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Challenges in Multidisciplinary Systematic Reviewing: A Study on Social Exclusion and Mental Health Policy

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Abstract

In the clinical sciences, systematic reviews have proved useful in the aggregation of diverse sources of evidence. They identify, characterize and summate evidence, but these methodologies have not always proved suitable for the social sciences. We discuss some of the practical problems faced by researchers undertaking reviews of complex and cross-disciplinary topics, using the example of mental health and social exclusion. The barriers to carrying out social science and cross-disciplinary reviews are reported and some proposals for overcoming these barriers are made, not all of them tried and tested, and some of them controversial. Using a mapping approach, a wide-ranging search of both clinical and social science databases was undertaken and a large volume of references was identified and characterized. Population sampling techniques were used to manage these references. The challenges encountered include: inconsistent definitions of social phenomena, differing use of key concepts across research fields and practical problems relating to database compatibility and computer processing power. The challenges and opportunities for social scientists or multidisciplinary research teams carrying out reviews are discussed. Literature mapping and systematic reviews are useful tools but methods need to be tailored to optimize their usefulness in the social sciences.

Keywords

Mental health; Social exclusion; Systematic reviews; Mapping methodologies; Information science

Introduction

Increasing attention is being paid to evidence-based approaches to the discussion and structuring of social policy, fuelling demands for more and better evidence. In order to meet these growing demands for evidence-based social policies, researchers need to be able to identify, aggregate, interpret and

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disseminate the best evidence. In order to do this it is necessary to know what are the most appropriate methods to use. It is also essential that social policy researchers and decision-makers have an understanding of the complexity of carrying out reviews in areas that address social phenomena, and the limitations of the methods currently available. Focusing on the topic of mental health and social exclusion, this article describes one method and also discusses the barriers and opportunities encountered.

One approach to the characterization of available evidence is to conduct a systematic review, an approach now commonplace in, for example, clinical practice and health policy contexts (Cook *et al.* 1997; Petticrew 2003). Systematic reviews can avoid the need for costly primary research and provide a transparent, hopefully robust method for managing information using an agreed protocol (Gough and Elbourne 2002; Petticrew and Roberts 2005). Although systematic reviewing has a long tradition in the areas of education (Glass 1976), criminal justice (Petrosino *et al.* 2000; Layton *et al.* 2001), and now health, it remains less well-established in other social science areas. It also poses some challenges.

From an information science perspective, developing a search strategy that is comprehensive enough to identify all relevant literature but precise enough to minimize the amount of spurious references retrieved is more difficult when using social science bibliographic databases (e.g. IBSS) compared to medical databases (e.g. Medline). Social science databases may have limited search capabilities and, unlike the medical databases, tend not to use consistent keywording terminology (Jackson and Waters 2004; Powell *et al.* 2004).

A second challenge concerns the scope and nature of research in the social sciences. A wide range of qualitative and quantitative designs are employed, the aetiology of social problems is arguably more complex, and the set of influences on phenomena such as 'outcomes' arguably more amorphous than in, say, the clinical sciences. Moreover, evaluative research in the social policy field is often likely to adopt a realist perspective, that is, not only to identify whether things work but in what circumstances and contexts (Boaz and Pawson 2005; Pawson *et al.* 2005). There is also perhaps less terminological consistency, which may be attributable either to inexactitude or to genuine epistemological disagreement within the social sciences.

One further challenge in the continued development of an empirical evidence base for social policy-makers, but one which also presents an opportunity, is the need for cross-disciplinary research. In the field of mental health, for example, the interactions between social context, behaviour and biology are becoming more widely understood (Rutter 2002), but unusual expertise is needed to pull together all of the various strands of argument. Such research is growing in volume and ambition as its potential to inform complex social and health issues becomes clearer. To be successful, however, cross-disciplinary research needs to accommodate different research traditions. This article discusses the practical problems facing social science and multidisciplinary researchers carrying out systematic reviews of evidence, as well as postulating some novel (and perhaps controversial) solutions.

Such considerations are pertinent to the area on which we focus in this article: the intersection between mental health and social exclusion, the

former traditionally dominated by clinical science and the other very much a child of social science. It has been widely reported that people with mental health problems are among the most socially excluded in society (Dunn 1999; Leino-Arjas *et al.* 1999; Evans 2000; Huxley and Thornicroft 2003; Schulze and Angermeyer 2003; Marwaha and Johnson 2004), while individuals experiencing unemployment and poverty, for example, are more vulnerable to developing mental health problems (Saraceno and Barbui 1997; Weich and Lewis 1998; Montgomery *et al.* 1999; Novo *et al.* 2000; Skapinakis *et al.* 2006). Being and becoming socially excluded, if you have a mental health problem, is a dynamic process mediated by a range of factors such as low income, unemployment, poor education, poor housing, poor physical health, lack of autonomy, lack of social networks, stigma and reduced opportunities to participate fully in society (Burchardt *et al.* 1999). Not surprisingly, the social exclusion literature has identified people with mental health problems as a vulnerable group (O'Leary 1998; Wilton 2004), while the clinical literature has occasionally explored the significance of social exclusion for people with mental health problems (Fryers *et al.* 2003; Huxley and Thornicroft 2003; Melzer *et al.* 2003).

Only relatively recently have policy discussions in the UK considered these connections (Social Exclusion Unit 2004). An appropriate first step towards policy change is to understand what empirical evidence has to offer. This article discusses the methodology, challenges and opportunities presented by a large-scale, cross-disciplinary literature mapping of the evidence on the relationship between mental health and social exclusion.

Search Strategy

We followed the approach devised by the Evidence for Policy and Practice Information (EPPI) Coordinating Centre, Institute of Education, London (Gough and Elbourne 2002), informed by both the Cochrane and Campbell Collaboration systematic review methodologies (Higgins and Green 2005). The EPPI approach is a two-part process. The first part is a question-led map of the research evidence on a specific topic where the focus is on characterizing and identifying the evidence. The second part is similar to a standard systematic review and addresses a more specific research question by summarizing the evidence, based on information retrieved from the map. The map describes each included paper by assigning a range of keywords that characterize content, setting, date of publication and methodological approach. By storing information in this fashion it becomes possible to undertake additional analysis, for instance allowing a researcher to identify both those topics that are well researched and others that are not (Gough and Elbourne 2002).

The EPPI methodology was particularly helpful in this study because of the large volume of literature to be identified and described. In our review, we posed a purposely broad research question in order to capture as much as possible of what we expected to be a diverse literature, whether social or clinical in origin. Such breadth was imperative because terminology varies between disciplines; the concept of 'mental health problems' has both a

blurred and sometimes a controversial interpretation, while social exclusion is a contested term with diverse interpretations and multiple dimensions.

A key challenge for mapping literature is to keep the task manageable. Researchers working in the social sciences need to be able to trade off their limited time and resources for literature reviewing with the need to minimize the chances of bias. Ideally, all 'hits' in the dataset of potentially relevant references should be analysed. However, the extremely large number of 'hits' from our search (see below) made this task impossible (unless all normal resource constraints had been removed). Instead, a novel literature-sampling technique was developed to facilitate a pragmatic approach to mapping.

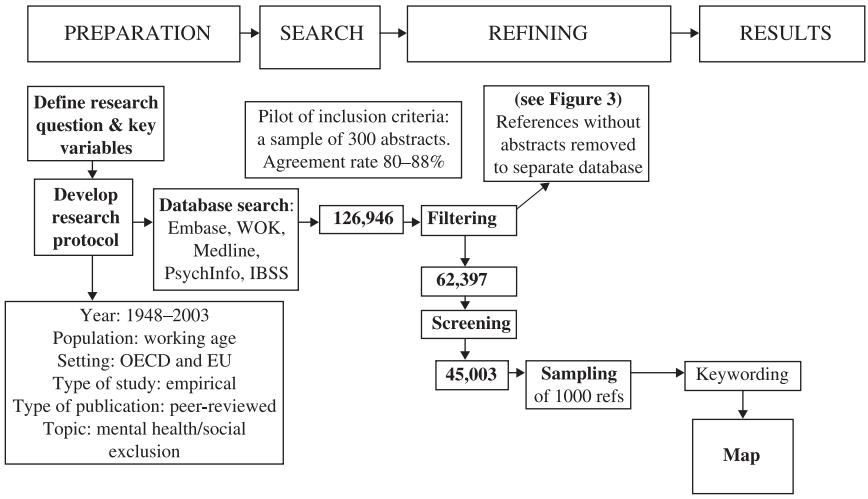
The process undertaken can be broken down into the following steps, the first five of which are standard to any review procedure:

- define the review question
- define the key variables: mental health and social exclusion
- specify the inclusion criteria (used to identify relevant studies)
- specify search terms and search strategy
- filter and screen
- sample
- map the database of references without abstracts
- map the database of references with abstracts

We now describe each in turn. Fuller details, including search terms and search strategies used, are available from the authors. A summary of the search strategy can be seen in figure 1.

Figure 1

Overall search strategy



Defining the Review Question

Clarifying the research question at the outset is imperative. Our primary research question was: What empirical evidence is available on the relationships between mental health problems and social exclusion? We also specified some secondary questions: What is the nature of this evidence? Is it qualitative or quantitative? Which mental health and social exclusion topics are well researched and which are not? Which countries are the studies set in? And, what research designs are used to generate the evidence?

Defining Key Variables

Unambiguous operational definitions are needed of the key research concepts, in this case mental health problems and social exclusion, in order accurately to identify evidence relating to their interaction and to ensure consistency of concepts. Defining and conceptualizing social phenomena can be problematic (Carter 1998; Pleace 1998; Burchardt *et al.* 2002), just as it has proved enormously difficult to define mental health problems and to settle on acceptable disease classification schemata, particularly those with global validity (Soltani *et al.* 2004). There are numerous, not necessarily complementary, frameworks within which mental health and social exclusion can be discussed, and numerous definitions of mental health/illness and social exclusion/inclusion. Terms are not used consistently (sometimes by accident, sometimes by design), definitions shift over time and – depending upon the context within which they are discussed – they can also vary between countries. Certainly, different research disciplines can use the same term to mean different things. For example, a case study in the clinical sciences tends to refer to the symptoms and treatment of a single individual (a 'patient'), whereas a case study in the social sciences might report the effect that a single policy has on any number of individuals. Another example would be the (relative) precision of terms like anxiety, depression and stress in the mental health literature because of the availability of and need to use diagnostic standards such as the *International Statistical Classification of Diseases and Related Disorders* (ICD; World Health Organization 2003), compared to their more colloquial usage in the social sciences. Inconsistencies of this kind make it imperative to be clear as to the meaning of key concepts in the review. This also enhances the replicability of the procedure. In this study we employed broad definitions in order to avoid inadvertently missing relevant evidence. Our definitions are therefore functional in the sense that they generate a search strategy.

Mental health problems

Mental health is a widely used term that covers a spectrum of medical and 'lay' mental, emotional and intellectual states. Mental disorders describe a set of clinically diagnosable problems (World Health Organization 2001), but mental health is more than an absence of disorders. Mental health can be conceptualized within either a social or medical model. The former

conceptualizes the interaction of the individual with their environment, suggesting that any limitation to full participation is a result of barriers and attitudes encountered in society that could be overcome by stripping away discrimination (Sayce 2000).

By contrast, the medical model concentrates on the diagnosis of disease, disorder or other health conditions using an aetiological framework, for example the World Health Organization's ICD schema or the American Psychiatric Association's *Diagnostic and Statistical Manual* (DSM; American Psychiatric Association 2000). This approach can be extended to examine the level of functioning and disability associated with specific health conditions, as does the WHO's *International Classification of Functioning, Disability and Health* (ICF; World Health Organization 1999). To some extent the ICF acts as a bridge between the medical and social approaches as it incorporates the impacts of broader social factors such as stigma and discrimination.

In our study we have classified mental health problems according to the ICD-10 definitions and related constructs, and have sought to consider the impact of social, economic and physical environments on people with mental health problems through examination of the relationship with social exclusion. We thus define mental health problems using diagnostic classifications according to six subcategories from chapter V of the ICD-10 (F00-09; F20-9; F40-8; F50-9; F99) plus additional nonspecific or 'lay' terms for mental health problems that might be more widely used in nonclinical papers. Broadly, the definition includes some clinical terms – such as schizophrenia and related disorders, affective (mood), neurotic, behavioural and stress-related disorders – and some terms which are widely used in the literature such as suicide and suicide attempts, stress, common mental health problems and severe mental health problems (a distinction widely, if not necessarily consistently, used in psychiatry), being in contact with psychiatric services, and mental health problems nonspecifically defined. This somewhat eclectic definition was chosen to reflect the range of terms used in the psychiatric and social science literatures, and as a means of grouping mental health problems that are likely to have similar relationships with the various dimensions of social exclusion.

Social exclusion

Defining social exclusion is similarly complex and a particularly good example of the difficulties associated with attempting to define a social phenomenon precisely. As with mental health problems, there is a range of possible definitions and frameworks. Social exclusion has been used in discussions of poverty, inequality and justice. It covers economic, social, political and cultural dimensions of society.

One school of thought identifies social exclusion as a lack of access to rights as a member or a citizen of a particular group, community or society. Walzer (1983) argues that the right to membership of a group is the most basic right. A society is just when all social goods are kept within their own 'spheres of justice', such as economic, social, political, civil or religious spheres. In France, where the concept of social exclusion first appeared

(Lenoir 1974), debates on social exclusion have surrounded the concept of citizenship. The discussions have challenged the bases of entitlement to rights in the modern state (Silverman 1991). Liberalism rooted in the ideas of equal treatment and universality has unavoidably involved exclusionary and discriminatory practices for those defined as outside the relevant sphere.

Another school of thought emphasizes social exclusion as lack of participation in society (Atal and Oyen 1997). Burchardt *et al.* (1999) suggest: 'An individual is socially excluded if he or she does not participate in key activities of the society in which he or she lives.' The participation-based definition emphasizes the process of exclusion and the interactions between the excluded and the rest of society. It considers the status of the relationship between individuals and the rest of the society, as well as with the state, and the active or passive roles individuals or groups may play in the process of social exclusion.

In the face of globalization and greater international labour mobility, the rights-based and participation approaches become increasingly difficult to separate. A number of researchers try to integrate the two approaches. Room (1995), Sen (2000) and Littlewood (1999) argue that social exclusion addresses the reinforcing processes of accumulated social disadvantages and the denial of civil, social and economic rights.

The definition of social exclusion used here attempts to encompass both rights-based and participation approaches. The rights-based approach is less usual in UK research but is more widespread in the international literature, and it was felt to be particularly appropriate in relation to mental health care in which the denial of rights can be a key issue (World Health Organization 2005). 'Participation' and 'rights' were identified as top-level terms in our search. Key terms under participation were consumption of goods and services, production (being involved in socially valued activities), political participation and social interaction. Many of the proxies for social exclusion made up the next level of terms in the hierarchy. For example, under consumption was income, housing, education and health care; under production was employment; under social interaction was social networks and friendship. Key factors under the rights major term were human, citizenship, individual and treatment, and at the next level, under treatment rights were access to appropriate care, coercion, maltreatment and equity, while under citizenship rights were education and employment. There was therefore considerable overlap between participation and rights terms but since our objective was comprehensive coverage, overlap was preferable to gaps.

Inclusion and Exclusion Criteria

Inclusion and exclusion criteria define the sample of studies that the search strategy aims to locate. Our primary criterion was that a study reported a mental health and/or social exclusion outcome, with at least one of the major experimental, input or predictor variables being a mental health problem, a social exclusion concept, or both. For example, in a report where social exclusion is an outcome or a consequence, then mental health must be one of the factors examined as a predictor or influence or input variable.

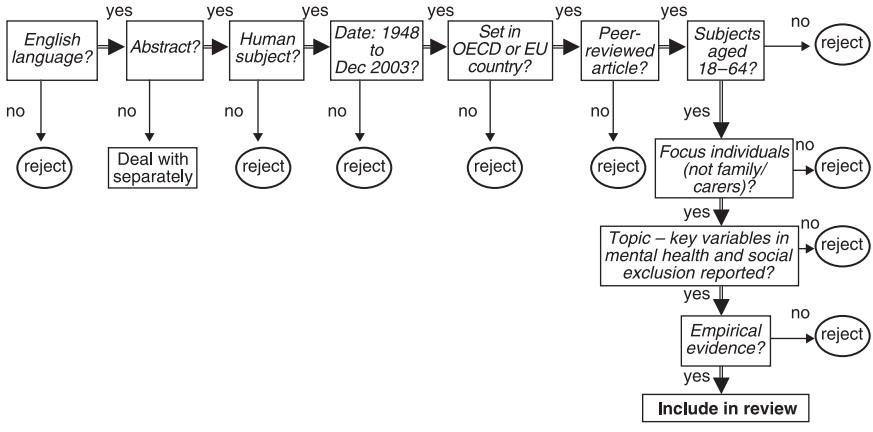
A study that looks at both mental health and social exclusion variables as predictors but not as outcomes would be excluded (for example, the impact of depression and low income on outcomes for people with HIV/AIDS).

Further inclusion criteria were necessary. We confined our search to published, English language, academic papers. Our population group was working-age adults, although papers reporting the transition from childhood/adolescence to adulthood and from working age to retirement were also included. The subject of a study had to be the individual directly affected by either mental health problems or social exclusion, and so papers were excluded where the main focus was carers or family. Papers published between January 1948 and December 2003 were included; the start date was chosen because of its historical policy importance in the UK. Studies had to be set in OECD countries and/or the European Union, including new member states and accession countries named as of 31 December 2003. Only empirical studies were included; therefore descriptive papers, polemics, editorials, letters, and case studies of an individual's situation were excluded. Figure 2 summarizes the inclusion process.

The inclusion and exclusion criteria were piloted by pairs of researchers. Following the pilot, a number of revisions were made to the inclusion/exclusion criteria and the following conventions adopted. Social exclusion can sometimes be used as an umbrella term for multiple dimensions of deprivation, for example experiencing poor housing, poor education and low income at the same time. Where a study looked at these component factors of social exclusion, more than one factor needed to be discussed in order for the paper to be included. For example, a study that reported a mental health outcome with poor education as a predictive factor would not necessarily be included in the review, whereas a study that looked at a mental health outcome with poor education, poor housing and low income as predictive factors would be included.

Figure 2

Algorithm for inclusion of papers in the literature mapping exercise



Unemployment was accepted as a proxy for social exclusion because of its salience in some conceptualizations of social exclusion. We acknowledged that an individual can be socially excluded while employed depending on their salary, hours or type of job. We were unable to devise a precise rule for when conditions of employment constituted social exclusion as there were so many contributory factors, for example the age of the individual, their health and the duration of their experience. However, we carried out another internal consistency rating and found a high level of agreement within the research team. We decided that being materially wealthy does not prevent a person from being socially excluded, as income is only one aspect of social exclusion. Being in a vulnerable group, such as being a prisoner, refugee or member of an ethnic minority does not itself constitute social exclusion although it does increase the risk of being socially excluded or experiencing a mental health problem. To be included, a study of such a vulnerable group also needed to include a specific aspect of social exclusion or a mental health problem.

At this stage deliberate self-harm was included as a mental health variable, even though not currently categorized in either the ICD or the DSM classifications, as this is now generally treated by mental health care services.

Search Terms and Search Strategy

The search terms used were based on the definitions of mental health problems and social exclusion described above. The challenge was to include as many terms as possible so as not to miss any relevant findings, particularly from outside traditional paradigms, while not formulating an impossibly large search. An attempt was made to capture both rights-based and participation approaches to social exclusion. For mental health problems, search terms were based upon strategies reported in Cochrane reviews of related topics (Adams *et al.* 2002; Churchill *et al.* 2003), the use of Medline 'controlled vocabulary' and free text non-clinical mental health terms.

Table 1 lists the search terms used. More details of the search strategy are available from the authors. Medline, EMBASE, PsychInfo, IBSS (the International Bibliography of the Social Sciences) and Web of Knowledge were searched. Each database has different search functions and search terms were tailored accordingly. Where possible, the 'limits' function in each database was used to correspond with the inclusion/exclusion criteria. Limiting by date and language was always possible. Limiting by other factors, for example by type of paper, was dependent upon the individual database. A considerable number of references ('hits') were identified – 126,946 from this first search – and transferred into a new database in a bibliographic software package.

Filtering and Screening

The filtering and screening processes operationalized those aspects of the inclusion/exclusion criteria (see figure 1) that could not be automated through the electronic database search. We use the term 'filtering' to

Table 1

Search terms: social exclusion and mental health

Social exclusion search terms
Social exclusion OR socially excluded OR social isolation OR socially isolated OR social rejection OR socially rejected OR (social NEAR TO disadvantage) OR (social NEAR TO disadvantages) OR (social NEAR TO disadvantaged) OR social alienation OR (socially inactive) OR (social NEAR TO inactivity) OR (social NEAR TO inactive) OR (social NEAR TO inaction) OR social outcast OR underclass OR social distance OR social hierarchy OR anomie OR vulnerable populations OR underprivileged
Social inclusion OR socially included OR social capital OR social cohesion OR social engagement OR socially engaged OR social involvement OR socially involved OR social participation OR social cohesion OR social capital
Social environment OR social insurance OR social protection OR social security OR social support OR social welfare OR social wellbeing OR social well-being OR support networks OR welfare benefit OR welfare rights OR minimum income OR minimum wage
Social adjustment OR social interaction OR social interactions OR social justice OR social networks OR social adaptation
Interpersonal relations OR social interaction OR social responsibility OR social responsibilities OR right to treatment
Inequity OR disparity OR disparities OR unfair treatment OR differential treatment OR social discrimination OR prejudice
Social characteristics OR shame OR stigma OR stigmatise OR stigmatizing OR stigmatisation OR stigmatization OR social perception OR stereotype OR stereotyping
Barriers or barrier OR social class OR right to treatment OR social segregation
Community participation OR community support OR community networks OR community mental health services
(Neighbourhood AND support) OR (neighborhood support)
(Friends AND support) OR friendship
Family life OR family relations OR family relationships OR family relationship OR partner communication OR family support
Marriage OR divorce OR marital status
Civil rights OR human rights OR basic rights
Rights AND (freedom OR move OR movement) OR food OR starvation OR starving OR hunger
Political rights OR vote OR voting OR voice OR voicing OR politically active OR politically inactive OR politically engaged OR political engagement OR autonomy
Patient rights OR (rights AND health) OR (rights AND physical health) OR (rights AND somatic health) OR (rights AND healthcare) OR standard of care OR living will OR poor healthcare OR professional patient relationship OR right to treatment
Data protection OR access to information OR informed consent OR community networks OR confidentiality OR (Patient NEAR TO access NEAR TO medical records)
Consent to treatment OR forced treatment OR cruel treatment OR inhuman treatment OR inhumane treatment OR degrading treatment
Involuntary admission OR involuntary interventions OR involuntary treatment OR (involuntary AND medication) OR coercion OR coerce OR threat OR threaten OR refuse to treatment OR treatment refusal
Maltreatment OR maltreat OR persecution OR persecute OR punishment OR punish

Table 1

(*Continued*)

Social exclusion search terms
Rights AND (child bearing OR pregnant OR pregnancy OR parenting OR abortion) OR unwanted pregnancy
Access AND (social services OR public services OR mental health services OR public facilities)
Socioeconomic factors OR economically inactive OR (gap NEAR TO income) OR (socioeconomic NEAR TO inequalities) OR (socioeconomic NEAR TO inequality) OR (social NEAR TO inequalities) OR (social NEAR TO inequality)
Low income OR (income NEAR TO inequality) OR (income NEAR TO inequalities) OR (poor NEAR TO community) OR (poor NEAR TO family) OR (poor NEAR TO families) OR (poor NEAR TO household) OR (poor NEAR TO households) OR (poor NEAR TO neighbourhood) OR (poor NEAR TO neighborhood) OR poor NEAR TO community OR (poor NEAR TO income) OR (poor NEAR TO money) OR deprivation OR deprive OR low earning OR poverty OR low wage OR low wages
(Practice NEAR TO monitor) OR (quality NEAR TO care) OR (quality NEAR TO services) OR (complain and services) OR treatment guidelines OR admission principles
Poor housing OR residence characteristics OR (poor AND accommodation AND standard) OR (rights NEAR TO ownership) OR (rights NEAR TO assets) OR (poor housing) OR (poor NEAR TO shelter) OR housing conditions OR living conditions OR rights NEAR TO treatment
Homeless or homelessness
(Access AND education) OR job and training OR (rights NEAR TO education) OR basic skill OR basic skills OR continuing education OR education OR poor education OR qualification OR illiteracy OR adult education OR educational status OR educational achievement OR special education
Labour market OR labor market OR employment OR labour force OR labor force OR workforce OR employment OR employed
Unemployed OR unemployment
Occupations OR (Job AND flexibility) OR (flexible AND job) OR (work AND voluntary) OR paid job OR paid work OR working conditions
Mental health search terms
Mental health OR mental disorders OR mental illness
Mental AND (confusion OR disability OR well-being OR capacity)
Psychiatric OR psychiatry
Psychological OR psychology
Neurotic OR neurosis OR neuroses
Psychosis OR psychotic OR psychoses
Depression OR depressive OR anxiety OR anxious
Schizophrenia OR schizophrenic OR Schizotype OR schizoptypal
Mania OR manic
Delusion OR delusional
(mood OR affective OR somatoform) AND (disorder OR disorders)
Obsessive compulsive disorder [MH] OR obsessive compulsive disorder* [Text Word] OR OCD [Text Word]
Phobia OR phobic
Life change events OR stressful events OR Post-traumatic stress disorders OR stress disorders, traumatic OR stress disorders

describe a largely electronic process, i.e. carrying out keyword searches in the databases or searching journal titles for those that are clearly irrelevant, while 'screening' is manual, i.e. reading through the list of references and identifying by eye those that should and should not be included. Decisions for the filtering and screening of the 126,946 references were based on information contained in the abstract, title and keywords. References without an abstract were moved into a separate database; for these 'non-abstracted' documents we employed a slightly different process (described later). After filtering, screening and removal of the non-abstracted references 45,003 hits remained.

Sampling

We used random sampling to manage the remaining 45,003 hits. A sample of 1,000 references was drawn randomly to give some initial indications as to the nature of the parent population and therefore guide our choice of sampling technique. Each reference was coded as either included or excluded, with a secondary code reporting reason for rejection. Of the 1,000 references, only 72 met the inclusion criteria. Of the 928 excluded references, approximately 15 per cent (n = 139) fell outside the inclusion criteria for research setting (country), population (age), language or type of evidence, while the remaining 85 per cent were excluded for not addressing the review topic, i.e. not having one aspect of mental health or social exclusion as an outcome and the other as a predictor or input. Social exclusion was not reported in 458 of these references, and mental health in 213. The remaining 118 papers reported miscellaneous topics such as physical health problems, scientific research papers or clinical practice papers. The 72 included papers in this trial were coded using our own simple coding system (described below), entered into a statistical package, SPSS, and some simple correlations were run. All decisions were based on abstract, keywords and titles only (see tables 2, 3 and 4). At this stage the aim is to characterize the references, not look at the evidence itself. For example, looking at whether a study reported is a randomized controlled trial or an observational study, cross-sectional or longitudinal, not at the variables themselves and the relationships between them. Sampling of references has been discussed before (Dixon-Woods *et al.* 2006); however, it is an emerging technique that appears not to have been applied to mental health and social exclusion before, or on this scale.

Coding

Codes were assigned to characterize each reference, and covered three dimensions: the practical details of the study; the social exclusion content; and the mental health content. Codes in the first dimension report the year and country setting; the age, gender and ethnicity of study subjects, the type of study (qualitative and/or quantitative, longitudinal and/or cross-sectional) and whether it was from the social or clinical sciences. These codes were piloted. For social exclusion they were: income, employment, housing, networks, stigma, and rights; these were then revised to include participation

and crime. In the pilot, the mental health keywords were: suicide, psychosis, affective disorders, common mental health problems, stress, in contact with psychiatric services and mental health (not otherwise specified). These were then revised to include neurosis disorders, behavioural disorders and severe mental health problems.

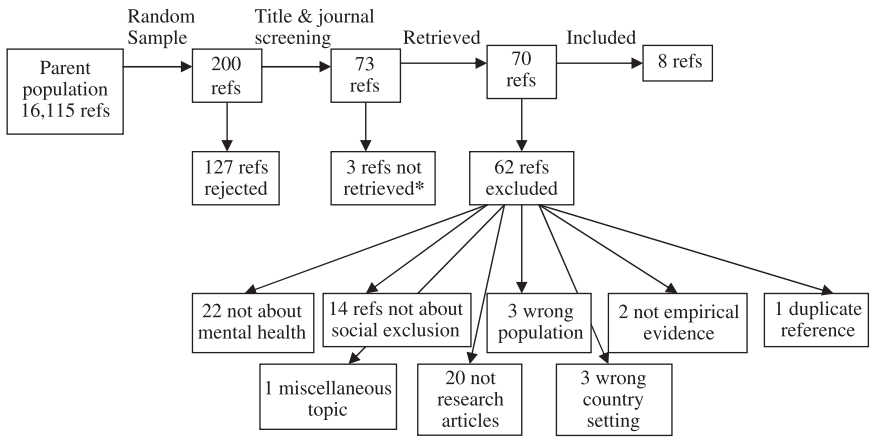
An inclusion rate of 7 per cent was achieved from the sample. The aim of this part of the study was to look at the characteristics of the references identified, not yet the evidence contained in them. The discussion is intended to move the debate forward around this type of research by illustrating the type of information retrieved, the methodologies available and some of the barriers and opportunities associated with them.

The Non-abstracted Database

'Hits' that did not have an abstract (n = 16,115) were removed to a separate database for assessment. An initial sample of 200 references was drawn. This time, however, the full papers were retrieved and assessed for whether they met the inclusion criteria, and coded accordingly. From this set of 200 we found only eight relevant references. Contrary to our expectation, this database did not contain a disproportionate number of social science papers. In fact, a large number of papers in this database were excluded publication types, for example book reviews or editorials, while those references excluded for being on the wrong topic commonly reported psychology experiments. Results from this sample are shown in figure 3. Because of the dominance of

Figure 3

Results from the pilot screening of the non-abstracted database



*One not available in the UK, two not possible to find (reference details inaccurate).

Table 2

Frequency of study setting for papers included in the pilot sample

Country	Frequency	Percentage
USA	37	51.4
UK	16	22.2
Europe	10	13.9
Other America	6	8.3
Comparison	1	1.4
Not known	2	2.8
Total	*72*	*100.0*

papers of the 'wrong publication type', the pragmatic decision was made, given our limited resources, not to sample a larger set of non-abstracted papers.

Findings from the Sample

With only 72 references from the abstracted database included from the initial sample, the inferences we can draw are limited. However, the sample provides a useful illustration of the type of findings produced by this mapping process. The following examples are for illustrative purposes only. Table 2 reports the distribution of papers according to their country of origin. Unsurprisingly, the majority of papers were from the USA. The lack of papers from Europe may, in part, be due to the exclusion of non-English language papers in our review protocol. Topics that are heavily researched or seemingly under-reported can be identified.

From this sample, social networks are well researched, whereas stigma and rights issues appear to be 'under-reported'. Surprisingly, stress is the least reported mental health topic in the pilot. It is a very commonly used term in both the medical and social science literature, but, it would seem, not in the literature relating mental health to social exclusion.

Table 3 presents the correlation between mental health and social exclusion concepts. Again, and only for illustration, a few findings can be highlighted:

- Stigma and rights abuses are more often discussed in papers about psychoses than in papers about stress.
- The number of papers discussing employment is similar for both affective disorders and psychoses.
- Income, which is obviously strongly related to employment, appears to be less well represented in studies of psychoses than affective disorders.

Other examples of the type of information that could be produced from a map include looking at the correlation between study country with research method, or correlating the mental health or social exclusion variable to the method (table 4).

Table 3

Mental health by social exclusion topics from the pilot sample from the abstracted database

Social exclusion variable	Mental health problems variables						
	Suicide	Psychoses	Affective disorders	Common mental health problems	Stress	Psychiatric services	Mental health
Income	8	3	9	9	5	8	13
Employment	8	6	7	6	6	12	10
Housing	6	7	5	4	6	12	11
Network	8	9	11	14	5	14	16
Stigma	5	6	2	2	4	8	7
Rights	5	6	3	3	5	9	7
Participation	6	8	11	12	5	12	16

Table 4

Topic variables and study methods reported

	Study methodology reported							
	Quantitative		Qualitative		Review		Total	
	N	%	*N*	%	*N*	%	*N*	%
Social exclusion variables								
Income	23	79	2	7	3	10	29	100
Employment	23	82	2	7	2	7	28	100
Housing	16	76	4	19	1	5	21	100
Networks	32	76	4	10	5	12	42	100
Stigma	8	67	3	25	1	8	12	100
Rights	8	62	1	8	4	31	13	100
Participation	27	73	3	8	6	16	37	100
Mental health variables								
Suicide	13	81	2	13	0	0	16	100
Psychoses	13	87	1	7	1	7	15	100
Affective	18	90	0	0	2	10	20	100
Common mental health problems	17	77	3	14	2	9	22	100
Stress	11	100	0	0	0	0	11	100
Psychiatric services	22	81	3	11	2	7	27	100
Mental health	22	67	5	15	6	18	33	100

- The majority of papers are quantitative, yet for research into stigma there is a larger number of qualitative papers.
- There are more reviews of affective (mood) disorders than other mental health variables.

- Year of publication can be correlated to the topic: papers on suicide and psychoses occur consistently in the literature over the years, whereas affective (mood) disorders papers are more common after 1998.
- For the social exclusion topics, rights are discussed relatively less often in more recent papers whereas social networks and employment are discussed consistently across the years.

Discussion

The methodology reported here has the potential to inform policy discussion by managing and characterizing large volumes of information from a range of research fields. However, it also highlights some of the problems involved in carrying out a systematic review in the social sciences or in multidisciplinary research. Adopting a method used successfully in the clinical sciences is not necessarily straightforward or appropriate. A key issue is that the social sciences rely on more documents contained in the grey literature. We struggled to find consistent definitions of grey literature and use it here to mean any literature other than peer-reviewed papers in journals. So, this includes policy documents, government-commissioned reports, reports from major charities and think tanks. In this particular topic the grey literature would often contain reports and views from service users so there are crucial issues of biasing research by not including such information.

A number of methods to improve the retrieval of information from social science research or qualitative information more generally are discussed in the literature. Wade *et al.* (2006) look at the role of an information specialist in the systematic review process. Greenhalgh and Peacock (2005) propose three different approaches for reviewing information in nonstandard clinical areas: standard protocol-driven (i.e. a Cochrane review), 'snowballing' and personal knowledge. We would suggest that the method developed here is a fourth approach: a systematic method for reducing the size of the haystack in the search for the needle, or more accurately, a number of important needles. The benefit of this approach is that it is less likely to have inherent bias than the 'snowballing' or personal knowledge approach. However, in common with the other protocol-driven review methods there is too much reliance on databases – which is problematic for conceptual and practical reasons.

Another issue that was repeatedly encountered was that of terminology. Social science definitions of social phenomena are more fluid than clinical terms and this makes the aggregation of information on one topic problematic. While we discuss social sciences adopting a similar hierarchical taxonomy to the clinical sciences, we recognize that shoe-horning social phenomena into tight definitions risks the loss of exact meaning and evolution of terms. However, without the social sciences adopting a more restricted 'technical' language the problems of reviewing the evidence contained are unlikely to be surmounted.

Nonetheless, the approach described in this article is useful in cross-disciplinary systematic reviews in which broader search strategies are needed to identify research that is not consistently described or classified. Mapping

exercises provide a useful aggregation of relevant literature and, 'if research is considered a useful endeavour then bringing together the results of individual pieces of research addressing similar questions *should* be seen as even more useful and largely unproblematic' (Gough and Elbourne 2002). Such methodologies have the potential to inform decision-making in social policy and practice in the same way as they already do in clinical policy and practice.

However, this technique is not widely used in social policy. There are a number of challenges to be overcome: poorly defined topics; inconsistent use of keywords and controlled vocabulary; abstracts that do not effectively communicate the content of the paper or are not accessible in bibliographic databases; and resource and technology problems. Moreover, this is before any attempt to appraise the quality of the qualitative and quantitative information retrieved (Attree and Milton 2006). We discuss below these challenges and our own study's limitations, before considering the opportunities for utilizing a methodology such as this in future social policy research.

Challenges

Problematic topics

Some problematic topics emerged at each stage of the review, among them stress, psychology, social support and life events. Each of these topics was widely reported but often poorly defined. The terms stress and psychology were problematic in that they led to a very large number of, sometimes irrelevant, hits. Both are widely used terms that have non-identical meanings in different contexts (clinical sciences, occupational health, social science, and psychology).

Controlled vocabulary and keywords

A related issue concerns keywords, controlled vocabulary, terminology and taxonomy, each of them important because they directly affect how research evidence is accessed and identified. The US National Library of Medicine uses controlled vocabulary in the form of MESH (MEdical Subject Headings) to categorize and place terms in a hierarchy, similar in form to the ICD-10 classification of diseases by aetiology. While this does not always work well – for example, economic evaluations are often not well coded in Medline although MESH terms exist (Sassi *et al.* 2002) – this remains a significant advantage over many social science databases which do not have a well defined controlled vocabulary. Consequently these databases are less structured and so less efficient to search.

It has also been suggested that the keywords used in social science databases are less consistent and credible than those in medical databases (Wallace *et al.* 2004). The implication, particularly for cross-disciplinary research, is that search strategies have to be broadly devised so that they are sensitive enough to identify relevant papers howsoever they are coded. But this leads to the identification of large numbers of hits, a large proportion of

which may prove irrelevant. A solution would be for social scientists to adopt a similar controlled vocabulary to that used in the clinical sciences to facilitate efficient searching of databases.

On the other hand, losing contestability in terms and concepts could have a detrimental effect on research progression. For example, while the choice of diagnostic categories as a means of classifying mental health problems leads to efficient searching of clinical science databases it may not appeal to service users or those who would see themselves as 'survivors' of the psychiatric system. Similarly, academic understandings of social exclusion may not tally with individuals' experiences (Richardson and Le Grand 2002). Moreover, the concept of social exclusion is still being contested, so to shoehorn it into a specific definition risks losing pertinent nuances.

One uncontroversial step in the right direction would be for journals (and the research community generally) to encourage authors to think carefully about the keywords they provide (as many databases rely solely on author-generated keywords) so as to make papers easier to identify in electronic searching.

Abstracts

Abstracts are sometimes not provided. Where they are, they may be of poor quality, with inaccurate representation of content a common problem (Wallace *et al.* 2004). In this study three types of abstracts were identified. The first were predominantly from clinical science papers reporting the results of trials and structured around subsections such as: introduction, methodology, results, discussion and conclusion. A second type, seen in both clinical and social sciences, used a broad-brush approach giving a very general overview of the content of a paper but from which it could be difficult to draw conclusions about findings. A third abstract type, appearing more often in the social science literature, was closer to an introductory paragraph than an abstract, giving no indication of how the paper progresses. We would urge authors to avoid this third approach, refine the second, and aim for the first where appropriate. Not all papers can be summarized in this latter, structured way, but many empirical papers would likely benefit from this treatment. A variety of standards are provided for reporting the results of studies in medical journals, such as CONSORT and QUORUM (Moher 1998; Moher *et al.* 1999), and others exist for reporting guidance in education (Newman and Elbourne 2005), but they are not as widespread in other areas of the social sciences.

Resource constraints

Systematic reviewing and literature-mapping are resource-intensive activities when carried out correctly. Wallace *et al.* (2004) report the EPPI Centre suggestion that the basic resource requirement for a review is two full-time workers for nine months. This, they note, can be a source of friction with funders (who want to pay less) and policy-makers (who want information more immediately).

Technology

Problems with the compatibility of software, memory size and processing power of computers can lead to inefficient searching, identification and storage of references. Storage capacity in reference management software is an issue that is not yet resolved, although expectations are high. While specialist databases have been constructed, and are available (EPPI for example provide software support for managing large volumes of references – http://eppi.ioe.ac.uk), we wanted to see what it was possible to do with a more standard software tool kit.

Limitations of this Study

While our strategy has adopted a broad approach, which we believe will include literature particularly from social science bibliographic databases that would otherwise not be identified, our study has a number of limitations. Only mainstream academic literature was identified, meaning that we overlooked some research by service users and advocacy groups reported in the 'grey literature'. This would mean that government policy documents, government reports, reports from other agencies (charities, think tanks, international organizations) would be excluded. Because of the tendency for user-led research on this topic to be in the grey literature there is a real risk of findings being biased. Recent innovative papers which may first appear as working papers prior to publication will not have been picked up. Moreover, only English-language papers were included, a particular limitation considering the tradition of social exclusion research in France.

The definitions of both mental health problems and social exclusion have shortcomings, while translating definitions into search terms for use in electronic databases loses some conceptual nuances. The inclusion/exclusion criteria for references, common to many systematic review protocols, were operationalized from the title, keywords and abstract rather than the full reference. This resource-driven decision is a limitation since, as noted earlier, abstracts do not always accurately represent the content of the full papers.

Opportunities

We have set out methodological approaches to enhance the feasibility and value of systematic reviews for multidisciplinary research in the social sciences, particularly for the management of large literature data sets. We have illustrated the use of the approach in an ongoing review of the relationship between mental health problems and social exclusion. We believe that the approach offers a number of opportunities to enhance research and further inform evidence-based policy-making.

Cross-disciplinary studies

Cross-disciplinary research can enhance research in a number of ways. It might represent a more efficient use of time and funding, it allows the

complexity of a topic to be viewed from two or more perspectives, and it encourages different research traditions to inform each other. Huxley (2001), for example, argues for the need to build capacity for social science research in the mental health field, emphasizing the contribution of social sciences to other areas of health care research and development:

> Without the social scientists to study and improve social assessment, social interventions and the measure of the impact of social care, the health service will simply continue to rotate consumers through its hospitals and community teams. Re-admission, relapses, people falling through the network of care, serious incidents, social exclusion due to the failing of the social security system, housing, vocational services and so on will improve slowly if at all, unless the role of social care provision is taken more seriously and concrete steps are taken to create a better social science evidence base. (see Huxley 2001: 120)

Cross-disciplinary research also encourages knowledge transfer. For example, in this particular area, social exclusion is currently a 'hot topic' in mental health policy discussions in some countries, yet the concept is still rarely consistently discussed, in a way that connects with social science research.

Reviews in the social sciences

Systematic reviews can play an important role in informing policy and practice, by appraising and summarizing a body of research, using techniques intended to minimize the bias found in non-systematic reviews. They can provide balanced inferences based on the collation of best available evidence rather than reflecting an 'expert's view'. Wallace *et al.* (2004) argue that the short-run reward of systematic reviewing in the social sciences is to sort the wheat from the chaff, identifying gaps and weaknesses in the evidence base and increasing access to credible knowledge; and in the long run, to increase the ratio of 'wheat' – encouraging consistent standards, better access to research, and potentially better policy and practice. Yet despite these advantages and the advocacy of groups such as the Campbell Collaboration, their use remains limited across the social sciences (notable exceptions being the fields of education and criminal justice).

Incorporating a literature-mapping exercise may help to enhance the value of investing time and resource in undertaking a systematic review. As we have illustrated, this step has the additional advantage of allowing large volumes of research – such as that emerging from a multidisciplinary review – to be more easily categorized. This can be a powerful analytical tool as the map itself can be used to retrieve information on specific research questions, something that is not easy in a conventional review. The map might also provide a convenient vehicle to build on through subsequent updates of the literature review. We believe this is the first time that a map has been used for a cross-disciplinary review on this scale. For instance, both heavily researched and neglected topics can be identified, while study methodologies can be observed and correlated to topic or country of research.

More narrowly defined systematic reviews of specific elements can be developed from the map, for example looking at how housing interventions for people at risk of social exclusion may or may not impact on their mental health.

While mapping has important benefits, such an exercise remains challenging with very large bibliographic data sets. There is always a trade-off between the added value of a comprehensive review and the amount of time and effort required. Indeed, in many cases this additional effort may not necessarily yield much additional evidence for reviews across the social sciences (Ogilvie *et al.* 2005). One pragmatic way of partially addressing this trade-off, and a technique we have used in our analysis, is the use of established sampling techniques. While not a substitute for a complete systematic analysis of all hits retrieved, as long as we can assume that relevant papers are randomly distributed within our data set this can help identify topics and categorize our literature map in a more cost- and time-efficient manner.

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