Neighbourhood environment and positive mental health in older people: The Hertfordshire Cohort Study

Catharine R. Gale [a,b,*], Elaine M. Dennison [a], Cyrus Cooper [a], Avan Aihie Sayer [a]

[a] MRC Lifecourse Epidemiology Unit, University of Southampton, UK
[b] Centre for Cognitive Ageing & Cognitive Epidemiology, Department of Psychology, University of Edinburgh, UK

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ABSTRACT

Little is known about the potential effects of neighbourhood environment on positive mental health in older people. We examined cross-sectional associations between the index of multiple deprivation score of the census area of residence, perceptions of neighbourhood cohesion and neighbourhood problems and mental wellbeing, as measured by the Warwick–Edinburgh Mental Wellbeing Scale, in 1157 men and women aged 69–78 years from Hertfordshire, UK. We found no association between area-level deprivation and mental wellbeing. People who felt a stronger sense of cohesion within their neighbourhood and reported fewer neighbourhood problems had higher levels of mental wellbeing, independently of social class, income, presence of limiting illness or disability, mobility problems, and perceived social support. Adjustment for emotional stability attenuated the associations between mental wellbeing and both of these measures of perceived neighbourhood environment, particularly in the case of neighbourhood problems. How older people feel about their neighbourhood may be important for positive mental health in later life.

1. Introduction

There is some evidence that neighbourhood environment may be important for mental health. Living in an area that has more socioeconomic deprivation has been linked with a higher prevalence of anxiety and depression (Fone et al., 2007), an increased risk of incident depression (Galea et al., 2007), and a greater likelihood of admission to psychiatric hospital, independently of individual-level socioeconomic factors (Sundquist and Ahlen, 2006). But this is not a consistent finding. Studies from Sweden (Lofors et al., 2006), the UK (Propper et al., 2005), and the Netherlands (Reijneveld and Schene, 1998) found that neighbourhood deprivation appeared to have little or no influence on the prevalence of anxiety or depression once individual socioeconomic status had been accounted for.

Fewer studies have examined the potential effect of neighbourhood environment on mental health in older people (Yen et al., 2009). It seems plausible that characteristics of the immediate residential neighbourhood may be more important for mental wellbeing at older ages because such individuals are less likely to go out to work and have an increased risk of mobility limitations. Yet findings on the relation between neighbourhood socioeconomic deprivation and depressive symptoms in older people have been as inconsistent as those in the general population, with two studies finding a significant association between neighbourhood poverty and increased depression after adjustment for individual characteristics (Kubzansky et al., 2005; Ostir et al., 2003), but others showing no effect (Aneshensel et al., 2007; Walters et al., 2004). There is only limited evidence on the relationship between perceived aspects of neighbourhood and mental health in older people, but findings linking self-reports of problems with the neighbourhood (Schieman and Meersman, 2004), neighbourhood social environment (Brown et al., 2009) and sense of belonging to a neighbourhood (Young et al., 2004) with psychological distress in older people suggest that how individuals feel about the physical and social environment where they live may be more strongly associated with their mental health than objective, area-level measures of neighbourhood deprivation.

Most studies into the relation between neighbourhood and mental health have assessed symptoms of depression or anxiety. Such measures have drawbacks as an indicator of the continuum of mental wellbeing in population samples because of their ceiling effects; in other words a large proportion of respondents will report no such symptoms. The Warwick–Edinburgh Mental Wellbeing Scale was developed specifically to measure mental wellbeing in population samples, focusing entirely on positive

* Corresponding author at: MRC Lifecourse Epidemiology Unit, University of Southampton, UK. Tel.: +44 23 80764080; fax: +44 23 80704021.
E-mail address: crg@mrc.soton.ac.uk (C.R. Gale).

aspects of mental health (Tennant et al., 2007). We used this measure in a survey of men and women aged 69–78 years, and investigated the cross-sectional relations between neighbourhood area-level deprivation, perceptions of neighbourhood problems and neighbourhood cohesion, and positive mental health. We were able to examine the role of several other factors that could potentially confound or mediate any association between our measures of neighbourhood environment and positive mental health, including individual socioeconomic circumstances, presence of limiting long-term illness or disability, mobility problems, the personality trait emotional stability (or neuroticism), and perceived level of social support. Our hypothesis was that how older people felt about neighbourhood problems and how strongly they felt a sense of cohesion with their neighbourhood would be more strongly linked to their positive mental health than an objective measure of deprivation in their area.

2. Methods

2.1. Participants

In 1998–2004, men and women born in Hertfordshire between 1931 and 1939 and still living in the county were recruited to take part in a cohort study to evaluate interactions between the genome, the intrauterine and early postnatal environment, and adult lifestyle in the aetiology of chronic disorders of later life. A description of the setting up of the Hertfordshire Cohort Study has been published previously (Syddall et al., 2005). Of 6099 people invited to take part in the initial survey, 3225 (53%) agreed to be interviewed. In 2008, surviving participants were invited to take part in a postal survey. Of 2689 people approached, 1417 (53%) returned a completed questionnaire. The study was approved by the Hertfordshire Research Ethics Committee.

2.2. Measures

2.2.1. Positive mental health

Positive mental health or mental wellbeing was assessed using the Warwick–Edinburgh Mental Wellbeing Scale. This scale was developed recently to measure a wide conception of mental wellbeing – including positive affect, psychological functioning, and interpersonal relationships – and to be suitable for use in population surveys (Tennant et al., 2007). Confirmatory factor analysis suggests it measures a single underlying concept (Tennant et al., 2007). It has been validated on a representative general population sample of adults, but, to our knowledge, has not yet been validated specifically in older people. The scale consists of 14 positively worded statements. Examples include 'I've been feeling optimistic about the future', 'I've been feeling interested in other people', 'I've been dealing with problems well', and 'I've been feeling good about myself'. For each statement, respondents are asked to indicate which of five options, ranging from none of the time (score 1) to all of the time (score 5), best describes their experience over the last two weeks. The overall score is calculated by summing the scores for each item. A higher score indicates a higher level of mental wellbeing or positive mental health. The Cronbach alpha for the 14 items in these data was 0.91, suggesting good internal consistency.

2.2.2. Neighbourhood deprivation

We linked the postcodes of the participants' current address to the 2001 census lower super output areas (LSOAs) using the GeoConvert online geography matching tool freely available to UK academics, and thence to scores on the Index of Multiple Deprivation (IMD) 2007 (Noble et al., 2008). The IMD provides a measure of area-level multiple deprivation by combining information on seven domains of deprivation—income, employment, health and disability, education, skills and training, barriers to housing and services, crime, and living environment. The higher the IMD score, the more deprived the area of residence.

2.2.3. Neighbourhood cohesion

Sense of neighbourhood cohesion was assessed using eight items from the 18-item Neighbourhood Cohesion Scale that was developed to measure sense of community, attraction to neighbourhood, and social interaction within it (Buckner, 1988; Lochner et al., 1999). These eight items have previously been used in the British Household Panel Survey (McCulloch, 2003). Examples include 'I feel like I belong to this neighbourhood', 'The friendships and associations I have with other people in my neighbourhood mean a lot to me', and 'I would be willing to work together with others on something to improve my neighbourhood'. Respondents were asked to indicate how strongly they agreed or disagreed with each statement using five response options, ranging from strongly disagree (score 1) to strongly agree (score 5). Examination of the scree slope from a principal components analysis of these eight items suggested the presence of a single factor. We calculated an overall score by summing the scores for each item. Higher scores indicate a higher sense of neighbourhood cohesion. The Cronbach alpha of the eight items in these data was 0.86.

2.2.4. Neighbourhood problems

Perceptions of neighbourhood problems were assessed by asking respondents to consider a list of eight problems that people often have with the area where they live and indicate whether each one was a big problem (score 3), a small problem (score 2) or not a problem (score 1) for them. These and similar items have been widely used in UK government social surveys such as the General Household Survey. The eight problems were: vandalism, litter and rubbish, smells and fumes, assaults and muggings, burglaries, disturbance by children or youngsters, traffic, and noise. We calculated an overall score by summing the scores for each item. The Cronbach alpha of the eight items in these data was 0.82.

2.2.5. Covariates

Social class, income, presence of limiting long-term illness or disability, problems with mobility, the personality trait emotional stability, and perceived social support were selected as potential confounding or mediating variables. Data on social class categorised in six groups according to the OPCS Occupational Classification scheme were derived from information on current or most recent job (in the case of married women, their husband's job) collected during the initial survey. In the follow-up questionnaire, participants were asked to indicate which out of eight income bands corresponded to their gross monthly income, and whether they had a long-term illness or disability that limited their activities. They were also asked how much difficulty they had, or would have, running for a bus or going up or down stairs: no difficulty (0), some difficulty (1), and unable to do alone (2). We calculated a mobility problem score by summing scores on these two items. In addition, they completed the RAND Social Support Scale, which assesses subjective impressions of how frequently different types of social support are available (Sherbourne and Hays, 1990). The types of support assessed are emotional support, affectionate support, tangible support, and positive interaction. Higher scores indicate greater levels of overall social support. Levels of the personality trait emotional stability (usually regarded as the opposite pole of neuroticism)