

Learning shared decision making in postgraduate medical education

Citation for published version (APA):

Baghus, A. H. F. (2025). *Learning shared decision making in postgraduate medical education*. [Doctoral Thesis, Maastricht University]. Maastricht University. <https://doi.org/10.26481/dis.20250401ab>

Document status and date:

Published: 01/04/2025

DOI:

[10.26481/dis.20250401ab](https://doi.org/10.26481/dis.20250401ab)

Document Version:

Publisher's PDF, also known as Version of record

Please check the document version of this publication:

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Shared decision making (SDM) is widely recognised as the preferred approach to involve patients in medical decisions. The aim of this dissertation was to develop a longitudinal SDM training programme for postgraduate medical education, integrated into workplace learning, and aligned with stakeholders' educational needs. This serves both a practical aim: to develop an evidence-informed SDM training programme that allows residents (and their supervisors) to improve their SDM performance in the clinical workplace; and a scientific aim: to understand how SDM training can optimally support clinical workplace learning of SDM for residents and their supervisors. The Dutch general practice specialty training was chosen as a study setting due to its potential supportive clinical learning environment and the relevance of SDM for the profession. This chapter describes the scientific and societal impact of the main findings of this dissertation.

Research summary

The studies presented in this dissertation provide valuable insights into learning of SDM during postgraduate medical education. First, we identified what residents need to learn to perform adequate SDM in clinical practice, formulated as entrustable professional activities (EPAs). These EPAs can help define educational objectives, guide observations of SDM during consultations, provide feedback and assess competence development. We also explored residents' SDM performance from the perspectives of observers, residents and patients. These insights are helpful for appropriately tailoring educational interventions. Our findings suggested that it is important to focus on learning to adapt SDM to the context of consultations and addressing residents' beliefs and motivation towards performing SDM. We also identified residents' educational needs for workplace learning of SDM and found that continuous attention to SDM during postgraduate medical education is important for acquiring SDM knowledge and skills and practising SDM in the clinical workplace. It is essential that the educational curriculum, workplace learning and learning activities are aligned to support residents' development. We also found that supervisors need parallel training to effectively support residents' learning. Finally, we outlined the design, implementation and evaluation of an SDM training programme. This resulted in the formulation of educational design principles, which describe how learning could be constructed and how the content of learning could be formulated. These principles may guide educational designers in designing SDM training tailored to their specific health professions educational contexts. The training programme also seemed to stimulate specific learning activities in the workplace, and we gained insight into factors influencing workplace learning of SDM. These findings highlighted the importance of linking formal training with clinical workplace learning for SDM.

Scientific and societal relevance

SDM is an important competence for healthcare professionals, their patients, healthcare and society in general. It is recognised by ethical and legal bodies as an essential ingredient of high-quality care. Effective SDM training is expected to improve patient involvement in decision-making in daily clinical practice. This positively affects clinical outcomes and possibly reduces healthcare use and costs. Our research was the first to study longitudinal SDM training integrated into clinical workplace learning for both residents and supervisors, providing novel insights into how learning could be constructed and how the content of learning could be formulated to support the development of SDM performance. These insights are valuable for transferring our findings from general practice specialty training to SDM training in other health professions educational contexts. Ultimately, this could lead to evidence-informed SDM training integrated into clinical workplace learning across various healthcare settings. This is especially important given that current SDM educational interventions, which are often stand-alone interventions, have limited effect on clinical performance.

This dissertation also highlights the value of using the methodological framework of educational design research (EDR) to address educational challenges, such as developing competences in the complex setting of workplace learning in medical education. As examples of performed EDR studies are relatively scarce, particularly for developing longitudinal training, this dissertation could offer useful insights for other health professions education researchers on how to conduct an EDR study.

Target groups

First, the results of this dissertation are relevant for educators in postgraduate medical education training, including curriculum coordinators and educational designers who develop the educational curricula for residents. They should become aware of the importance of including SDM into their curricula and how they could address this. It is especially to recognise that educational interventions need to pay attention to supporting longitudinal learning of SDM in the clinical workplace. Additionally, it is essential to acknowledge the complexity of learning SDM and make sure that both teachers and clinical supervisors are adequately prepared to support residents' learning. As local educational curricula are often based on national requirements, the results can also be interesting for policymakers and national boards of healthcare professions who set these requirements. The findings could also be transferred to teachers, residents and clinical supervisors, as this dissertation shows how collaboration with these stakeholder groups shaped the SDM training programme. The findings could also be inspiring for their own

role in the SDM learning process as improving SDM performance requires repeated practice and evaluation in the workplace. The findings of this dissertation can support teachers and clinical supervisors in their function as SDM role models for residents.

Second, the results are intended for health professions education in general as learning SDM is important for all health professions. More attention should be paid to effective educational interventions for SDM in all stages of health professions education, from undergraduate education to continuous professional development, to support the alignment of learning SDM.

Third, scientific organisations of (para)medical professions which develop clinical guidelines are targeted. They need to consider the supportive effects of including SDM and presenting multiple options in clinical guidelines and developing additional tools such as decision aids and option grids to help learners to increase their medical knowledge and identify clinical situations suitable for SDM.

Finally, researchers in the field of health professions educational design could use this dissertation as an example for conducting EDR to address educational challenges and involve stakeholders in educational design. For them, it is important to realise that EDR provides deep insights into educational challenges, needs and practical issues and often offers feasible, relevant and refreshing solutions. However, awareness how challenging performing EDR can be is helpful, as it usually is a longitudinal process which requires coordination to keep stakeholders engaged, careful consideration of different viewpoint and priorities, and support of stakeholders to foster understanding of the content and development of appropriate didactic strategies.

Dissemination activities

To share the results of this dissertation with the target groups, we carried out several activities. We published scientific articles in international peer-reviewed open-access journals (Chapters 2-4) and we intend to publish the remaining chapters (Chapter 5 and 6) as well. We specifically chose journals with different focuses, such as medical education, doctor-patient communication and medicine in general, to reach a broad audience. One of these articles was nominated for the Dutch College of General Practitioners Science Award 2022 and received special attention in a commentary article discussing the transferability of our findings to the context of oncology (Patient Education and Counseling, 2023). Another article appeared in a news item (Huisarts & Wetenschap, 2024). Our findings were also published in national journals for general practice (Huisarts & Wetenschap, 2021 & 2022; Tijdschrift voor Praktijkondersteuners

en Praktijkverpleegkundigen 2024). These articles were written from a practical approach to inspire practising healthcare professionals and to be useful for learning in educational settings. One of these articles was mentioned in the journal's editorial and led to an invitation to participate in a podcast about using decision aids and option grids in general practice (Huisarts Podcast, 2022). We noticed that both international and national articles are gaining attention, as they are regularly cited by other researchers.

Many of the target groups were acquainted with our findings at local, national and international conferences and meetings. Our scientific work was presented both on invitation and acceptance through workshops, oral presentations and poster presentations during the 2017, 2019 and 2022 international SDM conference (ISDM); the 2017 national Postgraduate Medical Education (MMV) conference; the 2018 international Conference on Communication in Healthcare (ICCH); the 2019 European Association of Communication in Healthcare (EACH) Forum; a theme session of the Netherlands Association for Medical Education (NVMO) in 2022; the 2024 NVMO conference; and several meetings of the national doctor-patient communication (APC) platform in general practice specialty training, the grant programme general practice and elderly care (HGOG), the national platform SDM, the local Care and Public Health Research Institute (CAPHRI) research line 'promoting health & personalised care', and the associated department of Family Medicine.

I also contributed to a conference at an organisational level as member of the scientific committee of the 2021 international World Organisation of National Colleges, Academies and Academic associations of General Practitioners/Family Physicians (WONCA) Europe conference on person-centred care. Here, I shared my knowledge on (learning) SDM and person-centred care in general practice in a broader sense. This committee is also where I connected with researchers from Leuven University who planned to start research on learning SDM in medical education in Flanders, Belgium. Meetings with these researchers led to knowledge exchange and new scientific opportunities for our research team.

This dissertation led to an SDM training programme. The training materials have been shared with the curriculum coordinators of all Dutch general practice specialty training institutes and we provided an explanatory presentation and consultation upon request to support these training institutes. The first steps have been taken to implement the training programme into the regular curriculum of general practice specialty training. For example, all supervisors in Maastricht were trained during fall 2024, for which we additionally co-developed a train-the-trainer module for teachers, and the training materials were added to the local digital educational blackboard in Amsterdam. All training materials are made openly available through the academic cloud service

Surfdrive. The training materials were also used to train healthcare professionals in SDM in Maastricht University Medical Centre (MUMC+), Zuyderland Medical Centre and Alrijne Hospitals, and to train clinicians, nurses and doctor's assistants in South Limburg in communication skills regarding urinary tract infections. Additionally, I was member of the national committee 'education & training in SDM', programme Uitkomstgerichte Zorg for the Ministry of Health, Welfare and Sports. I shared our findings to inform the e-learning 'the core of SDM' which resulted from this programme. Furthermore, our findings will be used to inform a training programme for undergraduate medical education at Maastricht University, which started fall 2024. One of our team members was awarded a Comenius Teaching Fellowship for this project, and I have been appointed to work on it. This will support the alignment between undergraduate and postgraduate medical education for learning SDM. I have also been involved in the development of a training module on risk communication for masters' students in medicine during their general practice clerkship, and as a teacher in undergraduate medical training, I attempt to make students aware of the importance of SDM and how to apply SDM during consultations.

I also shared our insights with the Dutch College of General Practitioners (NHG) during an elective placement at their department of Guideline Development and Science. During this internship, I analysed all NHG's clinical guidelines (NHG-Standaarden & -Behandelrichtlijnen) on appropriate decisions for SDM to guide the development of option grids and propagated the importance of these tools for residents' learning. I presented the findings at the NHG, the general practice specialty training institute in Maastricht and the 2021 WONCA conference, where we received recognition as being one of the best abstracts. The findings were also published in the national journal for general practice (Huisarts & Wetenschap, 2022). Afterwards, multiple option grids were developed based on this analysis, supporting healthcare professionals and patients in SDM in clinical practice.

The impact of our work was further acknowledged through an invitation to join the editorial board for a theme issue on doctor-patient communication for Huisarts & Wetenschap, the national journal for general practice. I used my gained expertise in SDM to address this topic in the theme issue. Additionally, I was interviewed by ZonMw, the Dutch health research funder, and Qruux, an online care platform. This helped us to share our findings with a broader scientific and healthcare audience. Furthermore, we contributed to other scientific research, for example on the development of educational interventions for SDM in Flanders and a website for learning evidence-based medicine during general practice specialty training. Additionally, I used the knowledge gained from this project as a co-author on several publications in Huisarts & Wetenschap. I also

trained multiple (inter)national research teams in using the OPTION⁵ tool for assessing SDM performance during consultations.

I continue combining clinical work, research and teaching, thereby aiming to contribute to the implementation of SDM learning in clinical practice.