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A prospective study of individual-level social capital and major depression in the United States

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Accepted 1 October 2007

ABSTRACT

Study objective: To investigate prospectively the associations between depression and cognitive social capital (social trust, sense of belonging, mutual aid) and structural social capital (volunteer work and community participation).

Methods: This was a prospective study that was carried out in the USA. The participants were a nationally representative sample of 724 English-speaking non-institutionalised adults (25–74 years old) who participated in the National Survey of Midlife Development in the United States (MIDUS) in 1995–6 and the MIDUS Psychological Experience Follow-Up study in 1998.

Main results: In multivariable adjusted logistic regression analyses, those who trusted their neighbours were less likely to develop major depression (MD) during follow-up than those who reported low levels of social capital on these dimensions (adjusted OR of MD for high vs low trust = 0.43; 95% CI 0.20 to 0.93, adjusted for MD at baseline, age, gender, race, education, working status, marital status, physical health and extroversion traits). Structural dimensions of social capital were not associated with MD in adjusted models.

Conclusions: Perceptions of higher levels of cognitive social capital (trust of neighbours) are associated with lower risks of developing MD during 2–3 year follow-up. However, after excluding participants with MD at the baseline, the association between trust and MD became non-significant. Structural dimensions were not associated with MD.

Social capital has been broadly defined as the resources that individuals access through their networks.[1] Individuals who lack network ties (ie people who are socially isolated) have been shown to be at increased risk of developing depressive illness.[1] More recently, interest has also turned toward examining the possible contextual influence of community-based social networks on mental health outcomes. Researchers have begun to ask whether residents of communities with low levels of social integration might also be at increased risk of poor mental health outcomes, net of individual characteristics.[1–7]

In practice, researchers have adopted a variety of indicators to assess social capital,[8] including trust of others,[9] sense of belonging to a community,[10 11] mutual assistance between neighbours,[12] neighbourhood cohesion,[13] volunteering activity,[14] group membership[15] and even voting participation.[2]

Three distinctions have been commonly drawn in the conceptualisation and measurement of social capital. First, indicators have been categorised as tapping either the "cognitive" dimensions of social capital (such as perceptions of trust, as well as beliefs about the extent to which neighbours can be called upon to provide social support) or the "structural" dimensions of social capital, which centre on reports of actual behaviours such as participating in locally based associations.[16] A second distinction in social capital research concerns the level of analysis—whether social capital is treated as an individual-level attribute or as a community-level characteristic.[17] Thus, some studies have characterised individuals as possessing either higher or lower levels of social capital based upon their network position, or other characteristics of the social networks to which they belong (eg high levels of trust and reciprocity). Other studies have treated social capital as a group-level attribute, and characterised communities as possessing either higher or lower stocks of social capital, based upon aggregated perceptions of cohesion among its members or patterns of social interaction. Yet a third distinction that is increasingly drawn in social capital research involves the differential consequences of "bonding" compared with "bridging" social capital.[18] "Bonding" capital refers to networks of dense ties between members of a group who are similar to each other with respect to social status, race/ethnicity and other forms of identification, whereas "bridging" capital refers to bonds that span across such lines of identity.

A growing number of studies have suggested a link between community social capital and mental health.[1–4 7] In the UK, a recent study by Fone et al[7] showed that both individual-level and community-level cognitive social capital were inversely associated with common mental disorder measured by the Mental Health Inventory, subscale of the SF-36. McCulloch[3] also reported that those who perceive their neighbourhood as low in social capital were more likely to have common mental disorders measured by general health questionnaire (GHQ). In Australia, Phongsavan et al[4] showed that higher cognitive social capital was associated with lower risk of common mental disorder measured by the 10-item Kessler (K10) instrument. Lofors and Sundquist[2] found that linking social capital (as inferred from mean voting participation within the neighbourhood) was inversely associated with hospitalisation for depression and psychosis in Sweden. A recent longitudinal study in The Netherlands found that one aspect of cognitive social capital, informal social control, was inversely associated with child mental health.[19] Nonetheless, several questions remain unresolved concerning the association between social capital and mental health.[5 6] Previous studies have been limited by their cross-sectional designs,[5 7 20–24] the

use of non-diagnostic instruments to assess mental health, such as GHQ or CES-D,[3 15 24–29] or the failure to consider both the cognitive and structural domains of social capital.[4]

The National Survey of Midlife Development in the United States (MIDUS) carried out in 1995–6 is a nationally representative sample of middle aged adults (aged 25–74 years old) in the USA that used the Composite International Diagnostic Interview Short Form (CIDI-SF) to assess mental illness, and measured several social capital dimensions, including social trust and community participation.[30] Although the survey did not provide information about individual residential location (so that a multilevel analysis of community social capital and mental illness could not be carried out), the data nevertheless permitted an analysis linking individual perceptions of community social capital to their mental health outcomes. Furthermore, a randomly selected subset of the MIDUS participants were followed up for 2–3 years after the baseline survey (in 1998) for psychological assessment ($N = 724$), which included the diagnosis of major depression (MD) assessed by the CIDI-SF.[31] By linking these two waves of the survey, we were able to prospectively examine the association between individual perceptions of community social capital and risk of MD.

Our aim was to test the hypothesis that different dimensions of social capital (social trust, sense of belonging, and mutual aid, volunteer work and community participation) were associated with risk of MD during the 2–3-year follow-up, after controlling for individual potential confounders.

METHODS

Source of data: the MIDUS study

For baseline data, we used the MIDUS data originally collected in 1995–6 as a collaborative, interdisciplinary investigation of the patterns, predictors and consequences of midlife development in the areas of physical health, psychological well-being and social functioning.[30] Respondents were selected from a nationally representative, random digit dial sample of non-institutionalised, English-speaking adults aged between 25 and 74 years, who were picked from working telephone banks in the coterminous United States. Detailed information regarding the MIDUS study has been published previously and is available on the MIDMAC website.[32 33] The sample for the current analysis includes original MIDUS respondents who completed the telephone survey (response rate 70%), which included CIDI-based baseline diagnoses of MD, and the postal questionnaire (response rate 87%), which captured information related to community social capital and other covariates. The combined response rate to the telephone survey and the postal questionnaire was 60.8%. Follow-up data were obtained using the Psychological Experiences Follow-Up Study implemented in 1998.[31] The primary objective of the follow-up study was to explore how adults perceive psychological change in their lives. This study was a random telephone follow-up of 724 respondents of the original MIDUS random digit dial sample (82% response rate among 883 participants selected from the original MIDUS survey who were recontacted). After the study was explained to the informant, a household listing was generated of people in the age range 25–74, and a random respondent was selected. Men and older people were over-sampled.

Measures

MIDUS researchers assessed MD in the original and the follow-up study using CIDI-SF.[34–36] The diagnosis of MD was based on

the 19 items in the definitions and criteria specified in the DSM-III-R.[37] A diagnosis of MD requires a period of at least 2 weeks of either depressed mood or anhedonia most of the day, nearly every day, and a series of at least four other associated symptoms typically found to accompany depression, including problems with eating, sleeping, energy, concentration, feelings of low self-worth, and suicidal thoughts or actions. MD was assessed by telephone interview in the original and the follow up surveys. In the original MIDUS survey, the time frame for enquiring about symptoms of MD was the previous 12 months, whereas, in the follow-up MIDUS survey, MD items enquired about the past 5 years to capture all depressive episodes during follow-up. The test–retest reliability and clinical validity of CIDI-SF diagnoses have previously been examined and found to be high.[38] Psychometric properties are also acceptable: sensitivity was 0.73 and specificity was 0.82 in comparison with semistructured clinical diagnostic interview.[39] Moreover, the MD scales employed in the present study were used in a previous publication, in which they were based upon the responses of the MIDUS dataset.[40 41]

Individual perceptions of community social capital were assessed within cognitive and structural domains. Cognitive social capital indicators included social trust, sense of belonging and mutual aid. Social trust was assessed with a single item—"people in my neighbourhood trust each other"—with Likert-scale responses ranging from "not at all" to "a little", "some" and "a lot". This single-item measurement of social trust was used in previous study.[9] The responses "not at all" and "a little" were collapsed a priori in order to create three categories: high trust (38.0 weighted per cent), middle trust (39.6 weighted per cent) and low trust (22.4 weighted per cent).

Sense of belonging was a three-item scale derived as the weighted average of responses to the following items: (1) "I don't feel I belong to anything I'd call a community", (2) "I feel close to other people in my community" and (3) "my community is a source of comfort". Responses to each question were recorded on a seven-point Likert scale, with higher scores denoting a higher sense of belonging. As the resulting sense of belonging index was relatively normally distributed, we analysed it as tertiles (high, medium and low). The internal consistency reliability of the sense of belonging index was acceptable (Cronbach's alpha = 0.73). Mutual aid was a three-item index calculated as the weighted mean of the following three items: (1) "people who do a favour expect nothing in return", (2) "people do not care about other people's problems" and (3) "I believe that people are kind". Responses were scaled from 1 to 7, with higher scores denoting higher perceptions of mutual aid. The internal consistency reliability of the mutual aid scale was not as high (Cronbach's alpha = 0.42). The mutual aid scale was also categorised into tertiles.

Structural social capital was assessed by enquiring about volunteer work and community participation. Volunteer work was calculated as the sum of reported hours per month in volunteer work at a hospital, nursing home or other health-related settings, at school or other youth-related activities, for political organisations or causes, and/or for any other local organisations or charity. Based on the distribution of responses, we categorised volunteer work into three groups: no volunteer work, 1–9 hours per month, and 10 or more hours per month. Finally, community participation was calculated as the sum of reported frequency of participation per month in religious services, meetings of religious groups, meetings of unions or other professional groups, meetings of sports or social groups, or meetings of any other groups (not including those required by

the respondent's job). Based on the distribution of responses, we categorised community participation into four groups: no participation, 1–3 times per month, 4–7 times per month, and 8 or more times per month.

All regression analyses controlled for age, gender, race, education, working status, marital status, perceived physical health (assessed with a single question: "in general, would you say your physical health is …?", with Likert-scale responses ranging from poor to fair, good, very good or excellent), extroversion trait and MD in 1995–6. Extroversion has been associated with the development of depression[42] and social capital[43] according to previous studies; therefore, this trait was considered as a confounder which needs to be adjusted. Extroversion was assessed by calculating the mean score of a self-administered questionnaire consisting of five items (outgoing, friendly, lively, active, talkative) with Likert-scale responses ranging from a lot to some, a little and not at all. Cronbach's alpha of this scale was 0.78. This scale was used in previous studies.[44 45] Detailed categories of each variable are presented in table 1.

Analyses

Sampling weights were applied to adjust for possible selection bias and differential non-response.[31] Intercorrelations between social capital variables were analysed by Spearman rank correlation. We performed sequential logistic regressions to examine the relationships of social capital and MD diagnosis. In model 1, we regressed diagnosis of MD in 1998 on social capital indicators in 1995–6, adjusting for baseline diagnosis of MD in 1995. In model 2, we additionally controlled for age and gender. In model 3, we additionally adjusted for race, education, working status and marital status. Finally, in model 4, we additionally adjusted for baseline perceived physical health and extroversion trait. The number of individuals dropped from analyses owing to missing data was small. With regard to social capital indicators, the number of missing cases was: social trust, 8; sense of belonging, 4; mutual aid, 4; volunteer activity, 9; and community participation, 3. With regard to subjects who were dropped because of missing covariate information, these were: race, 11; education, 1; working status, 8; and extroversion, 2. After we applied sampling weights in the analyses to approximate a national sample, the final weighted N ranged from 610 to 616, depending on the social capital indicator used. All analyses were carried out with STATA SE statistical package, version 9 (Stata, College Station, TX, USA).

RESULTS

Table 1 shows demographic and health characteristics of the study sample. Regarding demographic characteristics, 56% of the sample were women (weighted), 87% were white, 40% were high school graduates, 63% were full-time workers, and 75% were married. More than 80% of respondents perceived their physical health as good or better. Twelve per cent of the baseline sample in 1995–6 met the criteria for a diagnosis of MD, whereas the corresponding prevalence was 15% at follow-up in 1998.

Being female, of younger age, unemployed (compared with working full time), never married (compared with being married), reporting poor physical health and having a diagnosis of MD in 1995–6 were each associated with higher risks of MD diagnosis at follow-up in 1998. Race and education were not associated with MD in 1998. Extroversion trait was associated with MD in 1995–6, but was not associated with MD in 1998.

With regard to the relationships of demographic and health characteristics to social capital indicators, gender was not associated with social capital variables except for community participation—women were more likely than men to report participating in community activities. Older individuals reported higher levels of social capital across all domains with the exception of engaging in volunteer work. Race was related to lower levels of cognitive social capital (ie, lower perceptions of trust, belonging and mutual aid), but not to structural aspects of social capital. Educational attainment was strongly related to structural dimensions of social capital, but not to cognitive dimensions. Retired individuals had higher levels of social capital, whereas the unemployed showed lower levels of social capital. Marital status was associated with high social trust and sense of belonging. Better physical health was associated with higher structural social capital, though not with cognitive social capital (probably reflecting reverse causation). Extroversion trait was positively associated with all social capital indicators.

Table 2 shows the intercorrelations between social capital variables. All social capital variables were significantly correlated with each other. Correlations among cognitive social capital variables ranged from 0.20 to 0.34, while the two structural social capital scales (volunteering and community participation) were correlated (0.41).

Table 3 shows the weighted unadjusted and adjusted odds ratios of MD in 1998, according to levels of social capital assessed at baseline. Across models 1–3, MD was statistically significantly associated with social trust and sense of belonging. Even after controlling for baseline MD, socioeconomic status (education, working status) and other covariates (gender, age, race, marital status), high levels of social trust were associated with an odds ratio for MD of 0.44 (95% CI 0.20 to 0.95, weighted $N = 613$) compared with low levels of trust. The corresponding odds ratio for high versus low sense of belonging was 0.49 (95% CI 0.24 to 0.99, weighted $N = 617$), with a p for trend of 0.045 (table 3, model 3). In model 4 (additionally adjusting for baseline physical health status and extroversion trait) the association between trust and MD remained marginally significant (OR = 0.43, 95% CI 0.20 to 0.93, weighted $N = 612$). The p value for trend across categories of trust was 0.036, suggesting a "dose–response" effect. However, the association between sense of belonging and MD became statistically non-significant. No associations were found between mutual aid and MD, nor between the structural dimensions of social capital and MD.

As a further robustness check, we repeated the analyses after excluding those who reported MD at baseline. In the fully adjusted model, the point estimates of the odds ratio for high social trust in comparison with low social trust was 0.46, although the 95% CI included 1.0 (95% CI 0.18 to 1.15, weighted $N = 544$). Similarly, sense of belonging was marginally significantly associated with MD: the point estimate of the odds ratio for the high sense of belonging group in comparison with the low sense of belonging group was 0.45 (95% CI 0.19 to 1.02; weighted $N = 546$). p for trend for sense of belonging was 0.057, suggesting a marginally significant dose–response relation. Other social capital variables were not associated with MD. To investigate the interaction between MD at baseline and social trust and sense of belonging, the analysis was repeated among those who reported MD at baseline. We found that the odds ratio for high social trust was 0.36 (95% CI 0.08 to 1.69, weighted $N = 68$), suggesting a protective effect of social trust even among those who have MD at baseline. By contrast, with

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Table 1 Characteristics of sample (*N* = 724)

Variables	*N*	Weighted%	%SE
Gender			
Male	358	44.0	2.2
Female	366	56.0	2.2
Age (years)			
25–34	105	19.5	1.9
35–44	176	28.4	2.1
45–54	178	18.3	1.6
55–64	170	19.4	1.8
65–74	95	14.4	1.8
Race*			
White	645	87.1	1.7
Black	34	8.4	1.5
Other	34	4.4	0.9
Education*			
<High school	53	9.5	1.4
High school†	219	40.2	2.3
Some college‡	224	26.3	1.8
Graduated college§	227	24.0	1.7
Working status*			
Full-time working	457	62.7	2.2
Retired	118	15.1	1.6
Homemaker	80	13.4	1.7
Unemployment	61	8.8	1.3
Marital status			
Married	512	75.2	1.9
Separated	12	1.6	0.5
Divorced	89	9.1	1.2
Widowed	55	6.0	1.0
Never married	56	8.2	1.3
Perceived physical health			
Poor	25	3.0	0.7
Fair	93	14.0	1.6
Good	254	34.8	2.2
Very good	243	32.0	2.1
Excellent	109	16.2	1.7
Major depression in 1995–6			
Yes	85	11.6	1.4
Major depression in 1998			
Yes	115	15.4	1.6

*Total of *N* is less than grand total (*N* = 724) owing to missing value.
†General Educational Development is included.
‡No bachelor degree is included.
§Professional education is included.

regard to sense of belonging, the odds ratio of high sense of belonging was 0.71 (95% CI 0.17 to 3.03, weighted *N* = 69). The interaction term was not statistically significantly between MD and either social trust or sense of belonging.

DISCUSSION

The present study suggests that perceptions of higher levels of cognitive social capital (trust of neighbours and sense of belonging) are associated with lower risks of developing MD during 2–3-year follow-up, even after controlling for socioeconomic status, baseline diagnosis of MD and other sociodemographic covariates. The association between trust and MD remains statistically significant even after controlling for baseline physical health status and extroversion trait (table 3, model 4). However, after excluding participants with MD at baseline, the association between trust and MD became non-significant. Structural dimensions of social capital were not associated with MD.

Our results are consistent with some previous studies which found individual cognitive social capital to be inversely

Table 2 Intercorrelations between social capital variables

Social capital components	1	2	3	4	5
1. Social trust	–				
2. Sense of belonging	0.34**	–			
3. Mutual aid	0.20**	0.27**	–		
4. Volunteer work	0.11**	0.25**	0.08**	–	
5. Community participation	0.12**	0.28**	0.11**	0.41**	–

Social trust, sense of belonging and mutual aid were categorised into low, middle and high; volunteer work was categorised into no volunteer work, 1–9 hours/month and ≥10 hours/month; and community participation was categorised into no participation, 1–3 times/month, 4–7 times/month and ≥8 times/month.
**p<0.01.

associated with common mental disorder.[7 24 26–28] For example, Fone *et al*[7] reported inverse associations between individual-level and community-level cognitive social capital and common mental disorder using the same data. In another study, ecological social capital (measured as social cohesion) was inversely associated with psychotic morbidity within electoral wards in the UK.[46] Linking social capital was inversely associated with the risk of hospitalisation due to depression, net of individual covariates, in Sweden.[2] On the other hand, Rosenheck *et al*[47] reported that social capital, measured by both cognitive and structural dimensions, was not associated with depression or psychosis (assessed by C-DIS-R and PERI) among homeless people with severe mental illness in the USA using a longitudinal design.

Although our sample size is not very large, we used a nationally representative sample of middle-aged adults in the USA. To our knowledge, this is the first study to show the association between social capital and MD within a nationally representative sample, using diagnoses based on the DSM, and based on a prospective longitudinal design. The longitudinal design of our study reduces the likelihood of reverse causation (ie, the possibility that mental illness either led to lower perceptions of trust and belonging or that individuals with better mental health moved to more cohesive communities), which has limited the interpretation of cross-sectional studies. We hasten to add that, even with a longitudinal study design, we cannot rule out the possibility of common method bias. In other words, individuals with negative affect at baseline (who would have been at increased risk of developing MD during the course of follow-up) were more likely to negatively evaluate trust and other aspects of social capital within their communities. The ideal design to overcome this bias would have been to assess community social capital from an independent source (eg, a community survey in a separate sample), or to aggregate the responses of residents living within the same community.[48] Unfortunately, the MIDUS data did not permit us to aggregate (and average) the perceptions of individuals living within the same community, which is clearly the limitation of this study. Our inability to measure social capital at the ecological level precluded differentiating whether the "places" people live matters for MD, or whether the perception of individuals toward "place" matters for MD.

To address common method bias, we adjusted for extroverted personality trait, and found that both trust and sense of belonging continued to be associated with lower risks of MD. However, when we excluded MD at baseline, the associations became non-significant, although the point estimates of the odds ratios were quite similar (0.43 and 0.46 for trust and sense of belonging respectively). The exclusion of those who had MD at baseline (68 weighted cases) possibly reduced our power to detect a statistically significant association between social trust

Table 3 Weighted percentage of major depression by social capital level and weighted unadjusted and adjusted odds ratios of logistic regression of social capital variables on major depression in 1998

Social capital variables	Weighted percentage	Unadjusted OR (95% CI)	Adjusted OR (95% CI)			
			Model 1 (+ depression in 1995–6)	Model 2 (+ age, gender)	Model 3 (+race, education, working status, marital status)	Model 4 (+ perceived physical health, extroversion trait)
Cognitive social capital						
Social trust						
Weighted *N*		628	628	628	613	612
Low	22.4	1.00	1.00	1.00	1.00	1.00
Middle	39.6	0.51 (0.28–0.93)	0.59 (0.32–1.11)	0.59 (0.31–1.13)	0.60 (0.30–1.18)	0.58 (0.29–1.14)
High	38.0	0.34 (0.18–0.64)	0.39 (0.20–0.75)	0.42 (0.20–0.85)	0.44 (0.20–0.95)	0.43 (0.20–0.93)
p for trend		0.001	0.006	0.017	0.039	0.036
Sense of belonging						
Weighted *N*		632	632	632	617	615
Low	31.7	1.00	1.00	1.00	1.00	1.00
Medium	32.6	0.67 (0.38–1.20)	0.69 (0.38–1.27)	0.70 (0.38–1.29)	0.73 (0.39–1.38)	0.70 (0.37–1.33)
High	35.7	0.42 (0.23–0.77)	0.42 (0.22–0.80)	0.46 (0.24–0.90)	0.49 (0.24–0.99)	0.51 (0.25–1.04)
p for trend		0.004	0.008	0.022	0.045	0.062
Mutual aid						
Weighted *N*		632	632	632	617	615
Low	33.8	1.00	1.00	1.00	1.00	1.00
Medium	30.8	0.69 (0.38–1.27)	0.73 (0.40–1.34)	0.75 (0.41–1.39)	0.83 (0.43–1.58)	0.84 (0.41–1.70)
High	35.4	0.83 (0.47–1.47)	0.93 (0.50–1.71)	0.99 (0.52–1.88)	1.08 (0.54–2.16)	1.09 (0.52–2.25)
p for trend		0.524	0.815	0.968	0.831	0.817
Structural social capital						
Volunteer work						
Weighted *N*		628	628	628	612	610
No volunteer work	61.6	1.00	1.00	1.00	1.00	1.00
1–9 hours/month	19.7	0.65 (0.33–1.26)	0.74 (0.37–1.47)	0.76 (0.38–1.51)	0.77 (0.37–1.61)	0.81 (0.38–1.72)
⩾10 hours/month	18.7	1.35 (0.73–2.48)	1.62 (0.86–3.05)	1.61 (0.86–3.00)	1.57 (0.79–3.11)	1.64 (0.83–3.24)
p for trend		0.587	0.263	0.256	0.325	0.251
Community participation						
Weighted *N*		634	634	634	618	616
No participation	26.6	1.00	1.00	1.00	1.00	1.00
1–3 times/month	18.6	1.00 (0.50–1.98)	1.09 (0.52–2.31)	1.02 (0.47–2.21)	0.97 (0.45–2.13)	1.05 (0.47–2.35)
4–7 times/month	24.3	0.78 (0.39–1.54)	0.95 (0.46–1.96)	1.00 (0.48–2.09)	0.94 (0.45–1.98)	1.02 (0.48–2.16)
⩾8 times/month	30.5	0.69 (0.35–1.34)	0.83 (0.41–1.67)	0.81 (0.39–1.66)	0.70 (0.34–1.47)	0.77 (0.35–1.71)
p for trend		0.209	0.544	0.564	0.357	0.530

and MD, resulting in an imprecise risk estimate. An alternative interpretation is that social trust helps depressed people to recover from their illness, but does not affect the incidence of MD. Our findings do not allow us to conclude that social trust "prevents" the onset of MD. Rather, living in a high social trust community may be beneficial for depressed people as residents in such places might have better access to affective support, which may improve their prognosis.[7 49] Additional, longer follow-up studies are needed to investigate the association between social capital and MD.

The protective effect of social trust for MD can be interpreted in two ways. First, living in a community with higher social trust may have a direct protective effect for MD (main effect).[1] Individual interactions with trusting neighbours may produce positive psychological states, such as a sense of being "accepted" within the community. Alternatively, higher social trust within a community may foster health-related social norms (ie, more physical activity, non-smoking), which may have a protective effect for MD. A recent multilevel study showed that living in a deprived neighbourhood is associated with depressive symptoms.[50] Further multilevel studies are needed to test the existence of contextual effects of social trust on MD. Second, those who live in a high trust community may find it easier to

obtain social support from neighbours to cope with daily stress (stress-buffering model).[1] An explicit test of the stress-buffering model requires checking for a cross-level interaction term between community social capital and individual experiences of stress.

A notable finding of our study was that, although cognitive dimensions of social capital (trust in particular) were associated with MD, structural dimensions (volunteering and community participation) were not. This emphasises the importance of assessing different dimensions of social capital, since they may not be associated with health outcomes to the same degree. Our finding echoes recent reports indicating that volunteering and community participation are not always associated with better health outcomes (even though endogeneity bias might predict that they would be, ie, healthier people tend to volunteer and to participate in local activities).[51] In a previous review article, it was reported that none of the studies of structural capital (measured at the ecological level) found an association with common mental disorder or suicide.[5] In addition, in a study of a working class suburb in Adelaide, Australia, Ziersch and Baum[52] found that involvement in community groups was associated with worse physical health as measured by the SF-12 health status survey. Qualitative interviews with residents in the same

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What this study adds

A growing number of studies have suggested a link between community social capital and mental health; however, the association remains inconclusive. We conducted a longitudinal study to examine the association between both cognitive and structural social capital and mental health, using DSM diagnostic criteria. Our findings showed that high cognitive social capital, specifically social trust but not structural social capital, was associated with lower risk of MD. However, after excluding participants with MD at baseline, the association between trust and MD became non-significant.

Policy implication

Further empirical studies are warranted before the existing findings on social capital can be translated into effective interventions to promote mental health.

study found that respondents were more likely to view their participation in local community groups as emotionally and physically draining.[52]

In addition, recent research has also begun to emphasise the importance of distinguishing between the effects of so-called bonding and bridging social capital.[18] Bonding capital refers to resources that are accessed within social groups whose members are alike ("homophilous") in terms of their social identity, such as class or race. By contrast, bridging capital refers to the resources accessed by individuals and groups through connections that cross class, race/ethnicity and other boundaries of social identity. The importance of distinguishing between these two types of capital was illustrated in a small study of a disadvantaged minority community in Birmingham, Alabama, where Mitchell and LaGory[15] reported that high bonding social capital (measured by the strength of trust and associational ties with others of a similar racial and educational background as the respondent) was paradoxically associated with worse levels of mental distress. In the same study, however, individuals who reported social ties to others who were unlike them with respect to race and class (ie, who had access to bridging capital) were less likely to report mental distress.[15] Unfortunately, the social capital questions on the MIDUS survey did not permit us to distinguish between bonding and bridging social capital, though doing so may have helped us to understand why variables such as mutual aid did not appear to be associated with risk of MD.

In summary further empirical studies are warranted before the existing findings on social capital can be translated into effective interventions to promote mental health. Meanwhile, the present study has attempted to advance the evidence base in three incremental respects: (1) by utilising a longitudinal design, (2) by adopting a DSM-based diagnosis of MD as the outcome, and (3) by examining the links to both cognitive and structural aspects of community social capital.

Competing interests: None.

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