

Position paper of the German Network for Health Care Research: What is health care research?

Positionspapier des Deutschen Netzwerk Versorgungsforschung e.V.: Was ist Versorgungsforschung?

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ABSTRACT

The scope and definition of health care research is a matter of discussion in our scientific community. The Board of the German Network for Health Care Research has drafted a position paper that was extensively reviewed and commented upon by all working groups and specialist groups of the network. The present version represents consented common grounds to a large degree but is neither complete nor final. We consider this position paper a living document that will evolve and further converge in an ongoing discussion in the network.

ZUSAMMENFASSUNG

Definition und Aufgaben der Versorgungsforschung werden in unserer wissenschaftlichen Gemeinschaft diskutiert. Der Vorstand des Deutschen Netzwerks Versorgungsforschung hat ein Positionspapier erarbeitet, das von allen Arbeits- und Fachgruppen des Netzwerks intensiv diskutiert und kommentiert wurde. Die vorliegende Fassung ist zu großen Teilen konsentiert. Sie ist aber weder vollständig noch abschließend. Vielmehr betrachten wir dieses Positionspapier als ein living document, das sich in der laufenden Diskussion im Netzwerk weiterentwickeln und weiter konvergieren soll.

Introduction

In this position paper, the German Network for Health Care Research (DNVF) presents its current understanding of health care research, also based on the expertise and experience of its own activities as a contributor in this field. We describe our scientific concept of the discipline and then classify health care research in relation to neighboring scientific fields such as public health and health economics.

The jointly developed concept was first drafted at the meeting of the DNVF Executive Board on 26.08.2024 and then developed in an iterative process together with the new Executive Board (period 2024–2026) and the speakers of the DNVF's working groups and specialist groups. The discourse was engaging, detailed and focused. The Executive Board reviewed more than 150 comments from the DNVF's 14 working groups and specialist groups and incorporated as much of the feedback as possible into an updated paper. This final version was returned to all commentators and offered for co-signing.

The process demonstrated the strong culture of scientific exchange in the DNVF. At the same time, the intensive process of achieving consensus has made it clear that there remain differences in perspectives

on some aspects. The present version is therefore to be understood as the current expert consensus that may be revised following continued discussions. Thus, we see the position paper as a "living paper" that is intended to serve as a starting point for further deliberation.

The aim of the process is to develop a common understanding of health care research and its research topics and subjects as well as its methodological foundations. At the 24th German Congress for Health Care Research (DKVF) in September 2025, the discussion will be picked back up in a dedicated workshop.

The concept presented here is essentially based on the definition of the current textbook on health care research and a definition of the US-American professional association for health services research, the Academy Health [1, 2].

The DNVF's understanding of health care research

Health care research is a scientific discipline that deals with the analysis of health care under everyday conditions. The starting point is a specific

and always precise, operationalized research question. Health care research comprises basic research, descriptive, analytical and intervention research.

Basic research in the context of health care research aims to gain fundamental insights into individual and organizational behavior in the health care system that are of cross-disease and cross-care significance [3]. The focus is on the structures, processes, outcomes, and quality of healthcare provided by physicians, nurses, and other stakeholders from the various health professions in different organizations and settings. These are described, analyzed and explained from different perspectives (especially the perspectives of patients, caregivers, the healthcare system, and health policy). Health care research also examines the prerequisites for effective policy advice.

The tasks of health care research include, in particular, the generation and provision of evidence on how health care of the general population and/or specific groups of patients can be improved. In interventional healthcare research, scientists therefore develop healthcare innovations in a participatory manner with patients, relatives, caregivers and other stakeholders. They test the feasibility, effectiveness and safety of these innovations under realistic conditions and evaluate their acceptance as well as factors that promote and hinder them among as many participants as possible and at the system level. The aim is to implement successful care models into care practice in order to optimize the effectiveness, efficiency and safety of routine healthcare and thus to improve patients' outcomes, and to increase the resilience of the healthcare system.

Health care research stands for a needs-based and access-oriented healthcare system that is geared towards population health with conducive working conditions for healthcare professionals. Fair and equal access to healthcare innovations, social, economic and sustainability aspects as well as diversity and inclusion are taken into account.

Health care research applies the entire spectrum of quantitative and qualitative methods of empirical social research, (clinical) epidemiology, psychology, sociology and health economics and also develops its own models and theories in order to create evidence for the health care of the future.

The following sections describe the theoretical and methodological foundations of health care research, classify health care research in relation to neighboring scientific disciplines and describe the tasks, topics and working methods of health care research using a selection of current key topics.

Controlled intervention studies in health care research

Investigating the effectiveness, efficiency and safety of both new and already established healthcare concepts requires their testing in prospective and controlled intervention studies. Interventional health care research examines the effects of usually complex interventions on relevant health-related endpoints as comprehensively as possible in settings that are as realistic and practical as possible (so-called pragmatic trials). This distinguishes it from clinical research, in which the influence of individual or a few specific measures on a small number of precisely defined endpoints is investigated. Clinical research study designs generally aim to minimize heterogeneity and therefore rely on patient groups that are as uniform as possible. Double-blinded randomized controlled intervention studies offer the potential of high internal validity, but can be limited in terms of their ex-

ternal validity (generalizability/transferability) especially if they take place in an experimental setting remote from practical health care. Interventional health care research aims to achieve the highest possible internal validity with the highest possible external validity. The focus of interventional health care research is therefore on determining the effectiveness, efficiency and safety of complex interventions in settings that are as close as possible to their pertinent health care settings, while at the same time minimizing bias and confounding through suitable study designs.

In healthcare settings, it is often not possible to blind/mask the study participants and those conducting the study with regard to the intervention. Randomization at the individual participant level can also be difficult. In many cases, however, group-related randomization (so-called cluster randomization) at baseline or sequential randomization of the intervention (stepped-wedge design) can be implemented, e.g. at the level of individual care providers or facilities.

In interventional health care research, possible limitations to internal validity often have to be accepted. For example, the effect of a specific component of a complex health care intervention can often not be reliably distinguished from the influence of other components and the influence of contextual conditions. However, statements on the summative effect of the investigated intervention on often very relevant endpoints are obtained under realistic practical conditions (effectiveness). The results of pragmatic trials are easier to transfer to similar settings (external validity) and ideally enable a valid assessment of the benefits of an intervention that can be achieved under real-life care conditions.

Evidence-based health care research as a contribution to the resilience of the healthcare system

Health care research plays a critical role in a resilient health research and health care delivery system by strengthening the system's ability to respond to health threats while maintaining essential health care [4].

Crises such as the COVID-19 pandemic have shown that, in addition to classical study designs of evidence-based medicine, a broader range of methods is necessary, taking into account pragmatic designs, predictive modeling and the application of empirically proven theories, in order to be able to make scientifically sound recommendations for action in the short term (avoidance of the so-called EbM-lag) [5].

The term "EBM-lag" refers to the fact that classic double-blinded randomized controlled intervention studies and systematic reviews and meta-analyses of intervention studies cannot provide short-term results because, by design, they are only available with a latency of at least several months or even longer [6]. In Germany and internationally, there are therefore calls to expand the range of methods for preparing for and managing future crises [5, 7] and at the same time to improve access to and the linkability of health care-related data [8]. This would also enable the implementation of registry-based studies, such as those already successfully carried out in our neighboring countries [9].

A resilient healthcare system must be able to absorb shocks, to adapt and to transform in response. To achieve this, a more coordinated and evidence-based healthcare system is essential, for which healthcare research lays the foundations. Over-, under and misdirected supply of health care must be continuously identified

and avoided. This is the task of quality and patient safety research as an essential part of healthcare research. Especially in a crisis, the healthcare and research systems must interact closely with each other and with healthcare policy so that urgent healthcare issues can be quickly prioritized and addressed by research – to derive appropriate recommendations for action that can be implemented in healthcare. The timely provision of adequate quality evidence is necessary, but does not mean that policymakers and care providers will act on it immediately. In fact, none of the systems involved reacts deterministically and linearly (complex adaptive systems) [10]. Health care research therefore examines the conditions under which the health system and health policy react to scientific input in order to improve the effectiveness of scientific policy advice.

Another decisive factor for a resilient healthcare system is a research infrastructure that continuously collects relevant and up-to-date data on the quality and safety of care, the available resources, the burden of disease and access to care (so-called monitoring) and uses scientific methods to make forecasts and derive recommendations for action [11, 12]. Furthermore, cooperation within the system is crucial in order to promote flexibility and resilience in the response to crises. This includes the involvement of different stakeholders and the creation of relationships and trust between the different levels of the healthcare system. Health care research uses methods and concepts for the rapid consensus in heterogeneous expert groups on recommendations for action (e.g. Delphi studies).

Health care research and implementation research

The results of health care research should provide a reliable basis for health policy decisions to improve health care. However, health care research not only aims to make evidence-based knowledge available, but also to anchor it in health care practice in a way that improves quality for patients. Implementation research examines how the integration of scientific findings can be designed effectively (realization of implementation goals) and efficiently (targeted and economical use of resources with goal-fulfilling implementation). It determines and systematizes empirical knowledge about how the effectiveness of an innovation in patient care can be ensured depending on the (local) framework conditions [13]. Implementation and health care research are thus closely linked.

At the same time, health care research offers the opportunity to gain initial insights into the implementation of new health care concepts at an early stage, e.g. by analyzing the determinants of implementation in studies primarily focused on health services science. In addition, health care research can show which topics in health care should be socially and/or politically prioritized to address the so-called efficacy-effectiveness gap in these areas [14].

The authors believe that these overlaps and synergistic effects of joint research activities are beneficial for both research areas. However, a comprehensive evidence base for the introduction, implementation and continuation of new health care concepts can only be established if the methods used are also geared towards researching implementation science issues (e.g. the effectiveness of implementation strategies). We consider implementation to be an independent research topic within health care research for the further development of healthcare provision.

Health care research and the implementation of guidelines

Health care research plays an important role at various stages of guideline development. Guidelines and the treatment recommendations they contain are not developed in a vacuum, but are fundamentally informed and shaped by the existing healthcare context. Numerous guidelines explicitly refer to this in their own chapters, such as the eight National Disease Management Guidelines or the S3 guideline "Psychosocial therapy for severe mental illness". The healthcare context often provides key questions for guidelines. The available evidence on the previously defined key clinical questions of a guideline is processed within the framework of systematic literature searches, ideally randomized controlled trials (RCTs) and their meta-analyses. This evidence is assigned to a specific evidence level and forms the basis for the strength of recommendation (high evidence level Ia generally leads to a high recommendation grade A), which is then agreed upon in the guideline group. Recommendations can be upgraded or downgraded according to GRADE (Grading of Recommendations, Assessment, Development and Evaluation). Patient preferences and resource consumption also play a role in the GRADE criteria catalog. Results from health care research are directly incorporated here. The results of health care research therefore play an important role in guideline development, both in the generation of key questions and as an evidence base and in the graduation of the recommendations according to GRADE.

Guideline knowledge rarely finds its way into healthcare practice spontaneously. It therefore requires active efforts to implement guidelines. Research on guideline implementation is a domain of health care research. Health care research can benefit here from the methods and experience of implementation research (see above). Ideally, each guideline development should be followed by implementation projects, so that any changes in care and its quality due to the implementation of the guideline are adequately assessed and documented. The guideline manual of the Association of the Scientific Medical Societies in Germany (AWMF) and the German Agency for Quality in Medicine (ÄZQ) therefore proposes as one of the quality criteria of guidelines that measurable criteria or indicators are specified, on the basis of which the effect of the guideline application can be measured [15]. The development and evaluation of such guideline-based quality indicators is a typical task of health care research [16]. It should be noted that, in addition to guidelines for practitioners, implementation can also include patient guidelines and other guideline-based products, such as guideline-based online knowledge platforms for patients and their relatives.

Health care research and public health

Historically, health care research in Germany has developed in part from the public health study programs, the first of which emerged in the early 1990s. Public health and health care research share a number of related core disciplines, such as psychology, sociology, epidemiology and health economics [17].

Public health research and health care research pursue very similar goals, although the focus differs. The aim of public health research and practice is to prevent disease, prolong life and promote health on the population level (Acheson Report [18]). This is to be achieved

through organized services provided by the society [19]. If we add the original definition by Winslow (1920) [20], from which the Acheson definition was derived, we also find the goal of efficiency. This makes it clear that health care research is part of public health.

Health care research also takes a population or system perspective and aims to optimize care in order to protect, maintain or restore the health of the general population in the best possible way. While the goal of public health is pursued more through prevention and health promotion, health care research in the narrower sense is concerned with improving the design of the health care system and the supply of adequate health care to the respective patient groups.

Both health care research and public health research are multi-disciplinary and use a wide range of methods. Representatives of both scientific disciplines are aware that the consideration of the social framework conditions in the analyses and the development of proposed solutions is a prerequisite for success. Both research areas should therefore work together as closely as possible in order to mutually benefit from further conceptual and methodological developments, exploit synergies and coordinate closely in policy advice.

Health care research and health economics

In view of limited financial resources, rising healthcare costs and an ageing population, it is clear that the available financial, human and time resources must be used efficiently. At the levels of responsible partners in the self-administration in health care on the one hand, and in health policy on the other, and at the micro and meso levels of the healthcare system, a sound understanding is therefore required of how healthcare can be organized for the population within a financially reasonable, appropriate, and proportionate framework. In addition, knowledge about the behavior of the actors involved and about the fair allocation and distribution of funds among the various population groups is relevant for the design and development of healthcare.

Creating this scientific basis is the core task of health economic analyses in health care research. Health economics examines how care services are financed, what costs are associated with various interventions and how these costs can be minimized without unduly impairing the quality and accessibility of care. This makes health economics, similar to environmental economics, for example, one of the so-called "hyphenated economics", in which the entire spectrum of economic theories and methods is applied to specific issues in an economic sector [21].

Health economic studies in the context of health care research focus in particular on studies that estimate the socio-economic burden of disease for defined illnesses and empirically investigate the influence of various factors at the macro, meso and micro levels on the efficiency of service provision, e. g. in terms of avoiding overuse, underuse and misuse. This often includes complex care situations with combinations of outpatient and inpatient medical, nursing and other therapeutic services as well as pharmacotherapy and supply of medical products. It therefore requires the adaptation and further development of "traditional" methods of health economics. In addition, health economics is already an important partner for health care research in the development process of new health care concepts and interventions, as it can provide insights into possible incentive effects of the planned elements of a health

care concept. As part of the evaluation and transfer of new healthcare concepts into practice, health economics provides support by generating findings on the proportionality of costs and benefits, the appropriateness and reasonableness of the healthcare concepts to be introduced and their implementation measures. In view of the decreasing resources, health economic issues are becoming increasingly important in healthcare research.

Key tasks for health care research

We see the following topics as key tasks for health care research in the coming years:

Health challenges due to megatrends:

- Analysis of the impact of social developments on healthcare, including coping with the shortage of skilled health professionals and the health consequences of demographic ageing through innovative care models, taking into account interdisciplinary approaches and topics such as diversity and digitalization;
- Scientific monitoring of important reforms in the healthcare system, e. g. the hospital reform and the upcoming emergency medicine reform;
- Analysis of the effects of climate change on morbidity, mortality and utilization of healthcare in the population as well as evidence-based adaptation of the structures and functions of the healthcare system. Development of suitable care measures and concepts to mitigate the effects of climate change on health;
- Examination of the social influences and socio-economic inequalities on the quality and utilization of health care in Germany.

Regional care:

- Concepts for improving care within the sectors as well as across sectors, social insurances and systems (integration of services in different social security codes);
- Development of concepts for regional cooperative, and interprofessional health care based on division of labor and their evaluation in terms of quality and accessibility.

Patient-centredness:

- Focus on the patient perspective, quality and patient safety research, patient vulnerability, elicitation of preferences and modern methods for recording patient-reported outcomes (PROM);
- Further expansion of participatory research, appropriate involvement of patients in planning, design, implementation, interpretation and communication of research results (patient and public involvement);
- De-implementation of low-value care;
- Establishment of population-based care monitoring (accessibility, utilization, quality, safety, incl. PROM and patient-reported experience measures (PREM)).

Theory development:

- Development of theory-based concepts and independent theoretical paradigms in health care research;

- Development of theory-based concepts for causal inference in health care research;
- Critical reflection on the current state of the methodology in health care research and its further development, e. g. in studies on the importance of context in health care research;
- Health policy and policy impact analysis.

Interdisciplinarity, infrastructure and promotion of young talents:

- Cooperation with other related, research areas in order to meet the above-mentioned challenges in a coordinated manner;
- Creation of research-supporting framework conditions that enable comprehensive healthcare research in Germany (legal regulations, funding programs, further development of the innovation fund, enabling comprehensive data access and data linkage);
- Establishment of a research data infrastructure that continuously collects and makes available relevant data on the practice, quality and safety of care;
- Promotion of young researchers within healthcare research (study programs, core curriculum, with content and methodological standards, qualifications for research with healthcare-related data (registers, health insurance billing data).

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Conflict of Interest

The authors declare that they have no conflict of interest.

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