Social Science & Medicine 192 (2017) 102–111

Contents lists available at ScienceDirect

Social Science & Medicine

journal homepage: www.elsevier.com/locate/socscimed

Review article

Area-level socioeconomic disadvantage and suicidal behaviour in Europe: A systematic review

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ARTICLE INFO

Article history:
Received 8 February 2017
Received in revised form
21 June 2017
Accepted 20 September 2017
Available online 23 September 2017

Keywords:
Suicide
Health inequalities
Deprivation
Systematic review
Neighbourhood effects
Europe
Self-harm

ABSTRACT

The relationship between adverse individual socio-economic circumstances and suicidal behaviour is well established. However, the impact of adverse collective circumstances – such as the socio-economic context where people live - is less well understood. This systematic review explores the extent to which area-level socioeconomic disadvantage is associated with inequalities in suicidal behaviour and self-harm in Europe. We performed a systematic review (in MEDLINE, Embase, PsycINFO, EconLit and Social Sciences Citation Index) from 2005 to 2015. Observational studies were included if they were based in Europe and had a primary suicidal behaviour and self-harm outcome, compared at least two areas, included an area-level measure of socio-economic disadvantage and were published in the English language. The review followed The Joanna Briggs Institute guidelines for quality appraisal. We identified 27 studies (30 papers) from 14 different European countries. There was a significant association (in 25/27 studies, all of which were rated as of medium or high quality) between socioeconomic disadvantage and suicidal behaviour (and self-harm), particularly for men, and this was a consistent finding across a variety of European countries. Socio-economic disadvantage was found to have an independent effect in several studies whilst others found evidence of mediating contextual and compositional factors. There is strong evidence of an association between suicidal behaviours (and self-harm) and area-level socio-economic disadvantage in Europe, particularly for men. Suicide prevention strategies should take this into account.

1. Background

Suicide is now among the second leading cause of death for 15–29 year olds globally, based on latest statistics (WHO, 2017). The World Health Organization estimates the number of suicides per year worldwide amount to over 800,000, a rate of 11.4 per 100,000 (WHO, 2014). However, there are substantial variations in suicide rates *between-countries* in Europe. Suicide rates remain highest in Eastern Europe and lowest in England, Italy and Spain (WHO, 2014). There are also considerable *within-country* inequalities in suicide rates. For example in England, the North East region has the highest rate (13.8 per 100,000) compared to London which has the lowest (7.9 per 100,000). It has also been noted that there are inequalities at a smaller geographical scale, with neighbourhoods that are the least socio-economically disadvantaged having considerably lower rates of suicidal behaviour than those that are the most disadvantaged (Rehkopf and Buka, 2006; Platt, 2015). Area-level deprivation may well explain such differences at smaller scales.

Health geography literature suggests that there are area effects that link place to health (including mental health and suicide) through a variety of 'salutogenic' or 'pathogenic' pathways operating at the compositional and contextual level (Bambra, 2016). The composition of the area (demographic, behaviour of the individual and socio-economic status) influences health outcomes. In terms of suicide, the differences in suicidal behaviours between areas of high and low socio-economic disadvantage are therefore a result of the different characteristics of people living in the areas. Specific suicidogenic pathways postulated at the compositional level include accumulated adverse life course experiences;

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https://doi.org/10.1016/j.socscimed.2017.09.034
0277-9536/

powerlessness, stigma and disrespect; experiencing other features of social exclusion; poor health; unhealthy lifestyles; and social disconnectedness (Platt, 2015).

The contextual approach suggests that the economic, social, and physical environment of a place also contributes to area-level health; poor places lead to poor health (Bambra, 2016). For example, the area-level prevalence of brownfield land has been associated with higher rates of limiting long-term illness (Bambra et al., 2014), social cohesion has been associated with lower rates of mortality and morbidity (Cairns-Nagi and Bambra, 2013), and area-level unemployment has been found to be associated with premature mortality and a greater prevalence of mental ill-health (Möller et al., 2013). Health-promoting environments (less crime, more greenspace, etc.) are more likely to be found in more affluent areas, leading to area-level health inequalities. In terms of suicide, the specific suicidogenic pathways postulated at the contextual level include physical (e.g., poor housing conditions); cultural (e.g., tolerant attitudes to suicide); political (e.g., adverse public policy); economic (e.g., lack of job opportunities); social (e.g., weak social capital); history (e.g., high incidence of suicidal behaviour); infrastructure (e.g., poor quality, accessibility, acceptability of services); and health and wellbeing (e.g., high prevalence of poor general and mental health) (Platt, 2015).

Given this wider literature, the mixed findings of the previous review (Rehkopf and Buka, 2006) examining the association between socioeconomic disadvantage and suicide are unexpected. The objective of this systematic review is therefore to examine the association between area-level socioeconomic disadvantage and suicidal behaviour from 2005 to 2015 in Europe, updating a previous review (Rehkopf and Buka, 2006) which examined the association between socioeconomic disadvantage and suicide (not suicidal behaviour) for studies published between 1897 and 2004; however, this is not a complete update as we have limited our studies to Europe only for comparability purposes.

2. Methods

2.1. Study design and inclusion criteria

The review is registered with The Joanna Briggs Institute: http://joannabriggs.org/research/registered_titles.aspx. We included observational studies (cross-sectional, prospective and retrospective cohorts, time series, repeat cross-sectional). Studies had to compare at least two areas and have some area-level measure of socio-economic disadvantage. Area-level socio-economic disadvantage can be measured differently, but essentially involves ranking areas on the basis of relative local scores for factors such as income, employment and housing quality. Common measures include indices of multiple deprivation, percentage of poverty or percentage unemployed (Rehkopf and Buka, 2006).

2.2. Search strategy

We searched for peer-reviewed papers published in English, based in Europe and published between 2005 and 2015 using the search terms in Table 1. In keeping with previous work, five main databases were searched: MEDLINE, Embase, PsycINFO, EconLit, and the Social Sciences Citation Index (Rehkopf and Buka, 2006).

2.3. Outcomes

The outcome of interest was suicidal behaviour, which is defined as completed suicide (a fatal suicidal act resulting in death), parasuicide (a non-fatal suicide attempt where the aim is not death), suicidal ideation (thoughts about suicide ranging from fleeting thoughts to planning to act on these thoughts), or deliberate self-harm (to cause harm or injury to one self) - although this may not necessarily be due to suicidal thoughts so this is a limitation.

2.4. Data extraction and quality appraisal

Two researchers (JC/EG) screened the title and abstracts, with a random 10% of the sample checked by the other reviewer (JC/EG). Disagreements over inclusion were discussed with the project lead (CB). Full texts of eligible studies were retrieved and data extracted by one reviewer (JC or EG) and checked by a second reviewer (JC or EG). The methodological quality of each study was critically appraised in accordance with the Joanna Briggs Institute guidelines using the critical appraisal checklist for reporting observational studies, which includes questions on sampling, inclusion criteria, confounding, types of outcomes and statistical analysis (Appendix 1). JC/EG independently critically appraised the included studies and there was a high agreement kappa score (0.78).

2.5. Analysis and synthesis

A narrative synthesis thematically describing studies was undertaken. Unfortunately, due to heterogeneous measures being used by authors, there were not enough studies with the same outcome measure to be able to conduct a meta-analysis. In this review we report on the overall association between area-level socioeconomic deprivation and suicidal behaviours. Differences by gender, age, and individual-level socio-economic status as well as other contextual confounders were also analysed when sufficient data was available in the studies.

3. Results

The study search flow chart is shown in Fig. 1. A total of 9243 hits were retrieved; this reduced to 5931 after the removal of duplicates. 5667 were excluded at title screening stage, followed by 134 at abstract screening stage because they were not in Europe or not published in English, leaving 130 studies. Of these, 100 were excluded at the full paper stage because they adjusted for deprivation or there was no suicidal behaviour outcome. The remaining 30 papers were included in the synthesis, reporting on 27 unique studies.

The included studies spanned 14 countries: England (n = 9), Scotland (n = 6), Northern Ireland (n = 2), Spain (n = 2), Republic of Ireland (n = 1), Finland (n = 1), Denmark (n = 1), Sweden (n = 1), Portugal (n = 1), Netherlands (n = 1), Switzerland (n = 1), and a multi-country study (Slovakia, Italy, Hungary, Sweden, Switzerland and Portugal). The majority of studies (17/27) came from the UK (England, Scotland and Northern Ireland with no Welsh studies). Areas ranged from small neighbourhoods (containing approximately 1500 residents) to large cities. The majority of studies (n = 20) examined completed suicide, five studies were of

Table 1
Search terms.

[(suicide* OR self harm) **AND** (socioeconomic OR SES OR education* OR employment OR income OR occupation* OR poverty OR class OR deprive* OR disadvantage* OR social class OR social factors OR economic OR unemployment) **AND** (area* OR geo* OR place OR neighbourhood OR region* OR county OR ward OR city OR district OR country)]