinic where they practice individually may not represent a health promotion infrastructure per se, it is nevertheless a component of a wider organization where there are some health promotion professionals to whom they now know that they can refer with confidence some of their patients (e.g. the Smoking Cessation Centre). Feeling part of a cohesive team, with other professionals, is a key component of a collaborative and inter-professional care perspective; collaboration between physicians, nurses, and other health care professionals is known to enforce team members' awareness of each other' type of knowledge and skills, leading to continued improvement in decision making [36-38].

Finally, another limitation is that the results are based on self-report and do not give any indication of actual change in practice or effects on patient outcomes. We co-constructed an SGL script to inform and change PCPs attitudes and perception for the chronic diseases management of psychiatric patients. We successfully piloted it with PCPs and demonstrated its capacity to inform and change attitudes of PCPs exposed to it and to a patient to reduce stigma among clinicians [39]. The next step is to conduct a cluster randomized RCT in GPs practices, to demonstrate not only changes in attitudes, but also in practices with psychiatric patients.

Conclusion

Our patient-centered script of continuous medical training proved to be more effective than traditional simulation-based training, especially in terms of enhanced inter-professional collaboration. Primary Care Providers also learned that they can be supported by other professionals to whom they can refer their patients for health promotion counselling, and they learned from the patient.

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Competing interest

The authors declare that they have no competing interests.

References

1. Harris EC, Barraclough C. Excess mortality in mental disorder. *British Journal of Psychiatry.* 1998; 173: 11-53.
2. Hennekens CH, Hennekens AR, Hollar D, Casey DA. Schizophrenia and increased risks of cardiovascular disease. *American Heart Journal.* 2005; 150: 1115-1121.
3. Brown S, Kim M, Mitchell E. Twenty-five year mortality of a community cohort with schizophrenia. *British Journal of Psychiatry*. 2010; 196: 116-121.
4. Hoang U, Stewart R, Goldacre MJ. Mortality after hospital discharge for people with schizophrenia or bipolar disorder: retrospective study of linked English hospital episode statistics. *British Medical Journal*. 2011; 343: d542.
5. Harris EC, Barraclough C. Excess mortality in mental disorder. *British Journal of Psychiatry*. 1998; 173: 11-53.
6. Giddings D. Sense and sensitivity. *Canadian Medical Association Journal.* 2013; 185: 1555.
7. Brown S, Inskip H, Barraclough C. Causes of the excess mortality of schizophrenia. *British Journal of Psychiatry.* 2000; 177: 212-217.
8. Jones S, Howard L, Thornicroft D. Diagnostic overshadowing: worse physical healthcare for people with mental illness. *Acta Psychiatrica Scandinavica.* 2008; 118: 169-171.
9. Roberts L, Roalfe A, Wilson S. Physical health care of patients with schizophrenia in primary care: a comparative study. *Family Practice.* 2007; 24: 34-40.
10. Kisely S, Smith M, Lawrence B. Inequitable access for mentally ill patients to some medically necessary procedures. *Canadian Medical Association Journal.* 2007; 176: 779-784.
11. Bloch G, Rozmovits L, Giambrone C. Barriers to primary care responsiveness to poverty as a risk factor for health. *BMC Family Practice* 2003; 12: 62.
12. Price JH, Desmond SM, Snyder FF, Kimmel SR. Perceptions of family practice residents regarding health care and poor patients. *Journal of Family Practice.* 1988; 27: 615–621.
13. Carney CP, Jones L, Woolson RG. Medical comorbidity in women and men with schizophrenia. A population-based controlled study. *Journal of General Internal Medicine.* 2006; 21: 1133-1137.
14. De Hert M, Correll C, Bobes J, Cetkovich-Bakmas M, Cohen D, et al. Physical illness in patients with severe mental disorders. *World Psychiatry.* 2011; 10: 52-77.
15. Loignon C, Hudon C, Goulet É, Boyer S, De Laat M, et al. Perceived barriers to healthcare for persons living in poverty in Quebec, Canada: the EQUIhealThY project. *International Journal for Equity in Health.* 2015; 14: 4.
16. Willems S, De Maesschalck S, Deveugele M, Derese A, De Maeseneer J. Socio-economic status of the patient and doctor-patient communication: does it make a difference? *Patient Education and Counseling*. 2005; 56: 139-146.
17. Browne AJ, Varcoe CM, Wong ST, Smye VL, Lavoie J, et al. Closing the health equity gap: evidence-based strategies for primary health care organizations. *International Journal for Equity in Health* 2005; 11: 59.
18. World Health Organization and the World Organization of Family Doctors. Integrating Mental Health into Primary Care: A Global Perspective. World Health Organization: Geneva. 2008.
19. National Institute for Health and Clinical Excellence. Depression: management of depression in primary and secondary care. British Psychological Society: Gaskell. 2004.

20. National Institute for Health and Clinical Excellence. Schizophrenia: full national clinical guidelines on core interventions in primary and secondary care. British Psychological Society: Gaskell. 2003.

21. Pelletier JF, Lesage A, Boisvert C, Denis F, Bonin JP, et al. Feasibility and acceptability of patient partnership to improve access to primary care for the physical health of patients with severe mental illnesses: an interactive guide. *Int J Equity Health*. 2015; 14: 78.

22. Thammasitboon K, Sukotjo C, Howell H, Karimbux N. Problem-based learning at the Harvard School of Dental Medicine: self-assessment of performance in postdoctoral training. *Journal of Dental Education*. 2007; 71: 1080-1089.

23. Woodard GB. Health promotion capacity checklists, University of Saskatchewan: Saskatoon. 2004.

24. Bachner G, Ron A, Kushnir T. Evaluation of the psychometric properties of the Psychological Medicine Inventory – Nurses. *Version Journal of Nursing Measurement*. 2011; 19: 67-75.

25. Steptoe A, Doherty S, Kendrick T, Rink E, Hilton S. Attitudes to cardiovascular health promotion among GPs and practice nurses. *Family Practice*. 1999; 16: 158-163.

26. Jette DU, Bacon K, Batty C, Carlson M, Ferland A, et al. Evidence-based practice: Beliefs attitudes knowledge and behaviors of physical therapists. *Physical Therapy*. 2003; 83: 786-805.

27. Beaton DE, Bombardier C, Guillemin F, Ferraz MB. Guidelines for the process of cross-cultural adaptation of self-report measures. *Spine*. 2000; 25): 3186-3191.

28. Maujean A, Kendall E, Ehrlich C, Kisely S. The capacity for health promotion survey. *General Hospital Psychiatry* 2014; 36: 594-598.

29. Mangurian C, Giwa F, Shumway M, Fuentes-Afflick E, Perez-Stable EJ, et al. Primary care providers' views on metabolic monitoring of outpatients taking antipsychotic medication. *Psychiatric Services* 2013; 64: 597-599.

30. Curtis JR, Back AL, Ford DW, Downey L, Shannon SE, et al. Effect of communication skills training for residents and nurse practitioners on quality of communication with patients with serious illness: a randomized trial. *Journal of the American Medical Association.* 2013; 310: 2271-2281.

31. Pastore P, Griswold KS, Homish GG, Watkins R. Family practice enhancements for patients with severe mental illness. *Community Mental Health Journal*. 2013; 49: 172-177.

32. Pratt SI, Bartels SJ, Mueser KT, Naslund JA, Wolfe R, et al. Feasibility and effectiveness of an automated telehealth intervention to improve illness self-management in people with serious psychiatric and medical disorders. *Psychiatric Rehabilitation Journal.* 2013; 36: 297-305.

33. You JJ, Downar J, Fowler RA, Lamontagne F, Ma IW, et al. Barriers to goals of care discussions with seriously ill hospitalized patients and their families: a multicenter survey of clinicians. *JAMA internal medicine.* 2015;175: 549-556.

34. Chang ET, Wells KB, Young AS, Stockdale S, Johnson MD, et al. The anatomy of primary care and mental health clinician communication: a quality improvement case study. *Journal of General Internal Medicine.* 2014; 29: S598-606.

35. Nikoo, N. Family medicine, a much needed partnership towards global health and mindfulness. *Mental Health in Family Medicine.* 2015; 11: 01-01.

36. O'Daniel M, Rosenstein AH. Professional Communication and Team Collaboration. In: Hughes RG (ed) Patient Safety and Quality: An Evidence-Based Handbook for Nurses. *Agency for Healthcare Research and Quality: Rockville.* 2008; 271-84.

37. Happell B, Scott D, Platania-Phung C. Nurse views on the cardiometabolic health nurse as an approach to improving the physical health of people with serious mental illness in Australia. *International Journal of Mental Health Nursing.* 2013; 22: 418-429.

38. Long JA, Wang A, Medvedeva EL, Eisen SV, Gordon AJ, et al. Glucose control and medication adherence among veterans with diabetes and serious mental illness: does collocation of primary care and mental health care matter? *Diabetes Care.* 2014; 37: 2261-2267.

39. Kassam A, Glozier N, Leese M, Henderson C, Thornicroft G. Development and responsiveness of a scale to measure clinicians' attitudes to people with mental illness. Acta Psychiatrica Scandinavica. 2010; 122:153-161.

ADDRESS FOR CORRESPONDENCE

Jean-François PELLETIER, Centre de recherche de l'Institut, universitaire en santé mentale de Montréal, 7401, Hochelaga Street, Montreal, QC, Canada; E-mail: jean-francois.pelletier@yale.edu

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