An Exploration of the Methodology of Published Systematic Literature Reviews on "Burden of Disease"

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Objective

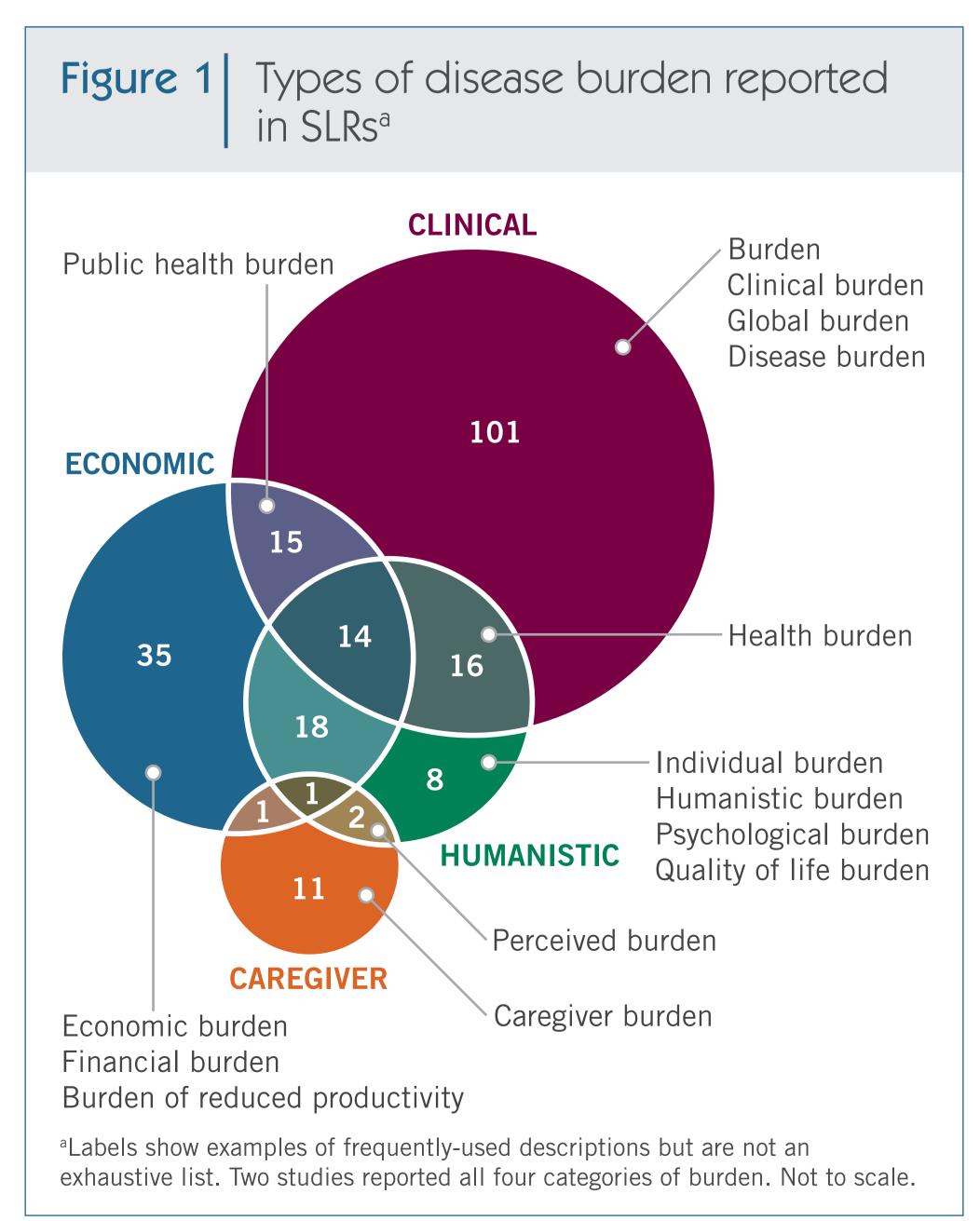
 To investigate the methodologies of systematic literature reviews reporting burden of disease, in order to identify common themes or key differences in their approach to assessing and quantifying "burden".

Background

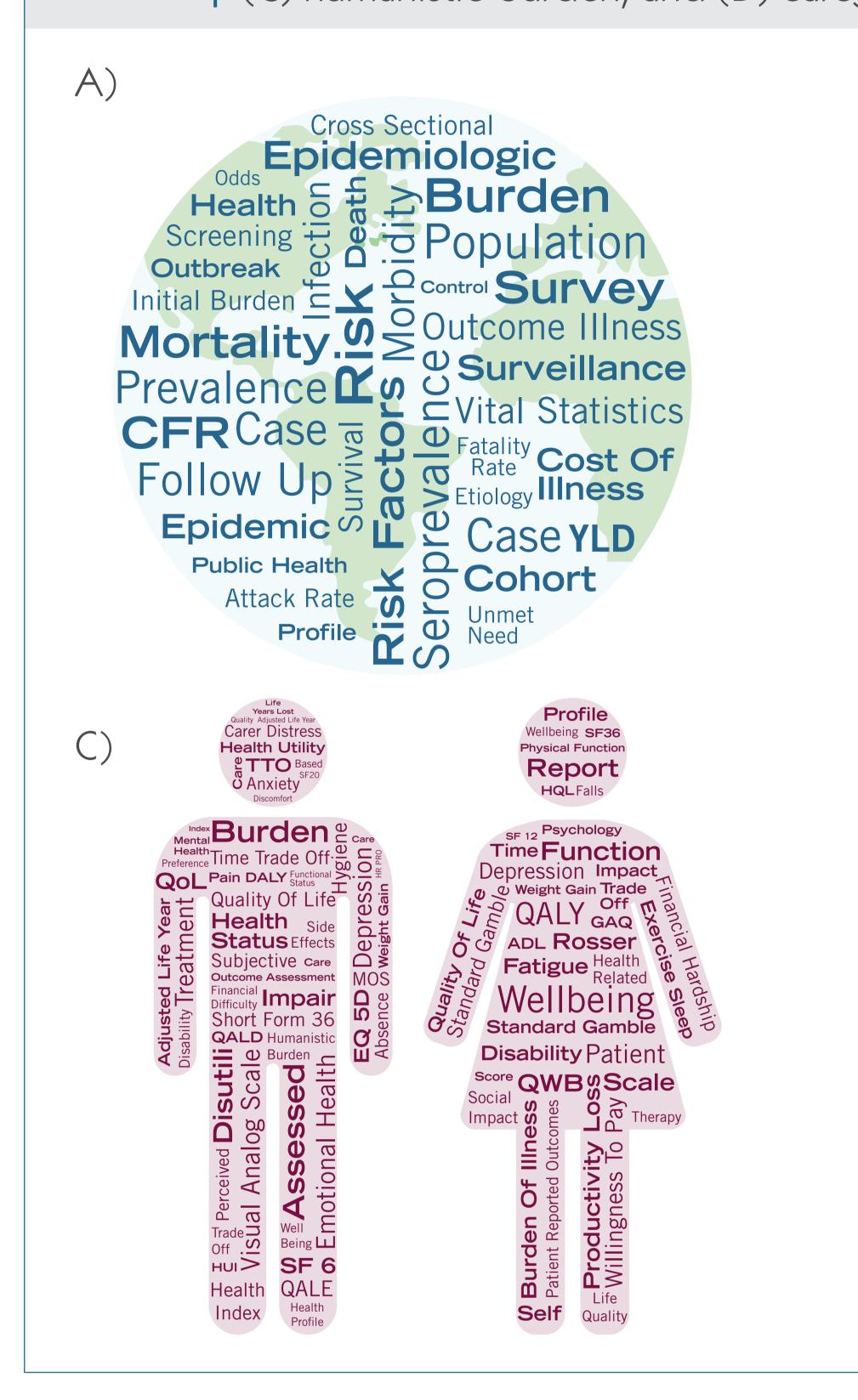
- The term "burden" is frequently used to describe the impact of a disease on clinical, economic, humanistic or caregiver measures; all of these can be assessed through diverse means and quantified by numerous outcomes.
- Understanding burden of disease is important for policy makers, health technology assessment bodies and any organisations with an interest in healthcare or public health.
- However, there is currently no established methodological guidance on the systematic identification or evaluation of burden of disease.

Methods

- A search of MEDLINE was conducted via PubMed using the search term "burden" within the "Title" field and the results filtered by "Systematic Reviews".
- Eligible articles were systematic literature reviews (SLRs) considering "burden of disease" by any definition and reporting sufficient details on ≥ 2 methodological aspects: evidence sources, database search terms, eligibility criteria or quality assessment tools.
- The eligibility of each record was assessed by a single reviewer, who was supported by a second reviewer where required, using a two-stage review process.
- Initially the title and abstract were reviewed against the eligibility criteria; the full text of all records included at this first stage were subsequently assessed under the same eligibility criteria.
- A single reviewer extracted characteristics of the publications, including types of burden reported, details on sources of evidence, search terms, eligibility criteria, and quality assessment tools used.



Frequently-used search terms for (A) clinical burden, (B) economic burden, (C) humanistic burden, and (D) caregiver burden



Results

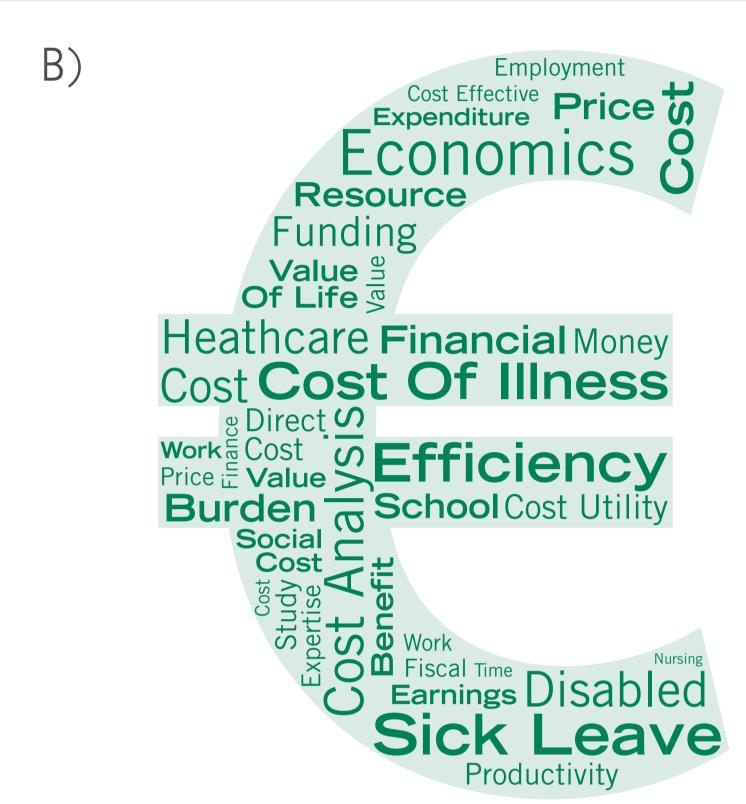
 A total of 834 records were identified through the MEDLINE search, of which 224 were SLRs considering burden of disease.

Types of Disease Burden

- The majority of included SLRs (66%) reported clinical burden (e.g. prevalence, morbidity).
- 38% of the SLRs considered economic burden (e.g. costs, resource use); 27% reported humanistic burden (e.g. quality of life), and 8% reported caregiver burden (Figure 1).
- However, these reported burden outcomes do not necessarily correspond with the way reviews were described by their authors, with approximately half defining their review objective as a consideration of just "burden" or "global burden".

Sources of Evidence and Search Strategies

- All SLRs identified conducted a search of MEDLINE or PubMed, with 68% also searching Embase.
- In addition to these two main databases, over 100 other databases were searched in at least one SLR; these included broad biomedical databases, disease-specific databases, sociological databases, economic databases, and databases with a specific geographic focus.
- Only 40% of SLRs hand-searched reference lists of identified studies, and only 18% conducted searches of relevant key congresses.
- Full search strategies were infrequently reported, but those that were available used a variety of search terms, with little consistency between SLRs; no SLR reported using a validated filter to identify relevant study types.









• The most frequently-used search terms to identify studies assessing each type of "burden" are presented in Figure 2.

Quality Assessment of Studies

- Formal quality assessment was only performed in around 40% of the included SLRs.
- Very little consistency in the choice of quality assessment checklist was identified, with the most commonlyused checklists being the Strengthening the Reporting of OBservational Studies in Epidemiology (STROBE) checklist and Newcastle-Ottawa Scale for cohort, casecontrol and cross-sectional studies, each used in around 15% of the SLRs that conducted quality assessments.

Conclusions

- High levels of heterogeneity between SLR methodologies were identified during this review, with no consistent approach to selecting evidence sources, constructing search strategies or assessing study quality.
- Furthermore, reviews differ considerably in the way "burden" is described and in which outcomes were considered.
- We suggest that guidelines presenting a considered approach to systematically assessing burden of disease would be of benefit to inform and standardise future reviews on this topic, and to aid the comparison of results across different disease areas by policy makers.

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