Health Service Research

Identification and treatment of depression of older adults in primary care: findings from the São Paulo Ageing and Health Study

Marcia Scazufca, Paulo Menezes, Karen Tabb, Rachel Kester, Wulf Rössler and Hsiang Huang

Abstract

Background. Depression, diabetes and hypertension are major contributors to the global burden of disease; however, the majority of research on depression and co-morbid conditions originates in high-income countries.

Objective. This study examines the depression identification rate and compares treatment rates of depression with those of diabetes and hypertension among elderly individuals served in primary care through the Family Health Program (FHP) in São Paulo, Brazil.

Method. A total of 1558 São Paulo Ageing and Health Study participants (low-income adults ≥65 years old living in São Paulo) registered in the FHP were included for analysis. Chart review was performed for participants with an International Classification of Diseases, 10th edition (ICD-10) depression diagnosis (from survey interview) to verify if depression was recorded for these individuals. Depression, diabetes and hypertension treatment were assessed based on clinical assessments and medication checks.

Results. Seventy-three participants (4.8%) had ICD-10 depression, 344 (23.2%) had confirmed diabetes and 1207 (79.3%) had confirmed hypertension. The proportion of those identified with depression by medical chart review (n = 63 for individuals whose chart could be found) was 4.8% (n = 3). Nine individuals (12.3%) with ICD-10 depression were treated. Rates of diabetes and hypertension treatment were 72.4% and 77.4%, respectively.

Conclusion. Levels of treatment of depression in older adults receiving care in the FHP is very low compared to treatment rates of diabetes and hypertension. Collaborative care effectiveness trials for the treatment of depression in the FHP are needed to improve the quality of depression care for this population.

Key words. Aged, Brazil, depression, depressive disorder, patient-centered care, primary health care.

Introduction

Brazil is a Latin American country undergoing a socio-demographic transition, with one of the fastest ageing populations in the world. By 2050, the population of those aged above 65 years old is projected to grow from <20 million in 2010 to ~65 million (1). Similar to other Latin American countries, complex epidemiologic changes
have been occurring in the region due, in part, to the ageing population, urbanization and changes in lifestyle. Non-communicable diseases, such as diabetes and hypertension, are increasing in Latin American countries, while mortality rates from communicable diseases, such as malaria, tuberculosis and HIV, are decreasing in higher-income Latin American countries such as Brazil (2). Within the Latin American countries, cardiovascular disease is now the most prevalent non-communicable disease while mental illness is responsible for the greatest proportion of non-communicable disease disability adjusted life years (3). Diabetes and hypertension have documented adult prevalence rates as high as 16% and 29%, respectively, in low- and middle-income countries (LAMICs) (4), but little research has focused on co-morbid conditions such as depression. In high-income countries, older adults with hypertension or diabetes are more likely to also have depression (5,6). A recent meta-analysis on the global burden of co-morbid depression and diabetes suggested that both conditions must be treated conjointly to reduce the burden of disease (7). Among older individuals, depression is a highly prevalent and debilitating chronic condition that leads to higher health care utilization (8–11).

Although many older individuals with depression are seen in primary care settings, numerous barriers to care at the patient, provider and health services levels contribute to depression being undetected and undertreated. At the patient level, older adults may not seek care for depression due to lack understanding about mental illness and available treatment options. At the provider level, barriers include lack of time, limited awareness of treatment options, skills, or confidence to correctly diagnose and treat depression in the elderly. At the health services level, geographical barriers can be difficult for the elderly who may have trouble with transportation. Furthermore, negative attitudes/stigma against depression may also contribute to lack of identification and inadequate depression treatment among older individuals (12). Given the important barriers across levels of the health care system, it is imperative to identify system level approaches to improve care for patients with depression.

Recent re-organization of the public health system in Brazil introduced a new model of primary care, the Family Health Program (FHP) with the goal of improving access to primary care. FHP was initiated in 1994 and has expanded across Brazil over the past 2 decades to become the world's largest community-based primary care health program, present in 85% of municipalities and covering 98 million people as of 2010 (13). The FHP focuses on family units rather than individuals and places emphasis on increasing outreach activities, community participation and prevention. FHP teams (each team consisting of one physician, one nurse, two nursing assistants and four to six community health workers) are based in primary care and are responsible for catchment areas of ~1000 households (or 4000 individuals). Each team is responsible for enrolling and monitoring the health status of their catchment area population, providing health promotion and education, offering primary care services and making referrals to higher levels of care as needed. Community health workers and/or other team members visit all households at least once monthly although patients can have consultations with physicians and nurses in the FHP clinic whenever needed.

Implementation of the FHP, including the Hiperdia program (a secondary prevention program aimed to improve hypertension and diabetes care), has been associated with a reduction in mortality from cardiovascular disease (14); however, less is known about the quality of depression treatment in the FHP. The purpose of this study is to examine the depression identification rate and compare treatment rates of depression with the more commonly treated non-communicable diseases diabetes and hypertension among elderly individuals served in primary care through the FHP in São Paulo, Brazil. We hypothesize that individuals with depression will have lower rates of treatment compared to those with diabetes and/or hypertension.

Methods

Study setting and sample

This study is based on data from the ‘São Paulo Ageing & Health Study’, a population-based study carried out with all eligible participants 65 years old living in São Paulo, Brazil's largest city. São Paulo has a population of 11.2 million people according to the 2010 census, and the population aged 60 years or over has exceeded 1.2 million inhabitants (15). Full details regarding the study population, assessments and procedures have been previously reported (16).

Participants were identified through in-person visits to households in the area defined for the study. Institutionalized individuals were not included. Between 2003 and 2005, of the 2266 older adults invited, 2072 (91.4%) consented to participate and were interviewed by trained mental health professionals. Among these 2072 individuals, 1558 (75.2%) were registered in the FHP and included in this study. Participants provided written informed consent. Those deemed unable to consent as well as those who were illiterate were recruited on the basis of consent signed by the informant or verbal consent. All study procedures were approved by the Brazilian National Committee for Ethics and Research.

Measurements

Point prevalence of major depressive disorder was determined according to the International Classification of Diseases, 10th edition (ICD-10) and was based on items of the Geriatric Mental State (GMS) (17) and the Neuropsychiatric Inventory (18). The GMS is a semi-structured assessment of mental disorders among older adults and has been validated in both developed and developing settings, including São Paulo, Brazil (19). Diabetes mellitus was assessed by fasting plasma glucose ≥126 mg/dl or current use of oral hypoglycaemic agents or insulin (20). Hypertension was defined as diastolic pressure ≥90 mmHg or systolic pressure ≥140 mmHg on standardized measurement, or current treatment with anti-hypertensives (21). A nurse assistant performed the physical examination (phlebotomy and blood pressure measurement). Use of anti-diabetic or anti-hypertensive medication was checked when research assistants assessed participants at home. The following information was also collected through interviews: age, gender, marital status, monthly income and occupation.

FHP units keep updated registries and medical records of all their patients. Documentation is made in the medical records when patients are seen by either a nurse or family physician. Among participants who had ICD-10 depression (as assessed by our survey) and reported having had an FHP visit over the past 12 months, medical records were reviewed by a psychiatrist using an abstraction form developed for the study. Depression cases were considered ‘identified’ if depression was on the diagnosis list or in the nurses’/physician’s notes for the 12 months prior to the interview. Cases were considered ‘unidentified’ if depression documentation was not made in the medical chart during the year prior to the interview. Treatment indicators for the chronic conditions were based on the following: (i) anti-depressants for depression, (ii) oral hypoglycaemics or insulin for diabetes and (iii) anti-hypertensives for hypertension.
Results

Table 1 provides the sample characteristics (n = 1558). The participants ranged from 65 to >80 years in age. The majority of participants were female (60.3%) and had ≤3 years education (89.6%). Included in Table 1 are the prevalence rates of depression, diabetes and hypertension. Seventy-three participants (4.8%) had depression, 344 (23.2%) had diabetes and 1207 (79.3%) had hypertension. Among those with depression, 19 (28.4%) had diabetes and 61 (88.4%) had hypertension. Table 2 shows the treatment rates for the three chronic conditions. Among depressed individuals whose medical record could be found (n = 63), only 3 (4.8%) had a depression diagnosis listed in the medical record. Among all the participants diagnosed by the survey as having ICD-10 depression, only 12.3% received an anti-depressant medication, while 72.4% of participants with diabetes received treatment and 77.4% of participants with hypertension received treatment. Nine individuals with depression who did not have a depression diagnosis listed in the medical record received anti-depressants. All nine of these individuals were seen by either a private physician or hospital physician in the 3 months prior to taking the survey.

In the USA, the recognition of depression in older adults with depression and diabetes has been found to be 51% in a primary care population-based sample (23). Furthermore, in this same sample, about 43% had exposure to depression treatment in the past 12 months (24). In a recent study of Medicare Advantage beneficiaries in the USA, 65% of elderly individuals with ICD-9 depression diagnosis based on claims data received treatment (25). Results from our study showed a substantially lower detection as well as treatment rate for depression in FHP units in São Paulo. Several barriers may help explain the low proportion of depression case detection and treatment in our study. First, health care professionals have difficulty in recognizing cases of depression (26) without the use of diagnostic or standardized screening instruments. It should be noted that the depression treatment program in Chile was so effective that it became a part of the national primary care system (22). The development of primary care-based interventions to treat depression in Brazil has the potential to drastically improve health outcomes for older adults.

Discussion

Our study examined the rates of depression identification and compared depression treatment rates to those of diabetes and hypertension among elderly Brazilian individuals registered in the FHP. We found a very low rate of depression detection (4.8%) by health care providers. Furthermore, among those with depressive disorders, treatment rates were low (12%) when compared to primary care patients with diabetes and hypertension in the three FHP clinics. Low treatment rates in LAMICs have been documented and are attributed to the lack of evidence of effectiveness, dearth of resources and a hesitation from the health care system to scale up interventions for depression (22). Primary care interventions to provide treatment for depression have proven to be cost-effective and efficacious in Chile. In fact, the depression treatment program in Chile was so effective that it became a part of the national primary care system (22). The development of primary care-based interventions to treat depression in Brazil has the potential to drastically improve health outcomes for older adults.

Table 1. Characteristics of São Paulo Ageing and Health Study sample and prevalence of depression, diabetes and hypertension, São Paulo, Brazil, 2003–05

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Total (n = 1558)</th>
<th>Depression (n = 73, 4.8%)</th>
<th>Diabetes (n = 344, 23.2%)</th>
<th>Hypertension (n = 1207, 79.3%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>65–69</td>
<td>669 (42.9%)</td>
<td>28 (4.2%)</td>
<td>144 (22.7%)</td>
<td>501 (76.5%)</td>
</tr>
<tr>
<td>70–74</td>
<td>405 (26.0%)</td>
<td>12 (3.0%)</td>
<td>86 (22.2%)</td>
<td>313 (79.6%)</td>
</tr>
<tr>
<td>75–79</td>
<td>271 (17.4%)</td>
<td>18 (6.9%)</td>
<td>68 (26.3%)</td>
<td>213 (79.8%)</td>
</tr>
<tr>
<td>80 or more</td>
<td>213 (13.7%)</td>
<td>15 (7.6%)</td>
<td>46 (22.6%)</td>
<td>180 (87.0%)</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>939 (60.3%)</td>
<td>51 (5.6%)</td>
<td>212 (23.6%)</td>
<td>744 (80.9%)</td>
</tr>
<tr>
<td>Male</td>
<td>619 (39.7%)</td>
<td>22 (3.7%)</td>
<td>132 (22.3%)</td>
<td>463 (76.9%)</td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>837 (53.7%)</td>
<td>42 (5.2%)</td>
<td>180 (22.4%)</td>
<td>659 (80.4%)</td>
</tr>
<tr>
<td>Partnered</td>
<td>721 (46.3%)</td>
<td>31 (4.4%)</td>
<td>164 (24.1%)</td>
<td>548 (78.1%)</td>
</tr>
<tr>
<td>Education (years)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0–3</td>
<td>1396 (89.6%)</td>
<td>68 (5.0%)</td>
<td>306 (22.9%)</td>
<td>1096 (80.2%)</td>
</tr>
<tr>
<td>4 or more</td>
<td>162 (10.4%)</td>
<td>5 (3.1%)</td>
<td>38 (25.7%)</td>
<td>111 (71.6%)</td>
</tr>
<tr>
<td>Monthly income (US$)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0–85</td>
<td>1196 (76.8%)</td>
<td>54 (4.6%)</td>
<td>255 (22.5%)</td>
<td>929 (79.7%)</td>
</tr>
<tr>
<td>≥85</td>
<td>362 (23.2%)</td>
<td>19 (5.4%)</td>
<td>89 (25.6%)</td>
<td>278 (77.9%)</td>
</tr>
<tr>
<td>Occupation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skilled</td>
<td>890 (57.2%)</td>
<td>36 (4.1%)</td>
<td>189 (22.4%)</td>
<td>681 (78.5%)</td>
</tr>
<tr>
<td>Unskilled</td>
<td>667 (42.8%)</td>
<td>37 (5.7%)</td>
<td>155 (24.3%)</td>
<td>525 (80.4%)</td>
</tr>
<tr>
<td>Depression (ICD-10)</td>
<td>n/a</td>
<td>19 (28.4%)</td>
<td>-</td>
<td>61 (88.4%)</td>
</tr>
</tbody>
</table>

n/a, not applicable.

Depression variable, 37 missing values.

Diabetes variable, 74 missing values.

Hypertension variable, 36 missing values.
that universal depression screening has not been implemented in the FHP units. However, depression screening is not generally recommended unless adequate resources for the treatment of positive cases are in place (24). Secondly, registries are not routinely used to keep track of the management of patients with depression like those who are registered in the Hiperdia program because of their diabetes and/or hypertension. In most low-resource settings, non-communicable diseases with cardiovascular risk become priority and mental disorders are still a secondary outcome.

Although there is a growing awareness about public mental health in Latin America, financial resources for this care sector remain insufficient (27). A landmark event from 1990 resulted in the so-called Caracas Declaration of the Pan American Health Organization and World Health Organization with the objective to downsize the old-fashioned asylums and shift resources to community mental health centers. But the meager resource allocation to specialized mental health care shifted the care of mentally ill mainly to primary care community centers without the respective skills to recognize and treat mental disorders (28). For elderly people, the situation becomes even worse as priority is given to those age groups with the highest rates of mental disorders, i.e. to the 15 years old and younger who account for about 40% population in Latin America (29).

Given that non-communicable diseases account for the majority of deaths in Brazil, disproportionally affecting the poor (30), strategies for multi-condition (e.g. depression and diabetes/hypertension) management are needed. A promising approach to improving the quality depression treatment in the FHP is the Collaborative Care model, which has been shown to improve depression outcomes for elderly depressed individuals compared to usual care in primary care settings (31). Collaborative Care utilizes care managers that use patient registries to keep track of a panel of patients with mental disorders (32). The care managers deliver brief psychological interventions such as problem-solving therapy (33) and reviews cases with a psychiatric expert on a regular basis to provide stepped care recommendations for the primary care provider. More recently, this model of care has been shown to be effective for the treatment of depression and co-morbid medical conditions such as diabetes, hyperlipidemia and hypertension (34). The intervention can be easily implemented into the existing primary care platform of the FHP units with either the nurse or nursing assistant taking on the role of the care manager. In this way, multi-condition collaborative care model has the potential to improve the quality of care for depression and other chronic medical conditions in the FHP in Brazil. However, most collaborative care interventions have been tested in high-income countries, thus effectiveness trials of this model need to be performed in LAMICs before widespread dissemination.

A primary strength of this study is the large sample size of community-dwelling older adults who attend primary care clinics through the FHP. Additional strengths include the controlling of socio-demographic and impairment variables, the high level of participation and the use of well-validated structured interviews specifically designed to assess older adults’ depression diagnosis. A limitation of our study is that the sample came from a specific, low-income area of the city of São Paulo, which may reduce generalizability to higher-income groups and other areas of Brazil.

Conclusion

Treatment of depression in older adults receiving care in the FHP (Brazil) is low compared to treatment rates of diabetes and hypertension. More specialized treatment approaches of depression in older adults in Latin America are needed to improve the quality of depression care for this population.

Acknowledgements

The authors would like to thank Andre Crepaldi and the SPAH research team responsible for collecting the data for the São Paulo Ageing and Health Study.

Declaration

Funding: Wellcome Trust, UK (GR066133MA). HH was supported by the Fulbright-Brazil Scientific Mobility Program. KT was supported by the University of Illinois Lemann Institute for Brazilian Studies Faculty Research Grant. MS and PRM were partially supported by the CNPq-Brazil. Ethical approval: Brazilian National Committee for Ethics and Research. Conflict of interest: none.

References

Identification and treatment of depression of older adults


