

Work Programme Methodology

Methods

Design

The work programme adopted a number of approaches:

- 1) An extensive literature review of resilience research
- 2) Concept analysis to clarify the definition of resilience
- 3) A quantitative methodological review of resilience measurement scales
- 4) Stakeholder consultation

Both of the reviews were conducted using systematic principles (e.g. NHS Centre for Reviews and Dissemination, 2008) for searching, screening, appraising quality criteria and data extraction and handling.

Concept Analysis

There are a number of approaches to concept analysis. This paper adopts that described by Walker and Avant (2005). This consists of eight steps that may or may not be conducted in a linear fashion. These steps include (a) selection of a concept, (b) determination of the aim or purpose of the analysis, (c) identification of all uses of the concept that can be discovered, (d) determination of the defining attributes, (e) construction of a model case, (f) construction of additional cases, (g) identification of antecedents and consequences, and (h) definition of empirical referents.

Search Strategy

The literature search was deliberately multi-disciplinary so as to identify the use of resilience within different contexts. The following electronic databases were searched; Social Sciences CSA (ASSIA, Medline, PsycInfo); Web of science (SSCI; SCI AHCI); Greenfile; Cochrane database of systematic reviews. The search strategy was run in the CSA data bases and adapted for the others.

For the methodological review all the included papers were searched to identify, in the first instance, the original psychometric development studies. The search was then further expanded and the instrument scale names were used to search for further studies which used the respective scales. A general search of the internet using the Google search engine was undertaken to identify any other measures, and reference lists of all identified papers were hand searched. Authors were contacted for further information regarding papers that the team were unable to obtain.

A. (DE=resilien*) and((KW=biol*) or(KW=geog*) or(KW=community)) or (KW=social*)

B. (DE=resilien*) and((KW=Interven*) or(KW=promot*) or(KW=associat*) or(KW=determin*) or(KW=relat*) or(KW=predict*) or(KW=review) or (definition)) or (measure*)).

C. (DE=resilien*) and ((KW=questionnaire) or (KW=assess*) or (KW=scale) or (KW=instrument))

Inclusion criteria

The inclusion criteria was peer reviewed journal articles where resilience was a key focus and/or assessed; the population of interest was human (not animal research); and publications covering the last twenty years (1989 onwards) published in English. This strategy was chosen so as to encompass all the project research questions and to identify some of the earlier definitive studies of resilience, to address any changes in meaning over time and to be able to provide a representative count of resilience research as applied to the different populations across the life course. All population age groups were considered for inclusion (children, adolescents/youth, working age adults, older adults).

Exclusion criteria

Papers were excluded if only the title was available, or the project team were unable to get the full article due to the limited time frame for the review. Papers not published in English were excluded from review if no translation was readily available.

Data synthesis

All identified abstracts were downloaded into RefWorks and duplicates removed. Abstracts were screened according to the inclusion criteria by one person and checked by a second. Papers that met the inclusion criteria were retrieved and assessed for final inclusion independently by two reviewers. For each paper, data regarding the definition, population, study design, measurement and results were extracted into purpose- developed data extraction tables. Complementary searches to identify policy and practice documents using internet search engines were also undertaken. Dictionary definitions were also sought. On completion, the tables were analysed to identify recurrent themes to inform each of the concept analysis stages proposed by Walker and Avant (2005). A limitation of the concept analysis methodology of Walker & Avant (2005) is that it lacks a specified approach to data analysis. To strengthen this analysis, a thematic content analysis was taken.

The psychometric properties of the resilience scales were evaluated using a quality assessment framework, including content validity, internal consistency, criterion validity, construct validity, reproducibility, responsiveness, floor and ceiling effects and interpretability (Terwee et al., 2007). A positive rating (+) was given when the study was adequately designed, executed and analysed, had appropriate sample sizes and results. An intermediate rating (?) was given when there was an inadequate description of the design, inadequate methods or analyses, the sample size was too small or there were methodological shortfalls. A negative rating (-) was given when unsatisfactory results were found despite adequate design, execution,

methods analysis and sample size. If no information regarding the relevant criteria was provided the lowest score (0) was awarded.

Study characteristics (the population(s) the instrument was developed for, validated with, and subsequently applied to, the mode of completion) and psychometric data addressing relevant quality criteria were extracted into purposefully developed data extraction tables. This was important as a review of quality of life measures indicates that the application to children of adult measures without any modification may not capture the salient aspects of the construct under question (Eiser & Morse, 2001).

An initial pilot phase was undertaken to assess the rigour of the data extraction and quality assessment framework. Two authors (GW and KB) independently extracted study and psychometric data and scored responses. Discrepancies in scoring were discussed and clarified. JN assessed the utility of the data extraction form to ensure all relevant aspects were covered. At a further meeting of the authors (GW, KB and JN) it was agreed to present the aggregated score for each measure in a numerical format (see table 1), to provide the reader with a clear overall score for each measure, ranging from 0 (low) to 18 (high). In line with the application of this quality criteria with another methodological assessment (Sikkens, de Lange-de Klerk, Pijnenburg, Scheltens & Uitdehaag, 2008) a score was awarded under the 'responsiveness' criterion to scales that reported change scores over time.

A number of studies that had used some of the measures provided further data additional to the validation papers, mainly on internal consistency and construct validity. In these cases a score was awarded and an overall score calculated for the relevant criteria. Data regarding the extent to which the measure was theoretically grounded was extracted for critical evaluation by discussion.

Stakeholder consultation

Stakeholders representing public health, social services, older people's and children's charities, NGOs and patient/public involvement attended two workshops. The first was held alongside the Network academic partners and discussed the concept of resilience. The stakeholders were asked to consider how they defined resilience, and its' key characteristics. The second workshop discussed the academic findings, explored a draft definition of resilience, and issues about the application of assessments of resilience. The aim was to ascertain any differences/similarities between the scientific application of resilience to that applied in 'real world' settings, so as to ensure a universal understanding of the concept. All responses were recorded and fed into the final definition of resilience.

References

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