

# The quality of cardiovascular disease and diabetes health care for older adults with serious mental illness: A review of comparative studies



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## Background

The prevalence of cardiovascular disease (CVD) and diabetes in adults with serious mental illness (SMI) may exceed that of the general population by at least two times<sup>1</sup>, and prevalence of these disorders has been demonstrated to be even greater in older adult SMI populations<sup>2</sup>.

Use of anti-psychotic medications and unhealthy lifestyle behaviours, including increased prevalence of smoking, drug and alcohol abuse, low physical activity, and poor diet, may contribute to the increased rates of CVD and diabetes in those with mental illness<sup>3</sup>. However, it appears that the health care for physical disorders provided to individuals with SMI may not be equitable to that provided to the general population<sup>4</sup>, and if common to CVD and diabetes care, this disparity may represent a major contributor to the increased prevalence of these disorders amongst the older adult SMI population.

## Aim

The aim of this literature review was to identify differences in CVD and diabetes care in older adults with and without SMI, using evidence from comparative studies.

## Methods

There is a wide body of literature examining co-morbid SMI and physical illness prevalence yet there are no standardised keywords to describe health care inequalities<sup>5</sup>, making systematic searches on this topic difficult. As a result, relevant articles were initially identified from the authors' personal libraries and this literature was supplemented by a review of each bibliography.

Studies were included if they examined differences in the quality of care for CVD- and diabetes-related measures between patients with and without SMI. Study populations were considered representative of older adults if the mean age was >50 years. SMI was defined as the presence of clinically diagnosed anxiety and bipolar disorders, major depression, schizophrenia or other non-affective psychoses<sup>6</sup>. The relevant sources were subsequently found to utilise data from population-based record linkage, administrative claims, or hospital in-patient studies within the United States (US).

## Cardiovascular disease

Table 1 demonstrates that CVD care for older adults with SMI is often equitable to that of those without SMI within the US Veteran's Affairs (VA) health care system. For instance, comparable odds for coronary artery bypass grafts (CABG) and medication prescription has been observed in patients admitted for acute myocardial infarction (MI), with only slightly reduced odds for angiography in SMI patients<sup>7</sup>. Exercise and nutrition counselling was only slightly lower and hypertension control was similar in other VA studies, although odds for hyperlipidaemia screening were around 40% lower in older adults with SMI<sup>8,9</sup>.

Table 1. Summary of studies comparing CVD and diabetes care in US older adult SMI and non-SMI populations.

Study	Setting	Study period	Study population	Main findings*
Petersen et al., 2003 <sup>7</sup>	81 VA hospitals	1994-5	Males admitted for acute MI; N = 4340 (SMI = 20%)	↓ Angiography (OR = 0.90) ↔ CABG ↔ Medications
Desai et al., 2002 <sup>8</sup>	147 VA medical centres	1998-9	Patients with hypertension and/or obesity with ≥ 3 visits; N = 90240 (male = 85%; SMI = 30%)	↓ exercise and nutrition counselling (by 2 - 4%)
Kilbourne et al., 2008 <sup>9</sup>	National sample of VA patients	2004-5	N = 24016 (male = 97%; SMI = 8%; depression = 23%)	↔ hypertension control ↓ hyperlipidaemia screening (OR = 0.58) ↔ HbA1C determination ↓ foot sensory examination (OR = 0.68) ↓ retina examination (OR = 0.65) ↓ renal testing (OR = 0.64)
Druss et al., 2000 <sup>10</sup>	Non-government hospitals	1994-5	Patients admitted for acute MI aged ≥ 65 yrs; N = 113653 (male = 52%; SMI = 5%)	↓ CABG (RR = 0.68) ↓ PTCA (RR = 0.75) ↓ cardiac catheterisation (RR = 0.72)
Druss et al., 2001 <sup>11</sup>	Non-government hospitals	1994-5	Patients admitted for acute MI aged ≥ 65 yrs; N = 88241 (male = 52%; SMI = 5%)	↓ reperfusion therapy (RR = 0.74) ↓ aspirin (RR = 0.91) ↓ beta blockers (RR = 0.90) ↓ ACEI (RR = 0.88)
Rathore et al., 2008 <sup>12</sup>	Non-government hospitals	1998-2001	Patients with heart failure; N = 53314 (male = 41%; SMI = 17%)	↓ LVEF evaluation (OR = 0.81) ↔ ACEI
Krein et al., 2006 <sup>13</sup>	National sample of VA patients	1997-8	Patients with diabetes; N = 36546 (male = 97%; SMI = 50%)	↔ HbA1C determination ↔ LDL and total cholesterol measurements ↔ foot inspection ↔ pedal pulses examination ↔ HbA1C determination
Desai et al., 2002 <sup>14</sup>	National sample of VA patients	1998-9	Patients with diabetes; N = 38020 (male = 89%; SMI = 28%)	↓ foot sensory examination (substance abuse; by 3%) ↓ retina examination (substance abuse; by 7%)
Goldberg et al., 2007 <sup>15</sup>	Community-based clinics	1999-2002	Patients with diabetes; N = 300 (male = 48%; SMI = 67%)	↔ HbA1C determination ↓ eye examination (OR = 0.26) ↓ lipid profiles (OR = 0.26) ↓ diabetes education (OR = 0.36)

Abbreviations: VA = Veteran's Affairs; MI = myocardial infarction; SMI = serious mental illness; CABG = coronary artery bypass graft; PTCA = percutaneous transluminal coronary angioplasty; ACEI = angiotensin-converting enzyme inhibitors; LVEF = left ventricular ejection fraction; HbA1C = haemoglobin A1C; LDL = low-density lipoprotein

\* ↓ denotes decreased care compared to controls; ↔ denotes similar care to controls; ↑ denotes improved care compared to controls

In contrast, substantial disparities in CVD health care for older adults have been reported in the US non-government hospital system. SMI patients admitted for acute MI or heart failure are 20 – 30% less likely to undergo CABG, percutaneous transluminal coronary angioplasty, cardiac catheterisation, reperfusion therapy, and left ventricular ejection fraction evaluation, and may have slightly reduced odds for prescription of aspirin, beta blockers, and angiotensin-converting enzyme inhibitors<sup>10-12</sup>. Importantly, patients with any mental illness had a 20% increased 1-year mortality risk following acute MI compared to those without mental illness, but this association was no longer significant after adjusting for quality of care measures<sup>11</sup>.

## Diabetes

As reported in Table 1, a study which compared care within the VA health system for older adults with co-occurring SMI and diabetes to those with diabetes only revealed similar numbers of tests for blood glucose (HbA1C) and cholesterol<sup>13</sup>. Rates for secondary care were also similar between SMI and non-SMI groups with diabetes, with only small reductions in the number of foot sensory and retina examinations for individuals with substance use disorders<sup>14</sup>. More recently though, US veterans with SMI were no less likely than veterans without SMI to have a HbA1C value >9% or not recorded, but were around 35% less likely to receive foot sensory exams, retinal exams, or renal tests<sup>9</sup>. Reduced test numbers in this study may be attributable to the fact that participants did not have a previous diagnosis of diabetes.

External to the VA health system, in a study of community-based clinics, likelihood for HbA1C examinations in people with type II diabetes and SMI was similar, although the reduced odds for undergoing this test approached significance ( $P = 0.053$ ). Patients with SMI were over 60% less likely to receive all of six recommended measures, particularly eye and lipid tests, and were also more than 60% less likely to be provided diabetes education, including glucose self-monitoring<sup>15</sup>.

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## Conclusions

Older adults with SMI may be afforded poorer primary and secondary medical care for CVD and diabetes than non-SMI counterparts. The explanation for the inequitable health care experienced by individuals living with SMI is undoubtedly multi-factorial. At the patient level, stigma and low socioeconomic status are common barriers faced in accessing care<sup>4</sup>.

At the systemic level, the prevailing distinction between physical and mental health care may contribute to reduced quality of physical health care in older adults with SMI<sup>16</sup>. It is therefore of note that several studies conducted within the US VA health care system have reported comparable levels for a number of indicators of quality of care for individuals with and without SMI. It is possible that the unique integration of primary and mental health care, both on a systemic and physical level, within the VA health care service results in improved CVD and diabetes care in patients with SMI<sup>13</sup>.

The excess mortality in older adult SMI populations may be largely explained by poor quality of health care<sup>11</sup>. This finding highlights the urgent requirement for policy and practice change to address inequalities in health care for those with SMI, and we believe integration of services may represent an effective target for intervention.

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