Sex, Gender and Measures of Mental Health
by Cara Tannenbaum

Introduction
In 2003, the Bureau of Women’s Health and Gender Analysis sent out a call to Canadian researchers to respond to a Health Canada Health Policy Research Program aimed at informing policy on the use of new gender-sensitive health indicators in future gender equality health planning initiatives. At the same time, Senator Michael Kirby was leading a Canadian Senate Committee on the re-examination of Canada’s approach to mental health and illness.[1,2] Our research team, a 12 member national advisory board for the Health Canada Health Policy Research Program on Gender Sensitive Health Indicators, appraised the agendas of these two programmes and asked the following questions:

How can we hope to develop a national mental health strategy without valid and reliable indicators of the population’s mental health status and a clearer understanding of whether women and men have different mental health needs? More importantly, how will we be able to evaluate the effectiveness of the new mental health programs put in place without indicators that can adequately monitor and track women and men’s responses to these programs and policies?

We subsequently applied for the project and received funding to assess different evidence from existing survey and administrative databases as potentially useful gender-sensitive mental health indicators. Our goal was to illustrate that data that had already been collected could be used as a rich source of gendered information, both at present, for developing and implementing programs according to gender and in the future for monitoring and tracking their outcomes. This case study highlights the potential as well as the pitfalls of studying gender using quantitative data from large national datasets.

Dis-ease or Disease?
A major challenge in this project was deciding whether to evaluate existing indicators that measure full-blown mental health disorders or to adopt a preventive framework whereby indicators measure determinants of mental health, thereby allowing the health system to respond to persons with “dis-ease” before disease is triggered. Using sex-disaggregated data from 15,889 men and 19,347 women aged 18 years and older who participated in the 2002 Canadian Community Health Survey on Mental Health and Well-being (CCHS cycle 1.2), we observed similar rates of mental health disorders for women and men, with 11 percent of women compared to 10 percent of men experiencing at least one mental health disorder during a 1-year period (see Figure 1).[3]

In absolute terms, this finding is a relatively small difference. However, if we look more closely, we see that the spectrum of mental health problems differs according to sex (see Figure 1). For example, women report more anxiety and...
depressive disorders (10 percent) in comparison to men (6 percent). However, women report much lower rates of substance abuse than men (1 percent vs. 4 percent). This distinction in mental health disorders is extremely important as diagnosis and treatment as well as resources and health education messages, may need to be adjusted to meet the differing needs and responses of women and men.

Figure 1. Percentage of Men and Women Reporting a Mental Health Disorder Within the Previous 12 months.

Source: CCHS cycle 1.2 (2002)

Looking at distress as a precursor of mental illness, we used the same dataset to plot distress scores and then calculated scores for women and men according to age. The distress scale consisted of 10 questions on non-specific psychological distress that a person may experience in the most recent four-week period. The higher the score the greater the distress (min score = 0, max score = 40).\(^a\) We used the highest quartile of distress scores to define high levels of distress (see Figure 2).

At all ages, women reported higher levels of distress than men. The mean distress scores were overall higher for women than men, and in each age group, the proportion of women in the highest quartile of distress was higher than for men. The highest levels of distress were noted in the younger age groups, but the gender gap was most significant in older adults. We would have liked to have investigated the reasons behind this large discrepancy in distress for older adults, but were limited by the availability of data collected in the survey. For instance, it would have been interesting to look at issues of widowhood, housing and higher rates of disability among older women as correlates and possible root causes of distress.

**Determinants of Distress**

Fortunately, some data addressing possible root causes of distress were available from the CCHS dataset and allowed us to investigate the relationships between distress and social support, income, employment status and education for women and men. We found that lower levels of social support were associated with higher levels of distress, and that at every level of social support, distress levels were more pronounced for women (see Figure 3).
We also found that women were more likely to live within the lowest or lower middle income level (12 percent vs. 8 percent of men). Lower income levels were also associated with higher levels of distress; with women experiencing higher levels of distress than men for any given income level (see Figure 4).

Employment status was defined in the CCHS as having worked in the last week and distinguished those who were permanently unable to work. The highest rates of distress were observed among the unemployed, with men experiencing higher levels of distress than women in this category. These differences may be associated with gendered expectations that place considerable pressure on men
to earn a livelihood and support their families. Among those who were employed or retired, a greater proportion of women compared to men were distressed and this gap was especially pronounced among retired persons (see Figure 5).

**Figure 5. Association of Highest Distress by Employment Status**

Lower educational attainment was likewise associated with higher levels of distress, especially for women (see Figure 6). The gender gap decreased among those who attained a university degree.

**Figure 6. Association of Highest Level of Distress by Educational Level Achieved**

In these analyses of distress, we begin to see the factors that contribute to greater distress and, in turn, mental health concerns among women. This is important information when it comes to understanding mental health needs and planning services. Distress indicators thus provide complementary information that helps to explain basic sex differences in population statistics.
Four Different Mental Health Indicators

Given the large scope of mental illness, and the importance of distress as a precursor, we initially decided to measure the prevalence of depression and anxiety only in adults, rather than lump the entire gamut of mental illness together. Given that very few surveys measure distress per se, it is not possible to use distress as an indicator on a large scale. A more common measure is mental health symptoms, as defined by the Diagnostic and Statistical Manual (DSM) IV criteria for depressive and anxiety disorders, so we used data from existing databases to test the usefulness of this measure.

We chose to measure mental health symptom prevalence in four methodologically different ways: (1) by looking at self-reported sub-threshold mental health symptoms, (2) self-reported full diagnostic disorders, (3) self-reported use of psychotropic medications for treatment of these disorders and (4) physicians’ billings for mental health visits. The prevalence of sub-threshold mental health symptoms, namely the occurrence of some but not all criteria for a mental health disorder, was used as a “proxy” or substitute indicator for distress.[5]

The CCHS database for Canada as a whole, as well as the medical services claims database recording patient visits to physicians in the province of Quebec only (RAMQ), was used for these analyses (see Figure 7). Because medical claims fall under provincial legislation, for convenience we selected only one province for the physician billings analysis. It will be important to validate these findings in other provinces in the future.

Figure 7. Four Indicators of Depression and Anxiety in Men and Women Aged 18 Years and Older, in Canada and in Quebec (Billing Data Only)
The lowest estimate of depression and anxiety, 8 percent of women and 4 percent of men, comes from self-reported use of medications for depression and anxiety. Intermediate estimates are based on the proportion of the population who reported symptoms that fulfilled the DSM IV diagnostic criteria for depression or anxiety. The highest estimates are based on the percent of the population with a sub-threshold diagnosis.

**Gender Bias in Interpreting the Indicators**

Rather than leading us to conclusions, the analysis raised many questions: What is the BEST way to estimate mental health? Which is the REAL estimate? On which indicator should we base our policies and programs? Before answering these questions, however, we need to consider the ways in which women and men identify mental health issues, make sense of and decide to treat depressive and anxiety symptoms. We know, for instance, that given the same prevalence of symptoms, women are more open than men to seeking help from a health care professional and to accept – or be prescribed – pharmacological treatment. For example, according to CCHS data, only 6 percent of men compared to 12 percent of women in the entire population reported going to see a physician for their mental health complaints. Furthermore, if we look at Figure 8, we can see that regardless of symptoms that meet DSM IV criteria, women experiencing any given level of distress are more inclined than men to take medications. We know that women are more likely than men to be prescribed medication to treat mental health issues.[6,7] Whether women ask for more medications, or physicians prescribe medications more for women with depression and anxiety, is not entirely clear.[8,9]

**Figure 8. Medication Use in Women and Men by level of Distress**

![Figure 8. Medication Use in Women and Men by level of Distress](image_url)
It is also well-recognized that men, and possibly their physicians, are more reluctant to report mental health diagnoses than women because of the stigma attached to mental illness.\textsuperscript{10,11} Without taking this into account, we do not know whether women are over-reporting symptoms or men are under-reporting them or if there is a real difference. Depending on the interpretation chosen, planning for services could mean that there are too many directed to women or too few directed to men.

**Conclusion**

Our results disclose a complicated tale of differential symptom reporting, service utilization and drug prescribing for mental health according to sex and gender. Designing and appropriately implementing improved mental health policies and programs will require careful consideration of these differences as well as a thorough understanding of how measurement decisions affect symptom prevalence across the spectrum of care. In terms of choosing the best gender-sensitive health indicator for mental health, it all depends on the questions being asked. That is, do we measure only self-reported mental illness or depression? Do we measure only who is prescribed medications for mental illnesses? Can we take into account how women and men report and cope with mental distress at different stages of their lives? The answers also need to take into account the socio-economic determinants of health that affect women and men differently.

For instance, besides the associations we have shown here between high distress and income, employment, education level, social supports, other recent work has shown that women and men report different levels of time stress, related to the amount of unpaid and domestic work they do.\textsuperscript{8,9,12} Further research is also needed to understand the factors underlying presentations of depression and anxiety among women and men. One approach to achieving that understanding is through refining and expanding existing databases to capture a wider and more nuanced range of information that can then be compared and contrasted in a thorough sex- and gender-based analysis.

**References**


