

The use of a surveillance system to measure changes in mental health in Australian adults during the global financial crisis

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Received: 15 November 2009 / Revised: 27 June 2010 / Accepted: 3 October 2010 / Published online: 21 October 2010
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Abstract

Objective This study aimed to describe trends in a range of mental health indicators in South Australia where a surveillance system has been in operation since July 2002 and assess the impact of the global financial crisis (GFC).

Methods Data were collected using a risk factor surveillance system. Participants, aged 16 years and above, were asked about doctor-diagnosed anxiety, stress or depression, suicidal ideation, psychological distress (PD), demographic and socioeconomic factors using Computer-Assisted Telephone Interviewing (CATI).

Results Overall, there was a decreasing trend in the prevalence of PD between 2002 and 2009. Stress has decreased since 2004 although anxiety has increased. Comparing 2008 or 2009 (the economic crisis period) with 2005 or 2007, there was significant increase in anxiety for part-time workers but a decrease for full-time workers.

There were significant differences for stress by various demographic variables.

Conclusion The overall prevalence of mental health conditions has not increased during the GFC. Some subgroups in the population have been disproportionately impacted by changes in mental health status. The use of a surveillance system enables rapid and specifically targeted public health and policy responses to socioeconomic and environmental stressors, and the evaluation of outcomes.

Keywords Mental health · Global financial crisis · Socioeconomic status · Trend · Australia

Introduction

Chronic disease and risk factor surveillance systems have been developed to assess health-related behaviours, determinants of behaviours and prevalence estimates for non-registry based chronic diseases in the population. Indicators related to mental health, social determinants, socio-economic, demographic and other influencing factors are routinely collected. The concept of time and immediacy are important in a surveillance system because it is imperative to know about problems as soon as they develop and to detect any significant change over time so that issues are identified and interventions undertaken if required.

Since 2007, the world has experienced a Global Financial Crisis (GFC). Concern has been expressed about the potential adverse effects of this economic crisis on health (Catalano 2009; Labonte 2009; Chatterjee 2009), in particular in the context of unemployment and poverty predominantly in poorer countries (Labonte 2009). Financial and work-related insecurity and stress (Cole et al. 2002), socioeconomic disadvantage and poverty (Cairney

This paper belongs to the special issue “Monitoring social determinants of health”.

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and Krause 2005; Phongsavan et al. 2006) and unemployment (Bartley 1994; Lindstrom 2005), may adversely affect mental health in any country. During the 1997–1998 Asian economic crisis there was an increase in suicide in some East/Southeast Asian countries associated with rises in unemployment (Khang et al. 2005). In Europe, research has shown that an increase in unemployment was associated with a rise in suicide in those younger than 65 years (Stuckler et al. 2009).

The reaction to the GFC has been handled differently by different countries. An economic stimulus package was launched in countries like USA, Canada and Australia. The social security and medical systems of these countries and other developed countries, although different within each country, offer a measure of financial security which may ameliorate the impact of the economic crisis on mental health. Paradoxically, an economic crisis may have positive effects on people by promoting healthy life styles such as quitting smoking and increasing walking (Chatterjee 2009), and in some countries an overall improvement in population health in terms of mortality has also been observed despite the impact of an economic crisis (Catalano 2009; Khang et al. 2005; Kondo et al. 2008; Stuckler et al. 2009).

Better monitoring and surveillance has been called for in the fight against the effects of the GFC on health (Horton 2009). The objective of this study was to describe trends in a range of mental health indicators in South Australia where a surveillance system has been in operation since July 2002 and assess the impact of the global financial crisis.

Methods

Survey design and sample selection

Data for this study were collected using the South Australian Monitoring and Surveillance System (SAMSS) from July 2002 to June 2009. SAMSS is designed to systematically monitor the trends of diseases, health-related problems, risk factors and other health services issues for all ages over time for the South Australian (SA) health system (Department of Health 2002). Interviews are conducted on a minimum of 600 randomly selected people (of all ages) each month. All households in SA with a telephone connected and the telephone number listed in the Electronic White Pages (EWP) are eligible for selection in the sample. A letter introducing the survey is sent to the selected household and the person with the last birthday (as in a 12 month period) is chosen for interview. There are no replacements for non-respondents. Up to ten call backs are made to the household to interview the selected persons. The rate of telephone coverage (landline or mobile) is

99.4% in the SA population. Interviews are conducted by trained health interviewers. SAMSS utilises a Computer-Assisted Telephone Interviewing (CATI) system to conduct the interviews. Data are weighted by area (metropolitan/rural), age, gender and probability of selection in the household to the most recent SA population data so that the results are representative of the SA population (Australian Bureau of Statistics 2004a, b).

In the period July 2002 to June 2009 a total of 49,008 interviews were conducted (62.1% response rate). The questions related to having a mental health condition are only asked of respondents aged 16 years and over. This analysis is therefore limited to $n = 38,979$ respondents.

Data items

Mental illness

Mental health-related questions included having been diagnosed by a doctor in the previous 12 months with anxiety, depression, a stress-related problem or another mental health problem. A self-reported current mental health problem is defined as either reporting doctor diagnosed mental health problems, or currently receiving treatment for anxiety, depression, stress-related problems or another mental health condition. The level of psychological distress of respondents was determined using the Kessler Psychological Distress 10 item scale (K10) (Kessler and Mroczek 1994). This scale was developed to measure anxiety and depressive disorders in the general population. The response categories of each of the ten questions are converted to Likert scales and reverse scored. The ten items in the scale are summed to give scores ranging from 10 (no distress) to 50 (high risk of anxiety or a depressive disorder). The scores are grouped in four categories: low (10–15), moderate (15–21), high (22–29), and very high (30–50). Participants having a K10 score higher than 22 were defined as having psychological distress (Health West 2001). Suicidal ideation is based on four questions contained in the 28 item General Health Questionnaire (GHQ-28) (Goldberg and Hillier 1979; Goldney et al. 2000; Watson et al. 2001). The inclusion of suicidal ideation questions in a surveillance system initially highlighted some methodological issues with concerns expressed by interviewers and ethics consultants regarding the sensitive, and perhaps influencing, nature of the four questions. Specialist psychiatric advice was obtained which indicated little cause for concern. Notwithstanding, a toll-free number, providing mental health advice, is offered to all respondents.

Demographic and socioeconomic variables such as sex, age, highest educational attainment, gross annual household income and work status were included in the analyses. Respondents were classified into quintiles of the

Socio-Economic Index for Areas (SEIFA) Index of Relative Socio-Economic Disadvantage (IRSD) according to their postcode (Australian Bureau of Statistics 2004a). The SEIFA IRSD, created from Census data, is an area level indicator of socioeconomic status and is used as a measure of inequality.

Data analyses

Chi square tests were used to compare differences in categorical variables. Logistic regression model was used to test the trend of mental health conditions across years. Statistical significance was considered when $p < 0.05$ (two sided). All the analyses were performed using STATA software (version 10, StataCorp, College Station, TX). Joinpoint regression was also used to detect whether 2008 (used as the start of the GFC) was join point for outcome measures (Kim et al. 2000). Join point regression is useful for identifying and describing the occurrence of changes in prevalence over different time periods using trends in data. It starts with no joinpoint and tests whether one or more joinpoints are statistically significant and need to be entered into the model (a maximum of three joinpoints by default) to best fit the data over the period of study.

This analysis was done by Joinpoint Regression Program (Version 3.4.3. April 2010; Statistical Research and Applications Branch, National Cancer Institute.)

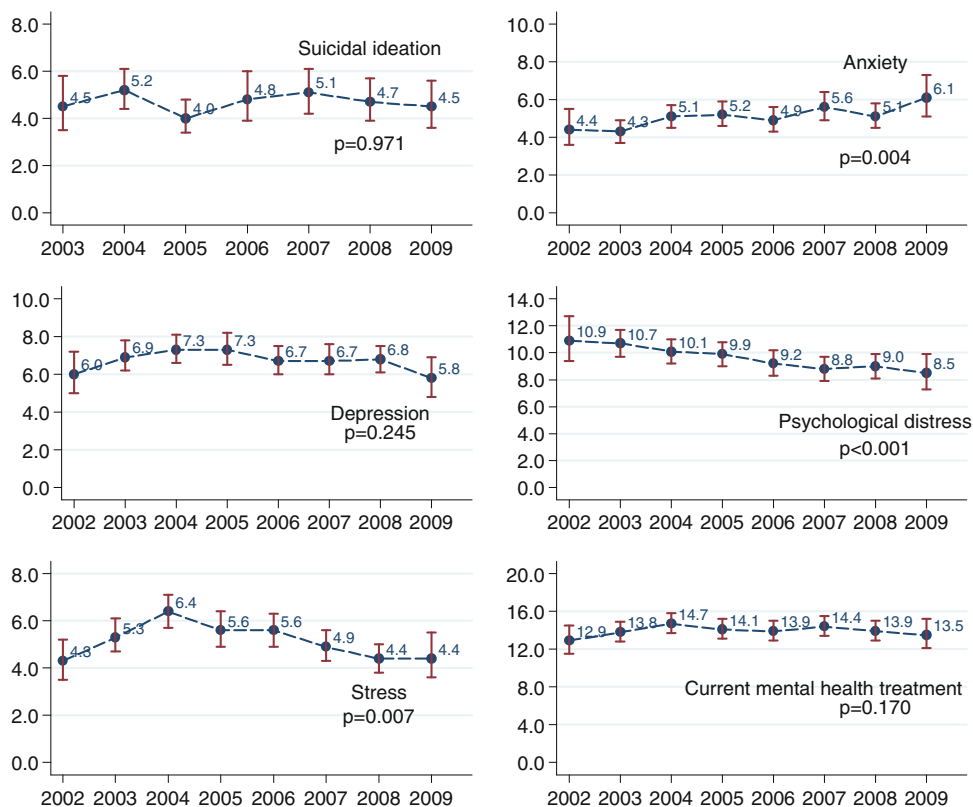
Results

Figure 1 shows the overall prevalence estimates over time for the six mental health indicators assessed. The prevalence of psychological distress (K10) decreased between 2002 and 2009. While the prevalence of stress has decreased since 2004 there has been an increase in the prevalence of anxiety.

Figure 2 highlights these indicators by gender. The prevalence rates for females were higher than males for all variables except suicidal ideation. There is also a divergence in recent years in anxiety levels. Work status classification was used as an example of socio-economic status and Fig. 3 highlights changes in the mental health indicators over time by work status, with unemployed people having higher rates than all other employment categories except in the case of stress.

Analysis was undertaken comparing the prevalence estimates in 2008 or 2009 (the economic crisis period) with 2005 or 2007. Those in full-time employment statistically significantly decreased in anxiety levels, while part-time employed workers significantly increased their anxiety levels. Stress levels statistically significantly decreased for females, low income, low education, middle age, full-time employed, unemployed and the middle and lowest SEIFA quintiles. Decreases in psychological distress occurred for females and those with low education levels.

Fig. 1 Prevalence of mental health problems between 2002 and 2009 among South Australian adults



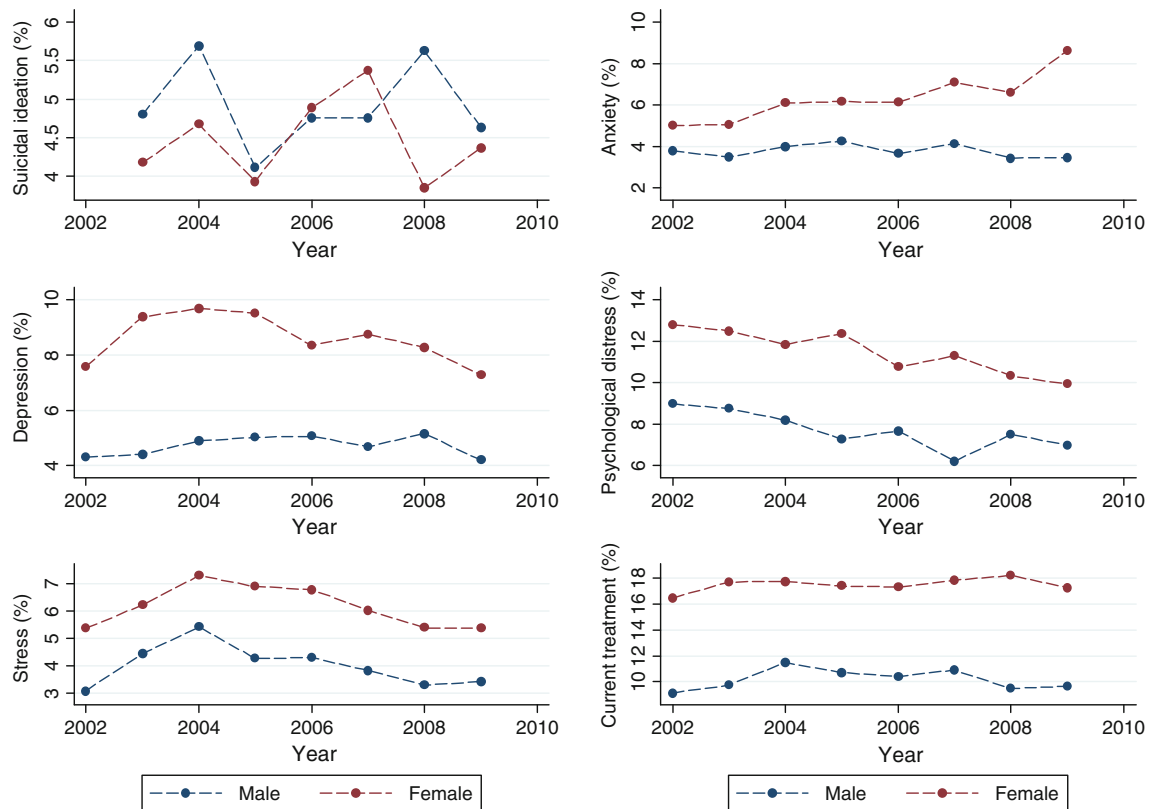


Fig. 2 Prevalence of mental health problems between 2002 and 2009 among South Australian adults by gender

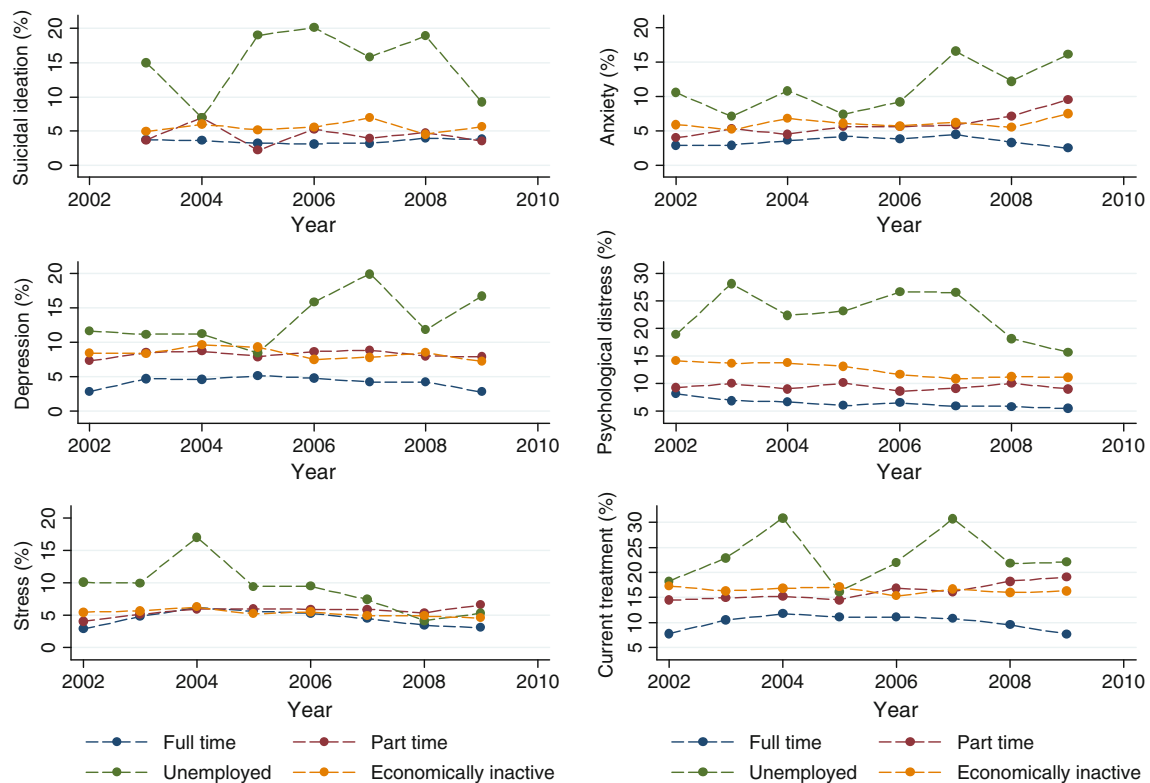


Fig. 3 Prevalence of mental health problems between 2002 and 2009 among South Australian adults, by work status

The prevalence of current mental health treatment decreased in the full-time employed. There was no significant difference in the prevalence of suicidal ideation and depression. In join point regression, 2008 was not a join point for all the PD measures (data not shown) including anxiety among women.

Discussion

Based on a continuous monthly surveillance system, there was a significant increase in levels of anxiety, no overall significant difference in depression, suicidal ideation or current treatment of mental health problems and a significant decrease in stress and psychological distress, during the GFC among South Australian adults.

There were, however, some differences when these overall figures were assessed by socio-economic related indicators, for example, higher rates overall for the unemployed. Nevertheless, even the unemployed and the lowest SEIFA group were found to have decreases in stress, possibly reflecting overall confidence or perhaps optimism in the Australian economy and the financial stimulus packaged implemented by the federal government. Those employed full time had a statistically significant decrease in anxiety levels and the part-time employed had an increase, perhaps indicating concerns over the possibility of cut in working hours or the loss of their job completely although the government implemented major construction packages (e.g. school buildings) aimed at maintaining employment.

Several factors could be related to the lack of increase of mental health problems in Australia during the GFC. First, the unemployment rate has been lower compared with other countries, although it should be noted that different definitions of unemployment have been used in different countries. The overall unemployment rate during the GFC in Australia was 5.8% in July 2009 compared with 9.4% in USA (U.S. Bureau of Labor Statistics). In July 2009, South Australia recorded the lowest unemployment rate of any mainland state in Australia and unemployment remained below the national average, with a figure of 5.6% (Government of South Australia 2009). Second, the recovery from the GFC has been faster in Australia than other countries. In October and November 2009, the Reserve Bank of Australia increased interest rates by 0.25% each month, seen as a sign of a recovering economy. Globally, Australia is the first and only country at this stage to increase bank interest rates since the current GFC began. Third, all Australians have access to free healthcare through Medicare, Australia's universal health insurance program, irrespective of whether they pay for private health care or not, which relieves them of the concern about the cost burden of medical expenditure, which can be considerable in some

countries. This may facilitate opportunities to deal with any mental health issues that may arise from the GFC.

A limitation of the study is the use of self-report and telephone sampling methods. Furthermore, in the sample the overall unemployment rate was below 3%, lower than the official unemployment rate for South Australia. It could be that those unemployed did not have a telephone, or they may have refused to participate in the study. It should also be noted that assessment of unemployment was limited to one self-reported question in the surveillance system compared with a more comprehensive assessment undertaken by Australian Bureau of Statistics. Self-report and social desirability could result in respondents indicating home duties or retired rather than the socially unacceptable label of unemployed. There may also be other reasons for an underestimate of the level of mental health problems as the prevalence was based on doctor diagnosis and thus those that felt anxious, stressed or depressed and who had not visited a doctor would not be included in the estimate. Data linkages to utilisation of mental health services through Medicare may address some of these issues in future studies.

The value of a surveillance system is that the system must provide timely information on the prevalence of conditions and/or risk and protective factors and be capable of detecting emerging trends. The system needs to identify high-risk populations and evaluate and monitor changes over time. In addition, a surveillance systems needs to be able to provide evidence-based information needed by policy makers, planners and health promoters to make appropriate, timely and efficient evidence-based decisions. An important component of evidence-based decision-making is the timely dissemination of the information to the decision-makers. The ongoing nature of the system allows the impact of events, such as the GFC, to be examined over time. Health problems affect human lives and data that explain, alter, inform or educate changes should be available as soon as possible. Based on the use of the South Australian surveillance system, the present results indicate that during the GFC, there has been no significant deterioration in measures of mental health in South Australian adults although certain sub groups of the population need careful observation. The current study supports the feasibility and need for surveillance of population mental health. It also points out the value of the surveillance in other places and for other purposes such as the monitoring of population mental health after policy changes in education or other relevant community or national sectors.

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