

Relationship of social factors including trust, control over life decisions, problems with transport and safety, to psychological distress in the community

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Abstract

Purpose Psychological distress encompasses anxiety and depression with the previous studies showing that psychological distress is unequally distributed across population groups. This paper explores the mechanisms and processes which may affect the distribution of psychological distress, including a range of individual and community level socioeconomic determinants.

Methods Representative cross-sectional data was collected for respondents aged 16+ from July 2008 to June 2009, as a part of the South Australian Monitoring and Surveillance System (SAMSS) using Computer Assisted Telephone Interviews (CATI). Univariate and multivariate analyses ($n = 5,763$) were conducted to investigate the variables that were associated with psychological distress.

Results The overall prevalence of psychological distress was 8.9%. In the multivariate model, females, those aged 16–49, respondents single with children, unable to work or unemployed, with a poorer family financial situation, earning \$20,000 or less, feeling safe in their home some or none of the time, feeling as though they have less than total control over life decisions and sometimes experiencing problems with transport, were significantly more likely to experience psychological distress.

Conclusions This paper has demonstrated the relationship between low-income, financial pressure, less than optimal safety and control, and high-psychological distress. It is important that the groups highlighted as vulnerable be targeted in policy, planning, and health promotion and prevention campaigns.

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Introduction

Psychological distress, which includes measures of depression and anxiety, is an important concept in the epidemiology of mental health. Previous studies have shown that psychological distress is not experienced equally among all population groups [1, 2]. In particular, research has shown different rates of psychological distress or poor mental health outcomes across several socioeconomic related factors including socioeconomic disadvantage [3–5], unemployment [6], poverty [7], work and life stressors [8–10], family structure [11, 12], and a range of psychosocial factors [13]. Internationally, race and ethnic differences have also been reported [14].

Effective policy and program interventions to reduce the prevalence and impact of psychological distress in the community can only be developed through a thorough understanding of its determinants. An evidence based on targeted information is necessary to inform policies which aim at reducing psychological distress. As previously argued [6], the relationship between variables that affect poor mental health outcomes need to be considered simultaneously. It has also been contended that although the distribution of social inequalities and the effect on health have been thoroughly researched, research on some of the mechanisms and processes which influence the inequalities, is required [15].

In South Australia, a large database is available, which contains a comprehensive range of the relevant demographic, socioeconomic status, social factors and life stressor measures, suggested to be related to psychological distress, which can be assessed at the univariate and multivariate level. The Assessment of the Determinants and Epidemiology of Psychological Distress (ADEPD) [16, 17] study aimed to provide a comprehensive analysis of the determinants of psychological distress in the South Australian population. The objective of this paper is to investigate the relationship between psychological distress and a range of individual and community level socioeconomic determinants, including levels of safety in the home, level of control over life decisions, amount of problems with transport and level of trust in the community.

Methods

The data for this analysis were collected using the South Australian Monitoring and Surveillance System (SAMSS), a monthly chronic disease and risk-factor survey of randomly selected persons, established in July 2002. All

households in South Australia with a telephone number listed in the Electronic White Pages (EWP) are eligible for selection in the sample. Each month, residential telephone numbers are randomly selected from the EWP. A letter introducing SAMSS is sent to the household of each selected telephone number. Within each household, the person who had their birthday last is selected for interview. There is no replacement for non-contactable persons. Although surrogate interviews are undertaken on behalf of children, the analysis in this paper is limited to adults aged 16+ years.

Data are collected by a contracted agency and interviews are conducted in English. At least ten call backs are made to the telephone number to interview household members. Replacement interviews for persons who cannot be contacted or interviewed are not permitted. Of each interviewer's work, 10% is selected at random for validation by the supervisor.

The data are weighted by age, gender, area (metropolitan/rural) and probability of selection in the household to the most recent Australian Bureau of Statistics Census or estimated residential population data so that the health estimates calculated would be representative of the adult population. Probability of selection in the household is calculated on the number of eligible people in the household and the number of listings in the EWP. The weights reflect unequal sample inclusion probabilities and compensate for differential non-response.

Data were analysed using SPSS version 15.0 for Windows and STATA version 10. The current analysis used data collected in the period July 2008–June 2009 among respondents aged 16 years and above ($n = 5,802$). The response rate of SAMSS for this period was between 65 and 70% each month. Chi-square tests were used to compare the prevalence estimates. Significance was determined at the $p < 0.05$ level. All variables significant at the $p < 0.25$ [18] were then included in the multivariate analysis. The SAMSS questionnaire has been approved by the Adelaide University Ethics of Human Research Committee.

In terms of assessing general psychological distress in the population, the Kessler 10 (K10) is a widely used tool [19, 20]. It is a ten item questionnaire on non-specific psychological distress. The items are based on the level of anxiety and depressive symptoms experienced in the most recent 4-week period. Subjects report the frequency of each experience on a five point scale ranging from 'all of the time' to 'none of the time'. Five points are given to any answer of 'all of the time' down to one point in a linear formulation for 'none' of the time. This results in individual K10 scores being restricted to the range of 10–50 inclusive. Cut-off scores for low, moderate, high and very high psychological distress are based on the 2000 Collaborative Health and Wellbeing Survey [21], where respondents with a score of 22–50 were classified as having

psychological distress. The ability to screen for anxiety and affective disorders is seen as one of the K10's strengths [22–24] and its use in population health surveys has been validated [1]. While not all people who have psychological distress have a diagnosed mental health condition, there is a known relationship between K10 and mental health [22] even though the K10 measures a mental health condition that does not necessarily meet the formal criteria of a psychiatric illness [19, 25, 26].

Demographic data were collected on age, country of birth, family structure, marital status, area of residence, the highest educational qualification, employment status, family's money situation, housing tenure, and the gross annual income for the household. Respondents were classified into quintiles of the Socio-Economic Index for Areas (SEIFA); Index of Relative Socio-Economic Disadvantage (IRSD) according to their postcode [27].

Questions relating to social factors included: 'Do you feel safe in your home?', 'Overall, do you feel that your neighbourhood is a safe place?', 'Do you think that in this neighbourhood people generally trust one another?' and 'I have control over the decisions that affect my life'. Respondents were also asked 'How often do you have problems with transport when you want to go, for example, to hospital, medical appointments, recreational facilities, visiting people, shopping, school or childcare?'

Results

Overall 49.0% of respondents were male and the mean age was 37.5 years. The overall prevalence of psychological distress between July 2008 and June 2009 was 8.9% (95% CI 8.2–9.6; $n = 5,763$). There were significant differences by sex (higher rates for females) and by age groups (higher rates for the younger groups). All demographic and socioeconomic differences are listed in Table 1. All of the social factors proved to be statistically significantly associated with higher levels of psychological distress (Table 2).

Initial multivariate modelling indicated that the variables measuring the safety of the neighbourhood and feeling safe in the home-measured similar concepts. While acknowledging that safety in the home could refer to the absence of domestic violence, rather than the broader neighbourhood safety, this variable was chosen to use in the analysis. The variables significant in the final model are listed in Table 3 (Hosmer and Lemeshow goodness of fit test $\chi^2 = 13.67$, $p = 0.091$).

Discussion

This representative population study of adults has highlighted a range of demographic, socioeconomic and social

variables that are associated with high levels of psychological distress in the population, and confirmed the relationship between lower socioeconomic status and higher rates of psychological distress. While overall 8.9% had high-psychological distress, this rate was statistically significantly higher for females and younger persons (16–34 years). The overall prevalence estimate in this study was similar when compared with the other Australian prevalence studies using the K10 as the instrument of choice [28]. Lower prevalence rates in younger age groups has previously been shown [29], although other studies have shown variations on this finding [30, 31]. Differences in methodology and measurement of psychological distress make comparison difficult although Toumborou [32] has suggested that ensuring younger people with low-socioeconomic status and mental health problems are the focus of promotion and prevention through development and educational endeavours is crucial. Kessler [33], in an analysis of the age of onset of mental health classifiable disorders, has shown that the initial onset often occurs early in life, but treatment and intervention often does not start until later in life. Life course research highlights the value of early intervention for those who grow up in a low-socioeconomic status environment [34, 35], while the resilience related research suggests positive opportunities for intervention [36].

The relationships between deficits in the social factors measured in this study (safety in the home, control over life decisions, problems with transport) have previously been cited [3]. Measuring socioeconomic status and social factors, however, is complex and measurements are not universally accepted. It is acknowledged that we have examined limited variables that do not fully cover the broad breath of these concepts. Notwithstanding, this research has again highlighted the interaction between poor mental health, measures of social factors including safety, control and access to transport and low-socioeconomic status. Neighbourhood trust, however, was not significantly associated with psychological distress in the multivariate model.

High-psychological distress and unemployment, or the inability to undertake work because of ill health, has previously been reported [6, 31, 37, 38], as has the relationship between low-paid employment and mental health [39]. Not surprisingly, our final model suggested the importance of the household financial situation with the categories 'just having enough money to get through' and 'spending more money than receiving', in addition to low-household annual income, all being significant. Previous research has highlighted the changing nature of financial pressures related to changes in employment status and the resultant change in psychological status. Thomas [37, 38], in a longitudinal study, argued that the direction of causality

Table 1 Univariate analysis of demographic and socioeconomic factors for respondents with psychological distress

	<i>n</i>	(%)	OR	95% CI	<i>p</i>
Gender					
Male	212/2,810	7.5	1.00		
Female	299/2,953	10.1	1.38	1.15–1.66	0.001
Age group (years)					
65 and above	80/1,105	7.2	1.00		
50–64	121/1,360	8.9	1.26	0.94–1.70	0.121
35–49	144/1,562	9.2	1.31	0.99–1.74	0.062
16–34	166/1,736	9.6	1.36	1.03–1.80	0.030
Country of birth^a					
Australia	402/4,579	8.8	1.00		
UK or Ireland	53/571	9.2	1.06	0.78–1.43	0.710
Europe, Asia, Others	57/605	9.4	1.08	0.80–1.44	0.617
Family structure^a					
Couple with children	204/2,737	7.5	1.00		
Single with children	78/346	22.7	3.64	2.73–4.86	<0.001
Single adult only	80/667	12.0	1.69	1.28–2.22	<0.001
Couple only	103/1,593	6.5	0.86	0.67–1.10	0.224
Adults (related)	35/314	11.1	1.55	1.06–2.27	0.024
Adults (unrelated)	11/90	12.4	1.76	0.92–3.35	0.085
Marital status^a					
Married/de facto	262/3,731	7.0	1.00		
Separated/divorced	68/396	17.1	2.74	2.05–3.67	<0.001
Widowed	34/364	9.4	1.38	0.95–2.00	0.091
Never married	148/1,271	11.6	1.74	1.41–2.16	<0.001
Area of residence					
Metropolitan	385/4,184	9.2	1.00		
Country	126/1,578	8.0	0.86	0.69–1.06	0.151
Number of people >16 years in household					
1	108/774	13.9	1.00		
2	241/3,137	7.7	0.52	0.41–0.66	<0.001
3 or more	162/1,852	8.8	0.59	0.46–0.77	<0.001
Number of children 0–15 years in household					
None	320/3,706	8.6	1.00		
At least one	191/2,056	9.3	1.08	0.89–1.30	0.425
Aboriginal or Torres Strait Islander^a					
No	505/5,713	8.8	1.00		
Yes	4/46	8.0	0.90	0.31–2.62	0.843
Education					
Degree or higher	102/1,320	7.7	1.00		
Trade, certificate, diploma	116/1,391	8.3	1.09	0.82–1.44	0.550
No schooling to secondary	293/3,042	9.6	1.28	1.01–1.62	0.041
Employment status^a					
Full time employed	131/2,369	5.5	1.00		
Part time employed	113/1,155	9.7	1.85	1.42–2.41	<0.001
Unemployed	34/161	21.2	4.62	3.04–7.01	<0.001
Home duties	25/291	8.6	1.61	1.03–2.52	0.037
Student	35/419	8.4	1.57	1.07–2.32	0.022
Retired	92/1,191	7.7	1.44	1.09–1.90	0.010

Table 1 continued

	<i>n</i>	(%)	OR	95% CI	<i>p</i>
Unable to work	81/175	46.2	14.73	10.43–20.82	<0.001
Family financial situation					
Can save a lot	41/921	4.5	1.00		
Can save a bit now and then	183/3,013	6.1	1.39	0.98–1.97	0.062
There's some money left over each week but just spend it	31/354	8.8	2.07	1.28–3.35	0.003
Have just enough money to get through	180/1,011	17.8	4.64	3.26–6.59	<0.001
Spending more money than get	67/260	25.6	7.40	4.87–11.25	<0.001
Don't know/Refused	9/203	4.5	1.02	0.49–2.12	0.960
Dwelling status ^a					
Owned or being purchased	376/4,924	7.6	1.00		
Rented privately	82/509	16.0	2.31	1.79–3.00	<0.001
Rented from the Housing Trust	38/203	18.7	2.78	1.93–4.02	<0.001
Other	16/120	13.2	1.84	1.08–3.16	0.026
Gross annual household income					
More than \$80,000	97/1,829	5.3	1.00		
\$60,001 to \$80,000	38/752	5.0	0.94	0.64–1.39	0.762
\$40,001 to \$60,000	69/755	9.1	1.80	1.30–2.48	<0.001
\$20,001 to \$40,000	105/835	12.6	2.57	1.92–3.43	<0.001
Up to \$20,000	107/617	17.3	3.74	2.79–5.01	<0.001
Not stated	96/975	9.8	1.94	1.45–2.61	<0.001
SEIFA IRSD ^a					
Highest quintile (advantaged)	108/1,337	8.1	1.00		
High quintile	94/1,155	8.1	1.01	0.76–1.35	0.945
Middle quintile	110/1,222	9.0	1.13	0.86–1.49	0.390
Low quintile	110/1,159	9.5	1.19	0.90–1.57	0.216
Lowest quintile (disadvantaged)	89/874	10.2	1.29	0.96–1.74	0.088

Bold values denote significant at $p < 0.05$

^a Not stated/other category not reported

goes from a negative change in employment status to financial pressures and the resultant psychological distress. Increased financial strain, with or without employment concerns, has been shown to increase psychological distress and the reverse has also been demonstrated—people with high-psychological distress are more likely to have financial problems [40]. It could also be possible that having high-psychological distress can increase the probability of being unable to find or hold a job [6]. The present study could not determine the direction of causality.

In our final multivariate model, being single with children was a joint predictor of high-psychological distress. Previous research has also shown the different relationship between employment and unemployment for single and married mothers. Ali and Avison [41] calls for targeted policies after reporting on different levels of psychological distress among employed and unemployed mothers, with significantly greater increases in psychological distress

among single mothers when employment changes. This again is generally related to increased family financial strain, although, other stressors related to childcare and household responsibilities have an impact [41]. Others have stressed the importance of targeting interventions and support programs for single mothers [42, 43] and mothers of young children [44].

We have shown the relationship between low-income and financial pressures, coupled with less than optimal safety, and control and high-psychological distress. Caron et al. [45] argues that financial pressures, in themselves, do not necessarily lead to high-psychological distress if meaningful social support is available. In addition, being unemployed increases the likelihood of decreased social activity, social participation and social support [6], all likely to be compromised by negative financial circumstances. For the newly unemployed, maintenance or forming of new 'normal' social support networks is required.

Table 2 Univariate analysis of social capital factors for respondents with psychological distress

	<i>n</i>	(%)	OR	95% CI	<i>p</i>
Feel safe in home ^a					
All of the time	321/4,459	7.2	1.00		
Most of the time	156/1,201	13.0	1.93	1.57–2.36	<0.001
Some of the time	27/91	30.0	5.52	3.47–8.77	<0.001
None of the time	6/9	67.5	26.79	6.79–105.62	<0.001
Neighbourhood a safe place					
Yes	462/5,363	8.6	1.00		
No	34/242	14.2	1.76	1.21–2.56	0.003
Don't know/not sure	15/158	9.3	1.09	0.63–1.87	0.768
Neighbourhood people trust one another					
Yes	381/4,693	8.1	1.00		
No	72/399	18.1	2.51	1.90–3.30	<0.001
Don't know/not sure	58/671	8.6	1.07	0.80–1.43	0.637
Control over life decisions					
Strongly agree	134/2,625	5.1	1.00		
Agree	231/2,700	8.6	1.74	1.40–2.17	<0.001
Neutral/don't know	40/162	24.6	6.06	4.07–9.02	<0.001
Disagree	93/251	37.3	11.04	8.10–15.04	<0.001
Strongly disagree	13/26	49.5	18.19	8.24–40.17	<0.001
Problems with transport ^a					
Never	367/5,079	7.2	1.00		
Sometimes	107/566	18.8	2.97	2.35–3.76	<0.001
All the time	37/114	32.3	6.11	4.07–9.18	<0.001

Bold values denote significant at $p < 0.05$

^a Not stated/other category not reported

Interestingly, transport accessibility was significant in the final model, and the question arises as to whether improving transport options, particularly for financially stressed people, could improve psychological distress in the population. This finding is a reminder that health is affected by all areas of life [46–48] and that the impact of inadequate transport can contribute to psychological distress. This connection should be discussed with transport authorities and used to shape the health-in-all-policies program which is a current initiative of the South Australian Government [49]. Notwithstanding, it should be noted that some other factor (perhaps personality characteristics) may give rise to high-psychological distress as well as the tendency to report negative perceptions about life circumstances such as transport.

Weaknesses of this study include the cross-sectional nature of the research with the consequent inability to determine direction of effect. In addition, the self-report nature of the data collection is vulnerable to socially desirable or other biased responses. The use of a telephone as the mode of data collection could also result in bias. As such, these estimates and associations could be underestimations as those without telephone connections in Australia are more likely to be homeless or itinerant. The EWP-sampling strategy used in this research includes mobile phone with up to 8% of interviews undertaken on

this medium. Although, possible bias associated with EWP as the sampling frame is acknowledged, research on this issue has previously been undertaken [50, 51]. It is also acknowledged that the socioeconomic status and social variables were not systematically researched for inclusion in the surveillance system; rather they are key questions uniformly included and limited by considerations of cost and time on the telephone.

Strengths of this study include the good response rate in an era when privacy concerns and increased telephone marketing has made it harder to achieve response rates over 70%. The data are weighted so that the estimates are reflective of the broader population. An additional strength is the fact that a large range of variables have been assessed against psychological distress. While trends were not analysed here the chronic disease and risk-factor surveillance system used to collect these data is in the field each month using the same-sampling strategy and identical questions, so re-analysis of these results over time will be possible.

As argued by others [52] public health has often ignored the association between socioeconomic status and mental health. This study brought together many experts from fields related to psychological distress, public health, social determinants of health, epidemiology, statistics, health promotion, policy, and planning in order to analyse and

Table 3 Multivariate analysis of demographic, socioeconomic and social capital factors for respondents with psychological distress

	OR	95% CI	<i>p</i>
Gender			
Male	1.00		
Female	1.36	1.01–1.82	0.039
Age group (years)			
65 and over	1.00		
50–64	1.43	0.97–2.12	0.074
35–49	1.85	1.12–3.06	0.017
16–34	2.00	1.16–3.48	0.013
Family structure ^a			
Couple with children	1.00		
Single with children	1.81	1.14–2.88	0.012
Single adult only	1.15	0.76–1.74	0.502
Couple only	0.87	0.60–1.28	0.479
Adults (related)	1.07	0.59–1.92	0.827
Adults (unrelated)	1.08	0.37–3.17	0.893
Employment status			
Full time employed	1.00		
Part time employed	1.33	0.88–2.03	0.169
Unemployed	2.11	1.07–4.13	0.031
Home duties	0.97	0.54–1.73	0.914
Student	0.93	0.45–1.91	0.845
Retired	1.54	0.95–2.48	0.077
Unable to work	5.65	3.18–10.04	<0.001
Other	4.24	0.31–57.94	0.278
Family financial situation			
Can save a lot	1.00		
Can save a bit every now and then	1.07	0.67–1.72	0.774
There's some money left over each week but just spend it	1.47	0.74–2.92	0.266
Have just enough money to get through	2.12	1.28–3.51	0.004
Spending more money than get	3.84	2.00–7.37	<0.001
Don't know/Refused	0.55	0.20–1.50	0.244
Gross annual household income			
More than \$80,000	1.00		
\$60,001 to \$80,000	0.84	0.51–1.38	0.483
\$40,001 to \$60,000	1.22	0.72–2.07	0.467
\$20,001 to \$40,000	1.38	0.86–2.20	0.183
Up to \$20,000	1.79	1.07–3.01	0.027
Not stated	1.36	0.83–2.21	0.218
Feel safe in home ^a			
All of the time	1.00		
Most of the time	1.33	0.98–1.81	0.072
Some of the time	2.68	1.32–5.42	0.006
None of the time	17.23	2.83–105.07	0.002
Control over life decisions			
Strongly agree	1.00		
Agree	1.46	1.09–1.97	0.012
Neutral/don't know	5.25	2.69–10.24	<0.001
Disagree	5.96	3.77–9.42	<0.001

Table 3 continued

	OR	95% CI	<i>p</i>
Strongly disagree	10.44	3.48–31.34	<0.001
Problems with transport			
Never	1.00		
Sometimes	1.80	1.26–2.58	0.001
All the time	1.84	0.95–3.54	0.070
Don't know	1.76	0.16–19.45	0.646

Bold values denote significant at $p < 0.05$

^a Not stated/other category not reported

interpret the existing data. While doing so, it provides recommendations for prevention and early intervention strategies as well as identification of groups at the greatest risk for further investigation. Reducing socioeconomic status inequalities continues to be an important consideration for minimising the exposure and experience of factors that can impair the mental health of individuals, communities and the overall population.

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