Towards appropriate care in old-age medicine

Exploring the professional identity of medical students and doctors in relation to older persons

Annemarie Moll-Jongerius

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Colofon

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Contents

Chapter 1

Introduction

Case

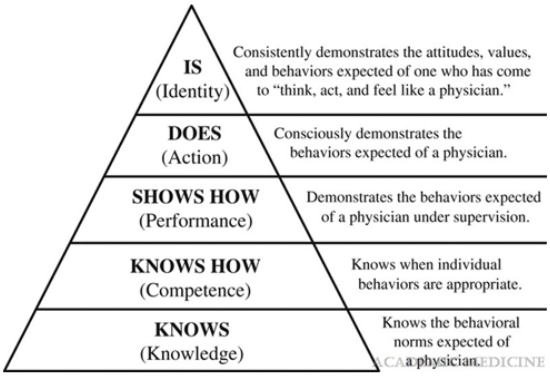
Bart is a fifth-year medical student following a six-week nursing home placement. Every week he participates in a small group session at the university where he can share his workplace experiences with other students guided by a medical teacher. Bart feels uncomfortable about a case. As medical student he is working on a rehabilitation ward in the nursing home. One of his patients, an 87 year old woman, passed away the day before. She was admitted after a hip fracture. In the beginning the rehabilitation went well. However, she developed pneumonia from which she did not recover well. In the end she became bedridden and stated that she didn't want any further treatment. After a few days she died. Bart wonders if he and his supervisor were good doctors. He believes that they have failed because they haven't done enough to cure her.

The thoughts and feelings of Bart are related to becoming and being a good doctor. Bart faced the problems of an older patient in the context of the nursing home which gave him the feeling that he was not the doctor he desired to be. As a medical teacher I experienced that a lot of medical students struggled with the same question as Bart when facing older patients. Apparently, the perception of being a good doctor in relation to older patients differs from what medical students experience during medical school. The students' questions lead to this thesis which describes an exploration of the professional identity of medical students and doctors in relation to the care of older persons.

Becoming a doctor

Becoming a doctor is seen as the interplay of building competencies and professional identity formation.[1-4] Competenties represent the 'doing' and can be defined as 'the cluster of knowledge, skills, abilities, behaviors, and performances'.[1] The professional identity of the doctor represents the 'being' and is related to the question 'who am I as a doctor?'. It describes how doctors see themselves and how they want to be seen by others, based on their values and norms.[1-3, 5]

Building competencies and professional identity formation are complementary in the process of becoming a doctor.[1] Their interplay can be explained by the amended version of the pyramid of Miller. In this version professional identity is added to the stages of 'knowing', 'knowing how', 'showing how' and 'doing' as the stage of 'being' on the top of the pyramid.[6, 7] The stage of 'doing' includes the integration of knowledge, skills and attitudes.[8] Professional identity encompasses professional values, norms and beliefs.[6] Therefore, the professional identity, 'the being', influences and guides the 'doing'.[1, 3] Even though it is known that the development of a professional identity is considered as fundamental to becoming a doctor, medical education is mainly competency based.[1, 3, 4, 9, 10] Therefore, professional identity formation has to be explicitly addressed in medical education.[4, 9]



The amended version of Miller's pyramid with the addition of "Is" and an outline of what is to be assessed at each level. Sources: Adapted with permission from Miller GE. The assessment of clinical skills/competence/performance. Acad Med. 1990;65(9 suppl):s63–s67. Quotation from Merton, 1957.22

Amending Miller's Pyramid to Include Professional Identity Formation
Cruess, Richard L.; Cruess, Sylvia R.; Steinert, Yvonne
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Socialization in a community of practice

Professional identity formation is defined as an ongoing process of socialization which is described as 'the process by which a person learns to function within a particular society or group by internalizing its values and norms'.[2] Through this process the medical student develops the professional identity of a doctor, i.e. learns to function within the medical profession by internalizing the characteristics, values and norms of this profession, gradually resulting in thinking, acting, and feeling like a doctor.[2, 9]

Socialization takes place in a community of practice which is a community that is characterized by a group of professionals with shared beliefs, values, knowledge base and practices.[1, 9, 11-14]. In the community of practice several aspects influence the socialization process i.e. the development of a professional identity. First social interaction with members of the community is essential to socialization. [3, 14] Furthermore, active engagement in patient care, observation of role models and experiences with patients are described as important influencers.[1-3, 12, 13, 15] Finally, 'discourse' regulates professional identity formation in a community of practice.[16, 17]. A 'discourse' is defined as an ideological way of thinking which represents the values and self-evidence of a community [14, 18]. It is reflected in informal rules, in the way members see the world, what they believe as important and call normal and abnormal.[14, 18, 19]

Medical education and the care of older persons

Worldwide the population aged 65 years or above is expected to rise resulting in an increase of the number of older patients.[20] Old age health problems differ from those of younger patients and are characterized by, among other things, multimorbidity, chronic illnesses, complexity, impairments and increasing dependency.[21-24] These demographic and related health care changes will lead to a change in society's healthcare expectations and needs, including the role of the doctor.[25-27] Future doctors will have to deal with old age health challenges regardless of the medical specialty they choose for their career. Therefore medical schools have to ensure that all medical students are well prepared for older persons' health care.[28-31]

Medical students feel uncomfortable with the care of older persons while they experience geriatric medicine as overwhelming complex due to, amongst other, multimorbidity, shorter life expectance, and treatment decisions.[32, 33] Geriatric undergraduate medical education has been developed over the years in which geriatric competencies have been defined and are utilized in medical education to prepare medical students for older persons' health care.[30, 34-37] Furthermore curricula include important geriatric topics and various teaching methods are used to improve geriatric competencies of medical students.[37] Becoming a doctor for older persons, however, goes beyond building competencies and also requires the development of a professional identity that enables medical students to give older persons the health care they need.[1-4, 38-40]

Professional identity formation and the care of older persons

Professional identity formation of medical students in relation to the care of older persons however is not described in the literature on undergraduate geriatric medical education. What we do know is that medical students develop their professional identity in the community of practice of medical school and clinical practice. Furthermore we know that this community is primarily hospital-based with a disease-oriented discourse in which evidence and skills to diagnose and solve clinical problems are important values and self-evident.[17, 39, 41-43] Socialization in this community will lead to the development of a cure focused professional identity.[17, 39, 41-43] Becoming a doctor who is mainly oriented on cure is not appropriate for older persons' health care, which more often requires emphasis on improving quality of life, relieving suffering and maintaining autonomy rather than on cure.[42, 44-46] Purposefully therefore, medical students should develop an appropriate professional identity in order to give older persons the health care they need. Furthermore, as a professional identity encompasses professional values, norms and beliefs, an additional benefit of this appropriate professional identity is that it might help medical students to feel more comfortable with older persons' health care.

Aim of the thesis

Considering all this, the aim of this thesis is to enhance medical education in order to better prepare medical students for the care of older patients. To this end the objective of this thesis is to gain insight in the professional identity formation of medical students in relation to older persons' health care. Our main research question is *'what are essential elements of the professional identity and its formation that enables future doctors to give older persons the health care they need?'*. Considering that this concept is new to geriatric undergraduate medical education, the studies presented in this thesis are explorative and address the following research questions:

1. What is known about the professional identity formation of undergraduate medical students in relation to the care of older persons?
2. What perceptions do medical students have of the doctor they want to become after participating in the nursing home community of practice and what experiences during the nursing home clerkship had impact on these perceptions?
3. What are the expectations and needs of older persons in the Dutch society regarding the doctor who takes care of them?
4. What is the perception of doctors, who are members of the community of practice of older persons' health care, regarding who they are and what they think is important in the care of older persons.

Outline of the thesis

We conducted four studies to achieve the objective of this thesis which are presented in the following chapters. *Chapter 1*, the introduction, describes the reason of this thesis and the theoretical background of our research. *Chapter 2* presents a systematic review with a qualitative data synthesis of the literature on what is known about the professional identity formation of medical students and the care of older persons. *Chapter 3, 4 and 5* describe three qualitative studies based on a constructivist research paradigm to explore the perspectives of different groups of people to better understand the concept of professional identity and its formation in relation to older persons' health care. *Chapter 3* presents the experiences of medical students before and after a nursing home clerkship and their reflection on becoming a doctor. *Chapter 4* describes the exploration of needs and expectations older persons have regarding their doctor and how this contributes to better understand the professional identity of the doctor in relation to the care of older persons. *Chapter 5* presents the perceptions of doctors who work in the community of practice of older persons' health care regarding their own professional identity and what they think is important for this care. Finally in *chapter 6*, the general discussion, the overall findings of our research and the implications for medical education are discussed. We also discuss strengths and limitations and future research perspectives.

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Chapter 2

Professional identity formation of medical students in relation to the care of older persons: a review of the literature.

Moll-Jongerius A, Langeveld K, Tong W, Masud T, Kramer AWM, Achterberg WP.

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Abstract

With the growing population of older persons, medical students have to be well prepared for older persons' health care during medical school. Becoming a doctor is an interplay of building competencies and developing a professional identity. Professional identity formation of medical students is a relatively new educational concept in geriatric medical education. This review aims to explore the concept of professional identity formation of undergraduate medical students in relation to the care of older persons. 23 peer-reviewed studies were included and summarized narratively. Patient-centeredness, caring and compassion, collaboration and holistic care are characteristics of the doctor's professional identity in relation to the care of older persons. Participating in the context of older persons' health care contributes to the becoming of a doctor in general. In this context the building of relationships with older persons, participating in their lives and role models are important influencers of professional identity formation. Furthermore, the perceptions and expectations medical students have of future doctoring influence their feelings about the care of older persons. To prepare medical students for older persons' health care, professional identity formation seems to be a relevant educational concept.

Introduction

Worldwide the population aged 65 years or above is expected to rise to 1.5 billion in 2050, an increase from 9.3 percent in 2020 to 16.0 percent in 2050.[1] Health problems in older age differ from those of younger patients and are characterized by multimorbidity, chronic illnesses, atypical presentations, psychosocial and functional problems, ethical dilemmas and increasing dependency.[2-6] With this growing population of older persons, future medical doctors will face these health care challenges regardless of their chosen medical specialties. Educators in medical school, therefore, have to prepare all medical students for older persons' health care.[7-9] Prior research shows that medical students feel ill prepared and uncomfortable in caring for older persons and find geriatric medicine too complex and challenging.[10] Defined geriatric competencies and learning outcomes can facilitate medical educators in guiding medical students.[9, 11-14] Becoming a doctor however goes beyond building competencies, and also requires the development of a professional identity.[15-18]

This professional identity of a doctor is linked to the question 'who am I as a doctor' and describes how doctors see themselves and how they want to be seen by others.[16, 17, 19] Professional identity formation (PIF) is an ongoing process of becoming a member of the medical profession in which the characteristics, values and norms of this profession are internalized, gradually resulting in thinking, acting, and feeling like a doctor.[16, 20] PIF can be seen as the added stage of 'being' on the top of the pyramid of Miller.[21] This pyramid describes the stages of 'knowing', 'knowing how', 'showing how' and 'doing' and is used to understand and assess teaching and learning. The stage of 'doing' includes the integration of knowledge, skills and attitudes.[22] PIF encompasses professional values, norms and beliefs.[21] Therefore, PIF influences and guides the 'doing'.[15, 17]

The development of a professional identity is mainly influenced by participation in a certain context through the process of socialization.[15-17, 23] Medical students develop their professional identity in the context of medical school and clinical practice. It is known that this context is mainly hospital and disease-oriented with a strong focus on skills to diagnose and solve clinical problems. This type of orientation produces doctors who are mainly cure focused.[5, 24-26] The latter, however, is not always appropriate for the care of older persons, where cure is not necessarily the main aim, but rather the focus should often be on improving quality of life, relieving suffering and maintaining autonomy.[2-6] Purposefully therefore, medical students should develop a professional identity that enables them to give older persons the health care they need.

From the literature we know that geriatric undergraduate medical education has developed over the years and geriatric competencies and learning outcomes have been defined.[9, 11, 12] Two reviews outlined the most important geriatric topics in existing curricula, the various teaching methods that are used and interventions to improve geriatric competencies of undergraduate medical students.[7, 27] The concept of PIF however is not described in these reviews.

PIF of medical students is described as a major goal of medical education.[18] To prepare medical students for older persons' health care, it is essential that they

develop an appropriate professional identity for the care of older persons. Medical educators should be aware of PIF as this will further enhance geriatric medical education. Since PIF is not described as an educational concept in the literature on undergraduate geriatric medical education, we explored the available literature, in our current systematic review with qualitative data synthesis, to focus on the research question: 'what is known about PIF of undergraduate medical students in relation to the care of older persons?'

Methods and analysis

Search strategy

Given that the knowledge on the concept of PIF of undergraduate medical students as an educational concept for geriatric medical education is scarce, we conducted a systematic review with qualitative data synthesis to explore this topic. In collaboration with a trained information specialist, a detailed search strategy was composed on the 21st of January 2022. The following databases were searched: PubMed, MEDLINE, Embase, Web of Science, Cochrane Library, Emcare, ERIC, Academic Search Premier and PsycINFO. The query consisted of the combination of terms related to 'professional identity', 'medical student' and 'older person' (see box 1).

Box 1 *Query used for this review consisting of the combination of terms related to 'professional identity', 'medical student' and 'older person'*

Professional Identity	Medical Student	Older person
professional identity formation	medical student	aged
professional identity development	medical trainee	elderly
PIF	medical education undergraduate medical	geriatrics
social identification	medical school	gerontology
psychological identification	clerkship	nursing homes
becoming	apprenticeship	aged care facilities
identity		older person
professionalism		older patient
professional development		aging
career choice		older population
student interest		old age

Selection criteria

No restriction was made to the year of publication, language or design. Only peer-reviewed journal articles were selected. Publications that met the combination of the following criteria were included: (1) related to PIF or to PIF related topics i.e. values, norms, beliefs, reflections or socialization; (2) related to undergraduate medical students or undergraduate medical education and (3) related to geriatric medicine or older persons. We excluded studies that (1) did not relate to PIF or PIF related topics; (2) were related to postgraduate medical education or other health care students; (3) did not relate to geriatric medicine or older persons. References were scrutinized for additional publications which were then checked for relevance using the same criteria.

Study selection

Three researchers (AM, KL, WT) independently screened all titles, abstracts and the full text articles for inclusion. Disagreements were resolved through extensive discussion between them or, if disagreement still persisted through involvement of researcher AK.

Data synthesis

A thematic approach was used to synthesize the data. The three researchers (AM, WT, KL) read and analyzed the included articles on topics that were described as relevant to the PIF of undergraduate medical students in relation to the care of older persons. Together the researchers (AM, WT, KL) discussed these topics and identified major themes and subthemes relevant to the subject, which were approved by the other research team members (TM, AK, WA) and summarized narratively.

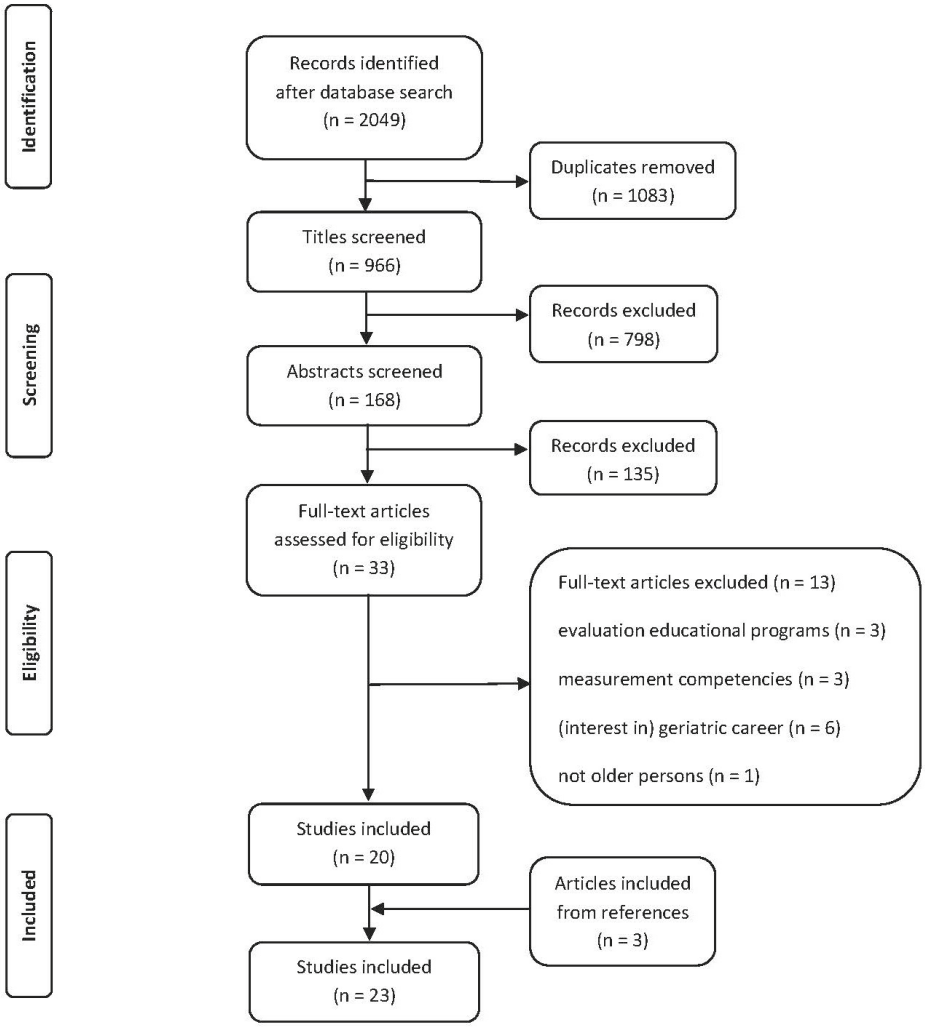
Results

The search generated 966 publications in total. The selection procedure let to the inclusion of 23 selected articles (see figure 1). These articles were mainly from the Global North and most studies used qualitative research methods (17) or mixed-methods (5). One study used a quantitative method.

Almost half of the articles (10) described reflections of preclinical medical students, particularly on one day experiences with older patients and in nursing attachments but also on a contact with one older patient over a longer period of time and a geriatric course. The other articles (13) described reflections of medical students in their clinical years, mainly on one day experiences with older patients but also on experiences during an internal medicine clerkship, a geriatric clerkship, and a geriatric curriculum.

We identified three major themes in the articles: (1) characteristics of the doctor's professional identity in relation to the care of older persons; (2) the relevance of the care of older persons to the PIF of medical students and the care of all patients and (3) external factors in the context of the care of older persons that influence the PIF of medical students.

Figure 1 *Flow-chart of studies selection*



1. Characteristics of the doctor's professional identity in relation to the care of older persons

Patient-centeredness, *caring and compassion*, *collaboration*, and *holistic care* are mentioned as characteristics of the doctor who takes care of older persons. *A patient-centered* doctor is described as a doctor who sees the older patient as unique, as an expert of his or her life and as part of the health care team. The patients' life experiences, perspectives and autonomy guide the doctors' decision making in which the patients' views are respected and taken into account.[28-32] In one study students emphasized the importance of listening to the story of the older patient and working together with this patient to provide care. They acknowledged

that the patients' life experiences gained through living were helpful in the patients' understanding of their needs and expectations of healthcare.[28] The doctor who takes care of older patients is also described as *caring and compassionate* through taking time, having empathy and humanity.[33-39] Students who observed the doctor during home visits, described the doctor as dedicated and the doctor-and-patient interaction as genuine and personal.[33]

Furthermore, the ability to *give holistic care* is described as a characteristic of the doctor in relation to the care of older persons. To accomplish this, the doctor has to know the whole life of the patient, understand the impact of the disease and treatment on this life and must also be able to tailor the care to this life.[31, 34, 39, 40] After having contact with older patients at home during one day, medical students emphasized the importance of knowing the social context, the home environment and the family of the patient to give good care.[31, 39] Additionally, a doctor who is able to *collaborate* with other health care professionals is described as essential in giving holistic care. Through teamwork and multidisciplinary thinking, different perspectives are taken into account resulting in care that is not only focused on the disease but also on functional and psychosocial needs.[31, 38, 40]

2. The relevance of the care of older persons to the PIF of medical students and the care of all patients

Several articles described the relevance of the participation of medical students in older persons' health care to graduating into a doctor in general.[30, 41-43] During a geriatric course in the first two years of medical school, medical students reflected on caring for older patients and their professional development. They shared that older patients have specific challenges, like hearing problems, complex conditions, fragility, limited mobility and end of life questions which made them develop professional skills like physical examination, communication skills and interprofessional collaboration. They experienced a growing sense of confidence in becoming a doctor and shared that their interaction with older patients would benefit all their patients.[42] Furthermore, the nursing home is described as a suitable context for medical students to develop patient-centered, collaborative and communication skills as well as empathetic behavior.[30, 43, 44] During a geriatric clerkship in the nursing home medical students experienced collaboration in a multidisciplinary team and shared they worked together with other health professionals more often than during other clerkships in the hospital.[43]

Besides these aspects various research described that contact with older patients can elicit emotions.[34, 35, 38, 45, 46] Medical students experienced sadness when watching the dementia progress of the patient they took care of.[34] In another study the students were shocked by the death of a patient.[31] Acknowledgement of emotions by supervisors and role models can help medical students in dealing with such feelings. This acknowledgement and the reflection on feelings and thoughts contribute to the becoming of a doctor in general.[47]

3. External factors in the context of the care of older persons that influence the PIF of medical students

Various external factors in the context of the care of older persons are described as influencers of the PIF of medical students. These factors can be summarized by *being part of the life of the older patient*, *role models*, *the hidden curriculum*, and *perceptions and expectations*.

By *being part of the personal life* and living environment of the patient during home visits, medical students learn to know the older patient as a person, get to know the life of the patient and experience the impact of a disease or treatment on this life and the family.[28, 32-35, 38] In one study medical students observed the commitment and responsibility of caregivers during home visits.[33] *Role models* during educational courses, nursing attachments or clerkships are frequently mentioned as influencers for medical students' learning to become a doctor.[29, 35, 41, 42, 45, 48, 49] Medical students experienced nurses as positive role models during a nursing attachment. The nurses showed kindness, warmth and empathy to the patient.[35] Care-givers who showed disrespect, frustration, coldness and depersonalization during an internal medicine clerkship were seen as negative role models by the students.[45, 49]

Role models represent parts of the *hidden curriculum*.[29, 45, 49, 50] A hidden curriculum refers to the characteristics of an organization or culture that are taken for granted and is communicated through implicit beliefs, messages and expectations.[51] Implicit messages and approaches in relation to older persons, will influence the perceptions medical students have of older patients.[49] It is known that, with traditional training, medical students often perceive that becoming a doctor predominantly means saving lives and curing diseases.[29] They learn to appreciate diagnostic skills, acute complaints and visible results in the medical profession which are less common characteristics in geriatrics. On the other hand aspects of older persons' health care such as psychosocial, chronic and terminal conditions are experienced as being less attractive, boring and time consuming.[29, 46, 52] These *perceptions and expectations* may negatively influence students' feelings and thoughts about what the care of older persons involves.

Discussion

PIF of medical students is a relatively new educational concept in geriatric medical education. In this review, we explore what is known in the literature about the development of a professional identity of undergraduate medical students in relation to the care of older persons. The majority of articles we have found are qualitative ones from the Global North. The results are particularly based on experiences of medical students during one day meetings with older patients or geriatric courses. Some studies described long term experiences with older patients during a nursing attachment or clerkship. Our exploration gives an overview of the characteristics of the doctor who takes care of the older person. Furthermore the results emphasize the relevance of caring for older persons to the PIF of medical students and outline the external influencers in the context of older persons' health care on this PIF.

The doctor who takes care of the older patient is characterised by compassion, patient-centeredness, collaboration and giving holistic and personal care. These characteristics are not only relevant to older persons' health care but also to the care of all patients, old and young. This suggests that the professional development of the medical student in the context of the care of older persons is applicable to all patients and relevant to the becoming of a doctor in general. In this context the building of relationships with older persons, participating in their lives and role models are important influencers of PIF.

The hidden curriculum influences the expectations medical students have of future doctoring as well. The focus of medical school on saving lives and curing diseases can create negative feelings and thoughts about older persons' health care. Moreover implicit messages and beliefs as a result of ageism among care-givers can induce negative perceptions, stereotypes and prejudices toward older persons in medical students. It is commonly known that age discrimination negatively impacts the health of older persons.[53]

Implications for medical education

Based on the results of this review we propose three recommendations for medical education. First, we argue that suitable contexts are essential for medical students to develop an appropriate professional identity for older persons' health care. These contexts have to provide engagement in older persons' lives and reflect the values and norms of patient-centredness, holistic care, compassion and collaboration. Socialization in these contexts will help medical students to focus not only on cure but also on care and quality of life.[15-17, 23, 29, 54, 55] The nursing home and the care for older patients at home are described as such suitable contexts.[27, 30, 36, 43, 56] We recommend that medical schools provide more and mandatory clinical placements in these contexts.

Second, we want to emphazise that the development of a professional identity with a focus on care and quality of life is important to all patients. Participation of medical students in the context of older persons' health care contributes to the development of a competent and compassionate doctor in general.[29, 42, 56] Therefore curriculum committees should be aware of the value of the learning opportunities of this context.

Furthermore, we realize that medical students have negative perceptions of older persons and experience geriatric medicine as boring, frustrating and complex. This can hinder an appropriate PIF in relation to the care of older persons.[10, 23, 46, 57] Ageism both in medical care and in the living environment of medical students contributes to these perceptions. Education and intergenerational contacts are described as effective interventions to reduce ageism, especially the combination of both interventions.[53, 58] As PIF encompasses professional values, norms and beliefs, we suggest that an appropriate PIF for the care of older persons might help medical students to feel more comfortable with geriatric medicine and reduce negative perceptions.[15, 17, 21] Therefore, PIF has to be explicitly addressed as an educational objective in medical education.[18, 20] Faculty development can facilitate medical educators to mentor medical students in this development, in

which guided reflections on experiences, emotions and thoughts are essential to make PIF explicit and effective.[18, 23]

Future research

In our opinion, PIF of undergraduate medical students in relation to the care of older persons is a relevant concept for medical education. To better understand this concept we suggest to explore this topic further. A future research area will be the experiences of medical students while caring for older persons over a longer period of time. Furthermore we want to explore the perspectives of older persons and physicians in older persons' health care on PIF. In the end, we intend to develop educational interventions to encourage PIF of medical students in relation to the care of older persons and evaluate the effect of these interventions on this care. We hope that a better understanding can strengthen the position of geriatric medicine in curriculum development and can facilitate medical educators to help medical students develop an appropriate professional identity.

Limitations

Our review has several limitations. First, to explore the concept of PIF we included all peer reviewed articles that met our inclusion criteria. We did not assess these articles on design. Second, we could have missed qualitative studies which are not published in the databases we used. Furthermore, our findings are particularly based on one day experiences of medical students with older patients. Literature on long term experiences with older patients are scarce and mainly situated in the pre-clinical years of medical school. Finally, the majority of the included studies are from the Global North. As PIF is related to context, this may limit the generalizability of our findings to medical schools outside this region.

Conclusion

With the growing population of older persons, undergraduate medical students have to be well prepared for older persons' health care during medical school. Becoming a doctor is an interplay and accumulation of building competencies for practice, and developing a professional identity through the internalisation of the values and norms of the medical profession. PIF of undergraduate medical students is a subject of significant interest in medical educational research and a relevant educational concept in preparing medical students for the care of older persons. The context of older persons' health care provides relevant learning opportunities for the becoming of a doctor in general.

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Chapter 3

Becoming a physician for older patients: exploring the professional identity formation of medical students during a nursing home clerkship. A qualitative study.

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Abstract

Background

To prepare medical students for the growing population of older patients, an appropriate professional identity formation is desirable. The community of practice of medical school is primarily hospital-based and disease-oriented which will lead to the development of a physician who is mainly focused on cure. This focus alone however is not always appropriate for older persons' health care. The aim of this study is to explore the influence of participating in a nursing home community of practice on the professional identity formation of medical students.

Methods

A qualitative study based on a constructivist research paradigm was conducted, using individual semi-structured, in-depth interviews and a visual narrative method (drawing) as a prompt. Thematic analysis was applied to structure and interpret the data. The study population consisted of fifth-year medical students participating in a six-week nursing home clerkship. Thirteen participants were purposefully sampled. The clerkship took place in nursing homes in the South-West of the Netherlands.

Results

The medical students described the nursing home as the living environment of the patients. Actively participating in the patients' care and experiencing the daily life of the patients was meaningful for the physician the students want to become in five ways: (1) a physician with a complete picture; (2) a physician who is close; (3) a physician who is in dialogue; (4) a physician who is able to let go and (5) a physican who collaborates.

Conclusions

Caring for older patients in the nursing home influences the professional identity formation of medical students. Patient-centeredness, personal, holistic and tailored care, approachability and collaboration are important characteristics in becoming a physician for older persons' health care. The context of this care provides relevant learning experiences for this development and the becoming of a physician in general.

Introduction

Health concerns of older persons differ from those of younger persons and are characterized by, among other things, complexity, multimorbidity, chronic illnesses and increasing dependency.(1-3) With the growing population of older patients, future physicians will need to deal with these health challenges of older age regardless of the medical specialties they choose for their career. Therefore, medical schools have to ensure that all medical students are well prepared for older persons' health care.(4-7) It is known that medical students feel uncomfortable with the care of older persons and consider geriatric medicine as overwhelmingly complex.(8, 9) Established geriatric competencies can be utilized in medical education to prepare medical students for geriatric care that is fit for purpose.(10, 11) Becoming a physician however goes beyond building competencies and also requires the development of a professional identity.(12-15) Therefore medical students need to develop a professional identity that enables them to provide older persons the health care they need.(16)

Professional identity formation (PIF) of the medical student is related to the question 'who do I want to become as a physician?' and is a relatively new concept in geriatric medical education.(13, 17, 18) In the theoretical framework of socialisation PIF is seen as the process of internalizing the characteristics, values and norms of the medical profession, gradually resulting in thinking, acting, and feeling like a physician.(13, 14, 19) This process is mainly influenced by participation in the community of practice (CoP) of medical care in which engaging in patient care, observation of role models and experiences with patients are important influencers.(12-14, 20-22)

A CoP is characterized by a group of professionals with shared values, knowledge base and practices.(20, 23) During medical school medical students participate in different CoPs like, among others, educational groups, hospital departments, public health facilities, primary care practices and nursing homes. It is known however that medical school is primarily hospital-based and disease-oriented with a strong focus on evidence and skills to diagnose and solve clinical problems, which will lead to development of a physician who is mainly focused on cure.(16, 24-27) This focus alone is not always appropriate for older persons' health care, which more often requires emphasis on improving quality of life, relieving suffering and maintaining autonomy rather than on cure.(26, 28, 29) The CoP of the nursing home is described as a suitable place for medical students' geriatric learning.(30, 31) Participating in this community can help medical students develop a professional identity that is appropriate for the care of older persons.

In a recent review we explored the literature on PIF of medical students and geriatrics.(18) It describes caring and compassion, patient-centeredness, collaboration and giving holistic and personal care as characteristics of the physician who takes care of older persons. Role models, building relationships with older persons and participating in their lives are mentioned as important influencers of PIF. The studies in this review however are particularly based on one day or preclinical experiences of medical students with older patients.

In this study we further explore the PIF of medical students in relation to older persons' health care. A deeper understanding can help medical educators to guide medical students in developing an appropriate professional identity for this care. To this end we use experiences of fifth year clinical medical students during a six week clerkship in a nursing home. The aim is to gain more insight into the influence of such a context on their PIF. Our research questions are:

1. What perceptions do medical students have of the physician they want to become after participating in the nursing home CoP?
2. What experiences during the nursing home clerkship had impact on these perceptions?

Methods

Methodology

We conducted an explorative, qualitative study based on a constructivist research paradigm. In this philosophical framework reality can only be understood through people's experiences and interpretations.(32) We used the meaningful experiences of medical students while they participated in the CoP of the nursing home, to better understand the influence of caring for older patients on the physican they want to become. We applied thematic analysis to structure and interpret the data. (33-35)

Research team

Our research team included an elderly care physician, medical teacher and PhD candidate in medical education (AM), a cultural/medical anthropologist, medical teacher and qualitative researcher (KL), an elderly care physician and qualitative researcher (EH), a geriatrician and professor in geriatric medicine (TM), a general practitioner and professor in medical education (AK), and an elderly care physician and professor of institutional care and elderly care medicine (WA).

Context

We conducted this study between June and December 2018 at the Leiden University Medical Center in the Netherlands, where fifth-year medical students participate in a six-week mandatory clerkship in a nursing home. Prior to this clerkship, students completed all clinical clerkships in hospital. After the clerkship, they entered the last year of medical school, consisting of elective courses.

The nursing home clerkship took place in nursing homes in the South-West of the Netherlands. Dutch nursing homes provide psychogeriatric, long-term somatic care and rehabilitation care for older patients who cannot live at home. The main difference with other countries is that in the Netherlands medical care in the nursing home is delivered by a specifically trained nursing home physician; an 'elderly care physician'.(36) This physician is employed by the nursing home and works together in a multidisciplinary team with other health professionals; psychologists, speech

therapists, dieticians, occupational therapists, physiotherapists and spiritual counsellors, who are also employed by the nursing home. During the nursing home clerkship medical students are supervised by the nursing home physician and they are part of the multidisciplinary team.

Participants

Our study population consisted of medical students entering the nursing home clerkship. Two weeks before the start of the clerkship, students were invited to participate by AM during a lecture at the university. AM provided information about the study and asked the students to reply by email if they wanted to participate. Every four weeks a new group of students started with the clerkship and AM continued to invite students until the research team felt data saturation had been achieved.(37) To ensure a rich diversity within the data and a representative sample, we sampled purposefully to select medical students who differed in gender, age, work experience, social background, cultural and/or religious backgrounds. Men were approached explicitly to try and improve the gender balance.

Data collection

As our goal was to understand the students' experiences, we used individual semi-structured, in-depth interviews and a visual narrative method (drawing) as a prompt. Drawing as a pre-interview activity can help to narrate the meaning of experiences more deeply.(38-40) Participants were invited for two interview sessions with AM, one session one week before the nursing home clerkship and one session in the last week of this clerkship. The pre-clerkship session took place at the university, and the end-of-clerkship session in the nursing home. First, the students were asked to make a drawing in response to the question *'who do I want to become as a physican'*. They made this drawing alone in a separate room, taking as much time as they needed. After finishing the drawing AM conducted an individual, semi-structured, in-depth interview in which the students shared what was important to them when they answer the question '*who do I want to become as a physician'*. Their drawing was used as a prompt, to help the students reflect on the topic. The same procedure was followed after the clerkship. The students received their pre-clerkship drawing and were asked to supplement it, leave it unchanged or make a new drawing in response to the same question *'who do I want to become as a physician'*. AM then conducted an individual, semi-structured, in-depth interview in which they shared and reflected on the perception of the physician they want to become after the nursing home clerkship and what experiences in the nursing home had contributed to this, using both drawings as a prompt. Drawing took approximately 30 minutes. The interviews lasted approximately one hour and were audio recorded and transcribed verbatim. We carried out a linguistic transcription, not phonetic but orthographic.(41)

Data analysis

Following the standard steps of thematic analysis we first analyzed the pre-clerkship interviews to identify a set of major themes and subthemes, using open coding and an iterative analysis.(34, 35) The drawings, used only as a prompt for the students to reflect on the topic during the interview, were not analyzed as a separate

data set. For the coding process, the first researcher AM reviewed the first two interviews by reading and re-reading the transcripts, listening to the audio tapes, and constructing a list of open codes. The senior researcher (KL) independently reviewed those two interviews by reading and re-reading the transcripts. AM and KL discussed the open codes and organized them into a list of starting codes. Then three more interviews were reviewed in the same way. AM and KL discussed new codes that emerged and inductively redefined the codes into a coding scheme, generating themes related to the research question. Subsequently AM analyzed another two interviews by applying the coding scheme and discussing evolving themes with KL and AK. This iterative process was repeated until no new themes emerged. The coding scheme was finalized after the analysis of nine interviews, and approved by the research team. Four additional interviews did not add new ideas. The final themes were grouped into an overview of major themes and subthemes to capture the essence of what is important to the students when answering the question '*who do I want to become as a physician*'.

After the analysis of all pre-clerkship interviews, the post-clerkship transcripts were analyzed in the same way, using the pre-clerkship themes as a comparison. To capture the influence of caring for older patients in the nursing home CoP on medical students' PIF, changes in pre-clerkship themes, new themes, reinforcement or confirmation of pre-clerkship themes were added in the final post-clerkship overview of major themes. Together with the research team AM and KL gave meaning to each theme and created narrative descriptions to explain the broader stories each theme tells. These stories are described in the results, using quotes of participants to illustrate key features.(34, 35) AM kept a journal throughout the process of data-gathering and analysis in which she recorded field notes and reflected on the choices she and the research team made.

Ethics

This project was approved by the Ethical Research Board of the Netherlands Association of Medical Education (NVMO-ERB, no 1056). Participation was fully voluntary and confidential, also to ensure that it would not have consequences for students' assessments. The participants provided written informed consent, part of which was consent to publish anonymized responses. Only AM knew the participants' identities and listened to the audio recordings. To guarantee confidentiality, each participant was given a number. The researchers were not involved in any teaching activities or assessments of the students.

Results

Thirteen fifth-year medical students (ten female) participated in this study. They described the nursing home as the living environment of the patients in which they could work as ward physicians under supervision. By doing so they actively participated in the patients' care, resulting in *'truly experiencing'* the daily life of the patients, up close and over a longer period of time. The students mentioned that this helped them *'really get to know'* the patient as a '*person*'. Student 4 shared:

> *'Yes, just looking at it differently. Less like, well, an object. Literally…try to always remember…that there is a complete human being in front of me.'*

This experience was meaningful for the physician they want to become in five ways: (1) a physician with a complete picture; (2) a physician who is close; (3) a physician who is in dialogue; (4) a physician who is able to let go and (5) a physician who collaborates.

A physician with a complete picture

Many students related to the *'complete picture'*, meaning the whole life of the patient like *'family, background, interests and emotions'*. They described that, as compared to the hospital, this complete picture received *'much more attention'* from the health care professionals. Student 5 shared what was important to her, based on a patient's discharge:

> *'But here we always think about what happens afterwards…I think that's very important…the occupational therapist converts the whole house when people go home… Just a lot more looking at the big picture.'*

Student 9 added a house and a globe to his post clerkship drawing and explained this meant the attention to the whole life of the individual patient. (fig 1)

Some students perceived the consequences of being ill or a treatment on this whole life. Student 13 shared her experience with a patient who was treated with diuretics:

> *'I never realized that…it just has a lot more impact than you actually envision…Until you suddenly see it up close. That someone needs to go to the bathroom all the time, but this is actually not possible with those legs…I think you often overlook that…'*

Students experienced they could better help the patients if the care takes into account this complete picture and not just a *'small part'* of it. This way of caring confirmed their desire to become a physician who tailors the care to the patient's whole life.

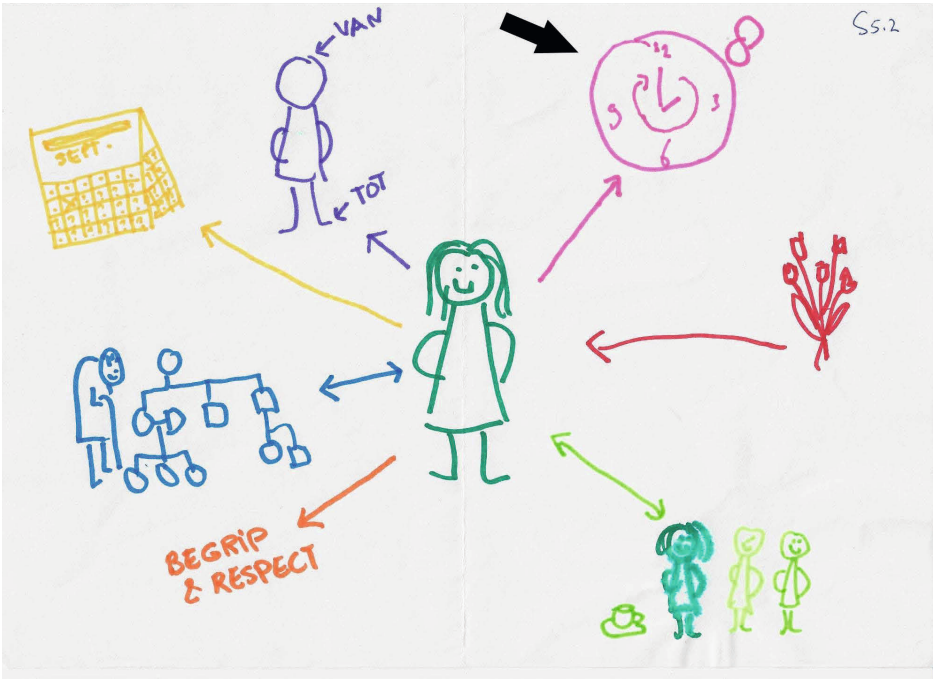

Figure 1
Student 9 added a house and a globe (see black arrow) to his post clerkship drawing and explained this meant the attention to the whole life of the individual patient.

A physician who is close

Several students described they could give the patient personal attention by *'little things'* such as *'a chat'* or *'drinking a cup of coffee'*. Student 5 added a clock to her post clerkship drawing and explained this meant *'taking time'* for the patient. (fig 2) As a result, they experienced closeness to the individual patient. The closeness of the supervisor with a *'human'* and *'approachable'* interaction with the patient, was mentioned as an example for their own physician patient interaction. Student 4 expressed:

> *'The atmosphere and the setting and the time…You do learn to be very person-to-person…not physician-to-…It's all very low-threshold.'*

They also expressed that closeness could be communicated by not wearing a white coat or through a touch. Student 13 experienced her supervisor as a role model:

> *'…how you can sit down next to a patient, and put an arm around someone…that was so beautiful. That I really thought: that's what it's all about, this is really who you are as a physician.'*

Students experienced that patients *'opened up more'* when they were close to the patient and they realized that human closeness is important for the physician they want to become.

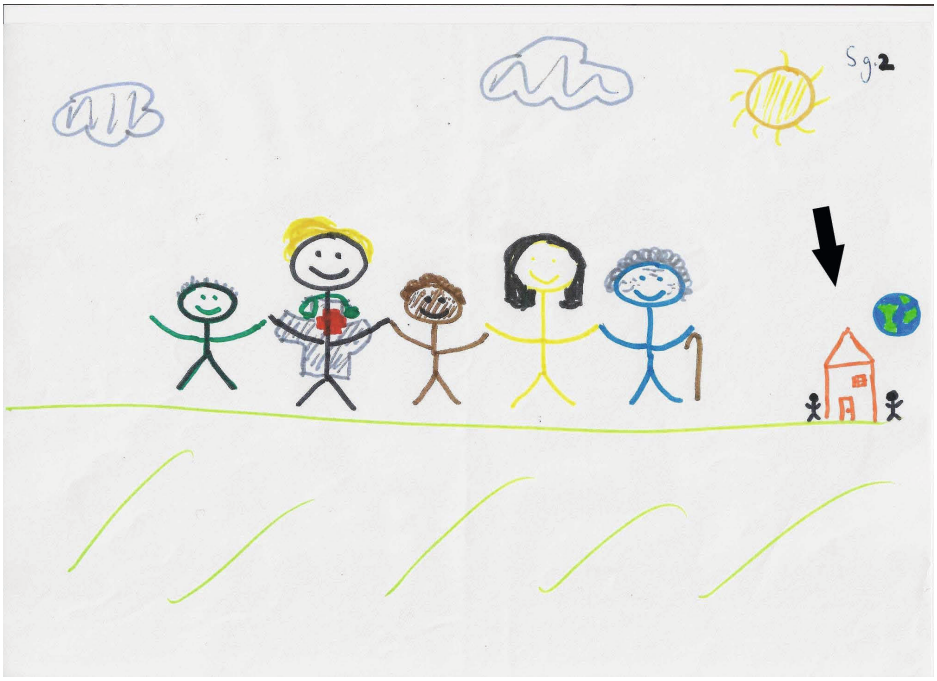

Figure 2
Student 5 added a clock (see black arrow) to her post clerkship drawing and explained this meant 'taking time' for the patient.

A physician who is in dialogue

Several students described that the nursing home physician made treatment decisions together with the patients and it was normal to be *'next to the patient'* without *'hierarchy'*. Most students were present during the conversations between the physician and the patient and described that it was important for the physician to *'accommodate'* to the patient and to *'respect wishes'*. Student 4 described the physician as less determinative and the relationship with the patient as human:

> *'That you really are not so much the leader, but you really do it in dialogue with the patient…Provide advice and support. Less dictating…I'm not sure how to describe it… just more one human being to another.'*

These experiences confirmed the students they want to become a physician who makes treatment decisions together with the patient. Student 2 explained:

> *'…always realized it, but maybe a little more so now…part of the patient is also what they want or don't want anymore…and that you also give that more consideration in your decision. That, of course, is most important.'*

A physician who is able to let go

Most students experienced patients who could not be cured up close. They observed that continuing curative treatment was very stressful for the patients. This had an impact on them. Student 3 shared her experience:

> *'That Parkinson's patient, no more treatment options, we had arranged an admission... and that morning he said 'I want to die'...so maybe you also recognize, yes, it is very burdensome. And you don't always realize that, that you understand better.'*

Students were impressed by the nursing home physician who was able to *'let go of'* the curative treatment and doing *'what is best at that moment'*. To the students, abandoning curative treatment seemed very difficult. They described it as a *'new experience'* and emphasized they want to become a physician who asks the question whether he should *'put a person through this treatment*'. Student 4 expressed that knowing the patient as a *'human being'* was helpful to her:

> *'So yes, it's different...it's about a human being, there's a human being in front of you. Rather than treat, treat, treat, it's more stop or do nothing.'*

A physician who collaborates

Several students described their experience of being part of a multidisciplinary team. They experienced that *'with different views you can achieve more'*, which benefits the care for the patient. Some students realized that a physician is '*really dependent on others*' and *'cannot do it on his own'*. Student 3 shared:

> *'I also realized that yes, how small you actually are...when you work in the hospital it's more heroic...we're going to help people...but...you really couldn't do anything without that collaboration...you really are depended on the team.'*

Students described that, as compared to the hospital, working together with other health professionals was *'natural, low-treshold and without hierarchy'*. Students experienced this way of working in a team as *'for the first time*' and important for the physician they want to become. Student 9 shared:

> *'So I have learned a complete different form of collaboration here...And that is something I really take with me.'*

Discussion

In this study we explore the PIF of medical students in relation to the care of older persons. To our knowledge this is the first study in which clinical medical students are specifically asked about becoming a physician after participating in the nursing home CoP over a longer period of time. This participation influences the perceptions of becoming a physician. Caring of older patients reinforces and confirms the students to become a physician who tailors the care to the patients' whole life, makes treatment decisions together with the patient and is close to the patient.

Furthermore, it creates the intention to become a physician who is able to let go of curative treatment and who works together in a team with other health professionals.

These findings broaden our understanding of PIF of medical students in relation to geriatrics. To develop an appropriate professional identity, medical students need to become patient-centered, collaborative, and able to give holistic and personal care.(18) Our results emphasize these characteristics and add new ones, creating a more complete picture of this professional identity. First it is essential to become a physician who is able to give tailored care by avoiding unnecessary curative treatment. Furthermore the older patient needs a physician who takes time and is approachable. Finally a non-hierarchical attitude to both the patient and other health care professionals facilitates collaboration and dialogue. This picture of characteristics has similarities with the concept of 'whole person care' that is used to describe holistic care in nursing and general practice.(42-46)

Several experiences in the nursing home CoP support the students' becoming. Our study underlines engaging in patient care, observation of role models and experiences with patients as influencers of PIF.(12-14, 20-22) In addition the findings make explicit which elements are essential to the process of PIF in relation to the care of older persons. Due to the participation in a multidisciplinary team other health care professionals can contribute to this process by being role models. This participation also encourages the development of a holistic approach.(47) Furthermore, being part of the living environment and lives of the older person over a longer period of time creates the opportunity to build a physician patient relationship. This results in a better understanding of patients' needs and well being. It is known that having long term relationships with patients influences PIF and stimulates the development of personal care, patient-centeredness, humanity and compassion.(48, 49)

Implications for medical education

Based on our findings we have two considerations for medical education. First, to become a physician of older persons, participation in an appropriate CoP is essential. This CoP has to provide role models and practices that represent the values and norms relevant to this care. The nursing home and the care of older patients at home are described as suitable communities.(30, 31, 50, 51) These contexts can also supplement the dominant hospital CoP characterised by disease centredness and a more hierarchical relationship between physician and patient or other health professionals.(25-27, 52, 53) Additionaly, the values of patient-centeredness, personal and holistic care, approachability and collaboration are not only important to older persons' health care but also to the care of all patients. This suggests that participation in the CoP of caring of older persons is also relevant to the becoming of a physician in general.(16, 18, 54, 55) Therefore curriculum committees should be aware of the value of the learning opportunities of this community.

Second, we want to emphasize the importance of building long term relationships with older persons. By being part of the personal life medical students learn to know the older patient as a person and will better understand the needs and expectations of the older patient. Longitudinal integrated clerkships in general practice or educational projects that facilitate long term contacts with community living older adults can stimulate and facilitate these relationships.(48, 56)

Strenghts and limitations

Our study has strengths and limitations. A strength of the study was the use of in-depth interviews with a drawing as a prompt. Taking time and the visual narrative method as pre-interview activity offered the students different ways to share their experiences and thoughts.(38, 40) Furthermore, AM is an elderly care physician and understood the context of the nursing home. This may have created safety and rapport during the interviews. Conversely, being an elderly care physician may have influenced the interpretation of the data which is a limitation. To ensure reflexivity, the data were analyzed together with a cultural/medical anthropologist and a general practitioner, and AM kept a journal. The participation of another health care professional, like a occupational therapist, nurse or psychologist in the research team could have enriched the analyses of the data.

The period of participating in the nursing home was six weeks. This period was longer than in previous studies, however, the long term effects on PIF are not known which limit our conclusions. Furthermore we used two research methods, interviewing and drawing, to explore the experiences of the students. Triangulation through, for example, observation would have further deepened our understanding. The sample size of medical students from one Dutch university may limit the generalizability of our findings to medical schools outside the Netherlands. The small amount of men in the sample is almost representative for Dutch medical schools. Finally, we realize that the specific context of Dutch nursing homes with specialized nursing home physicians and medical care is uncommon in the world. We believe however that this unique situation can contribute to enhancement of (geriatric) medical education internationally.

Future research

Given the growing population of older patients and the need to prepare medical students for this care with an appropriate PIF, more research is needed to further explore this development. A future research area will be the perspectives of older persons and physicians on the development of a professional identity and older persons' healthcare. Furthermore the understanding and knowledge of PIF has been evolved over the years. New developed conceptual models can help us to further explore this process.(57) In the end we intend to develop educational interventions to encourage this PIF based on the literature and our findings. A better understanding can facilitate medical educators to help medical students develop a professional identity that enables them to give older patients the health care they need.

Conclusion

To prepare medical students for the growing population of older patients, an appropriate PIF is desirable. In this study, we explored the influence of the CoP of the nursing home on the PIF of medical students. The aim was to gain more insight in the development of an appropriate professional identity for older persons' health care. To our knowledge this is the first study in which clinical medical students are specifically asked about their perception of becoming a physician, after caring for older patients over a longer period of time. Patient-centeredness, personal, holistic and tailored care, approachability and collaboration are important characteristics in this becoming. The context of older persons' health care provides relevant learning experiences for the development of an appropriate professional identity for the care of older persons and for the becoming of a physician in general.

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Chapter 4

Professional identity formation of medical students in relation to older persons' health care: exploring the views of older persons living in the Netherlands. A qualitative study.

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Abstract

Objectives

Given the growing population of older persons, medical students need to develop an appropriate professional identity to comply with older persons' healthcare needs. In this study we explored the needs and expectations of older persons regarding their doctor to gain more insight into the characteristics of this professional identity.

Design

A qualitative study based on a constructivist research paradigm was conducted, based on individual semi-structured, in-depth interviews using a letter as a prompt, and focus groups. Thematic analysis was applied to structure and interpret the data.

Setting and participants

Our study population consisted of older persons, aged 65 years and above, living at home in the South-West of the Netherlands, with no apparent cognitive or hearing problems and sufficient understanding of the Dutch language to participate in writing, talking, and reflecting. The in-depth interviews took place at the participant's home or at the Leiden University Medical Center (LUMC), the focus groups were held at the LUMC.

Results

The older persons shared and reflected on what they need and expect from the doctor who takes care of them. Four major themes were identified (1) personal attention, (2) equality, (3) clarity, and (4) reasons why.

Conclusion

Increasing complexity, dependency, and vulnerability that arise at an older age, make it essential that a doctor is familiar with the older person's social context, interacts respectfully and on the basis of equality, provides continuity of care and gives clarity and perspective. To this end the doctor has to be caring, involved, patient, honest and self-aware. Participation in a community of practice that provides the context of older persons' health care may help medical students to develop a professional identity that is appropriate for this care.

Introduction

Worldwide, the population aged 65 years or above is expected to rise to 1.5 billion in 2050, increasing from 9.3 per cent of the total population in 2020 to 16.0 per cent in 2050.[1] Health concerns of older age differ from those of younger persons and future medical doctors will face old age healthcare challenges regardless of their chosen medical specialties.[2-6] Educators in medical school therefore have to prepare all medical students for older persons' health care.[7-9] Defined geriatric competencies and learning outcomes can facilitate medical educators in guiding medical students.[10-12] Becoming a doctor for older persons, however, goes beyond building competencies. It also requires the development of an appropriate professional identity that enables medical students to give older persons the health care they need.[13-19] Therefore, a deeper understanding of this appropriate professional identity is required. Literature on professional identity and its formation in relation to geriatric medical education is scarce.[17] Studies describe patient-centeredness, collaboration, approachability and giving holistic care as important characteristics medical students need to develop to take care of older persons. [17, 20]

To gain more insight in the professional identity for older persons' health care, we use the concepts of 'socialization in a community of practice' and 'social contract' in this study. The professional identity of the doctor describes how doctors see themselves and how they want to be seen by others. [14, 21] The development of this professional identity is a process of socialization in which the characteristics, values and norms of the medical profession are internalized, gradually resulting in thinking, acting, and feeling like a doctor.[14, 22, 23] This process takes place in the community of practice of medicine, which is characterized by a group of professionals with shared values, knowledge base and practices.[13, 22, 24-27] Engaging in patient care, observation of role models and experiences with patients are described as important socialization factors. [13-15, 24, 27, 28]

Through the lens of the concept of 'social contract' the relationship between medicine and society can be seen as a contract between two parties, in which reciprocal expectations and societal needs are important aspects.[29, 30] Expectations and needs of a society regarding health care evolve over time, and as a result values, norms and practices of medicine's community of practice may change. This will result in the transformation of certain aspects of the doctor's professional identity.[14, 15, 24, 27, 29, 31, 32] The growing population of older persons leads to a change in society's healthcare expectations and needs regarding the doctor.[2, 27, 32-34] We therefore argue that knowledge about expectations and needs of older persons in society can help us gain more insight into the appropriate professional identity medical students need to develop for older persons' health care.

Older persons' involvement and engagement in health care and research has been developed over the years.[35-37] To our knowledge there is, however, little literature on the exploration of older persons' needs and expectations related to the doctors' professional identity. One study in Switzerland investigated hospitalized older patients' perceptions of "good" and "bad" doctors.[38] This study showed that internal medicine patients, mean age 72, defined a good doctor as

scientifically proficient and sensitive to the patients' feelings. However, needs and expectations are culturally determined.[39] A study in the Netherlands explored the expectations that community-dwelling older persons have of their general practitioner (GP) when they experience pain or mobility problems. They expect their GP to be proactive, easily accessible, attentive, well informed, and engaged. [40] This study, however, was related to older persons with specific health problems and concerned only the GP.

The aim of this study is to gain more insight into the characteristics of the professional identity medical students need to develop for the care of older persons. To this end we explored the expectations and needs of older persons in Dutch society regarding the doctor who takes care of them.

Methods

Methodology

Because of the paucity of literature on the topic, we conducted an explorative qualitative study based on a constructivist research paradigm. In this philosophical framework, reality can be understood through analysis and interpretation of people's experiences.[41] We used older persons' narratives of their needs and expectations regarding the doctor who takes care of them, to better understand the professional identity of the doctor in relation to older persons' health care. We applied thematic analysis to structure the data using an inductive approach to identify themes that are strongly linked to the data.[42-44] The whole research team was involved in the interpretation of the data.[42, 43]

Public and patient involvement

There was patient and public involvement and engagement (PPIE) in this study, aimed at including the perspectives of older persons. To this end a member of the Senior's Advisory Board 'Care and Well-being' of South-Holland North participated in the design of the study, recruitment of participants and formulating the discussion section of the manuscript. This Senior's Advisory Board is a team of older individuals in the region South-Holland North who aims to bring older persons perspectives into research, education and policy. The organization is part of the Leiden University Medical Center (LUMC). By this cocreation, members want to contribute to the improvement of the ageing society in the Netherlands. [45]

Research team

Our research team included an elderly care physician, medical teacher and PhD candidate in medical education (AM-J), a cultural/medical anthropologist, medical teacher and qualitative researcher (KL), a general practitioner and professor in general practice (JG), a general practitioner and professor in medical education (AK), and an elderly care physician and professor of institutional care and elderly care medicine (WPA).

Context

We conducted this study between February and July 2023 at the LUMC in the Netherlands. Participants were recruited in close cooperation with the Senior's Advisory Board Health and Well-being. This organization is one of the eight regional organizations in the Netherlands that represent older persons in the region and facilitate the participation of older persons in education, research, and policy. Recruitment was carried out via the newsletter of this organization in which we described the aim of the study and what we expected from participants.

Participants

We used inclusion criteria to select participants. Older persons living at home, aged 65 years and above, who had no apparent cognitive or hearing problems and with sufficient understanding of the Dutch language to participate in writing, talking, and reflecting on the topic, could join the study. From the older persons who signed up, we purposefully sampled participants on age and gender for the interviews and focus groups to ensure a diversity to feed the data.

Data collection

To better understand the expectations and needs of older persons regarding the doctor they need, we used three research methods to collect our data to create triangulation; a letter to a student used as a prompt for the interview, an individual semi-structured in-depth interview to explore individual needs and expectations, and focus groups to discuss and so deepen our understanding of needs and expectations.[46-48] To collect as much rich information as possible we used an iterative approach till data saturation occurred which means that data were collected until no new themes were generated.[49]

The letter

First participants were asked to write a letter to a fourth-year medical student who is entering the clerkships. They could write to a female (Sophie) or a male (Bart) medical student and were asked to share with them what they need and expect from the doctor who takes care of them. A general instruction was created to guide the participant. Participants wrote the letter at home in the days before the interview.

The interview

The individual, semi-structured, in-depth interview by AM-J took place at the participant's home or at the LUMC (depending on participant's preference). In this interview of approximately one hour, participants shared what they expected and needed from their doctor, using the letter they wrote as a prompt. A topic list was composed for this interview based on the concepts of expectations and needs (see supplemental file 1).[50, 51]

The focus group

After analysis of the interviews and the identification of themes, two focus groups were conducted with other participants than the interview participants to deepen our understanding of the major interview themes. We made a topic list of these themes. For each major theme ('personal attention', 'equality', 'clarity', and 'reasons why'), participants were asked to share and discuss what this theme means to them. AM-J led the focus groups and KL observed. These focus groups took place at LUMC and lasted approximately 90 minutes.

The interviews and focus groups were audio recorded and transcribed verbatim. We carried out a linguistic, orthographic transcription.[52]

Data analysis

The letters, only used as a prompt for the participants to reflect on the topic during the interview were not analysed as a separate data set. We first analysed the individual interviews. To identify themes that are strongly linked to the data we followed the six-step method of thematic analysis, using an inductive approach, open coding and iterative analysis.[42-44] For the coding process, the first researcher AM-J reviewed the first three interviews by reading and re-reading the transcripts and listening to the audio tapes to become familiar with the data. After this first step she generated a list of open codes on items related to expectations and needs older persons have regarding their doctor. The senior researchers (KL and AK) independently reviewed those three interviews by reading and re-reading the transcripts. AM-J, KL and AK discussed the open codes and organized them into a list of starting codes. Then three more interviews were analysed in the same way. AM-J, KL and AK discussed new codes that were identified and inductively redefined the codes into a coding scheme, generating themes related to the research question. Subsequently AM-J analysed another three interviews by applying the coding scheme and reviewed themes with KL and AK. The iterative process was repeated until no new themes were identified. The coding scheme was finalized after the analysis of 12 interviews and discussed by the whole research team. To be sure that no new data would arise we carried out another interview. This additional interview did not add new ideas. The final themes were grouped into an overview of four major themes to capture the essence of the expectations and needs older persons have regarding their doctor: (1) personal attention, (2) equality, (3) clarity, and (4) reasons why. Each major theme includes subthemes (as described in the Findings section).

After this analysis process, the major themes were discussed in the focus groups. Next, researchers AM-J, KL and AK analysed the focus group interviews, discussed new information that was identified and inductively redefined the major themes and subthemes. A final overview of themes was achieved after two focus groups (one with four participants and one with five participants) and discussed by the whole research team. Together with the research team AM-J gave meaning to the themes by creating narrative descriptions to explain the stories each theme tells. These stories are described in the findings, using quotes of participants to illustrate key features.[42, 43] AM-J made field notes in which she described the process of data gathering and analysis and reflected on the choices she and the research team made. Moreover she reflected on being an elderly care physician and the influence

of this on her interpretation of the date. To ensure reflexivity, she analysed the data together with KL and AK.

Ethics

This research project was approved by the LUMC non-WMO Review Committee (nr 23-3024). Participation was fully voluntary and confidential. All participants were informed about the aim of the study, the study procedures and provided written informed consent, part of which was consent to publish anonymized responses. To guarantee confidentiality, each participant was assigned a number.

Findings

22 persons participated in the study, 13 women and 9 men, aged 68-85 years. During the individual and focus group interviews, participants shared and reflected on what they need and expect from the doctor who takes care of them. We identified four major themes: (1) personal attention, (2) equality, (3) clarity, and (4) reasons why.

In addition to these themes, it was noticed that most participants while reflecting on their needs and expectations, referred to a doctor with whom they had frequent contact or a relationship over a longer period of time. This could be their GP or a medical specialist. Furthermore, participants particularly reflected on the interaction between them and the doctor and mentioned almost no needs and expectations concerning medical expertise, which they viewed as self-evident. When meeting a doctor, they assumed skilled medical expertise. Some participants preferred a female doctor because of their personal way of interacting.

1. Personal attention

To be known and understood

Most participants expect a doctor who knows who they are and makes them feel that 'it is truly about me'. This doctor has a total picture of their life, social context, and history. To be known provides a sense of trust. They emphasize the need to be seen as a person who is ill instead of attention being paid only to the technical aspects of an 'ulcer or broken leg'. Participant 3 shared:

> *'Suppose I became ill. I wouldn't just want to be my illness. I'd still want to be who I am, who is sick…that's what I mean, that you are known as a human being and not just as your disease.'*

Furthermore, they expect an empathetic doctor who is interested and understands what a problem means to them and the impact it has on their life. Participant 4 explained:

> *'In that case, you could say well that shoulder of yours is frozen and it is broken…What is important to you? What things do you need your arm for?'*

To experience human contact

Participants describe the doctor who shows them personal attention as compassionate, caring and warm. Someone who has an informal chat, makes eye contact, sits next to them and will use gentle touch if necessary. They perceive their relationship with this doctor as friendly. Some speak of a doctor with a 'female touch'. A doctor who is continuously looking at the computer screen is described as cold and disinterested. Participant 9 shared:

> *'Simply caring. I believe there are two things. First be caring, which means you listen, and second, simple touch…it's a human connection.'*

To feel welcome

All participants emphasize they need a doctor who takes enough time and makes you feel welcome. This doctor is patient, sits down, listens carefully, and leaves room to ask questions. The experience of being hurried makes participants feel inhibited. Participant 4 shared her experience:

> *'It's basically just taking the time to tell you what's going on…that they sit down. When I think about the hospital…they are always standing and that makes you feel like, okay, so you've told me what you needed to say…but this doesn't give you the opportunity to take a moment to think about what you have heard and to respond to it…'*

Several participants mention that a doctor can create a welcome feeling by meeting or calling them regularly. Participants expect this continuity especially when there is a severe illness or life event.

2. Equality

To be taken seriously

All participants expect a doctor who respects them, who doesn't patronize or treat them like a child or a 'crybaby'. They emphasize that it is important that their complaint 'isn't dismissed as a common aspect of ageing'. Participant 15 shared what this meant to him:

> *'That doctor shouldn't be thinking oh dear, this is an ailing senior here in front of me. You know. Well, just stuff three pills in there, he's off to heaven next week anyway, so what's the point?'*

They appreciate a doctor who is self-aware, who is aware of what he or she does and doesn't know, who can be vulnerable and open to feedback. Participant 8 shared her experience:

> *'And when I once mentioned that I thought she had slipped up, she said yes, I understand, thank you for telling me actually. Well, those are good doctors in my book…who are open to feedback.'*

To work together

Participants need a doctor who interacts with them at the same level, no hierarchy. They explicitly emphasize that they have extensive life experience and are experts on their own lives and bodies. They expect a doctor to respect this, discuss and make decisions together with them. Participant 9 shared:

> *'…that the doctor doesn't look down on me and say I'm the better person…I'm a doctor, I know best. And then I say, 'It's my body, I know better than you!' That's why I think 'together' is very important…'*

Some participants mentioned the importance of professional distance in their interaction with a doctor. For participant 7 this meant:

> *'He should also exude a certain authority. So it's not like we're all buddy-buddy… that, well, not on the, the same level so to speak. I'm afraid you wouldn't be able to speak freely anymore…there has to be some distance there…there must be a certain authority…'*

3. Clarity

To be told the honest story

All participants expect a doctor who is open and realistic about a diagnosis, treatment, or prognosis. This doctor is not afraid to say what needs to be said, explains things clearly and does not use jargon. If they feel that information is withheld or sugarcoated, they become restless and uncertain. Participant 3 explained what she needs:

> *'Suppose it had a bad prognosis. Or that he doesn't know yet. That he is open about it, no matter how difficult that would be for me. But in a calm atmosphere, you know. And there has to be room for me to respond…to check like, is the message getting across.'*

To co-create a perspective

Furthermore, most participants emphasize that 'life at their age is definitely still worth living'. They need a positive doctor who sees it that way, focuses on possibilities, provides perspective, and helps them to accept the things they can no longer do. Some participants mention the use of humour to put things into perspective. Participant 6 shared his experience:

> *'I mean…growing old inevitably comes with ailments, you know. And of course you could say, gosh, what a shame. Or you can say: we'll make do with what we have… and enjoy it as much as possible.'*

4. Reasons why

Social context

Participants mention that their social context has changed compared to their younger years. They have become caregivers, children are grown up, friends and family have passed away or they are widowed themselves. These changes influence their well-being. It is therefore essential that the doctor is familiar with their social context and understands the impact a problem has on their life. Participant 15 explained:

> *'But I think for the older patient and when you see a doctor, you expect him to look a bit further and take a broader view…That he says, are you still managing at home? That he checks or asks if you can manage by yourself or if you need help…that he includes the social context.'*

Life experience

Participants have many life years, which creates life experience and wisdom. They emphasize that they expect a doctor who respects them, is open to feedback and works together with them on a basis of equality. Participant 1 shared:

> *'I bring so much life experience and experience and knowledge about my own body and my own illness to the table. You already know so much. Then I feel that a GP should understand when you walk in, that you obviously already have a whole past behind you…'*

Complexity

Most participants make a distinction between a 'simple' or 'severe' condition as regards what they expect from a doctor. In their younger years they mainly had simple symptoms for which they needed a quick solution, and it was less relevant if the doctor knew them. Participant 12 explained:

> *'Yes, well a wart isn't a big deal…but if I have a serious problem…then it would nice to have a doctor who already knows all that…someone you start looking at more as a friend. Not as a stranger, but as someone, well, who knows you better.'*

As they get older they develop more and more serious conditions, which cannot always be cured. Furthermore, they experience functional decline, lower energy, and a decreased overview. They also realize that the years they have left are limited. These elements all make them feel more vulnerable and dependent and create complexity in healthcare needs. That is why they need time and continuity of care from a caring doctor who knows and understands them and who provides clarity and perspective. Participant 11 shared:

> *'Because we have more ailments…You feel your health is declining and that you may be having more dealings with the GP or others. That you would also like proper guidance in that respect…You prefer having one single person to rely on.'*

Some participants share they do not have other needs and expectations from the doctor in their older age because they had different illnesses and often needed a doctor when they were younger. Participant 13 explained:

> *'I needed so much care when I was a child…so I was at the doctor's fairly often…I mean there always were contacts with doctors… in one way or another…I don't expect there to be much difference.'*

Discussion

To gain more insight into the characteristics of the professional identity that medical students need to develop for the care of older persons, we explored the expectations and needs older persons have regarding the doctor who takes care of them.

We identified that older persons need and expect a doctor who shows them personal attention, is empathetic and positive, and values interaction based on equality, respect, and humanity. This doctor is familiar with the social context, takes time, listens carefully and is responsive to needs. Moreover, this doctor is open and explains clearly, works together with the older person and gives perspective. These characteristics are particularly needed in case of serious illnesses or life events, which are more present at an older age. Becoming older also means functional decline, less grip and energy and limited years remaining. Furthermore, changes in the social context influence well-being. These factors generate complexity in care needs and older persons feel more vulnerable and dependent which makes it essential that the doctor meets their needs and expectations.

Our findings show similarities with the needs and expectations of the general public regarding the doctor.[32, 38, 39, 53] Literature shows that personal qualities and social skills of the doctor are more prominently mentioned by patients than knowledge and technical skills.[30, 32, 53] The characteristics of showing personal attention, empathy and compassion, taking time, listening carefully and explaining clearly are also expected by younger patients.[32, 38, 39, 53] Furthermore, it is known that female doctors are described as more personal and empathetic compared to male doctors.[54] Our study adds to and clarifies what is important to persons when they become older. Increasing complexity, dependency, and vulnerability make it essential that the doctor is familiar with the person's social context, interacts with them respectfully and on the basis of equality, provides continuity of care and gives clarity and perspective. To this end the doctor has to be caring, involved, patient, honest and self-aware.

We contribute to a better understanding of the professional identity formation of medical students in relation to older persons' health care. It is known that the growing population of older persons will lead to a change in society's healthcare expectations and needs and that this change will influence what is expected regarding the doctor's professional identity.[2, 24, 27, 29, 31-34, 55] Our study shows what characteristics of the doctor are important to older persons and also why these characteristics are essential which shows the challenges of older persons'

health care.[55] This knowledge may contribute to the dialogue between society and the community of practice of medicine regarding certain aspects of the professional identity of present and future doctors.[24, 27, 29, 31-33] Furthermore we know that engaging in patient care, observation of role models and experiences with patients in a community of practice are important factors in the professional identity formation process.[13-15, 24, 27, 28, 56] Socialization in a community of practice that provide role models and practices that meet the descibed characteristics and challenges, can help medical students to develop an appropriate professional identity for older persons' health care.[13-15, 17, 20, 24, 27, 28, 56] After a nursing home clerkship, medical students mentioned participating in the lives of the older patients over a longer period of time and observing the nursing home doctors as role models as important experiences for their becoming.[20]

Strengths and limitations

To increase the validity of our data we created methodological triangulation by using three research methods.[48] The participation of an older person as patient representative, who participated in the study design, recruitment of participants and formulating the discussion section of the manuscript, contributed to ensuring the perspective of the patient in our study. Furthermore, AM-J is an elderly care physician and has experience talking to older persons. This may have been a strength in that it created safety and rapport during the interviews. Conversely, being an elderly care physician may have influenced the interpretation of the data, which is a limitation. To ensure reflexivity, the data were analysed together with a cultural/medical anthropologist and a general practitioner, and AM-J made field notes. Another limitation of our study was that our sample consisted of participants who were all Dutch, well-educated urban older persons living at home. For a first exploration of the research question this is a necessary step. However, it limits the transferability of our findings to other older persons in and outside the Netherlands.

Implications for medical education

Based on our findings we emphasize the importance of medical students' engagement in the context of older persons' health care. Therefore we recommend active older patient and public involvement and engagement (PPIE) in medical education to create a curriculum based on patients' perspectives, needs and expectations.[57, 58] Working together with patients in medical education, where patients' narratives are central, influences the professional identity formation of medical students towards patient-centeredness.[56] Furthermore, appropriate clinical communities of practice can provide participation of medical students in older persons' lives and appropriate role models. The nursing home and the care for older patients at home are described as suitable clinical contexts.[59-62] Having long term relationships with patients is known to stimulate the development into a patient-centred doctor, able to show personal attention and humanity.[63, 64] We argue that curriculum committees should be aware of the value of older persons as collaborators in medical education and we recommend that medical school provides long-term clinical placement in the context of older persons' health care.

Moreover, professional identity formation has to be explicitly addressed as an educational objective in medical school to make medical students active participants of their becoming.[16, 22, 27] For the development of a professional identity, guided reflection on experiences with patients and role models is described as fundamental to socialization and therefore required to create personality change.[13, 16, 27, 56, 65] Faculty development can facilitate medical educators to mentor medical students in this reflection and make professional identity formation explicit and effective.[16, 27]

Additionally, the characteristics of the professional identity in relation to the care of older persons may be relevant to the care of other patients groups. From the literature we known that adults with chronic diseases benefit from equality in the collaboration with a physician.[66] Furthermore, the need of continuity of care and having a close relationship with a trusted healthcare professional is described in palliative care and cancer care.[67, 68]

Future research

More research is needed to further explore the topic of an appropriate professional identity and its formation in relation to older persons' health care. In future research we will explore the needs and expectations of a broader population of older persons in and outside the Netherlands and investigate the generalizability of our results to other patient groups with complex healthcare needs. The participation of older persons in the development, delivery and evaluation of medical education will also be an area of research. Furthermore, to gain more insight in this appropriate professional identity, we want to explore the perspectives of doctors working in older persons' health care on their professional identity formation. We ultimately intend to develop educational interventions to encourage the development of an appropriate professional identity based on our findings.

Conclusion

Medical students need to develop an appropriate professional identity to meet older persons' healthcare needs. In this study we explored the needs and expectations older persons have regarding their doctor to gain more insight into the characteristics of this professional identity. The challenges of increasing complexity, dependency, and vulnerability that arise at an older age, make it essential that a doctor is familiar with the older person's social context, interacts respectfully and on the basis of equality, provides continuity of care and gives clarity and perspective. To this end the doctor has to be caring, involved, patient, honest and self-aware. Participation in a community of practice that provide role models and practices that meet these challenges and characteristics, may help medical students to develop a professional identity that enables them to give older persons the health care they need.

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Chapter 5

Exploring the professional identity of physicians experienced in older persons' health care: implications for medical education. A qualitative study.

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Abstract

Background

Given the growing population of older persons, medical students need to develop an appropriate professional identity that enables them to give older persons the health care they need. The aim of this study is to gain more insight into the characteristics of this professional identity. To this end, we explored the perceptions of physicians who care for older persons regarding who they are as a physician, and what they think is important for older persons' health care.

Methods

A qualitative study based on a constructivist research paradigm was conducted, using individual semi-structured, in-depth interviews and a visual research method (photo elicitation) as a prompt. The method of the six-step thematic analysis was applied to structure and interpret the data, using an inductive approach. The study population consisted of Dutch physicians who had an official medical specialty registration as an elderly care physician or a general practitioner with an additional qualification in geriatrics, and who provided health care to older persons at the time of the study. Twenty participants were purposefully sampled. The interviews took place at the participants' place of work.

Results

The participants reflected on the characteristics of older persons' health care, what they think is important in this care and who they are as physicians for these patients. Participants perceived themselves as the patient's companion on their health care journey, helping the patient to find their way. They shared what is important to them on this journey, summarized by the three themes we identified: (1) to align with the patient (2) to find a way to navigate the complexity, and (3) to be reflective.

Conclusions

Being a physician for older persons means alignment with the patient, multidisciplinary collaboration, dealing with complexity and being self-aware. Physicians experienced in older persons' health care can be role models for medical students. Participation in the community of practice of older persons' health care can help medical students to develop a professional identity that enables them to give older persons the health care they need.

Introduction

Professional identity formation of medical students is a well-established concept in medical education. It is considered a fundamental attribute for becoming a physician.[1-4] In geriatric medical education, however, this concept is relatively new[5]. The population aged 65 years or above is expected to rise to 1.5 billion in 2050 worldwide, an increase from 9.3 percent of the total population in 2020 to 16.0 percent in 2050.[6] In light of these demographic and healthcare changes, all medical students need to be well prepared for older persons' health care. The development of an appropriate professional identity contributes to this preparation and will help medical students to become physicians capable of providing health care to older people.[2, 4, 7-9] A deeper understanding of the professional identity needed for older persons' health care is required to enhance medical geriatric education. There is, however, a paucity of knowledge about this professional identity.[5] Studies describe patient-centeredness, collaboration, approachability, equality and the ability to provide holistic care as important characteristics that medical students must develop to care for older persons.[5, 9, 10]

We use the concept of socialization in a community of practice as the theoretical framework to gain more insight into the professional identity that medical students need to develop for providing health care to older persons.[7, 11] In this framework, the development of a professional identity is viewed as a process of socialization. This process involves internalization of the characteristics, values and norms of the medical profession, which gradually leads to thinking, acting, and feeling like a physician.[1, 8] Socialization takes place within a community of practice, which is a community that is characterized by a group of professionals with shared beliefs, values, knowledge base, and practices.[1, 7, 11-13]. A professional identity describes how physicians see themselves and how they want to be seen by others, based on their values and norms.[8, 14] We therefore argue that how physicians in the community of practice of older persons' health care see themselves, can provide more insight into the characteristics of the appropriate professional identity for the care of older persons. To our knowledge, there are no studies in which physicians who care for older persons describe their professional identity. We found one study in which elderly care physicians described building relationships, having time, and autonomy as positive aspects of their profession. However, this was not related to the concept of professional identity or its formation.[15] The aim of this study is to gain more insight into the characteristics of the professional identity that medical students need to develop in order to take care of older persons. To this end, we will study the perceptions of physicians who are members of the community of practice of older persons' health care regarding their professional identity. Our twofold research question is 'what perceptions do physicians who are members of the community of practice of older persons' health care have regarding who they are as a physician, and what do they think is important for the care of older persons'?

Methods

Methodology

Because of the paucity of existing literature on the topic, we conducted an exploratory qualitative study based on a constructivist research paradigm. This philosophical framework allows us to understand reality through analysis and interpretation of people's experiences.[16] To better understand the essential elements of the professional identity in relation to older persons' health care, we used the narratives of physicians specialized in this care on how they perceive themselves as physicians and what they think is important for this care. We applied thematic analysis to structure the data, using an inductive approach to identify themes that are strongly linked to the data.[17-19] The whole research team was involved in the interpretation of the data.[17, 18]

Research team

Our research team included an elderly care physician, medical teacher and PhD candidate in medical education (AM); a cultural and medical anthropologist, medical teacher and qualitative researcher (KL); an elderly care physician, medical teacher and quantitative researcher (WT); a geriatrician and professor in geriatric medicine (TM); an elderly care physician and professor in elderly care medicine (MS); a general practitioner and professor in medical education (AK); and an elderly care physician and professor of institutional care and elderly care medicine (WA).

Context

We conducted this study between January and May 2024 at Leiden University Medical Center (LUMC) and Amsterdam University Medical Center (Amsterdam UMC) in the Netherlands. Participants were associated with the department of Public Health and Primary Care of LUMC or the department of Medicine of Older People of UMC Amsterdam as clinical supervisors of the training institutes of the medical specialties of General Practice and Elderly Care Medicine. Elderly Care Medicine is a medical specialty in the Netherlands and elderly care physicians are specifically trained nursing home physicians who work in nursing homes and in the community with general practitioners.[20] Participants were recruited via the heads of these institutes. Recruitment was carried out by means of an information letter describing the purpose of the study and what was expected from participants. This letter was sent by email.

Participants

A medical specialty can be seen as a community of practice.[13] Therefore, we included participants who are members of a medical specialty in older persons' health care. Physicians were eligible to participate if they had an official medical specialty registration as an elderly care physician (ECP) or a general practitioner with an additional qualification in geriatrics (GP), who provided health care to older persons at the time of the study and had been providing it for at least 12 months. From the physicians who signed up, we purposively sampled participants

on medical specialty (ECP or GP), age, gender, cultural background, place of work, and years of experience to ensure a diversity of views.

Data collection

To better understand the physicians' perceptions of what is important in caring for older persons and who they are as a physician caring for older patients, we used individual semi-structured, in-depth interviews and a visual research method (photo elicitation) as a prompt. Photo elicitation as a pre-interview activity can evoke feelings and memories, which helps to reflect more deeply on the topic.[21] To collect as much rich information as possible, we used an iterative approach until data saturation occurred, which means that data were collected until no new themes were generated.[22]

The interviews, conducted by AM, took place at the participants' place of work. Before the interview, AM asked the participants to look at 16 photographs of objects and nature and to select one or more images that corresponded to their perception of who they are as a physician. Participants made this choice alone in a separate room, taking as much time as they needed. Figure 1 shows the 16 photographs that were used. During the interview, which lasted approximately one hour, participants shared and reflected on what they think is important in caring for older patients and who they are as a physician caring for these patients, using the photographs they selected as prompts. A topic list for the interview was composed based on the literature on professional identity formation (see Supplementary file 1).[1, 4, 7, 8, 11, 14, 23] The interviews were audio recorded and transcribed verbatim. We made a linguistic transcription, not phonetic but orthographic.[24] Eight participants reviewed their own transcript and were satisfied. The other 12 participants didn't want to review their transcript because they were content with the interview or hadn't time to review.

Data analysis

The chosen photos, used only as prompts for the participants to reflect on the topic during the interview, were not analyzed as a separate data set. To identify themes that were strongly linked to the data, we followed the six-step method of thematic analysis, using an inductive approach, open coding and iterative analysis.[17-19] For the coding process, first researcher AM reviewed the first three interviews by reading and rereading the transcripts and listening to the audio tapes to familiarize herself with the data. After this first step, she generated a list of open codes. The senior researchers (KL, WT and AK) independently reviewed these three interviews by reading and re-reading the transcripts. AM, KL, WT and AK discussed the open codes and organized them into a list of starting codes. Four more interviews were then analyzed in the same way. AM, KL, WT and AK discussed newly identified codes and inductively redefined the codes into a coding scheme, generating themes related to the research question. Subsequently AM analyzed another four interviews by applying the coding scheme and reviewed themes with KL, WT and AK. The iterative process was repeated until no new themes were identified. The coding scheme was finalized after the analysis of 18 interviews and was discussed by the whole research team. To be sure that no new data would emerge, two additional interviews were conducted. These additional interviews did not generate

any new ideas. The final themes were grouped into an overview of three major themes to capture the essence of the physicians' perceptions of who they are and what they think is important in the care of older persons: (1) to align with the patient (2) to find a way to navigate the complexity, and (3) to be reflective. Each major theme includes subthemes (as described in the findings below). Together with the research team, AM gave meaning to the themes by creating narrative descriptions to explain the stories each theme tells. These stories are described in the findings, using quotes from participants to illustrate key features.[17, 18] During the coding process there weren't any disagreements in the team. However we did have a thorough discussion on the topic of being a companion of the patient. In the end this topic seems to be an overall perception of all physicians that includes all themes and subthemes and we decided to mentioned this as a such in the beginning of the findings.

Reflexivity

In order to attain reflexivity AM self-consiously realized that her own values, norms and beliefs related to older persons' health care could influence the interviews and the interpretation of the data.[25] To ensure reflexivity, AM took several steps to be aware of her biases. Before she started the study she shared with KL her own values, norms and beliefs of being a doctor for older patients. After every interview she reflected on these aspects and experiences together with KL and described her thoughts and reflections in her research diary. To maintain an open attitude towards the participants AM created a topic list with open questions related to the personal experiences of the participants (see Supplementary file 1). In respons to the answers she asked the question 'what does this mean for you?'. Furthermore AM created and discussed the coding scheme with three other members of the research team (KL, WT and AK) who had different research backgrounds, clinical expertise and perspectives. Furthermore TM, MS and WA, who are experts in geriatric care, participated in finalizing the coding scheme and in creating narrative descriptions of each theme.

Ethics

The Leiden University Medical Center ethical committee deemed this study exempt from the Medical Research Involving Human Subjects Act (Wet medisch-wetenschappelijk onderzoek met mensen, WMO) and approved the study (protocol number 23-3093). Participation was completely voluntary and confidential. All participants were informed about the aim of the study, the study procedures, and they provided written informed consent, which included consent for publication of anonymized responses. A number was assigned to each participant to ensure confidentiality.

Figure 1: the 16 photographs of objects and nature that were used as a prompt during the interviews.

Findings

Twenty physicians participated in the study, twelve women and eight men, aged 36-67 years, including seven GPs, nine ECPs working in a nursing home (palliative care, dementia care, rehabilitation ward) and four ECPs working together with a GP in the community.

During the interviews, the participants reflected on the characteristics of older persons' health care, what they think is important in this care and who they are as physicians for these patients. Overall participants perceived themselves as the patients companion on their health care journey, helping the patient to find their way. One ECP explained what this means to him:

> *That in the role of physician for older people, that you actually take a journey together... know that you're walking or traveling some distance together...And I personally really think it a privilege to be able to walk with someone, to think and work with them. (8)*

The participants shared what is important to them on this journey, summarized by the three themes we identified: (1) to align with the patient (2) to find a way to navigate the complexity, and (3) to be reflective. Table 1 and figure 2 give an overview of the findings.

Table 1: an overview of the findings showing the characteristics of older persons' health care, what participants think is important in this care and who they are as physicians for these patients

Characteristics older persons' health care	What is important for older persons' health care	Characteristics of the physicians	
Life experiences and changes in social context and living environment	To align with the patient	To know the patient as a person	*Involved* *Humble* *Service minded*
		To connect with the patient	*Kind, warm and human* *Sense of humor* *Calm and patient* *Respectful* *Curious and open minded* *Interested*
		To cooperate with the patient	*Collaborative* *Non hierarchical* *Indicative* *Explaining*
Complexity in health care problems and needs	To find a way to navigate the complexity	To be in control	*Has an overview* *Structured and organized* *Anticipated* *Disentangles knots*
		To be clear	*Clear* *Courageous* *Decisive* *Honest and open* *Realistic*
		To be creative	*Creative* *Flexible* *Finds a balance* *Thinks outside the box*
		To work in a team	*Non hierarchical* *Dependent* *Connected* *Supervising and coordinating*
Vulnerability and unpredictability	To be reflective	To show vulnerability	*Accepts uncertainty* *Dares to have doubts* *Reconsiders decisions* *Asks for help*
		To be experienced	*Understanding* *Learning*

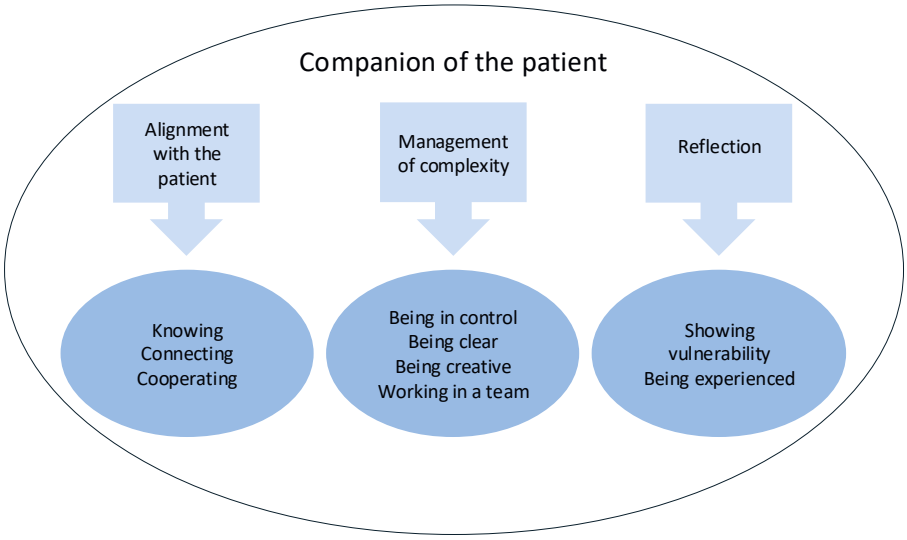

Figure 2: a graphic presentation of the themes and subthemes

1. To align with the patient

The physicians explained that older patients 'have lived a whole life', which has made them who they are, determined what they value and consider important. One ECP shared that she has to take this into account:

> *That when you see an eighty-year-old, you don't see someone who is eighty years old... It's not a snapshot... it's someone who has lived eighty years and has eighty years of life experience...and has some things of his own to say about his situation... (15)*

In order to give older patients the health care they need, they have to align with the patient by knowing the patient as a person, and by connecting and collaborating with the patient.

To know the patient as a person

The physicians described themselves as involved in order to become familiar with the patient's life story, life experiences, social context and living environment. GPs described that they benefit from their practice of having a long-term relationship with the patient. The ECPs shared their believe that it is important to get to know the patient. One ECP used the metaphor of a historical novel to explain:

> *So I always say that every resident in the nursing home is a historical novel...we're now going to write the last chapter. Then you also have to be familiar with the earlier chapters. (11)*

The physicians described they are humble and at the patient's service because they believe it is important to really understand the patient's needs. Some physicians shared that they put aside their own 'assertiveness' and what they think is good

for the patient. They therefore ask the question 'what do you need from me?' and try to 'put themselves in' the patient's shoes. One GP explained:

> *What makes a good doctor? I think…you're only really a good doctor for such an older person if you can put yourself in that person's shoes. (12)*

To connect with the patient

All physicians emphasized that they need to connect with the patient. They described their practice of being 'focused on the relationship' with the patient. An ECP shared why:

> *…so people are the way they are…because of the life they've had…And if you are not able to connect, then the other person is not going to tell you anything about it. (8)*

To be able to do so several physicians described themselves as warm, kind, human and caring. Some use touch in their contact with the patient, such as a hand on the shoulder. Others reported that humor is helpful. They all emphasized that the practice of taking time, being calm, and being patient is essential. As one ECP explained:

> *Especially take your time…You can't expect to get a complete picture in 15 minutes. So of course that's what a lot of other doctors say, oh, you have so much time for your patients. Then I think yes, and we need it, because otherwise it won't happen. (17)*

Furthermore the physicians described themselves as respectful and curious, which means ready to be 'surprised and amazed' and listen with an open mind and genuine interest. One GP reported:

> *I guess I'm an inquisitive doctor for older people…I probe just a little bit deeper and remain surprised at how it develops…this curiosity about leads to the essence of the story. (1)*

To cooperate with the patient

All physicians described their practice of 'walking with' the patient, which means that they 'are engaged in conversation, jointly set goals, and together give shape to the care in which 'they both have a different role'. They believe it is important to give the patient a comprehensive explanation. Several physicians experienced this cooperation as equal, without hierarchy. One GP explained what this means to her:

> *That there's no hierarchy, so that you walk with a patient for a bit…we do it together, so it really is equal…that we need each other..(19)*

Others pointed to the difference in knowledge between the patient and the physician that makes the cooperation less equal. Furthermore the physician and the patient can disagree or the patient can suffer from cognitive impairment. One ECP explained how she works together with the patient by indicating a direction:

As I have gotten to know you, I think B is more appropriate for you. If I had to decide as a doctor, I would recommend C…But you have to decide for yourself what you are more comfortable with…Indicating a direction…because well, after all, you did study for six years to become a doctor and more years after that for your specialization. (15)

2. To find a way to navigate the complexity

Furthermore the physicians explained that caring for older patients is complicated. Patients often have 'multiple problems at the same time'. These problems are often interrelated, cannot always be resolved, and affect the patients' entire life. This creates complexity in decision making and in the delivery and organization of care. As one GP explained:

The complexity is often caused by the multiple problems…like existing chronic conditions, care demand and care system issues. The family caregiver not coping anymore or trouble with children…that's complexity in older age. (12)

In order to give older patients the health care they need, physicians have to find a way to navigate the complexity by being in control, being clear and creative and work together in a team.

To be in control

All physicians emphasized their practice of 'taking a broad perspective and don't focus on only one thing'. To create a complete picture they make an overview of the problems and a structured plan. This helps them to manage the complexity, prioritize and anticipate new problems. One ECP explained:

…if you have some overview of the complexity, you can then make your decisions on what do we address, what is still appropriate to do, what isn't appropriate…it helps me to…especially in the most complex cases to move forward. (16)

To be able to do so, they described themselves as thinkers and puzzlers who take the time to 'disentangle knots' find connections and organize. One ECP explained:

You do have to…have the love to want to puzzle…feel the urge to want to see the whole person. I think that is what makes the doctor for the older patient…(15)

Some GPs shared that the complexity makes them feel helpless and frustrated, especially because of the lack of time. One GP explained what she feels:

…what I often find very difficult is that it's very complex sometimes…and then I think, well, do I really have a good overview? And that ideally I want that overview, but sometimes it's lacking a little bit.(7).

To be clear

Many physicians described themselves as clear, courageous and decisive. They are expected to make decisions and set the final goals. One ECP explained what this means to her:

> *Well, guys, we're just going to make this decision. We're going to do this and we'll see what happens…And then we'll adjust if necessary. No indecision … Sometimes you just have to take steps. (5)*

For them it is important to express the mutual expectations between the patient, relatives and themselves. They described their practice of being honest, open and realistic, which means that they 'tell it like it is'. One GP shared:

> *I'm always completely honest. And then I always say, like, you know, you're doing this for the first time, but I know where it's going…Look, a lot of people end up in a situation they don't want to be in because they're not willing to accept help sooner. (14)*

To be creative

Most physicians explained that medical guidelines are often not suitable for older patients' health care. They described this care as 'a big pair of scales' and their practice is to find a balance and the best way to achieve it. Therefore they have to be creative, flexible, and think outside the box. One GP explained:

> *Dare to color outside the lines now and then…that's this creativity too. Allowing to change color now and then…because it turns out along the way to be more a cat than a dog….(19)*

To work in a team

All physicians shared their believe that they 'cannot do it alone'. They depend on other healthcare professionals to develop and organize the care of older patients. One ECP explained:

> *Because it is complex, there are many different elements that require very specific expertise. So…it's necessary to do it together. You can't do it on your own. (17)*

ECPs described their practice of being supervisors and coordinators who are responsible for connecting the team members, gathering all necessary information and then 'setting the course'. They shared their belief that working together as equals with other health professionals who have their own expertise is important. One ECP used the metaphor of a bracelet:

> *…As a doctor you are the clasp of the bracelet, so there is a chain of links of beautiful things. But then you as a doctor are the clasp, so you connect…ultimately also…to make a clear decision. (15)*

GPs shared that they have the practice of 'solving things on their own'. In older patients' health care they experience that working with other healthcare professionals, especially an ECP, can help to make this care less complicated. One GP explained what this means to him:

> *Well…that you have so many caregivers around you that you're not always aware of as a GP that you can just do it together…that also makes for fewer frustrations and dilemmas for us as caregivers…(9)*

3. To be reflective

The physicians explained that the complexity of healthcare problems and needs makes older patients vulnerable. They are at risk of 'problems derailing' or things going differently than expected. This leads to unpredictability and uncertainty. As one GP clarified:

> *Sometimes a person falls and breaks his hip when you're in a process of working toward something and then you are overtaken by reality. (19)*

In order to give older patients the health care they need physicians shared their believe that it is important to be reflective. Therefore they allow themselves to be vulnerable and realize that their experience helps them to care for older patients.

To show vulnerability

Several physicians expressed that they cannot control everything and have to accept uncertainty. For them, this means that they don't need to know everything, dare to have doubts, and if necessary reconsider their decisions or plans. A GP shared his experience:

> *Dare to let go, dare to be vulnerable. Dare to say you don't really know that well. Allowing yourself doubt. Allowing yourself to change your mind. That really relieves the burden, it's a huge relief. (9)*

Another GP explained that she had learned to ask for help in difficult situations and that she wants to set an example for younger physicians:

> *…that you need each other then…I also think we be role models for the young medical students in that respect. We really don't know everything…set aside your own ego a bit more. (19)*

To be experienced

Almost all physicians say that they have learned to care for older patients over the years. Thanks to their experiences as physicians and their own life experiences, such as bereavement and sadness, they are better able to understand the older patient. Several physicians think it is important that experienced physicians take care of older patients because it is the most complicated care. One GP explained:

> *Caring for the older persons is the most complicated care there is. And you shouldn't put the least experienced doctor on it …district nurses who get the most done per patient are often not the youngest. (14)*

Discussion

The aim of this study was to gain more insight into the characteristics of the professional identity that medical students need to develop in order to take care of older persons. To this end we explored the perceptions of physicians working in older persons' health care regarding what they think is important for this care and who they are as physicians for older patients.

To provide the care that older persons need it is important that this care is aligned with the context, life and values of the patient. Furthermore, coordination, supervision and having an overview of the multidomain problems are essential. In addition, the involvement of a team of health professionals is necessary. To be able to achieve this the physician has to be a companion on the older patients' health care journey, where the patient sets the direction and the physician helps, advises, and occasionally leads. From the perspectives of medical students and older patients we know that the physician for older patients thinks holistically, is person-centered, non-hierarchical, collaborative, patient, clear, and positive.[5, 9, 10] Our findings add the perspectives of physicians who are experienced in older persons' health care to what is known. Their believes and practices describe new characteristics and clarify why these characteristics are important in which the aspect of dealing with the complexity and unpredictability comes forward. To manage these aspects, the physicians have to be curious and creative puzzlers and organizers, service-minded and flexible, accept uncertainty and not be afraid to show their vulnerable side.

Our findings create a bigger picture of the characteristics that medical students need to develop in order to take care of older persons. This contributes to a broader understanding of the professional identity in relation of older persons' health care. In particular, being a physician for older persons means dealing with complex situations.[26-30] In the literature, complexity is characterized by unpredictability, uncertainty, changing and interacting situations, and often low agreement on what to do.[31-33] Managing these challenges requires experienced professionals who are creative, flexible, thoughtful and reflective, able to think holistically, integrating and prioritizing information.[31-33] This is consistent with our findings. Therefore, the literature on complexity may be relevant to better guide medical students in becoming physicians for older persons. In addition, experienced physicians who are members of the community of practice of older persons' health care can be valuable resources to increase our knowledge about the professional identity that medical students need to develop for the care of older persons. They manage complexity by working together with the patient and a team, prioritizing and making an overview of the problems, being clear and creative and accepting that they don't need to know everything.

Medical students view the care of older persons as overwhelmingly complex which makes them uncomfortable with this care.[27, 28] We know that the development of their professional identity takes place in the community of practice of medical school and clinical practice. [4, 7, 8, 11, 13, 34] This community is primarily hospital-based and disease-oriented, with a strong focus on skills to diagnose and solve a single clinical problem.[35-39] This way of thinking fails in complex situations and with multidomain problems and is therefore not always appropriate for older

persons' health care.[27, 31, 37, 38] The development of an appropriate professional identity for this care could help medical students to feel more comfortable with geriatric medicine.[4, 7, 40] The participation of medical students in a community of practice that provides opportunities for engagement in older persons' health care and role models who are experienced in this care, can help medical students to develop this professional identity.[4, 5, 7-9, 11, 13, 27, 34, 41]

Studies on professional identity formation in other medical specialties are scarce. They show that workplace experiences and interactions, personal reflection, cultural expectations and duration of training are important influencers of the development of a professional identity of surgical and psychiatric trainees.[42, 43] This is in line with the literature on professional identity formation. [2, 11, 13, 44]

Implications for medical education

First we want to emphasize the importance of building long term relationships with older persons. By being part of the personal life medical students learn to align with the patients' context, life and values. Educational projects that facilitate long term contacts with community living older adults can stimulate these relationships. [45, 46]

Second members of a medical community can be role models for medical students, and their ways of being and acting can provide an example of the physician medical students want to become.[1, 2, 11, 13, 47-51] Based on our findings we recommend that physicians who are experienced in older persons' health care participate in the community of practice of medical school as medical teachers in geriatric courses. [51, 52] These courses can help medical students to integrate medical knowledge, evidence-based medicine, and patient perspectives and develop creative problem-solving skills.[39] Furthermore, clinical placements in nursing homes and the care for older persons at home can provide engagement in the complexity and uncertainty of older persons' health care as well as appropriate role models.[53-56] In light of the demographic change of a growing population of older persons we argue that medical schools need to ensure clinical placements and role models that complement the dominant disease-oriented focus of the hospital setting.[35-39]

Finally guided reflection on experiences in patient care and on role models is essential for the development of a professional identity.[2, 7, 11, 41, 48] Reflection makes the implicit explicit, gives meaning to experiences, and can lead to personality change.[1, 2, 11, 48, 57] A recent study on collaborative reflection sessions during a general practice clerkship shows that reflecting on workplace experiences with peers and guided by a trained facilitator is a valuable educational tool to support professional development of medical students.[58] Therefore, we recommend that medical schools explicitly address professional identity formation as an educational objective and facilitate medical educators to mentor medical students in reflecting on their development to make professional identity formation effective.[1, 2, 11, 48]

Strengths and limitations

Our study has strengths and limitations. One strength of the study was the rich sample of participants working in older persons' health care. Furthermore, we used

in-depth interviews with photo elicitation as a prompt. Taking time and the visual narrative method as a pre-interview activity offered the participants different ways to share their experiences and thoughts.[21] In addition, first researcher AM is an ECP and understood the context of the care of older patients outside the hospital. This may have been a strength in that it created safety and rapport during the interviews. Conversely, being an ECP may have influenced the interpretation of the data, which is a limitation. To ensure reflexivity, the data were analyzed together with another ECP, a cultural/medical anthropologist and a GP, and AM made field notes. Furthermore, the sample of only GPs and ECPs may limit the transferability of our findings to geriatric medical specialists in the hospital. Finally, we realize that the specific context of the Dutch healthcare system for older patients is uncommon in the world and has an influence on the participants' perceptions.

Future research

More research is needed to further explore the topic of the appropriate professional identity and its formation in relation to older persons' health care. In previous studies we explored the perceptions of a small group of medical students and of older persons.[9, 10] Building on our studies we would like to further explore the perceptions of a broader population of medical students, older persons, and physicians who care for older patients, both in and outside the Netherlands. Furthermore, we want to deepen our understanding of the concept of complexity and what is known about dealing with complexity in health care. Finally, we intend to adjust and develop educational programs to encourage the development of a professional identity that enables medical students to give older persons the health care they need.

Conclusions

Being a physician for older persons means alignment with the patient, multidisciplinary collaboration and dealing with complexity. Therefore this physician needs to be an experienced professional, who is service-minded, curious, creative, flexible, thoughtful and reflective, able to think holistically, to collaborate and to integrate and prioritize information. Physicians experienced in older persons' health care can be role models for medical students. Participation in the community of practice of older persons' health care can help medical students to develop a professional identity that enables them to give older persons the health care they need.

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Chapter 6

General discussion

Becoming a doctor for older persons is an interplay of building competencies and the development of an appropriate professional identity.[1-4] Throughout the years geriatric competencies have been defined to prepare medical students for older persons' health care.[5-8] The concept of professional identity formation however is not utilized in the literature on undergraduate geriatric medical education.[9] As the development of a professional identity is considered a fundamental attribute for becoming a doctor, an appropriate professional identity will help medical students to become a doctor capable of providing the health care that older people need. Therefore a deeper understanding of this professional identity is required.[3, 4, 10, 11]

The main aim of this thesis was to enhance medical education in order to better prepare medical students for the care of older patients. To this end the objective of this thesis was to gain insight in the professional identity formation of medical students in relation to older persons' health care. Our main research question was '*what are essential elements of the professional identity and its formation that enables future doctors to give older persons the health care they need?'*. Considering that this concept is new to geriatric undergraduate medical education, the studies presented in this thesis have been explorative and addressed the following research questions:

1. What is known about the professional identity formation of undergraduate medical students in relation to the care of older persons?
2. What perceptions do medical students have of the doctor they want to become after participating in the nursing home community of practice and what experiences during the nursing home clerkship had impact on these perceptions?
3. What are the expectations and needs of older persons in the Dutch society regarding the doctor who takes care of them?
4. What is the perception of doctors, who are members of the community of practice of older persons' health care, regarding who they are and what they think is important in the care of older persons.

In this final chapter the main findings are summarized and discussed and methodological considerations are described. Furthermore implications and recommendations for medical education and future research perspectives are presented.

Main findings

To answer the main research question a review of the literature was conducted and the views and experiences of medical students, of older persons and of doctors experienced in older persons' health care were explored. The four studies of this thesis deepened the understanding of the characteristics of the professional identity of the doctor who cares for older persons. Furthermore older persons in chapter four and doctors in chapter five explained why these characteristics are important. The review in chapter two and medical students in chapter three gave more insight in the elements that are related to the development of this professional identity.

Professional identity and older persons' health care

To provide appropriate older persons' health care the doctor is characterized as a companion on the older patients' health care journey, where the patient sets the direction and the doctor helps, advises, and occasionally leads. Being a doctor for older patients requires alignment with the patient, dealing with complexity and being self-aware.

Older persons explained that they have lived a whole life and that their life years remaining are limited. This creates life experience and wisdom and determine what they value and consider important. Doctors also described this aspect and both older persons and doctors emphasized that medical care should be aligned with the older persons' context, life and values. Therefore it is essential that the doctor knows the patient as a person, is familiar with their social context and understands what a problem means to the patient.

To know the patient as a person the doctor is focused on the relationship with the patient. All studies in this thesis described that the doctor for older persons is human, caring, patient, involved and interested. Doctors also mentioned being curious and open minded. Moreover, all studies showed that this doctor works together with the patient on a basis of equality and is therefore service minded, respectful, and non-hierarchical. Older persons explained that the doctor and the patient both have a different role and expertise in their interaction. The patients have their life experience which makes them expert of their own lives and bodies and the doctor has the medical expertise and experience. Doctors also described this aspect and stated that their decision making is guided by the patients' perspectives, values and goals which was also mentioned in the review and by the medical students.

Older persons and doctors explained that an older person frequently has multiple problems at the same time such as acute diseases, functional decline, chronic illnesses, and changes in the social context. These problems are often interrelated, cannot always be resolved, and affect the patients' entire life. Older persons and doctors emphasized that these elements make older persons vulnerable and create complexity in health care needs and the delivery and organization of care. Moreover doctors explained that medical guidelines are often not suitable for complex problems. To provide the care that older persons need continuity of care, coordination of the multidomain problems and the expertise of other health professionals are essential. To be able to meet these aspects doctors underlined the importance of being in control, create clarity, make choices and work equally together with other health professionals. This requires a doctor who is thoughtful, realistic, creative, decisive and collaborative. Finally older persons emphasized that they need a doctor who is positive and gives perspective.

The complexity of healthcare problems also leads to unpredictability and uncertainty. To be able to deal with these aspects doctors described themselves as flexible and reflective which is expressed in showing vulnerability, daring to doubt, asking for help and reconsidering decisions. Furthermore they shared that their life experience and work experience help to give older persons the health care they need. This corresponded with the needs of older persons who appreciate a doctor who is self-aware and open to feedback of the patient.

Professional identity formation and older persons' health care

The review and the experiences of medical students decribed several elements of the context of older persons' health care that are related to the development of a professional identity for this care. First the element of being part of the life and the living environment of older persons over a longer period of time creates the opportunity to learn to know the older patient as a person. Medical students explained that this experience helped them to better understand the patients' needs, perspectives and what well-being means to older persons. Furthermore, the review showed that health care professionals who are experienced in older persons' health care are appropriate role models for medical students. Medical students shared that the doctor patient interaction of their supervisor was an example for the doctor they want to become. Finally the review described the hidden curriculum as an important element that is related to the professional identity formation of medical students. A hidden curriculum refers to the culture of an organization or community and the characteristics that are taken for granted. This curriculum is communicated through implicit beliefs and messages which influence the perceptions and expectations medical students have of what is important in becoming a doctor. The review showed that ageism in the hidden curriculum can negatively influence students' feelings and thoughts about what the care of older persons involves.

Methodological considerations

Considering that the concept of professional identity and its formation is new to geriatric undergraduate medical education the studies presented in this thesis are explorative and qualitative in nature. Qualitative research is an appropriate method to better understand medical educational phenomena.[12] The qualitative studies of this thesis are based on a constructivist research paradigm. In this philosophical framework reality can be understood through analysis and interpretation of people's experiences.[13]

Transferability

The context of the participants in the qualitative studies of this thesis is the setting of older persons' health care in the Netherlands. This context is different from other countries in the world. In the Netherlands older persons' health care is among others delivered by a an elderly care physician.[14] Elderly Care Medicine is a medical specialty in the Netherlands and elderly care physicians are specifically trained nursing home physicians who work in nursing homes and in the community with general practitioners.[14] The findings of the qualitative studies of this thesis are only based on experiences in this specific Dutch context which limits the transferability of these findings to geriatric care and medical schools outside the Netherlands.[12] At the same time however this unique context can contribute to the enhancement of geriatric medical education internationally.

Another limitation of this thesis is that the sample of participants in chapter four were all well-educated urban older persons living at home. This also limits the transferability of our findings to other older persons in and outside the Netherlands.

The review in chapter two described studies outside the Netherlands and several results corresponded with the findings of the qualitative studies of this thesis. The included studies of the review however were not assessed on study design and summarized narratively which limits conclusions about the representativeness of these results.[15]

Credibility

To explore and better understand the experiences and perspectives of the participants individual semi-structured, in-depth interviews were used in chapter three, four and five. Furthermore pre-interview activities were applied to offer participants different ways to share their experiences and thoughts.[16, 17] To collect as much rich information as possible an iterative approach was used until data saturation occurred. This means that data were collected until no new themes were generated.[18]. To increase the credibility of qualitative data methodological triangulation was created in chapter four by using three research methods, i.e. writing a letter, an interview and focus groups.[19] Different research methods provide multiple perspectives. In chapter three and five two research methods were used, i.e. a visual narrative research method (a drawing and photo elicitation) and an interview. These two methods provide the reflections of the participants which is a one-sided perspective. The method of observation for example would have provided another perspective which had further enriched the data. Furthermore, member checking is a method to ensure the trustworthiness of qualitative data.[12] This method was applied in study four. In study three an older person participated as patient representative in the study design, recruitment of participants and formulating the discussion section to ensure the perspective of the older patient.[20-22]

Reflexivity

Reflexivity is an important aspect of qualitative research to enhance the trustworthiness of a study.[23] The first researcher of this thesis is a medical teacher and an elderly care physician and understands the context of older persons' health care. This may have created safety and rapport during the interviews and focus groups. Conversely, it may have influenced the interpretation of the data because of her own values, norms and beliefs related to older persons' health care and geriatric medical education. To ensure reflexivity, the data were analyzed together with a research team in which the members had other expertise, i.e. general practice and anthropology. Moreover the first researcher took field notes in which she described the process of data gathering and analysis and reflected on being an elderly care physician and medical teacher and how this influenced her interpretation of the data.

Discussion and recommendations

The community of practice of medical care is guided by the social contract with society in which doctors serve the needs of their patients.[24, 25] The growing population of older persons leads to a change in society's healthcare expectations and needs regarding the doctor.[24-27] Therefore medical school and curriculum committees have the responsibility to create medical education that prepares medical students for older persons' health care. Based on the findings of this thesis several considerations and recommendations can be made for medical education to meet the expectations and needs of this population.

Community of practice of older persons' health care

By participating in communities of practice of older persons' health care, like nursing homes and the care for older persons in general practice, medical students experience a context that shares values, norms and practices related to a whole person approach, equality, multidisciplinary collaboration, and dealing with complexity. Being part of these communities will help medical students to develop a professional identity that is appropriate for the care of older patients.[1, 28, 29] Members of these communities can be role models for medical students, and their ways of being can provide an example of the doctor they want to become.[4, 10, 28-34] Furthermore by being part of the personal life of the older patient and active participation in the care, medical students learn to know the older patient as a person and will better understand the needs, perspectives and expectations of the patient. Having long term relationships with patients stimulates the development into a patient-centered doctor, able to show personal attention and humanity.[35, 36]

Reflecting on these aspects three recommendations for medical education can be made. First medical school needs to provide more and mandatory long term clinical placements in nursing homes and general practice.[37-40] These contexts will complement the current dominant hospital focus of medical school. This focus creates a disease-oriented context in which the practices of cure, skills to diagnose and solve clinical problems and a more hierarchical relationship between the doctor and patient or other health professionals are important.[41-46] Second it is essential that a sufficient number of doctors who are experienced in older persons' health care participate in the community of medical school as medical teachers, mentors, and supervisors.[34, 47] Finally, active older patient and public involvement and engagement (PPIE) in medical education has to be stimulated. For example the participation of an older person as member of the curriculum committee and in educational courses. This will create a curriculum based on patients' perspectives, needs and expectations.[48, 49]

The dominant culture of cure

Implicit beliefs, messages and approaches in medical school as a result of ageism influence the expectations medical students have of future doctoring.[50-52] They often perceive and expect that becoming a doctor means curing diseases and therefore experience aspects of older persons' health care such as multimorbidity, end of life care and multidomain problems as boring and frustrating.[53-56] This creates negative feelings and thoughts about older persons' health care which

hinders the development of an appropriate professional identity for this care.[29, 45] To reduce ageism medical schools have to facilitate intergenerational contacts, for example educational projects that facilitate long term contacts with healthy community living older adults.[57-59] These contacts stimulate the understanding of older persons' perspectives, needs and expectations.[35, 59, 60]

Furthermore, experiences and activities in an unknown context with values and norms that are different from a preexisting professional identity can create identity dissonance which evokes emotions of anxiety, uncertainty and stress.[2, 3, 61, 62] Medical students who are socialized in the community of practice of medical school with the dominant cure-oriented and hospital-centered discourse can experience internal discomfort in the community of practice of older persons' health care that is often focused on care.[3, 41, 42, 51] As a professional identity encompasses professional values, norms and beliefs, the development of a professional identity for the care of older persons will help medical students to feel more comfortable with care-oriented practices.[3, 51, 63]

Educational tools for supporting professional identity formation

Guided reflection on emotions, experiences in patient care and observation of role models is essential for the development of a professional identity.[1, 4, 29, 31, 64, 65] Reflection makes the implicit explicit, gives meaning to experiences, helps to deal with emotions and can lead to personality change.[4, 10, 29, 31, 66] To be able to do so medical students need to develop a reflective attitude in which they become aware of their responses to an experience, share their feelings, emotions and thoughts with peers and ask themselves questions to learn from an experience.[67] This requires a safe environment, time, patience and equipped teachers.[67] A recent study on collaborative reflection sessions during a general practice clerkship shows that reflecting on workplace experiences with peers and guided by a trained facilitator is a valuable educational tool to support professional development of medical students.[68] Therefore medical schools have to explicitly address professional identity formation and socialization as objectives in reflective educational practice and train teachers to guide medical students in actively reflect on their becoming of a doctor.[4, 10, 11, 29, 31, 67] This can also create awareness of the hidden curriculum and incorrect expectations of becoming a doctor in the current society.

The value of older persons' health care context to medical school

The development of a professional identity with a focus on the alignment with the patient, equality, whole person care, quality of life, multidisciplinary collaboration, and dealing with complexity is not only important to older patients but also relevant to the care of other patient groups. Adults with chronic illnesses benefit from an equal collaboration with their physician and the need of continuity of care and a close relationship with a trusted physician are described in palliative care and cancer care.[69-71] Furthermore complexity of health care needs and organization of care can also be present in younger patients.[72] Therefore curriculum committees should be aware of the opportunities that the contexts of the nursing home and general practice provide and of the value of these contexts to the becoming of a doctor in general.[39, 45, 73, 74]

Future research

Professional identity formation of medical students is a relevant educational concept to prepare medical students for the care of older patients. The studies in this thesis represent a first exploration of this concept resulting in new research questions. First it is important to deepen the understanding of the influence of participating in the community of practice of older persons' health care on professional identity formation. More detailed knowledge about which elements in this community are of influence on the process of formation can help medical teachers to better guide medical students in their becoming. Observational research methods during participation or the use of a diary by the medical student can provide this information. One element to further explore is the relation of the period of participation on the development of a professional identity. This can give curriculum committees guidance for the length of mandatory clinical placements in nursing homes and general practice. Furthermore, chapter three and five only concern the community of older persons' health care outside the hospital. Qualitative research of the hospital community of practice of older persons' health care can provide a broader picture of what is needed to become a doctor for older patients.

In chapter four only the expectations and needs of a sample of Dutch, well-educated urban older persons living at home were explored. More research has to be done to explore the needs and expectations of a broader population of older persons to create a more comprehensive description of the characteristics of the doctor older patients need. Quantitative research methods based on our findings like a survey can be used to investigate this.

Finally the development and evaluation of educational interventions to encourage professional identity formation in relation to older persons' health care will be a future research area. Examples of these interventions are (1) the participation of older persons in educational courses and curriculum development, (2) the utilization of experienced doctors in older persons' health care as medical teachers and mentors, (3) longitudinal contact of medical students with healthy older adults living at home throughout medical school, and (4) collaborative reflection sessions (CRSs) with socialization and identity formation as specific themes. Furthermore it is relevant to explore in which stage of their professional development medical students are ready for and receptive to the complexity of older persons' health care. This knowledge can also contribute to the position of geriatric medicine in curriculum development.

Overall conclusion

Professional identity formation is a relevant educational concept to prepare medical students for the care of older persons. The community of practice of older persons' health care provides opportunities that can help medical students to develop an appropriate professional identity for this care. To give older persons the healthcare they need, medical students have to become a doctor who gives whole persons care, is able to deal with complexity and to work equally together with the patient and other health professionals and is self-aware. Guided reflection on experiences, emotions and thoughts is essential for the development of a professional identity and to make implicit expectations about becoming a doctor explicit. Participating in the community of practice of older persons' health care like the nursing home and general practice can also contribute to the becoming of a doctor in general. In the case of Bart, mentioned in the introduction of this thesis, the advice for the medical teacher and supervisor is to invite and help Bart to reflect on his experiences in the care of older persons related to his values, norms and beliefs of being a doctor.

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Chapter 7

Summary

The community of practice of medical care is guided by the social contract with society in which doctors serve the needs of their patients. Given that health problems in older age differ from those of younger patients the growing population of older persons leads to a change in society's healthcare expectations and needs regarding the doctor. Therefore medical school and curriculum committees have the responsibility to create medical education that prepares medical students for older persons' health care.

Becoming a doctor is an interplay of building competencies and the development of a professional identity. To prepare medical students for older persons' health care geriatric competencies have been defined. As the development of a professional identity is considered a fundamental attribute for becoming a doctor, an appropriate professional identity will help medical students to become a doctor capable of providing the health care that older people need.

Professional identity formation is defined as an ongoing process of socialization which is described as 'the process by which a person learns to function within a particular society or group by internalizing its values and norms'. Socialization takes place in a community of practice which is a community that is characterized by a group of professionals with shared beliefs, values, knowledge base and practices. Social interaction with members of the community and active engagement in practices are essential to socialization. Medical students develop their professional identity in the community of practice of medical school. This community is primarily hospital-based and disease-oriented in which evidence and skills to diagnose and solve clinical problems are important values. Socialization in this community will lead to the development of a cure focused professional identity. This focus is not appropriate for older persons' health care, which more often requires emphasis on improving quality of life, relieving suffering and maintaining autonomy rather than on cure. Purposefully therefore it is important that medical students develop an appropriate professional identity for older persons' health care. The concept of professional identity formation however is new to geriatric undergraduate medical education. The main aim of the research of this thesis is to gain more insight in the professional identity and its formation that enables future doctors to give older persons the health care they need. A summary of the main research findings are briefly described below.

Chapter 2 presents a systematic review with a qualitative data synthesis of the literature on what is known about the professional identity formation of undergraduate medical students in relation to the care of older persons. In this review 23 peer-reviewed studies were included and summarized narratively. Patient-centeredness, caring and compassion, collaboration and holistic care are characteristics of the doctor's professional identity in relation to the care of older persons. Participating in the context of older persons' health care contributes to the becoming of a doctor for older patients and in general. In this context the building of relationships with older persons, participating in their lives and role models are important influencers of professional identity formation. Furthermore, the perceptions and expectations medical students have of future doctoring influence their feelings about the care of older persons.

Chapter 3 describes the experiences of medical students before and after a nursing home clerkship and their reflection on becoming a doctor. The aim of

this qualitative study was to explore the influence of participating in a nursing home community of practice on the professional identity formation of medical students. The study population consisted of thirteen fifth-year medical students participating in a six-week nursing home clerkship. The students shared that active participation in the patients' care and experiencing the daily life of the patients influenced their becoming. Patient-centeredness, personal, holistic and tailored care, approachability and collaboration were mentioned as important characteristics of the doctor who cares for older patients.

In *Chapter 4* the needs and expectations of older persons regarding their doctor are explored aiming to gain more insight in the characteristics of the appropriate professional identity in relation to older persons' health care. The study population of this qualitative study consisted of older persons, aged 65 years and above, living at home in the South-West of the Netherlands. The participants shared that increasing complexity, dependency, and vulnerability that arise at an older age, make it essential that the doctor is familiar with their social context, interacts respectfully and on the basis of equality, provides continuity of care and gives clarity and perspective. To this end the doctor has to be caring, involved, patient, honest and self-aware.

Chapter 5 presents a qualitative study which explores the perceptions of doctors who work in the community of practice of older persons' health care regarding their own professional identity and what they think is important for this care. Twenty Dutch doctors who had an official medical specialty registration as an elderly care physician or a general practitioner with an additional qualification in geriatrics, participated in this study. They described older persons' health care as complex and unpredictable. Being a doctor for older persons means alignment with the patient and multidisciplinary collaboration. Therefore they need to be experienced, service-minded, curious, creative, flexible, thoughtful and reflective. Furthermore they have to be able to think holistically, to collaborate and to integrate and prioritize information.

In *chapter 6* the overall findings of the described research and the implications for medical education are discussed. The concept of professional identity formation is a relevant educational concept to prepare medical students for the care of older persons. In the research of this thesis several elements of the appropriate professional identity for older persons' health care and its formation are described. Older persons' health care is characterised by complexity and unpredictability. Being a doctor for older patients requires alignment with the patient's context, life and values, dealing with complexity, multidisciplinary collaboration and self-awareness. Participation in the community of practice of older persons' health care, like nursing homes and general practice, provides opportunities that can help medical students to develop this appropriate professional identity. Furthermore these contexts will complement the current dominant hospital focus of medical school. Members of the community of older persons' health care can be role models for medical students, and their ways of being can provide an example of the doctor they want to become. For the development of a professional identity guided reflection on emotions, experiences in patient care and observation of role models is essential. Furthermore participating in the community of practice of older persons' health care can also contribute to the becoming of a doctor in general. Therefore curriculum committees should be aware of the opportunities that the contexts of the nursing home and general practice provide for the education of medical students.

Chapter 8

Nederlandse samenvatting

Dankwoord

Curriculum Vitae

Nederlandse samenvatting

De relatie tussen de geneeskunde en de samenleving is een sociaal contract waarin artsen de zorg afstemmen op de behoeften en verwachtingen van patiënten. Gezondheidsproblemen en zorgvragen van oudere patiënten verschillen van die op jongere leeftijd. Door de toename van het aantal ouderen in de samenleving zullen verwachtingen en behoeften die de samenleving heeft van de arts, veranderen. Om die reden is het belangrijk dat de geneeskundeopleiding geneeskundestudenten voorbereid op de zorg voor oudere patiënten.

De ontwikkeling tot arts is een samenspel van het verwerven van competenties en de ontwikkeling van een professionele identiteit. Door de jaren heen zijn er ouderengeneeskundige competenties opgesteld die de geneeskundeopleiding richting kunnen geven. Aangezien de ontwikkeling van een professionele identiteit fundamenteel is in de opleiding tot arts, is het belangrijk dat geneeskundestudenten, naast het verwerven van competenties, ook een professionele identiteit ontwikkelen die hen helpt om ouderen de zorg te geven die zij nodig hebben.

Professionele identiteitswikkeling is een proces van socialisatie in een 'community of practice'. Socialisatie betekent 'het leren functioneren in een gemeenschap door het internaliseren van de normen en waarden van die gemeenschap'. Dit gebeurt door sociale interactie met professionals en het actief participeren in werkzaamheden. Een 'community of practice' is een gemeenschap van professionals met dezelfde, waarden, normen, kennis en praktijken. Geneeskundestudenten ontwikkelen hun professionele identiteit in de gemeenschap van de geneeskundeopleiding. Deze gemeenschap is primair ziekenhuis -en ziektegericht waarbij diagnosticeren, behandelen en genezen belangrijke waarden zijn. Socialisatie in deze gemeenschap zal leiden tot de ontwikkeling van een arts die gericht is op genezen. In de zorg voor oudere patiënten is genezing niet altijd mogelijk en ligt de nadruk op het verbeteren van de kwaliteit van leven, het verlichten van lijden en het behouden van autonomie. Het is daarom belangrijk dat geneeskundestudenten een professionele identiteit ontwikkelen die passend is voor de zorg voor ouderen. Professionele identiteitsontwikkeling is echter een onbekend concept in ouderengeneeskundig medisch onderwijs. Het onderzoek in dit proefschrift heeft als doel om meer inzicht te krijgen in de professionele identiteit en de ontwikkeling daarvan die toekomstige artsen in staat stelt om ouderen de zorg te geven die zij nodig hebben. Een samenvatting van de belangrijkste onderzoeksbevindingen worden hieronder kort beschreven.

Hoofdstuk twee beschrijft een systematische review van de bestaande literatuur over de professionele identiteitsontwikkeling van geneeskundestudenten in relatie tot de zorg voor ouderen. In deze review zijn 23 peer-reviewed studies opgenomen die kwalitatief geanalyseerd zijn en narratief zijn samengevat. Patiëntgerichtheid, zorgzaamheid en compassie, samenwerking en holistische zorg zijn belangrijke kenmerken van de professionele identiteit van de arts in relatie tot de zorg voor oudere patiënten. Participatie in de context van de ouderengeneeskunde draagt bij aan de ontwikkeling tot arts voor oudere patiënten en voor het arts worden in het algemeen. Het opbouwen van relaties met ouderen, het deelnemen aan hun leven en rolmodellen in de zorg beïnvloeden de professionele identiteitsontwikkeling van geneeskundestudenten. Bovendien beïnvloeden de percepties en verwachtingen

die geneeskundestudenten hebben van toekomstig arts zijn hun gevoelens over de zorg voor ouderen.

Hoofdstuk drie geeft de ervaringen van geneeskundestudenten voor en na een coschap in het verpleeghuis en hun reflecties op 'arts worden' weer. Het doel van deze studie, met een kwalitatief onderzoekdesign, was om te exploreren wat de invloed is van het participeren in de community of practice van het verpleeghuis op de professionele identiteitsontwikkeling van de geneeskundestudent. De onderzoekspopulatie bestond uit dertien vijfdejaars geneeskundestudenten die deelnamen aan een zes weken durend coschap in het verpleeghuis. Na deze zes weken gaven de deelnemers aan dat het actief participeren in de zorg voor patiënten en het ervaren van het dagelijks leven van de patiënt hun ontwikkeling tot arts heeft beïnvloed. Zij noemden patiëntgerichtheid, persoonlijke, holistische en op maat gemaakte zorg, benaderbaarheid en samenwerking als belangrijke eigenschappen van de arts die voor oudere patiënten zorgt.

Hoofdstuk vier beschrijft een kwalitatief onderzoek die de behoeften en verwachtingen van ouderen ten aanzien van hun arts exploreert. Het doel van deze studie was om meer inzicht te krijgen in de kenmerken van de professionele identiteit van de arts in relatie tot de zorg voor ouderen. De onderzoekspopulatie bestond uit 22 thuiswonende ouderen van 65 jaar en ouder uit de regio Zuidwest Nederland. De deelnemers gaven aan dat er op latere leeftijd complexiteit in gezondheidsproblemen en context ontstaat en dat zij afhankelijker en kwetsbaarder worden. Hierdoor hebben zij een arts nodig die bekend is met hun sociale context, respectvol en op basis van gelijkheid met hen omgaat, duidelijk is, perspectief geeft en continuïteit van zorg biedt. Hiervoor moet de arts zorgzaam, betrokken, geduldig, open en reflectief zijn.

Hoofdstuk vijf onderzoekt hoe artsen, die werken in community of practice van de ouderengeneeskunde, zichzelf omschrijven als arts en wat zij belangrijk vinden in de zorg voor ouderen. Twintig Nederlandse artsen, specialisten ouderengeneeskunde en huisartsen met een kaderopleiding ouderengeneeskunde, namen deel aan deze kwalitatieve studie. Zij omschrijven de zorg voor de oudere patiënt als complex en onvoorspelbaar. Arts zijn voor deze populatie betekent voor hen dat zij hun beleid afstemmen op de individuele patiënt en multidisciplinair samenwerken. Om dit te kunnen doen moeten zij ervaren, dienstbaar, nieuwsgierig, creatief, flexibel, bedachtzaam en reflectief zijn. Bovendien moeten ze in staat zijn om holistisch te denken, samen te werken en overzicht hebben over alle informatie.

In hoofdstuk zes beschrijft de algemene bevindingen van het onderzoek en de implicaties hiervan voor de geneeskundeopleiding. Het concept van professionele identiteitsontwikkeling is een relevant educatief concept om geneeskundestudenten voor te bereiden op de zorg voor ouderen. In het onderzoek van dit proefschrift worden verschillende karakteristieken van de passende professionele identiteit en de ontwikkeling daarvan in relatie tot de ouderengeneeskunde beschreven. De zorg voor ouderen wordt gekenmerkt door complexiteit en onvoorspelbaarheid. Een arts voor oudere patiënten is daarom gericht op de context, het leven en de waarden van de patiënt, weet om te gaan met complexiteit, kan multidisciplinair samenwerken en is reflectief. Participeren in de context van de ouderengeneeskunde, zoals het verpleeghuis en de huisartsenpraktijk, biedt

mogelijkheden aan geneeskundestudenten om een passende professionele identiteit te ontwikkelen voor de zorg voor oudere patiënten. Bovendien zijn deze contexten een tegenhanger voor de huidige dominante context van het ziekenhuis. Professionals uit de context van de ouderengeneeskunde kunnen rolmodellen zijn voor geneeskundestudenten. Hun manier van zijn is een voorbeeld voor de arts die studenten willen worden. Daarnaast zijn voor de ontwikkeling van een professionele identiteit reflectie op emoties, ervaringen in de patiëntenzorg en observaties van rolmodellen essentieel. Bovendien draagt het participeren in de context van de ouderengeneeskunde ook bij aan de ontwikkeling tot arts in het algemeen. Curriculumcommissies dienen zich bewust te zijn van de mogelijkheden die de contexten van het verpleeghuis en de huisartsenpraktijk bieden voor het opleiden van geneeskundestudenten.

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Curriculum Vitae

Annemarie Jongerius werd geboren op 10 juni 1976 in Woerden. Zij groeide op in Groot-Ammers, een plattelandsdorpje in de Alblasserwaard. Aan CSG Willem De Zwijger in Schoonhoven volgde zij het VWO en behaalde in 1993 haar diploma. Van 1993-1994 studeerde zij Psychologie en Pedagogiek aan de Universiteit van Utrecht waarna zij in 1994 Geneeskunde ging studeren aan de Erasmus Universiteit in Rotterdam. In 2001 studeerde zij cum laude af. Tijdens de geneeskundeopleiding was bij Annemarie de interesse gewekt voor de huisartsgeneeskunde. Ter voorbereiding werkte zij een jaar als ANIOS Interne Geneeskunde in het St Franciscus Gasthuis in Rotterdam en startte in 2003 met de huisartsenopleiding in Leiden. Het solistische werken als huisarts bleek haar echter niet te passen en in 2004 keerde Annemarie terug naar het St Franciscus Gasthuis voor nog twee jaar ANIOS Interne Geneeskunde. In 2006 startte zij haar opleiding tot, toen nog, verpleeghuisarts bij Gerion aan de VU en rondde deze opleiding in 2008 af. De jaren daarna werkte Annemarie bij diverse zorgorganisaties in Rotterdam en volgde in 2016 de kaderopleiding Psychogeriatrie waarna zij als specialist ouderengeneeskunde in de eerste lijn is gaan werken. Momenteel werkt zij voor zorgorganisatie ActiVite in Alphen aan den Rijn.

Vanaf 2013 heeft Annemarie het werken als arts in de praktijk gecombineerd met onderwijs en opleiden. In 2013 startte zij als eerste specialist ouderengeneeskunde in het studentenonderwijs van de afdeling PHEG (Public Health en Eerstelijns Geneeskunde) van het LUMC. Van 2013-2017 ontwikkelde zij een coschap ouderengeneeskunde en was zij docent in de bachelor -en masterfase van de geneeskundeopleiding. Van 2017-2019 coördineerde zij dit coschap ouderengeneeskunde en het coschapscluster POSH (psychiatrie, ouderengeneeskunde, sociale geneeskunde en huisartsgeneeskunde) en was zij mentor voor AIOS specialisme ouderengeneeskunde. Annemarie behaalde in 2018 haar BKO en startte in 2019 met haar promotieonderzoek. De ervaringen die de geneeskundestudenten opdeden tijdens het coschap ouderengeneeskunde waren aanleiding voor dit onderzoek. In 2019 werd Annemarie adjunct-hoofd van SOOL (Specialisme Ouderengeneeskunde Opleiding LUMC) en zal in september 2025 het huidige hoofd van SOOL opvolgen.

Annemarie woont in Rotterdam en is getrouwd met Marcel Moll. Zij hebben drie kinderen, Merel (2004), Sophie (2006) en Joris (2008).