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Concept mapping as a promising method to bring practice into science



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ABSTRACT

Objective: Concept mapping is a method for developing a conceptual framework of a complex topic for use as a guide to evaluation or planning. In concept mapping, thoughts and ideas are represented in the form of a picture or map, the content of which is determined by a group of stakeholders. This study aimed to explore the suitability of this method as a tool to integrate practical knowledge with scientific knowledge in order to improve theory development as a sound basis for practical decision-making.

Method: Following a short introduction to the method of concept mapping, five Dutch studies, serving different purposes and fields in public health, will be described. The aim of these studies was: to construct a theoretical framework for good regional public health reporting; to design an implementation strategy for a guideline for integral local health policy; to guide the evaluation of a local integral approach of overweight and obesity in youth; to guide the construction of a questionnaire to measure the quality of postdisaster psychosocial care; and to conceptualize an integral base for formulation of ambitions and targets for the new youth healthcare programme of a regional health service.

Results: The studies showed that concept mapping is a way to integrate practical and scientific knowledge with careful selection of participants that represent the different perspectives. Theory development can be improved through concept mapping; not by formulating new theories, but by highlighting the key issues and defining perceived relationships between topics. In four of the five studies, the resulting concept map was received as a sound basis for practical decision-making.

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Conclusions: Concept mapping is a valuable method for evidence-based public health policy, and a powerful instrument for facilitating dialogue, coherence and collaboration between researchers, practitioners, policy makers and the public. Development of public health theory was realized by a step-by-step approach, considering both scientific and practical knowledge. However, the external validity of the concept maps in place and time is of importance.

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Introduction

Policy decisions in public health are always influenced by factors other than evidence, including institutional constraints, interests, ideas, values and external factors (e.g. crises, hot issues and concerns of organized interest groups).^{1–3} Evidence-based public health policy is required to achieve significant health gains and a better use of scarce resources. Therefore, decisions have to be made explicitly and openly, even in cases where the evidence is difficult to find or poor in quality.^{1,2} As stated by Muir Gray, ‘absence of excellent evidence does not make evidence-based decision making impossible; what is required is the best evidence available not the best evidence possible’.²

Jenicek defined evidence-based public health as ‘...the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of communities and populations in the domain of health protection, health maintenance and improvement (health promotion)’.⁴ Analogously, evidence-based public health policy will identify and apply the most efficacious interventions to maximize the quality and quantity of life for the community. However, ‘evidence-based’ in public health has a different meaning from ‘evidence-based’ in medicine. In evidence-based public health, the problems to be solved are more complex than those in evidence-based medicine. Public health works in different contexts (individual, populations, organizations, societal) and affects both individual and population patterns of disease.^{5,6} As such, there is a need to work with broader evidence; introduce disciplines that do not have the same analytic foci as biomedicine; and operate with differing epistemological precepts, different methods and produce different types of evidence.⁵ Also, changes in contexts over time have to be taken into account.

Theory development plays an important role in evidence-based public health. Inductive theory development is intrinsic to the social scientific armoury, but does not fit into biomedical research as applied in evidence-based medicine.⁵ Theory development is needed to address all relevant aspects that might require different levels of evidence, crossing disciplinary boundaries. By inventing and applying scientific methods to gain insight into the issues at stake in different contexts and at different levels, theories can be developed that can be considered as good evidence for decision-making in public health. By applying quantitative analytical approaches to qualitative data, the concept mapping method not only identifies and explores multiple ideas for complex

phenomena, but also visually represents relationships between ideas, contributing to a better understanding of these relationships in order to develop theories and generate research hypotheses.⁷

According to Brownson et al., key components of evidence-based public health include, amongst others, ‘...applying program-planning frameworks, engaging the community in decision making, conducting sound evaluation, and disseminating what is learned’.³ One of the social research methods that addresses the first two key components is concept mapping. Concept mapping involves operating with differing epistemological precepts and crossing disciplinary boundaries, and simultaneously addresses the issue of theory development in evidence-based public health by constructing a theoretical framework for a complex topic to guide planning and evaluation. Concept mapping is seen as a useful approach in the field of community-based participatory research.⁸

This paper explores the suitability of concept mapping as a method to integrate practical knowledge with scientific knowledge in order to improve theory development as a sound basis for practical decision-making in the field of public health. This is done by describing five studies of concept mapping in co-produced and researched work. Based on the authors’ experiences and observations, the value of the concept mapping method for evidence-based public health policy will be discussed.

Method

Concept mapping

Concept mapping is a method for developing a conceptual framework of a complex topic for use as a guide to evaluation or planning. In concept mapping, thoughts and ideas are represented in the form of a picture or map, the content of which is determined by a group of stakeholders.⁹ Concept mapping combines an inductive group process with several multivariate deductive statistical analyses, and concludes with a group interpretation of the conceptual map that finally results.¹⁰ Concept mapping has been used in a variety of subjects [e.g. education, children and youth, health promotion, (mental) health and care, and the arts] and for a variety of purposes [e.g. planning, evaluation, survey design, theory building, translating research into practice, curriculum development and (quality) management].^{7,11–18} The six-step method described by Trochim was used in the five studies in

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