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Incidence, nature and causes of medication errors in hospitalised patients in Middle Eastern countries: a systematic review protocol

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Review question(s)

What are the incidence of medication errors and the incidence of the classifications of prescribing, administration and dispensing errors?

What is the nature (e.g. classification, severity, patient outcomes) of these errors?

What are the causes and contributory factors leading to these errors?

Searches

The search strategy aims to identify both published and unpublished studies. A three-step search strategy will be applied:

1. An initial limited search of MEDLINE and CINAHL will be undertaken followed by analysis of the text words contained in the title and abstract, and of the index terms used to describe the article

2. A second search using all identified keywords and index terms will then be undertaken across all included databases.

3. Thirdly, the reference list of all identified articles and reports will be searched for additional studies.Citation searching of included studies using the SCOPUS database will be performed. Key contacts will be contacted by email to seek additional studies.

The following databases will be searched:

1. MEDLINE

2. EMBASE

3. Cumulative Index of Nursing and Allied Health Literature (CINAHL)

4. International Pharmaceutical Abstracts (IPA)

5. PsycINFO

6. Cochrane Database of Systematic Reviews (CDSR)

7. Centre for Review and Dissemination (CRD) database

8. Joanna Briggs Institute Library

The search for unpublished studies will include: Grey literature (Google Scholar, government reports) and dissertation thesis (ProQuest).

Search terms

Initial search terms to be used will be:

• MedicationOR prescribing OR dispensing OR administration

AND

• Error OR incident OR mistake

AND

• Middle East OR names of individual countries (Saudi ArabiaOR QatarOR United Arab EmiratesOR KuwaitOR BahrainOR OmanOR PalestineOR IsraelOR IranOR IraqOR SyriaOR LebanonOR EgyptOR JordanOR TurkeyOR Yemen).

The search terms will be used in various combinations along with truncations (*), wild cards ($), adjacent search options (e.g. adj3), hyphens and other relevant Boolean operators where allowed by the databases

Types of study to be included

The review will involve identification of studies which have employed the following:

1. Quantitative designs - randomised controlled trials which may have captured data on incidence, nature and causes, non-randomised comparative studies, observational studies, cohort studies and before and after studies, surveys.

2. Qualitative designs - narrative, phenomenology, grounded theory, ethnography, case studies, action research

3. Mixed methods designs

4. Systematic reviews

Condition or domain being studied

Medication errors in hospitalised patients.

Inclusion criteria – quantitative studies

Participants/ population

The review will consider studies, which focus on errors in hospitalised patients(of any age or speciality)in any of the countries of the Middle East. Studies of hospital practitioners (or other key stakeholders), which capture data on causes of errors, will also be included

Phenomenon of interest

Qualitative studies will focus on the phenomenon of medication errors, specifically their causes

Intervention(s), exposure(s)

There are no interventions or comparators as would be the case in reviews of effectiveness or cost-effectiveness

Comparator(s)/ control

There are no interventions or comparators as would be the case in reviews of effectiveness or cost-effectiveness

Context

Inclusion criteria – quantitative studies

Population:

The review will consider studies, whichfocus on errors in hospitalised patients(of any age or speciality)in any of the countries of the Middle East. Studies of hospital practitioners (or other key stakeholders), which capture data on causes of errors, will also be included.

Types of interventions; Comparators

There are no interventions or comparators as would be the case in reviews of effectiveness or cost-effectiveness.

Outcome(s):

Quantitative outcomes are related to each of the review questions as follows:the incidence of medication errors and incidence of classifications of prescribing, administration and dispensing errors; the nature (e.g. classification, severity, patient outcomes) of errors; causes and contributory factors leading to errors.

Inclusion criteria – qualitative studies

Population

The review will consider studies, which focus on errors in hospitalised patients (of any age or speciality) in any of the countries of the Middle East. Studies of hospital practitioners (or other key stakeholders) which capture data on causes of errors will also be included.

Phenomenon of interest:

Qualitative studies will focus on the phenomenon of medication errors, specifically their causes.

Context:

Any of the countries of the Middle East

Outcome(s)

Primary outcomes

Quantitative outcomes are related to each of the review questions as follows:the incidence of medication errors and incidence of classifications of prescribing, administration and dispensing errors; the nature (e.g. classification, severity, patient outcomes) of errors; causes and contributory factors leading to errors.

Secondary outcomes

none

Data extraction, (selection and coding)

Screening and selection:

Independent, duplicate screening of titles and abstracts will be performed. Disagreements will be resolved by consensus and referred to a third reviewer if required. Authors will be contacted if necessary for clarification of information. Study selection will be conducted in three stages:

•Initial screening of titles and abstracts to be carried out against the inclusion criteria to identify potentially relevant papers for abstract retrieval.

•Screening of abstracts to identify papers for full text retrieval. Inclusion and exclusion of abstracts will be documented using a screening form that will be specifically developed for this purpose.

•Assessment of full papers for inclusion into the review.

Data extraction:

A data extraction tool will be developed. The following key data will be extracted: details of the authors; country of publication/study; year of publication; study population; setting; recruitment;incidence;nature of errors; causes of errors (based on Reason's model of accident causation).

Risk of bias (quality) assessment

Assessment of methodological quality

All studies identified during the database search will be assessed for relevance to the review protocol based on information via the title, abstract and full study review by two independent reviewers. A third reviewer will be consulted if consensus cannot be reached.

Papers selected for retrieval will be assessed by two independent reviewers for methodological validity prior to inclusion in the review using standardized critical appraisal instruments. Any disagreements that arise between the reviewers will be resolved through discussion, or with a third reviewer.

Strategy for data synthesis

Synthesis is collating, combining and summarising the findings of individual studies included in the systematic review. All results will be subject to double data entry. It is considered that pooling of data derived from quantitative studies is likely to be inappropriate due to an observational study design; hence the findings will be presented in narrative form including tables and figures to aid in data presentation where appropriate.

Qualitative research findings will, where possible be pooled. This will involve the aggregation or synthesis of findings to generate a set of statements that represent that aggregation, through assembling the findings (Level 1 findings) rated according to their quality, and categorizing these findings on the basis of similarity in meaning (Level 2 findings). These categories are then subjected to a meta-synthesis in order to produce a single comprehensive set of synthesized findings (Level 3 findings) that can be used as a basis for evidence-based practice. Where textual pooling is not possible, the findings will be presented in narrative form.

Analysis of subgroups or subsets

None planned

Dissemination plans

Our dissemination strategy includes:

1. Sending a brief summary of the review findings to all health professionals and key stakeholders involved in the study.

2. Delivering seminars within HMC

3. Publishing summary findings on internal communications within HMC

4. A display of study findings via social media (e.g. study Facebook page) and hosted on university websites.

5. Submission of abstracts for oral presentation at key national and international conferences such as the Annual Saudi Medication Safety Conference, the Medication Safety Conference in UAE and the International Society of Pharmacoepidemiology Annual Conference.

6. Submission for publication in key academic journals such as BMJ Quality & Safety and BMC Health Services Research.

Contact details for further information

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Details of any existing review of the same topic by the same authors
Health professionals' beliefs, attitudes and experiences of medication error reporting: a systematic review protocol.
Mai Al Qubaisi, Derek Stewart, Antonella Tonna, Alison Strath

Anticipated or actual start date
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Subject indexing assigned by CRD

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Stage of review
Ongoing

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Stage of review at time of this submission	Started	Completed
Preliminary searches	Yes	Yes
Piloting of the study selection process	No	No
Formal screening of search results against eligibility criteria	Yes	No
Data extraction	No	No
Risk of bias (quality) assessment	No	No
Data analysis	No	No