

## **Les problèmes de santé physique chez les personnes atteintes de schizophrénie au Canada : une recension critique de la littérature**

**Debora Isane R. Kirschbaum Nitkin, Denise Gastaldo**

Les auteures présentent une recension critique de la littérature issue de chercheurs canadiens et portant sur les comorbidités médicales, et recommandent certaines ressources et stratégies pour l'évaluation et la gestion de problèmes de santé physique chez les personnes atteintes de schizophrénie. La littérature scientifique sur ce thème se résume à neuf articles de recherche originaux et six recensions de littérature, ce qui indique une rareté d'études dans ce domaine au Canada. Selon les recherches examinées, le diabète, l'obésité, les maladies cardiaques et l'abus de substances constituent les comorbidités les plus fréquentes chez les personnes souffrant de schizophrénie. Un autre constat qui découle de ces recherches est le fait que la plupart des chercheurs font face à des obstacles méthodologiques quant à la généralisation des résultats, en raison de limites sur le plan de la conception ou de caractéristiques présentes dans l'échantillonnage. Les auteures soulignent la nécessité d'intensifier la recherche pour mieux comprendre les rôles que jouent le traitement, les caractéristiques individuelles, le mode de vie et les problématiques structurelles dans le développement de comorbidités chez les personnes atteintes de schizophrénie. Elles discutent également de l'importance de traiter de ces questions dans le cadre de la pratique et de l'éducation en sciences infirmières.

Mots clés : schizophrénie, comorbidité

# **Addressing Physical Health Problems Experienced by People With Schizophrenia in Canada: A Critical Literature Review**

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The authors present a critical review of the literature produced by Canadian researchers regarding medical co-morbidities and the resources and strategies they recommend for assessing and managing the physical health problems of people with schizophrenia. Scientific production in the field consists of 9 original research articles and 6 literature reviews, revealing a dearth of studies in this area in Canada. The studies examined show that diabetes, obesity, heart disease, and substance abuse are the most frequent co-morbidities affecting people with schizophrenia. Another finding is that most researchers are challenged methodologically to generalize results due to limitations in design or sample characteristics. The authors point to the need for more research to better understand the role of treatment, individual characteristics, lifestyle, and structural issues in the development of co-morbidities among people with schizophrenia. They also discuss the importance of addressing these topics in nursing practice and education.

Keywords: schizophrenia, psychotic disorders, mental health, co-morbidity, psychiatric nursing

## **Introduction**

Presently in Canada and internationally, mental health professionals who provide care for people with schizophrenia are expected to deal not only with the complex issues related to their clients' social rehabilitation but also with their physical health (World Health Organization [WHO], 2003). However, research has shown that people with schizophrenia are more likely to present with physical health problems than the general population (Millar, 2008) and that their life expectancy in Canada is 10 to 15 years shorter than that of the general population (Cohn & Sernyak, 2006; Goeere et al., 1999). Poverty, high prevalence of substance abuse, metabolic syndrome, diabetes, cardiovascular disease, and obesity, as well as barriers to health-care access, make people with schizophrenia a highly vulnerable group (Villares & Sartorius, 2003; WHO, 2003).

In the health-care system, several limitations regarding treatment and support for this group have been identified. For instance, family physicians and general practitioners lack the preparation needed to assess and follow up on the clinical needs of those with schizophrenia, while psychiatrists tend to underestimate patients' physical complaints and consequently underdiagnose their physical health problems (Marder et al., 2004; Vilares & Sartorius, 2003). Nurses, on the other hand, tend to undervalue clinical physical care in mental health settings and to overlook patients' physical health needs (Muir-Cochrane, 2006). This situation applies internationally, including in wealthy countries with universal access to health care such as Canada and the United Kingdom, resulting in increased patient vulnerability (Forchuk et al., 2007; Forchuk, Brown, Schofield, & Jensen, 2008; Goering, 2000; Mulvale, Abelson, & Goering, 2007).

Although in Canada there is significant interest in meeting clients' needs in a more comprehensive manner (Kirby, 2006), the system's integration is insufficient to ensure quality care, with some exceptions (Kates, Craven, Crustolo, Nikolaou, & Allen, 1997). Therefore, there are few well-established programs or services to provide simultaneous care for psychiatric symptoms and physical problems (Chue, 2004; Cohn & Sernyak, 2006).

Finally, in the international and Canadian scientific literature, there is a scarcity of studies in disciplines such as nursing, psychiatry, and public health that identify the physical health problems of people with schizophrenia and the barriers to offering them quality and integrated health care (Millar, 2008; Muir-Cochrane, 2006). In this article we review the Canadian literature on physical health problems among people with schizophrenia, hereafter called co-morbidity, and discuss the implications of such literature for the care provided by the Canadian health-care system.

We believe that in order to offer effective and good-quality health care, as well as to enhance quality of life and life expectancy for people with schizophrenia, mental health teams — particularly nurses working at different levels within the health-care system — should be aware of physical co-morbidity among schizophrenic clients and be better prepared to identify symptoms and formulate strategies to ensure adequate treatment. Since nurses, either as practitioners or as case managers, have an important role to play in supporting clients' management of everyday issues, we argue that addressing the impact of physical health problems on clients' lives is at the centre of quality care in nursing.

The aim of this critical literature review is to examine what Canadian researchers concerned with this discussion (Archie et al., 2007; Caron et al., 2006; Cohn, Prud'homme, Streiner, Kameh, & Remington, 2004;

Coodim, 2001; Curkendall, Mo, Glasser, Stang, & Jones, 2004; Eastabrook et al., 2003; Faulkner, Cohn, Remington, & Hyacinth, 2007; Goldberg & Van Exan, 2008; Voruganti et al., 2007) have studied regarding medical co-morbidities, and what resources and strategies they consider necessary in order to assess and manage the physical health problems of people with schizophrenia.

### **Methodology**

We searched the Cumulative Index for Nursing and Allied Health Literature (CINAHL), Medical Literature Analysis and Retrieval System Online (Medline), and PsychINFO databases through Scholars Portal using the keywords schizophrenia, psychosis, severe mental illness, co-morbidity, medical problems, physical health, concurrent diseases, and Canada (country of publication or country of origin) from 1996 (when the first study on the morbidity and mortality of people with schizophrenia was published by Goeree et al. [1999]) to 2008, in English, French, and Spanish. We found 88 articles published in peer-reviewed journals. Of these, 76 abstracts or titles were excluded because they focused on psychiatric co-morbidity (e.g., anxiety, mood, and depression); genetics; elders; children and young populations; or exclusively on psychiatric symptoms of schizophrenia, diabetes, and trials of the action mechanisms of antipsychotic medication.

Our research criterion was studies involving original research or a literature review about medical co-morbidity or concurrent disorders in adult clients (18–65 years) living with schizophrenia in Canada. We identified 14 abstracts. Of these, six were excluded after a full text reading because they focused on the development of research instruments or technical procedures. Due to the limited number of articles on the subject, we expanded our search using Google Scholar. Four more publications were found: three original research articles and one literature review. Two of the original research articles and the literature review were included in the sample. The third original research article was excluded because it did not meet the inclusion criterion. An additional search for publications was conducted using the surnames of the authors of the articles selected as well as the references of these articles, but the results were the same as those of the database searches.

The 15 articles selected were divided into two groups: original research articles (nine) and literature reviews (six). The articles were summarized and classified by author, year of publication, journal, aim, methodology, main findings, conclusions, and recommendations. We conducted a thematic content analysis of the articles' findings, conclusions, and recommendations, and in this review we present a synthesis of these

articles in a critical narrative style. Finally, information from the grey literature, such as government and research reports, was included as secondary data to support and define the context of the studies described. The analysis is presented under the following themes: challenges to the study of co-morbidities; Canadian original studies on co-morbidities, which include studies about coronary heart disease, diabetes, obesity, and substance abuse; and Canadian literature reviews on co-morbidities.

## **Results**

### ***Challenges to the Study of Co-morbidities***

This literature review contributes to the debate on co-morbidities in schizophrenia because it systematizes knowledge that is difficult to locate. There is a vast diversity of terms and keywords used to describe physical health problems that affect people with schizophrenia, in both the international and the Canadian literature. For instance, the following terms are used to describe the presence of more than one disease affecting the same patient: co-morbidity, dual diagnosis, concurrent disorders, dual disorders, co-occurring disorders, and medical problems.

The use of such terminology also varies according to region. While the terms medical problem and dual diagnosis are commonly used by authors in Europe and the United States, the terms co-morbidity and concurrent disorders are more often used by Canadian authors to describe the presence of substance abuse and schizophrenia as well as the co-existence of schizophrenia and other medical conditions (e.g., diabetes, heart disease, and metabolic syndrome). Yet, while the term dual diagnosis is frequently used in the US and South American literature on schizophrenia and substance abuse, it is employed in the Canadian province of Ontario when referring to people with developmental disabilities and psychiatric disorders (Centre for Addiction and Mental Health [CAMH], Canadian Mental Health Association, & Ontario Mental Health Foundation, 2005; Health Canada, 2002).

In Ontario the term co-morbidity is often used in research that explores physical disease, since co-morbid disorder is a medical term describing the presence of more than one significant health problem (CAMH et al., 2005), whereas the term concurrent disorders is used when referring to the presence of substance abuse and mental disorders, which include mood disorders, anxiety, and depression, as well as schizophrenia. For this reason, a search for diseases that affect people with schizophrenia using any of these terms instead of medical co-morbidity is unlikely to capture studies related to physical health problems, with the exception of substance abuse.

### **Canadian Original Studies on Co-morbidities**

In spite of the recognition that physical health deterioration among people with schizophrenia is a serious problem in Canada (CAMH et al., 2005; Kirby, 2006), our literature review shows that research on medical co-morbidity is scarce.

The main concern of original research is to investigate the prevalence and characteristics of different co-morbidities. Research published in Canada between 1996 and 2008 predominantly examines the high prevalence of metabolic syndrome and its relation to increased risk for coronary heart disease, diabetes, dysglycemia, weight gain in long-term patients, and high rates of substance abuse among people with schizophrenia (Archie et al., 2007; Caron et al., 2006; Cohn et al., 2004; Coodim, 2001; Curkendall et al., 2004; Eastabrook et al., 2003; Faulkner, Cohn, Remington, & Hyacinth, 2007; Goldberg & Van Exan, 2008; Voruganti et al., 2007).

**Coronary heart disease.** The prevalence and characteristics of risk factors for coronary heart disease (CHD) are examined in two studies with inpatient and outpatient samples in the provinces of Ontario and Saskatchewan (Cohn et al., 2004; Curkendall et al., 2004). Although they used different methodologies, both studies found increased risk for CHD among patients with schizophrenia compared to the general population. Cohn et al. (2004) examined CHD risk in people with chronic schizophrenia using a sample of hospital-based inpatients and outpatients. Their goal was to examine the prevalence and to characterize such risk in patients with chronic schizophrenia and schizoaffective disorder. They compared the prediction of risk in a group of 240 patients to a national sample based on data from the Canadian Heart Health Survey. Cohn et al. also compared rates of metabolic syndrome to currently known rates in the US adult population. Their findings reveal a higher prevalence of obesity, smoking, increased fasting triglycerides, and reduced HDL levels among patients with severe mental illness of both genders compared to the reference population. They also demonstrate that inpatients and outpatients with schizophrenia and schizoaffective disorder are at increased risk for CHD. They report a similar tendency in relation to metabolic syndrome, since the risk of CHD increased significantly as the condition became associated with a high prevalence of cigarette smoking.

Curkendall et al. (2004) examined the incidence and prevalence of cardiovascular disease and mortality in outpatients and compared these to the rates for the general population. Their data were obtained through a retrospective cohort study that included all patients diagnosed with schizophrenia in 1994 and 1995 in Saskatchewan, according to the province's health database. The population studied was composed of clients of

mental health service providers in Saskatchewan, equally distributed between men and women, with a median age of 47 years. The authors conclude that people with schizophrenia are more likely to have a history of cardiovascular and pulmonary disease than the general population. Patients diagnosed with schizophrenia showed higher rates of conditions such as arrhythmia, syncope, heart failure, stroke, and diabetes. Curkendall et al. also found an increased risk of mortality from all causes, as well as cardiovascular mortality. Finally, they conclude that patients with schizophrenia have an increased burden of cardiovascular co-morbidities and mortality. They point out a need for additional studies to clarify whether these conditions are determined by unhealthy lifestyle, are a result of the “social disadvantages of schizophrenia,” or are the natural history of the psychiatric disease. Therefore, consistent with the international literature, both studies conclude that people with schizophrenia have a greater risk for cardiovascular morbidity and mortality than the general population.

**Diabetes.** Voruganti et al. (2007) examined the prevalence of this disturbance in a sample of patients receiving treatment for schizophrenia within a community-based mental health program in southern Ontario, through a research project that reviewed health records. They describe increased rates of dyslipidemia and under-recognition of diabetes among people with schizophrenia. The patients had a long history of schizophrenia or schizoaffective disorder (mean duration  $20.08 \pm 10.08$  years) and 78.9% of them were being treated with second-generation antipsychotics. Furthermore, 3.5% of the participants presented a known history of type 2 diabetes mellitus and 22.8% reported the presence of other chronic co-morbid physical disorders. The researchers found a lack of uniformity in screening procedures for diabetes and other metabolic disorders as well as in risk factors in data-collection practices within the psychiatric care settings studied. They noticed that while 3.5% of this population was already diagnosed with and being treated for diabetes, a significant number of clients in the sample were not yet formally diagnosed as having dysglycemia or diabetes. Within this group, 12.2% were dysglycemic, with a fasting plasma glucose (FPG) at the pre-diabetes level (5.6–6.9 mmol/l), while 31% presented an FPG in the diabetes range ( $\geq 7$  mmol/l). Moreover, among the sample receiving treatment for schizophrenia, 43.2% had evidence of either diabetes or pre-diabetes, and the prevalence rates were significantly higher than the corresponding regional rates reported for the general population.

Voruganti et al. (2007) believe that the dysglycemia reported in this sample might be associated with several non-modifiable and modifiable factors. Among the non-modifiable factors, they identify family history, ethnicity, and older age. As modifiable risk factors, they cite low physical activity, increased weight and body mass index, and independent living

status. The risk factors for diabetes documented in this research were similar to those observed in prior studies, including older age, non-European ethnicity, and family history of diabetes, implying that there are few reasons to propose the adoption of preventive strategies. The authors also report that they did not find a link between dysglycemia and type of antipsychotic drug used. They attribute this finding to population characteristics, since the sample was composed of people with long-term illness who had used both first- and second-generation antipsychotic drugs over the years. Like other authors (Coodim, 2001), Voruganti et al. recognize that such “findings suggest that the pathophysiology of schizophrenia-diabetes co-morbidity is far more complex than originally speculated” (in prior research) (p. 219).

**Obesity.** Coodim (2001) examined whether the risk of being overweight or obese was higher among people with schizophrenia than among the general population. He obtained the weight and height measures of a sample of 189 patients attending a treatment and education program at a university teaching hospital in the province of Manitoba. The findings indicate a significant difference between the sample and the general population. In the sample, 26.7% had a body mass index in the acceptable range, while 48% of Canadians and 43% of Manitobans had an appropriate weight-to-height ratio. The prevalence of obesity in the sample was about 42%, or 3.5 times the Canadian average (12%). Moreover, among those classified as obese in the sample, 11% could be considered morbidly obese and therefore at high risk for premature death. Based on these findings and a subsequent analysis based on sex, Coodim also concludes that women with schizophrenia are more prone to develop obesity than men with schizophrenia.

In Ontario, Faulkner, Cohn, and Remington (2007) studied the relationship between quality of life and measures of body weight. They found significantly higher rates of increased adiposity (5.08), which resulted in limited physical functioning among patients and restricted everyday activities due to physical health problems. Based on this finding, they recommend preventing or treating weight gain among people with schizophrenia as a strategy for improving physical health and quality of life. However, they found no correlation between body weight measures and quality of life related to emotional or mental health. They recommend further research to examine this gap and to determine whether weight-management interventions have an indirect impact on mental health.

**Substance abuse.** The use and abuse of substances among clients with schizophrenia was the aim of three of the studies reviewed (Eastabrook et al., 2003; Goldberg & Van Exan, 2008; Margolese, Malchy, Negrete,



Tempier, & Gill, 2004). All of them conducted surveys with randomized samples.

Margolese et al. (2004) developed an investigation with outpatients attending continuing psychiatric services at the Montreal General Hospital with the aim of characterizing substance use and abuse and psychiatric symptoms among a population of patients meeting DSM-IV diagnostic criteria for schizophrenia or related psychoses (schizoaffective, delusional disorder, psychosis). In their sample of 207 patients, the authors found that 55.1% presented a single diagnosis (SD), while 44.9% had a dual diagnosis (DD) — that is, both schizophrenia or a related psychosis and substance abuse. These findings are similar to those of previous research in Australia, Europe, and the United States. Yet Margolese et al. obtained lower rates of current substance abuse/dependence (14% of the entire sample). They attribute this finding to a different criterion used to define current abuse (the last month, rather than the last 6 months as in other studies). Corroborating the results of other studies, Margolese et al. found that the most frequently abused substances in their sample were nicotine (65.2%) and alcohol (47.3%) and that 20% of the participants had used at least one drug of abuse (one of the previously mentioned drugs) within the previous 30 days. Among the patients with DD, 68.8% presented lifetime substance abuse, while 31.2% met the criteria for diagnosis as having a current substance abuse disorder. The authors observed a greater presence of positive and depressive symptoms and greater vulnerability to using more than one drug among those who were nicotine-dependent than among the SD group. They also noticed that current DD patients showed different rates of non-compliance with medication, which suggests a direct implication of current substance use — for instance, cigarette smoking and its role in increasing positive symptoms of schizophrenia.

Eastbrook et al. (2003) focused on substance abuse among clients of four Assertive Community Treatment (ACT) teams in southeastern Ontario using data from a larger investigation of ACT outcomes. The research goal was to report on the rates of alcohol, drug, and tobacco use among ACT clients. The authors found alcohol and drug abuse rates to be lower in the sample than those reported in the international literature for persons with mental illness and no higher than that reported for the general adult population in Ontario. They attribute these findings to specific sample characteristics, since the sample consisted of individuals from a semi-rural region who had a history of long-term institutionalization. Both of these factors have been associated with lower rates of substance abuse in previous international research.

Eastbrook et al. (2003) emphasize the importance of monitoring prevalence rates and patterns over time as the sociodemographics of the

ACT population and the community change. Their findings on cigarette smoking show much higher smoking rates for the sample than for the general adult population in Canada. The authors also explain that smoking may harm the physical health and economic sustainability of individuals with schizophrenia in the community.

Like Margolese et al. (2004), Eastabrook et al. (2003) attribute the study's limitations to a lack of information on the prevalence of substance abuse among Canadians with severe mental illness, especially among ACT clients, and also to the type of methodology employed.

In the third study, Goldberg and Van Exan (2008) used a longitudinal research design to examine the changes in smoking status over 10 years among a group of patients who attended a well-established community-based psychiatric rehabilitation program in Hamilton, Ontario. The authors were interested in clarifying whether the rates of smoking change in patients with schizophrenia over time, given the lack of prospective longitudinal studies applied to this population and considering that prevalence rates decreased significantly among the general population in the same decade. They found lower rates than those reported in the international literature. Goldberg and Van Exan report that smoking rates among people with schizophrenia tended to follow the reduction in smoking observed in the Canadian population between 1995 and 2005. They also noticed a large decrease in the use of first-generation antipsychotic medication between 1995 and 2005, followed by an expressive increase in the use of atypical antipsychotic drugs beginning in 2006. However, they found no correlation between changes in smoking status and type of antipsychotic medication used. They conclude that a switch to a different antipsychotic medication by itself cannot be associated with smoking cessation. Still, according to the authors, the effects of societal restrictions, intensive community management, and educative programs played a significant role in changes in smoking status.

### ***Canadian Literature Reviews on Co-morbidities***

The Canadian literature reviews on physical health problems affecting people with schizophrenia (Chue, 2004; Cohn & Sernyak, 2006; Faulkner, Cohn, & Remington, 2007; Jobe & Harrow, 2005; Newcomer & Haupt, 2006; Poulin, Cortese, Williams, Wine, & McIntyre, 2005) provide an overview of the authors' concerns and gaps in the literature on physical co-morbidities. These reviews point to gaps in the areas of metabolic disturbances in relation to their onset, prescription of atypical anti-psychotics, and recognition of risk factors for coronary heart disease. Factors involving weight gain and effective interventions for its prevention and treatment are also explored. However, the main feature of the Canadian

literature is its interest in offering guidelines for assessing, monitoring, and managing medical co-morbidities.

Of six articles (Chue, 2004; Cohn & Sernyak, 2006; Faulkner, Cohn, & Remington, 2007; Jobe & Harrow, 2005; Newcomer & Haupt, 2006; Poulin et al., 2005), three examine a significant body of international literature related to the hypothesis that some anti-psychotic medication may be associated with increased risk for weight gain, type 2 diabetes, insulin resistance, hyperglycemia, and dyslipidemia (Chue, 2004; Cohn & Sernyak, 2006; Newcomer & Haupt, 2006). The articles found that, in general, all anti-psychotic medications are related to changes in body weight, but that some are more associated with this symptom than others. For instance, patients who used amisulpride, ziprasidone, and aripiprazole showed less weight gain than those who used clozapine and olanzapine (Cohn & Sernyak, 2006; Faulkner, Cohn, & Remington, 2007; Newcomer & Haupt, 2006).

All of these studies refer to the need to clarify the various mechanisms by which such effects are produced. For example, although there is evidence indicating that patients presented with diabetes more frequently when they took olanzapine and clozapine than when they took other atypical anti-psychotics, it is unclear whether that condition resulted from intrinsic liability differences within these medications (Poulin et al., 2005). It also remains unknown which mechanisms contribute to the increase in type 2 diabetes among those who take antipsychotic drugs and who is more likely to be at risk for developing diabetes (Poulin et al., 2005).

These authors highlight the need for clinicians to adopt structured and systematic procedures for the early detection of metabolic disturbances among clients taking antipsychotic medication. However, they observe that these interventions are possible only if mental health professionals recognize the need for and assume responsibility for monitoring clients or clearly defining to whom to delegate the laboratorial and clinical evaluation of metabolic disturbances, despite the lack of financial resources to address patients' physical needs, particularly in community mental health facilities. Another element acknowledged by these authors is the de-medicalization of psychiatry, which left most psychiatrists uncomfortable taking a leadership role in clinical areas where they "may feel that they are no longer sufficiently knowledgeable" (Cohn & Sernyak, 2006, p. 499).

For these reasons, the authors encourage mental health professionals to change the status quo by dealing with the resources available at the local level. They emphasize that if this goal is to be achieved, psychiatrists will have to collaborate with family physicians, dietitians, occupational

therapists, and diabetes specialists. It is also worth noting that of the six articles, only one (Cohn & Sernyak, 2006) mentions problems related to the delivery of mental health care, the organization of health services, and professional education as barriers, while the other five refer exclusively to individual and local issues, as if professionals and centres could meet the complex challenges of continuity of mental health care at the municipal and provincial levels.

Finally, there is consensus that it is unacceptable to not monitor patient medical issues under the assumption that mental health professionals are not prepared to do so. While acknowledging that there are several limitations in our current knowledge on this issue, these authors recommend the adoption of guidelines for assessing, monitoring, and managing more appropriate patient follow-up (Cohn & Sernyak, 2006; Faulkner, Cohn, & Remington, 2007; Poulin et al., 2005).

### **Discussion**

The study was designed to provide a more comprehensive view of how physical health problems affect people living with schizophrenia in Canada. This critical literature review has shown that medical co-morbidities in schizophrenia is a theme seldom addressed by Canadian researchers and that, given the diverse terminology used to describe this phenomenon, it is difficult to identify such literature through database searches. One of the limitations of the study is the possibility that we missed articles that did not use keywords commonly employed in the English-language literature.

Researchers refer to several factors that may explain the scarcity of studies in the face of consensus on the relevance of this theme. In methodological terms, most of the authors refer to methodological limitations, such as inadequate sample size to produce generalizable findings, and design problems, such as the use of different methods and/or instruments for assessing similar populations.

The studies report correlations between schizophrenia and risk factors for pathologies such as cardiovascular disease, diabetes, obesity, and substance abuse, and they conclude that people with schizophrenia are more affected by these morbidities than the general population. However, researchers have not been able to determine whether the high prevalence of such diseases is caused by lifestyle, the natural history of the disease, or side effects of the pharmacological treatments adopted.

Given the lack of definitive answers, authors argue that the studies did not support the adoption of prescriptive educative or preventive interventions for risk factors related to coronary heart disease or diabetes

(Faukner, Cohn, & Remington, 2007). Nonetheless, some authors cite the importance of assessing and monitoring patients with schizophrenia as a strategy for early detection of physical problems (Chue, 2004; Cohn et al., 2004; Goldberg & Van Exan, 2008).

We propose moving into the realm of clinical qualitative research to study clients' perceptions of different therapeutic regimes, contrasting groups of patients using different medications, and their assessment of physical symptoms. Another means of producing clinically relevant information might be to conduct case studies of how people with schizophrenia manage their co-morbidities in everyday life, exploring implications for health promotion and disease prevention.

Despite limited evidence supporting nursing interventions in this area, we propose that, based on the articles reviewed, there are several practices that could be adopted to enhance the quality of patient care. We also propose some more general strategies based on professional standards of practice and ethical principles that could act in synergy with evidence-based practices (see Table 1) (Canadian Nurses Association, 2003, 2007).

**Table 1** *Enhanced Nursing Practice for People Living With Schizophrenia*

**Individual and Collective Nursing Practices Derived From Scientific Publications**

- Routinely assess and monitor for symptoms of the most prevalent risk factors and diseases.
- Support active living and physical activity and prevent substance abuse — or, when not possible to prevent, promote harm-reduction strategies.
- Educate at the undergraduate and graduate levels, as well as in continuing education in work settings, to ensure competent clinical assessment of co-morbidities.

**Individual and Collective Nursing Practices Derived From Professional Standards and Ethical Principles**

- Educate/support patients in navigating the health-care system for physical care.
- Propose interventions that take into account clients' special needs, mainly regarding diet, housekeeping, and budget management.
- Participate in shared care with psychiatrists, family physicians, and general practitioners.
- Advocate on behalf of patients for quality and comprehensive care.
- In partnership with other professionals, critically analyze structural conditions that disadvantage patients in accessing quality care and quality living conditions and propose alternatives.

We believe that nurses, through associations and professional groups, should collectively promote education- and practice-based changes in order to better serve patients living with schizophrenia in Canada. At the same time, we believe that more nurses should engage in research in this field, to increase information regarding nursing care and support.

The Cartesian mind-body division, which is still heavily enmeshed in nursing education and the education systems of most health disciplines, is clearly insufficient to prepare professionals to address the complexities of care for patients living with schizophrenia. More specifically, this division acts as a barrier to the delivery of high-quality care, given that it perpetuates the separation between psychiatry and mental health (mind issues) and “clinical subjects” (usually represented in the study of physical pathologies).

With respect to the health-care system, it is alarming that, of the articles reviewed, only Cohn et al. (2004) refer to the lack of an integrated health-care system as a barrier to the implementation of comprehensive care. Other studies refer to individual professionals, such as psychiatrists and general practitioners, as responsible for finding solutions. The same kind of individual analysis is used to describe patients’ weight gain, poor diet, and physical inactivity as lifestyle choices rather than as consequences of structural conditions they may not be able to control. Lifestyle could also be considered a symptom — a social one — of living with schizophrenia. Such alternative understandings can help to challenge interventions that are built on the assumptions of patients’ agency and ability to provide self-care.

Despite the limited contribution Canadian studies can offer so far, they do show clearly that professionals are inadequately prepared to address co-morbidities, health-care practices that neglect physical disease, the organization of health-care systems that further disadvantage this vulnerable population, and customary social services related to housing, food, and support systems. We recommend that more studies be conducted. Some could use larger samples to address the correlation of disease, risk factors, and medication use, while ethnographies and case studies could contribute to our understanding of the highly contextual experiences of care and access to treatment. The study of successful experiences of comprehensive care could also contribute valuable information to the Canadian health-care system as a whole.

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