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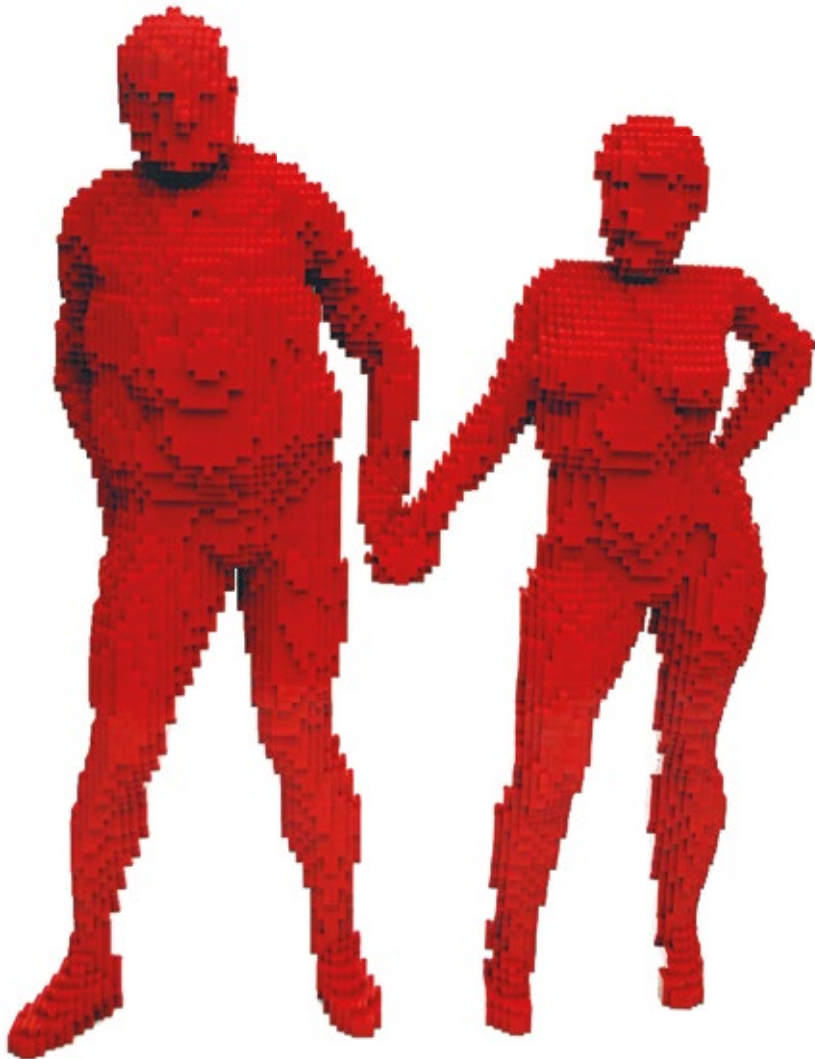
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Health professionals for an ageing society: transforming medical education

A mixed methods approach



Marjolein van de Pol

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Health professionals for an ageing society: transforming medical education

A mixed methods approach

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Marjolein Helena Johanna van de Pol
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Promotoren

Prof. dr. A.L.M. Lagro-Janssen

Prof. dr. M.G.M. Olde Rikkert

Copromotoren

Dr. C.R.M.G. Fluit

Dr. J. Lagro

Manuscriptcommissie

Prof. dr. R.F.J.M. Laan, voorzitter

Prof. dr. S.U. Zuidema (Rijksuniversiteit Groningen)

Prof. dr. G.D.E.M. van der Weijden (Universiteit Maastricht)

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Introduction



General introduction

I will start my thesis with a brief case history, to demonstrate that this research started in my everyday general practice, and that the questions raised are both based on my medical work caring for older patients, and on my education efforts to train medical students in elderly care both during my practice hours and during my teaching at medical school. Starting from this case I will concisely describe the state of the art, against which this case was seen, and finally will elaborate the research questions drawn from this and other case histories.

Patient case

During one of my night shifts I am called out as duty doctor to see Mr. H, an 87-year-old man, who was suffering from shortness of breath. During this shift I am accompanied by a sixth-year general medical practice intern who is working with me.

Mr. H has been living in an elderly care home for 1.5 years. He moved there after the death of his wife. He has severe COPD and is currently being treated for pneumonia. Ten years ago he had a heart attack and 2 years ago a CVA, which left him with a paresis of his left leg. He also has Diabetes Mellitus type 2. He walks with difficulty with a rolling walker. He takes 9 different tablets, injects insulin, has 3 kinds of inhalation medication and is currently on a course of antibiotics.

He visits the cardiologist, the internist and the pulmonologist regularly for check-ups. Two days ago his general practitioner prescribed a course of antibiotics for him. The care staff at the home rang for the duty doctor as tonight the man was more short of breath and was frightened. His blood pressure was normal and he had a temperature of 38.3 degrees Celsius.

When I enter the room, together with the intern, the patient is sitting up in bed. He looks frightened. His breathing is regular at that moment. I go and sit next to him, tell him that I am the duty doctor and ask what the matter is: "Doctor, when I went to the toilet I suddenly became short of breath, I thought I was going to die. Now that the nurses have got me back to bed and you're here I feel a lot better, but I'm frightened that I'll become short of breath again and if I'm on my own..." I tell him that I understand his fears and that I will take the time to find out what is going on and how I can help him.

He visited the cardiologist sixth months ago and everything was fine with his heart. The internist did a blood test last month and because of a deteriorating kidney function one of his tablets was halved, he doesn't know which. The physio-therapist visits him regularly to help improve his walking. Last week he went to

the pulmonologist and he gave him an extra inhaler as he has been feeling more short of breath recently. He doesn't feel that this is helping much, but it is giving him palpitations. Last week he was coughing more, was more short of breath and had a temperature. His general practitioner (GP) prescribed antibiotics. His temperature went down and he coughed less, but he still feels short of breath.

The care staff do not currently have a good overview of his medication. His GP gave the instruction to ring if things didn't improve with the patient.

At the moment the patient is breathing regularly. His blood sugar is normal. Over the lungs there are strong crepitations on both sides and there is a prolonged expirium. When the patient lies down, he becomes acutely short of breath. He has swollen ankles: "Oh doctor, during the day they get much more swollen, I can't get my support stockings on any more, so I asked the nurse to make them bigger."

I ask the patient what he hopes I can do for him. "Doctor, I'm getting worse, I'm frightened I'm going to suffocate. Can you make sure that I don't suffocate?"

We discuss together that he has a lot of different complaints that all have an effect on one another and cannot be seen independently. I explain in plain language that he has a *decompensatio cordis* that can be treated so that he will be less short of breath. I explain that it will also help him if he maps his various problems better and makes a care plan that coordinates his wishes and aims.

Together with the patient and the nursing staff, I draw up a care plan for the night and arrange, with the permission of the patient, that I will contact his own doctor to discuss how to proceed further. I ask the patient to think about his wishes and aims. The care staff are happy with the clearly defined care plan.

I discuss the case afterwards with the intern. She is surprised how many healthcare providers are involved with the patient and how little coordination there seems to be: "I didn't know that so much was involved in the care of elderly patients. I feel that I have very little knowledge of the complexity of geriatric problems."

.....

Background

The above patient case from primary healthcare practice is illustrative of the complexity of care for (frail) older patients. From their own perspective all health professionals strive to deliver the best possible (medical) care, however their often mono-disciplinary approach does not do justice to the interdependence of the problems and the complexity of cases in (frail) older patients.¹

Often, age is merely seen as a biological variable, without considering the implications of multi-morbidity and complexity that often arise at a higher age. When patients grow older and their resilience and reserve capacity wane, focus on single diseases seldom makes a difference. However, focus on wellbeing and patient centred care and shared decision making delivered in multidisciplinary teams often make the difference.² Delivering this kind of integrated care for older patients requires education of the health professionals involved.³

An ageing society

The world population is ageing.⁴ In the Netherlands, in 2040 25% of all citizens will be 65 years or older.⁵ As a consequence, the number of patients with multiple chronic diseases and impairments will also increase.^{6, 7} This multi-morbidity is associated with lower quality of life, increased healthcare utilisation and greater complexity.⁸⁻¹⁰ The changing demographics towards an older population contribute to this complexity and lead to higher healthcare costs.^{11, 12} Other complicating factors in the care for an ageing population include the rapidly changing living conditions and supportive care for older patients, as well as their need for tailored care.⁴ Unfortunately, our current healthcare systems are not well equipped to deal with the changing demographics and need for tailored care.^{1, 4}

The above case clearly shows that care is often fragmented and provided by a large number of professionals from a variety of organizations.^{1, 2} This fragmentation in care provision is especially problematic in the care for frail older patients with complex needs.² As continuity of care is limited, care does not always connect with a patient's medical needs and personal context, resulting in a decreased quality of life, despite the best intentions of all individual health professionals.^{2, 13} Moreover, many health professionals feel overwhelmed by the complexity of care for older patients and lack a positive attitude towards these patients.¹⁴⁻¹⁶

In the absence of relevant and applicable evidence for frail older patients with multi-morbidity, it may be difficult for health professionals to balance benefits and disadvantages of all the recommendations given in multiple disease specific guidelines that are not developed for older patients with multi-morbidity, co morbidity or polypharmacy.^{17, 18} Therefore, the traditional disease centred approach to healthcare is not adequate for this ageing patient population.⁴ For older patients with multi-morbidities a more goal-oriented approach towards healthcare is preferable, with the focus on patient centred care and to be started with shared decision making.¹⁹⁻²¹ However, not many healthcare workers are familiar with this approach and are struggling to manage care for this patient

group.²²⁻²⁵ Shared decision making (SDM) can help health professionals to connect treatment with a patient's medical needs and personal context and thereby deliver patient centred care.²⁶ Moreover, SDM is known to increase patient and professional satisfaction, improve quality of life and clinical outcomes, and to create a stronger doctor-patient relationship.²⁶

Considering the fact that many health professionals are struggling to deliver adequate patient centred care to frail older patients, more insight is necessary into how and when to prepare health professionals for managing their ageing patient population. Furthermore, training and education in SDM may contribute to a positive attitude towards older patients and also prepare health professionals for their ageing patient population.

Geriatrics education

Almost all health professionals will probably serve the healthcare needs of frail older patients at some point and will therefore need a basic set of geriatric competencies.^{4, 27} Despite this need for geriatric competent health professionals, not all medical schools offer appropriate geriatrics education.²⁷⁻³¹ In addition, not all medical schools have a department of geriatrics or elderly care to promote the presence of geriatrics in the curriculum.³² The same underrepresentation of geriatrics can also be found in nursing education.³³⁻³⁵ Specific dedicated geriatrics courses are known to be a more effective learning experience for students, however not all medical schools offer geriatrics as a separate subject.^{28, 36, 37} Moreover, geriatrics and elderly care education may improve student performance in clinical clerkships and their attitudes towards these topics.^{37, 38} In the Netherlands however, only two medical schools offer a mandatory geriatrics or elderly care clerkship and theoretical geriatrics education is limited.^{27, 39} The distinct knowledge and skills acquired in geriatric clerkships cannot be obtained from contact with older patients in non-geriatric clerkships.⁴⁰ Therefore, as long as geriatric medicine is underrepresented in education, this is likely to lead to false diagnoses in frail older patients, ineffective and inefficient treatments, both based on a lack of basic knowledge of the mechanisms of ageing and the lack of competencies to take care of this frail patient group.^{41, 42}

Geriatrics and elderly care are not popular among medical students and health professionals.^{14-16, 43, 44} Many medical students and health professionals experience a sinking feeling towards older patients and are often overwhelmed by the complexity of problems presented by these patients.^{14, 15, 44, 45} This negative image of geriatrics and elderly care has been formed before students start their formal medical education.^{46, 47} The process of attitude formation continues throughout education, at the formal education level, but also at the informal level of the "hidden curriculum". The hidden curriculum is defined as learning that occurs by

means of informal interactions among students, faculty and others and/or learning that occurs through organizational, structural and cultural influences intrinsic to training institutions.⁴⁸⁻⁵¹ The educational climate and the behaviour of individual health professionals or educators have a significant effect on student attitudes.⁵¹ As our patient case shows also, more exposure to geriatrics education from competent health professionals and educators may have a positive influence on both attitudes towards and knowledge of geriatrics.⁵² But more insight is therefore necessary into what kind of education might be effective.

Shared decision making

Shared decision making (SDM) is widely recommended by many professionals as a way to support patients in making healthcare choices.⁵³⁻⁵⁶ SDM incorporates patient values and preferences about healthcare choices, and professionals and patients share their knowledge to attain patient centred care. Properly performed SDM increases the satisfaction of patients and professionals, improves quality of life and clinical outcomes, and also creates a stronger doctor-patient relationship.²⁶ Applying SDM in geriatrics therefore can improve patient centred care and attitudes towards geriatrics, and SDM might help health professionals to feel less overwhelmed.^{6, 19, 57}

However, existing SDM models do not consider the complexity of cases in frail older patients.⁵⁸ SDM with frail older patients needs to take this complexity into account, thus requiring adequate geriatric knowledge and competencies. Moreover, more insight is necessary into what specific elements are needed for SDM with frail older patients. A first step towards training students and health professionals in SDM with frail older patients is to define the core competencies and the specific elements needed to perform SDM with this patient group.

Health professionals for an ageing society

All medical students and other health professionals who take care of older patients need to receive more geriatric-specific education in order to address the high societal need for health professionals with basic geriatric competencies as well as to improve their attitudes towards elderly patients and to deliver patient centred care.^{37, 38} SDM is known to increase the satisfaction of patients and professionals; training and education in SDM can therefore contribute to a positive attitude towards elderly patients. However, SDM training is still in its infancy.⁵⁸ Currently, little is known about how to engage students and health professionals in the field of geriatrics and elderly care, or about what kind of education is most effective in preparing them for this ageing society.^{59, 60} This lack of insight in how to prepare the future generation of health professionals for our ageing society is the major reason to focus the research in this thesis on geriatrics

education in general and SDM education in particular. This focus on education is all the more important as we know that reform of medical education first improves learning outcomes and attitudes, and subsequently patient care.⁶¹

Aims of the thesis

Based on experiences similar to the case history described here, I conducted a series of studies together with my research team aimed at how medical students and health professionals need to be educated to become health professionals with adequate attitudes and competencies in delivering medical care for older patients.

Based on the general aims of this thesis the following research objectives were formulated:

1. What are the key elements that need to be addressed in future-proof geriatrics education?
2. What is the influence of geriatrics education on medical students' attitudes towards geriatrics and elderly care and can innovative teaching methods improve these?
3. What are the key elements to perform shared decision making with frail older patients and can health professionals and older patients reach consensus on a model that encompasses these elements?
4. What are the core competencies for shared decision making in frail older patients and how can these best be taught?

Outline of the thesis

In the following chapters of this thesis we will describe the studies that were conducted to achieve our research aims. This thesis applies mixed methods, containing both quantitative and qualitative research methods, to address the research questions defined. We conducted five studies, which are briefly described below, to provide an outline of the thesis.

After a short introduction *chapter 2* investigates primary healthcare provision from the perspective of patients and health professionals. We use content analysis from focus group interviews with elderly care home patients, general practitioners and nurses and from individual interviews with home-dwelling elderly patients to identify focal areas for improving healthcare for elderly patients and to identify key elements for teaching geriatrics.

Chapter 3 contains the results of the proof of concept study that evaluates the effect of a novel, serious game-based, geriatrics course on student attitudes towards the elderly and on students' self-perceived knowledge of geriatric themes.

In *chapter 4* we focus on third-year medical students' views on geriatrics and elderly care. We summarise the results of a mixed methods study using student narrative reflection essays and in-depth focus group interviews aimed at identifying elements that can be useful in improving attitudes towards and knowledge of geriatrics

In *chapter 5* we conducted a Delphi study to reach consensus among patients and an international group of experts in the field of geriatrics and shared decision making, on a model for shared decision making with frail older patients.

In *chapter 6* we apply a mixed methods approach including a qualitative inquiry and a literature review to develop a teaching framework for education on shared decision making with frail older patients.

Finally, in *chapter 7* we first summarize the previous chapters and then discuss the interpretation of the overall findings from the studies in this thesis, relating it to the existing literature. Moreover, we discuss implications for medical education, clinical practice and future research.

References

1. Stange KC. The problem of fragmentation and the need for integrative solutions. *Annals of family medicine*. 2009;7(2):100-3.
2. Bodenheimer T. Coordinating care--a perilous journey through the health care system. *N Engl J Med*. 2008;358(10):1064-71.
3. Frenk J, Chen L, Bhutta ZA, Cohen J, Crisp N, Evans T, et al. Health professionals for a new century: transforming education to strengthen health systems in an interdependent world. *Lancet*. 2010;376(9756):1923-58.
4. Christensen K, Doblhammer G, Rau R, Vaupel JW. Ageing populations: the challenges ahead. *Lancet*. 2009;374(9696):1196-208.
5. CBS. Bevolkingspiramide Leeftijdopbouw Nederland 1950-2060 (publication in Dutch) 2015.
6. Ayyar A, Varman S, De Bhaldraithe S, Singh I. The journey of care for the frail older person. *Br J Hosp Med (Lond)*. 2010;71(2):92-6.
7. van Oostrom SH, Picavet HS, van Gelder BM, Lemmens LC, Hoeymans N, Verheij RA, et al. [Multimorbidity and comorbidity in the Dutch population--data from general practices]. *Ned Tijdschr Geneesk*. 2011;155:A3193.
8. Lacas A, Rockwood K. Frailty in primary care: a review of its conceptualization and implications for practice. *BMC medicine*. 2012;10:4.
9. van den Akker M, Buntinx F, Metsemakers JF, Roos S, Knottnerus JA. Multimorbidity in general practice: prevalence, incidence, and determinants of co-occurring chronic and recurrent diseases. *J Clin Epidemiol*. 1998;51(5):367-75.
10. Bayliss EA, Bayliss MS, Ware JE, Jr., Steiner JF. Predicting declines in physical function in persons with multiple chronic medical conditions: what we can learn from the medical problem list. *Health and quality of life outcomes*. 2004;2:47.
11. Shugarman LR, Decker SL, Bercovitz A. Demographic and social characteristics and spending at the end of life. *J Pain Symptom Manage*. 2009;38(1):15-26.
12. Butler A, Gallagher D, Gillespie P, Crosby L, Ryan D, Lacey L, et al. Frailty: a costly phenomenon in caring for elders with cognitive impairment. *Int J Geriatr Psychiatry*. 2016;31(2):161-8.
13. Kripalani S, LeFevre F, Phillips CO, Williams MV, Basaviah P, Baker DW. Deficits in communication and information transfer between hospital-based and primary care physicians: implications for patient safety and continuity of care. *JAMA*. 2007;297(8):831-41.
14. Lun MWA. Student Knowledge and Attitudes Toward Older People and Their Impact on Pursuing Aging Careers. *Educational Gerontology*. 2011;37(1):1-11.
15. Drickamer MA, Levy B, Irwin KS, Rohrbaugh RM. Perceived needs for geriatric education by medical students, internal medicine residents and faculty. *J Gen Intern Med*. 2006;21(12):1230-4.
16. Nilsson A, Lindkvist M, Rasmussen BH, Edvardsson D. Staff attitudes towards older patients with cognitive impairment: need for improvements in acute care. *J Nurs Manag*. 2012;20(5):640-7.
17. Zulman DM, Sussman JB, Chen X, Cigolle CT, Blaum CS, Hayward RA. Examining the evidence: a systematic review of the inclusion and analysis of older adults in randomized controlled trials. *J Gen Intern Med*. 2011;26(7):783-90.
18. Hughes LD, McMurdo ME, Guthrie B. Guidelines for people not for diseases: the challenges of applying UK clinical guidelines to people with multimorbidity. *Age Ageing*. 2013;42(1):62-9.
19. Reuben DB. Medical Care for the Final Years of Life "When You're 83, It's Not Going to Be 20 Years". *Jama-J Am Med Assoc*. 2009;302(24):2686-94.
20. Hallenbeck J. Palliative care in the final days of life - "They were expecting it at any time". *Jama-J Am Med Assoc*. 2005;293(18):2265-71.
21. zorg RvdVe. De participerende patient. http://rvznet/uploads/docs/De_participerende_patientpdf. 2013.
22. Bergman H, Beland F, Perrault A. The global challenge of understanding and meeting the needs of the frail older population. *Aging clinical and experimental research*. 2002;14(4):223-5.

23. Coleman EA. Challenges of systems of care for frail older persons: the United States of America experience. *Aging clinical and experimental research*. 2002;14(4):233-8.
24. Metzelthin SF, van Rossum E, de Witte LP, Ambergen AW, Hobma SO, Sipers W, et al. Effectiveness of interdisciplinary primary care approach to reduce disability in community dwelling frail older people: cluster randomised controlled trial. *BMJ*. 2013;347:f5264.
25. Marsteller JA, Hsu YJ, Wen M, Wolff J, Frick K, Reider L, et al. Effects of Guided Care on providers' satisfaction with care: a three-year matched-pair cluster-randomized trial. *Population health management*. 2013;16(5):317-25.
26. Weston WW. Informed and shared decision-making: the crux of patient-centred care. *Can Med Assoc J*. 2001;165(4):438-9.
27. Tersmette W, van Bodegom D, van Heemst D, Stott D, Westendorp R. Gerontology and Geriatrics in Dutch medical education. *Neth J Me* 2013;71(6):331-7.
28. Bartram L, Crome P, McGrath A, Corrado OJ, Allen SC, Crome I. Survey of training in geriatric medicine in UK undergraduate medical schools. *Age Ageing*. 2006;35(5):533-5.
29. Gordon JE. Updated survey of the geriatrics content of canadian undergraduate and postgraduate medical curricula. *Canadian geriatrics journal : CGJ*. 2011;14(2):34-9.
30. Keller I Makipaa A KT, Kalache A. Global Survey on Geriatrics in the Medical Curriculum. 2012. Available from: <http://tinyurl.com/ctapf4c>.
31. Ogundipe OA. Undergraduate training in geriatric medicine in the United Kingdom. *Age Ageing*. 2007;36(1):109-10; author reply 10.
32. Bragg EJ, Warshaw GA, Petterson SM, Xierali IM, Bazemore AW, Phillips RL, Jr. Refocusing geriatricians' role in training to improve care for older adults. *Am Fam Physician*. 2012;85(1):59.
33. Tenhunen ML, Fitzgerald A. Revision of an undergraduate older adult health care nursing education course. *J Nurs Educ*. 2014;53(9 Suppl):S110-3.
34. Roethler C, Adelman T, Parsons V. Assessing emergency nurses' geriatric knowledge and perceptions of their geriatric care. *J Emerg Nurs*. 2011;37(2):132-7.
35. Koroknay V. Educating nurses in gerontology: we still have a way to go. *J Gerontol Nurs*. 2015;41(1):3-4.
36. Duque G, Gold S, Bergman H. Early clinical exposure to geriatric medicine in second-year medical school students--the McGill experience. *J Am Geriatr Soc*. 2003;51(4):544-8.
37. Atkinson HH, Lambros A, Davis BR, Lawlor JS, Lovato J, Sink KM, et al. Teaching medical student geriatrics competencies in 1 week: an efficient model to teach and document selected competencies using clinical and community resources. *J Am Geriatr Soc*. 2013;61(7):1182-7.
38. Tullo ES, Spencer J, Allan L. Systematic review: helping the young to understand the old. Teaching interventions in geriatrics to improve the knowledge, skills, and attitudes of undergraduate medical students. *J Am Geriatr Soc*. 2010;58(10):1987-93.
39. MHJ van de Pol, Kim Rodijk, MWM Schatorie, ALM Lagro-Janssen. Ouderengeneeskunde nauwelijks aanwezig in bachelor onderwijs op de Nederlandse geneeskunde faculteiten: Analyse van al het huidige bachelor onderwijs in Nederland. NVMO 2014.
40. Diachun L, Van Bussel L, Hansen KT, Charise A, Rieder MJ. "But I see old people everywhere": dispelling the myth that eldercare is learned in nongeriatric clerkships. *Acad Med*. 2010;85(7):1221-8.
41. Gordon J. The under-representation of elderly patients in a problem-based medical school curriculum. *Med Teach*. 2007;29(8):844.
42. Gordon AL, Blundell AG, Gladman JR, Masud T. Are we teaching our students what they need to know about ageing? Results from the UK National Survey of Undergraduate Teaching in Ageing and Geriatric Medicine. *Age Ageing*. 2010;39(3):385-8.
43. E. HW, E. Z. Progress and challenges in graduate education in gerontology: the U.S. Experience. *Gerontol Geriatr Educ*. 2007;27(3):11-26.
44. Higashi RT, Tillack AA, Steinman M, Harper M, Johnston CB. Elder care as "frustrating" and "boring": Understanding the persistence of negative attitudes toward older patients among physicians-in-training. *J Aging Stud*. 2012;26(4):476-83.

45. Haley WE, Zelinski E. Progress and challenges in graduate education in gerontology: the U.S. Experience. *Gerontol Geriatr Educ.* 2007;27(3):11-26.
46. Braam GP. [Elderly: the image in the public eye. The 'luxury lives of the elderly' versus the bitter truth]. *Tijdschr Gerontol Geriatr.* 2002;33(1):3-4.
47. Versteegh E, Westerhof GJ. [Mutual stereotypes of younger and older adults and their relation with self-concept and self-esteem]. *Tijdschr Gerontol Geriatr.* 2007;38(1):27-35.
48. Hafferty FW. Beyond curriculum reform: confronting medicine's hidden curriculum. *Acad Med.* 1998;73(4):403-7.
49. Gaufberg EH, Batalden M, Sands R, Bell SK. The hidden curriculum: what can we learn from third-year medical student narrative reflections? *Acad Med.* 2010;85(11):1709-16.
50. White CB, Kumagai AK, Ross PT, Fantone JC. A Qualitative Exploration of How the Conflict Between the Formal and Informal Curriculum Influences Student Values and Behaviors. *Acad Med.* 2009;84(5):597-603.
51. Haidet P, Stein HF. The role of the student-teacher relationship in the formation of physicians. The hidden curriculum as process. *J Gen Intern Med.* 2006;21 Suppl 1:S16-20.
52. Shah U, Aung M, Chan S, Wolf-Klein GP. Do geriatricians stay in geriatrics? *Gerontol Geriatr Educ.* 2006;27(1):57-65.
53. Elwyn G, Edwards A, Kinnersley P. Shared decision-making in primary care: the neglected second half of the consultation. *Br J Gen Pract.* 1999;49(443):477-82.
54. Elwyn G, Frosch D, Thomson R, Joseph-Williams N, Lloyd A, Kinnersley P, et al. Shared decision making: a model for clinical practice. *J Gen Intern Med.* 2012;27(10):1361-7.
55. Stiggelbout AM. Shared decision making: really putting patients at the centre of healthcare (vol 344, e256, 2012). *Br Med J.* 2012;344.
56. Charles C, Gafni A, Whelan T. Shared decision-making in the medical encounter: What does it mean? (Or it takes at least two to tango). *Soc Sci Med.* 1997;44(5):681-92.
57. Leipzig RM, Sauvigne K, Granville LJ, Harper GM, Kirk LM, Levine SA, et al. What Is a Geriatrician? American Geriatrics Society and Association of Directors of Geriatric Academic Programs End-of-Training Entrustable Professional Activities for Geriatric Medicine. *J Am Geriatr Soc.* 2014;62(5):924-9.
58. Legare F, Stacey D, Turcotte S, Cossi MJ, Kryworuchko J, Graham ID, et al. Interventions for improving the adoption of shared decision making by healthcare professionals. *The Cochrane database of systematic reviews.* 2014;9:CD006732.
59. Nanda A, Farrell TW, Shield RR, Tomas M, Campbell SE, Wetle T. Medical Students' Recognition and Application of Geriatrics Principles in a New Curriculum. *J Am Geriatr Soc.* 2013;61(3):434-9.
60. Campbell JY, Durso SC, Brandt LE, Finucane TE, Abadir PM. The Unknown Profession: A Geriatrician. *J Am Geriatr Soc.* 2013;61(3):447-9.
61. McGaghie WC. Mastery Learning: It Is Time for Medical Education to Join the 21st Century. *Acad Med.* 2015;90(11):1438-41.

2

Quality elderly care provision: a process of expectation and goal management An interview study with patients and their primary care health professionals

This chapter is based on:

Quality care provision for older people:
an interview study with patients and primary healthcare professionals

van de Pol, Marjolein H.J.

Fluit, Cornelia R.M.G.

Lagro, Joep

Niessen, Danielle

Olde Rikkert, Marcel G.M.

Lagro-Janssen, Antoine L.M.

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Abstract

Background, Aim In recent years, primary health care for the aging population has become increasingly complex. This study sought to explore the views and needs of health care professionals and elderly patients in regard to primary care in order to identify focal areas for improving primary health care for the elderly.

Design, Setting Our research was structured as a mixed interview study with focus groups and individual interviews of participants comprised of primary health care professionals and elderly patients. All interviews were transcribed verbatim and analyzed by two individual researchers applying constant comparative analysis. Data collection proceeded until saturation was reached.

Results Participants in our study concurred on the necessity of primary care for elderly patients, and showed sympathy with one another's perspectives. However, they did note a number of obstacles that hinder good health care provision. The major themes that arose were: "autonomy and independence;" "organizational barriers" and "professional expertise." Participants generally noted that it is important to clarify differences in perspectives on good care between patients and health care professionals.

Conclusion Our findings show that effective primary elderly care intervention requires mutual understanding of the expectations and goals of all parties involved and also reveals a number of important requirements, especially: accessible patient information in the form of care plans; special training for nurses and GPs on complex care and multimorbidity; training on discussing autonomy, goal setting and shared care. Further improvement in health care for elderly persons and its evaluation research should focus on these requirements.

Introduction

The Netherlands' population is aging. In 2040, 25% of the country's inhabitants will be over 65.¹ Consequently, the number of patients with multiple chronic diseases and impairments will also increase.^{2, 3} In recent years, primary health care for this aging population has become increasingly complex.⁴ This is due, in part, to multimorbidity involving the complex interactions of co-existing diseases.⁵ Other factors include the rapidly changing living conditions and supportive care for these patients, as well as their need for tailored care.⁶ In the Netherlands, all home-dwelling elderly individuals and residents of elderly care homes are registered as patients with a general practitioner (GP). On average, Dutch GPs treat 95% of presented medical problems.⁷ GPs arrange referrals to secondary care when needed, but remain involved in their patients' health care. This has considerable workload implications for primary care, as older patients consult their GPs and health care services more frequently than do younger patients with no chronic diseases.⁸⁻¹⁰

In the face of this increasing complexity, care for the elderly is largely provided by GPs and nurses, who are not specifically trained to cope with this intricate care provision. The primary health care support needs for patients with complex cases vary per individual. However, the task of determining what is necessary for effective care provision appears to be a struggle for patients and health care professionals alike.¹¹⁻¹⁴ This process is complicated because most guidelines are not developed for older patients with multimorbidity, comorbidity or polypharmacy.¹⁵

Relatively little research has investigated the views and needs of elderly patients regarding their (goals of) primary care.^{16, 17} Moreover, to our knowledge, no research has ever investigated the views and needs of both patients and their primary health professionals. Our study explored experiences in the provision and receipt of primary care from the perspective of both primary health care professionals and elderly patients in order to identify expectations and needs. Other aims of our study were to identify focal areas for improving health care for elderly patients and to make suggestions for improving the training of the professionals who work in this field.

Participants and methods

Focus group interviews: Our study was exploratory due to the paucity of research on this topic. We opted, therefore, to use focus groups for group interaction purposes, in order to encourage participants to explore and clarify their views in

more depth.¹⁸ To ensure substantial contributions during discussions from each individual participant, group sizes were kept relatively small (3-8 individuals), but large enough to enable discussion and to generate new insights. By grouping participants with their peers, we aimed to minimize the impact of power relationships between the interviewees.

We set up focus group interviews with the following participant groups: residents of elderly care homes (5 groups); their general practitioners (5 groups); and their coordinating nurses (5 groups) (Table 1). Patients were recruited from among five elderly care homes in a small city in the southern part of the Netherlands. The patients were selected with the help of nurses employed at these facilities to ensure a mixed group of elderly individuals over 80 years of age. All coordinating nurses of the five elderly care homes participated in the focus groups, as did GPs from all general practices that had registered patients in the participating care homes. Each focus group interview lasted approximately one and a half hours. All subjects consented to participate and received a guarantee of anonymity and confidentiality. Participants were offered a box of chocolates in appreciation for their contributions.

In short, the elderly care home setting in the Netherlands in general is such that patients have their own apartment with a combined living/sleeping room, a private bathroom and small kitchenette. Every apartment has its own front door. The elderly care homes have a common space for dinner or activities. Admission to elderly care homes is limited to individuals with debilitating infirmities. Twice a year a care plan meeting is organized by the coordinating nurse. GP's are invited for these meetings.

Individual interviews: Because of eligibility criteria for residential elderly care facilities, we also conducted individual interviews with home-dwelling elderly subjects to investigate potential differences in important focal areas, and to further develop the areas identified by the focus groups.

We conducted 20 individual interviews with home-dwelling elderly subjects aged seventy and over. These participants were recruited from three GP practices

Table 1 Demographics of participants, focus groups and individual interviews

	General practitioners (n=20)	Coordinating nurses (n=21)	Care home patients (n=33)	Home-dwelling patients (n=20)
Male/Female (N)	11/9	3/18	12/21	6/14
Mean age in yrs (range)	48 (32-60)	42 (28-55)	86 (82-94)	79 (70-89)

in the same region (Table 1). Patients in the seventy-plus age group at these three practices were invited during regular consultation visits to participate in our interviews. All patients who were asked to participate agreed to do so and gave written, informed consent. These subjects also received a box of chocolates in appreciation for their participation.

Interviews and data collection

A health care manager experienced in conducting professional interviews acted as a moderator for the focus groups. The moderator used an interview guide to direct the discussion and to fulfil the research aims. The interview guide was based on literature and the expert opinions of the supervising committee. Small changes were made after testing in a pilot with five participants. In the individual interviews, every participant was interviewed by two trained research assistants, who used the interview guide for the focus groups and its results as a starting point.

Both the focus group interviews and individual interviews were audio-taped and transcribed verbatim by research assistants. One researcher made field notes (DN) and another researcher (MvdP) listened to the tapes to double-check the accuracy of the transcripts, and make any necessary corrections.

Analysis

The focus groups were analyzed, using constant comparative analysis.¹⁹ Two researchers (MvdP and DN) began by familiarizing themselves with the data. They then applied open coding in a process of breaking down, examining and comparing the data, hereby conceptualizing and categorizing data (explorative phase). During the subsequent axial coding, data were put back together in new ways after open coding by making connections between categories. This was done with a view to defining the important elements of the information (specification phase). Subsequently, selective coding was used at the highest level of abstraction, in which the core variable guided further relevant coding, and the data were scrutinized for invalid areas (reduction phase).

The two researchers who analyzed the data, discussed the initial coding, and consulted a third researcher wherever disagreements or doubts arose about identified themes. The supervising team discussed interpretations of the identified themes. Data collection proceeded until saturation was reached, which in this case, meant that no new themes were identified by the analysis. The

individual interviews were analyzed with the same technique. Information from the previous focus group discussions was used to feed the discussion of each next focus group. The individual interviews took place after the analysis of the focus groups. At the end of every individual interview the identified themes from the focus groups were discussed and agreed with the participants.

Results

Participants

The 15 focus groups comprised of 33 elderly residential care patients, 20 GPs and 21 coordinating nurses, and 20 home-dwelling elderly patients in the individual interviews (Table 1).

General results

Three major and inter-related themes proved pivotal to understanding the process of primary care provision for elderly patients from the providers' and recipients' perspectives: "autonomy and independence," "organizational barriers," and "professional expertise." Although all of the participants mentioned the same themes, the emphasis on issues relating to those areas varied per group. These themes are presented below in more detail from the perspective of the different groups. Quotations from the participants are included to support the findings (GP= general practitioner; CN= coordinating nurse; EP= elderly care home patient; HP= home-dwelling patient).

"Autonomy and independence"

Although all participants agreed that every discipline has its own role and responsibilities, the expectations of each group towards the others proved to be largely implicit. Some uncertainty was expressed about the alignment between GPs, patients and nurses. The GPs, who were used to solitary work, expressed difficulties with the new working method required to handle more complex cases. The GPs were also unaccustomed to working with care plans. Often, they were not present at the care plan meetings held for every patient in their respective care homes.

"Speaking as a GP, I'd be inclined to say ... let's see, how should I put this? This is like trying to fight too many fires. We just make follow-up appointments – or not, depending on the case. And sometimes, we just agree to get a call if something goes wrong." GP

“The thing is, GPs are the generalists that provide care from the cradle to the grave Some elderly people function perfectly well and never need any specialized expertise. So, I feel like it’s undermining our care provision to draw a line, where the GP’s role ends and the specialists are called in....” GP

The coordinating nurses indicated having trouble deciding at times whether to consult a GP. The GPs and coordinating nurses had no format or standard for establishing agreements and setting common goals. All of the professional health care providers expressed uncertainty about their degree of autonomy in care provision.

“You see, a GP might think it’s fine for us to make a decision. But we might feel that we can’t just take that responsibility without informing the GP of the situation.... And that’s when we discuss responsibilities” CN

Another concern regarding medical care provision in the elderly care homes was the level of patient autonomy. All of the patients were (infirm) elderly individuals, they mentioned they sometimes lacked an overview of their own cases in terms of for example medication use, disease case or needed care. The GPs and coordinating nurses also sometimes doubted whether they were capable to discuss their problems adequately. However, some patients expressed the desire to discuss their problems directly with their GPs without interference from a nurse, or relative. Patients also expressed a strong desire to make their own medication arrangements.

“Patients in elderly care homes have lower levels of independence, overview and empowerment (than home dwelling elderly)” GP

“The minute you enter a nursing home, you give up so much – even if the care is excellent.” EP

“I take something like fourteen or fifteen pills a day and that’s all well taken care of now. But, it was really hard for me to deal with in the beginning” EP

“Yes, and if all you get is half of them, that’s really upsetting” EP

The home-dwelling elderly participants placed great importance on maintaining control of their own medical affairs, and thus remaining autonomous. They expressed the wish to discuss their medical needs with their GPs, and if necessary, with their relatives. All patients felt it was important to have conversations with their GPs and nurses about the meaning of life.

“I think this is lacking. I really do. Good discussions ... it’s because the doctor ... hardly has time anymore.” EP

“As long as I can manage, I want to do things myself.... My children and husband know what I want. If we reach the point where we can’t handle things, then our children can take over with our GP...” HP

All participants, doctors, nurses and patients alike, expressed difficulty in determining their own individual independence and autonomy. This was due to the need for collaboration between all parties, which arises as cases increase in complexity.

“Organizational barriers”

All of the participants expressed concerns about the practical workings of care protocols in the elderly care homes. Care provision in these facilities was described as deficient in its coordination and clarity regarding the distribution of tasks and responsibilities. The consensus was that the care homes lacked formal agreements concerning the assignment of responsibilities to the patients, their coordinating nurses and their GPs. All participants felt that longitudinal continuity was vital to good quality care. However, most participants felt that this continuity was threatened by the constant changes in attending nurses and GPs. It was noted that the frequent unavailability of coordinating nurses to discuss questions and planning undermines, among other things, the longitudinal continuity of care in patient health check visitations at these elderly care homes. Typically, during visitations the GPs dealt with their patients’ acute problems, but were unaccustomed to recording their treatment plans in patient care logs. The nurses expected the GPs to note their findings, but never explicitly requested that. As a result, an excellent platform for building common care goals was neglected. Another barrier appeared to be a lack of acquaintance with each other. Frequently, GPs and coordinating nurses did not know each other very well, which also hampered good communication and continuity. Moreover, GPs and nurses adhere to their own sets of professional standards, which proved to lack common alignment. This was further complicated by the absence of any collective digital patient records.

*“... And then they run into 20 GPs, while we deal with at least 30 care workers.”
GP*

“I think the biggest problem is the number of care workers involved in a patient’s care ... as well as confusion and miscommunication between the staff...” GP

Time is another important organizational barrier. Elderly care home patients often ask their coordinating nurses to contact their GPs, which has proven very time consuming for the nurses.

"... Calling takes up enormous amounts of time. It's hard to get in touch with the doctor. You have to keep calling back, and waiting on hold. You lose so much time in the process. They're hard to access; they're really hard to access." CN

Both the home-dwelling patients and the resident patients in elderly care homes wanted more time with their GPs. The elderly care home patients complained about frequent changes in attending nurses. For home-dwelling patients, long telephone waiting times and all the questions asked by medical assistants were an extra barrier. These patients wanted to be able to make appointments on short notice with their own GPs.

"We keep getting different caregivers. One shows up in the morning to help with the elastic stockings. Then there's another one for the medicines" EP
"... Whenever you need to call, you get this recording: 'there are 11 callers ahead of you....' And then they ask you all kinds of questions and decide for you whether you get an appointment with the doctor.' HP
"He just never seems to have time. If you ask about a second problem, he tells you to come back.... Whenever my husband can't take me, I have to go on my own by bike, but that's getting harder these days." HP

"Professional expertise"

GPs acknowledged that their training was disease-oriented, and that they sometimes felt overwhelmed by the complexity of problems presented by infirm elderly patients. They also admitted that their knowledge of multimorbidity, polypharmacy for the elderly and care plans was insufficient.

"Some time ago, I prescribed quite a number (of medications), but I really don't feel very comfortable with that. I think I would benefit from some extra training in this area because I feel like patients are getting far too much medication...." GP

GPs were concerned that the nurses had insufficient knowledge and expertise, and that these shortcomings hindered them from gaining an overall medical picture. Coordinating nurses acknowledged that not all attending caregivers were capable of providing adequate medical information, such as blood pressure, pulse or temperature to the GPs, and that they had no standard format for communicating the patients' medical status to GPs. The coordinating nurses also felt that GPs underestimate their ability to determine whether a GP visit is necessary, and said they often feel caught in a difficult position between the patients and GPs.

“I still think that this is mainly an issue of knowledge The problems we’re seeing in elderly care homes are more complex than they were, say, 15 or 20 years ago. And I just think what’s needed is the expertise (in nurses) to deal with it” GP

“To top it all, some of our staff members call the doctor for every band-aid. As a result, the doctor doesn’t take any of us seriously.... And we also have some who don’t record all the necessary information before they call the GP....” CN
“Doctors often feel that the difference in levels of expertise (of the different nurses) is too great.” CN

Most patients agreed that their coordinating nurses and GPs were highly qualified caregivers. Both patient groups asserted, however, that their GPs sometimes had difficulties in judging the complexity of their conditions. The patients viewed their GPs as having sufficient knowledge about different diseases, but felt they lacked an overall understanding of how individuals with multiple conditions suffer. Moreover, some of the elderly care home patients mentioned that not all of the nurses were sufficiently knowledgeable to assess their medical conditions and doubted their ability to pass on their questions accurately to their GPs.

“I trust him. I think he (the GP) is a nice person, and I’m comfortable with any treatment he administers. Common sense also tells me I should be comfortable since he’s known me for so long” EP

“I think they (the doctors) underestimate things sometimes. There’s too quick a tendency to advise people to focus on what they still can do, rather than what they can’t anymore. But that makes me feel like these GPs and specialists know everything about diseases, yet have no clue what it’s like to have several of them together.... I feel like this should be handled better.” HP

Discussion

This study explored the experiences and needs of both primary health care professionals and elderly patients. Participants in our study concurred on the necessity of primary care for (infirm) elderly patients, and also showed sympathy with one another’s perspectives. However, they did note a number of obstacles that hinder good health care provision. The following focal areas for improvement were identified based on their observations: “autonomy and independence;” “organizational barriers;” and “professional expertise.” Moreover, our participants gave some suggestions for the training of professionals working in the field of elderly care.

Relevance to the existing literature

The focal areas identified in our study are supported in part by earlier research on specific areas of health care for the elderly. A recent study, which reviewed the perspectives of elderly patients regarding their health and health care needs, supported our finding that elderly patients residing at home and care facilities alike have problems with caregivers who do not understand their desire for meaning in their lives, or their struggle for autonomy and independence. However, that study was limited to the elderly and did not cover the perspectives of doctors, or nurses.²⁰ Another study confirmed our finding that nurses often feel caught in a difficult position between patients and doctors.¹⁷ In addition, a review on quality improvement in care homes, which focused on the management of specific physical health needs, argued that structured interventions in shared planning are necessary.²¹ Our study reveals a picture of varying quality in care. We also observe frustration among the participating care professionals, who, despite the best intentions, do not formalize methods for collaboration, or express mutual expectations. These findings confirm the importance of creating protocols, where mutual expectations are clarified and common goals are established. From earlier studies it is known that shared goal-setting is still in its infancy.^{16, 22}

Our findings on the main organizational barriers for patients are supported by those of two recent qualitative studies on patient perceptions of (chronic) care.^{23, 24} All patients want more time with their GPs and nurses. General practitioners frequently interact with infirm elderly patients, and are ideally positioned to give tailored, patient-centred care.^{23, 25} However, as our study shows, time pressures, the increased complexity of cases and lack of specific expertise may complicate the process of providing such tailored, patient-centred care. All of the GPs and nurses we interviewed want more knowledge to deal with complex elderly care and to better support their patients.

Strengths and limitations

Our study included all of the three groups involved in primary care for the elderly: GPs, nurses and elderly patients themselves. Our inclusion of these three groups enables us to draw more solid conclusions about primary care for the elderly from a multi-disciplinary perspective. All of the coordinating nurses at the five participating elderly care homes took part in our study. The patients living in the elderly care homes were recruited through the coordinating nurses, thus ensuring a mixed group of patients. GPs from all the general practices that had registered patients in the participating elderly care homes also took part. Our study was novel and used focus group methods and individual interviews to obtain the views of patients and primary care givers for further research. Our pragmatic

approach to recruitment resulted in an appropriate number of participants. However, given the voluntary nature of the participation among all participants, it is possible that they were more motivated than may have been the case otherwise. Considering that a caregiver-patient hierarchy had the potential to limit or alter contributions from patients, we used heterogeneous groups to minimize the impact of power relationships between the interviewees. The data were analyzed by two researchers. The high level of agreement between the focal areas identified by the two independent researchers and the fact that the focal areas were recognized and agreed by the participants increase our confidence in the results. Focus group and individual interviews were conducted in Dutch. For the purposes of this paper, the quotations included to illustrate the interview findings were translated from Dutch into English. The translation was done by a native English speaker with extensive qualifications as a medical translator in order to preserve, as closely as possible, the nuances of the interviewee's responses.

An important merit of this study is that, to our knowledge, it is the first ever qualitative study that aimed to identify focal areas for improving the provision and receipt of primary care from the perspectives of both primary health care professionals and elderly patients. Our patient group was representative of the Netherlands' elderly population, as we interviewed home-dwelling elderly subjects and residents of elderly care homes. The focal areas for improvement that were identified based on the focus group and interview findings were the same for both patient groups. One of our most significant results – and the greatest value this study offers – was the finding that clarifying the differences in perspectives on good care between patients and caregivers is vitally important. GPs and nurses adhere to their professional perspective and are more medically oriented, whilst for most patients the perspectives of their well being and mutual understanding or personalized communication are more important than their actual medical condition.

Conclusions and implications for policy and practice

We found conflicting expectations between patients' and caregivers' views on good primary care. The current focus of primary care for the elderly is twofold: to deliver innovative initiatives for cost-effective, community-based care^{13, 26, 27} and to prevent disability.²⁸ Our findings clearly show that realizing successful care intervention is an undertaking that requires mutual understanding of the expectations and goals of all the parties involved. Recognition of expectations and goal setting is still in its infancy and the main challenge facing caregivers and their patients is to create a system that carries out these tasks as standard procedure. This study has also outlined the main requirements of a system like

this. On a short-term interim basis, practical measures for strengthening care coordination would likely improve primary care for the elderly. In the longer term, a digitally accessible system of care plans, where patient information is recorded, could further improve the system. Both GPs and nurses lacked knowledge and expertise on how to cope with cases of complex care and multimorbidity, emphasizing the need for special training for nurses and GPs on complex care and multimorbidity. Caregivers as well as patients expressed difficulties in determining their autonomy and discussing goals. These findings underline the need for training on how to discuss topics, such as autonomy, goals and shared care.^{4, 16, 29, 30} The number of elderly patients with multiple problems calls urgently for well-organized health care at local and regional levels that takes special account of the patients' views and priorities to stimulate patient empowerment and patient centeredness. Further improvement in health care for elderly persons and its evaluation research should focus on these requirements.

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References

1. CBS. Bevolkingspiramide Leeftijdopbouw Nederland 1950-2060 (publication in Dutch) 2015.
2. Ayyar A, Varman S, De Bhaldrath S, Singh I. The journey of care for the frail older person. *Br J Hosp Med (Lond)*. 2010;71(2):92-6.
3. van Oostrom SH, Picavet HS, van Gelder BM, Lemmens LC, Hoeymans N, Verheij RA, et al. [Multimorbidity and comorbidity in the Dutch population--data from general practices]. *Ned Tijdschr Geneesk*. 2011;155:A3193.
4. Lacas A, Rockwood K. Frailty in primary care: a review of its conceptualization and implications for practice. *BMC medicine*. 2012;10:4.
5. van den Akker M, Buntinx F, Metsemakers JF, Roos S, Knottnerus JA. Multimorbidity in general practice: prevalence, incidence, and determinants of co-occurring chronic and recurrent diseases. *J Clin Epidemiol*. 1998;51(5):367-75.
6. Christensen K, Doblhammer G, Rau R, Vaupel JW. Ageing populations: the challenges ahead. *Lancet*. 2009;374(9696):1196-208.
7. Verheij R VDC, Stirbu-Wagner I, et al. [Netherlands Information Network of General Practice. Facts and numbers on general practice care in the Netherlands] In Dutch. Utrecht/Nijmegen: Nivel/IQ. 2009.
8. Salisbury C, Johnson L, Purdy S, Valderas JM, Montgomery AA. Epidemiology and impact of multimorbidity in primary care: a retrospective cohort study. *Br J Gen Pract*. 2011;61(582):e12-21.
9. Wolff JL, Starfield B, Anderson G. Prevalence, expenditures, and complications of multiple chronic conditions in the elderly. *Arch Intern Med*. 2002;162(20):2269-76.
10. Dy SM, Pfoh ER, Salive ME, Boyd CM. Health-related quality of life and functional status quality indicators for older persons with multiple chronic conditions. *J Am Geriatr Soc*. 2013;61(12):2120-7.
11. Bergman H, Beland F, Perrault A. The global challenge of understanding and meeting the needs of the frail older population. *Aging clinical and experimental research*. 2002;14(4):223-5.
12. Coleman EA. Challenges of systems of care for frail older persons: the United States of America experience. *Aging clinical and experimental research*. 2002;14(4):233-8.
13. Metzger SF, van Rossum E, de Witte LP, Ambergen AW, Hobma SO, Sipers W, et al. Effectiveness of interdisciplinary primary care approach to reduce disability in community dwelling frail older people: cluster randomised controlled trial. *BMJ*. 2013;347:f5264.
14. Marsteller JA, Hsu YJ, Wen M, Wolff J, Frick K, Reider L, et al. Effects of Guided Care on providers' satisfaction with care: a three-year matched-pair cluster-randomized trial. *Population health management*. 2013;16(5):317-25.
15. Zulman DM, Sussman JB, Chen X, Cigolle CT, Blaum CS, Hayward RA. Examining the evidence: a systematic review of the inclusion and analysis of older adults in randomized controlled trials. *J Gen Intern Med*. 2011;26(7):783-90.
16. Kulski K, Gill A, Naganathan G, Upshur R, Jaakkimainen RL, Wodchis WP. A qualitative descriptive study on the alignment of care goals between older persons with multi-morbidities, their family physicians and informal caregivers. *BMC family practice*. 2013;14:133.
17. Ericson-Lidman E, Norberg A, Persson B, Strandberg G. Healthcare personnel's experiences of situations in municipal elderly care that generate troubled conscience. *Scand J Caring Sci*. 2013;27(2):215-23.
18. Kitzinger J. Qualitative research. Introducing focus groups. *BMJ*. 1995;311(7000):299-302.
19. Glaser BG, Strauss AL. The discovery of grounded theory; strategies for qualitative research. Chicago,: Aldine Pub. Co.; 1967. x, 271 p. p.
20. Holm AL, Severinsson E. A qualitative systematic review of older persons' perceptions of health, ill health, and their community health care needs. *Nursing research and practice*. 2013;2013:672702.
21. Davies S, Cripps CG. Supporting quality improvement in care homes for older people: the contribution of primary care nurses. *J Nurs Manag*. 2008;16(2):115-20.
22. Robben SH, Perry M, Olde Rikkert MG, Heinen MM, Melis RJ. Care-related goals of community-dwelling frail older adults. *J Am Geriatr Soc*. 2011;59(8):1552-4.

23. Hudon C, St-Cyr Tribble D, Bravo G, Hogg W, Lambert M, Poitras ME. Family physician enabling attitudes: a qualitative study of patient perceptions. *BMC family practice*. 2013;14:8.
24. Berkelmans PG, Berendsen AJ, Verhaak PF, van der Meer K. Characteristics of general practice care: what do senior citizens value? A qualitative study. *BMC Geriatr*. 2010;10:80.
25. Luijckx HD, Loeffen MJ, Lagro-Janssen AL, van Weel C, Lucassen PL, Schermer TR. GPs' considerations in multimorbidity management: a qualitative study. *Br J Gen Pract*. 2012;62(600):e503-10.
26. Markle-Reid M, Browne G, Weir R, Gafni A, Roberts J, Henderson SR. The effectiveness and efficiency of home-based nursing health promotion for older people: a review of the literature. *Med Care Res Rev*. 2006;63(5):531-69.
27. Keating N, Otfinowski P, Wenger C, Fast J, Derksen L. Understanding the caring capacity of informal networks of frail seniors: a case for care networks. *Ageing Soc*. 2003;23:115-27.
28. Daniels R, Metzelthin S, van Rossum E, de Witte L, van den Heuvel W. Interventions to prevent disability in frail community-dwelling older persons: an overview. *Eur J Ageing*. 2010;7(1):37-55.
29. Thraen I, Bair B, Mullin S, Weir CR. Characterizing "information transfer" by using a Joint Cognitive Systems model to improve continuity of care in the aged. *Int J Med Inform*. 2012;81(7):435-41.
30. Moreau A, Carol L, Dedianne MC, Dupraz C, Perdrix C, Laine X, et al. What perceptions do patients have of decision making (DM)? Toward an integrative patient-centered care model. A qualitative study using focus-group interviews. *Patient Educ Couns*. 2012;87(2):206-11.

3

Teaching geriatrics using an innovative patient-centered serious game: both students and educators win. A proof-of-concept study

This chapter is based on:

Teaching Geriatrics Using an Innovative, Individual-Centered Educational Game: Students and Educators Win. A Proof-of-Concept Study

van de Pol, Marjolein H.J.

Lagro, Joep

Fluit, Lia R.M.G.

Lagro-Janssen, Antoine L.M.

Olde Rikkert, Marcel G.M.

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Abstract

Given our increasingly aging population, nearly every doctor will encounter elderly patients who present with multiple complex comorbidities that can challenge even experienced physicians. This may explain why many medical students do not have a positive attitude towards elderly patients and are overwhelmed by the complexity of their problems. We hypothesized that our recently developed medical school geriatrics course, which is based on the serious game GeriatriX and was designed specifically to address the complexities associated with decision-making in geriatrics, can have a positive effect both on attitudes towards geriatrics and on the perceived knowledge of geriatrics. As a proof-of-concept, we evaluated the effects of this game-based course. Our assessment was based on the Aging Semantic Differential (ASD) and a validated self-perceived knowledge scale of geriatric topics. We also assessed the usability of (and satisfaction with) the serious game GeriatriX using a 5-point Likert scale. After completing the course, the ASD significantly changed in the geriatrics course group (N=29; $p < 0.05$), but not in a control group, who took a neuroscience course (N=24; $p = 0.3$). Moreover, the geriatrics course group had a significant increase in self-perceived knowledge for 12 of the 18 topics ($P < 0.05$), compared to one in the control group. Finally, the geriatrics students reported a high appreciation for the serious game GeriatriX.

This proof-of-concept study clearly supports our hypothesis that a short four-week course using a modern educational approach such as the serious game GeriatriX can improve students' self-perceived knowledge of geriatrics and their attitudes with respect to elderly patients.

Introduction

Given our increasingly aging population, nearly every doctor will likely contribute to serving the healthcare needs of frail elderly patients and will therefore need to acquire a basic set of skills regarding geriatric assessment and care. However, many medical students do not express a positive attitude regarding elderly patients, and geriatrics is traditionally an unpopular specialty.^{1,2} A similar attitude is prevalent among many professional caregivers³ who are often overwhelmed by the complexity of problems presented by geriatric patients.^{4,5}

To overcome this challenge, doctors need to receive more geriatric-specific education, both to address the high societal need for doctors with basic geriatric assessment skills and to improve their attitude towards elderly patients.^{6,7} Currently, however, little is known regarding the type of education that can stimulate and motivate students and young doctors with respect to the field of geriatrics and elderly care.^{8,9} The most successful education with respect to improving both attitude and knowledge will utilize various learning styles¹⁰, connect with students' perceptions¹¹, have a practical approach¹², and combine several teaching methods.^{6,13} To achieve this goal, we developed and evaluated a geriatrics course based on the serious game GeriatriX; this course was designed specifically to improve medical students' engagement with and knowledge of the complexities associated with geriatric patients as well as their attitude towards these older patients. Meeting the abovementioned criteria for implementing a successful new educational program is both complex and challenging. Our first challenge in developing this new geriatrics course was to address the complexities associated with decision-making in geriatrics. We focused on an approach that is centered both on patient's preferences and goals, rather than an approach that utilized traditional disease-centered education.¹⁴ Our medical school—which is similar in many respects to most medical schools that use problem-based learning curricula—still relies on disease-centered education. Our second challenge was to engage students during the course and to create an active learning style. Digital game-based learning modules (also known as “serious games”) activate a variety of learning styles and are used to improve the student's learning outcomes.¹⁵ Serious games have permeated medical education in recent years. In medical curricula, applied games based on geriatrics have also been developed and implemented; however, unlike GeriatriX, these are not serious games with clinical reasoning, and they have received relatively little attention regarding their impact.¹⁶⁻¹⁸

The objective of this proof-of-concept study was to assess whether a course that is based largely on a serious game is feasible and can be used effectively to teach medical students about geriatrics. We hypothesized that our recently

developed undergraduate geriatrics course, which is based on the serious game GeriatriX, can have a positive effect on medical students with respect to both their attitudes towards the elderly and their knowledge of geriatrics. Here, we describe the outcome of this recently developed geriatrics course, and we assesses the usability and satisfaction of the serious game GeriatriX.

Methods

Study design

In this non-randomized, controlled pre/post-measurement study, we compared the effects of a four-week elective game-based course in geriatrics on students' attitudes towards the elderly and on students' self-perceived knowledge of geriatric themes. Students who were taking an elective neuroscience course were invited to participate as a control group. The neuroscience course was chosen as a control because it was scheduled in the same period as the geriatrics course, and the participating students were in the same stage in their medical training and were comparable with respect to both age and gender. At various course periods during medical school, students complete a total of five electives during their three years of preclinical training. In each period, students can choose from several courses; however, for practical reasons, students are not always placed in their first choice. The geriatrics course contained 29 students, and the neuroscience course contained 30 students. Participation in the study was voluntarily, and all participants provided written informed consent.

Course development

Prior to 2012, the medical students in our Bachelor's curriculum did not receive any specific education regarding geriatrics. Thus, the four-week geriatrics course was an initial step towards incorporating geriatric-specific education into the medical Bachelor's curriculum.

The primary goals for the four-week elective game-based course in geriatrics were to increase students' knowledge regarding key geriatric topics and to improve their attitude towards elderly patients. Therefore, we combined traditional teaching methods with the recently developed medical-teaching serious game GeriatriX¹⁹ in order to fully address the complexities associated with medical decision-making in geriatric medicine.

During the course, students played the game and developed completely new cases for the game using the systematic interface of GeriatriX. Input for new game cases came from visiting complex geriatric patients at the geriatrics department and in a nursing home, where students saw several patients under the direct supervision of a licensed, trained clinician.

Additional educational topics in GeriatriX and the remainder of the course included geriatric assessment and management regarding the following items: polypharmacy, delirium, falls, depression, function loss, and management of complex decision-making. Input from the patient visits and two patient demonstrations were used to illustrate the educational topics. We chose to focus on teaching patient preferences and goal-setting throughout the entire course. Students spent approximately 50% of their time playing the game, developing new game cases, discussing the game, and reflecting on the game. The course outline is provided in Appendix 1.

Students received grades for the development of their GeriatriX cases and for taking an individual exam. For the individual exam, students attended a clinical case demonstration upon which they had to formulate a new research question; they then answered that question using PubMed and current guidelines.²⁰

The control neuroscience course was a four-week elective course without a serious game. This course focused on the interactions between the brain, nerves, and muscles. The educational topics included hearing, seeing, and moving.

Both courses were taught in September 2012 at the start of the third year of the Bachelor's curriculum. The courses were taught by the medical faculty of the Radboud University Nijmegen Medical Center, Nijmegen, The Netherlands.

GeriatriX

A screenshot of the serious game GeriatriX is shown in Figure 1. Playing this serious game motivates students to account for the following three objectives that were recently added to the knowledge base of evidence-based medicine: 1) patient-oriented goals and preferences; 2) the appropriateness or futility of medical care; and 3) the costs associated with medical care. The game includes a tutorial that explains the purpose of the game and how the game works. The game starts with reading the first patient's referral letter; using this information, the student must then decide which laboratory tests, additional tests, and treatments they wish to order. Students must solve three medical cases of anemia in elderly patients. Each patient is different with respect to his/her preferences and frailty characteristics; thus, each patient's optimal diagnostic and therapeutic strategy is unique. Playing through all three cases requires approximately 90 minutes in total. In the game, students are informed of the costs of each specific test and procedure, and they must defend their choices. Students receive digital feedback regarding their choices, including the patient's preferences (from the patients), the appropriateness of each choice based on pathophysiological reasoning (from the supervisor), and the cost (from the director). The game and game cases are in English.



Figure 1 Screenshot of the serious game GeriatriX user interface.

Students worked in groups of five to develop new game cases. Students formulated a referral letter and an ideal path for examination and tests, taking into account the abovementioned objectives. According to the patients' preferences and goals, students also formulated feedback regarding the ideal path of examination and tests. Throughout this process, students were supervised and supported by an experienced clinical teacher.

Data collection

Changes in attitudes towards the elderly and self-perceived geriatric knowledge were measured as primary outcomes. Attitudes were assessed using the refined and validated version of the Aging Semantic Differential (ASD), which measures the attitudes of students towards the elderly on a 7-point Likert scale containing 27 items with age stereotypes. Total scores ranging from 27-189 (a lower score indicates a more positive attitude).²¹ We also used a well-validated questionnaire that measures the student's self-perceived knowledge regarding 18 geriatric topics using a 5-point Likert scale (1=low, 5=high).²²

The usability and satisfaction with the serious game GeriatriX were evaluated using a 5-point Likert scale questionnaire (1=completely disagree, 5=completely agree). The questions are listed in Table 1.

All of the students in the geriatrics and neuroscience courses completed the questionnaires before the start of the course. Students completed the questionnaires

again after the last session of the course, but before they received their grade for the course, thereby preventing a potential bias based on their grade.

Statistics

The pre-course and post-course data were compared using the paired Student's *t*-test with Holms correction²³ for multiple testing (correcting for the 18 comparisons in the questionnaire regarding self-perceived knowledge). An unpaired Student's *t*-test was used to compare the two pre-course groups. Effect sizes were calculated by applying Cohen's *D*. All analyses were performed using SPSS version 20.0 (SPSS IBM Inc., Armonk, NY). Differences with a *P*-value <0.05 were considered to be statistically significant. Unless otherwise indicated, data are presented at the mean ± SD.

Results

Students in the geriatrics course did not differ significantly from students in the control (neuroscience) course with respect to age (23 ± 1.5 vs. 24 ± 1.0 years, respectively) or gender (with 51.7% vs. 33.3% female students, respectively). Due to an unanticipated change in the neuroscience course schedule, six of the 30 students in this course were unable to complete either the pre-course or post-course questionnaire, reducing the number of students in this group to 24. The geriatrics course was the first choice for only two of the 29 students; in contrast, the neuroscience course was the first choice for all 30 students.

Prior to taking their respective courses, neither the Aging Semantic Differential (ASD) nor the self-perceived knowledge of geriatrics differed between the two groups (see Table 1).

Effect of the geriatrics course on attitudes towards geriatrics and self-perceived knowledge

After completing the geriatrics course, the ASD scores decreased significantly in this group from 84 ± 11 to 77 ± 15 , with a per-student difference of -7.0 ± 15 (95% CI: -1.0 to -13 ; $t=2.5$, $p=0.02$). In contrast, the ASD scores did not change significantly among students who completed the neuroscience course ($t= -1.2$, $p=0.3$).

In the geriatrics course group, self-perceived knowledge increased significantly for 12 of the 18 topics, including the major geriatrics topics of dementia and falls, as well as for functional assessment, geriatric rehabilitation, and informal care (see Table 1). In contrast, in the neuroscience course group, self-perceived knowledge increased significantly for one topic only (sensory impairment).

Table 1 Changes in self-perceived knowledge, as rated by students taking the geriatrics course or the neuroscience course

Please respond to the following items on a 5-point Likert scale (1=low, 5=high): Your confidence in performing <item> with geriatric patients. Measured prior to and immediately following the respective course (prior to receiving the grade for the course).

Item	Geriatrics Course (N = 29 students)			Neuroscience Course (N = 24 students)			
	Pre	Post	95% CI of the difference	Cohen's D	Pre	Post	95% CI of the difference
1 Dementia	2.1±0.8	3.5±0.7	-1.67 -- -1.02*	1.7	2.7±0.9	2.7±0.8	-0.30 -- 0.30
2 Urinary incontinence	2.6±1.0	3.8±0.6	-1.63 -- -0.93*	1.6	2.7±0.8	2.8±1.0	-0.35 -- 0.26
3 Functional assessment	2.2±0.9	3.7±0.8	-1.94 -- -1.16*	1.9	2.6±1.0	2.4±0.8	-0.13 -- 0.56
4 Sensory impairment	2.1±0.8	2.6±0.8	-0.97 -- -0.07	0.6	2.2±0.8	2.8±1.0	-0.97 -- 0.25*
5 Risk of falls	2.3±0.9	3.8±0.9	-1.90 -- -1.00*	1.6	3.1±0.9	3.3±0.9	-0.56 -- 0.23
6 Nutritional status	2.3±0.9	2.9±0.7	-1.06 -- -0.18	0.8	3.0±1.2	2.6±0.9	0.08 -- 0.70
7 Pain & symptoms terminal illness	2.0±0.8	2.9±0.9	-1.25 -- -0.61*	1.1	2.6±1.2	2.8±0.8	-0.74 -- 0.21
8 Geriatric rehabilitation	1.8±0.7	2.6±0.8	-1.18 -- -0.55*	1.2	2.1±0.9	2.4±1.0	-0.80 -- 1.00
9 Depression	2.3±0.8	3.4±0.8	-1.50 -- -0.71*	1.3	2.6±1.0	2.6±0.9	-0.47 -- 0.38
10 Sexual dysfunction	1.8±0.9	2.1±0.9	-0.73 -- 0.11	0.4	1.9±0.9	2.0±0.8	-0.85 -- 0.15
11 Patients with multiple problems	2.0±0.8	3.7±0.7	-2.08 -- -1.37*	2.5	2.2±0.9	2.2±0.8	-0.42 -- 0.34
12 Preventive care	2.5±0.8	3.4±0.8	-1.28 -- -0.58*	1.2	2.5±1.0	2.5±0.8	-0.41 -- 0.41
13 History-taking and examination	2.4±0.8	2.8±0.8	-0.80 -- 0.05	0.5	2.6±0.8	2.7±0.9	-0.43 -- 0.26
14 Osteoporosis	2.3±0.8	3.2±0.8	-1.28 -- -0.58*	1.2	2.6±1.1	2.6±0.8	-0.49 -- 0.40
15 Informal care and social support	2.4±0.8	3.3±0.8	-1.31 -- -0.55*	1.2	2.6±1.0	2.9±1.1	-0.80 -- 0.19
16 End-of-life issues	2.2±0.9	2.6±0.9	-0.81 -- -0.13	0.5	2.4±1.0	2.5±1.0	-0.67 -- 0.33
17 Hormone replacement	1.9±0.7	2.2±1.0	-0.78 -- 0.09	0.4	2.0±0.9	2.2±0.8	-0.56 -- 0.15
18 Advance directives	1.9±0.7	3.0±1.0	-1.61 -- -0.66*	1.3	2.1±1.0	2.2±0.9	-0.48 -- 0.30

*p<0.05, after correcting for multiple comparisons²³

Table 2 Evaluation of the serious game GeriatriX by the 29 students in the geriatrics course

5-point Likert scale questionnaire (1=completely disagree, 5=completely agree)

	Question	Score \pm SD
Clarity	It was clear to me:	
1	what the purpose of the game was	4.3 \pm 0.5
2	what steps to take in the game	3.5 \pm 0.8
3	what to do to finish the game	3.3 \pm 1.0
4	what the consequences of my actions were	3.5 \pm 1.1
Fun		
5	I wanted to finish the game	3.6 \pm 0.8
6	Playing the game was frustrating	2.2 \pm 0.8
7	Time is flying when playing the game	3.5 \pm 0.8
8	I enjoyed playing the game	3.9 \pm 0.6
9	The game was hard to play	3.0 \pm 0.9
10	The game represented what I like in a game	3.3 \pm 0.8
Game control		
11	I was able to control my actions in the game	3.6 \pm 0.8
12	The consequences of my actions on the end result of the game were clear	3.2 \pm 1.2
Learning experience		
13	The feedback while playing the game was useful	3.4 \pm 0.9
14	Playing the game increased my awareness of the importance of weighted choices in treating patients	4.0 \pm 0.8

All 29 students in the geriatrics course passed the course with good marks. For developing the GeriatriX case, the groups received a grade of 7.4 ± 0.6 ; for their individual exams, students received a grade of 7.9 ± 0.7 ; both grades were scored as an integer based on a range of 1-10 (a grade of 6 or higher was considered passing). The final grade was determined by averaging the two separate grades, and the individual grades for all 29 students was 7.6 ± 0.6 . None of students received a grade below 6.

Evaluation of the serious game GeriatriX

The GeriatriX game was evaluated using a 14-item questionnaire (Table 2). The majority of the 29 students found the game to be highly instructive. The following three items received the highest scores (on a 5-point scale): the purpose of the

game was clear (4.3 ± 0.5); students enjoyed playing the game (3.9 ± 0.6); and students increased their awareness of weighing their choices according to the patients' preferences (4.0 ± 0.8). Moreover, students reported low frustration associated with playing the game (2.2 ± 0.8). However, some students reported that the consequences of their actions were not always completely clear (3.2 ± 1.2).

Discussion

After completing a novel four-week educational course on geriatrics using our innovative medical-teaching serious game GeriatriX, students reported a positive change in their attitudes towards elderly patients and a considerable improvement in their self-perceived knowledge of key geriatric topics. Moreover, students reported moderate to high appreciation for the serious game GeriatriX. The control group (students who took a four-week neuroscience course instead of the geriatrics course) reported no improvement in their self-perceived knowledge of geriatrics or their attitudes towards geriatric patients (with the exception of a change in their self-perceived knowledge of sensory impairment, which was expected given that sensory impairment was a key topic in the neuroscience course).

Depending on the type of education that students receive, geriatric education can produce differing effects with respect to both attitude and knowledge.^{5, 7, 24, 25} However, to the best of our knowledge, this is the first report that a relatively short (four weeks in total) training course in geriatrics early in medical school can yield such robust positive effects regarding both attitude and self-perceived knowledge with respect to geriatric patients and geriatric medicine in general. We believe that this course's unique approach of combining learning techniques—embedded in an intensive course in which key geriatric topics were taught in a stimulating game environment—was the key to its high effectiveness. Importantly, the GeriatriX game provides students with the opportunity to practice handling complex geriatric cases in a safe, comfortable learning environment. It also allowed them to experience the complexity and consequences of medical decision-making with respect to: 1) patient-oriented goals and preferences; 2) the appropriateness or futility of medical care; and 3) the costs associated with medical care. The ability to weight these criteria effectively—including cost consciousness—is currently recognized as being essential for improving healthcare.^{26, 27} Students also developed new cases for the game while considering the game's abovementioned key objectives. The new cases were developed in group sessions that were highly interactive and collaborative. In addition, this is also the first report of a medical education course in which students developed new cases within the game. Playing the game and developing new cases makes

the complexity of geriatrics manageable. The complexity of treating elderly patients is often mentioned as one of the challenges that medical students and clinicians face when teaching and learning geriatric medicine.²⁸ The GeriatriX game's unique combination of allowing students to play the game individually and develop new cases in a group setting utilized several learning strategies (including both individual and collaborative learning), an approach that has been shown to improve educational outcomes.¹⁰ Students' favorable evaluation of GeriatriX reflects their high appreciation of this educational tool and is consistent with similar reports regarding the use of serious gaming in formal education.^{29, 30} Serious games connect with professional learners, who are generally problem-centered, results-oriented, and self-directed. Serious games require *a priori* knowledge and the ability to judge results, stimulating self-directed learning. Moreover, games are generally closely tied to the social media world in which many students participate intensely.²⁹ To date, however, evidence regarding the efficacy of using serious gaming in medical education—particularly in geriatrics education—has been limited.^{18, 31} Our analysis strongly suggests that our approach of using a serious game that applies clinical reasoning to complex geriatric cases played an important role in achieving our positive results.

Strengths and limitations

Our study has several strengths. First, we used validated questionnaires to measure the participants' attitudes and self-perceived knowledge.^{21, 22} Second, as an additional control for the questionnaires and to control for the potential effect of repeated measurements when using a questionnaire, the geriatrics course group was compared with a separate group of gender- and age-matched third-year medical Bachelor's students, whose attitudes and self-perceived knowledge with respect to geriatrics did not change between the first and second assessments. Moreover, these two student groups did not differ with respect to their baseline scores. Third, only two of the 29 students in the geriatrics course had selected this specific course as their first choice; thus, our results were likely not biased by the inclusion of students with an *a priori* positive attitude towards geriatric patients and/or an interest in geriatric medicine. In general, geriatrics is not a popular specialty among students; therefore, the fact that relatively few students chose this course as their first choice suggests that the student group who took the course likely represents the entire student population.^{1, 9} Fourth, our serious game-based teaching method can easily be adapted for use by larger groups of students, particularly for medical schools who do not currently provide an elective or clerkship in geriatrics or elderly patient care.^{32, 33} The game was developed in English and can be expanded to include additional cases, and it can be adapted for use in other courses. Finally, embedding GeriatriX into the medical

curriculum provides students with the opportunity to experience and practice geriatric care by efficiently utilizing the teaching hours of geriatricians, thereby benefitting students, educators, and—ultimately—geriatric patients.

On the other hand, the study also has several limitations. First, because it was a proof-of-concept study, we included only a relatively small number of students. Generally speaking, however, the two groups of students were similar with respect to age and gender. Second, because this course was a completely new addition to our medical curriculum and this was the first geriatrics undergraduate course in our curriculum, we were unable to randomize the participants. Despite this limitation, the large effect sizes still suggest that the course provides educationally relevant benefits. If possible, this should be confirmed by performing a more comprehensive randomized controlled trial. Third, the questionnaire measured students' self-perceived knowledge, not their actual knowledge. However, in other studies perceived and actual knowledge are found to be correlated.^{34, 35} Since all of the students in the geriatrics course passed their exams with good results, and this course was their first encounter with geriatrics education, it is reasonable to conclude that the questionnaire accurately reflected students' actual improvement in knowledge regarding geriatrics. Fourth, we measured the post-course effects immediately after the four-week elective courses. Therefore, we were unable to measure the long-term benefits of the geriatrics course. Relatively short (e.g., four weeks) courses are less likely to yield persistent attitude improvements compared to longer courses.^{6, 36, 37} In following up on this proof-of-concept study, we will incorporate a longer follow-up period. When confirmed, this teaching method may also be used to efficiently train larger groups of medical students in the basics of geriatrics and to simultaneously improve their attitudes. Fifth, although our analysis revealed that this novel geriatrics course improved students' attitudes towards elderly patients and improved their perceived knowledge regarding several geriatrics topics, we were unable to determine precisely which components contributed to this improvement. As discussed above, the course was centered around the serious game GeriatriX, and students directly—or indirectly—spent more than 50% of their course time playing GeriatriX and developing new cases for GeriatriX. Therefore, we expect that the promising positive findings are in large part due to the incorporations of GeriatriX into the curriculum. Finally, GeriatriX is a recently developed serious game and therefore still had some minor drawbacks at the time of the study. For example, the nature of the feedback was not always completely clear to students. However, the students' general evaluation was positive, and students provided valuable comments that can be used to improve the game in future versions. After the game is fine-tuned, it can be adapted for use in larger classes.

Conclusions

Our results demonstrate that using the serious game GeriatriX in a modern medical educational setting can improve students' knowledge of geriatric care and can have a positive effect on students' attitudes towards elderly patients. Because the serious game GeriatriX itself was valued highly by students, we encourage its wider use in teaching geriatrics to medical students. Teaching students how to effectively treat geriatric patients—particularly frail patients with complex, multiple health issues—can play a significant role in meeting society's need for doctors who are properly trained to provide geriatric care, including incorporating patient goals, medical effectiveness, and health care costs into their medical decision-making process with respect to elderly patients.

Appendix 1 Outline of the four-week elective geriatrics course

	Monday	Tuesday	Wednesday	Thursday	Friday
Week 1	Lectures Self-study Become familiar with GeriatriX	Lectures Play the GeriatriX game	Lectures Self-study Visit patients	Geriatric assessment of patient cases Self-study	Journal club Play GeriatriX game
Weeks 2 and 3	Students work on their GeriatriX case together in small groups of five students each, working under the supervision of a geriatrician or general practitioner who specializes in elderly care. Self-study and journal clubs to discuss evidence-based geriatrics, guidelines, and geriatric assessment.				
Week 4	Write reports regarding patient cases (geriatric assessment), working with the guidelines and GeriatriX game cases. All student groups play each developed game case.			Knowledge exam (individual)	Oral presentation of the GeriatriX game cases

References

1. Haley WE, Zelinski E. Progress and challenges in graduate education in gerontology: the U.S. Experience. *Gerontol Geriatr Educ*. 2007;27(3):11-26.
2. Higashi RT, Tillack AA, Steinman M, Harper M, Johnston CB. Elder care as “frustrating” and “boring”: Understanding the persistence of negative attitudes toward older patients among physicians-in-training. *J Aging Stud*. 2012;26(4):476-83.
3. Nilsson A, Lindkvist M, Rasmussen BH, Edvardsson D. Staff attitudes towards older patients with cognitive impairment: need for improvements in acute care. *J Nurs Manag*. 2012;20(5):640-7.
4. Lun MWA. Student Knowledge and Attitudes Toward Older People and Their Impact on Pursuing Aging Careers. *Educational Gerontology*. 2011;37(1):1-11.
5. Drickamer MA, Levy B, Irwin KS, Rohrbaugh RM. Perceived needs for geriatric education by medical students, internal medicine residents and faculty. *J Gen Intern Med*. 2006;21(12):1230-4.
6. Tullo ES, Spencer J, Allan L. Systematic review: helping the young to understand the old. Teaching interventions in geriatrics to improve the knowledge, skills, and attitudes of undergraduate medical students. *J Am Geriatr Soc*. 2010;58(10):1987-93.
7. Atkinson HH, Lambros A, Davis BR, Lawlor JS, Lovato J, Sink KM, et al. Teaching medical student geriatrics competencies in 1 week: an efficient model to teach and document selected competencies using clinical and community resources. *J Am Geriatr Soc*. 2013;61(7):1182-7.
8. Nanda A, Farrell TW, Shield RR, Tomas M, Campbell SE, Wetle T. Medical Students’ Recognition and Application of Geriatrics Principles in a New Curriculum. *J Am Geriatr Soc*. 2013;61(3):434-9.
9. Campbell JY, Durso SC, Brandt LE, Finucane TE, Abadir PM. The Unknown Profession: A Geriatrician. *J Am Geriatr Soc*. 2013;61(3):447-9.
10. Kolb AY, Kolb DA. Learning Styles and Learning Spaces: Enhancing Experiential Learning in Higher Education. *Academy of Management Learning & Education*. 2005;4(2):193-212.
11. Hean S, Craddock D, O’Halloran C. Learning theories and interprofessional education: A user’s guide. *Learn Health Soc Care*. 2009;8(4):250-62.
12. Albanese MA, Mitchell S. Problem-based learning: A review of literature on its outcomes and implementation issues. *Acad Med*. 1993;68(1):52-81.
13. Jonsson PV, Gustafson Y, Hansen FR, Saks K, Pitkala KH. Challenges of current geriatric education-inspired by the Nordic geriatric professors’ meetings. *Gerontol Geriatr Educ*. 2003;24(1):1-14.
14. Wallace C, Chandler L, Rogers A, Crosby K, Joshi N, Spriggs T, et al. Caring for frail patients: best practice. *Nurs Stand*. 2012;26(28):50-6: quiz 8.
15. Akl EA, Gunukula S, Mustafa R, Wilson MC, Symons A, Moheet A, et al. Support for and aspects of use of educational games in family medicine and internal medicine residency programs in the US: a survey. *BMC medical education*. 2010;10:26.
16. Schmall V, Grabinski CJ, Bowman S. Use of games as a learner-centered strategy in gerontology, geriatrics, and aging-related courses. *Gerontol Geriatr Educ*. 2008;29(3):225-33.
17. Tumosa N, Morley JE. The use of games to improve patient outcomes. *Gerontol Geriatr Educ*. 2006;26(4):37-45.
18. Alfarah Z, Schunemann HJ, Akl EA. Educational games in geriatric medicine education: a systematic review. *BMC Geriatr*. 2010;10:19.
19. Lagro J VM, Huijbregts-Verheyden F, van Litsenburg A, Olde Rikkert MGM. Development of the serious game GeriatricX for interns in elderly care. Let’s play! *Perspect Med Educ*. 2013;2(1):45-7 abstract.
20. Huang X, Lin J, Demner-Fushman D. Evaluation of PICO as a knowledge representation for clinical questions. *AMIA Annual Symposium proceedings / AMIA Symposium AMIA Symposium*. 2006: 359-63.
21. Polizzi KG. Assessing attitudes toward the elderly: Pollizi’s refined version of the aging semantic differential. *Educational Gerontology*. 2003;29(3):197-216.
22. Robinson BE, Barry PP, Renick N, Bergen MR, Stratos GA. Physician confidence and interest in learning more about common geriatric topics: a needs assessment. *J Am Geriatr Soc*. 2001;49(7):963-7.

23. Holm S. A Simple Sequentially Rejective Multiple Test Procedure. *Scandinavian Journal of Statistics*. 1979;6(2):65-70.
24. Davis BE, Nelson DB, Sahler OJ, McCurdy FA, Goldberg R, Greenberg LW. Do clerkship experiences affect medical students' attitudes toward chronically ill patients? *Acad Med*. 2001;76(8):815-20.
25. Alford CL, Miles T, Palmer R, Espino D. An introduction to geriatrics for first-year medical students. *J Am Geriatr Soc*. 2001;49(6):782-7.
26. Cooke M. Cost consciousness in patient care--what is medical education's responsibility? *N Engl J Med*. 2010;362(14):1253-5.
27. Robben SH, Melis RJ, Olde Rikkert MG. Cost consciousness and medical education. *N Engl J Med*. 2010;363(9):889-90; author reply 90-1.
28. Fernandez K. A New Standard of Care: Despite Opportunity, Gerontology Programs Face Obstacles.
29. Arnab S BR, Earp J, Freitas de S, Popescu M, Romero M, Stanescu I, Usart M. Framing the adoption of serious games in formal education. *The electronic Journal of e-learning*. 2012;10(2):159-256.
30. Hannig A, Kuth N, Ozman M, Jonas S, Spreckelsen C. eMedOffice: a web-based collaborative serious game for teaching optimal design of a medical practice. *BMC medical education*. 2012;12:104.
31. Akl EA, Pretorius RW, Sackett K, Erdley WS, Bhoopathi PS, Alfarah Z, et al. The effect of educational games on medical students' learning outcomes: A systematic review: BEME Guide No 14. *Med Teach*. 2010;32(1):16-27.
32. Tersmette W, van Bodegom D, van Heemst D, Stott D, Westendorp R. Gerontology and Geriatrics in Dutch medical education. *Neth J Me* 2013;71(6):331-7.
33. Fisher AL, O'Keefe EA, Hanlon JT, Studenski SA, Hennon JG, Resnick NM. A brief, intensive, clinically focused geriatrics course during the third year of medical school. *J Am Geriatr Soc*. 2009;57(3):524-9.
34. Chan MF, Zang YL. Nurses' perceived and actual level of diabetes mellitus knowledge: results of a cluster analysis. *J Clin Nurs*. 2007;16(7B):234-42.
35. Lehna C, Myers J. Does Nurses' Perceived Burn Prevention Knowledge and Ability to Teach Burn Prevention Correlate With Their Actual Burn Prevention Knowledge? *J Burn Care Res*. 2010;31(1): 111-20.
36. Hall NK, Riesenber LA, Stein LK, Biddle WB. Longitudinal effectiveness of a medical school geriatrics clerkship. *Acad Med*. 1997;72(10 Suppl 1):S28-30.
37. Rull GM, Roshier RB, McCann-Stone N, Robinson SB. Aging Couple Across the Curriculum. *Gerontol Geriatr Educ*. 2009;30(3):243-53.

4

Teaching geriatrics: what can we learn from medical students' narrative reflections about geriatrics education?

This chapter is based on:

Lessons learned from narrative feedback of students
on a geriatric training program
van de Pol, Marjolein H.J.

Lagro, Joep

Koopman, Elise L.

Olde Rikkert, Marcel G.M.

Fluit, Cornelia R.M.G.

Lagro-Janssen, Antoine L.M.

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Abstract

Geriatrics continues to draw insufficient numbers of medical students today. Currently, little is known regarding how education can motivate students to choose geriatrics. Our aim was to examine geriatrics from the students' perspective in order to identify elements that can be useful in education and improving attitudes towards, interest in and knowledge about geriatrics.

We analyzed narrative reflection essays of 36 students, and clarified the themes from the essays during focus group sessions.

Four overarching themes that influenced students' perspective on geriatrics were identified: professional identity; perception of geriatrics; geriatric-specific problems; and learning environment.

Students have an inaccurate image of clinical practice and the medical professional identity, which has a negative impact on their attitude towards, interest in and knowledge of geriatrics. Furthermore, this study yielded the important role of the hidden curriculum on professional identity, the novelty of geriatric-specific problems to students, the importance of educational approach and good role models.

Introduction

Given our aging population, most doctors will likely serve the healthcare needs of frail older patients at some point, and will, therefore, need a basic set of geriatric assessment and care competencies. However, geriatrics has traditionally been an unpopular field, despite the high job satisfaction reported among geriatricians.¹⁻³ Moreover, doctors often feel overwhelmed by the complexity of problems presented by geriatric patients⁴, and many medical students lack a positive attitude towards older patients.^{1, 3, 5, 6} At the same time and possibly related to this, the number of medical students enrolling in geriatrics is insufficient, especially considering the growing demands of our ageing society.

Recently, the Association of American Medical Colleges established minimum geriatric competencies for medical students.⁷ Every graduating physician must meet these minimum geriatric competencies. However, despite this recent effort to address society's pressing demand for doctors with basic geriatric assessment competencies and to improve attitudes among doctors towards older patients, only a few medical schools have a mandatory clerkship in geriatrics, or some other geriatric-specific training program.^{8, 9} Currently, little is known about how education can positively influence attitude towards older persons and about how young doctors take more interest in the field of geriatrics and care for older persons.^{10, 11} To achieve such improvements, insight is needed into educational methods that will appeal to students and that will improve their attitudes towards, and interest in as well as knowledge about geriatrics and care for older persons.

The process of shaping knowledge, values and behaviours takes place at different levels throughout the course of a student's education: at the formal education level; course catalogs, class syllabi, lectures, notes and handouts, and at the informal level of the so called "hidden curriculum" ; learning that occurs by means of informal interactions among students, faculty, and others and/or learning that occurs through organizational, structural, and cultural influences intrinsic to training institutions. It is through this hidden curriculum that students are socialized to clinical practice and where their professional identity is shaped.¹²⁻¹⁴ Our discussion here examines how medical students' attitudes towards, and interest in geriatrics and care for older persons are shaped by various factors, including both the formal and hidden curriculum.

Student narrative reflection essays provide a rich source of information about the impact of both the formal and hidden curriculum, and are a potential substrate for curricular enhancement.^{15, 16} We hypothesized that student narrative reflection essays would help identify students' preconceptions and image of geriatrics and care for older persons and geriatrics education. To this end, we

asked third-year medical students, who had taken a four-week geriatric course, to write a narrative reflection essay about their experiences in the course and their thoughts on geriatrics and care for older persons before and after the course. The course in question was new and combined traditional teaching methods with a recently developed medical educational game called GeriatricX.¹⁷ After analyzing the essays, we held focus group interviews to elaborate and clarify the elements that emerged from the essays. This study specifically seeks to explore the preconceptions and image of delivering medical care for frail older persons from the students' perspective in order to identify elements that can be useful in education in improving attitudes towards, interest in and knowledge about geriatrics. We argue that when it is clear which elements are responsible for improving attitudes towards, interest in and knowledge about geriatrics, they can be used to adjust medical curricula to deliver geriatric competent young doctors.

Methods

Participants

The subjects of this study were students who have taken a four-week elective course in geriatrics over two consecutive years (September 2012 and 2013) at the Radboud University Medical Center, Nijmegen. Students complete a total of five electives during their three years of pre-clinical training. In each period, students can choose from several courses; however, for practical reasons, students are not always placed in their first-choice elective. Every elective course teaches 15-20 students at a time. The year cohort consists of 300 students.

Thirty-six students (100%) (age 22.4 ± 1.3 , 21 males/ 15 females) wrote a narrative reflection essay. Of that group, 17 students (age 22.9 ± 1.9 , 12 males/5 females) participated in the focus group interviews.

The elective course

The main goals of the geriatrics elective course are to increase students' knowledge regarding key geriatric topics and to improve their attitude towards elderly patients, using a combination of teaching methods e.g. interactive lectures, group discussions, bedside teaching and gaming (educational serious game). Table 1 shows an outline of the course.

Narrative reflection essays

A total of 36 students, were asked to write a narrative reflection essay specifically about their preconceptions and perception of geriatrics and care for older persons

Table 1 Outline of the four-week elective geriatrics course

	Monday	Tuesday	Wednesday	Thursday	Friday
Week 1	Lectures Self-study Become familiar with serious game	Lectures Play the serious game	Lectures Self-study Visit patients	Geriatric assessment of patient cases Self-study	Journal club Play serious game
Weeks 2 and 3	Students work on their serious game case together in small groups of five students each, working under the supervision of a geriatrician or general practitioner who specializes in elderly care. Self-study and journal clubs to discuss evidence-based geriatrics, guidelines, and geriatric assessment.				
Week 4	Write reports regarding patient cases (geriatric assessment), working with the guidelines and serious game cases. All student groups play each developed game case.			Knowledge exam (individual)	Oral presentation of the serious game cases

before and after the course. Students received a few supportive questions to guide them in their reflection essay; Which parts of the course (content and education type) were motivating and stimulating and which parts not?; Why were these stimulating and motivating or not?; What happened to your attitude towards geriatrics before and after the course? Length of the reflection essays was 500-750 words.

Data analysis

The essays were analyzed, using the constant comparative analysis technique.¹⁸ Two researchers MP and EK first familiarized themselves with the data. They then applied open coding, a process of breaking down, examining and comparing, thereby conceptualizing and categorizing the data (explorative phase). During the subsequent axial coding, data were placed together again in new ways after open coding. This was done by making connections between categories and with a view to defining the important elements of the information (specification phase). Following that, selective coding was used at the highest level of abstraction, in which the core variable guided further relevant coding, and the data were sought for invalidating themes (reduction phase).

The two researchers discussed the initial coding and consulted a third researcher AL wherever disagreements or doubts arose about focal themes. All reflections and interviews were analyzed separately by the first two researchers. The congruence was >95% in all cases. In the small percentage of difference

or disagreement the third researcher was consulted and these differences or disagreements were resolved by consensus.

Interpretation of the focal themes was discussed among the research team. Analysis processing was supported by Atlas.ti version 6.2 software.

Focus group interviews

The content analysis of the essays was used to develop an interview guide for the focus group interviews. This interview guide was generic and concentrated on elaborating the themes that emerged from the essays. We chose focus groups to examine more in-depth the elements that emerged from the narrative reflection essays and to draw on group interaction, which encourages participants to explore and clarify their views more in detail. To enable all participants to contribute substantially to the discussion, the groups were kept relatively small (4-8 individuals), yet large enough to stimulate discussion and produce new insights.¹⁹

The focus group interview moderator was a general practitioner and lecturer with extensive experience in moderating focus groups; a researcher MP observed the interviews. The focus group moderator had no relationship with the students. The focus group interviews were audio-taped and transcribed verbatim. One researcher made field notes EK, and another researcher MP listened to the recordings to double-check the accuracy of the transcripts, and make any necessary corrections.

In total, three focus group interview sessions were held. The focus group transcripts were analyzed with the same technique used for the narrative reflection essays. Quotations are used to support our findings (NR= narrative reflection essay quote, FG=focus group quote).

All participating students gave informed consent, and received a box of chocolates to thank them for their contributions. According to Dutch legislation, no ethics committee approval is necessary for analyzing essays and interviewing students on their thoughts and opinions. The study was approved by the education-management committee of our faculty. Participation in the study was voluntarily and students could withdraw at any moment without consequence. The reflection essays were blinded before analysis.

Results

Only five of the 36 students participating in the geriatrics course, had signed up for the course as their first-choice elective. From the 17 students participating in the focus group interviews, 2 students had the course as their first-choice elective.

All 36 students who wrote essays agreed to participate in the focus groups. Due to logistics (course schedule conflicts), 17 students actually participated in the focus groups to elaborate and clarify the elements that emerged from the essays. Data saturation was reached in the third interview.

Overarching themes

Four overarching themes that influenced students' perspectives on geriatrics and care for older persons appeared in some way in virtually every student's reflection essay (Table 2): 1. Professional identity; 2. Perception of geriatrics and care for older persons; 3. Geriatric-specific problems; 4. Learning environment.

Table 2 Overarching themes from Narrative Reflections

Theme	Different topics
Perception of geriatrics and care for older persons	<ul style="list-style-type: none"> - Complexity of care for older persons - Relevance of geriatrics and care for older persons - Difficulty of non-sufficient disease guidelines
Geriatric-specific problems	<ul style="list-style-type: none"> - Frailty - Emphasis on quality of life - Cost-consciousness
Learning environment	<ul style="list-style-type: none"> - Practice based learning - Appealing teaching - Serious gaming - Meeting a researcher - Team work - Using a real patient case
Professional identity	<ul style="list-style-type: none"> - seeing oneself in the role of doctor - Ideas about geriatrics and care for older persons

Professional identity

Several students reported that this geriatrics course changed their perception of medical practice in this field and its professional identity. Most students had pre-conceived ideas about what it is like to be a doctor, and started medical school with an idealized image of medical practice. They envisioned themselves heroically saving all patients, an image engendered in part by the fictional doctors in television shows, such as "Grey's Anatomy" and "ER".

"We're the Grey's Anatomy generation...." FG

When the students first enrolled in medical school, they saw being a doctor as a combination of studying the human body, biology, solving difficult puzzles, interacting with patients, helping them and curing them.

"I wanted to be a doctor because I find people and the process of diagnosis fascinating."(FG)

"It's an exciting profession... with a lot of variety... and offers the chance to help people by thinking through their problems....I wanted to know more about the human body..." (FG)

During medical school, the students came to realize that being a doctor is much more complex than they had envisioned. In daily practice, figuring out the puzzle and solving problems are only aspects of the job. Moreover, curing is not always an option.

"Yes, I think effective treatment involves more than just the technically appropriate treatment...." (FG)

"...I think there are a lot of chronic patients in every sub-field. In that regard, my personal impression of being a doctor may have differed in the beginning from the actual reality of practicing medicine." "I did not realise there are so many older patients..."(FG)

On entering medical school, hardly any of the students had thought about becoming a geriatrician; some had never even heard of the field. After participating in this course, the students discovered that geriatrics includes many of the aspects of being a doctor that were important to them. In addition, the students realized that almost every doctor will face older patients later and will need to know how to deal with the complexity of their care. The geriatrics course also changed the students' perspective on medicine from heroism and cures to more emphasis on care and quality of life.

"For me personally, I think it adjusted my views more. At first, I had a really stale image of geriatrics.... But once you've finished this course, you have a better idea of what it is and realize that it really is more interesting than you thought." "...but for me, I don't know if I want to do this every day.." (FG)

"In medicine, curing a disease is often the ideal ultimate goal. In geriatrics, however, the focus is not so much the 'cure' as it is the 'care'...." (NR)

"... Comparing this field to cardiology, I feel like it presents ... an enormous challenge with older patients. A cardiologist has four pills and a choice between rhythm control and rate control, so to speak." (FG)

Perception of geriatrics and care for older persons

For many students, this geriatrics course was their first clinical exposure to geriatric patients, as well as their first educational experience with geriatrics. Most of the students were not sure what to expect and a large number anticipated a frustrating and boring course. Their opinion about geriatrics changed during the course from daunting to rather interesting. One of the influencing factors, which made the course attractive, was that geriatrics became tangible.

*“Over the past three years, my interests have definitely not included geriatrics However, this course was an enjoyable, positive introduction to geriatrics.”
(NR)*

Some students found the complexity and difficulty of geriatrics daunting. Although that remained a concern after the course, they were relieved to discover that small interventions can make a large difference in patients' lives.

Disease-specific guidelines are often insufficient for frail older patients with multiple diseases, which made the students realize the importance of considering all of a patient's conditions in treatment and of individually weighing all treatment decisions. This realization helped to transform the complexity of care from a daunting prospect to an attractive puzzle. Interactions with real and very diverse patients and the occasional chance to overrule guidelines to remain patient-centred had a positive effect on attitudes towards older patients in general.

“I used to assume that treatment, as a rule, was based on the same medical principles and only required some adjustments for older patients. But this geriatrics course taught me that it's much more complicated than that.” (NR)
“... There's no real predominant cause. It's a combination of things to deal with.... And yes, there are those small measures that can help.” “...but for me, not being able to cure is difficult...” (FG)
“One thing I never really thought about before this course was the diversity among ‘the elderly.’” (NR)

Geriatric-specific problems

The concept of frailty was new to many students; most were unfamiliar with the practice of asking patients about their quality of life or the need to consider the costs of various medical treatments. The students gained basic knowledge about important geriatric problems, termed the “geriatric giants”²⁰. The geriatrics course allowed the students to integrate medical knowledge, evidence-based medicine and patient perspectives.

“What really struck me was that geriatric patients often present a complex pattern of multi-morbidity and polypharmacy.”(NR)

“Another thing that stood out in this field is how much more consideration is given to the patients’ personal preferences and the question of what measures are worth taking from a medical perspective. In other words, should we treat every single bout of pneumonia?” “Yeh, this course made me think about medical futility and what does a patient really thinks is important.... But I also would have liked more in depth knowledge about for example the geriatric giants.. 4 weeks is too short....”(FG)

Learning environment

Students recognized the influence of teacher role models on their learning. Effective teaching increased students’ enthusiasm for geriatrics. During the interviews, students were very emphatic about their opinion that teachers make all the difference. The teachers were young at heart, enthusiastic, friendly, skilful and student-centred. They taught with passion, created an active environment that made classes more interesting, and were always willing to re-explain difficult concepts from different angles. Another factor of positive influence on the students was the small scale of the course. A small pool of teachers returned multiple times for different course sections.

“All the different course components were very well coordinated. The supervisors were also enthusiastic and easy to approach, which created a highly interactive and very enjoyable environment for course participation.”(NR)

“... The lecturers were teaching this course because they enjoyed it.... And, seeing that enthusiasm on their part, I became more interested in the subject.” “...geriatrics in the title of an elective doesn’t attract students in the first place, haha....” (FG)

Different teaching methods were also recognized as powerful tools to increase student engagement. During the course, students used a real-life patient case as a starting point for discussions with a researcher about evidence-based medicine. In addition, they played the medical educational game GeriatriX. Students found this game inspiring, as it enabled them to combine all their newly acquired knowledge in a safe, practice-based digital environment.

“I really liked the GeriatriX game. It allows you, as a student, to weigh the decisions you’re going to face later as a doctor. Do you follow the guidelines blindly? What factors will you consider in choosing a course of treatment? How do you communicate your treatment choices to colleagues? What does

the patient want? What do you consider important as a doctor? ... It was like solving a type of puzzle. The patient visits you with a problem, and now it's up to you to figure it out. It's theory translated into practice!" (NR)

"... It was a very modern approach to teaching, with the chance to take your own initiatives.... I mean the game ... it was fun."(FG)

Meeting and talking to real patients with real problems gave the students a framework for their theoretical knowledge, and also clarified aspects of the importance of patient-centred care.

"You learn about a whole host of things at the same time, including about communication and medical technology. What's more, you discover that real patients aren't a perfect match with the textbook descriptions."FG

Discussion

This study examined geriatrics and care for older persons from the perspective of medical students to explore the image of delivering medical care for frail older persons in order to identify elements that can be useful in education in improving attitudes towards, interest in and knowledge about geriatrics. One of the most striking findings was that students have an unrealistic impression of clinical practice and the professional identity of this field of medicine, which negatively influences their knowledge of and attitudes towards geriatrics. Our multi-method study design enabled us to obtain highly detailed and nuanced descriptions, as well as insight into the factors that influence students' perspectives on geriatrics. Our study design also helped us to identify four overarching focal themes. In addition to professional identity, these themes included: perception of geriatrics and care for older persons; geriatric-specific problems; and learning environment.

Professional identity

This study clearly demonstrates that students have preconceptions about medical practice and shows that professional identity plays a large role in the negative attitude towards geriatrics. The inaccurate image of what it is like to be a doctor has a number of implications. Not only does it lead to a false impression of geriatrics, it may also affect specialization choices after graduation.²¹ Ongoing efforts to revise medical curriculums should, therefore, not only focus on geriatrics education, but also on the wide range of ritual behaviours, assumptions and commonly held beliefs regarding geriatrics, care for older persons and professional identity. Both the formal and hidden curriculum play a significant

role in how students perceive this professional identity. Inconsistencies between what is taught in the formal curriculum and what students experience in the ritual behaviours, assumptions and commonly-held beliefs of their fellow students and clinician-teachers (the hidden curriculum) creates tension in the process of forging a sense of their professional identity. Earlier research has found indications of the powerful influence of the hidden curriculum and presumptions about older patients¹. There is also some literature on the influence of the attitudes of senior physicians and the organization of the medical system on perceptions about geriatrics.^{1, 13, 22} This study demonstrates that narrative reflection essays can reveal influential elements in the hidden curriculum and that clarifying the statements about these elements in focus group discussions can provide a substrate for altering these hidden curriculum effects.

Perception of geriatrics and care for older persons

By and large, the participants entered the course anticipating a boring and frustrating experience. Interestingly, however, the students were also initially unable to draw up a clear description of what geriatrics generally entails. Evidently, *unfamiliarity* can also breed contempt. Presumptions about geriatrics as a specialty (medically unrewarding or unchallenging) were intertwined with negative perceptions of older people and care for older persons in general. Possibly, the emphasis on youth and anti-aging in medicine and society plays a role in these presumptions.^{23, 24} Several students mentioned that they feared the complexity of the problems presented by geriatric patients. It is known that students and physicians tend to feel overwhelmed by the complexity of geriatrics.^{5, 6} During the geriatrics course, however, the students interacted with real and very diverse patients, and they received their first introduction to patient-centred care. Earlier research has shown that interaction with healthy older individuals can alter student perceptions of older persons.²⁵ Another study, where students met older patients in retirement facilities, also showed a positive attitude shift.²⁶ Our study has demonstrated that a short, four-week geriatrics course can change the perception of geriatrics and care for older persons by invalidating presumptions and demystifying its complexity.

Geriatric-specific problems

We also found that the lack of knowledge about geriatrics and specific geriatric problems and concepts, such as “frailty,” may lead to assumptions that geriatrics is an uninteresting, or unrewarding field.^{11, 27} For most students, the experience of asking patients about their quality of life, or discussing economic aspects of care were also new. The course gave them the opportunity to integrate medical knowledge with other aspects of medical care, a task that they found challenging.

The students' experience of gaining more insight into geriatric-specific problems had a positive effect on their perceived knowledge and attitudes towards geriatrics, which strongly substantiates a case for a more integrated approach to geriatrics education. It is known that an increase in knowledge tends to foster positive attitudes towards a given subject.^{7, 28}

Learning environment

This study also highlights the importance of role models with whom students can identify. New in our study was the finding that students had the presumption that geriatricians and elderly care physicians are old and boring, and that the complexity of problem solving in care for older persons is overwhelming to them. Several students mentioned that the lecturers, who were all practicing clinicians, made all the difference. Enthusiastic, skilled lecturers created an active learning environment that had a positive influence on the students' knowledge of and attitudes towards geriatrics in general and geriatric specialties. This finding falls in line with several other studies that have demonstrated the importance of role models for professional identity.²⁹⁻³¹ In addition, the students commended the small scale of the course and the use of the educational game GeriatriX.¹⁷ Positive role models who are able to build relationships with their students, small-scale courses and appealing teaching methods, all are known to positively influence students' attitudes towards geriatrics.^{5, 9, 32-35} Moreover, the students felt that this combination significantly increased their knowledge about geriatrics. A recent study about designing education to improve care supports this concept.³⁶ Most medical faculty, however, receive little training on how to be effective teachers.^{35, 37} This study emphasizes the importance of combining effective teaching, graded in complexity with appealing role models who build relationships with their students.

Strengths and limitations

Our study has four major strengths. First, our analysis is based on qualitative data from all 36 students in the geriatrics course. We gave the students freedom to express their thoughts by only giving them a few supportive questions. Reflection essays are an effective tool for identifying important themes, it allows learners to "think about thinking".³⁸ Secondly, our study gave students the opportunity to elaborate their thoughts in focus group discussions in which all students also agreed to participate. Due to course schedule conflicts, only 17 students were able to attend the focus group sessions. The 17 focus group participants did not differ in age and gender from the entire group of 36 and the proportion of students who had this course as a first choice course was the same. The three focus groups were large enough to clarify in detail all the themes from the narrative reflection essays as we reached data saturation. However, in the focus

groups the themes from the reflection essays were elaborated, possibly increasing already existing positive feelings towards the topic. The moderator of the focus groups had no relationship with the participating students or with the curriculum, minimising power imbalance and securing a safe environment. The third strength was the low number of students who signed up for the geriatrics course as their first-choice elective. Consequently, our results are not likely to be biased by the inclusion of students with an *a priori* positive attitude towards geriatrics. In general, geriatrics is not a popular specialty among students. Therefore, the fact that relatively few students signed up for the course as their first-choice elective suggests that the group of course participants likely represents the entire student population.^{11,39} Finally, the male-female distribution of participants was about equal, thus levelling gender differences.⁴⁰

On the other hand, our study also presents a number of limitations. First, this study was confined to one medical school and all students were third-year Bachelor's students of roughly the same age. However, the results of the two consecutive courses were comparable. Secondly, the male-female distribution was about equal, whereas most medical schools currently have far more female students. Therefore, the equal male-female distribution is not representative of the student bodies of Dutch medical schools. In addition, the qualitative structure of our study gave all students the space to formulate their thoughts and can be used as a starting point for further study. However, writing the reflection essays and participating in focus groups can positively influence engagement of the students with the subject.³⁸ A possible bias in the results is that students may have written social desirable reflections. Though, participation was voluntary and we specifically addressed this possibility in the focus groups. Thirdly, we do not know the long- term effects or sustainability of the positive shift in attitude towards geriatrics and care for older persons. However, the students gave us important pointers for improving geriatrics education, and better education is known to have a positive influence on attitudes and knowledge.^{8,9}

Conclusions and implications for geriatrics education

While a large number of studies have focused on negative associations with geriatrics and care for older persons, this study seeks to understand the perceptions of students towards geriatrics. Our most important finding was that students lack a realistic perception of clinical practice and professional identity, which negatively influences their image of geriatrics. Our study clearly shows that teaching students the complexity of clinical practice and professional identity, instead of focusing on cures and diseases, helps them to develop a more positive attitude towards geriatrics.

On examining the students' perspective of geriatrics, four key findings emerged. First, it is important to acknowledge that the hidden curriculum has a significant influence on professional identity and the preconceptions about geriatrics and care for older persons. Secondly, geriatric-specific problems, such as frailty, are complex and novel to medical students. Thirdly, the approach to teaching is important and appealing role models are absolutely vital in geriatric education. Finally, narrative reflection essays, combined with clarifying, in-depth focus group discussions, can be used as an educational tool to influence students' image of and preconceptions about a certain topic, in this case geriatrics and care for older persons.

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References

1. Higashi RT, Tillack AA, Steinman M, Harper M, Johnston CB. Elder care as “frustrating” and “boring”: Understanding the persistence of negative attitudes toward older patients among physicians-in-training. *J Aging Stud.* 2012;26(4):476-83.
2. Shah U, Aung M, Chan S, Wolf-Klein GP. Do geriatricians stay in geriatrics? *Gerontol Geriatr Educ.* 2006;27(1):57-65.
3. Haley WE, Zelinski E. Progress and challenges in graduate education in gerontology: the U.S. Experience. *Gerontol Geriatr Educ.* 2007;27(3):11-26.
4. Nilsson A, Lindkvist M, Rasmussen BH, Edvardsson D. Staff attitudes towards older patients with cognitive impairment: need for improvements in acute care. *J Nurs Manag.* 2012;20(5):640-7.
5. Drickamer MA, Levy B, Irwin KS, Rohrbaugh RM. Perceived needs for geriatric education by medical students, internal medicine residents and faculty. *J Gen Intern Med.* 2006;21(12):1230-4.
6. Lun MWA. Student Knowledge and Attitudes Toward Older People and Their Impact on Pursuing Aging Careers. *Educational Gerontology.* 2011;37(1):1-11.
7. Leipzig RM, Granville L, Simpson D, Anderson MB, Sauvigne K, Soriano RP. Keeping Granny Safe on July 1: A Consensus on Minimum Geriatrics Competencies for Graduating Medical Students. *Acad Med.* 2009;84(5):604-10.
8. Tullo ES, Spencer J, Allan L. Systematic review: helping the young to understand the old. Teaching interventions in geriatrics to improve the knowledge, skills, and attitudes of undergraduate medical students. *J Am Geriatr Soc.* 2010;58(10):1987-93.
9. Atkinson HH, Lambros A, Davis BR, Lawlor JS, Lovato J, Sink KM, et al. Teaching medical student geriatrics competencies in 1 week: an efficient model to teach and document selected competencies using clinical and community resources. *J Am Geriatr Soc.* 2013;61(7):1182-7.
10. Nanda A, Farrell TW, Shield RR, Tomas M, Campbell SE, Wetle T. Medical Students’ Recognition and Application of Geriatrics Principles in a New Curriculum. *J Am Geriatr Soc.* 2013;61(3):434-9.
11. Campbell JY, Durso SC, Brandt LE, Finucane TE, Abadir PM. The Unknown Profession: A Geriatrician. *J Am Geriatr Soc.* 2013;61(3):447-9.
12. Hafferty FW. Beyond curriculum reform: confronting medicine’s hidden curriculum. *Acad Med.* 1998;73(4):403-7.
13. Gaufberg EH, Batalden M, Sands R, Bell SK. The hidden curriculum: what can we learn from third-year medical student narrative reflections? *Acad Med.* 2010;85(11):1709-16.
14. White CB, Kumagai AK, Ross PT, Fantone JC. A Qualitative Exploration of How the Conflict Between the Formal and Informal Curriculum Influences Student Values and Behaviors. *Acad Med.* 2009;84(5):597-603.
15. Karnieli-Miller O, Vu TR, Holtman MC, Clyman SG, Inui TS. Medical students’ professionalism narratives: a window on the informal and hidden curriculum. *Acad Med.* 2010;85(1):124-33.
16. Fischer MA, Harrell HE, Haley HL, Cifu AS, Alper E, Johnson KM, et al. Between two worlds: a multi-institutional qualitative analysis of students’ reflections on joining the medical profession. *J Gen Intern Med.* 2008;23(7):958-63.
17. van de Pol MH, Lagro J, Fluit LR, Lagro-Janssen TL, Olde Rikkert MG. Teaching Geriatrics Using an Innovative, Individual-Centered Educational Game: Students and Educators Win. A Proof-of-Concept Study. *J Am Geriatr Soc.* 2014;62(10):1943-9.
18. Glaser BG, Strauss AL. *The discovery of grounded theory; strategies for qualitative research.* Chicago,: Aldine Pub. Co.; 1967. x, 271 p. p.
19. Kitzinger J. Qualitative research. Introducing focus groups. *BMJ.* 1995;311(7000):299-302.
20. Sherman FT. The geriatric giants. Don’t miss their footprints! *Geriatrics.* 2003;58(4):8.
21. Scott A. Getting the balance right between generalism and specialisation - does remuneration matter? *Aust Fam Physician.* 2014;43(4):229-32.
22. Thomas DC, Leipzig RM, Smith LG, Dunn K, Sullivan G, Callahan E. Improving geriatrics training in internal medicine residency programs: best practices and sustainable solutions. *Ann Intern Med.* 2003;139(7):628-34.

23. Estes CL, Binney EA. The Biomedicalization of Aging - Dangers and Dilemmas. *Gerontologist*. 1989;29(5):587-96.
24. Nelson TD. Ageism: Prejudice Against Our Feared Future Self. *J Soc Iss*. 2005;61(2):207-21.
25. Shue CK, McNeley K, Arnold L. Changing medical students' attitudes about older adults and future older patients. *Acad Med*. 2005;80(10 Suppl):S6-9.
26. Hsieh C, Arenson CA, Eanes K, Sifri RD. Reflections of medical students regarding the care of geriatric patients in the continuing care retirement community. *Journal of the American Medical Directors Association*. 2010;11(7):506-10.
27. Bragg EJ, Warshaw GA, Petterson SM, Xierali IM, Bazemore AW, Phillips RL, Jr. Refocusing geriatricians' role in training to improve care for older adults. *Am Fam Physician*. 2012;85(1):59.
28. Chang A, Fernandez H, Caya D, Chheda S, Paniagua M, Eckstrom E, et al. Complexity in Graduate Medical Education: A Collaborative Education Agenda for Internal Medicine and Geriatric Medicine. *J Gen Intern Med*. 2014.
29. Bandura A. Social-Learning through Imitation of Adult Models. *Am J Orthopsychiatry*. 1962;32(2):290-1.
30. Egnaw TR, Wilson HJ. Faculty and medical students' perceptions of teaching and learning about the doctor-patient relationship. *Patient Educ Couns*. 2010;79(2):199-206.
31. van de Pol MH, van Weel-Baumgarten EM. Challenges in communication during clerkships: a case report. *Med Teach*. 2012;34(10):848-9.
32. Benbassat J. Role Modeling in Medical Education: The Importance of a Reflective Imitation. *Acad Med*. 2014;89(4):550-4.
33. Passi V, Johnson S, Peile E, Wright S, Hafferty F, Johnson N. Doctor role modelling in medical education: BEME Guide No. 27. *Med Teach*. 2013;35(9):E1422-E36.
34. Friedman LS. Becoming a clinician-educator: lessons learned. *Gastroenterology*. 2014;146(3):599-601.
35. Sutkin G, Wagner E, Harris I, Schiffer R. What makes a good clinical teacher in medicine? A review of the literature. *Acad Med*. 2008;83(5):452-66.
36. Armstrong G, Headrick L, Madigosky W, Ogrinc G. Designing education to improve care. *Joint Commission journal on quality and patient safety / Joint Commission Resources*. 2012;38(1):5-14.
37. Srinivasan M, Li ST, Meyers FJ, Pratt DD, Collins JB, Braddock C, et al. "Teaching as a Competency": competencies for medical educators. *Acad Med*. 2011;86(10):1211-20.
38. Sandars J. The use of reflection in medical education: AMEE Guide No. 44. *Med Teach*. 2009;31(8):685-95.
39. Haley WE, Zelinski E. Progress and challenges in graduate education in gerontology: the U.S. Experience. *Gerontol Geriatr Educ*. 2007;27(3):11-26.
40. van Tongeren-Alers M, van Esch M, Verdonk P, Johansson E, Hamberg K, Lagro-Janssen T. Are new medical students' specialty preferences gendered? Related motivational factors at a Dutch medical school. *Teaching and learning in medicine*. 2011;23(3):263-8.

5

Expert and patient consensus on a dynamic model for shared decision- making in frail older patients

This chapter is based on:

Expert and patient consensus on a dynamic model
for shared decision-making in frail older patients

van de Pol, Marjolein H.J.

Fluit, Cornelia R.M.G.

Lagro, Joep

Slaats, Yvonne H.P.

Olde Rikkert, Marcel G.M.

Lagro-Janssen, Antoine L.M.

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Abstract

Objective Shared decision-making (SDM) is widely recommended as a way to support patients in making healthcare choices. Due to an ageing population, the number of older patients will increase. Existing models for SDM are not sufficient for this patient group, due to their multi-morbidity, the lack of guidelines and evidence applicable to the numerous combinations of diseases. The aim of this study was to gain consensus on a model for SDM in frail older patients with multiple morbidities.

Methods We used a three-round Delphi study to reach consensus on a model for SDM in older patients with multiple morbidities. The expert panel consisted of 16 patients (Round 1), and 59 professionals (Rounds 1-3). In Round 1, the SDM model was introduced, rounds 2 and 3 were used to validate the importance and feasibility of the SDM model.

Results Consensus for the proposed SDM model as a whole was achieved for both importance (91% panel agreement) and feasibility (76% panel agreement).

Conclusions SDM in older patients with multiple morbidities is a dynamic process. It requires a continuous counselling dialogue between professional and patient or proxy decision maker.

Implications The developed model for SDM in clinical practice may help professionals to apply SDM in the complex situation of the care for older patients.

Introduction

Shared decision-making (SDM) is widely recommended by many professionals as a way to support patients in making healthcare choices.¹⁻⁴ In SDM professionals and patients share their knowledge, values and preferences about healthcare choices and, together, they explore beneficial solutions. Thereby, final decisions will be more congruent with patient preferences. SDM is fundamental to informed consent and patient-centred care, it increases patients'- and professionals' satisfaction, improves quality of life and clinical outcomes, and also creates a stronger doctor-patient relationship.⁵

In recent years, a large number of studies have been conducted on methods for implementing SDM in medical settings.⁶ Elwyn *et al.* developed one of the best known models for SDM, in which three phases are distinguished: 1. 'Choice talk', exchanging information and announcing that a decision must be made, 2. 'Option talk', discussing various treatment options, including benefits and harms, and 3. 'Decision talk', reaching a decision together, based on patients' informed preferences.² This model is particularly helpful accomplishing preference-sensitive treatment decisions in the medical curative setting, especially for patients with a single condition, and with a limited number of preference-sensitive treatment options, such as breast or prostate cancer. The decision making process only then starts after completing the diagnostic phase, it is confined to the treatment phase of the consultation.

Due to an ageing population, the number of patients with multi-morbidity and impairments will increase, which complicates patient management.^{7, 8} Moreover, in complex care situations for older patients with multi-morbidity, a goal-oriented approach towards shared decision-making is more advisable than the traditional disease-oriented and technology-focused approach.⁹⁻¹² In a goal-oriented approach the focus lies on the patient's most pressing issues, rather than on the underlying diseases. However, physicians are often overwhelmed by the complexity in caring for frail older patients.^{13, 14} This process is complicated, because most guidelines are not developed for this patient category, standardised diagnostics or treatments are seldom available and life expectancy may be short.^{11, 15, 16} Relatively little research has focused on SDM in chronic conditions.^{17, 18} Besides this, most research on SDM is focused on applying SDM in the second half of the consultation, when treatment options are considered.^{1, 4, 19, 20}

For starting a decision-making process in frail older patients, prioritising the most urgent problem is essential. Furthermore, the decision-making process can start as early as the diagnostic phase and must be tailored to the patients' personal situation.^{13, 14, 21} Moreover, it is known that participating in SDM can be

difficult for more vulnerable patient categories and information should be tailored to their specific needs and personal situation.^{12, 22-26} Therefore, existing models for SDM -that are developed for medical treatment decision making about a single condition- are difficult to apply in frail older patients with multi-morbidity and complex care situations.

The aim of this study was to develop and gain consensus on a model for SDM in frail older patients with multi-morbidity. To this end, a model was developed based on the model of Elwyn *et al.*, the existing literature about shared decision-making with vulnerable patient groups and the experiences of physicians in the consulting room.^{2, 6, 9-11, 14, 21} The model was presented to an expert panel using a Delphi study design. This paper reports the views of the expert panel and the resulting consensus on a model for SDM in frail older patients with multi-morbidity.

Methods

Between May 2014 and January 2015, a Delphi study was conducted to reach consensus on a developed model for shared decision making in frail older patients.^{27, 28} The Delphi method has been used widely in health research to obtain consensus on a given issue, especially when scientific knowledge is lacking. It consists of several questionnaires or 'rounds' which are sent to experts to collect information about a specific issue to reach consensus or gain understanding. Questionnaires are filled in anonymously and individually to avoid domination of the consensus process by one or a few experts. The definition of 'expert' in this method is related to theoretical knowledge, as well as knowledge from experience. The results from each round were summarised and a next questionnaire was developed, based on the most important results of this round. Rounds were held until consensus was reached.^{29, 30}

A model for shared decision making in frail older patients with multi-morbidity

A model was developed based on the model of Elwyn *et al.*, the existing literature and the experiences of physicians in the field of elderly care, geriatrics and SDM.^{2, 6, 9-11, 14, 16, 21} Physician experiences were gathered by a researcher (MvdP) through discussions with physicians (self-report of consultation behaviours). The model started with a preparatory step to identify the preferred role of the patient in the SDM-process and to prioritise problems (Table 1).

Table 1 Concept model for shared decision making in older patients with multiple morbidities

Phase	Step
Preparation (Preparation talk)	Preliminary work: History. <i>Has the patient previously discussed or documented anything with regard to treatment in general or on specific issues (e.g. resuscitation)?</i>
	Preliminary work: Problem analysis by the care professional.
	<i>Have all the patient's problems been outlined sufficiently? How do these problems relate to the problems about which a decision must be made?</i>
	Start the conversation. During the conversation, identify the role of your discussion partner and any observers.
	<i>Which roles would the patient and the physician like to have in the decision-making process? Who will make the decisions in this conversation (patient, representative/caregiver, doctor)? Is an observer present (e.g. nursing auxiliary, other relatives)?</i> Ask about outlook on life and perceptions.
Announcing the choice (Choice talk)	<i>What role does outlook on life, beliefs or faith, play in the decision-making process?</i> <i>How does the patient perceive this conversation?</i>
	List the possible treatment and other objectives, including those not specifically medical in nature (e.g. in the area of well-being).
	<i>independence, living arrangements, health-related objectives, people with chronic illness: altered perspective</i>
	State that a decision must be made.
	Offer choice for the problem at hand and provide justification for them. Assess how the patient reacts to the choice of options, and support the patient in weighing the options.
Discussing the options (Option talk)	Check to determine what the patient has understood from the discussion, up to this point, and use the preceding steps to compile a list of treatment options (taking into account the identified (treatment) objectives).
	Describe the treatment options, including the advantages and disadvantages, using decision aids (if available). Provide a summary of the treatment options.
Deciding (Decision talk)	Focus on the preferences of the patient and make a decision with the patient/representative.
	Prepare a treatment plan based on this decision.

The Delphi panel: patients and professionals

For the expert panel in this study, 16 patient experts (Round 1) and 59 professional experts (Rounds 1-3) were invited to participate. The patient group consisted of ten home-dwelling and six elderly care home patients aged over 65 years, without cognitive impairments. The multiple morbidities burden of the patients was classified by calculating their age-adjusted 'Charlson Comorbidity Score' (CACI score). CACI scores assign different weights to patients' comorbidities. The higher the score, the frailer the patient is. Scores of ≥ 3 are related to high mortality rates.^{31, 32} Professional experts were healthcare professionals active in the field of geriatrics and care for older persons, SDM research, medical education, or a combination of these.

All patients came from the Netherlands. The professionals were from Europe and North- America/Canada.

Design and analysis

A Delphi study with three iterative rounds was conducted, using Dutch as well as the English language. In the first round, all the experts were invited to participate. The patients were invited personally by the Researcher at a meeting of the 'Dutch Patient Platform'.³³ Patients were considered eligible when 65 years or older and having one or more chronic disease, but without cognitive impairment. The professionals were identified on their expertise in the field and invited via email. After invitation, all experts received a letter or email informing them of the purpose of the study, stating the voluntary nature of the study, the process and the estimated time it would take. It was also explained that responses would be confidential and that agreeing to participate was considered as informed consent. Those who agreed to participate received an email containing a hyperlink to the online Delphi questionnaire. Subsequent emails with hyperlinks to the questionnaires of Rounds 2 and 3 were sent to the same pool of experts. In all rounds, non-responders received two reminders by email. Patients received an adjusted version of the Delphi questionnaire in lay-terms. Patients were only invited to participate in Round 1, which was exploratory in nature. Details of each round are outlined below.

According to Dutch legislation, no ethics committee approval is necessary for a Delphi study. Participation was voluntary, participants could withdraw from the study at any time, without reason.

Round 1

Round 1 was exploratory in order to identify relevant components for SDM in frail older patients with multi-morbidity. A questionnaire with semi-structured questions was used. Firstly, a case of a patient with multi-morbidity for illustration was presented and patient and professional experts were requested to describe their initial thoughts on what they considered essential for a proper SDM-process. The first question asked was: *'Considering the complex case described above, which elements would you need for a proper decision-making process?'* Next, the concept model was introduced and the experts were requested to answer several questions about each step of the model, separately. After this, experts were asked to comment on the sequence of the model and possible irrelevant or missing steps.

After collection of the questionnaires, two Researchers (MvdP en YS) familiarised themselves with the responses using the constant comparative analysis technique.³⁴ In a process of breaking down, examining and comparing the data, responses were grouped to identify recurring themes across the responses. The congruence was >95% in all cases. In the small percentage of difference or disagreement the third researcher (AL) was consulted and these differences or disagreements were resolved by consensus. Emerging- and recurring themes were discussed and agreed to by all authors, transcribed into statements regarding important key elements in the process of SDM in older patients and used to adjust the concept model.

The responses of the patients were compared with those of the professionals to explore differences and similarities in perspective and ideas about the SDM process.

Round 2

The aim of Round 2 was to establish consensus among health care professionals about the importance and feasibility of the adjusted model for SDM in older patients with multi-morbidity. First, the professionals were provided with feedback from round one. Then, the adjusted concept model was presented and they were asked to rate importance and feasibility of each element of the adjusted SDM model. Importance was assessed with the question: How essential is this step in our model? Feasibility was assessed with the question: How likely is it that this step can be successfully performed? Both were scored on a seven-point Likert-Scale.

Professionals were also invited to clarify each step, to modify its explanation, or to add important issues.

Round 3

The aim of Round 3 was to reach final consensus on the model for SDM in frail older patients with multi-morbidities. This allowed the professionals to comment on some small adjustments in the model, based on the comments of Round 2.

Data analysis Rounds 2 and 3

The qualitative components of these rounds were analyzed by the same method of comparative analysis as in round 1. A seven-point Likert-Scale was used to quantify and compare the importance and feasibility of the different steps in the model, in which '1' indicated 'strongly disagree' and '7' indicated 'strongly agree'. The criterion for consensus was defined as a mean score of 6 or higher, with 75% or more of the experts scoring ≥ 6 (75% panel agreement) and as less than 5% scoring ≤ 3 .²⁹

Results

Participants

In Round 1, all 16 patients who were invited to participate, agreed to take part and filled out the questionnaire (response 100%). Of the 59 professionals, who agreed to take part in the study, 53 completed Rounds 1 and 2 (90%) and 51 completed Round 3 (86%). After Round 2, two experts (both nursing home physicians) were excluded from the study, due to illness.

The patient group consisted of ten home-dwelling elderly (five male, five female, aged 72 ± 6) and six elderly care home-dwelling elderly (one male, five female, aged 89 ± 4). All patients had several chronic diseases, resulting in CACI scores of 5 ± 1 for the home-dwelling and 8 ± 1 for the elderly care home-dwelling elderly.

Professionals had a background as physician, nurse or academic and were active in different professional activities. Their characteristics are presented in Table 2.

Round 1

In Round 1, both patients and professionals expressed their initial thoughts on SDM in older patients with multi-morbidity. The most important theme emerging from the patients was the wish to engage in a dialogue with their physician about their specific personal situation. In line with this theme, patients mentioned time, communications skills of the physician, and the possibility to bring a relative, as important factors in SDM communication. The following major themes emerged amongst the professionals: patients' treatment preferences and their values

Table 2 Professionals characteristics

Professionals (N=53)	
Mean Age in Years(SD)	47 (10)
Gender (N)	
• Male	24
• Female	29
Background	
• Physician	45
• Nurse	3
• Academic	5
Present professional activity*	
• Elderly care/geriatrics	43
• Education and communication	40
• Education and communication research	20
• SDM research	21
Geographical region in which currently active	
• The Netherlands	41
• Europe	8
• North-America/Canada	4

* More than one activity is possible

regarding healthcare, determination of the decisional capacity of the patient involved, knowledge of the social context of the patient, discussion of previously documented treatment commitments and decisions, allocation of adequate time and appropriate communication skills. There were no differences in themes between the home-dwelling and the elderly care home-dwelling patients. Patients and professionals had similar thoughts about the most important themes.

Next, both patients and professionals commented on the concept model for SDM. The overall appraisal of our model was predominantly positive. According to the professionals however, several steps required elaboration and clarification. Patients unanimously considered 'previously discussed treatment decisions' as an important starting point of SDM. Some professionals wanted to complete diagnostics first, before discussing aims and struggled with the sequence of the steps. A summary of the responses from round 1 is presented in Table 3.

The Research Team used the results from the initial thoughts and the comments of both the patients and professionals to adjust the SDM model for Round 2.

Table 3 Comments on the concept model for SDM from Round 1 of the Delphi

Phase	Step	Summary of feedback from the patients and experts
Preparatory (Preparation talk)	Preliminary work: History. <i>Did the patient previously discuss or documented anything with regard to treatment in general or on specific issues (e.g. resuscitation)?</i>	Not all patients had previously documented anything about treatment or advance care planning. If available, it can be a starting point for the shared decision-making (SDM) process. Patients considered this a good starting point for the SDM process.
	Preliminary work: Problem analysis by the care professional. <i>(Have all of the patient's problems been outlined sufficiently? How do these problems relate to the problems about which a decision must be made?)</i>	The importance of a thorough problem analysis was supported by patients and experts. The Comprehensive Geriatric Assessment was considered an important aid to perform this step.
	Start the conversation. During the conversation, identify the role of your discussion partner and any observers. <i>(Which roles would the patient and the physician like to have in the decision-making process? Who will make the decisions in this conversation [patient, representative/caregiver, doctor]? Is an observer present [e.g. nursing auxiliary, other relatives]?)</i>	For most experts, this step (identification of the discussion partner) needed clarification. <i>What if the patient does not want to be involved in the decision making? And what if the patient is not able to decide (is not decisional)?</i> Patients stressed the importance of engaging in dialogue.
	Ask about outlook on life and perceptions. <i>(What role do outlook on life, beliefs or faith, play in the decision-making process? How does the patient perceive this conversation?)</i>	Several experts wanted to investigate the cognitive state of the patient. The terms 'outlook on life' and 'perceptions' caused confusion. Several experts suggested using the broader and more neutral term: 'patient values', which covers outlook on life and perceptions, as well as religious considerations and cultural background.
	List the possible treatment and other objectives, including those not specifically medical in nature (e.g. in the area of well-being). <i>(independence, living arrangements, health-related objectives, people with chronic illness: altered perspective)</i>	Steps were considered essential, however, not completely self-evident. The experts discussed the differences between treatment aims/objectives and treatment/therapy. They questioned the need to know aims before having all the diagnostics.

Table 3 Continued

Phase	Step	Summary of feedback from the patients and experts
Announcing the choice (Choice talk)	State that a decision must be made.	In a more recent version of the 'Choice-Option-Decision-talk', the 'Choice-talk' is changed to 'Team-talk', to emphasise the participation of both patient and doctor in the process.
	Offer choices for the problems at hand and provide justification for them. Assess how the patient reacts to the choice of options, and support the patient in weighing the options.	
Discussing the options (Option talk)	Check to determine what the patient has understood from the discussion up to this point, and use the preceding steps to compile a list of treatment options (taking into account the identified (treatment) objectives).	For several experts, defining patient values and global healthcare/life goals were an important tool in the process of defining the patients' treatment aims. Treatment options need to be adjusted according to these values and goals.
	Describe the treatment options, including the advantages and disadvantages, using decision aids (if available). Provide a summary of the treatment options.	Most patients emphasised having a good dialogue about their specific personal situation as most important.
Deciding (Decision talk)	Focus on the preferences of the patient and make a decision with the patient/representative. Prepare a treatment plan based on this decision.	Experts and patients agreed on this step. Some experts suggested adding an extra evaluation step. Naturally, not all steps need to be performed in one conversation.

Round 2

Positive consensus, defined as 75% panel agreement, was reached on all steps of the model regarding importance. Three steps of the model: problem analysis; identifying values and goals of care; and 'option talk'; did not achieve consensus regarding feasibility. Professionals stressed the importance of discussing goals and stated that global healthcare goals are closely linked to treatment aims. The professionals proposed several small alterations and elaborations to improve the feasibility of the model, which are shown in more detail in Table 4. With the results from Round 2 small alterations were made in the model for SDM.

Table 4 Results of Round 2: 53 participating experts.

Importance and feasibility were measured on a seven-point Likert-Scale.
%Agree: %with Likert-Score ≥ 6

Step	Importance Mean (SD)	% Agree	Feasibility Mean (SD)	% Agree
<i>Preparatory step</i> • <i>History</i>	6.4 ± 1.0	92	6.1 ± 0.8	87
<i>Preparatory step</i> • <i>Problem analysis</i>	6.3 ± 0.8	92	5.7 ± 1.1	66
Definition talk: • <i>Identify discussion partner</i>	6.6 ± 0.6	92	6.0 ± 1.1	77
Definition talk: • <i>Identify life goals and patients values</i>	6.2 ± 1.3	85	5.4 ± 1.3	51
Team talk: Invite the patient to formulate his treatment aims	6.5 ± 0.9	94	6.2 ± 1.0	85
Option talk	6.6 ± 0.6	92	5.8 ± 1.0	77
Decision talk	6.5 ± 0.7	94	6.0 ± 0.8	83
Evaluation talk	6,1 ± 1,4	83	6,1 ± 0,9	83

Round 3

In Round 3, the professionals were requested to re-rate the different steps of the model (Figure 1). Positive consensus for the model as whole was achieved for both importance (91% panel agreement) and feasibility (76% panel agreement). Consensus was also reached for the importance of all individual steps: scores ranged from 6.0 to 6.6 (SD 0.6-1.2), and the level of agreement ranged from 80% to 98%. Regarding feasibility, two individual steps showed a panel agreement below 75%. The step about identifying values and goals of care had a mean score of 5.7 ± 0.9 with an agreement of 63%. The step about discussion the options ('option-talk') had a mean score of 5.7±0.8 and a panel agreement of 61%.

Major comments

It is all about what the patient wants now. However, history can be a starting point for the conversation.

Problem analysis can be more or less comprehensive depending on the situation. The problem analysis must be discussed with the patient to prioritise the problems.

Definition-talk is not a good term. It is a talk about goals or choices. Do not talk about taking decisions, but about making or having choices. Explain why choices need to be made.

It is not always possible to disentangle global healthcare/life goals from treatment aims (they are arguably inseparable). Goals of care would be a better formulation.

Most experts prefer 'choice-talk' instead of 'team-talk'. Verify with the patient if recapitulation is correct. Physician will have to help the patient understand which potential goals there are. Also, choices are often not mutually exclusive, e.g. something could improve quality of life, increase comfort and reduce pain. Use the term 'health-professional' instead of 'doctor'.

This is a difficult step, because clinical studies including (older) people with multimorbidity are scarce, and the evidence base for risks and benefits of additional treatment options is limited. Visual support of options can be helpful.

If the patient wants the doctor to decide, discuss this explicitly. Sometimes it is necessary to plan an extra consultation for this step. Bear in mind that making decisions is not a hard science. People can change their minds during the process. Emotions play a large role. The doctor needs to provide support here.

Evaluation is not always necessary, but can be a useful step.

Improving feasibility of the SDM model

In round 3 the experts were asked to formulate their thoughts on how to improve the feasibility of the model. Several professionals stressed the importance of the model as a counselling dialogue. It can be necessary to switch back and forward through the different steps. In Box 1, the consensus model is shown in more detail. Most important are good communication skills both on the side of the professional and of the patient. Emphasis on patient empowerment and preparation of SDM is necessary.

Regarding identifying values and goals of care, some professionals expressed the need for tools or example phrases to discuss values and goals of care. Regarding discussing the options, professionals called for more evidence on risks and benefits of different treatment options in this patient category. Moreover,

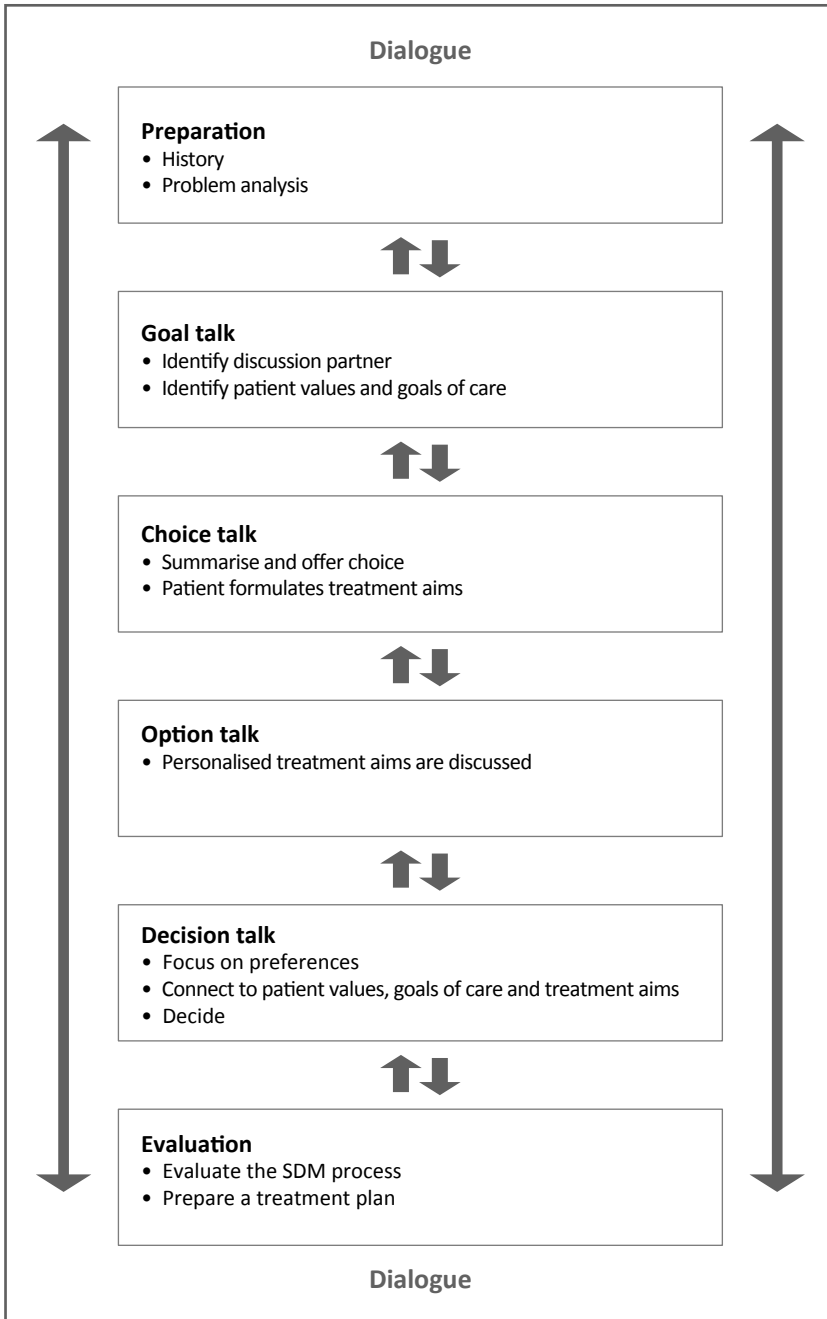


Figure 1 Dynamic model for SDM in older patients with multiple morbidities

the professionals underlined the importance of more education on risk communication and the development of decision aids for this patient category.

Box 1 Explanatory remarks for Dynamic model for SDM in older patients with multiple morbidities.

Preparation	<ul style="list-style-type: none"> • <u>History</u>: Did the patient previously discuss or document anything with regard to treatment in general or on specific issues e.g. resuscitation, advance care planning? (As a starting point for the conversation or as indicator in situations where the patient is incompetent). • <u>Problem analysis</u>: Functional assessment of all current problems. (Extensiveness of the analysis depends on the situation. Other caregivers can contribute. The comprehensive geriatric assessment (CGA) is a useful tool. Prioritise problems in consultation with the patient).
Goal talk	<p>Explain to the patient that a new (or exacerbation of a current) problem/disease has occurred and state that choices need to be made. Explain that every patient is unique and has his own preferences and priorities. Engage the patient in a dialogue to clarify several important general topics that require clarification before choices can be made regarding the current problem:</p> <ul style="list-style-type: none"> • <u>Identify discussion partner</u>: <ul style="list-style-type: none"> ◦ Has this patient sufficient decision-making capacity (cognitive, emotional)? If not, who is (by law) assigned to take the decisions? ◦ Does the patient want to take decisions? If not, who does the patient designate? (proxy decision maker) • <u>Identify patient values and goals of care</u> (what is the role of his/her important values regarding decisions): <ul style="list-style-type: none"> ◦ What are important values in the patients' life? (Roles of outlook on life, perceptions, spirituality/religion, culture?) ◦ Elicit goals of care? (Prolongation of life, functional autonomy, visit grandchildren, comfort, etc.)
Choice-talk	<ul style="list-style-type: none"> • Summarise the preceding steps (the actual problem and the identified values and goals of care) and verify if your recapitulation is correct. Explain that there are several treatment possibilities and offer choice. • Invite the patient (or proxy decision maker) to formulate their treatment aims and support the patient: <ul style="list-style-type: none"> ◦ Convey that whilst the health professional is the medical expert, only the patient can be the expert on treatment aims, priorities and preferences. (Cure, quality of life, no treatment, no pain, comfort, etc.) • Check if the patient (or proxy decision maker) has understood everything and summarise again if necessary. Continue to engage the patient in a dialogue.

Box 1 Continued.

Option-talk	<ul style="list-style-type: none"> • List personalised treatment options (according to the identified values, goals of care and treatment aims). • Discuss risks, benefits and side effects of every treatment option. • Check which risks and side effects the patient is willing to take (opportunity/cost). • Observe how the patient reacts and continue to engage the patient (and/or representative). • If possible use decision aids (visual support options can be helpful).
Decision-talk	<ul style="list-style-type: none"> • Inquire if the patient (or proxy decision maker) is ready to make a decision. If not, go back to the preceding steps. Focus on engaging a dialogue. • Focus on the preferences of the patient and make a decision with the patient (and/or proxy decision maker) • If the patient wants the doctor to decide: discuss this explicitly and connect to the identified patient values, goals of care and treatment aims.
Evaluation-talk	<ul style="list-style-type: none"> • Discuss the decision-making process. Is everybody satisfied with the decision? If not, enquire about the dissatisfaction and go back to a preceding step. If yes: • Prepare a treatment plan based on the decision.

Discussion

A three round Delphi study was conducted to identify important elements for SDM in older patients with multi-morbidity. Consensus was reached on the proposed model for SDM. SDM is seen as a dynamic process, and as a continuous counselling dialogue to link the perspective of both patient and physician. The process of SDM begins at the start of a consultation and concludes with a reflection on the SDM process. The patients emphasised the importance of person-centred communication. The professionals agreed on the importance of all elements of the model for SDM in clinical practice. Several professionals did not feel adequately trained to identify patient values and goals of care. Discussing options was seen as a challenge in the absence of evidence-based guidelines for older patients with multiple morbidities.

General results in context

In recent years, a large proportion of studies have described the key elements and the importance of SDM.^{2, 6, 23, 35, 36} As far as we know, this study is the first to develop a specific model for SDM in older patients with multiple morbidities, and an important merit of this study is that we included the perspectives of health care professionals, researchers from the SDM-field and older patients.

Although the key elements of SDM are important in older patients with multiple morbidities additional new elements were also identified. These include, counselling patients on their most important health related problems, the relationship of SDM with advance care planning, the importance of identifying the patient's decision capacity and values and goals of care.

Specific results in context: A model for SDM in older patients with multiple morbidities

The SDM model for clinical practice is a dynamic model, which means that the sequence can differ between consultations and cases. The different steps or stages of the model are fluid and participants can move back and forth between the steps in an iterative ongoing manner (Figure 1). A dynamic model stimulates a continuous counselling dialogue between patient and professional, and educating the professionals to engage in a person-centred approach, instead of a disease oriented approach.²⁴ As such it adds to the current SDM models that focus specifically on disease oriented decision making, whereas in the care for older persons, engaging the patient in formulating their values and setting goals are indispensable conditions.^{9, 11, 18, 37}

Preparation is an important element of the model. As mentioned before, many professionals feel overwhelmed by the complexity in caring for frail older patients.^{13, 14} A comprehensive geriatric assessment (CGA) can help the professional gaining an overview of the patient. Together with the patient, they can prioritise the problems.³⁸ Existing SDM models are focussed on medical decision making for single conditions and lack a step on prioritizing the most pressing issue or problem for which a decision needs to be made.^{1, 2} Previously made do-not-resuscitate orders or advance care planning agreements (ACP) can also play a role in gaining overview of the patient case, and in a person-centred approach.³⁹ Patients and professionals in this Delphi study considered both CGA and ACP as a starting point for the dialogue of the SDM process, but the professionals also emphasised that verification of the previously-made agreements is necessary.

From the literature, it is known that in patients with multi-morbidity a goal-oriented approach is more suitable than the traditional disease-centred approach.^{10, 40} Thoroughly discussing goals moves the decision making process away from the focus on disease and technological possibilities and more towards what really matters in the 'every day' life of the patient. A recent review about preoperative assessment of older patients confirmed this preferred approach.⁴¹ For geriatric patients life expectancy may be short and end of life should be part of the discussion and may result in discussing treatment trade-offs.^{10, 41, 42} In our model the 'choice-talk' always includes the option of no treatment (Box 1) as this may be of help to accomplish patient goals.

Though the professionals included in this study reached consensus on this ‘goal-talk’, the lower levels of consensus on the feasibility of this step and their comments underscored their tendency towards a more biomedical and disease oriented approach. Discussing options can be difficult, because clinical studies including (older) people with multi-morbidity are scarce, and the evidence base for the risks and benefits of additional treatment options is limited., which is reported in other studies about SDM in chronic conditions as well.^{18,37} *Bernacki et al.* recently developed a ‘serious illness conversation guide’ for conversations with patients suffering from serious and life-threatening illnesses.⁴³ Their study focussed on care goals in relation to advanced care planning and end of life decisions and patients were not included in their study. Our study did include patients, and for them discussing care goals and building a relationship with their health care professional, seem natural at all moments, not only when they have a life threatening disease. These results are supported by literature about person-centred and relationship-centred approaches.^{21,24,44}

In the final version of the model ‘choice-talk’ is the step, in which the ‘offer choice’ is summarised, and patients are invited to formulate their treatment aims. In the new version of the three-step SDM model of Elwyn *et al.*, this step is called ‘team-talk’.⁴⁵ The professionals included in this Delphi study clearly preferred the term ‘choice-talk’. They reasoned that the whole process is a team process and a continuous dialogue, and that ‘choice-talk’ better describes the content of this step.

The experts also called for data (evidence) on risks and benefits regarding treatment options. Data on specific risks and benefits in older patients with multiple morbidities are lacking.^{46,47} Even if more research is conducted, there will always remain uncertainty about the possible benefits and harms of certain treatment options, and the validity of evidence for the complex patients with multi-morbidity. A focus in research on how to communicate uncertainty would be helpful.⁴⁸ Friesen-Storms *et al.* recently presented a model for integrating research evidence, clinical expertise and patients’ values, which can be of help in discussing options.⁴⁹ Moreover, evidence-based medicine should begin and end with the patient.⁵⁰

In 2012, the *American Geriatrics Society Expert Panel* developed a ‘Guiding principle for the care of older adults with multi-morbidity’.¹⁶ Their approach is organized around five domains relevant to the care of older adults with multi-morbidity: Patient Preferences, Interpreting the Evidence, Prognosis, Clinical Feasibility, and Optimizing Therapies and Care Plans. Their guiding principles offer a generic approach for the care of older patients, preferably delivered by an interdisciplinary team, whilst we offer a stepwise approach that can be used in everyday consultation. Moreover in our model an extra domain

'goals' is added. We argue that after thoroughly discussing this domain (including patient values, global healthcare goals and treatment aims) the number of treatment options will be relatively small. Thus limiting the amount of information the healthcare professional need to explain to the patient, which was seen as an important challenge in the 'Guiding principle for the care of older adults with multi-morbidity',¹⁶

Paths through which patients arrive at decisions are often inconceivable.^{23, 35, 51} Elwyn *et al.* recently proposed a conceptual model called 'collaborative deliberation' to focus on the interpersonal aspects that affect decisions.⁵² At the core of this model, is a process of collaboration, in which patients and professionals communicate to share their views, which is in line with continuous dialogue in the proposed model. The proposed model for SDM in older patients with multi-morbidity embraces all the approaches for clinical practice that underpin Elwyn's conceptual model. The focus of our study was geriatrics, however the identified new elements of SDM are potentially transferable to other fields of complex care. A study about shared decision making in youth mental health supports this view.⁵³

Before a clinical practice scenario, in which all professionals and patients apply the SDM approach is achieved, however, a cultural change in medical practice towards a truly person-centred approach is necessary.^{6, 21, 24, 52}

Strengths and weaknesses

This study explored a topic that is very relevant for everyday practice in geriatrics, elderly and primary care, but has received little attention in research, so far.

The study has several strengths. Firstly, a Delphi consensus process is appropriate for identifying important themes.²⁷ Recommendations from Boukdedid *et al.* were applied for planning, using and reporting the Delphi procedure.²⁸ Secondly, the Delphi involved an international panel of experts from various backgrounds. When an expert panel is more diverse, it often results in different points of view that can enrich the results. The international panel of professional experts included: health professionals (elderly care nurses, GP's, nursing home physicians, geriatricians); SDM researchers; communication experts; and geriatric education experts. A potential weakness was that most experts were from the Netherlands. However, the results were homogenously divided and a critical cut-off level was established of less than 5% scoring of ≤ 3 (disagree), before consensus was accepted.

Another major strength of the study is that a range of geriatric patients, both home-dwelling patients and patients living in elderly care homes, were invited to participate. These are the target audience. Their responses to the open-ended questions of Round 1 were of high value for the person-centred adjustment of

the concept model. All patients invited did participate, which demonstrated their engagement with the subject. The participating patients were all older persons with several chronic diseases and CACI-scores of ≥ 4 . Admission to elderly care homes in the Netherlands is limited to individuals with debilitating infirmities. There were no differences in the results between those patients living at home and those in elderly care homes. These results are an indication of the acceptability and perceived practicality of the model in older patients with multi-morbidity. Family members or carers can also play a significant role in the decision making process, they were not included in our study. From other studies it is known that one of the challenges in engaging family members or carers is to remain focus on the values and goals of the patient.^{16, 53, 54} Our model specifically focuses on this importance of eliciting values and goals, we therefore think it is possible to engage family members or carers in the process.

There was a high response amongst professionals, who participated in all three rounds of the Delphi study. Sometimes e-mail reminders were necessary, but apparently all participants considered the subject relevant. A possible weakness is that the Delphi study was conducted in both English and Dutch. However, the translation was done by a native English speaker with extensive qualifications as a medical translator in order to preserve, as closely as possible, the nuances of the responses.

Lastly, a possible weakness is the fact that all participants were from high income countries, which should be considered when applying the results to lower income countries and other cultural backgrounds.^{55, 56}

Conclusions

SDM in older patients with multi-morbidity is a dynamic process that takes place during all stages of a consultation. It requires a continuous counselling dialogue between professional and patient or representative, taking the personal situation of the patient into consideration in the context of the problem, for which a decision is necessary. The developed consensus model may help professionals to apply SDM in the complex situation of the care for older patients.

To date, many professionals are accustomed to applying a biomedical and disease oriented approach in patient care, whilst patients request a person-centred approach. Identifying values and goals of care are important parts of the proposed model and can help professionals with the paradigm shift from disease oriented to a genuine patient-centred approach. A challenging part of the SDM process is the absence of evidence-based guidelines for older patients with multiple morbidities.

Further research should focus on testing the effects and feasibility of the model in geriatric practice, on identifying specific competencies needed for the

different elements of the decision-making process, and on educating professionals and engaging patients.

Practice Implications

In the care for older patients with multiple morbidities, SDM is still in its infancy. Many professionals feel overwhelmed by the complexity of the cases and do not know how to effectuate SDM in the care for older patients. The model we developed may help professionals to support patients in the SDM process of making healthcare choices. It offers a continuous dialogue approach to SDM and can be used in everyday consultations. Both patients and professionals articulated the need for communication skills regarding engaging a person centred dialogue and eliciting values and goals. Further research needs to focus on education about these factors and on implementation of the model in everyday practice.

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References

1. Elwyn G, Edwards A, Kinnersley P. Shared decision-making in primary care: the neglected second half of the consultation. *Br J Gen Pract.* 1999;49(443):477-82.
2. Elwyn G, Frosch D, Thomson R, Joseph-Williams N, Lloyd A, Kinnersley P, et al. Shared decision making: a model for clinical practice. *J Gen Intern Med.* 2012;27(10):1361-7.
3. Stiggelbout AM. Shared decision making: really putting patients at the centre of healthcare (vol 344, e256, 2012). *Br Med J.* 2012;344.
4. Charles C, Gafni A, Whelan T. Shared decision-making in the medical encounter: What does it mean? (Or it takes at least two to tango). *Soc Sci Med.* 1997;44(5):681-92.
5. Weston WW. Informed and shared decision-making: the crux of patient-centred care. *Can Med Assoc J.* 2001;165(4):438-9.
6. Joseph-Williams N, Elwyn G, Edwards A. Knowledge is not power for patients: A systematic review and thematic synthesis of patient-reported barriers and facilitators to shared decision making. *Patient Educ Couns.* 2014;94(3):291-309.
7. Ayyar A, Varman S, De Bhaldraithe S, Singh I. The journey of care for the frail older person. *Br J Hosp Med (Lond).* 2010;71(2):92-6.
8. Lacas A, Rockwood K. Frailty in primary care: a review of its conceptualization and implications for practice. *BMC medicine.* 2012;10:4.
9. Fried TR, Tinetti ME, Iannone L. Primary care clinicians' experiences with treatment decision making for older persons with multiple conditions. *Arch Intern Med.* 2011;171(1):75-80.
10. Reuben DB. Medical Care for the Final Years of Life "When You're 83, It's Not Going to Be 20 Years". *Jama-J Am Med Assoc.* 2009;302(24):2686-94.
11. Morris RL, Sanders C, Kennedy AP, Rogers A. Shifting priorities in multimorbidity: a longitudinal qualitative study of patient's prioritization of multiple conditions. *Chronic illness.* 2011;7(2):147-61.
12. Robben SH, Perry M, Olde Rikkert MG, Heinen MM, Melis RJ. Care-related goals of community-dwelling frail older adults. *J Am Geriatr Soc.* 2011;59(8):1552-4.
13. Bergman H, Beland F, Perrault A. The global challenge of understanding and meeting the needs of the frail older population. *Aging clinical and experimental research.* 2002;14(4):223-5.
14. Coleman EA. Challenges of systems of care for frail older persons: the United States of America experience. *Aging clinical and experimental research.* 2002;14(4):233-8.
15. Zulman DM, Sussman JB, Chen X, Cigolle CT, Blaum CS, Hayward RA. Examining the evidence: a systematic review of the inclusion and analysis of older adults in randomized controlled trials. *J Gen Intern Med.* 2011;26(7):783-90.
16. Ickowicz E, Panel AGSE. Patient-Centered Care for Older Adults with Multiple Chronic Conditions: A Stepwise Approach from the American Geriatrics Society. *J Am Geriatr Soc.* 2012;60(10):1957-68.
17. Gionfriddo MR, Leppin AL, Brito JP, Leblanc A, Boehmer KR, Morris MA, et al. A systematic review of shared decision making interventions in chronic conditions: a review protocol. *Systematic reviews.* 2014;3:38.
18. Montori VM, Gafni A, Charles C. A shared treatment decision-making approach between patients with chronic conditions and their clinicians: the case of diabetes. *Health expectations: an international journal of public participation in health care and health policy.* 2006;9(1):25-36.
19. Legare F, Ratté S, Gravel K, Graham ID. Barriers and facilitators to implementing shared decision-making in clinical practice: update of a systematic review of health professionals' perceptions. *Patient Educ Couns.* 2008;73(3):526-35.
20. Legare F, Politi MC, Drolet R, Desroches S, Stacey D, Bekker H, et al. Training health professionals in shared decision-making: An international environmental scan. *Patient Educ Couns.* 2012;88(2):159-69.
21. Nolan MR, Davies S, Brown J, Keady J, Nolan J. Beyond person-centred care: a new vision for gerontological nursing. *J Clin Nurs.* 2004;13(3a):45-53.
22. Robben S, van Kempen J, Heinen M, Zuidema S, Olde Rikkert M, Schers H, et al. Preferences for receiving information among frail older adults and their informal caregivers: a qualitative study. *Fam Pract.* 2012;29(6):742-7.

23. Legare F, Thompson-Leduc P. Twelve myths about shared decision making. *Patient Educ Couns.* 2014;96(3):281-6.
24. Olthuis G, Leget C, Grypdonck M. Why shared decision making is not good enough: lessons from patients. *J Med Ethics.* 2014;40(7):493-5.
25. Moreau A, Carol L, Dedienne MC, Dupraz C, Perdrix C, Laine X, et al. What perceptions do patients have of decision making (DM)? Toward an integrative patient-centered care model. A qualitative study using focus-group interviews. *Patient Educ Couns.* 2012;87(2):206-11.
26. Klaver K, Baart A. Attentiveness in care: Towards a theoretical framework. *Nurs Ethics.* 2011;18(5):686-93.
27. Kleyne M, Bleijlevens MH, Beurskens AJ, Rasquin SM, Halfens J, Wilson MR, et al. Terminology, taxonomy, and facilitation of motor learning in clinical practice: protocol of a delphi study. *JMIR research protocols.* 2013;2(1):e18.
28. Boukedi R, Abdoul H, Loustau M, Sibony O, Alberti C. Using and Reporting the Delphi Method for Selecting Healthcare Quality Indicators: A Systematic Review. *Plos One.* 2011;6(6).
29. Keeney S, Hasson F, McKenna H. Consulting the oracle: ten lessons from using the Delphi technique in nursing research. *J Adv Nurs.* 2006;53(2):205-12.
30. Powell C. The Delphi technique: myths and realities. *J Adv Nurs.* 2003;41(4):376-82.
31. Charlson ME, Pompei P, Ales KL, Mackenzie CR. A New Method of Classifying Prognostic Co-Morbidity in Longitudinal-Studies - Development and Validation. *J Chronic Dis.* 1987;40(5):373-83.
32. Dias-Santos D, Ferrone CR, Zheng H, Lillemo KD, Castillo CF. The Charlson age comorbidity index predicts early mortality after surgery for pancreatic cancer. *Surgery.* 2015.
33. <http://www.npcf.nl/>. [cited 2015].
34. Glaser BG, Strauss AL. *The discovery of grounded theory; strategies for qualitative research.* Chicago,: Aldine Pub. Co.; 1967. x, 271 p. p.
35. Mulley AG, Trimble C, Elwyn G. Stop the silent misdiagnosis: patients' preferences matter. *Br Med J.* 2012;345.
36. Gravel K, Legare F, Graham ID. Barriers and facilitators to implementing shared decision-making in clinical practice: a systematic review of health professionals' perceptions. *Implementation science : IS.* 2006;1:16.
37. Chewning B, Bylund CL, Shah B, Arora NK, Gueguen JA, Makoul G. Patient preferences for shared decisions: a systematic review. *Patient Educ Couns.* 2012;86(1):9-18.
38. Carlson C, Merel SE, Yukawa M. Geriatric Syndromes and Geriatric Assessment for the Generalist. *Med Clin North Am.* 2015;99(2):263-79.
39. Brinkman-Stoppelenburg A, Rietjens JAC, van der Heide A. The effects of advance care planning on end-of-life care: A systematic review. *Palliat Med.* 2014;28(8):1000-25.
40. Hallenbeck J. Palliative care in the final days of life - "They were expecting it at any time". *Jama-J Am Med Assoc.* 2005;293(18):2265-71.
41. Oresanya LB, Lyons WL, Finlayson E. Preoperative Assessment of the Older Patient A Narrative Review. *Jama-J Am Med Assoc.* 2014;311(20):2110-20.
42. Kaldjian LC, Curtis AE, Shinkunas LA, Cannon KT. Goals of Care Toward the End of Life: A Structured Literature Review. *Am J Hosp Palliat Me.* 2008;25(6):501-11.
43. Bernacki RE, Block SD, Care ACPHV. Communication About Serious Illness Care Goals A Review and Synthesis of Best Practices. *Jama Intern Med.* 2014;174(12):1994-2003.
44. Tinetti ME, Basch E. Patients' Responsibility to Participate in Decision Making and Research. *Jama-J Am Med Assoc.* 2013;309(22):2331-2.
45. Elwyn G, Tsulukidze M, Edwards A, Legare F, Newcombe R. Using a 'talk' model of shared decision making to propose an observation-based measure: Observer OPTION5 Item. *Patient Educ Couns.* 2013;93(2):265-71.
46. Martin FC, O'Mahony MS, Schiff R. Complexity of treatment decisions with older patients: who, when and what to treat? *Clin Med.* 2007;7(5):505-8.
47. Boyd CM, Darer J, Boulton C, Fried LP, Boulton L, Wu AW. Clinical practice guidelines and quality of care for older patients with multiple comorbid diseases: implications for pay for performance. *JAMA.* 2005;294(6):716-24.

48. Elmore JG, Ganschow PS, Geller BM. Communication between patients and providers and informed decision making. *J Natl Cancer Inst Monogr.* 2010;2010(41):204-9.
49. Friesen-Storms JH, Bours GJ, van der Weijden T, Beurskens AJ. Shared decision making in chronic care in the context of evidence based practice in nursing. *Int J Nurs Stud.* 2015;52(1):393-402.
50. Hoffmann TC, Montori VM, Del Mar C. The Connection Between Evidence-Based Medicine and Shared Decision Making. *Jama-J Am Med Assoc.* 2014;312(13):1295-6.
51. Epstein RM, Peters E. Beyond Information Exploring Patients' Preferences. *Jama-J Am Med Assoc.* 2009;302(2):195-7.
52. Elwyn G, Lloyd A, May C, van der Weijden T, Stiggelbout A, Edwards A, et al. Collaborative deliberation: a model for patient care. *Patient Educ Couns.* 2014;97(2):158-64.
53. Westermann GM, Verheij F, Winkens B, Verhulst FC, Van Oort FV. Structured shared decision-making using dialogue and visualization: a randomized controlled trial. *Patient Educ Couns.* 2013;90(1):74-81.
54. Scheunemann LP, Arnold RM, White DB. The facilitated values history: helping surrogates make authentic decisions for incapacitated patients with advanced illness. *Am J Respir Crit Care Med.* 2012;186(6):480-6.
55. Charles C, Gafni A, Whelan T, O'Brien MA. Cultural influences on the physician-patient encounter: The case of shared treatment decision-making. *Patient Educ Couns.* 2006;63(3):262-7.
56. Suurmond J, Seeleman C. Shared decision-making in an intercultural context - Barriers in the interaction between physicians and immigrant patients. *Patient Educ Couns.* 2006;60(2):253-9.

6

Recommendations for teaching shared decision making with frail older patients

This chapter is based on:

Recommendations for teaching shared
decision making with frail older patients

van de Pol, Marjolein H.J.

Fluit, Cornelia R.M.G.

Lagro, Joep

Slaats, Yvonne H.P.

Olde Rikkert, Marcel G.M.

Lagro-Janssen, Antoine L.M.

Submitted



Abstract

Shared decision making (SDM) with frail older patients is still in its infancy. This study is aimed firstly to identify the core competencies for SDM with frail older persons and secondly to determine key elements of a teaching framework, based on our recently developed model for SDM with frail older patients.

To this end we conducted a mixed methods study involving a qualitative inquiry among health professionals (n=59) and frail older patients (n=16), and a literature exploration.

Participants formulated core competencies for SDM with frail older patients. The most important are: geriatric expertise; ability to empower and engage patients; assessing decision capacity; and eliciting values and goals of care. All elements of the SDM model with frail older patients were considered complex competencies, for which specific education was required, specifically on elements of the 'goal-talk'. In the literature exploration we addressed these elements. Combination of the core competencies defined by the participants and the literature exploration resulted in practice recommendations and a teaching framework with the following key elements: create a knowledge base for all health professionals; offer practical training; facilitate communication; identify discussion partners; engage patients; and collaborate.

Our teaching framework for SDM with frail older patients may be useful for clinicians, educators and researchers who aim to promote SDM with frail older patients. In view of the importance of SDM for all clinicians, teaching should start early in education and should focus on skills transfer to clinical practice.

Introduction

Shared decision making is increasingly advocated as the preferred way to support patients in making healthcare choices.¹⁻⁴ Despite its importance, research shows that the application of SDM in routine clinical practice remains limited.⁵ Because of the ageing population, in nearly all clinical practices the number of patients with multi-morbidity and impairments will increase, which complicates patient management and decision making.^{6, 7} In this patient category however, SDM is still in its infancy.^{8, 9} Although almost all health professionals will need awareness and a basic set of competencies regarding SDM with frail older persons, professional education does not take this specific group into account.¹⁰ Most educational programmes directed at increasing the application of SDM are implemented in clinical settings^{11, 12}, only a few programmes exist for undergraduate students.^{13, 14} These educational programmes vary greatly, moreover there is little evidence about which educational programmes are most effective, and which core competencies are needed to adequately deliver SDM adequately.^{12, 15} The application of SDM is even more complex in the care for frail older patients, since multi-morbidities, cognitive decline and complex care situations challenge the process.^{8, 9} Moreover the most frequently used model for guiding the SDM process focusses on treatment decisions in the medical curative setting.² However, in the complex care situation for older patients with multi-morbidity, the preferred goals for SDM are individually different and often more directed towards improving wellbeing than towards cure or increased survival¹⁶⁻¹⁹

At this moment no specific educational programmes or systematic skills training exist to teach SDM with frail older patients.^{15, 20, 21} Moreover, despite the importance of SDM competencies for all health professionals²², the topic of SDM with frail older patients receives little attention in geriatrics undergraduate curricula.^{23, 24} Assisting patients and families in making care decisions is considered important, paradoxically systematic skills training regarding SDM is lacking in geriatrics specialty training.^{12, 25}

Recently, we developed a model for SDM with frail older patients (Box 1).²⁶ In order for health professionals to be able to perform SDM with this patient group adequately, it is necessary to establish a list of core competencies that are required and subsequently to develop appropriate education and training. The objective of this study is therefore firstly to identify the core competencies for SDM with frail older persons and secondly to determine key elements of a teaching framework for SDM in this patient group.

Box 1 Explanatory remarks for Dynamic model for SDM in older patients with multiple morbidities.

Preparation	<ul style="list-style-type: none"> • History: Did the patient previously discuss or document anything with regard to treatment in general or on specific issues e.g. resuscitation, advance care planning? (As a starting point for the conversation or as indicator in situations where the patient is incompetent). • Problem analysis: Functional assessment of all current problems. (Extensiveness of the analysis depends on the situation. Other caregivers can contribute. The comprehensive geriatric assessment (CGA) is a useful tool. Prioritise problems in consultation with the patient).
Goal talk	<p>Explain to the patient that a new (or exacerbation of a current) problem/disease has occurred and state that choices need to be made. Explain that every patient is unique and has his own preferences and priorities. Engage the patient in a dialogue to clarify several important general topics that require clarification before choices can be made regarding the current problem:</p> <ul style="list-style-type: none"> • Identify discussion partner: <ul style="list-style-type: none"> ◦ Has this patient sufficient decision-making capacity (cognitive, emotional)? If not, who is (by law) assigned to take the decisions? ◦ Does the patient want to take decisions? If not, who does the patient designate? (proxy decision maker) • Identify patient values and goals of care (what is the role of his/her important values regarding decisions): <ul style="list-style-type: none"> ◦ What are important values in the patients' life? (Roles of outlook on life, perceptions, spirituality/religion, culture?) ◦ Elicit goals of care? (Prolongation of life, functional autonomy, visit grandchildren, comfort, etc.)
Choice-talk	<ul style="list-style-type: none"> • Summarise the preceding steps (the actual problem and the identified values and goals of care) and verify if your recapitulation is correct. Explain that there are several treatment possibilities and offer choice. • Invite the patient (or proxy decision maker) to formulate their treatment aims and support the patient: <ul style="list-style-type: none"> ◦ Convey that whilst the health professional is the medical expert, only the patient can be the expert on treatment aims, priorities and preferences. (Cure, quality of life, no treatment, no pain, comfort, etc.) • Check if the patient (or proxy decision maker) has understood everything and summarise again if necessary. Continue to engage the patient in a dialogue.

Box 1 Continued.

Option-talk	<ul style="list-style-type: none"> • List personalised treatment options (according to the identified values, goals of care and treatment aims). • Discuss risks, benefits and side effects of every treatment option. • Check which risks and side effects the patient is willing to take (opportunity/cost). • Observe how the patient reacts and continue to engage the patient (and/or representative). • If possible use decision aids (visual support options can be helpful).
Decision-talk	<ul style="list-style-type: none"> • Inquire if the patient (or proxy decision maker) is ready to make a decision. If not, go back to the preceding steps. Focus on engaging a dialogue. • Focus on the preferences of the patient and make a decision with the patient (and/or proxy decision maker) • If the patient wants the doctor to decide: discuss this explicitly and connect to the identified patient values, goals of care and treatment aims.
Evaluation-talk	<ul style="list-style-type: none"> • Discuss the decision-making process. Is everybody satisfied with the decision? If not, enquire about the dissatisfaction and go back to a preceding step. If yes: • Prepare a treatment plan based on the decision.

Methods

A mixed methods study involving 1) a qualitative inquiry and 2) literature exploration, using a scoping approach was conducted to define educational needs for performing SDM with frail older patients.

Qualitative inquiry

Between May 2014 and January 2015, we conducted a three-round Delphi study in which we reached consensus on a model for shared decision making in frail older patients.²⁶ Participants of this Delphi study were asked to reflect on the competencies needed in daily practice to perform SDM with frail older patients.

In round 1 all participants were asked to formulate their general thoughts about the key issues and competencies needed to perform SDM adequately with frail older patients. In round 2 participants were asked to formulate core competencies needed per stage of the developed SDM model. In round 3 participants were asked to refine the core competencies and they were asked for their educational needs for these competencies and suggestions for specific teaching programmes. In addition to the Delphi study^{27, 28}, we asked the expert panel that developed the model for SDM to reflect on the competencies needed for SDM with frail older persons.

Literature exploration

After the identification of the educational needs, we explored the literature using a scoping review approach²⁹ based on the formulated competencies and needs. The literature search method is described after presentation of the results of the qualitative inquiry.

On the bases of the qualitative inquiry and the literature review, we propose key elements of a teaching framework for SDM with frail older patients.

Participants

In total 16 patient experts (Round 1) and 59 professional experts (Rounds 1, 2 and 3) participated in the qualitative inquiry. The patient group consisted of ten home-dwelling and six elderly care home patients aged over 65 years, without cognitive impairments. Professional experts were healthcare professionals active in the field of geriatrics and care for older persons, SDM research, medical education, or a combination of these.

According to Dutch legislation, no ethics committee approval is necessary for a questionnaire study. Participation was voluntary, participants could withdraw from the study at any time, without reason.

Document analysis of qualitative reflections on core competencies for SDM

The results of the participants qualitative reflections were analyzed using constant comparative analysis.³⁰ Two researchers (MvdP and YS) began by familiarizing themselves with the data. They then applied open coding in a process of breaking down, examining and comparing the data, hereby conceptualizing and categorizing data (explorative phase). During the subsequent axial coding, data were put back together in new ways after open coding by making connections between categories. This was done with a view to defining the important elements of the information (specification phase). Subsequently, selective coding was used at the highest level of abstraction, in which the core variable guided further relevant coding, and the data were scrutinized for invalid areas (reduction phase).

The two researchers who analyzed the data discussed the initial coding and consulted a third researcher (AL) wherever disagreements or doubts arose about identified key issues. Finally, the supervising team discussed interpretations of the identified key issues.

Results of qualitative reflections on core competencies

Generic competencies for SDM with frail older patients

Patients and professionals formulated their general thoughts about the key issues and competencies needed by patients as well as physicians to support the process

of SDM. Health professionals need adequate medical knowledge, communication skills, the ability to show empathy and person-centeredness, and time management skills. Patients require adequate cognitive functions and the ability to process information. Furthermore, the participating patients stressed that patients need to be actively involved and honest about their values and wishes.

“The doctor must have good medical knowledge, be able to listen well and take time. The important thing is the person opposite him and the environment of this person...” M, 76 home dwelling

“as a patient I need to be well informed so that I can communicate better with the doctor” F, 82 elderly care home

“The patient must have some understanding of the illness and understand the information given and the consequences. He must be able to express wishes and include all this in the decision” F, 41 elderly care physician

Core competencies for SDM with frail older patients

All professionals were asked to formulate core competencies that are needed for adequate training and education on the different stages of SDM with frail older patients (summary of the SDM model is presented in Box 1). The results are summarized in Table 1. Selected quotes on these competencies are presented below.

Preparation: History and Problem analysis

“The doctor must know the patient’s history... ..even better if the doctor remembers previous consultations.” F, 30 elderly care physician

Goal talk

“...identifying patient values and goals requires patients to have done some ‘homework’ and a culture change whereby patients expect doctors and other health professionals to take their goals and values into account!” F, 39, geriatrician

“.....Not every 95 year old wants to die because life has lasted too long, not every 40 year old wants to fight at all costs... that is your own frame of reference. If you can’t let this go, I’m afraid this model has no effect.” F, 44 geriatrician

“I never learnt this step (identifying goals of care) in my education, nor in a case history, it never looked further than religion. I made it my own by obtaining information from spiritual counsellors.” F, 40 elderly care physician
“doctors don’t speak much about life vision, spirituality and culture in our context. This requires practice and feedback.” M 54, MD educator

Table 1 Core competencies for SDM with frail older persons

Phase	Element	Preconditions	Competencies
Preparation	History	Adequate (electronic) patient record “knowing” the patient well	Record keeping of discussed advance directives
	Problem analysis	Time (and money) Availability of relevant information	Geriatric expertise (about CGA or other problem analysis method)
Goal talk	Adequate (electronic) patient record	Adequate (electronic) patient record	Inter-professional collaboration
	Engage patient in dialogue	Public reorientation / empowerment campaign	Ability to empower and engage patients Relationship building
	Identify discussion partner	“knowing” the patient well	Assessing decision capacity Assessing health literacy
	Identify patient values and goals of care	Mutual trust, enough time, and compassion	Eliciting values and goals of care: <ul style="list-style-type: none"> • Advanced communication and questioning skills; prepare the patient for these questions • Ability to broaden (medical) scope to include well being • Ability to show cultural awareness • Ability to show empathy
Choice talk		Analytic skills, ability to prioritize	Summarizing skills Ability to engage patient
Option talk		Decision aids would be helpful	Knowledge of outcome measures and trade-offs Ability to perform Risk communication
Decision talk		Negotiation skills	Reinforcing engagement (avoid pressure)
Evaluation talk		Analytic skills	Ability to discuss decision making process Ability to make a treatment plan

"...doctors need additional training, need to learn how to "diagnose" decisional capacity" M, 62 geriatrician

Choice talk

"It can be challenging to associate general goals (prolongation of life, functional autonomy, visit my grandchildren, comfort, etc.) with concrete medical decisions" F, 49 geriatrician

"Need to educate health professionals on the variability of patient preferences and that they can't be making good decisions if they don't take patient preferences into account" F, 55 geriatrician

Option Talk

"The doctor must possess a certain degree of empathy to understand what the patient's reaction means. To involve the patient the doctor must know how to stimulate the patient. It's useful here too if the doctor already knows the patient." F, 49 elderly care nurse

"Getting the facts and giving them is the most critical. But it is really hard to do. Our evidence base probably informs us of about 1% of what we need to tell people. The other 99% is experience and value judgment." F, 32 geriatrician

Decision talk

"The notion of 'participatory consent' might be valuable here, which helps to see decision making as a process rather than an event, wherever possible." F, 32 Geriatrician

"Just to say that I am perpetually surprised by the decisions people make when given time to think with the doctor out of the room: we give them the information, but give them time to decide. I prefer to make my purchasing decisions without the shop assistant hovering around!" F, 32 Geriatrician

Evaluation talk

"Let the patient tell the result of the consultation in his own words, then there is a greater, but still small, chance that it will be retained by the patient / family." F, 53 geriatric nurse

Formulated educational needs

The whole process of adequate SDM with frail older patients was considered difficult. The participants considered the "goal talk" stage of the SDM process as the most challenging part and specifically articulated educational needs for 'engaging patient in dialogue', 'identifying discussion partner' and 'identifying patient values and goals of care'.

Engaging patient in dialogue: Participants stressed the importance of time and rest to build a relationship with the patient and asked for practical training on how to engage and empower patients. In addition to their own educational needs, the participating professionals asked for education of patients who need to play an active role in making healthcare choices.

Identifying discussion partner: Participants asked for validated instruments and communication training on how to assess decision capacity. Participants also requested practical training on how to involve family members or proxy decision makers in the process. Some participants suggested that structured discussion sessions with colleagues could help in developing dedicated communication skills for capacity assessment.

Identifying patient values and goals of care: Participants expressed the need for specific training in asking open-ended questions. They also asked for help in learning how to address wellbeing as a way to clarify goals of care. Several participants suggested that interdisciplinary education (i.e. nursing and medical students and staff) could be appropriate for this.

The identified educational needs were used as key words for the scoping literature review.

Literature exploration

We explored the literature using a scoping review approach based on the identified core competencies and educational needs.²⁹ We present and interpret general findings on ‘engaging patient in dialogue’, ‘identifying discussion partner’, ‘identifying values and goals of care’ and educational needs and transfer of training and learning combining different perspectives. The following key words were used to search the electronic databases of Pubmed, Web of Science and the Cochrane Library: “relationship building”, “empowerment”, “empowering”, “patient”, “assessing”, “assessment”, “decision capacity”, “eliciting goals of care”, AND “transfer of competencies” “transfer of skills/competencies”, “transfer of training” and “transfer of learning”.

We searched for literature studies, reviews and empirical studies, written in English and published before January 2016. Key journals and reference lists were also searched by hand (Figure 1). During the literature search, the first author composed mind maps to structure and classify the findings from the articles in an effective way, which were then discussed in the research team.³¹

Results of literature exploration

Since the participants identified educational needs specifically for the ‘goal talk’, we focussed our scoping review on its separate elements; ‘engaging patient in dialogue’, ‘identifying discussion partner’ and ‘identifying patient values and goals of

care'. We included a total of 20 articles on engaging patient in dialogue, 11 articles on identifying discussion partner and 14 on values and goals of care (Figure 1). Below we present the results per element.

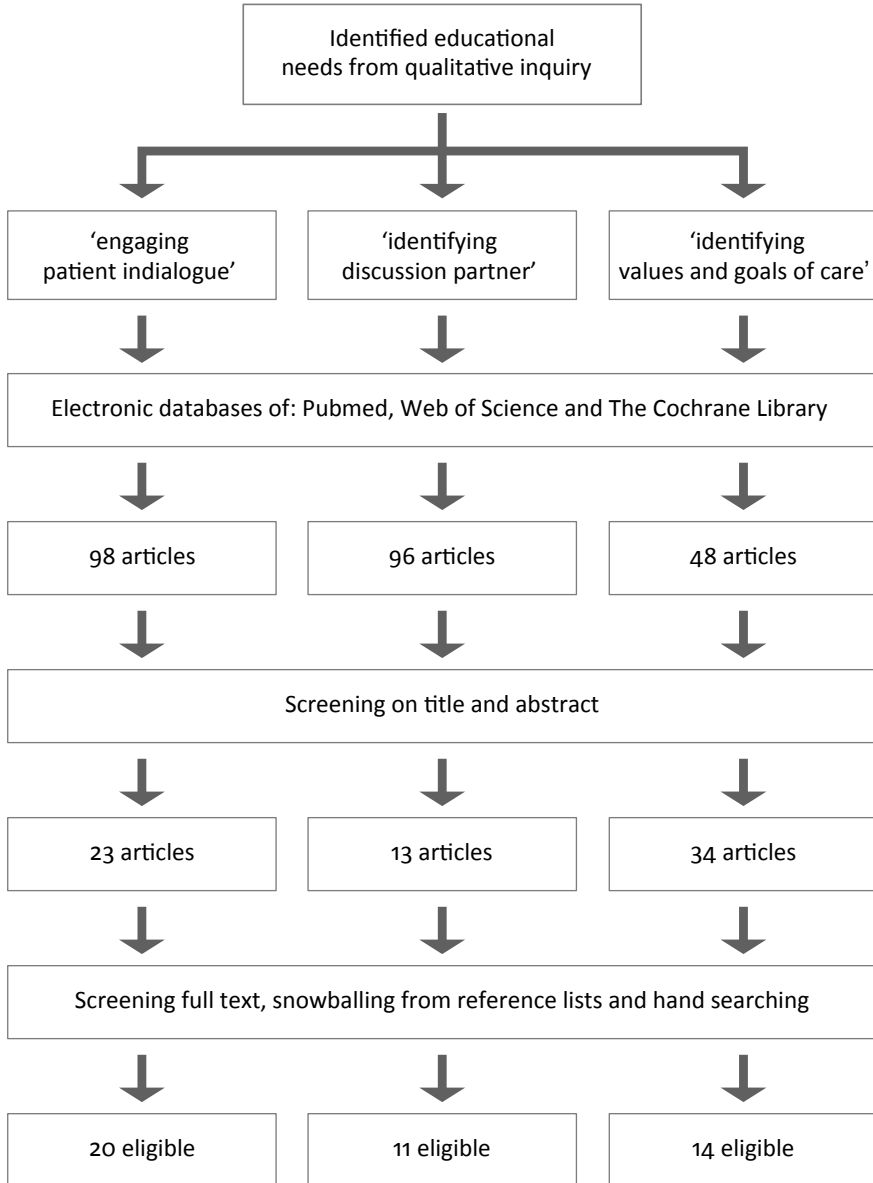


Figure 1 Scoping literature exploration

Engaging patient in dialogue

Table 2 presents a summary of the results of the included articles. In general, training of health professionals had a positive effect on patient empowerment and engagement. Although several studies included older patients, only one was specifically directed at geriatrics.³² Most training programmes were focused on communication skills supplemented with disease specific topics. Both shorter and longer training programmes were effective.³³⁻³⁶ However, patient centeredness that is taught in undergraduate education is under pressure in daily practice.³⁷ Patients need specific instructions to become more engaged.^{38, 39} In addition to advanced communication skills, health professionals need to create a dialogue with the patient to focus on their lives, more than on their medical problems to increase patient empowerment.^{32, 40-42}

Identifying discussion partner

Literature on assessing decision capacity (for treatment decisions) focused on two main topics. On the one hand research focuses on decision capacity assessment instruments, on the other hand on assessing decision capacity as a complex skill. We found no studies that specifically addressed transfer of training or learning. Table 3 presents the results of the included articles. In summary, a combination of assessment instruments and clinical judgement is considered most reliable. Moye *et al.*, for example, describe capacity assessments as ultimately human judgements in a social context and they argue that education of patients increases their decision making capacity.⁴³

Identifying values and goals of care

Table 4 presents a summary of the results of the included articles. More education, in particular experience-based training in advanced interpersonal and communication skills, is necessary.⁴⁴⁻⁴⁹ Example questions or prompts may help health professionals to develop these.⁵⁰⁻⁵³ Short educational courses can already have an effect on eliciting goals.^{54, 55} Relatively little research focused on eliciting goals in frail older patients.^{45, 49, 51, 52, 56}

Recommendations for teaching SDM with frail older patients

The findings from the qualitative inquiry and the literature exploration demonstrate that performing SDM with frail older patients is a complex process that requires complex competencies. We synthesized the findings and developed practice recommendations for SDM (Table 5) and defined key elements of a teaching framework (Box 2): create a knowledge base; train; facilitate communication; identify discussion partner; engage patient; and collaborate inter-professional.

Create a knowledge base

Many older patients have several chronic diseases, polypharmacy and are frail, which complicates patient management.^{6, 7} Knowledge of geriatric syndromes and a basic set of geriatric assessment and care competencies are therefore indispensable.^{23, 57, 58} Geriatrics should therefore receive substantial attention throughout education. Repeated practice based geriatrics courses, appealing role models and contact with geriatric patients are helpful.⁵⁸⁻⁶¹

Train

To acquire complex competencies training and practice are essential.^{10, 48, 49, 54} Since almost all health professionals are likely to contribute to serving the healthcare needs of older patients, it is essential that training starts early in education and continues during clinical practice to consolidate competencies.^{37, 62} For all core competencies regarding SDM with frail older patients (Table 1) training is necessary, however eliciting values and goals of care are most challenging. Interactive case-based practice sessions are considered effective and should focus on initiating discussions with patients adequately, and encouraging them to discuss nonmedical goals as well.^{48, 49, 54-56}

Facilitate communication

Communication skills training receives a considerable amount of attention during undergraduate education.⁶³ However, SDM with frail older patients requires advanced communication skills on topics such as goal setting and patient empowerment that do not receive much attention.^{37, 40, 48, 49, 52, 55} Although the practice recommendations and 'prompts' in Table 5 can help structure SDM communication, training will also be necessary.

Identify discussion partner

In geriatric patients decision capacity may be limited due to cognitive decline, emotional distress, their multi-morbidity or a combination of these.⁶⁴ Therefore, assessment of decision capacity in frail older patients is an important, but also a complex competency for most health professionals. Assessment of decision capacity requires knowledge of and ability to use specific assessment tools as well as advanced communication skills and clinical judgement expertise.^{43, 64-66} Education should focus on teaching assessment tools in combination with experience-based learning under the supervision of experienced and well trained clinicians.^{43, 64, 66}

Table 2 Results literature search on ‘engaging patient in dialogue’ N=20

Author	Method	Sample
Trummer et al. 2006 ³⁴	2 hour training session for health professionals focused on learning to talk with instead of about the patient	Patients undergoing heart surgery N=99 intervention N=100 control
Forlani et al. 2006 ³³	Eight 2 hour training sessions for patients led by different health professionals	Type 1 Diabetes patients N= 54 intervention N=36 control
Van Peperstraten et al. 2010 ³⁵	Multifaceted empowerment strategy (conversation, decision aid, follow up phone call)	Young couples receiving in vitro fertilisation therapy N=152 intervention N= 156 control
Melnyk et al. 2004 ³⁶	3 phase educational program for parents to increase their knowledge, to engage mothers in emotional and physical care (conversations, workbook and participation in care)	Mothers from children with unplanned ICU visit N= 87 intervention N=76 control
Brosseau et al. 2012 ⁸⁰	In a one day knowledge transfer workshop arthritis patients were taught to empower other patients	Arthritis patients N=49
Dotseth et al. 2014 ³⁸	Online chat room conversations with patients with chronic diseases	Patients with chronic diseases N=100
Gittner et al. 2015 ³⁹	eSMART device to train patients how to navigate and act to be an effective partner	Literature review and description of eSMART
Eubank et al. 2012 ⁴⁰	Review study to develop an adaptive leadership curriculum	Literature review Primary care setting
Russell et al. 2003 ⁴¹	Discussion paper on nursing studies on how to increase compliance	Literature review
Gair et al. 2001 ³²	Qualitative analysis of discharge meetings from a geriatric assessment unit	Case study, n=5 case review meetings and subsequent n=12 interviews with all members of multidisciplinary team of geriatric assessment unit

Findings	Comments
Positive effect on patient empowerment or engagement Positive effect on disease measures as well.	Empowerment is defined as coproduction between patient and caregiver
Better disease regulation and higher quality of life	Patients felt more engaged.
Patients felt more empowered and were able to make complex decisions	
Improved maternal functional and emotional coping outcomes, which resulted in significantly fewer child adjustment	Effect on both mothers and their children
Improved self management and participation among patients	
Patients want specific instructions from their health professionals on how to become more engaged	
eSMART is developed based on results from devices for training of healthcare providers	Based on: simulations used in the preparation of healthcare providers (effectively communicate or navigate the healthcare System)
Process skills are necessary to engage and empower patients to eventually deliver patient centred care Necessary for adequate training are: funding, accreditation, explaining novel concepts, acceptance by learners and faculty, assessment of learning, development of coaches, and creation of the context necessary for learning	Investing in relationship with patients improves patient empowerment
Listening and integrating an understanding of patients context improves compliance and empowers patients	
Better interdisciplinary collaboration and reducing the level of medical dominance results in discharge meetings that are more patient centred	Moving away from medical dominance enhances patient centred care

Table 2 Continued

Author	Method	Sample
Hage et al. 2005 ⁴²	Review study to develop an education programme for the frail elderly	Literature review Nursing studies
Williams et al. 2001 ³⁷	Qualitative interviews to investigate doctor-patient relationship over time	N=24 in depth semi structured interviews with newly qualified preregistered house officers
Groene et al 2012 ⁷¹	Qualitative interviews with health professionals and patients to study patient empowerment during handovers	N=12 patients an 22 health professionals
Falk et al. 2007 ⁷⁴	Qualitative interviews with chronic heart failure patients	N=17 chronic heart failure patients
Bayliss et al. 2007 ⁶⁹	Working group developed recommendations for supporting self management	
Hudon et al. 2013 ⁸¹	Descriptive qualitative study family physicians enabling attitudes	N=30 patients with chronic disease
Aujoulat et al 2008 ⁶⁷	Qualitative in depth interviews to understand the process of empowerment	N=40 chronically ill patients
Rohrer et al. 2008 ⁸²	Qualitative interview study to identify elements that improve patient empowerment	N= 680 interviews with adult primary care patients
Dwamena et al. 2012 ⁶⁸	Systematic review on patient centred approach	Literature review
Benbow 2012 ⁷⁰	Review on patient and carer participation	Literature review

Findings	Comments
Education programme for the frail elderly, an ongoing process: disease knowledge, relations, experiences, information, context, time	Empowerment is a dialogue between patient and caregiver
Patient centeredness that is taught during undergraduate education is under pressure after graduation	Communication skills training for staff at all levels needs to continue, and an assessment of communication skills needs to be incorporated into all staff appraisals
Standardized handover processes could increase patient centeredness Better inform patients could increase empowerment	lower socio-economic status, language barriers, fewer family resources or low health literacy decrease patient empowerment
Understanding patients' perceptions of balancing life with their illness creates opportunity to empower patients: ie. planning healthcare availability through a variety of channels including outreach clinics, telephone contact and rapid access appointments	Training of health professionals necessary (how and when is not studied)
Improving self management and patient empowerment requires an individualized approach, and must acknowledge and address existing challenges at patient, provider and health policy levels	Tailored programs are necessary, more research on how and when necessary
Enabling behaviours: Developing partnership, promoting interest, starting from the patient situation, legitimizing illness experience, acknowledging patient experience, helping patient to maintain hope	
Narratives provided by health professionals can facilitate patient empowerment	
Patient centred communication is important but costly. Health promotion and education programs improve patient empowerment as well	
All postgraduate training. Short and long training equally effective. Complex interventions directed at both patients and patients seem more effective	Not specific on empowerment. Skills training necessary. When, what and how is most effective remains unsolved
Collaboration between patients and health professionals is important Both patients and professionals need to be trained	More research necessary on how and when to train

Table 3 Results literature search on ‘Identifying discussion partner’ N=11

Focus	Author (year)	Sample
Decision capacity instruments	Sessums et al. 2011 ⁸³	Literature review on available instruments for assessing decision capacity
	Carling-Rowland et al. 2014 ⁸⁴	Development and validation of CACE (Communication ACE) N=32
	Ferron Parrayre et al. 2014 ⁸⁵	N=654 primary care patients
	Billick et al. 2009 ⁸⁶	N=29 older surgical patients
	Grisso et al. 1997 ⁸⁷	N=40 psychiatric patients, n=40 control
	Appelbaum 2007 ⁸⁸	Discussion paper with brief literature review
	Dunn et al. 2006 ⁸⁹	Literature review on articles describing structured assessments of adults’ capacity to consent to clinical treatment or research protocols
Assessing decision capacity as complex skill	Moye et al. 2007 ⁴³	Literature review on medical decision making capacity
	Van Laarhoven et al. 2014 ⁶⁶	Discussion paper
Combination of decision capacity tool and clinical skills	Rodin et al. 2008 ⁶⁵	Discussion paper with brief literature review Focus on older patients
	Vellinga et al. 2004 ⁶⁴	N=80 geriatric patients. For every patient decision capacity was assessed by clinician, family member and Vignette method

Main findings

Aid to Capacity evaluation (ACE) best instrument to help clinicians. Mini Mental State Examination (MMSE) useful at extreme scores

Adjusted ACE also effective

SURE is an effective tool (4-item questionnaire) for detecting decisional conflict

CQ-Med may be a useful adjunct in assessing declining competency in geriatric patients

The MacCAT-T offers a structured method to assess capacity

List with questions adapted from the MacCAT-T can increase assessment of decision capacity in complex situations

The MacCAT-T most empirical support. Contextual factors are important but understudied

Decision making capacity assessments are ultimately human judgements occurring in social context. Educating patients increases decision capacity

for a variety of reasons, patients may not be able to make a decision, focusing on patient's values and preferences can help patients to make decisions

Decision capacity is not static and can best be assessed to combine decision capacity tools (preferred tool: MacCAT^{87, 88}) and geriatric interview techniques

Vignette method (A vignette describes a hypothetical treatment choice, after which questions are posed to evaluate decision making capacity) can determine decision capacity. It is best used in combination with judgment of family members. Clinicians tend to overestimate decision capacity of their patients.

Table 4 Results literature search on ‘identifying values and goals of care’ N=14

Author	Method	Sample
Doukas et al. 2003 ⁷³	Discussion paper	Topic: advance directives
Scheunemann et al. 2012 ⁵³	Literature review	Development of framework based on literature review
Mierendorf et al. 2014 ⁵⁰	Literature review	Topic: palliative care in emergency department
Say et al. 2003 ⁴⁴	Literature review	Topic: eliciting patient preferences
Michelson et al. 1991 ⁵¹	Qualitative inquiry with vignette method to identify medical care preferences	N=44 nursing home residents
Schonwetter et al. 1996 ⁵⁶	Qualitative method using questionnaire and individual structured interviews	N=132 patients from independent retirement community
Furman et al. 2007 ⁴⁵	Qualitative study: one-on-one interviews	N=23 nursing home health professionals
Goodman et al. 1998 ⁴⁶	Discussion paper	Topic: eliciting end of life preferences
Buss et al. 2005 ⁶²	Cross sectional self report questionnaire (on competency in eliciting patient end of life preferences)	N=282 internal medicine residents
Bernacki et al. 2014 ⁴⁸	Literature review and synthesis of best practices	Topic: communication about serious illness care goals
Kelley et al. 2012 ⁴⁹	Evaluation of a new 2-day educational program in geriatrics	N=18 geriatric and palliative care fellows

Findings	Comments
<p>The family covenant formulates advance directives in conversation with family members and with the assistance of a physician</p>	<p>Training is necessary, how and when?</p>
<p>Facilitated values history helps caregivers to construct a view of patients health related values</p>	<p>Offers clinical framework with communication prompts to open discussion.</p>
<p>A list with pre-formulated questions can help elicit goals</p>	
<p>Eliciting patient preferences improves quality of care, but training of professionals in advanced interpersonal and communication skills necessary</p>	<p>Innovative research and appropriate professional training is needed</p>
<p>Vignettes can be of help in eliciting care preferences</p>	
<p>Eliciting values helps patients to think about advance directives and medical care.</p>	<p>Education of patients and caregivers necessary</p>
<p>A lack of systematic attention to goals of care and many barriers (ie. Lack of collaboration, time, fear, no family involved) More formal education for all health professionals necessary</p>	
<p>Clinicians need more education to adequately perform conversations to elicit preferences. Forms can be of help, but should be used with flexibility</p>	
<p>Residents view themselves as competent, but fail to report behaviours recommended for such discussions. Experiential learning is suggested as best way to train these competencies</p>	<p>Experiential learning: practicing with feedback from attending clinical educators</p>
<p>A systematic approach to discussing care goals is necessary. Interactive case-based sessions with communication skills practice and clinical training are effective</p>	
<p>An intensive communication skills program, improved fellows' self-assessed preparedness for challenging communication tasks</p>	

Table 4 Continued

Author	Method	Sample
Revello et al. 2015 ⁵⁴	Pre and post evaluation of an educational intervention	N=35 nurses who participated in the educational course N=63 patients who evaluated received care
Alexander et al. 2006 ⁵⁵	Controlled trial to evaluate the effects of a short educational course to increase communication skills and eliciting preferences	Intervention: N=37 internal medicine residents Control: N=19 internal medicine residents
Cooper et al. 2016 ⁵²	Prototype communication framework for goal-concordant care was developed with input from a one-day conference	Setting: surgical emergencies for seriously ill older patients N=23 conference attendants

Table 5 Practice recommendations for SDM with frail older patients

Stage of SDM model	Specific actions
Before you start	Prepare
Preparation: History and problem analysis	Adequate recordkeeping Performing relevant geriatric assessment
Goal talk: engage patient	Talk with not about the patient. Talk about living more and less about disease Provide specific instructions for patients
Goal talk: identify discussion partner	Assess decision capacity (eliciting patient values and goals of care may be helpful)

Findings**Comments**

A 30 minute training program for nurses improves their goal eliciting skills. Patients whose goals were elicited have more confidence in their care. It is necessary to repeat training

A two-day intensive course improved medical residents communication skills and their skills to elicit preferences

The communication framework (with prompts for clinicians) should support surgeons. More research is necessary to study implementation and how this can best be educated

Examples

Have lots of conversations with older people

“Know” background of your patient

Think about your own goals and values

Read about spirituality and the art of living

“Every person feels different about what is important when facing a health problem, would you share with me what is important to you at the moment...”

“Could you tell me something about what is important to you?” (can give examples: physical function, longevity, retaining cognitive function, freedom from symptoms, independence, etc.)

“Could you tell me what you know about your current problem?”

“Is your current problem stopping you from doing the things you like?”

“Can you help me to take good care of you by sharing your health history?”

Present a ‘vignette’⁶⁴ to a patient to test his/her decision capacity

“I am going to ask you some questions to discuss if you feel comfortable in having a conversation about decisions..”

“Would you like someone else (proxy) to support you?”

Table 5 Continued

Stage of SDM model	Specific actions
Goal talk: identify patient values and goals of care	Elicit patient values and goals of care Bridge between values and goals (advanced interpersonal and communication skills): Use concrete examples of how other patients formulated goals.
Choice talk	Summarize and pause
Option talk	Describe the options with benefits and trade offs
Decision talk	Reinforce engagement Pause
Evaluation talk	Summarize and pause

Engage the patient

To perform SDM adequately, both health professional and patient need to become active participants in the conversation. Patients need help to become engaged or empowered.^{38, 41, 67} Health professionals therefore need to focus on the relationship with the patient, create a dialogue and give specific instructions.^{38, 40} Practical training for health professionals may work, but more tailored programmes to train health professionals are necessary.^{34, 68-70}

Collaborate inter-professional

The care for frail older patients is often delivered by a team of health professionals. Every professional has a specific expertise and can contribute to obtain an overview of the patient. Moreover, during daily care situations patients may share important information with different health professionals. Both participants and literature therefore stimulate collaboration and inter-professional education to improve patient outcomes.^{32, 71}

Examples

“Tell me what you liked to do before you came to the hospital”

“Is religion important to you?”

“What is important to you? (can give examples: physical function, longevity, retaining cognitive function, freedom from symptoms, independence, etc.)”

“What are you hoping for?”

“What are you afraid of?”

“Let us discuss how we can help you meet your goals”

“Do you ever think about the end of life? Can you say something about that?”

“Let me summarize what we have discussed so far..”

“I can see this is difficult for you..”

“What is your understanding of your problem and what would you like to achieve?”

“based on our discussion, these are the possible options...”

“In your situation, here’s what we expect this could look like..”

“Are you ready to decide?”

“Do you want more time?”

“Do you have any questions?”

“Can you tell me in your own words what we have discussed and decided?”

“Are you satisfied with the decision?”

Box 2 Key elements of a teaching framework for educating SDM with frail older patients

<p>Create a knowledge base Specific geriatric knowledge on and training in geriatric syndromes, comprehensive geriatric assessment and geriatric clinical problem solving</p>	<p>Identify discussion partner Specific attention is necessary to assess decision capacity Practice with assessment tools Develop clinical judgment under supervision of experienced clinician</p>
<p>Train Practical training sessions to acquire core competencies (Table 1) Experience-based learning and interactive case-based sessions are effective</p>	<p>Engage patient Invest in relationship, create a dialogue Focus on patient, not disease Provide specific instructions</p>
<p>Facilitate communication Practice specific actions and use example questions (Table 5)</p>	<p>Collaborate inter-professional Practice together with other students/ professionals Improve through inter-professional training</p>

Discussion

Currently there is still a great need to improve access to and quality of SDM with frail older patients, since it receives too little attention both in clinical practice and in medical education. In a mixed methods study we developed recommendations for communication and a teaching framework for SDM with frail older patients. SDM with frail older patients can be seen as a dynamic and complex process. Educating the necessary core competencies for this complex process is challenging for most trainees. Using our proposed teaching framework and practice recommendations, we provided a basis for developing education, and a broader view on learning as a continuing change and transition in both the learner and his or her environment; this connects with recent education evidence.⁷²

The complexity of the competencies required to perform SDM with frail older patients necessitate comprehensive education and training. The reviewed literature endorsed the need for education and training, however did not state what the best timing is.^{69, 73, 74} From research on the training of other complex competencies, such as for example communication, it is known that these can be taught in small steps in increasing complexity, however transfer of complex competencies to clinical practice remains a difficult process.^{63, 75} A possible challenge in this process of teaching complex competencies is over-reliance on a model or guideline.⁷⁶ The complex competency of SDM with frail older patients requires a continuous counselling dialogue, not merely following the steps of a model. Our teaching framework therefore stimulates case-based education and emphasizes the importance of building a relationship with the patient and focusing on well-being. Moreover our teaching framework addresses the importance of inter-professional learning.⁷⁷

The fact that almost all health professionals at some point will serve the healthcare needs of (frail) older patients, further supports our plea to start teaching the necessary competencies for SDM with frail older patients early on in education. This is in line with the CanMEDS recommendations to teach competencies in an increasing degree of difficulty to provide physicians with a basic competency level and to support continuing competency building during specialization and subsequent clinical practice.²² Teaching these complex competencies calls for dedicated clinical educators and dedicated competency-based courses.^{61, 78} From the few general SDM courses available in undergraduate education it is known that young students are capable of achieving complex competencies.^{13, 14} We therefore argue that teaching necessary SDM competencies should start during undergraduate education and that education and practical training should continue in subsequent clinical practice.

Strengths and limitations

A major strength of this study is that we used a qualitative mixed methods approach to develop our teaching framework. Mixed methods studies are considered rigorous.⁷⁹ Another strength is that participants were from different countries and that we invited both caregivers and patients to participate in our Delphi study.

However, this study also has some methodological limitations. The literature exploration included only articles in English. We used a scoping approach²⁹ focused on transfer of learning; we searched for the articles using key words in the title and or abstract and may therefore have missed some relevant articles. Nevertheless, we were able to strengthen the results of our qualitative inquiry with literature support. Another possible limitation is that the qualitative inquiry was done in both English and Dutch. However, the inquiry and the responses were translated by a native English speaker with extensive qualifications as a medical translator in order to preserve, as closely as possible, the nuances of the responses.

Summary and future work

This article presents a novel teaching framework and communication recommendations for SDM with frail older patients that may be useful to clinicians, educators and researchers who aim to promote SDM with frail older patients. In view of the importance of SDM for all clinicians, teaching should start early in education and should carefully transfer skills and competencies to clinical practice. Further research is necessary to develop different SDM training programmes for both undergraduate education and clinical practice, and to evaluate what kind of education is most effective and at what time. Moreover, we need to evaluate the impact of SDM on quality of life and care of frail older patients.

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References

1. Elwyn G, Edwards A, Kinnersley P. Shared decision-making in primary care: the neglected second half of the consultation. *Br J Gen Pract.* 1999;49(443):477-82.
2. Elwyn G, Frosch D, Thomson R, Joseph-Williams N, Lloyd A, Kinnersley P, et al. Shared decision making: a model for clinical practice. *J Gen Intern Med.* 2012;27(10):1361-7.
3. Stiggelbout AM. Shared decision making: really putting patients at the centre of healthcare (vol 344, e256, 2012). *Br Med J.* 2012;344.
4. Charles C, Gafni A, Whelan T. Shared decision-making in the medical encounter: What does it mean? (Or it takes at least two to tango). *Soc Sci Med.* 1997;44(5):681-92.
5. Couet N, Desroches S, Robitaille H, Vaillancourt H, Leblanc A, Turcotte S, et al. Assessments of the extent to which health-care providers involve patients in decision making: a systematic review of studies using the OPTION instrument. *Health expectations : an international journal of public participation in health care and health policy.* 2015;18(4):542-61.
6. Ayyar A, Varman S, De Bhaldraithe S, Singh I. The journey of care for the frail older person. *Br J Hosp Med (Lond).* 2010;71(2):92-6.
7. Lacas A, Rockwood K. Frailty in primary care: a review of its conceptualization and implications for practice. *BMC medicine.* 2012;10:4.
8. Gionfriddo MR, Leppin AL, Brito JP, Leblanc A, Boehmer KR, Morris MA, et al. A systematic review of shared decision making interventions in chronic conditions: a review protocol. *Systematic reviews.* 2014;3:38.
9. Montori VM, Gafni A, Charles C. A shared treatment decision-making approach between patients with chronic conditions and their clinicians: the case of diabetes. *Health expectations : an international journal of public participation in health care and health policy.* 2006;9(1):25-36.
10. Frenk J, Chen L, Bhutta ZA, Cohen J, Crisp N, Evans T, et al. Health professionals for a new century: transforming education to strengthen health systems in an interdependent world. *Lancet.* 2010;376(9756):1923-58.
11. Bieber C, Nicolai J, Hartmann M, Blumenstiel K, Ringel N, Schneider A, et al. Training physicians in shared decision-making-who can be reached and what is achieved? *Patient Educ Couns.* 2009;77(1):48-54.
12. Legare F, Stacey D, Turcotte S, Cossi MJ, Kryworuchko J, Graham ID, et al. Interventions for improving the adoption of shared decision making by healthcare professionals. *The Cochrane database of systematic reviews.* 2014;9:CD006732.
13. Ledford CJ, Seehusen DA, Chessman AW, Shokar NK. How we teach U.S. medical students to negotiate uncertainty in clinical care: a CERA study. *Fam Med.* 2015;47(1):31-6.
14. Morrow CE, Reed VA, Eliassen MS, Imset I. Shared decision making: skill acquisition for year III medical students. *Fam Med.* 2011;43(10):721-5.
15. Legare F, Politi MC, Drolet R, Desroches S, Stacey D, Bekker H, et al. Training health professionals in shared decision-making: An international environmental scan. *Patient Educ Couns.* 2012;88(2):159-69.
16. Fried TR, Tinetti ME, Iannone L. Primary care clinicians' experiences with treatment decision making for older persons with multiple conditions. *Arch Intern Med.* 2011;171(1):75-80.
17. Reuben DB. Medical Care for the Final Years of Life "When You're 83, It's Not Going to Be 20 Years". *Jama-J Am Med Assoc.* 2009;302(24):2686-94.
18. Morris RL, Sanders C, Kennedy AP, Rogers A. Shifting priorities in multimorbidity: a longitudinal qualitative study of patient's prioritization of multiple conditions. *Chronic illness.* 2011;7(2):147-61.
19. Robben SH, Perry M, Olde Rikkert MG, Heinen MM, Melis RJ. Care-related goals of community-dwelling frail older adults. *J Am Geriatr Soc.* 2011;59(8):1552-4.
20. Stiggelbout AM, Pieterse AH, De Haes JC. Shared decision making: Concepts, evidence, and practice. *Patient Educ Couns.* 2015;98(10):1172-9.
21. Waterworth S, Gott M. Decision making among older people with advanced heart failure as they transition to dependency and death. *Current opinion in supportive and palliative care.* 2010;4(4):238-42.

22. CanMEDS competencies. Available from: <http://www.royalcollege.ca/portal/page/portal/rc/canmeds>.
23. Tersmette W, van Bodegom D, van Heemst D, Stott D, Westendorp R. Gerontology and Geriatrics in Dutch medical education. *Neth J Me*. 2013;71(6):331-7.
24. Leipzig RM, Granville L, Simpson D, Anderson MB, Sauvigne K, Soriano RP. Keeping Granny Safe on July 1: A Consensus on Minimum Geriatrics Competencies for Graduating Medical Students. *Acad Med*. 2009;84(5):604-10.
25. Leipzig RM, Sauvigne K, Granville LJ, Harper GM, Kirk LM, Levine SA, et al. What Is a Geriatrician? American Geriatrics Society and Association of Directors of Geriatric Academic Programs End-of-Training Entrustable Professional Activities for Geriatric Medicine. *J Am Geriatr Soc*. 2014;62(5):924-9.
26. Pol van de MHJ FC, Lagro J, Slaats YHP, Olde Rikkert MGM, Lagro-Janssen ALM. Expert and patient consensus on a dynamic model for shared decision-making in frail older patients. *Patient Educ Couns*. 2015;in press.
27. Kleyne M, Bleijlevens MH, Beurskens AJ, Rasquin SM, Halfens J, Wilson MR, et al. Terminology, taxonomy, and facilitation of motor learning in clinical practice: protocol of a delphi study. *JMIR research protocols*. 2013;2(1):e18.
28. Boulkedid R, Abdoul H, Loustau M, Sibony O, Alberti C. Using and Reporting the Delphi Method for Selecting Healthcare Quality Indicators: A Systematic Review. *Plos One*. 2011;6(6).
29. Arksey H, O'Malley L. Scoping studies: towards a methodological framework. *International Journal of Social Research Methodology*. 2005;8(1):19-32.
30. Glaser BG, Strauss AL. The discovery of grounded theory; strategies for qualitative research. Chicago,; Aldine Pub. Co.; 1967. x, 271 p. p.
31. Farrand P, Hussain F, Hennessy E. The efficacy of the 'mind map' study technique. *Med Educ*. 2002;36(5):426-31.
32. Gair G, Hartery T. Medical dominance in multidisciplinary teamwork: a case study of discharge decision-making in a geriatric assessment unit. *J Nurs Manag*. 2001;9(1):3-11.
33. Forlani G, Zannoni C, Tarrini G, Melchionda N, Marchesini G. An empowerment-based educational program improves psychological well-being and health-related quality of life in Type 1 diabetes. *J Endocrinol Invest*. 2006;29(5):405-12.
34. Trummer UF, Mueller UO, Nowak P, Stidl T, Pelikan JM. Does physician-patient communication that aims at empowering patients improve clinical outcome? A case study. *Patient Educ Couns*. 2006;61(2):299-306.
35. van Peperstraten A, Nelen W, Grol R, Zielhuis G, Adang E, Stalmeier P, et al. The effect of a multifaceted empowerment strategy on decision making about the number of embryos transferred in in vitro fertilisation: randomised controlled trial. *BMJ*. 2010;341:c2501.
36. Melnyk BM, Alpert-Gillis L, Feinstein NF, Crean HF, Johnson J, Fairbanks E, et al. Creating opportunities for parent empowerment: Program effects on the mental health/coping outcomes of critically ill young children and their mothers. *Pediatrics*. 2004;113(6):E597-E607.
37. Williams C, Cantillon P, Cochrane M. The doctor-patient relationship: from undergraduate assumptions to pre-registration reality. *Med Educ*. 2001;35(8):743-7.
38. Dotseth M. Teaching patients to protect themselves during care transitions: a patient safety campaign. *Minn Med*. 2014;97(8):41-3.
39. Gittner LS. Empowering Patients to Become Better Partners. *J Health Hum Serv Adm*. 2015;38(2):276-88.
40. Eubank D, Geffken D, Orzano J, Ricci R. Teaching adaptive leadership to family medicine residents: what? why? how? *Families, systems & health : the journal of collaborative family healthcare*. 2012;30(3):241-52.
41. Russell S, Daly J, Hughes E, Hoog Co C. Nurses and 'difficult' patients: negotiating non-compliance. *J Adv Nurs*. 2003;43(3):281-7.
42. Hage AM, Lorensen M. A philosophical analysis of the concept empowerment; the fundament of an education-programme to the frail elderly. *Nursing philosophy : an international journal for healthcare professionals*. 2005;6(4):235-46.

43. Moyer J, Marson DC. Assessment of decision-making capacity in older adults: an emerging area of practice and research. *J Gerontol B Psychol Sci Soc Sci*. 2007;62(1):P3-P11.
44. Say RE, Thomson R. The importance of patient preferences in treatment decisions--challenges for doctors. *BMJ*. 2003;327(7414):542-5.
45. Furman CD, Kelly SE, Knapp K, Mowery RL, Miles T. Eliciting goals of care in a nursing home. *Journal of the American Medical Directors Association*. 2007;8(3 Suppl 2):e35-41.
46. Goodman KW. End-of-life algorithms. Psychology, public policy, and law : an official law review of the University of Arizona College of Law and the University of Miami School of Law. 1998;4(3):719-27.
47. Davies S, Crippacc CG. Supporting quality improvement in care homes for older people: the contribution of primary care nurses. *J Nurs Manag*. 2008;16(2):115-20.
48. Bernacki RE, Block SD, Care ACPHV. Communication About Serious Illness Care Goals A Review and Synthesis of Best Practices. *Jama Intern Med*. 2014;174(12):1994-2003.
49. Kelley AS, Back AL, Arnold RM, Goldberg GR, Lim BB, Littrivis E, et al. Geritalk: communication skills training for geriatric and palliative medicine fellows. *J Am Geriatr Soc*. 2012;60(2):332-7.
50. Mierendorf SM, Gidvani V. Palliative care in the emergency department. *The Permanente Journal*. 2014;18(2):77-85.
51. Michelson C, Mulvihill M, Hsu MA, Olson E. Eliciting medical care preferences from nursing home residents. *Gerontologist*. 1991;31(3):358-63.
52. Cooper Z, Koritsanszky LA, Cauley CE, Frydman JL, Bernacki RE, Mosenthal AC, et al. Recommendations for Best Communication Practices to Facilitate Goal-concordant Care for Seriously Ill Older Patients With Emergency Surgical Conditions. *Ann Surg*. 2016;263(1):1-6.
53. Scheunemann LP, Arnold RM, White DB. The facilitated values history: helping surrogates make authentic decisions for incapacitated patients with advanced illness. *Am J Respir Crit Care Med*. 2012;186(6):480-6.
54. Revello K, Fields W. An Educational Intervention to Increase Nurse Adherence in Eliciting Patient Daily Goals. *Rehabil Nurs*. 2015;40(5):320-6.
55. Alexander SC, Keitz SA, Sloane R, Tulsy JA. A controlled trial of a short course to improve residents' communication with patients at the end of life. *Acad Med*. 2006;81(11):1008-12.
56. Schonwetter RS, Walker RM, Solomon M, Indurkha A, Robinson BE. Life values, resuscitation preferences, and the applicability of living wills in an older population. *J Am Geriatr Soc*. 1996;44(8):954-8.
57. Tullo ES, Spencer J, Allan L. Systematic review: helping the young to understand the old. Teaching interventions in geriatrics to improve the knowledge, skills, and attitudes of undergraduate medical students. *J Am Geriatr Soc*. 2010;58(10):1987-93.
58. Atkinson HH, Lambros A, Davis BR, Lawlor JS, Lovato J, Sink KM, et al. Teaching medical student geriatrics competencies in 1 week: an efficient model to teach and document selected competencies using clinical and community resources. *J Am Geriatr Soc*. 2013;61(7):1182-7.
59. van de Pol MH, Lagro J, Fluit LR, Lagro-Janssen TL, Olde Rikkert MG. Teaching Geriatrics Using an Innovative, Individual-Centered Educational Game: Students and Educators Win. A Proof-of-Concept Study. *J Am Geriatr Soc*. 2014;62(10):1943-9.
60. Chang A, Fernandez H, Cayea D, Chheda S, Paniagua M, Eckstrom E, et al. Complexity in Graduate Medical Education: A Collaborative Education Agenda for Internal Medicine and Geriatric Medicine. *J Gen Intern Med*. 2014.
61. Srinivasan M, Li ST, Meyers FJ, Pratt DD, Collins JB, Braddock C, et al. "Teaching as a Competency": competencies for medical educators. *Acad Med*. 2011;86(10):1211-20.
62. Buss MK, Alexander GC, Switzer GE, Arnold RM. Assessing competence of residents to discuss end-of-life issues. *Journal of palliative medicine*. 2005;8(2):363-71.
63. van den Eertwegh V, van Dulmen S, van Dalen J, Scherpbier AJ, van der Vleuten CP. Learning in context: identifying gaps in research on the transfer of medical communication skills to the clinical workplace. *Patient Educ Couns*. 2013;90(2):184-92.

64. Vellinga A, Smit JH, Van Leeuwen E, Van Tilburg W, Jonker C. Competence to consent to treatment of geriatric patients: judgements of physicians, family members and the vignette method. *Int J Geriatr Psychiatry*. 2004;19(7):645-54.
65. Rodin MB, Mohile SG. Assessing decisional capacity in the elderly. *Semin Oncol*. 2008;35(6):625-32.
66. van Laarhoven HW, Henselmans I, de Haes JH. To treat or not to treat: who should decide? *Oncologist*. 2014;19(4):433-6.
67. Aujoulat I, Marcolongo R, Bonadiman L, Deccache A. Reconsidering patient empowerment in chronic illness: a critique of models of self-efficacy and bodily control. *Soc Sci Med*. 2008;66(5):1228-39.
68. Dwamena F, Holmes-Rovner M, Gaulden CM, Jorgenson S, Sadigh G, Sikorskii A, et al. Interventions for providers to promote a patient-centred approach in clinical consultations. *The Cochrane database of systematic reviews*. 2012;12:CD003267.
69. Bayliss EA, Bosworth HB, Noel PH, Wolff JL, Damush TM, McIver L. Supporting self-management for patients with complex medical needs: recommendations of a working group. *Chronic illness*. 2007;3(2):167-75.
70. Benbow SM. Patient and carer participation in old age psychiatry in England. Part I: a systemic perspective of the historical and policy context. *Int Psychogeriatr*. 2012;24(2):175-84.
71. Groene RO, Orrego C, Sunol R, Barach P, Groene O. "It's like two worlds apart": an analysis of vulnerable patient handover practices at discharge from hospital. *BMJ quality & safety*. 2012;21 Suppl 1:i67-75.
72. van der Vleuten CP, Driessen EW. What would happen to education if we take education evidence seriously? *Perspect Med Educ*. 2014;3(3):222-32.
73. Doukas DJ, Hardwig J. Using the family covenant in planning end-of-life care: obligations and promises of patients, families, and physicians. *J Am Geriatr Soc*. 2003;51(8):1155-8.
74. Falk S, Wahn AK, Lidell E. Keeping the maintenance of daily life in spite of chronic heart failure. A qualitative study. *European journal of cardiovascular nursing : journal of the Working Group on Cardiovascular Nursing of the European Society of Cardiology*. 2007;6(3):192-9.
75. van Weel-Baumgarten E, Bolhuis S, Rosenbaum M, Silverman J. Bridging the gap: How is integrating communication skills with medical content throughout the curriculum valued by students? *Patient Educ Couns*. 2013;90(2):177-83.
76. Hawkins RE, Welcher CM, Holmboe ES, Kirk LM, Norcini JJ, Simons KB, et al. Implementation of competency-based medical education: are we addressing the concerns and challenges? *Med Educ*. 2015;49(11):1086-102.
77. Curran V, Reid A, Reis P, Doucet S, Price S, Alcock L, et al. The use of information and communications technologies in the delivery of interprofessional education: A review of evaluation outcome levels. *Journal of interprofessional care*. 2015;29(6):541-50.
78. McGaghie WC. Mastery Learning: It Is Time for Medical Education to Join the 21st Century. *Acad Med*. 2015;90(11):1438-41.
79. Creswell JW, Fetters MD, Ivankova NV. Designing a mixed methods study in primary care. *Annals of family medicine*. 2004;2(1):7-12.
80. Brosseau L, Lineker S, Bell M, Wells G, Casimiro L, Egan M, et al. People getting a grip on arthritis: A knowledge transfer strategy to empower patients with rheumatoid arthritis and osteoarthritis. *Health Educ J*. 2012;71(3):255-67.
81. Hudon C, St-Cyr Tribble D, Bravo G, Hogg W, Lambert M, Poitras ME. Family physician enabling attitudes: a qualitative study of patient perceptions. *BMC family practice*. 2013;14:8.
82. Rohrer JE, Wilshusen L, Adamson SC, Merry S. Patient-centredness, self-rated health, and patient empowerment: should providers spend more time communicating with their patients? *J Eval Clin Pract*. 2008;14(4):548-51.
83. Sessums LL, Zembrzuska H, Jackson JL. Does this patient have medical decision-making capacity? *JAMA*. 2011;306(4):420-7.

84. Carling-Rowland A, Black S, McDonald L, Kagan A. Increasing access to fair capacity evaluation for discharge decision-making for people with aphasia: A randomised controlled trial. *Aphasiology*. 2014;28(6):750-65.
85. Ferron Parayre A, Labrecque M, Rousseau M, Turcotte S, Legare F. Validation of SURE, a four-item clinical checklist for detecting decisional conflict in patients. *Med Decis Making*. 2014;34(1):54-62.
86. Billick SB, Perez DR, Garakani A. A clinical study of competency to consent to hospitalization and treatment in geriatric inpatients. *J Forensic Sci*. 2009;54(4):943-6.
87. Grisso T, Appelbaum PS, Hill-Fotouhi C. The MacCAT-T: a clinical tool to assess patients' capacities to make treatment decisions. *Psychiatr Serv*. 1997;48(11):1415-9.
88. Appelbaum PS. Clinical practice. Assessment of patients' competence to consent to treatment. *N Engl J Med*. 2007;357(18):1834-40.
89. Dunn LB, Nowrangi MA, Palmer BW, Jeste DV, Saks ER. Assessing decisional capacity for clinical research or treatment: a review of instruments. *AJ Psychiatry*. 2006;163(8):1323-34.

7

General discussion



General discussion

The overall aim of this thesis was to investigate how medical students and health professionals need to be educated to become health professionals with adequate attitude and competencies in delivering medical care for older patients, with special focus on shared decision making.

This final chapter starts with a continuation of the case of patient Mr. H. Thereafter, the main findings and conclusions of the previous chapters are summarized, followed by a reflection on the findings and the methodology. Furthermore recommendations for medical education, clinical practice and further research are described.

Continuation of case for patient Mr. H

After the night shift I contact the patient's own GP and offer to visit the patient together within the framework of the primary care elderly care project.

The patient's own GP has known him fifteen years, but does not know what to do anymore in view of the current complexity. Until a year ago the patient was still reasonably vital. His general condition then deteriorated badly and he moved into a care home. After the death of his wife, he indicated that he does not want to be resuscitated, but has not yet made any other arrangements. The patient arranges the specialist visits himself. The GP has little contact with the care home staff.

Together with his own GP and the intern we take a look at his information and data from the patient file. In the care home, the staff can still provide important help from the care perspective.

The patient says that he feels slightly better than at the previous visit, but feels that shortness of breath is the main problem. Since my previous visit he has been asking himself what the future holds: "Things aren't getting any better doctor..." We explain to the patient that he is in fact deteriorating physically due to a combination of problems, including diabetes mellitus, kidney function disorders, COPD and heart failure. And that it is a good idea to discuss together how best to deal with these problems. "Each patient is unique and to give you the best possible care we need to know what's important to you."

Can you tell me something about what's important to you?"

"My youngest grandchild is taking her first communion next month and I'd like to be there."

.....

Do you have any other wishes?

“Not really doctor, I’m just getting worse, I can hardly do anything for myself, most of all I would like to be with my wife again...”

“Are you frightened of anything?”

“Of suffocating!”

.....

Together with the patient, his own GP and the care staff we decide to aim at improving his quality of life by reducing the shortage of breath.

After adjusting the medication, clear instructions for patient and care staff and documentation of this in the care file, the GP makes a follow-up appointment with the patient and care staff to check how things are going and to discuss the next steps.

.....

Together with the GP, the intern and the care staff we go through the approach. The GP and care staff say that they now have the information they need to move forwards.

The intern says that she would like to learn more about functional analysis and shared decision-making in order to deal with complex cases of this kind.

Overview of main findings

As stated in *Chapter 1*, healthcare has become increasingly complex during the last decades. Part of this complexity is caused by an ever ageing patient population. The overwhelming complexity of the medical care for older patients is one of the reasons that geriatrics and elderly care are not popular specialties among medical students, physicians, nurses and other health professionals.

In order to gain more insight in the complexities that healthcare workers face when taking care of older patients the study in *Chapter 2* was carried out. This study sought to explore experiences in the provision and receipt of primary care from the perspective of both primary health care professionals and elderly patients in order to identify expectations and needs. It demonstrated that effective primary elderly care intervention requires mutual understanding of the expectations and goals of all parties involved, and also reveals a number of important requirements, especially: accessible patient information in the form of care plans; special (inter-professional) training for nurses and GPs on complex care and multi-morbidity; training on discussing autonomy, goal setting and shared care.

In *Chapter 3*, we developed and evaluated a geriatrics course based on the serious game GeriatriX that was designed specifically to address the complexities associated with decision-making in geriatrics. It showed that using the serious game GeriatriX in a modern medical educational setting can improve students' knowledge of geriatric care and can have a positive effect on students' attitudes towards elderly patients. Teaching students how to effectively treat geriatric patients-particularly frail patients with complex, multiple health issues- can play a significant role in meeting society's need for doctors who are properly trained to provide geriatric care.

In *Chapter 4*, we examined geriatrics from the students' perspective in order to identify elements that can be useful in education and improving attitudes towards and knowledge about geriatrics. To this end, students were asked to write a narrative reflection essay specifically about their preconceptions and perception of geriatrics and care for older persons before and after an elective course on geriatrics. Our most important finding was that students lacked a realistic perception of clinical practice and professional identity, which negatively influenced their image of geriatrics. Moreover, this study clearly showed that teaching students the complexity of clinical practice and professional identity, instead of focusing on cures and diseases, helped them to develop a more positive attitude towards geriatrics.

From the perspective of both healthcare workers and patients as well as from medical students the subject of shared decision making (SDM) was found to be an important topic to improve care for older patients. However, SDM with frail older patients is still in its infancy. In the study described in *Chapter 5*, we achieved consensus on a model for SDM with frail older patients. This dynamic model for clinical practice, that consists of six fluid stages, requires a continuous counselling dialogue between health professional and patient. The six stages are: *preparation, goal talk, choice talk, option talk, decision talk* and *evaluation*. What specific competencies are for the different stages and how these can be educated were the aims of our last research chapter. *Chapter 6* described the development of practice recommendations and a teaching framework for SDM with frail older patients. We used a mixed methods approach involving a qualitative inquiry and a literature exploration, that resulted in practice recommendations and a teaching framework with the following key elements: create a knowledge base for all health professionals; offer practical training; facilitate communication; identify discussion partner; engage patient; and collaborate. In view of the importance of SDM for all clinicians, teaching should start early in education and should transfer into clinical practice.

Reflections on the findings

Particularly in the light of our ageing society, far too few students consider a career in geriatrics or elderly care.^{1, 2} Many medical students lack a positive attitude towards the elderly and many health professionals feel overwhelmed by the complexity of problems presented by geriatric patients.²⁻⁴ In addition, all healthcare workers need basic geriatric competencies, but far too few medical schools offer specific geriatrics education and mandatory clerkships in geriatrics.⁵⁻⁷ The studies in this thesis were directed at exploring how medical students and healthcare workers need to be educated to become health professionals with adequate attitudes and competencies in delivering medical care for older patients. Reflecting on the different studies described in this thesis, I identified many factors that are important when reforming geriatrics education. The above patient case is an illustration of the challenges that health professionals may face when caring for (frail) older patients and shows several of the important factors. Geriatrics education therefore needs to take the perspectives of students, patients as well as health professionals into account. In Figure 1, which can be seen as the ultimate result of this thesis, I have presented the results of this thesis in a schematic overview, which can help guide educators and policymakers in transforming medical education.

Basic skills and attitude

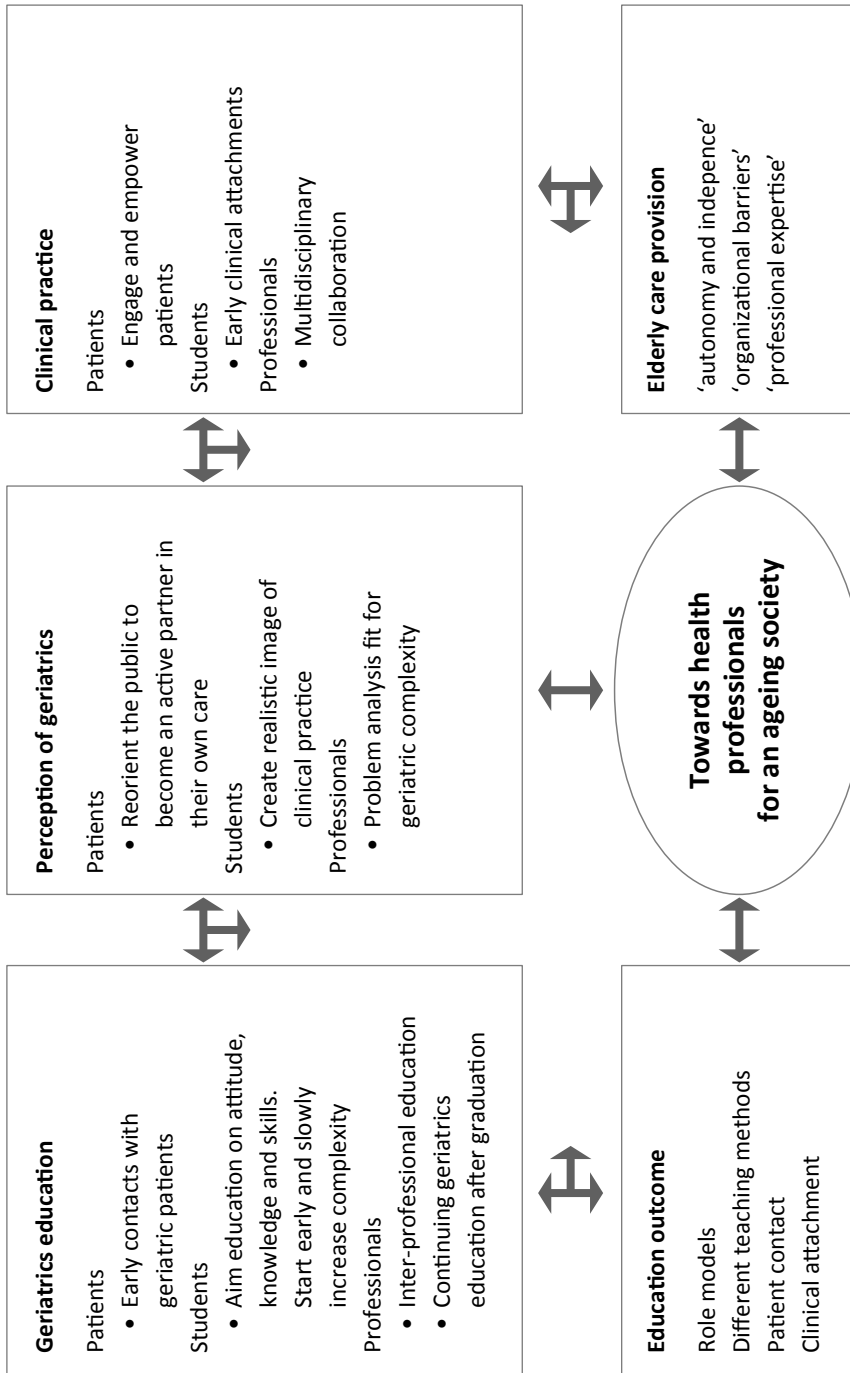
We showed that geriatric patients are struggling with themes such as autonomy, independence and meaning of life. They want to have meaningful conversations with their doctors and nurses, but often do not know how to achieve these. Health professionals on the other hand struggle with the medical complexity of cases and lack the tools to start conversations about care planning (*chapter 2*). As our patient case shows also, a complicating factor here is the lack of collaboration between different health professionals and the fragmentation of care.⁸⁻¹⁰ A disease-oriented approach is common for most medical specialists, whereas in primary care and nursing the approach to care is broader, but they too are struggling with the complexity of frail older patients. Health professionals do not recognize each other's expertise and expressed a lack of specific geriatric expertise. Therefore, realizing successful care for (frail) older patients requires mutual understanding of the expectations and goals of all the parties involved. A lot of medical schools and medical specialist training, however, still rely on a disease-centred approach and are often mono-disciplinary. Results of programmes of interdisciplinary geriatrics education are promising.^{11, 12} However, the work environments of different health professionals do not always support inter- and multi-disciplinary education and collaboration. Contact between hospital

specialists and primary care workers, for example, can be complicated for practical reasons such as time pressure, different working hours and non-compatible digital patient records.¹³ The work of Fenwick shows us that inter-professional education and collaboration are still under pressure due to the physical organisation of our healthcare facilities.^{14, 15} Other problems towards improving inter-professional collaboration are more fundamental, such as lack of trust in and respect for the contributions of other professionals, lack of knowledge about the expertise of other professionals and differences in professional cultures.^{9, 16, 17} This supports our emphasis on attention for inter-professional education in both undergraduate education and postgraduate education or clinical practice (Figure 1).

When patients become older and more frail, this affects their autonomy. Loss of autonomy can have a negative impact on wellbeing.¹⁸ When health professionals specifically address the theme of loss of autonomy, this has a positive effect on well-being.^{19, 20} However, in the overwhelming complexity of the care for frail older patients, health professionals do not regularly address this theme and sometimes lack the competencies and attitudes to do so (*chapter 2*). Patient empowerment may positively influence the feeling of autonomy. However, this requires education of both patients and health professionals. In fields outside geriatrics, specially trained patients, so-called patient educators, are deployed to teach students and health professionals elements of patient care.^{21, 22} It would be interesting to explore if older patients can be trained to discuss the topic of autonomy with students and health professionals, which may in turn affect their empowerment. Moreover, contacts with older patients might improve attitude towards older patients.² To date relatively little research had focused on how health professionals can empower their older patients.^{23, 24} In general, training of health professionals has a positive effect on patient engagement and empowerment, however what type of education is most effective and what is the best timing remains unclear.²⁵⁻²⁷ Moreover, the communication skills of health professionals that are learned during formal education may be under pressure during daily clinical practice.²⁸ In Figure 1 we therefore connect the perspectives of students, patients and health professionals in education and practice to emphasize the need for an integrative approach.

Image of geriatrics

Medical students do not have an overall positive attitude towards geriatrics and elderly care (*chapters 3 and 4*). The image of geriatrics and elderly care has already been formed before students start their formal medical education.^{29, 30} Unfortunately, until now, medical education has not been able to change this attitude to enthuse a sufficient number of medical students and other health



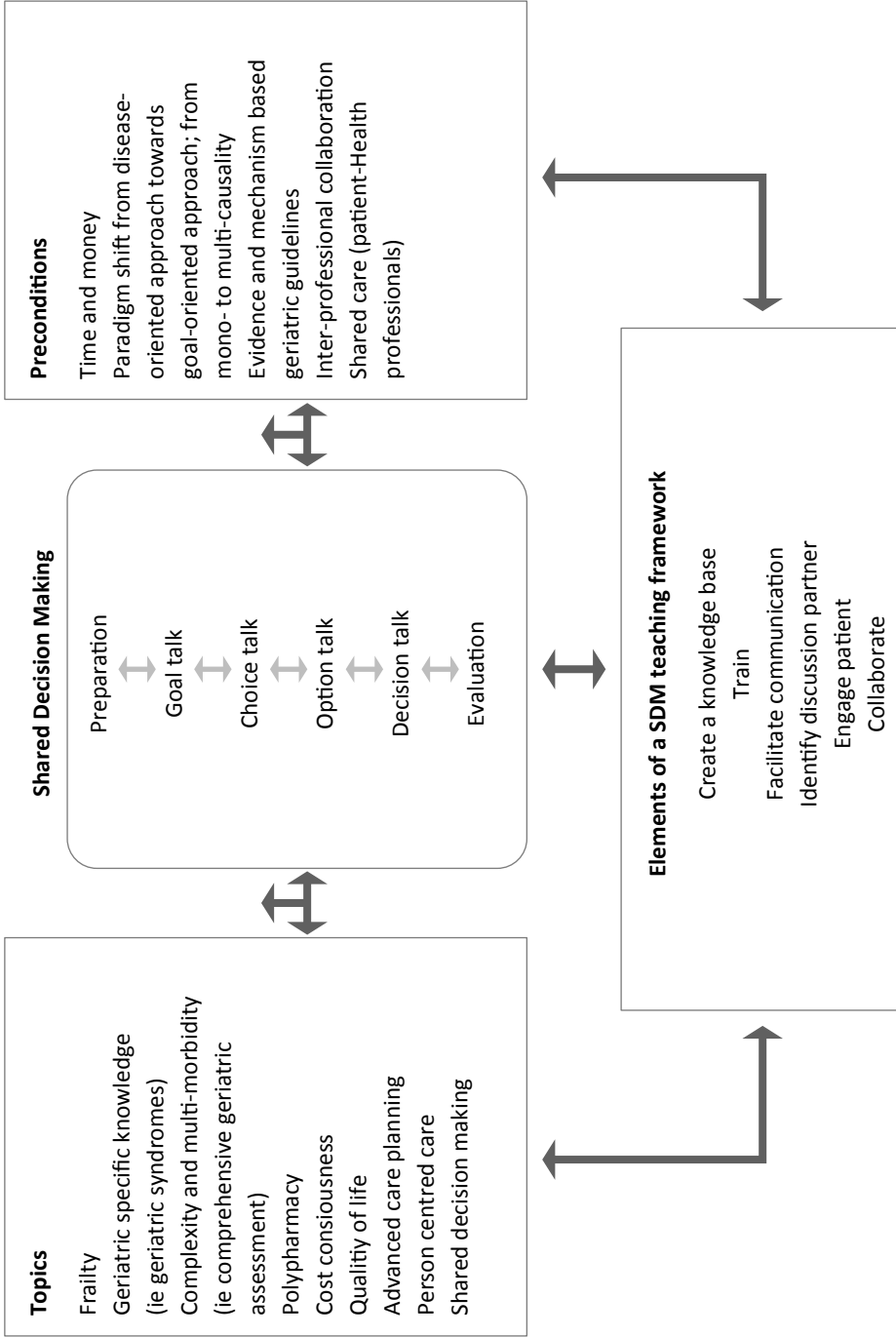


Figure 1 Health professionals for an ageing society: Transforming medical education

professionals (i.e. nurses) for a career in geriatrics.^{1,31} Medical students have an inaccurate image of clinical practice and medical professional identity, which has a negative impact on their attitude towards, interest in and knowledge of geriatrics (*chapter 4*). The hidden curriculum plays an important role in this inaccurate image and their preconceptions about geriatrics. Actively investigating the hidden curriculum with narrative reflection essays, combined with clarifying, in-depth focus group discussions, can be used as an educational tool to influence students' image of and preconceptions about a certain topic. We recommend further investigation into the use of this tool as a way to influence the attitude towards geriatrics and elderly care in, for example, medical specialist training.

Meeting positive role models and early patient contact are other factors that positively influence attitude towards geriatrics (*chapters 3 and 4*). However, students also meet (many) educators and health professionals, who are not directly positive role models for geriatrics. When investing in changing the attitude of students, we should equally invest in the attitude of other educators and health professionals.^{32,33} A lot of work still needs to be done in this regard. When students regularly visit older patients under the supervision of geriatric competent clinicians, this may not only improve their attitude towards these patients, but may also increase their geriatric expertise.^{2,7,34} As our patient case also shows, currently health professionals and medical students (in our patient case a medical student in her family practice clerkship) still lack adequate geriatric expertise. Our findings further emphasize the need for education with a goal-oriented approach towards geriatrics and endorse collaboration between disciplines to prepare students for their future practice of taking care of frail older patients. Keough *et al.*, in 2002 already invested in a patient goals-oriented approach towards geriatrics education for family practice residents, with positive results on both knowledge and attitude.³⁵ In order to have an effect for all health professionals, we believe this patient goals-oriented approach should start as early as undergraduate education. Recent research on curricular reform in the Netherlands agrees with our preference towards a goal-oriented approach in the undergraduate curriculum.⁵ Unfortunately, to date geriatrics is underrepresented in medical schools and we need further curricular reform to broadly achieve patient goals-oriented and inter-disciplinary education.³⁶ Starting geriatrics education early on in medical school, safeguarding exposure to positive role models, sufficient focus on geriatric complexity, application of different appealing teaching methods (including practice visits and patient contact), all these help deliver basic geriatrics competencies to health professionals. Figure 1 may be of use to develop this further curricular reform.

Gamification

Our proof of concept study showed that an appealing game-based geriatrics course had a positive effect on both geriatric knowledge and attitude towards geriatrics (*chapter 3*).³⁷ Serious games are developed to make complex problems manageable. The complexity of treating elderly patients is often mentioned as one of the challenges that medical students and clinicians face when teaching and learning geriatric medicine.³⁸ The serious game GeriatriX applies clinical reasoning to complex geriatric cases. Clinical reasoning is considered the basis of good clinical practice and expertise.³⁹ Therefore, extending GeriatriX with more cases around important geriatrics topics can further improve geriatric knowledge for students. Furthermore it can be applied to put geriatric multi-causality and goal-oriented approach into the minds of current health professionals (Figure 1). More research is needed, but since serious games positively change the attitude of players, they may also have potential in creating more positive role models for geriatrics and elderly care.^{40, 41}

Shared Decision Making

When exploring geriatrics education from the perspective of students, patients and healthcare professionals, we found that developing SDM and patient centred care competencies should be a part of this (*Chapters 2, 3 and 4*). Special training on how to discuss topics, such as autonomy, goals and shared care, can support health professionals to cope with cases of complex care and multi-morbidity and improve patient-centred care.⁴²⁻⁴⁵ We developed a model for SDM with frail older patients in clinical practice and a teaching framework. As this is the first model for SDM with frail older patients, to date there is no evidence on the effects of teaching and practising this model. Our model focuses on engaging in a patient-centred approach, instead of a disease-oriented approach, which is an important omission in other SDM models, according to Olthuis *et al.*⁴⁶ As such our model broadens the view on SDM, emphasizing that in the care for older persons, engaging patients in formulating their values and setting goals are indispensable conditions.⁴⁷⁻⁵⁰ Our patient case shows how important goal setting is. Goal setting may quite well be possible with frail older patients.^{51, 52}

Existing SDM training programmes vary greatly in what training is delivered. Moreover there is little evidence about which training programmes are most effective and what are core competencies to adequately deliver SDM.^{53, 54} Currently, there are no specific training programmes for SDM with frail older persons. In this population the application of SDM is even more complex, since multi-morbidities and complex care situations challenge the process.^{50, 55} From research on the training of other complex competencies, such as for example communication, it is known that complex competencies can be taught in small

steps in increasing complexity, however transfer of complex competencies towards clinical practice remains a difficult process.^{56,57} Therefore, adequate time should be invested in adoption and implementation of SDM with frail older patients.^{58, 59} A possible challenge in this process of teaching complex competencies is too much reliance on a model or guideline.⁶⁰ The complex competency of SDM with frail older patients requires a continuous counselling dialogue, not merely following the steps of a model. To date, we have no evidence about what is the best timing for training of complex competencies such as SDM. Our teaching framework can stimulate the development of specific training programmes for SDM with frail older patients (*Chapter 6*). As such this teaching framework offers the possibility to build knowledge, skills and attitude in different steps before integrating them. Adequately performing SDM with frail older patients can be seen as a highly complex process, integrating geriatric specific knowledge, skills and attitude, and the perspectives of both patients and health professionals, thus ensuring patient centred care.^{46, 61, 62} This places SDM at the core of geriatric education, supporting an early start in undergraduate education (Figure 1). An early start aligns with the CanMEDS recommendations to teach competencies in an increasing degree of difficulty to provide physicians with a basic competency level and to support continuing competency building during specialization and subsequent clinical practice.⁶³

As Figure 1 shows, medical education, clinical practice and perception of geriatrics are all interrelated. Therefore, delivering health professionals for an ageing society truly needs reform of both healthcare systems and education. The novelty of the research in this thesis lies in combining these fields and including the perspectives of medical students, patients and healthcare workers.

Reflections on methodology

With a mixed methods approach this thesis generated more knowledge in the field of geriatrics education. The central goal of this thesis was to clarify how and when geriatric-specific education can improve geriatric knowledge, skills and attitude of health professionals. The strengths of this thesis are its relevance for clinical and educational practice, the use of different methodological approaches, and inclusion of perspectives of older persons, older patients, different health professionals and students.

First, this thesis comprises relevant and timely studies. Recent studies on medical education emphasized the importance of future-proof medical education to prepare healthcare workers for an ageing society.^{5, 36, 64} However, despite this recent effort to address society's pressing demand for doctors with basic geriatric

assessment competencies and to improve attitudes among doctors towards older patients, only a few medical schools have a mandatory clerkship in geriatrics, or some other geriatric-specific training programme.⁵⁻⁷ Moreover, little is known about how education can positively influence attitude towards older persons and about how to make young doctors take more interest in the field of geriatrics and care for older persons.^{65, 66} The studies described in this thesis contribute to future-proof medical education by offering a proof of concept study on effective geriatrics education, and insight into what factors need to be addressed to improve student appreciation of geriatrics. Moreover, focal areas for improving healthcare for elderly patients were identified and suggestions for improving the training of the professionals who work in this field were made.

A second strength is the robustness of the methods applied. We used various research methodologies, both quantitative and qualitative, to answer the different research questions. In our proof of concept study we combined data of two student groups, who were comparable in age, gender and educational level to rule out bias and confounding as much as possible. Moreover, the questionnaires we used to measure the effect of the course were validated questionnaires.^{67, 68} In the qualitative studies an iterative process of data collection and analysis was applied, as required in this kind of research.⁶⁹⁻⁷¹ Furthermore, we used different types of data, for example questionnaires, individual and focus group interviews, narrative reflection essays and a Delphi discussion forum. Data collection proceeded until saturation was reached. In our focus group study with primary healthcare professionals we were able to engage a large group of different participants, thus strengthening the body of our results. The number and representatives of the experts in the Delphi study (16 elderly patients and 59 international experts in the field of geriatrics, elderly care, SDM, education and communication) can be considered a well-accepted body of knowledge.^{72, 73}

Lastly, our studies combined perspectives of students, older persons and older patients as well as health professionals. In three of our studies we succeeded in engaging both health professionals and patients and in two studies medical students were included. When sampling is large and varied, this enriches the results and increases the reliability of the conclusions drawn.

Chapter 2 was to our knowledge the first ever qualitative study that aimed to identify focal areas for improving the provision and receipt of primary care from the perspectives of both primary healthcare professionals and elderly patients. We were able to identify conflicting expectations of the different parties and to target our further research on patient empowerment and patient centeredness (developing a model for SDM with frail older patients).

Several limitations of the work described in this thesis also need to be acknowledged. First, inherently qualitative research investigates the ideas, perceptions and intentions of participants, not their actual behaviour. To improve scientific rigour we used different forms of triangulation: data, methods and investigator triangulation.⁷¹ Moreover, by investigating and combining perceptions and intentions of participants from different backgrounds and perspective (patients, nurses and GPs), we gained insight into the actual behaviour of participants.

A second potential limitation is that we used personal narrative reflection essays of students rather than formal evaluations. A possible bias in the results is that students may have written socially desirable reflections. To overcome this possible threat, we assured confidentiality, made sure their reflections had no influence on their course assessments and we specifically addressed this possibility in the in-depth focus group interviews. The narrative reflections gave us insight into students' unrealistic perception of clinical practice and professional identity that would probably not have been visible from observations or formal evaluations. Moreover, the writing of reflection essays and participation in focus groups can positively influence engagement of students with a subject.⁷⁴ Therefore, the use of narrative reflection essays and subsequent focus groups can be used as an educational tool to influence students' image of and preconceptions about a certain topic.

Our conclusions were in part drawn from results from third-year medical students from our university. The student group following this particular curriculum did not receive structured geriatrics and elderly care education before this third year. Therefore, we do not know if their negative image of geriatrics is comparable to that of students from other universities. However, our findings are supported by literature on geriatrics education.^{2, 75} The Delphi study in this thesis included participants from several countries and many universities. This probably makes the results applicable in other medical schools and medical practice. The ability to combine our outcomes with the literature was, however, limited due to scarcity in studies on SDM with (frail) older patients.^{50, 55}

Future perspectives

Based on the results presented in this thesis, some recommendations can be defined for medical education, clinical practice and further research.

Recommendations for medical education and clinical practice

In this thesis we have shown how a modern geriatrics course based on a serious game GeriatriX positively influences attitudes towards and knowledge of geriatrics. This serious game-based teaching method can easily be adapted for use in larger groups of students, particularly for medical schools that do not currently provide an elective or clerkship in geriatrics or elderly patient care.^{5, 76} We therefore recommend broader use of serious game-based geriatrics education to both improve attitudes towards and knowledge of geriatrics.

Medical students have an unrealistic image of clinical practice, which influences their attitude towards geriatrics and elderly care. Narrative reflection essays give insight into students' perception and preconception about geriatrics. Discussing the results of the narrative reflection essays in in-depth focus group discussions gave students insight into their perception and positively influenced their image towards geriatrics and elderly care. Based on this finding, we recommend the use of this method to improve attitude towards geriatrics and elderly care among medical students. Given the widespread negative attitude towards geriatrics, it will be interesting to explore whether this method can be used to change attitude among other students or health professionals.^{2, 3}

This thesis also shows that health professionals experience difficulties in the daily care for (frail) older patients. They expressed the need for more education on geriatrics, especially on how to discuss topics, such as autonomy, goals and shared care. The model and teaching framework that we developed for SDM with frail older patients offer starting points for both education and clinical practice. Awareness of the importance of SDM is the first step, practical training thereafter can support health professionals to achieve the necessary competencies. Health professionals who have experience with the practice of SDM can act as positive role models. Moreover, a goal-oriented approach towards education, inter-professional education and collaboration could further strengthen the practice of SDM.

SDM with frail older patients requires complex competencies that need to be taught extensively. Given the complexity of SDM, it is advisable to start this teaching early in health education. Students can start with isolated elements of SDM, growing towards the whole process of SDM. Here, clinical educators and practising clinicians can set an example, since the complex competency of SDM with frail older patients requires a continuous counselling dialogue, not merely following the steps of a model or guideline.

For optimal healthcare for older patients, patients themselves need to become active participants in their care. Patient engagement in this patient category is still in its infancy.⁷⁷ Public campaigns aimed at empowering patients and training health professionals to engage patients can therefore play an important role in achieving higher quality care. Patients educating other patients may also play a role here.

The results of our research also show that geriatrics education, exposure to positive role models and focussing on geriatric complexity, using different appealing teaching methods (including practice visits and patient contacts), improve attitudes towards and knowledge of geriatrics. Given the societal need for competent health professionals and the complexity of geriatrics and elderly care, we emphasize the importance of starting geriatrics education early in health education.

Recommendations for future research

The results of this thesis offer many opportunities for further research. We used a mixed methods approach to investigate how and when medical students and health professionals should be educated in geriatrics. We identified several factors and perspectives that are important when reforming medical education. We gave a schematic overview of these factors and perspectives (Figure 1) that should be building blocks for further investigation.

As we only included third-year medical students from one medical school in our studies, it would now be worthwhile to extend the results from our proof of concept study to students in different years of their studies, and to other medical schools and other forms of health education to improve generalizability.

In addition to the evidence presented in this thesis, we also conducted a randomized controlled trial on teaching geriatrics using a serious game, which supports the results of our proof of concept study (*Chapter 3*).³⁷ These are promising results, but more research on the long-term follow-up is necessary. We also recommend the investigation of more teaching methods to improve geriatrics education.

Medical students have an unrealistic image of clinical practice and of being a doctor, which influences their negative attitude towards geriatrics and elderly care. More research is needed to explore the origin of this image and how it can be changed effectively.¹

The health professionals participating in our studies expressed the need for inter-professional education. Positive results are obtained from the research field of inter-professional education, however what types of inter-professional education are best suited for geriatrics education remains unclear and should be researched further.^{11, 12}

SDM emerged as a pivotal element for improving both clinical practice and education, resulting in the development of a model and teaching framework for SDM with frail older patients. Further research should focus on developing and implementing timely educational programmes for teaching the complex competency of SDM with frail older patients. To that end, we recommend the piloting of several different SDM teaching courses, using our teaching framework, for different groups of students and health professionals. These pilot SDM teaching courses should aim at obtaining insight into the best timing and method to teach SDM, and at improving the courses with feedback from the participants. Moreover, it would be worthwhile investigating SDM further from different perspectives (patient, student and health professional). In addition, as frail older patients are underrepresented in research on SDM^{54,55}, studies in clinical practice are needed to evaluate SDM with this patient category.

Conclusions

This thesis investigated how and when medical students and health professionals need to be educated to become health professionals with adequate attitude and competencies in delivering medical care for older patients. The research was conducted from the perspectives of patients, health professionals and education, using a mixed methods approach. It adds to previous research specifically by integrating these perspectives.

From the student perspective, we discovered that medical students have an unrealistic image of professional identity, which negatively influences their attitude towards geriatrics. Appealing education, using a combination of different teaching methods including serious gaming, patient contact, geriatric-specific topics and clinical role models improved both attitude towards and knowledge of geriatrics. Investigating the patient perspective showed us that patients want meaningful conversations with their health professionals and need to be empowered to become active partners in their own healthcare. From the health professionals' perspective it became clear that they are behind in geriatrics knowledge and would appreciate dedicated skills training within a goal-oriented approach and shared care.

In shared decision making the different perspectives are integrated and SDM is seen as a way to deliver patient centred care. The model and teaching framework for SDM with frail older patients that we developed therefore provides us with an important tool to simultaneously educate students and health professionals and empower patients.

In the light of our ageing society, geriatrics and elderly care are or should be high on the agenda of both medical education and practice. Geriatric education, practice and further teaching research need to take the perspectives of students, health professionals and patients into account to have a significant impact on elderly proof healthcare.

Literature

1. Meiboom AA, de Vries H, Hertogh CM, Scheele F. Why medical students do not choose a career in geriatrics: a systematic review. *BMC medical education*. 2015;15:101.
2. Higashi RT, Tillack AA, Steinman M, Harper M, Johnston CB. Elder care as “frustrating” and “boring”: Understanding the persistence of negative attitudes toward older patients among physicians-in-training. *J Aging Stud*. 2012;26(4):476-83.
3. Nilsson A, Lindkvist M, Rasmussen BH, Edvardsson D. Staff attitudes towards older patients with cognitive impairment: need for improvements in acute care. *J Nurs Manag*. 2012;20(5):640-7.
4. Lun MWA. Student Knowledge and Attitudes Toward Older People and Their Impact on Pursuing Aging Careers. *Educational Gerontology*. 2011;37(1):1-11.
5. Tersmette W, van Bodegom D, van Heemst D, Stott D, Westendorp R. Gerontology and Geriatrics in Dutch medical education. *Neth J Me*. 2013;71(6):331-7.
6. Atkinson HH, Lambros A, Davis BR, Lawlor JS, Lovato J, Sink KM, et al. Teaching medical student geriatrics competencies in 1 week: an efficient model to teach and document selected competencies using clinical and community resources. *J Am Geriatr Soc*. 2013;61(7):1182-7.
7. Tullo ES, Spencer J, Allan L. Systematic review: helping the young to understand the old. Teaching interventions in geriatrics to improve the knowledge, skills, and attitudes of undergraduate medical students. *J Am Geriatr Soc*. 2010;58(10):1987-93.
8. Stange KC. The problem of fragmentation and the need for integrative solutions. *Annals of family medicine*. 2009;7(2):100-3.
9. Bodenheimer T. Coordinating care—a perilous journey through the health care system. *N Engl J Med*. 2008;358(10):1064-71.
10. Christensen K, Doblhammer G, Rau R, Vaupel JW. Ageing populations: the challenges ahead. *Lancet*. 2009;374(9696):1196-208.
11. Koh GC, Ling CL, Ma BH, Chen C, Lim WS, Scherer SC, et al. Effect of a new longitudinal interprofessional geriatric medicine educational track on knowledge and attitude of medical students: a controlled cohort study. *J Am Geriatr Soc*. 2015;63(3):558-64.
12. Wallace C, Chandler L, Rogers A, Crosby K, Joshi N, Spriggs T, et al. Caring for frail patients: best practice. *Nurs Stand*. 2012;26(28):50-6: quiz 8.
13. Beaulieu MD, Samson L, Rocher G, Rioux M, Boucher L, Del Grande C. Investigating the barriers to teaching family physicians’ and specialists’ collaboration in the training environment: a qualitative study. *BMC medical education*. 2009;9:31.
14. Fenwick T. Knowledge circulations in inter-para/professional practice: a sociomaterial enquiry. *Journal of Vocational Education & Training*. 2014;66(3):264-80.
15. Fenwick T. Sociomateriality in medical practice and learning: attuning to what matters. *Med Educ*. 2014;48(1):44-52.
16. Suter E, Arndt J, Arthur N, Parboosingh J, Taylor E, Deutschlander S. Role understanding and effective communication as core competencies for collaborative practice. *Journal of interprofessional care*. 2009;23(1):41-51.
17. Fewster-Thuente L, Velsor-Friedrich B. Interdisciplinary collaboration for healthcare professionals. *Nurs Adm Q*. 2008;32(1):40-8.
18. Holm AL, Severinsson E. A qualitative systematic review of older persons’ perceptions of health, ill health, and their community health care needs. *Nursing research and practice*. 2013;2013: 672702.
19. Mallers MH, Claver M, Lares LA. Perceived control in the lives of older adults: the influence of Langer and Rodin’s work on gerontological theory, policy, and practice. *Gerontologist*. 2014;54(1):67-74.
20. Davies S, Cripacc CG. Supporting quality improvement in care homes for older people: the contribution of primary care nurses. *J Nurs Manag*. 2008;16(2):115-20.
21. Towle A, Godolphin W. Patients as educators: interprofessional learning for patient-centred care. *Med Teach*. 2013;35(3):219-25.

22. Towle A, Godolphin W. The neglect of chronic disease self-management in medical education: involving patients as educators. *Acad Med.* 2011;86(11):1350.
23. Hage AM, Lorensen M. A philosophical analysis of the concept empowerment; the fundament of an education-programme to the frail elderly. *Nursing philosophy : an international journal for healthcare professionals.* 2005;6(4):235-46.
24. Gair G, Hartery T. Medical dominance in multidisciplinary teamwork: a case study of discharge decision-making in a geriatric assessment unit. *J Nurs Manag.* 2001;9(1):3-11.
25. Russell S, Daly J, Hughes E, Hoog Co C. Nurses and 'difficult' patients: negotiating non-compliance. *J Adv Nurs.* 2003;43(3):281-7.
26. Falk S, Wahn AK, Lidell E. Keeping the maintenance of daily life in spite of chronic heart failure. A qualitative study. *European journal of cardiovascular nursing : journal of the Working Group on Cardiovascular Nursing of the European Society of Cardiology.* 2007;6(3):192-9.
27. Bayliss EA, Bosworth HB, Noel PH, Wolff JL, Damush TM, McIver L. Supporting self-management for patients with complex medical needs: recommendations of a working group. *Chronic illness.* 2007;3(2):167-75.
28. Williams C, Cantillon P, Cochrane M. The doctor-patient relationship: from undergraduate assumptions to pre-registration reality. *Med Educ.* 2001;35(8):743-7.
29. Braam GP. [Elderly: the image in the public eye. The 'luxury lives of the elderly' versus the bitter truth]. *Tijdschr Gerontol Geriatr.* 2002;33(1):3-4.
30. Versteegh E, Westerhof GJ. [Mutual stereotypes of younger and older adults and their relation with self-concept and self-esteem]. *Tijdschr Gerontol Geriatr.* 2007;38(1):27-35.
31. Koroknay V. Educating nurses in gerontology: we still have a way to go. *J Gerontol Nurs.* 2015;41(1):3-4.
32. Armstrong G, Headrick L, Madigosky W, Ogrinc G. Designing education to improve care. *Joint Commission journal on quality and patient safety / Joint Commission Resources.* 2012;38(1):5-14.
33. van de Pol MH, van Weel-Baumgarten EM. Challenges in communication during clerkships: a case report. *Med Teach.* 2012;34(10):848-9.
34. Shue CK, McNeley K, Arnold L. Changing medical students' attitudes about older adults and future older patients. *Acad Med.* 2005;80(10 Suppl):S6-9.
35. Keough ME, Field TS, Gurwitz JH. A model of community-based interdisciplinary team training in the care of the frail elderly. *Acad Med.* 2002;77(9):936.
36. Frenk J, Chen L, Bhutta ZA, Cohen J, Crisp N, Evans T, et al. Health professionals for a new century: transforming education to strengthen health systems in an interdependent world. *Lancet.* 2010;376(9756):1923-58.
37. Lagro J, van de Pol MH, Laan A, Huijbregts-Verheyden FJ, Fluit LC, Olde Rikkert MG. A Randomized Controlled Trial on Teaching Geriatric Medical Decision Making and Cost Consciousness With the Serious Game GeriatricX. *Journal of the American Medical Directors Association.* 2014.
38. Fernandez K. A New Standard of Care: Despite Opportunity, Gerontology Programs Face Obstacles.
39. Bowen JL. Educational strategies to promote clinical diagnostic reasoning. *N Engl J Med.* 2006; 355(21):2217-25.
40. Tumosa N, Morley JE. The use of games to improve patient outcomes. *Gerontol Geriatr Educ.* 2006;26(4):37-45.
41. Akl EA, Pretorius RW, Sackett K, Erdley WS, Bhoopathi PS, Alfarah Z, et al. The effect of educational games on medical students' learning outcomes: A systematic review: BEME Guide No 14. *Med Teach.* 2010;32(1):16-27.
42. Thraen I, Bair B, Mullin S, Weir CR. Characterizing "information transfer" by using a Joint Cognitive Systems model to improve continuity of care in the aged. *Int J Med Inform.* 2012;81(7):435-41.
43. Moreau A, Carol L, Dedianne MC, Dupraz C, Perdrix C, Laine X, et al. What perceptions do patients have of decision making (DM)? Toward an integrative patient-centered care model. A qualitative study using focus-group interviews. *Patient Educ Couns.* 2012;87(2):206-11.

44. Lacas A, Rockwood K. Frailty in primary care: a review of its conceptualization and implications for practice. *BMC medicine*. 2012;10:4.
45. Kuluski K, Gill A, Naganathan G, Upshur R, Jaakkimainen RL, Wodchis WP. A qualitative descriptive study on the alignment of care goals between older persons with multi-morbidities, their family physicians and informal caregivers. *BMC family practice*. 2013;14:133.
46. Olthuis G, Leget C, Grypdonck M. Why shared decision making is not good enough: lessons from patients. *J Med Ethics*. 2014;40(7):493-5.
47. Fried TR, Tinetti ME, Iannone L. Primary care clinicians' experiences with treatment decision making for older persons with multiple conditions. *Arch Intern Med*. 2011;171(1):75-80.
48. Chewning B, Bylund CL, Shah B, Arora NK, Gueguen JA, Makoul G. Patient preferences for shared decisions: a systematic review. *Patient Educ Couns*. 2012;86(1):9-18.
49. Morris RL, Sanders C, Kennedy AP, Rogers A. Shifting priorities in multimorbidity: a longitudinal qualitative study of patient's prioritization of multiple conditions. *Chronic illness*. 2011;7(2):147-61.
50. Montori VM, Gafni A, Charles C. A shared treatment decision-making approach between patients with chronic conditions and their clinicians: the case of diabetes. *Health expectations : an international journal of public participation in health care and health policy*. 2006;9(1):25-36.
51. Schulman-Green DJ, Naik AD, Bradley EH, McCorkle R, Bogardus ST. Goal setting as a shared decision making strategy among clinicians and their older patients. *Patient Educ Couns*. 2006;63(1-2):145-51.
52. Robben SH, Perry M, Olde Rikkert MG, Heinen MM, Melis RJ. Care-related goals of community-dwelling frail older adults. *J Am Geriatr Soc*. 2011;59(8):1552-4.
53. Legare F, Politi MC, Drolet R, Desroches S, Stacey D, Bekker H, et al. Training health professionals in shared decision-making: An international environmental scan. *Patient Educ Couns*. 2012;88(2):159-69.
54. Legare F, Stacey D, Turcotte S, Cossi MJ, Kryworuchko J, Graham ID, et al. Interventions for improving the adoption of shared decision making by healthcare professionals. *The Cochrane database of systematic reviews*. 2014;9:CD006732.
55. Gionfriddo MR, Leppin AL, Brito JP, Leblanc A, Boehmer KR, Morris MA, et al. A systematic review of shared decision making interventions in chronic conditions: a review protocol. *Systematic reviews*. 2014;3:38.
56. van Weel-Baumgarten E, Bolhuis S, Rosenbaum M, Silverman J. Bridging the gap: How is integrating communication skills with medical content throughout the curriculum valued by students? *Patient Educ Couns*. 2013;90(2):177-83.
57. van den Eertwegh V, van Dulmen S, van Dalen J, Scherpbier AJ, van der Vleuten CP. Learning in context: identifying gaps in research on the transfer of medical communication skills to the clinical workplace. *Patient Educ Couns*. 2013;90(2):184-92.
58. Getting evidence into practice is not easy. *J Adv Nurs*. 1999;30(2):282-.
59. Grimshaw JM, Eccles MP, Lavis JN, Hill SJ, Squires JE. Knowledge translation of research findings. *Implementation science : IS*. 2012;7:50.
60. Hawkins RE, Welcher CM, Holmboe ES, Kirk LM, Norcini JJ, Simons KB, et al. Implementation of competency-based medical education: are we addressing the concerns and challenges? *Med Educ*. 2015;49(11):1086-102.
61. Nolan MR, Davies S, Brown J, Keady J, Nolan J. Beyond person-centred care: a new vision for gerontological nursing. *J Clin Nurs*. 2004;13(3a):45-53.
62. Tinetti ME, Basch E. Patients' Responsibility to Participate in Decision Making and Research. *Jama-J Am Med Assoc*. 2013;309(22):2331-2.
63. CanMEDS competencies. Available from: <http://www.royalcollege.ca/portal/page/portal/rc/canmeds>.
64. Leipzig RM, Granville L, Simpson D, Anderson MB, Sauvigne K, Soriano RP. Keeping Granny Safe on July 1: A Consensus on Minimum Geriatrics Competencies for Graduating Medical Students. *Acad Med*. 2009;84(5):604-10.

65. Campbell JY, Durso SC, Brandt LE, Finucane TE, Abadir PM. The Unknown Profession: A Geriatrician. *J Am Geriatr Soc.* 2013;61(3):447-9.
66. Nanda A, Farrell TW, Shield RR, Tomas M, Campbell SE, Wetle T. Medical Students' Recognition and Application of Geriatrics Principles in a New Curriculum. *J Am Geriatr Soc.* 2013;61(3):434-9.
67. Polizzi KG. Assessing attitudes toward the elderly: Pollizi's refined version of the aging semantic differential. *Educational Gerontology.* 2003;29(3):197-216.
68. Robinson BE, Barry PP, Renick N, Bergen MR, Stratos GA. Physician confidence and interest in learning more about common geriatric topics: a needs assessment. *J Am Geriatr Soc.* 2001; 49(7):963-7.
69. Glaser BG, Strauss AL. *The discovery of grounded theory; strategies for qualitative research.* Chicago,: Aldine Pub. Co.; 1967. x, 271 p. p.
70. Boulkedid R, Abdoul H, Loustau M, Sibony O, Albetri C. Using and Reporting the Delphi Method for Selecting Healthcare Quality Indicators: A Systematic Review. *Plos One.* 2011;6(6).
71. Barbour RS. Checklists for improving rigour in qualitative research: a case of the tail wagging the dog? *BMJ.* 2001;322(7294):1115-7.
72. Hasson F, Keeney S, McKenna H. Research guidelines for the Delphi survey technique. *J Adv Nurs.* 2000;32(4):1008-15.
73. Keeney S, Hasson F, McKenna H. Consulting the oracle: ten lessons from using the Delphi technique in nursing research. *J Adv Nurs.* 2006;53(2):205-12.
74. Sandars J. The use of reflection in medical education: AMEE Guide No. 44. *Med Teach.* 2009;31(8):685-95.
75. Meiboom A, Diedrich C, Vries HD, Hertogh C, Scheele F. The hidden curriculum of the medical care for elderly patients in medical education: a qualitative study. *Gerontol Geriatr Educ.* 2015;36(1):30-44.
76. Fisher AL, O'Keefe EA, Hanlon JT, Studenski SA, Hennon JG, Resnick NM. A brief, intensive, clinically focused geriatrics course during the third year of medical school. *J Am Geriatr Soc.* 2009;57(3):524-9.
77. Gittner LS. Empowering Patients to Become Better Partners. *J Health Hum Serv Adm.* 2015;38(2):276-88.

8

Summary Nederlandse samenvatting



Summary

The aim of this thesis was to investigate how medical students and health professionals need to be educated to become health professionals with adequate attitudes and competencies in delivering medical care for older patients.

Based on the general aims of this thesis the following research objectives were formulated:

1. What are the key elements that need to be addressed in future-proof geriatrics education?
2. What is the influence of geriatrics education on medical students' attitudes towards geriatrics and elderly care and can innovative teaching methods improve these?
3. What are the key elements to perform shared decision making with frail older patients and can health professionals and older patients reach consensus on a model that encompasses these elements?
4. What are the core competencies for shared decision making in frail older patients and how can these best be taught?

Chapter 1, starts with the patient case of Mr. H, which gives an overview of the many challenges that healthcare professionals face in the care for older patients. To overcome these challenges, students and healthcare professionals need to receive more geriatric-specific education, both to address the high societal need for healthcare workers with basic geriatric assessment skills, and to improve their attitude towards elderly patients.

In order to gain more insight into the complexities that healthcare workers face when taking care of older patients, the study in *Chapter 2* was carried out. The aim of this study was to explore experiences in the provision and receipt of primary care from the perspective of both primary healthcare professionals and elderly patients in order to identify expectations and needs. Other aims of this study were to identify focal areas for improving healthcare for elderly patients and to make suggestions to improve the training of the professionals who work in this field.

We performed a mixed interview study with focus groups and individual interviews of participants comprised of primary healthcare professionals and elderly patients.

Three major inter-related themes proved pivotal to understand the process of primary care provision for elderly patients from the provider and recipient perspectives: *autonomy and independence*, *organizational barriers*, and *professional expertise*. The most important findings are summarized for each theme:

Autonomy and independence: Although all participants agreed that every discipline has its own role and responsibilities, the expectations of each group towards the others proved to be largely implicit. All patients were frail elderly individuals, they mentioned they sometimes lacked a general overview of their care management, specifically on medication use, disease case and/or needed care. The GPs and coordinating nurses also sometimes doubted whether they were able to discuss their problems adequately.

Organizational barriers: All participants expressed concerns about the practical workings of care protocols in the care homes for the elderly. Care provision in these facilities was described as lacking coordination and clarity regarding the distribution of tasks and responsibilities. The consensus was that the care homes lacked formal agreements concerning the assignment of responsibilities to the patients, their coordinating nurses and their GPs.

Professional expertise: GPs acknowledged that their training was disease-oriented, and that they sometimes felt overwhelmed by the complexity of problems presented by infirm elderly patients. They also admitted that their knowledge of multi-morbidity, polypharmacy and care plans was insufficient. GPs were concerned that the nurses had insufficient knowledge and expertise, and that these shortcomings hindered them from gaining an overall medical picture. The coordinating nurses also felt that GPs underestimate their ability to determine whether a GP visit is necessary, and said they often feel caught in a difficult position between the patients and GPs. Most patients asserted that their GPs and nurses sometimes had difficulties in judging the complexity of their conditions. We concluded that effective primary elderly care intervention requires mutual understanding of the expectations and goals of all parties involved, and also reveals a number of important requirements, specifically: accessible patient information in the form of care plans; special (inter-professional) training for nurses and GPs on complex care and multi-morbidity; training on discussing autonomy, goal setting and shared care. Further improvement in healthcare for elderly persons and its evaluation research should focus on these requirements.

In *Chapter 3* we focussed our attention on the influence of geriatrics education on the attitudes of medical students towards geriatrics and elderly care. We developed and evaluated a geriatrics course based on the serious game GeriatricX that was designed specifically to address the complexities associated with decision-making in geriatrics. In this serious game students must solve several patient cases taking patient preferences, optimal diagnostic and therapeutic strategy, and cost consciousness into account. This course was designed specifically to improve medical students' engagement with and knowledge of the complexities

associated with geriatric patients as well as their attitude towards these older patients. We hypothesized that this course can have a positive effect both on attitudes towards geriatrics and on the perceived knowledge of geriatrics.

As a proof-of-concept study, we evaluated the effects of this game-based course on students' attitudes towards the elderly and on students' self-perceived knowledge of geriatric themes and made an assessment of the usability of and satisfaction with the serious game GeriatriX. Students who were taking an elective in neuroscience were invited to participate as a control group.

After completing the course, the Ageing Semantic Differential significantly changed in the geriatrics course group (N=29; $p < 0.05$), but not in the control group (N=24; $p = 0.3$). The geriatrics course group showed a significant increase in self-perceived geriatric knowledge for 12 of the 18 topics ($P < 0.05$), compared to only one in the control group. Finally, the geriatrics students reported a high appreciation for the serious game GeriatriX. We concluded that using the serious game GeriatriX in a modern medical educational setting can improve students' knowledge of geriatric care and can have a positive effect on students' attitudes towards elderly patients. Teaching students how to effectively treat geriatric patients—particularly frail patients with complex, multiple health issues—can play a significant role in meeting society's need for doctors who are properly trained to provide geriatric care, including incorporating patient goals, medical effectiveness, and healthcare costs into their medical decision-making process with respect to elderly patients.

After concluding that an innovative short educational course could positively influence students' attitudes towards geriatrics, in *Chapter 4* we further investigated the students' perspective on geriatrics and elderly care.

Little is known about how education can positively influence attitudes towards older persons and influence young doctors to take more interest in the field of geriatrics and elderly care. Therefore we examined geriatrics from the students' perspective in order to identify elements that can be useful in education and improving attitudes towards and knowledge about geriatrics. We hypothesized that student narrative reflection essays would help identify students' preconceptions and image of geriatrics and care for older persons and geriatrics education.

A total of 36 students were asked to write a narrative reflection essay specifically about their preconceptions and perception of geriatrics and care for older persons before and after an elective course on geriatrics. Students received a few supportive questions to guide them in their reflection essay. Four overarching themes that influenced students' perspective on geriatrics were identified from the reflection essays: *professional identity*; *perception of geriatrics*; *geriatric-specific problems*; and *learning environment*. Our most important finding was

that students lacked a realistic perception of clinical practice and professional identity, which negatively influenced their image of geriatrics. Moreover, this study clearly showed that teaching students the complexity of clinical practice and professional identity, instead of focusing on cures and diseases, helped them to develop a more positive attitude towards geriatrics. In conclusion, after examining the students' perspective of geriatrics, four key findings emerged. First, it is important to acknowledge that the hidden curriculum has a significant influence on professional identity and the preconceptions about geriatrics and elderly care. Secondly, geriatric-specific problems, such as frailty, are complex and novel to medical students. Thirdly, the approach to teaching is important and appealing role models are absolutely vital in geriatric education. Finally, narrative reflection essays, combined with clarifying, in-depth focus group discussions, can be used as an educational tool to influence students' image of and preconceptions about a certain topic, in this case geriatrics and elderly care.

From the perspective of both healthcare workers and patients as well as from medical students the subject of shared decision making (SDM) was found to be an important topic to improve care for older patients. The study presented in *Chapter 5* developed a model for SDM with frail older patients.

One of the most frequently used models for SDM is particularly helpful in accomplishing preference-sensitive treatment decisions in the medical curative setting, especially for patients with a single condition, and with a limited number of preference-sensitive treatment options, such as breast or prostate cancer. However, for older patients these existing models for SDM are not sufficient, due to their multi-morbidity, the lack of guidelines and evidence applicable to the numerous combinations of diseases. Moreover, it is known that participating in SDM can be difficult for more vulnerable patient categories and information should be tailored to their specific needs and personal situation. The aim of this study was therefore to gain consensus on a model for SDM in frail older patients with multiple morbidities.

We used a three-round Delphi study to reach consensus on a model for SDM in older patients with multiple morbidities. The expert panel consisted of 16 patients (Round 1) and 59 professionals (Rounds 1-3). We achieved consensus for the proposed SDM model as a whole for both importance (91% panel agreement) and feasibility (76% panel agreement). The SDM model developed for clinical practice consists of six stages, however it is a dynamic model, which means that the sequence can differ between consultations and cases. The six stages are: *preparation, goal talk, choice talk, option talk, decision talk* and *evaluation*. In conclusion, SDM in older patients with multi-morbidity is a dynamic process that takes place during all stages of a consultation. It requires a continuous counselling

dialogue between professional and patient or representative, taking the personal situation of the patient into consideration in the context of the problem, for which a decision is necessary. The developed consensus model may help professionals to apply SDM in the complex situation of the care for older patients. Further research should focus on testing the effects and feasibility of the model in geriatric practice, on identifying specific competencies needed for the different elements of the decision-making process, and on educating professionals and engaging patients.

The last research chapter of this thesis (*Chapter 6*) discussed the development of a teaching framework for SDM with frail older patients. To develop this teaching framework, we used a mixed methods approach involving a qualitative inquiry and a literature review.

Participants of the Delphi study were asked to formulate what core competencies are necessary to perform SDM with frail older patients, and on what specific skills teaching needs to focus for the different stages of SDM. The participants considered the *goal-talk* stage of the SDM process as the most challenging part and specifically articulated educational needs for this stage. After the qualitative inquiry, we explored the literature on the articulated educational needs. Combination of the core competencies defined by the participants and the literature exploration resulted in practice recommendations and a teaching framework with the following key elements: create a knowledge base for all health professionals; offer practical training; facilitate communication; identify discussion partner; engage patient; and collaborate. Our teaching framework for SDM with frail older patients may be useful to clinicians, educators and researchers who aim to promote SDM with frail older patients. In view of the importance of SDM for all clinicians, teaching should start early in education and should transfer into clinical practice. Further research needs to focus on developing and implementing timely educational programmes on SDM with frail older patients.

Chapter 7 gave an overview of the main findings, and furthermore reflected on the findings and methodology of this thesis. The implications from this thesis for medical education, clinical practice and further research were discussed. The research in this thesis was conducted from the perspectives of patients, health professionals and education, using a mixed methods approach. We concluded that the research in this thesis adds to previous research specifically by integrating these perspectives. From the student perspective, we discovered that medical students have an unrealistic image of professional identity, which negatively influences their attitude towards geriatrics. Appealing education, using a combination of different teaching methods including serious gaming, patient

contact, geriatric-specific topics and clinical role models improved both attitude towards and knowledge of geriatrics. Investigating the patient perspective showed us that patients want meaningful conversations with their health professionals and need to be empowered to become active partners in their own healthcare. From the health professionals' perspective it became clear that they are behind in geriatrics knowledge and would appreciate dedicated skills training within a goal-oriented approach and shared care.

In shared decision making the different perspectives are integrated and SDM is seen as a way to deliver patient centred care. The model and teaching framework for SDM with frail older patients that we developed therefore provides us with an important tool to simultaneously educate students and health professionals and empower patients.

In the light of our ageing society, geriatrics and elderly care are or should be high on the agenda of both medical education and practice. Geriatric education, practice and further teaching research need to take the perspectives of students, health professionals and patients into account to have a significant impact on elderly proof healthcare.

Nederlandse samenvatting

Het doel van dit proefschrift was om te onderzoeken hoe we medisch studenten en hulpverleners zo opleiden dat zij adequate kennis, attitude en vaardigheden ontwikkelen ten aanzien van de medische zorg voor oudere patiënten.

Gebaseerd op dit algemene doel werden de volgende onderzoeksvragen geformuleerd:

1. Welke onderwerpen moeten aan bod komen in het geriatrie onderwijs om dit toekomstbestendig te maken?
2. Wat is de invloed van geriatrie onderwijs op de attitude van medisch studenten ten aanzien van geriatrie en ouderengeneeskunde? Kan innovatief onderwijs deze attitude positief beïnvloeden?
3. Welke stappen zijn nodig om gezamenlijke besluitvorming uit te kunnen voeren met (kwetsbare) oudere patiënten? Kunnen hulpverleners en oudere patiënten consensus bereiken over een model voor gezamenlijke besluitvorming?
4. Welke competenties zijn nodig om gezamenlijke besluitvorming met kwetsbare ouderen vorm te geven en hoe kunnen deze het beste worden onderwezen?

Hoofdstuk 1, begint met het verhaal van patiënt Dhr. H. Dit verhaal maakt duidelijk voor welke uitdagingen hulpverleners dagelijks staan in de zorg voor kwetsbare ouderen. Om deze uitdagingen het hoofd te bieden dienen medisch studenten en hulpverleners meer specifiek geriatrie onderwijs te krijgen, om zowel meer kennis en vaardigheden te verwerven als om hun attitude ten aanzien van ouderen te verbeteren.

Om meer inzicht te verkrijgen in de complexiteit die hulpverleners tegen komen in de zorg voor kwetsbare ouderen voerden we het onderzoek in *Hoofdstuk 2* uit. In dit onderzoek werden ervaringen met de eerstelijnszorg geëxploreerd vanuit het perspectief van zowel de eerstelijns hulpverleners als oudere patiënten, met als doel om hun verwachtingen en wensen vast te stellen. Aanvullende doelen waren het vaststellen van aangrijpingspunten voor verbeteringen in de zorg voor oudere patiënten en voor het trainen van hulpverleners. Hiertoe interviewden we groepen huisartsen, verpleegkundigen en oudere patiënten. Uit deze interviews kwamen drie thema's naar voren die van belang zijn in de eerstelijnszorg voor oudere patiënten: *autonomie en onafhankelijkheid*, *organisatorische belemmeringen* en *professionele expertise*. De belangrijkste bevindingen per thema worden hieronder samengevat.

Autonomie en onafhankelijkheid: Hoewel alle deelnemers het erover eens waren dat iedereen zijn eigen rol en verantwoordelijkheid heeft, bleven de

verwachtingen naar elkaar grotendeels onuitgesproken. Alle patiënten waren kwetsbare ouderen die aangaven soms het overzicht over hun zorg te missen, vooral op het gebied van medicatie, ziektebeelden en benodigde zorg. De huisartsen en coördinerende verpleegkundigen gaven aan ook soms te twijfelen of de kwetsbare patiënten wel in staat waren hun problemen goed voor het voetlicht te brengen.

Organisatorische belemmeringen: Alle deelnemers spraken hun zorgen uit over de uitvoering van richtlijnen en protocollen in de verzorgingshuizen. Duidelijke omschrijvingen van coördinatie en taakverdelingen werden niet gemist. Alle deelnemers waren het erover eens dat formele afspraken over verantwoordelijkheden van zowel huisartsen als verpleegkundigen als patiënten ontbraken.

Professionele expertise: De geïnterviewde huisartsen gaven aan dat hun opleiding vooral ziektegeoriënteerd was geweest en dat zij zich regelmatig overweldigd voelden door de complexiteit van de problematiek bij hun kwetsbare oudere patiënten. Tevens ervoeren zij hun kennis over polyfarmacie en zorgplannen als ontoereikend. De huisartsen waren van mening dat het niveau van de verpleegkundigen te laag was om zich een goed algeheel (medisch) beeld te kunnen vormen van de oudere patiënt. De verpleegkundigen daarentegen voelden zich onderschat in hun vermogen om in te schatten of een huisbezoek door de huisarts noodzakelijk was en voelden zich vaak in een ongemakkelijke positie tussen de patiënt en de huisarts geplaatst. Veel patiënten gaven aan dat hun huisartsen en verpleegkundigen de complexiteit van hun aandoeningen en de impact op hun dagelijks leven niet altijd goed konden inschatten.

We concludeerden dat voor goede eerstelijnszorg wederzijds begrip van verwachtingen en doelen nodig is en dat daarnaast aan een aantal randvoorwaarden moet zijn voldaan: toegankelijke patiëntinformatie in de vorm van zorgplannen; gerichte (inter-professionele) training van verpleegkundigen en huisartsen in multi-morbiditeit; training in het bespreken van autonomie, doelen en gezamenlijke besluitvorming. Verbeteringen in de zorg voor oudere patiënten en onderzoek naar de resultaten hiervan dient zich op deze randvoorwaarden te richten.

In *Hoofdstuk 3* hebben we onze aandacht gericht op de invloed van geriatrie onderwijs op de attitude van medisch studenten ten aanzien van geriatrie en ouderenzorg. We ontwikkelden en evalueerden een geriatrie onderwijsblok. Het onderwijsblok was opgebouwd rondom de 'serious game' 'GeriatricX', die speciaal was ontwikkeld om de complexiteit rondom geriatrische besluitvorming in beeld te brengen. In deze 'serious game' lossen studenten enkele patiënten casus op, waarbij ze rekening houden met patiënt voorkeuren, optimale diagnostische en

therapeutische strategieën en kosten van de zorg. Het onderwijsblok was erop gericht om zowel de betrokkenheid en kennis ten aanzien van geriatrie te vergroten onder de deelnemende medisch studenten als om hun attitude ten aanzien van ouderen te verbeteren. Onze hypothese was dat dit onderwijsblok een positief effect kan sorteren op zowel kennis als attitude ten aanzien van geriatrie.

We evalueerden de effecten van dit onderwijsblok op de attitude van studenten ten aanzien van ouderen en op hun zelfgerapporteerde kennis van geriatrische onderwerpen. Daarnaast evalueerden we het gebruik en de waardering van de 'serious game' 'GeriatrIX'. Studenten die tegelijkertijd een onderwijsblok 'neuroscience' volgden waren onze controlegroep.

Na afsluiting van het blok was in de groep studenten van het geriatrieblok de attitude ten aanzien van ouderen positief veranderd, tegen geen verandering in de controlegroep. Tevens was er een significante toename in de kennis van geriatrische onderwerpen in de geriatriegroep. Tot slot werd 'GeriatrIX' hoog gewaardeerd.

We concludeerden dat het gebruik van de 'serious game' 'GeriatrIX' in een moderne onderwijssetting een positief effect teweegbracht op kennis ten aanzien van geriatrie en attitude ten opzichte van ouderen. Studenten onderwijzen in hoe zij op adequate wijze kunnen zorgen voor kwetsbare oudere patiënten kan daarmee bijdragen aan het afleveren van basisartsen die voldoende geschoold zijn in het leveren van zorg aan kwetsbare ouderen, die bovendien in staat zijn om patiëntvoorkeuren, effectieve behandeling en kostenbewustzijn mee te nemen in hun besluitvormingsproces.

Na te hebben geconcludeerd dat een kort onderwijsblok een positieve invloed heeft op de attitude van studenten ten aanzien van geriatrie, onderzochten we in *Hoofdstuk 4* het studenten perspectief op geriatrie en ouderenzorg verder.

Er is weinig bekend over hoe onderwijs kan bijdragen aan een positieve attitude ten aanzien van ouderen en jonge artsen kan interesseren in het veld van geriatrie en ouderengeneeskunde. Daarom onderzochten we geriatrie door de ogen van de studenten, om zo te identificeren welke factoren in onderwijs bijdragen aan een positieve attitude tegenover en kennis van geriatrie en ouderengeneeskunde. Onze hypothese was dat reflectieverslagen van studenten ons inzicht zouden kunnen geven in het beeld dat studenten hebben van geriatrie en ouderenzorg onderwijs.

Zesendertig studenten werden gevraagd een reflectieverslag te schrijven over hun beeld van geriatrie en ouderengeneeskunde voor en na een keuzeblok geriatrie. De studenten ontvingen enkele ondersteunende vragen om hen te helpen bij hun reflectieverslag.

We identificeerden 4 thema's uit de reflectieverslagen: *professionele identiteit; perceptie ten aanzien van geriatrie; geriatrie-specifieke problematiek; en leeromgeving*. In aanvullende focusgroep interviews werden de thema's uit de reflectieverslagen verder uitgediept. Onze meest in het oog springende bevinding was het feit dat studenten geen goed beeld hebben van de klinische praktijk en professionele identiteit in het algemeen, wat hun beeld ten aanzien van geriatrie negatief beïnvloedde. Daarnaast toonde ons onderzoek aan dat wanneer studenten de complexiteit van de klinische praktijk en professionele identiteit onderwezen krijgen, in plaats van enkel te focussen op ziektes en behandelingen, dit de attitude ten aanzien van geriatrie positief beïnvloedt. Concluderend gaven de reflectieverslagen ons 4 belangrijke inzichten. Ten eerste, het zogenaamde verborgen curriculum speelt een belangrijke rol bij het beeld dat studenten hebben van de professionele identiteit en geriatrie en ouderengeneeskunde. Ten tweede zijn geriatrie-specifieke problemen, zoals 'frailty', nieuw voor studenten. Ten derde spelen de onderwijskundige benadering en de inzet van positieve rolmodellen een belangrijke rol in aansprekend geriatrie onderwijs. Ten slotte kunnen reflectieverslagen, gecombineerd met verdiepende focusgroep interviews, gebruikt worden als onderwijs middel om de attitude en beeldvorming ten aanzien van een bepaald onderwerp, in dit geval geriatrie en ouderenzorg, positief te beïnvloeden.

Vanuit het perspectief van zowel hulpverleners en patiënten als medisch studenten kwam gezamenlijke besluitvorming (SDM) naar voren als een belangrijk middel om de zorg voor oudere patiënten te verbeteren. Het onderzoek in *Hoofdstuk 5* was erop gericht om een model voor gezamenlijke besluitvorming met kwetsbare ouderen te ontwikkelen.

Een van de meest gebruikte modellen voor SDM is behulpzaam in het ondersteunen van voorkeursgevoelige behandelbeslissingen in de medische curatieve setting. Vooral voor patiënten met een enkele aandoening waarvoor een beperkt aantal voorkeursgevoelige behandelingen bestaan, zoals bijvoorbeeld borst- of prostaatkanker. In de zorg voor kwetsbare oudere patiënten zijn de bestaande SDM modellen echter niet toereikend, door hun multi-morbiditeit, het gebrek aan richtlijnen en evidence die toepasbaar zijn op hun uitgebreide combinaties van ziektebeelden. Bovendien is bekend dat deelnemen aan SDM moeilijk kan zijn voor meer kwetsbare patiëntencategorieën. Informatie moet toegespitst worden op hun specifieke behoeften en situaties. Het doel van dit onderzoek was daarom om consensus te bereiken over een model voor SDM met kwetsbare oudere patiënten met multi-morbiditeit.

In een 3 ronden tellende Delphi studie zochten we consensus over een model voor SDM met kwetsbare oudere patiënten met multi-morbiditeit. Het expert

panel bestond uit 16 patiënten (ronde 1) en 59 professionals (rondes 1-3). We bereikten consensus over het voorgestelde model als geheel voor zowel belang (91% panel overeenstemming) als bruikbaarheid (76% panel overeenstemming). Het SDM model dat we ontwikkelden voor de klinische praktijk bestaand uit 6 stappen, het is echter een dynamisch model, wat wil zeggen dat de volgorde tussen de stappen kan wisselen tussen verschillende consultaties en patiënten casus. De 6 stappen zijn: *voorbereiding, doelen gesprek, keuze gesprek, opties gesprek, besluitvormingsgesprek en evaluatie*. Concluderend kan worden gesteld dat SDM met kwetsbare oudere patiënten met multi-morbiditeit een dynamisch proces is dat plaatsvindt gedurende alle fasen van een consultatie. Het vereist een continue ondersteunende dialoog tussen hulpverlener en patiënt of diens vertegenwoordiger, waarbij de persoonlijke situatie van de patiënt dient te worden meegewogen in de context van het probleem waarvoor een besluit moet worden genomen. Het ontwikkelde consensus model kan hulpverleners helpen om SDM toe te passen in de complexe situatie van de zorg voor kwetsbare oudere patiënten. Verder onderzoek moet zich focussen op het effect en de bruikbaarheid in de dagelijkse geriatrische praktijk, op het identificeren van specifieke competenties die nodig zijn voor de verschillende stappen van het besluitvormingsproces en op het scholen van hulpverleners en het betrekken van patiënten.

Het laatste onderzoekshoofdstuk van dit proefschrift (*Hoofdstuk 6*) beschrijft de ontwikkeling van een 'teaching framework' voor SDM met kwetsbare oudere patiënten. Om dit 'teaching framework' te ontwikkelen combineerden we een kwalitatief onderzoek met een literatuur verkenning.

Deelnemers uit de Delphi studie (*Hoofdstuk 5*) werden gevraagd om te formuleren wat kerncompetenties zijn om SDM met kwetsbare oudere patiënten adequaat te kunnen uitvoeren en op welke specifieke vaardigheden onderwijs en training zich zouden moeten richten. De deelnemers beschouwden unaniem het 'doelen gesprek' als meest uitdagende deel van het SDM proces en gaven aan hier aanvullende scholing in nodig te hebben. Vervolgens doorzochten we de literatuur op de uit het kwalitatieve deel opgekomen onderwerpen. Combinatie van de door de deelnemers geformuleerde kerncompetenties en de literatuurverkenning resulteerde in praktijk aanbevelingen en een 'teaching framework' dat de volgende elementen bevat: *zorg voor een kennis basis voor alle hulpverleners; bied praktische training aan; ondersteun communicatie; identificeer discussie partner; betrek de patiënt; en werk samen*. Ons 'teaching framework' voor SDM met kwetsbare oudere patiënten kan behulpzaam zijn voor zowel klinici, docenten als onderzoekers die SDM met kwetsbare patiënten willen implementeren. In het licht van het belang van SDM voor alle klinici zou onderwijs hierover al vroeg tijdens de opleiding moeten starten en moeten overgaan in

praktische trainingen tijdens de klinische praktijk. Verder onderzoek moet zich focussen op het ontwikkelen en implementeren van SDM onderwijs.

Hoofdstuk 7 gaf een overzicht over de belangrijkste bevindingen uit dit proefschrift en reflecteerde op de gebruikte onderzoeksmethoden. Daarnaast werden de implicaties van het onderzoek uit dit proefschrift voor medisch onderwijs, de klinische praktijk en verder onderzoek beschouwd. Het onderzoek in dit proefschrift werd uitgevoerd vanuit het perspectief van patiënten, hulpverleners en onderwijs en met gebruik van verschillende onderzoeksmethoden. We concludeerden dat het onderzoek uit dit proefschrift een toevoeging levert op bestaand onderzoek door het combineren en integreren van de verschillende perspectieven. Vanuit het studentenperspectief ontdekten we dat medisch studenten een onrealistisch beeld hebben van de professionele identiteit, wat hun beeld en attitude ten aanzien van geriatrie negatief beïnvloedt. Aansprekend onderwijs dat gebruik maakt van een combinatie van verschillende onderwijsmethoden, waaronder 'serious gaming', patiëntencontact, geriatrie-specifieke onderwerpen en klinische rolmodellen had een positief effect op zowel de attitude ten aanzien van, als kennis over geriatrie en ouderengeneeskunde. Onderzoek van het patiënten perspectief toonde ons dat patiënten vooral behoefte hebben aan betekenisvolle gesprekken met hun hulpverlener en dat zij uitgedaagd moeten worden om betrokken partners te worden in hun eigen gezondheid(zorg). Vanuit het perspectief van de hulpverleners werd duidelijk dat zij een achterstand hebben in geriatrie-specifieke kennis en behoefte hebben aan toegepaste vaardigheden training gericht op doelen stellen en gezamenlijke zorg. Gezamenlijke besluitvorming integreert de verschillende perspectieven en daarmee is SDM een uitgelezen manier om patiënt gecentreerde zorg te leveren. Het model en 'teaching framework' voor SDM met kwetsbare oudere patiënten dat wij ontwikkelden geeft ons een belangrijk hulpmiddel om gelijktijdig studenten en hulpverleners te scholen en patiënten te betrekken.

In het licht van onze vergrijzende maatschappij dienen geriatrie en ouderengeneeskunde hoog op de agenda te staan van zowel medisch onderwijs als de klinische praktijk. Geriatrie onderwijs, praktijk en verder onderwijs onderzoek dienen de perspectieven van zowel studenten, hulpverleners als patiënten in acht te nemen om optimaal bij te dragen aan toekomstbestendige op ouderen gerichte gezondheidszorg.

9

Dankwoord

Publicaties

Curriculum vitae

RIHS PhD portfolio



Dankwoord

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De samenwerking met mijn begeleidingscommissie was voor mij een van de belangrijkste bronnen van inspiratie. De diversiteit en verschillende expertisegebieden van ieders inbreng zorgde voor levendige discussies en hielp me enorm bij het verder ontwikkelen van mijn wetenschappelijk denken.

Mijn promotoren Prof. dr. Toine Lagro-Janssen en Prof. dr. Marcel Olde Rikkert.

Beste Toine, wat heb ik ontzettend veel van je geleerd. Je hielp me met je verdiepende vragen om door te dringen tot de essentie van mijn wetenschappelijke bevindingen. Je gaf me daarbij alle ruimte om me te ontwikkelen als onderzoeker en jouw coachende, inspirerende stijl stimuleerden me enorm. Met jouw toewijding, bevlogenheid en oog voor mij als persoon was je niet alleen mijn promotor, maar ook een rolmodel. Ik ben enorm blij dat ik onder jou heb mogen promoveren. Ik verheug me op onze gesprekken na de promotiemijlpaal.

Beste Marcel, met je encyclopedische kennis van de geriatrie en je snelle en oorspronkelijke manier van denken bracht jij verbanden aan tussen de inbreng van ieders expertise in mijn promotieteam. Geweldig dat ik zo vaak met je heb mogen discussiëren, het heeft me geholpen om zelf ook steeds op zoek te gaan naar verbanden en samenhang. Ik zie uit naar de voortzetting van deze discussies in onze samenwerking in geriatrieonderwijs en toekomstig onderzoek.

Mijn copromotoren dr. Lia Fluit en dr. Joep Lagro.

Beste Lia, jouw onderwijskundige blik was een prachtige aanvulling op de ideeën vanuit de praktijk. Ik heb veel geleerd van je nauwgezetheid en je kennis van onderwijskundige theorieën, jouw feedback sneed altijd hout. Ik verheug me erop dat we blijven samenwerken in onderwijs en onderzoek daarvan.

Beste Joep, onze samenwerking begon in het onderwijs. Met veel plezier hebben we samen onderwijs medisch professionele vorming en geriatrieonderwijs

vormgegeven. Dit bleek een goede basis voor verdere samenwerking in onderzoek. Veel heb ik geleerd van de manier waarop we samen aan de slag zijn gegaan om het eerste artikel van concept naar publicatie in een mooi tijdschrift te krijgen. Ook na je verhuizing naar Den Haag bleef je steeds betrokken en ik zie uit naar mogelijke nieuwe gezamenlijke projecten op het gebied van onderwijs of onderzoek.

Prof. dr. Pim Assendelft. Beste Pim, de afgelopen tijd had ik met onderzoek, onderwijsontwikkeling, regulier onderwijs en praktijkwerkzaamheden aardig wat taken op mijn bordje. Ik heb onze gesprekken over strategie, persoonlijke ontwikkeling en loopbaan dan ook als bijzonder prettig en zinvol ervaren. Deze gesprekken zet ik graag ook na het afronden van mijn promotie met je voort.

Prof. Dr. Jacqueline de Graaf. Beste Jacqueline, als mijn mentor in het promotie-traject had je altijd zeer constructieve en bruikbare adviezen voor het behouden van focus en balans. Dank voor deze waardevolle gesprekken.

Dr. E. van de Lisdonk. Beste Eloy, we kennen elkaar al uit mijn studententijd, toen ik vanuit studenteninspraak met je aan tafel zat om het onderwijs te verbeteren. Toen ik in 2010 bij de afdeling Eerstelijns geneeskunde kwam werken pakten we die draad weer op en hielp je mij bij het ontwikkelen van mijn onderwijskwalificaties. Toen ik coördinerende functies in het onderwijs ging vervullen, was jij degene die me adviseerde om ook promotieonderzoek te overwegen. Dank voor de prettige samenwerking, begeleiding en je aanmoedigingen.

Danielle Niessen. Beste Danielle, onze samenwerking bij De Zorggroep en in het project eerstelijns ouderengeneeskunde hebben de basis gelegd voor mijn gedachten over onderzoek op het terrein van de ouderengeneeskunde en voor het tweede hoofdstuk in dit proefschrift. Samen met jou en Annie Groenen hebben we heel wat zitten praten over goede ouderenzorg. Onze gesprekken hierover zullen zich blijven voortzetten.

Andre Haverkort. Beste Andre, je combineert jouw meesterschap als huisarts en docent met een grote bescheidenheid en een zeer innemende persoonlijkheid. Dank dat je als gespreksleider hebt willen optreden bij de focusgroepen met studenten.

Karen Keijsers. Beste Karen, min of meer toevallig werden we samen gevraagd om een workshop over gezamenlijke besluitvorming te ontwikkelen. In onze eerste uren samenwerken werd de basis gelegd voor het Delphi onderzoek. Ik ben vereerd dat je de afsluitende spreker bent op het symposium voor mijn promotie.

Tijdens mijn onderzoek heb ik diverse stagiaires begeleid. De stages van zowel Kim Rodijk, Tineke Schatorie, Elise Koopman als Yvonne Slaats hebben geresulteerd in congresbijdragen, of bijgedragen aan publicaties. Ik heb jullie met veel plezier begeleid en ben trots dat jullie deze mooie resultaten hebben bereikt.

Erica de Vries dank ik voor haar ondersteuning met de Lime survey vragenlijsten voor het Delphi onderzoek. Bij ons eerste onderzoek met vragenlijsten ging dit nog op papier. Annemarie de Graaff, Ingrid van Haalen, Michelle Teunissen en Brigitte van Dijk hebben me daarna in sneltreinvaart geholpen om de vragenlijsten digitaal in te voeren. Dit maakte de analyses een stuk eenvoudiger, waarvoor ik hen zeer erkentelijk ben.

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Marianne van Iersel, samen hebben we al een deel van de onderzoeksresultaten vertaald in het keuzeblok geriatrie en een online training. Ik zie ernaar uit om onze samenwerking nog verder uit te breiden.

Ook bedank ik Medisch Centrum Groenveld en verzorgingshuis de Beerendonck in Venlo, de plekken waar ik jarenlang huisarts ben geweest. In de praktijk vond ik steeds mijn inspiratie. Jullie hadden er ook weleens last van als ik weer eens voor onderwijs of onderzoek moest ruilen met dagen en tijden (Lucien, jij in het bijzonder), maar jullie mopperden eigenlijk nooit. Ik hoop dat de ouderenzorg bij jullie hoog in het vaandel blijft en kom graag nog af en toe langs voor een kop koffie.

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Ook bedank ik mijn naaste collega's uit de curriculumherziening met wie ik de laatste anderhalf jaar zo intensief heb samengewerkt om curriculum 2015 te lanceren. Ik heb gemerkt dat mijn gesprekken met jullie over onderzoek en onderwijs tot veel kruisbestuiving leiden.

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Mijn beste paranimfen, Olga de Haes en Wim Gorgels.

Beste Olga, wat heerlijk dat ik altijd bij je kan binnenlopen. Jouw overzicht over wat er speelt op de afdeling, je nuchtere kijk op het leven en je steun bij het plannen van al het onderwijs zijn van onschatbare waarde. Iedere dag heb je wel

even een vriendelijk woord of een hart onder de riem, of het nu gaat over onderwijs, curriculum of opvoeden.

Beste Wim, als mijn kamergenoot heb je mijn onderzoeks- (en ook curriculum) emoties van heel dichtbij meegemaakt. Je luisterend oor, je relativiseringsvermogen en vooral je humor hebben veel voor mij betekend. Het geeft me een gerust gevoel dat jullie tijdens mijn verdediging naast me staan. Dank jullie wel!

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Lieve Ron, al meer dan een half leven zijn we samen en jij bent mijn grootste steun en toeverlaat. 'Everlasting', net als het kunstwerk op de voorpagina van dit proefschrift. Jij geeft me altijd alle ruimte om mijn dromen na te jagen, maar houdt me als het nodig is liefdevol-kritisch een spiegel voor. We vullen elkaar aan en houden elkaar in balans door veel met en om elkaar te lachen. Samen met jou wil ik vrolijk oud worden.

Publicaties

Peer reviewed

Lessons learned from narrative feedback of students on a geriatric training program. Marjolein.H.J. van de Pol, Joep Lagro, Elise L. Koopman, Marcel G.M. Olde Rikkert, Cornelia R.M.G. Fluit, Antoine L.M. Lagro-Janssen. *Gerontology & Geriatrics Education*, In press, Published online February 2016

Expert and patient consensus on a dynamic model for shared decision-making in frail older patients. Marjolein HJ van de Pol, Cornelia RMG Fluit, Joep Lagro, Yvonne HP Slaats, Marcel GM Olde Rikkert, Antoine LM Lagro-Janssen. *Patient education and counselling*, In press, Published online: j.pec.2015.12.014

Quality care provision for older people: an interview study with patients and primary healthcare professionals. van de Pol, Marjolein Helena Johanna; Fluit, Cornelia Rita Maria Gertruda; Lagro, Joep; Danielle Niessen, Marcellinus Gerardus Maria Olde Rikkert, Antoinette Leonarda Maria Lagro-Janssen. *British Journal of General Practice* Volume: 65 Issue: 637 Pages: E500-E507 Published: 2015

A Randomized Controlled Trial on Teaching Geriatric Medical Decision Making and Cost Consciousness With the Serious Game GeriatriX. Lagro, Joep; van de Pol, Marjolein H. J.; Laan, Annalies; Fanny J. Huijbregts-Verheyden; Lia C.R. Fluit; Marcel G.M. Olde Rikkert. *Journal of the American Medical Directors Association* Volume: 15 Issue: 12 Published: 2014

Teaching Geriatrics Using an Innovative, Individual-Centered Educational Game: Students and Educators Win. A Proof-of-Concept Study. van de Pol, Marjolein H. J.; Lagro, Joep; Fluit, Lia R. M. G.; Toine L. M. Lagro-Janssen; Marcel G. M. OldeRikkert. *Journal of the American Geriatrics Society* Volume: 62 Issue: 10 Pages: 1943-1949 Published: 2014

Challenges in communication during clerkships: A case report. van de Pol, M. H. J.; Van Weel-Baumgarten, E. M. *Medical Teacher* Volume: 34 Issue: 10 Pages: 848-849 Published: 2012

Systemic inflammatory response to exhaustive exercise in patients with chronic obstructive pulmonary disease. van Helvoort, H. A. C.; van de Pol, M. H. J.; Heijdra, Y. F.; Dekhuijzen, P.N.R. *Respiratory Medicine* Volume: 99 Issue: 12 Pages: 1555-1567 Published: 2005

Dissociation between urine osmolality and urinary excretion of aquaporin-2 in healthy volunteers. Baumgarten, R.; van de Pol, M. H. J.; Deen, P. M. T.; van Os, C.H; Wetzels, J.F.M. *Nephrology Dialysis Transplantation* Volume: 15 Issue: 8 Pages: 1155-1161 Published: 2000

Urinary excretion of aquaporin-2 in response to different stimuli of ADH-dependent water reabsorption. van de Pol, M. H. J.; Baumgarten, R.; Wetzels, J. F. M.; et al. *Kidney International* Volume: 55 Issue: 4 Pages: 1625 Published: 1999

Glycosylation is not essential for vasopressin-dependent routing of aquaporin-2 in transfected Madin-Darby, canine kidney cells. Baumgarten, R.; Van de Pol, M. H. J.; Wetzels, J. F. M.; Deen, P. M. T.; van Os, C. H. *Journal of the American Society of Nephrology* Volume: 9 Issue: 9 Pages: 1553-1559 Published: 1998

Nederlandse publicaties

Besluitvorming bij kwetsbare ouderen, Gesprek over niet-reanimeren. M. H. J. van de Pol. *NHG Handboek Effectieve communicatie in de huisartspraktijk 2016*, Hoofdstuk ouderen

Persoonsgerichte zorg, gezamenlijke besluitvorming en zelfmanagement. J. Engels, M. van de Pol, S. van Maurik-Brandon. *NHG Boek Protocollaire ouderenzorg editie 2015*, Hoofdstuk 11

Stap voor stap samen beslissen. Marjolein van de Pol, Karen Keijsers, Marcel Olde Rikkert, Toine Lagro-Janssen. *Medisch contact*, Nr. 12 - 19 maart 2014, 602-604

Oefenen verbetert balans bij ouderen een beetje. Marjolein van de Pol. *Huisarts en wetenschap*, Maart 2013

Posters en presentaties

Shared decision making with frail older patients. MHJ van de Pol. *ICCH meeting 2016*, symposium and oral presentation

One health clerkship; Collaboration between medical school and veterinary medicine. MAM Houben, AGM Olde Loohuis, L Peeters, MHJ van de Pol. *International One Health Congress 2015*, poster

Ouderengeneeskunde nauwelijks aanwezig in bachelor onderwijs op de Nederlandse geneeskunde faculteiten. MHJ van de Pol, K Rodijk, MWM Schatorie, ALM Lagro-Janssen. *NVMO congres 2014*, presentatie

Soliciting Patient's Goals: Starting on the Right Path to Shared Decision-Making. M. Perry, S. Robben, M. van de Pol, Radboud University Medical Center, H Beckman, University of Rochester, A Beckman, Einstein School of Medicine. ICCH Meeting, Amsterdam, Netherlands, September 29, 2014, Symposium and oral presentation

Het leren van geriatrische medische besluitvorming en kostenbewustzijn met behulp van de serious game GeriatriX. J Lagro, M van de Pol, A Laan, F Huijbregts-Verheyden, L Fluit, M Olde Rikkert. NVMO congres 2014, poster

Ouderengeneeskunde in het onderwijs: Handvatten voor de toekomst! MHJ van de Pol, E Koopman, CRMG Fluit, MGM OldeRikkert, J Lagro, ALM Lagro-Janssen. NVMO congres 2014, poster

Shared Decision Making met de geriatrische patiënt: uitdaging voor patiënt en dokter! Karen Keijsers, Marjolein van de Pol. Geriatriedagen 2014, workshop

Samenwerken met de patiënt: "... maar wat wilt u eigenlijk zelf?" Trudy van der Weijden, Loes van Bokhoven, Marjolein van de Pol, Sandra Beurskens. NHG congres 2014, workshop

Innovatief onderwijs stimuleert kennis en attitude ten aanzien van ouderen. MHJ van de Pol, J. Lagro, C. Fluit, M. OldeRikkert, A. Lagro-Janssen. NHG wetenschapsdag 2013, presentatie. NVMO congres 2013, presentatie

Serious game GeriatriX en complexe geriatrische besluitvorming: eerste ervaringen uit de praktijk. J Lagro, M van de Pol, A Laan, F Huijbregts-Verheyden, M Olde Rikkert. NVMO congres 2013, poster

"Het verzorgingshuis chronisch complex": Verbetering van de medische zorg in het verzorgingshuis. Marjolein.H.J. van de Pol, D. Niessen, A. Groenen en A.L.M. Lagro-Janssen. NHG wetenschapsdag 2012, poster

Curriculum Vitae

Marjolein van de Pol werd in 's-Hertogenbosch geboren op 30 mei 1975. In 1993 behaalde zij haar gymnasiumdiploma aan het Jeroen Bosch College te 's-Hertogenbosch en aansluitend begon zij met haar studie geneeskunde aan de Katholieke Universiteit Nijmegen (Thans Radboud Universiteit). Tijdens haar studie was zij student assistent op de afdeling celfysiologie waar zij haar eerste onderzoekservaringen opdeed (Zij won met haar onderzoek de scriptieprijs voor beste wetenschappelijke stage). In 1999 behaalde zij Cum Laude haar artsexamen. Na haar artsexamen werkte zij als arts assistent en onderzoeker op de afdeling longziekten van het UMC St Radboud en longcentrum Dekkerswald (Thans Radboudumc). In 2003 startte zij met de huisartsopleiding aan het UMC St Radboud. Na het afronden van haar specialisatie tot huisarts werkte zij in verschillende huisartspraktijken en zorginstellingen en specialiseerde zij zich als kaderhuisarts in de ouderengeneeskunde. Vanaf 2010 combineert zij haar werk als kaderhuisarts ouderengeneeskunde met het geven en ontwikkelen van onderwijs aan het Radboudumc in zowel de basisopleidingen geneeskunde en biomedische wetenschappen als de vervolgopleidingen tot huisarts en specialist ouderengeneeskunde.

Sinds 2013 is zij principal lecturer. Zij is onder andere coördinator van de episode in de master geneeskunde die de coschappen en het bijbehorende theoretische onderwijs in de vakken ouderengeneeskunde, huisartsgeneeskunde en public health omvat. Daarnaast is zij actief in de curriculumherziening van geneeskunde en biomedische wetenschappen en is zij coördinator van kwartaal 1 van de bachelor geneeskunde en biomedische wetenschappen.

In 2011 ontstonden de eerste ideeën voor een onderzoek naar onderwijs over ouderengeneeskunde. In 2013 werd voor het onderzoek een subsidie verkregen vanuit het Instituut voor Wetenschappelijk Onderwijs en Opleidingen (IWO, nu Radboud Health Academy) en werd het geformaliseerd als promotietraject wat heeft geleid tot dit proefschrift.

Marjolein is getrouwd met Ron Hamelers en samen hebben zij een zoon Tim (2006).

.....

Marjolein van de Pol was born in 's-Hertogenbosch on May 30th 1975. In 1993 she graduated from secondary school (gymnasium) at the 'Jeroen Bosch College' in 's-Hertogenbosch and subsequently started her medical education at the Catholic University Nijmegen (now Radboud University). During her studies she was a student assistant at the department of physiology, where she acquired her first

research experience. In 1999 she graduated cum laude from medical school. After graduating medical school, she worked as a clinical house officer and researcher at the department of pulmonary diseases of the Radboud University Medical Center and the Dekkerswald department of pulmonary diseases. In 2003 she started the vocational training programme in general practice at the Radboud University Medical Center. After she became board certified as general practitioner (GP), she worked in various GP practices and care institutions and specialized as expert GP in elderly care. Since 2010 she combines her work as expert GP elderly care with teaching and educational development at the Radboud University Medical Center in both the curricula of Medicine and Biomedical Sciences and the vocational training of general practitioners and elderly care physicians. Since 2013 she is principal lecturer. She coordinates the internships and accompanying theoretical education of geriatric medicine, family medicine and public health. In addition, she is active in the curriculum reform of Medicine and Biomedical Sciences and coordinates the first course of the bachelor of medicine and biomedical sciences.

In 2011 the first ideas for a research project about education and geriatric medicine originated. In 2013, she obtained a grant from the Institute for Scientific Education and Training (now Radboud Health Academy) and the research project was formalized into a PhD project, which led to this thesis.

Marjolein is married to Ron Hameleers and together they have a son, Tim (2006).

RIHS PhD portfolio

Name PhD student: MHJ van de Pol	PhD period: 01-09-2013 - 01-01-2016
Department: Department of Primary & community care	Promotor(s): Prof. dr. ALM Lagro-Janssen, Prof. dr. MGM Olde Rikkert
Graduate School: Radboud Institute for Health Sciences	Co-promotor(s): Dr. CRMG Fluit, dr. J Lagro

	Year(s)	ECTS
TRAINING ACTIVITIES		
a) Courses & Workshops		
- Scientific writing and speaking Radboud In'to languages	2013	1.5
- Cochrane course Evidence Based Medicine	2013	1
- Qualitative research methods in healthcare	2013	1
- RIHS introduction course	2014	1
- Academic writing	2014	2
- RIHS scientific integrity course	2015	0.5
b) Seminars & lectures^		
- KNMG conference 'zorg voor kwetsbare ouderen', oral	2014	0.2
- EACH conference September 2014, seminar	2014	0.2
- NHG conference 2014 'dokteren doe je niet alleen', seminar	2014	0.2
c) Symposia & congresses^		
- NVMO conference 2013, poster & oral	2013	0.2
- NHG 'wetenschapsdag', poster	2013	0.2
- NHG 'wetenschapsdag', oral	2014	0.2
- EUGMS 2014	2014	0.2
- NVMO conference 2014, poster & oral	2014	0.2
- NVMO conference 2015, poster & oral	2015	0.2
d) Other		
- Research meetings Radboud Health Academy	2013-2016	0.2
- Research meetings department Primary & Community Care	2013-2016	0.2
- Reviewing scientific papers for multiple journals	2014-2016	0.4
TEACHING ACTIVITIES		
e) Lecturing		
- Expert teacher elderly care in GP residency programme	2013-2016	0.5
- Teaching and educational development for medical students	2013-2016	1
- CME programmes on elderly care and shared decision making	2015-2016	1
f) Supervision of internships / other		
- Supervision research internship Kim Rodijk	2012	1
- Supervision research internship Tineke Schatorie	2012	1
- Supervision research internship Elise Koopman	2014	1
- Supervision research internship Yvonne Slaats	2015	1
- Supervision GP vocational training residents 'differentiatie ouderengeneeskunde' 3 aios	2013-2016	1
TOTAL		17.1

