The impact of pharmacist interventions on health-related quality of life
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Authors' objectives
To describe and evaluate pharmacy-based studies that include health-related quality of life (HRQL) as an outcome measure and to recommend approaches for incorporating HRQL as a patient outcome in pharmacy-based intervention studies.

Searching
Computerised searches were conducted of the following databases from January 1988 to February 1999: MEDLINE, Healthstar, EMBASE and International Pharmaceutical Abstracts. MeSH terms and non-MeSH keywords used to describe HRQL and pharmacist interventions were used. Reference lists for reviewed papers were cross-checked for additional relevant citations. Efforts were made to identify complete articles published subsequent to abstracts reporting research in progress.

Study selection
Study designs of evaluations included in the review
Included studies were of the following designs: randomised controlled trials (RCTs); concurrent cohort studies; pre and post prospective studies with no control group; and pre and post studies with nonequivalent control. Duration of studies ranged from 1.5 months to 24 months. Abstracts presenting partial findings or work in progress were not included in the review unless actual HRQL outcome data was reported. There appeared to be no restrictions applied to study design.

Specific interventions included in the review
The inclusion criteria were any pharmacist based intervention. The following pharmacist-based interventions were included: clinical pharmacist interventions; pharmaceutical care; comprehensive pharmaceutical services; community pharmacist with or without training programme; and pharmacist consultation. Interventions included disease specific interventions.

Participants included in the review
Participants included the general public and patients with the following medical problems: elderly outpatients; diabetes; hypertension; asthma; hyperlipidaemia; and chronic obstructive pulmonary disease. Inclusion criteria for participants were not stated.

Outcomes assessed in the review
Inclusion criteria was patients health-related quality of life (HRQL) which was evaluated was evaluated using the generic 36-Item Short-Form Health Survey (SF-36) or its variations (see Other Publications of Related Interest no.1); Health Status Questionnaire; SF-12; visual analogue scale; or disease specific instruments (including Hypertension/Lipid Form 5.1, disease specific hypertension questionnaire, asthma-related quality of life, and Diabetes Form 2.1) either alone or complemented by a generic measure.

How were decisions on the relevance of primary studies made?
Abstracts of unique citations were reviewed by two researchers. Abstracts potentially meeting the inclusion criteria were identified and the complete articles retrieved for fuller scrutiny.

Assessment of study quality
Some aspects of validity were discussed in the text though no systematic assessment of validity was undertaken. The authors do not state how the papers were assessed for validity, or how many of the reviewers performed the validity assessment.
Data extraction
The authors do not state how the data were extracted for the review, or how many of the reviewers performed the data extraction. Tables reported details of the following data: author; year of publication; purpose of study; study design; length of study; sample size at completion; outcome measure; and reported findings.

Methods of synthesis
How were the studies combined?
The studies were combined in a narrative review.

How were differences between studies investigated?
Differences between the studies were discussed.

Results of the review
A total of 11 studies were included (7821 patients at completion).

Six of the studies (with 7 treatment arms) were RCTs (7566 patients).

One concurrent cohort (80 patients).

Two pre and post-prospective study with no control group (62 patients).

One prospective study with patients acting as their own control (25 patients).

One pre and post-nonequivalent control (100 patients).

The studies used a diversity of reporting approaches. Methodological flaws included: small sample size; short duration of intervention (only three studies were longer than six months); limitations of study design; choice of HRQL measure; and inappropriate statistical analysis.

All studies: inconsistent findings were reported. Nine studies contained a disease specific focus, of which five reported significant improvement in one or more domains in the intervention group.

RCTs: inconsistent findings with three RCTs reporting no significant difference in any HRQL domain and four RCTs reporting significant improvement in the intervention group in some HRQL domains and not others.

Authors’ conclusions
The initial research findings about the influence of pharmaceutical interventions of HRQL are mixed. In order to demonstrate the positive effect of pharmaceutical services on patient health, pharmacy practice researchers should continue incorporating HRQL outcome measures complemented by clinical, economic, and other humanistic outcome indicators.

CRD commentary
The aims were stated and inclusion criteria defined in terms of setting, intervention and outcome. Methods used to select primary studies were mentioned though no mention was made of methods used to extract data. Searches were conducted of more than one database but search terms used were not specified and it was not stated whether any language restrictions were applied. Attempts were made to obtain full reports of research in progress. Some aspects of validity were discussed in the text though no systematic evaluation of study validity was undertaken. Some relevant detail of the primary studies was presented in tabular format though more comprehensive descriptions of the actual interventions would have been welcome and only the numbers of patients completing the study were given. Data was not extracted on an intention to treat basis. Given the heterogeneity among studies a narrative review was appropriate though attention was not drawn to the better sources of evidence. The discussion includes consideration of the following problems: the influence of the labelling effect (increase in patients distress due to greater self-awareness about a disease.
state); selection bias that leads to the participation of pharmacies that are already providing a high standard of care; and the appropriateness of instruments used to measure HRQL.

Re-analysing the data on an intention to treat basis and taking study validity into account may have allowed firmer conclusions to be reached.

**Implications of the review for practice and research**

**Practice:** The authors did not state any implications for practice.

**Research:** The authors recommend that future research should ensure the use of sample size sufficient to detect significant change in HRQL; consider the use of lagged designs and randomised pharmacy designs; ensure that the construct validity, reliability and responsiveness of selected HRQL instrument have been demonstrated; and give thought to the use of disease-specific instruments with good construct validity, reliability and responsiveness.

**Bibliographic details**


**PubMedID**

10573313

**Other publications of related interest**


**Indexing Status**

Subject indexing assigned by NLM

**MeSH**

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**Record Status**

This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.