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Relevant models and elements of integrated care for multi-morbidity: Results of a scoping review

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ABSTRACT

Background: In order to provide adequate care for the growing group of persons with multi-morbidity, innovative integrated care programmes are appearing. The aims of the current scoping review were to i) identify relevant models and elements of integrated care for multi-morbidity and ii) to subsequently identify which of these models and elements are applied in integrated care programmes for multi-morbidity.

Methods: A scoping review was conducted in the following scientific databases: Cochrane, Embase, PubMed, PsycInfo, Scopus, Sociological Abstracts, Social Services Abstracts, and Web of Science. A search strategy encompassing a) models, elements and programmes, b) integrated care, and c) multi-morbidity was used to identify both models and elements (aim 1) and implemented programmes of integrated care for multi-morbidity (aim 2). Data extraction was done by two independent reviewers. Besides general information on publications (e.g. publication year, geographical region, study design, and target group), data was extracted on models and elements that publications refer to, as well as which models and elements are applied in recently implemented programmes in the EU and US.

Results: In the review 11,641 articles were identified. After title and abstract screening, 272 articles remained. Full text screening resulted in the inclusion of 92 articles on models and elements, and 50 articles on programmes, of which 16 were unique programmes in the EU ($n = 11$) and US ($n = 5$). Wagner's Chronic Care Model (CCM) and the Guided Care Model (GCM) were most often referred to (CCM $n = 31$; GCM $n = 6$); the majority of the other models found were only referred to once (aim 1). Both the CCM and GCM focus on integrated care in general and do not explicitly focus on multi-morbidity. Identified elements of integrated care were clustered according to the WHO health system building blocks. Most elements pertained to 'service delivery'. Across all components, the five elements referred to most often are person-centred care, holistic or needs assessment, integration and coordination of care services and/or professionals, collaboration, and self-management (aim 1). Most ($n = 10$) of the 16 identified implemented programmes for multi-morbidity referred to the CCM (aim 2). Of all identified programmes, the elements most often included were self-management, comprehensive assessment, interdisciplinary care or collaboration, person-centred care and electronic information system (aim 2).

Conclusion: Most models and elements found in the literature focus on integrated care in general and do not explicitly focus on multi-morbidity. In line with this, most programmes identified in the literature build on the CCM. A comprehensive framework that better accounts for the complexities resulting from multi-morbidity is needed.

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1. Introduction

Due to an ageing society and changing epidemiology, the number of people with chronic diseases is increasing. Consequently the burden of multi-morbidity in European countries is growing [1–4]. Even though the prevalence of multi-morbidity increases with age, the relative majority of persons with multi-morbidity are of working age [2,4–6]. Over the past decades many definitions have evolved explaining what integrated care and multi-morbidity is. So far, there is no single definition existing for integrated care or multi-morbidity. Some studies define multi-morbidity as 'the co-occurrence of two or more chronic or long-term conditions within the same persons' [1,3]. A general definition of integrated care is provided by the World Health Organisation (WHO), which describes integrated care as: "the management and delivery of health services such that people receive a continuum of health promotion, health protection and disease prevention services, as well as diagnosis, treatment, long-term care, rehabilitation, and palliative care services through the different levels and sites of care within the health system and according to their needs" [7].

Multi-morbidity constitutes a challenge for the organisation of health and social care in western countries, because the care for persons with multiple chronic conditions, provided by multiple care providers from different sites and sectors, often lacks alignment. The need to provide person-centred integrated care as opposed to fragmented and single-disease focused care has been well recognised [8]. Consequently, there is an urgent need for integrated care services for multi-morbid persons that are truly person-centred, meaning that services are tailored to the individuals' needs, capabilities and preferences, rather than just to a particular disease [9].

Disease-specific integrated care programmes have in recent years been increasingly implemented in European countries or regions, and the evidence base for their effectiveness is growing [10–17]. However, evidence is lacking on how to best design and organise integrated care specifically for multi-morbid persons. Further research in this respect is therefore needed [8,18–23]. An important precursor to developing and implementing effective integrated care programmes for persons with multiple chronic conditions is to gain more knowledge about single and interrelated elements that contribute to the success of integrated care programmes. For this reason, we performed a scoping review in which we aimed to identify relevant models and elements for integrated care especially for multi-morbidity (aim 1). Models are defined in the current study as existing frameworks or theories while elements are defined as components or concepts that often make up models. Subsequently, we aimed to identify which of these models and elements were used to build integrated care programmes, which are defined as real-world care practices, for persons with multi-morbidity described in the scientific literature (aim 2). This review was performed in the context of the Horizon2020 EU project SELFIE, which is described in Box 1.

Box 1: SELFIE About the SELFIE project. (Sustainable intEgrated chronic care modeLs for multi-morbidity: delivery, FInancing, and performancE) is a Horizon2020 funded EU project that aims to contribute to the improvement of person-centred care for persons with multi-morbidity by proposing evidence-based, economically sustainable, integrated care programmes that stimulate cooperation across health and social care and are supported by appropriate financing and payment schemes. More specifically, SELFIE aims to:

- Develop a taxonomy of promising integrated care programmes for persons with multi-morbidity;
- Provide evidence-based advice on matching financing/payment schemes with adequate incentives to implement integrated care;
- Provide empirical evidence of the impact of promising integrated care on a wide range of outcomes using Multi-Criteria Decision Analysis;
- Develop implementation and change strategies tailored to different care settings and contexts in Europe, especially Central and Eastern Europe.

The SELFIE consortium includes eight countries: the Netherlands (coordinator), Austria, Croatia, Germany, Hungary, Norway, Spain, and the UK. www.selfie2020.eu [Grant Agreement No 634288].

2. Methods

2.1. Study design

A scoping review was conducted to address the two research aims. One overall search strategy was used to find literature pertaining to either or both of the two aims. However, different in- and exclusion criteria and data extraction methods were applied. Data was extracted according to PRISMA guidelines [24].

A scoping review aims to identify relevant literature and key concepts addressing a broader topic, while focusing on more than one research question. It includes different study designs and types of evidence available, and does not involve an assessment of the quality of included publications [25,26]. We followed the methodology of Armstrong et al. [27], which allowed us to review different aspects related to integrated care for multi-morbidity [27].

Definitions were developed for the scoping review:

i.) "Multi-morbidity" refers to multiple (e.g. at least two) chronic conditions, physical or mental, occurring in one person at the same time, where one is not just a known complication of the other.
ii.) "Integrated care" refers to structured efforts to provide coordinated, pro-active, person-centred, multidisciplinary care by two or more communicating and collaborating care providers. Providers may work at the same organisation or different organisations, either within the health care sector or across the health care, social care, or community care sectors (including informal care).
iii.) "Model" refers to any existing framework or theory for integrated care, this pertains to the 'abstract' and intangible.
iv.) "Element" refers to any specific component or concept to provide integrated care, elements can be parts of a model (iii) or a programme (v).
v.) "Programme" refers to any existing care provision, practice or initiative, programmes are thus real-world approaches to provide care for patients or clients. These programmes can range from small-scale case finding, regional, to population health management approaches.

2.2. Search strategy

We searched in the following scientific databases: Cochrane, Embase, PubMed, PsycInfo, Scopus, Social Services Abstracts Sociological Abstracts, and Web of Science in October 2015. A comprehensive search strategy was developed jointly by all authors with the assistance of a librarian to identify English language articles published since 1990. The search algorithm comprised search terms (and their linguistic variations) pertaining to: a) models, elements, and programmes, b) integrated care, and c) multi-morbidity (see Appendix A file 1). We searched predominantly in title and

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