Creation of Exhaustive Item Banks: The Role of the Health Sciences Librarian

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INTRODUCTION

An exhaustive search for all known instruments is the critical first step in the development of IRT-based CAT applications (Fries, Bruce, and Cella, 2005).

Health sciences librarians can effectively and efficiently assist investigators in the successful completion of this critical first step, because they have extensive

- knowledge of selection of appropriate information resources, (most suitable sources containing instruments)
- knowledge of database characteristics, such as content, structure, controlled vocabulary, and
- expertise in searching multiple databases

This poster describes a successful collaboration between health sciences librarians and PROMIS investigators seeking to develop exhaustive item banks of questionnaires designed to assess emotional distress.

METHODS

Librarians identified and prioritized electronic and print resources from which terms could be derived and used to search for self-report measures of emotional distress (anxiety, depression, sleep, substance use, anger). Resources included:

- well known databases (e.g., MEDLINE, PsycINFO)
- lesser known but highly relevant resources (e.g., Health & Psychosocial Instruments [HaPI], The Contemporary Thesaurus of Search Terms and Synonyms, National Library of Medicine subject headings/classification)

A list of literature search terms was developed using the following iterative process:

- Librarians harvested controlled vocabulary and selected keywords from the resources they identified

- Vocabulary terms were chosen to reflect three aspects of the search request:
  - emotional domain of interest,
  - concept of assessment or measurement,
  - concept of self report

METHODS (continued)

- Terms were entered into an Access database and forwarded to investigators

- Investigators voted to retain or exclude terms, and had the option to suggest additional search terms

- A final list of search terminology was developed by librarians based on
  - Vote summaries
  - Expert knowledge of database content/organization
  - Identification and removal of problematic terms (e.g., exceedingly broad terms that could skew search results)

Librarians selected three databases deemed most likely to produce high numbers of relevant instrument citations
  - MEDLINE,
  - PsycINFO,
  - Health and Psychosocial Instruments (HaPI)

Librarians utilized expert search techniques:
  - Search statements were extensive lists of terms (Table 1)
  - Initial searches were refined by
    - limiting to studies that utilized adults (excluding studies of children or adolescents)
    - limiting to citations in which the relevant emotional domain was a major focus of the original journal article
    - limiting to English language journals
    - using expert judgment to selectively add or delete search terms based on preliminary search results

Each set of results was then submitted for review to PROMIS investigators.

RESULTS

Initial number of search terms harvested from print/electronic resources	3651
Final number of terms approved by librarians and investigators for literature searches (across all five emotional domains)	2829

RELEVANT CITATIONS RETRIEVED

Domains of emotional distress	PsycINFO	MEDLINE	HaPI Health and Psychosocial Instruments	TOTAL	Instruments Identified
Anxiety	762	553	423	1738	145
Depression	293	547	364	1204	75
Sleep	61	136	338	535	78
Substance Use	195	680	540	1415	64
Anger	105	285	887	1277	25
	1416	2201	2552	6169	387

CONCLUSIONS

Collaboration between PROMIS investigators and librarians led to comprehensive searches for existing measures of emotional distress, and identification of numerous potentially relevant instruments for inclusion in item banks.

IMPLICATIONS

Development of IRT-based CAT applications must include identification of existing measures of the constructs of interest. Inclusion of librarians, as expert searchers, in this process insures that literature searches will be effective (on-target and comprehensive) and efficient.

REFERENCES

Fries JF, Bruce B, Cella D. The promise of PROMIS: using item response theory to improve assessment of patient-reported outcomes. Clin Exp Rheumatol. 2005 Sep-Oct;23(5 Suppl 39):S53-7.

Table 1 Search statements used to identify measures of depression in MEDLINE and PsycINFO

An asterisk (*) indicates searches that were limited to articles in which the MeSH reflected a primary focus of the article.

Search terms 1 through 15 are Medical Subject Headings (MeSH).

Search terms 17 through 57 are keywords, i.e., the searches examined multiple places within each citation record to find occurrences of the term.

Search terms 1 through 119 and 159 through 162 are PsycINFO subject headings.

Search terms 121 through 157 are keywords, i.e., the searches examined multiple places (title, abstract, subject headings, table of contents, key concepts) within each citation record to find occurrences of the term.

"Adj1" requires that the search terms occur within one word of each other, and the truncation symbol ($) picks up multiple terms with the same prefix. Thus, this command will identify records that contain phrases such as: personal narrative, personal narratives, personal narrating, narrating personal, narrating of personal.

Line 169 limits search results to particular settings or subject areas by using PsycINFO classification codes.