Effectiveness of telemedicine interventions for the most prevalent chronic diseases in German primary care – a protocol for an umbrella review

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Background

Public health relevance
- Chronic conditions prevalent in patients > 65 (Fig.1) [1] and expected to rise by 2030 (e.g. heart failure/ cardiac insufficiency (+11.6%), cardiomyopathy (+9.3%), other cardiovascular diseases (+7.3%) and diabetes (+6.4%) [2]
- Telemedicine expected to facilitate access to relevant target groups and improve overall effectiveness of care [3,4]
- Need for individualised and continuous monitoring and self-management support of patients in chronic care ⇒ chronic diseases are the ideal setting for the development and implementation of telemedicine approaches [5]

Research gap
- No clear understanding of the processes through which the applications work [6]
- Many studies suffer from methodological shortcomings and weaknesses of study designs [7]
- Fast evolving body of evidence requiring guidance for care providers

Objectives
- To identify and synthesise relevant international high-level evidence on the effectiveness of telemedicine solutions and their components on the most common chronic diseases in Germany (Fig. 1) by conducting an umbrella review [8]

Methods and Preliminary Results

PICOS-Criteria

<table>
<thead>
<tr>
<th>Patients</th>
<th>Intervention</th>
<th>Control, Outcome &amp; Time applied</th>
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</thead>
<tbody>
<tr>
<td>patients with at least one of the four most prevalent chronic diseases</td>
<td>telemedicine intervention specified as (1) use of ICT, (2) covering distance and (3) involvement of health care provider [9]</td>
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Study Design

- systematic review of RCTs or a meta-analysis

Inclusion

- Primary studies applying telemedicine (specified as (1) use of ICT, (2) covering distance and (3) involvement of health care provider [9])
- Study design being either a systematic review of RCTs or a meta-analysis, including systematic reviews of observational studies

Exclusion

- No telemedicine applied
- Study designs other than systematic reviews of RCTs or meta-analysis

Population

- Population with (at least one of the four most prevalent chronic diseases)
- Humans ≥ 18 years
- Median OQAQ ≥ 14
- Population not matching or not reported

Primary aim: effectiveness of telemedicine
- Efficacy or studies primarily investigating costs or cost-effectiveness, or feasibility
- Animals
- Median OQAQ < 14
- Other language

Publication in English

Qualitative Assessment

Oxford Quality Assessment Questionnaire (OQAQ) [10]

Data Extraction

Basic information
- Author
- Study design
- Publication year

Characteristics
- Country (patient recruitment)
- Sites
- Number of original studies
- Study design of original studies
- Number of patients
- Setting (e.g. primary care clinic, reha, community)
- Study population
- Diagnosis / target disease

Telemedicine application studied (Intervention)
- Telemedicine component
- Comparator
- Follow Up / duration

Outcome
- Statistical analysis
- Effect size and significance

References