

Structural social capital and mental health in Australia: an analysis of the 2007 Household Income and Labour Dynamics (HILDA) Survey

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Abstract

Improving mental health has become a priority for governments and health agencies in Australia and elsewhere, and several commentators have suggested that enhanced social capital can lead to improved mental health outcomes for individuals. We examine the relationship between mental health and the structural social capital, using participation in civic and community groups and frequency of social contact as indicators of social capital. Our analysis reveals that frequency of social contact is associated with improved mental health. Participation in community, sporting and hobby groups was associated with improved mental health. However, other types of community participation, including volunteer work, were not associated with mental health except for the elderly. Our analysis also finds evidence that the association between social capital and mental health may be different in different age groups, which may need to be considered in future studies on this subject.

Keywords: Social Capital, Mental Health, Psychological Distress, Age

Introduction

Improving mental health has become a priority for governments and health agencies in Australia and elsewhere. The recent National Survey of Mental Health and Wellbeing (Australian Bureau of Statistics 2007:7) found that 45% of the adult Australian population had suffered a mental illness at some point during their life, and 20% of the population had symptoms of a mental illness in the previous 12 months. Mental illness is a significant problem for individuals and governments, costing Australia governments \$2.7 billion in 2005-06 (Australian Institute of Health and Welfare 2008: 152).

Several authors have suggested that mental health outcomes can be influenced by improved social capital, and suggest interventions to increase the social capital of at risk groups (Almedom and Glandon 2008). This paper will examine the association between social capital and mental health using data from the 2007 Household Income and Labour Dynamics Survey in different age groups, focusing on the relationship between structural social capital (the behavioural aspects of social capital-- civic, participation and social participation) and mental health.

Social Capital

In his work on civic engagement in Italy and in his analysis of the decline of social capital in the US, Robert Putnam (1993; 1995) defined social capital as “features of social organization such as networks, norms, and social trust that facilitate coordination and cooperation for mutual benefit”. As conceived by Putnam, social capital is a broad ranging concept that encompasses social networks, social participation and civic engagement as well as the norms of trust and reciprocity that make these activities possible.

Putnam’s analyses focus on the links between social capital, civic engagement, and political participation, arguing that declining political participation could be explained as a result of a decline in social capital. Influenced by the long Tocquevillian tradition of linking democracy to civic associations, Putnam(1995) argued that the decline in membership of church groups, unions and other voluntary associations, including bowling leagues was directly linked to decreased political participation. Later theorists have linked social capital to a wide variety of other social phenomena, including physical and mental health.

The link between mental health and social capital is examined by a large number of studies, some of which are summarised by De Silva et al (2005) who examined 21 studies of social capital and mental health. The writers had concluded that there was strong evidence of an association between low cognitive social capital (the perceived or conceptual aspects of social capital) and mental illness. However, the evidence regarding structural social capital was less consistent. Although several large studies did find an inverse relationship between measures of structural social capital and mental health, this relationship was not consistent across the studies examined.

Phongsavan et al (2006) examined the links between social capital and mental health using data from the New South Wales Population Health study. These authors found that some aspects of social capital, particularly feelings of trust and safety, were associated with lower risk of psychological distress. In contrast, Ziersch and Baum (2004) found no connection between membership of civil society groups and mental health outcomes. Additional qualitative data captured by their study suggests that for some, participation in civic activities or volunteering may actually be a negative influence on mental health, through exposure to difficult or stressful circumstances.

Harpham (2008) also suggested that the formal aspects of social capital such as community or civic participation may have a different relationship to mental health than the informal aspects of networks and social participation. This is reflected in Phongsavan et al. (2006) who found an association between neighbourhood social connections and mental health, but not association between community participation and mental health outcomes.

Interpreting the relationship between social capital and mental health is complicated by a number of socio-demographic confounding factors. Many studies have found a link between mental health and socioeconomic status and a number of writers have

stressed the relationship between employment status and mental health in particular (Lorant et al. 2003; Cai 2006; Dockery 2006; Waghorn, 2005; Flatau et al. 2000). Other variables, including marital status, country of birth, geographic remoteness and gender, are also strongly related to mental health outcomes (van Praag et al. 2009; Australian Bureau of Statistics 2007: 29-36).

Age is also known to have an effect on mental health. Rates of mental illness decrease with age (Australian Bureau of Statistics 2007: 29) and several studies find that social capital is associated with improved mental health only in certain age groups (Musick and Wilson 2003; Burke et al. 2009). This suggests that there may be an interaction between age and the association between social capital and mental health.

While there have been a number of studies examining the effect of social capital on mental health, this study will be the first to examine the influence of age on this association. Using a nationally representative survey, this analysis will consider the relationship between social capital for four age groups. The analysis will also focus on one aspect of social capital (structural social capital) which has been central to the theoretical descriptions of social capital but has not been shown to be strongly associated with improved mental health.

Methods

To examine the relationship between social capital and mental health, this analysis will use data from the 2007 wave of the Household Income and Labour Dynamics (HILDA) Survey. The HILDA survey is a nationally representative panel survey of Australian households. The methods used for the HILDA Survey are discussed in Watson and Wooden (2002) and Watson and Wooden (2004). Wave 7 of the survey involved 7,063 participating households and 12,789 individuals (Melbourne Institute

of Applied Economic and Social Research 2008). For this analysis, we have used information from the 11,378 individuals who completed a “Self Completion Questionnaire”.

Mental health measure

Wave 7 of the HILDA survey includes two measures of mental health, the SF-36 mental health subscale and the Kessler 10 (K10) measure of psychological distress. This was the first wave of the survey to include the K10, although the instrument had previously been included in a number of other nationally representative surveys, including the 2007 National Survey of Mental Health and Wellbeing (Wooden 2009a). For this analysis we have chosen to use the K10 to measure mental health outcomes because it is particularly effective at discriminating between community cases and non-cases of DSM-IV disorders (Kessler et al. 2002).

The K10 is a 10 items scale designed to measure general symptoms of psychological distress (Kessler et al. 2002). The K10 composite measure aims to capture the feelings of nervousness, hopelessness, worthlessness and depression. The K10 has been validated as a measure of mental health in the US (Kessler et al. 2002) and in Australia (Andrews and Slade 2001). The K10 is scored by summing the responses using a simple linear scale running from 5 to 1 (Wooden 2009a), resulting in scores ranging from 10 to 50. Higher scores represent higher levels of psychological distress and worse mental health. In cases with item non-response, scores were imputed if there were responses to at least five of items a, b, d, e, g, h and i. In these cases, scores were imputed by taking the mean of the valid responses and multiplying it by ten. In this analysis, as in (Phongsavan et al. 2006), we have divided the responses

into two groups: low or moderate psychological distress (scores of 21 or less), and high or very high psychological distress (scores of 22 or more).

Social capital measures

Some writers stress that the structural aspects of social capital also need to be divided between formal (membership of community associations or other organizations) and informal (networks of friends and family) (Harpham 2008). As such, this analysis will consider both these types of structural social capital. The HILDA survey includes several questions related to formal structural social capital. First, the survey asks about the number of hours a respondent spent on volunteer or charity activities in the past week. This was converted to a binary variable indicating whether the respondent participated in voluntary work. The survey also provides an indication of membership of sporting clubs and community associations and membership of trade unions and employee associations. Wooden (2009b) suggests that the HILDA Survey may inflate the number of union members by including “employee associations” such as the Australian Medical Association (AMA) and similar organisations. However, this is unlikely to affect this analysis, as these employee associations are likely to provide similar level of social interaction as traditional unions.

There is also a measure of the informal aspect of structural social capital included within the HILDA survey, which asks “In general, how often do you get together socially with friends or relatives not living with you?”. Responses were coded as “more than once a week”, “once a week”, “less than once a week but at least once a month” and “less than once per month”.

Other covariates

Demographic, socioeconomic and physical health related measures have all been demonstrated to influence mental health. Researchers have used a wide range of socioeconomic indicators, including education, income and occupation, as well as employment status (Lorant et al. 2003). Some have used indicators for an area or neighbourhood in their analysis to represent the influence of the local community on mental health outcomes (Fone et al. 2007; Stafford et al. 2008). In this analysis we have included highest educational attainment, the local area's Index of Advantage and Disadvantage for 2001 (SEIFA) and the AUSEI06 Occupational Status Scale as measures of socioeconomic status. The SEIFA is an index constructed from a number of demographic and socioeconomic variables from the 2001 Census that represent the advantage or disadvantage associated with an area (Australian Bureau of Statistics 2004). We have recoded the SEIFA into quintiles. The Occupational Status Scale is an index constructed using data on education and income from the 2006 Census to represent the relative status of different occupations (McMillan et al. 2009). For the purposes of this analysis, we have recoded the Occupational Status Scale into quartiles.

We have also included age, gender, marital status, country of birth and remoteness area as demographic variables. We also considered including religious attendance, which is sometimes considered alongside civic participation in social capital research (Veenstra 2000). However, we did not include it in our models as preliminary bivariate analysis suggested that it had no significant effect on mental health.

Analysis

We used logistic regression to model the effect of social capital and the other covariates on mental health. The dependent variable, psychological distress, is dichotomous: 0 if the respondent experienced low or moderate distress during the reference period, 1 if experienced high or very high stress. To help interpretation, the estimated regression coefficients are presented as odds ratio. The reference category for each covariate takes the value of 1. If the estimated coefficient is greater than one, it indicates a greater likelihood of experiencing elevated distress than the reference category. If the estimated value is less than one, it indicates lower likelihood compared to the reference category.

As discussed above, for this analysis we have chosen to model age groups separately due to the evidence in the literature for an interaction between age, mental health and social capital. We have excluded some socioeconomic or demographic variables from the analysis for a particular age group, generally because there were too few observations for meaningful analysis to occur (for example, widowed or divorced marital status for those aged 15 to 25) or that they are not relevant (eg occupational status for those aged over 65).

Results

Table 1 shows the characteristics of the respondents included in the analysis divided into four age groups. Psychological distress decreased with age, with those aged 15 to 25 reporting the highest levels of distress. Participation in voluntary activities increased with age, while union membership was highest in those aged 46 to 65. Membership of sporting, hobby and community groups was more common than union membership or voluntary work, and was of similar magnitude across the age groups, although those over 65 had higher levels of involvement in these activities.

Table 1: Sample Characteristics

	15-25 % (N=2130)	26-45 % (N= 3772)	46-65 % (N=3462)	Over 65 % (N=1701)	All % (N=11065)
K10 Psychological Distress Risk Categories					
Low/Moderate	80.9%	85.0%	86.8%	89.0%	85.4%
High/ Very High	19.1%	15.0%	13.2%	11.0%	14.6%
Voluntary Activities					
No voluntary work	89.9%	82.7%	78.0%	74.2%	81.4%
Voluntary work	10.1%	17.3%	22.0%	25.8%	18.6%
Union membership					
Not a union member or not employed	90.7%	81.0%	78.4%	98.3%	84.6%
Union member	9.3%	19.0%	21.6%	1.7%	15.4%
Member of a sporting/ hobby/ community association					
Not a member	61.8%	65.1%	61.6%	50.1%	61.2%
Member	38.2%	34.9%	38.4%	49.9%	38.8%
Social contact					
Less than once per month	51.3%	24.9%	21.0%	29.5%	29.5%
Once or twice a month	26.8%	34.9%	30.8%	30.6%	31.4%
Once a week	16.7%	29.8%	35.1%	26.5%	28.4%
More than once a week	4.3%	9.5%	11.9%	9.3%	9.2%
Invalid	0.9%	0.9%	1.3%	4.0%	1.5%
Socioeconomic					
Employment Status					
Employed	70.2%	82.7%	70.4%	9.5%	65.7%
Not employed	29.8%	17.3%	29.6%	90.5%	34.3%
Highest level of education					
Did not complete year 12	43.0%	20.5%	32.0%	53.3%	33.3%
Completed year 12	31.3%	14.6%	9.2%	6.5%	15.0%
Diploma or Certificate	16.9%	34.2%	34.8%	28.7%	30.2%
University qualification	8.8%	30.7%	24.0%	11.5%	21.5%
Occupational Status					
Occupational status first (lowest) quartile	10.5%	9.3%	8.1%	1.1%	7.9%
Occupational status second quartile	46.3%	35.1%	30.2%	4.1%	31.2%
Occupational status third quartile	6.5%	15.2%	12.7%	1.4%	10.7%
Occupational status fourth (highest) quartile	7.0%	23.0%	19.5%	3.0%	15.9%
Not employed	29.8%	17.3%	29.6%	90.5%	34.3%
SEIFA Index of advantage/disadvantage					
Lowest Quintile	19.4%	17.4%	19.0%	24.7%	19.3%
2nd Quintile	18.6%	19.7%	20.0%	21.4%	19.8%
3rd Quintile	19.1%	20.0%	19.4%	16.2%	19.1%
4th Quintile	21.4%	21.0%	18.6%	19.3%	20.1%
Highest Quintile	21.5%	22.0%	23.1%	18.5%	21.7%

The results of logistic regression are shown in table 2. Two of the social capital measures are significantly associated with psychological distress in all age groups, frequency of social contact and membership of sporting, hobby and community associations. In particular, having contact with friends or relatives less than once a month was associated with greatly increased risk of psychological distress. Those who had contact fewer than once per month were over two and a half times more likely to have experienced high level of psychological stress than those who had more than one contact per week. This effect was most notable in those aged 26 to 45 (OR=3.14 $p<0.05$) and was less pronounced in those over 65 (OR=1.67 $p<0.10$). It is also interesting that the variation in frequency of contact was more important for those aged under 45 than those aged over 45. Among those aged over 65, there are only two groups in terms of contacts with friends and relatives: those who had at least one contact per month (were about 66% less likely to have experienced high distress) compared the rest. But among those aged under 45, there are 4 distinct groups of distressed people: compared to those who contacted their friends or relatives more than once a week, likelihood of experiencing high level of distress increased gradually from 'once a week contact', through 'once or twice a month' to 'less than once a month'. This finding indicates that among older people (aged over 45) contact at least once a month is enough to keep the distress level low but among younger people (aged under 45) contact once a week keeps distress at a lower level than contacting once a month or fewer than once a month.

Membership of a sporting, hobby or community also significantly reduced the odds of high levels of psychological distress in all age groups, although in this case the effect was greatest in those over 65 (OR = 0.44 $p<0.05$) and smallest in those 26 to 45 (OR = 0.77, $p<0.05$). In general, being a member of any community or sporting

Not employed	2.45**	1.97*	2.48**	3.42**	0	0	0
Highest level of education							
Did not complete year 12	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Completed year 12	0.94	0.73**	0.90	1.27	1.20	0.95	0.94
Diploma or Certificate	0.96	0.90	1.01	0.96	0.75	0.96	0.96
University qualification	0.87	0.71	0.82	0.95	1.22	1.11	0.73**
Occupational Status							
Occupational status first (lowest) quartile	1.66**	2.51**	1.35	1.52	0	0	0
Occupational status second quartile	1.28**	1.83*	0.95	1.22	0	0	0
Occupational status third quartile	0.87	1.32	0.75	0.87	0	0	0
Occupational status fourth (highest) quartile	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SEIFA Index of advantage/disadvantage							
Lowest Quintile	1.41**	0.95	1.25	2.05**	2.28**	1.78**	1.17
2nd Quintile	1.28**	1.06	1.23	1.67**	1.61	1.47**	1.15
3rd Quintile	1.15	0.98	1.02	1.58**	1.56	1.43**	0.98
4th Quintile	1.03	0.77	0.92	1.54**	1.46	1.16	0.93
Highest Quintile	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Note: Control variables include: gender, country of birth, marital status, rural/urban residence, Body Mass Index, smoking and alcohol consumption.

There were also a number socioeconomic and demographic variables that had significant effect on mental health. As would be expected being unemployed or out of the labour force increased the risk of psychological distress significantly among those aged under 65 years. The unemployed/not in the labour force were over two times more likely to have experienced high level of psychological distress compared to those who were employed. Although employed status was critical for all those aged under 65, occupational status was important for those aged 15-24. In this age group (15-24), those whose occupational status was in the bottom two quartiles were almost two times more likely to have experienced high level of distress compared to those in the top quartile. In contrast to employment and occupation, educational qualifications was immaterial for the level of stress experienced.

Discussion and Conclusion

There is mixed evidence from this study for an association between structural social capital and mental health. The informal dimension of structural social capital, as measured by frequency of contact with friends or relatives was clearly related to improved mental health. This supports the results of a number of previous investigations (Almedom and Glandon 2008; De Silva et al. 2005; Myer et al. 2008). However, results for the more formal aspects of structural social capital were inconsistent. Membership of community, sporting and hobby associations (Putnam's bowling leagues) were associated with better mental health. However, union membership was not significantly related to mental health and voluntary work was related to improved mental health only for those over 65.

Our finding that union membership is not significantly related to improved mental health may be caused by the small numbers of trade union members. However, our findings also suggest that for those under 65 involvement in voluntary activities has almost no effect on mental health. This reflects previous investigations by Musick and Wilson (2003). As such, the difference between voluntary work and other indicators of community participation may require further consideration, perhaps by examining information not collected in this wave of the HILDA Survey, such as the nature and location of the voluntary work.

Our study also confirmed previous findings that socioeconomic status, and particularly employment, has a strong association with mental health (Lorant et al. 2003; Cai 2006; Dockery 2006; Waghorn 2005; Flatau et al. 2000). This study also found evidence of an interaction between age, social capital and mental health, particularly regarding voluntary work.

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