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A systematic review of the influence of community level social factors on alcohol use

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ABSTRACT

Purpose: To explore evidence on the influence of community level social factors on alcohol use among adults and adolescents.
Methods and results: Major bibliographic databases were searched for quantitative studies meeting inclusion criteria. After screening, narrative synthesis and a quality review were applied. Forty-eight studies met the eligibility criteria. While the findings were inconclusive for associations between alcohol use and deprivation, poverty, income, unemployment, social disorder and crime, there was some indication that social capital characteristics were protective.
Conclusions: Social capital has a potentially important association with reducing alcohol use. Further studies are required to better understand social influences on alcohol use.

1. Introduction

Alcohol is one of the leading contributors to the global burden of disease, and the leading contributor to premature death and disability worldwide in the 15–59 age group (World Health Organization, 2009, 2011). Alcohol consumption also has major psychosocial consequences, including breakdown of relationships and families, violence, crime, child neglect and abuse, and reduced individual and community productivity (Babor et al., 2010; Cercone, 1994; Graham and West, 2001).

Many studies have attempted to identify risk- and protective-factors associated with alcohol misuse. Most of these studies have focused on individual, peer, parental and genetic correlates of alcohol use. However, an individual's behaviour may also be shaped by the physical and social environment in which they live (Chow et al., 2009; Jencks and Meyer, 1990), an issue of growing interest to researchers. In a recent systematic review (Bryden et al., 2012) we have examined the influence of availability and advertising of alcohol within a community on the drinking behaviour of local residents. In order to provide as complete a summary as possible of evidence on potentially modifiable community-level factors, this partner paper focuses on community level social factors that may influence alcohol consumption locally. These include socio-economic factors (deprivation, income and employment), disorder and crime (including disorder, safety, violence/crime), social capital (community attachment, closeness and supportiveness and community participation) and social norms – all of which are factors that may offer scope for interventions to complement those targeted individually. There has been no previous systematic review specifically focusing on how these community level social factors influence alcohol use. In combination with its partner paper on availability and advertising of alcohol, such a review could help guide policy makers seeking to tackle hazardous drinking at a local level, as together they highlight potentially modifiable community-level factors that affect alcohol misuse.

This systematic review examines the associations between community level social factors and alcohol use. The specific research objectives were to (i) describe the methodological and other characteristics of the studies identified following a systematic search (including study locations, populations, research methods, outcomes and exposures of interest); (ii) assess the methodological quality of the studies included, (iii) and assess the strength of the evidence that community level social factors are significantly associated with alcohol use in adults and adolescents.

2. Methodology

A systematic review of observational (cross-sectional and longitudinal) and intervention studies was conducted according

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to PRISMA systematic review guidelines (Liberati et al., 2009); a completed checklist is provided in Web Annex 5. Primary research studies published in peer-reviewed journals or which were found in grey literature were eligible to be included. Only quantitative studies were included in order to quantify any associations between community level social factors and alcohol use.

The population of interest was adult and adolescent males and females (adolescents were included specifically because the determinants may differ from adults) (Cicchetti and Rogosch, 2002; Leventhal and Brooks-Gunn, 2003). The outcomes of interest included quantity or frequency of alcohol consumption, binge drinking, alcohol dependency and problem drinking, with specific attention to the prevalence of drinking among adolescents as this may determine problem drinking in later life (Heron et al., 2012).

Following an initial scoping of the literature on community level social factors, four main exposures of interest were identified: (i) socio-economic deprivation (e.g. average income, unemployment rate); (ii) disorder and crime, including social disorder (e.g. drug activity, divorce rate), physical disorder (e.g. graffiti), safety, crime and violence in the community; (iii) social capital (e.g. trust, membership, support from neighbours), and (iv) community norms about alcohol use (e.g. acceptability of drinking). Intervention studies addressing any of these community level exposures were included in the review (but not interventions addressing individual change). Some other factors that can be measured at a community level, such as ethnicity and religion, were excluded from this review. Although these can have an important influence on alcohol use, they are far less amenable to policy or practice interventions and their effects are likely to be experienced at an individual or family level rather than at a whole community level.

Communities were defined as neighbourhoods, villages, towns or residential college campuses. Exposures were included if they were specifically about a local community (e.g. asking people if they feel safe in their community) or if they were aggregated to a community level from individual level measures (e.g. average income). Studies which only explored individual level factors (e.g. individual level demographic or socio-economic characteristics), parental or peer characteristics (e.g. drinking norms among friends) or genetic characteristics (e.g. family history of harmful alcohol use) were excluded.

3. Search strategy

Studies were initially identified by searching the electronic databases Medline, Web of Science, IBSS and PsycInfo on 26th August 2011. Limits were applied to include titles only, but no limits were applied for language, country or publication start date. The core search strategy is shown below, and search terms were amended for use as necessary in the different databases:

(area* OR geogr* OR place OR local* OR neighborhood* OR neighbourhood* OR community OR communities OR environment OR environments OR environmental OR determinant* OR depriv* OR poverty OR disadvantage* OR economic OR socioeconomic OR income OR employment OR unemployment OR crim* OR acceptab* OR norm OR norms OR social capital) AND (alcohol* OR drink* OR liquor* OR liqor*) NOT water.

Four other search terms were not included (risk, disorder, violence and safety) as they identified studies that were mostly not relevant.

Additional studies were identified by manual searches of bibliographies of included studies and review articles.

4. Selection of studies

There were four stages in selecting studies for inclusion in the review: (i) identification of studies from bibliographic databases and references; (ii) screening of titles and abstracts; (iii) review of full papers to identify eligibility, and (iv) in-depth review and narrative synthesis of final selected papers. Papers which failed to distinguish exposures, or separating alcohol from substance use (e.g. tobacco and drugs) in general, were deemed ineligible.

Stages 1 and 2 were independently conducted for all databases by AB and BR. Any discrepancies in screening results were discussed with reference to the eligibility criteria, and a final list of full papers to be reviewed was agreed upon.

A data extraction form was piloted using a small number of studies, refined accordingly and used subsequently to extract data from all full papers and to record any potentially relevant references. Data were extracted from each paper on study characteristics (e.g. country, year, location, study design), sample characteristics (e.g. age range of sample, sample size), exposure and outcome measures, results (including statistical significance of results) and evidence of bias or confounding. The fields in the data extraction form were based upon STROBE criteria for reporting of observational studies (Von Elm et al., 2007). A quality assessment tool was then used to review the methodological quality of studies. This tool was adapted from the 'Quality Assessment Tool for Quantitative Studies' developed specifically to assess quantitative public health studies, which has successfully undergone testing for reliability and validity (Effective Public Health Practice Project, 1998; National Collaborating Centre for Methods and Tools, 2011; Thomas et al., 2004). Although a small number of studies were rated as 'weak' using this tool, none were excluded in order to provide a complete overview of studies in this area. However, less methodologically robust studies are highlighted in the results and in the tables. A summary of the quality assessment process is provided in Web Annex 6–9.

5. Data extraction and analysis

The findings of the primary studies were grouped into the four main categories of exposure (socio-economic factors, disorder and crime, social capital and social norms). Studies with multiple exposures were included in more than one category where appropriate. Due to substantial methodological diversity, differences in methodological quality and in the exposure and outcomes measures used in the primary studies, a narrative synthesis is used to describe the studies and their results. It was not possible to carry out a meta-analysis as part of this review due to the substantial heterogeneity of the studies so results are therefore only provided for individual studies. This is consistent with advice on dealing with heterogeneity in the Cochrane Handbook (The Cochrane Collaboration, 2011). The effect sizes reported in the original studies are presented in Tables 1–4 (regression coefficients, correlation coefficients, odds ratios and risk ratios). When confidence intervals were not provided in the papers these were calculated where possible. If no p value is given for a specific result it indicates that these results were only described as 'significant' or 'not significant' in the original paper. All data presented from the studies were adjusted for the influence of other variables by the authors of the primary studies unless stated otherwise.

Duplicate data were excluded, for example if there were multiple papers from the same study reporting the same results. However, if there were papers that related to the same studies but used different measures of exposure or outcome and/or time periods, then both papers were included. Based on the details given