



Social inequalities in health care and long-term care for the very old: a scoping review

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Abstract

Aim Despite broad discussions in the scientific literature concerning the connection between social and health inequalities, the group of the very old (people aged 80 years and older) is not sufficiently represented in the research concerning health and long-term care. Are there inequalities among the very old in home and institutional care in the so-called industrialized Western countries and Asian countries? What differences can be detected regarding social determinants, gender, and region? Are there mutual aspects of health and long-term care on an international level? Is there a kind of tipping point in the progressive aging process at which the need for long-term care becomes inevitable?

Subject and methods Based on these four guiding questions, a scoping review of the literature in the last 10 years was conducted with German and English search terms. CINAHL, PubMed, ProQuest, and Scopus were searched in December 2022 and January 2023. In addition, a manual search was performed.

Results The very old are still not adequately represented in the research on the issue of social and health inequalities and implications for health and long-term care. Nevertheless, evidence of inequalities in care design was found. Market-based health and long-term care systems appear to show these more frequently. Also, market-based health and long-term care systems seems to rely more heavily on family structures than supply-oriented systems like in the Scandinavian countries. System structures tend to provide for an accumulation of inequalities in health and long-term care, as is also seen for low incomes.

Conclusion The scoping review showed that the group of the very old is underrepresented in health services research. At the same time, there are indications of a perpetuation of social inequality at old age. There is a need for more research on appropriate research terminologies and methods as well as research-based health care and long-term care measures and interventions.

Keywords Very old · Social inequality in health · Long-term care · Older care · Care systems

Introduction

People's life expectancy is increasing (Oeppen and Vaupel 2002), although this trend seems to be slowing (Raleigh 2019). This development leads to various questions: What are the health and care needs of the very old in different countries? How are these needs met, and do they depend

on social milieus and gender? The importance of the topic becomes clear when we take a closer look at the expected growth in the proportion of people ≥ 80 years of age in the coming years. For countries of the Organisation for Economic Co-operation and Development (OECD), this is predicted to double on average between 2017 and 2050, from 4.6% to 10.1% (OECD/EU 2023). It is well documented in the literature that social inequalities and gender are linked to health inequalities (OECD/EU 2023), which are also related to differences in the health care that people receive depending on their social environment and gender (OECD/EU 2018). However, there is little systematic evidence regarding the relationship between social inequality among the very old and their health and long-term care.

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As early as 2007, Artazcoz and Rueda pointed out that older people tend to be forgotten in research on health inequalities compared to people at other stages of life (Artazcoz and Rueda 2007). Furthermore, they argue that there is a need for optimization of evidence on the relationship between social class, gender at older ages, and health. Kümpers expressed a similar view for Germany (Kümpers 2008). Even then, she recognized that although there is evidence that health inequalities persist into old age, the data situation in Germany is in need of optimization. Likewise, she said, there are hardly any international scientific studies focusing on social and health inequalities among older people, especially not for the very old. A publication by Von dem Knesebeck and Vonneilich provided initial findings that social inequality continues at old age (Von dem Knesebeck and Vonneilich 2009): They showed, for example, that people with a low level of education are exposed to higher mortality risk. Also, social inequality leads to differences in disease risk between the sexes, which leads to higher mortality. Furthermore, according to this publication, low educational background appears to have an impact on subjective and functional health. It should be noted, however, that Von dem Knesebeck and Vonneilich do not specifically address the population of > 80-year-olds in their publication. They conclude that few studies offer specific explanations for health inequality at old age, and they question the contribution of factors related to middle adulthood, such as social selection, material living conditions, health behavior, or psychosocial factors, in determining differences in morbidity and mortality at older age (OECD/EU 2023).

In a publication based on the Robert Koch Institute's health reporting in 2016, it was also pointed out that research on social and health inequalities is focused predominantly on the working population, while older age is largely disregarded (Lampert et al. 2016). It was noted that existing research indicated that social inequality appears to persist throughout life. Further, this publication addressed the research situation of those > 65 years old, but hardly addressed the population aged > 80 years (OECD/EU 2023). The "omission" of this age group in social and health research raises questions as to the reasons: One reason could be the societal, cultural, and institutional perception of older adults (Baltes and Mittelstrass 1992; Kühne 2005; Kessler 2012; Kornadt and Rothermund 2011, 2012; Filipp and Mayer 2005; Göckenjan 2010; Wurm and Huxhold 2012; Schulz 2023). Also, the supposed stereotypes of frailty and illness or health losses are mentioned in the public discourse, which presumably affect the focus on this group and lead to discourses concerning the rationing of health care services for older people (Remmers 2015; Wurm et al. 2013). Our assumption is that the social and health problems of this group seem to be taken for granted and do not merit special attention.

This is supported by exemplary insights from age research (Walkner et al. 2018) and care research (Larkin and Milne 2017).

Referring to Germany only, one survey addressed people over 80 years of age: In 2021, Hansen et al. published results of a study on the quality of life of very old people in North Rhine-Westphalia—categorized as D80+. They suggest that life events, social milieu association, and other characteristics may have more influence on quality of life in old age (Hansen et al. 2021). Initial findings from the study illustrate that gender- and life course-related inequalities intensify as people enter old age (Zimmermann et al. 2022). From the age of 90, the need for long-term care according to the statutory long-term care insurance in Germany predominates, and this is more likely to be the case for very old people with low levels of education than for more highly educated people of this age (Zimmermann et al. 2022). High-aged women are also particularly affected by low incomes and poverty (Fey and Wagner 2021). On a regional level of North Rhine-Westphalia as the most populous federal state in Germany, this thus supports the previous findings reported in the literature. However, it remains to be seen how inequality in health and long-term care is reflected in terms of utilization of care services and whether empirical studies have been conducted on this topic.

This study aims to conduct an exploratory scoping review, which is framed by the following considerations:

The close connection of "health" and "long-term care" has led us to a broad understanding of both aspects in our search strategy (e.g., ambulatory and hospital care, home and institutional care). Concerning this close connection, there is also a need to focus on the process which leads to the utilization of the services provided. However, there is no comprehensive concept of the process or the time point regarding the need for health and long-term care services (Blüher et al. 2021), because the focus in recent studies, such as in Germany, is primarily on cost reduction or avoiding costs in long-term care (Herberg and Teuteberg 2022). Consequently, it is important to identify a kind of tipping point, defined as the irreversible beginning of the utilization of long-term care services due to health and care limitations, rather than cost-oriented perspectives on long-term care.

Against this background, the following questions guide the scoping review:

1. Is there evidence of social inequalities in health and health care among the very old in home and institutional care in aging populations (e.g., Austria, Japan, Italy, Spain, Australia, USA, Japan, China, Korea, etc.)?

2. How does health and care provision differ according to social determinants, gender, and region?
3. On an international level, are there aspects of health and long-term care that can be identified internationally that address social, health, and gender inequalities?
4. Is there a “tipping point” in the progressive aging process at which health and care limitations reach the state of requiring long-term care services?

Methodology

To answer the central research question regarding inequalities in health and care provision for the very old, a scoping review was conducted following the Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) in its methodology and presentation (von Elm et al. 2019; Peters et al. 2020) and structured according to the PCC scheme as follows:

Population: very old people ≥ 80 years, regardless of gender, ethnicity, and religion

Concept: inequalities in social and health care

Context: international health care systems

Search strategy

An iterative search strategy was defined as appropriate to answer the research question (Ruppert et al. 2023). A preliminary search of the international literature led to a rough description of the problem of social and health inequalities of the very old in health and long-term care. Initial sources for the literature search included the OECD, World Health Organization (WHO), Robert Koch Institute, and European Observatory on Health Systems and Policies (Raleigh 2019; Lampert et al. 2016; Huisman et al. 2013; Fuchs 2013; Geer et al. 2021). Following Boland et al., problem areas were extracted in order to condense the outlined problem descriptions of very old people (Boland et al. 2017).

- Very old
- Inequality
- Home and institutional care setting
- Health and nursing care
- Social determinants
- Need for care
- Tipping point of need for care

The results of the first cursory search and approximately 100 German and English terms were subsumed under the seven topics, including the following:

- High-aged: high age, elder, elderly, frail elderly
- Institutionalized care: institutional care, nursing home, homes for the aged
- Social determinants: housing, suburban health services, rural health services

For the second, deeper literature searches, German and English search strings were formed from these terms for the search in scientific databases according to the four individual questions introduced in the previous section (Fig. 1).

Eligibility criteria and selection process

The use of inclusion and exclusion criteria for study selection followed the pattern wherein these criteria determined which sources from the databases should be selected for or excluded from the scoping review. Inclusion criteria included the language of the publication. Publications in English and German were included. The number 1 was used to correlate the German context with the other countries. Only publications published from January 2012 to December 2022 were included. A specific methodology was not determined, because of the explorative nature of this scoping review. As a result, studies with secondary data (e.g., systematic reviews) were included.

The following countries were included: all European countries, the USA, Australia, New Zealand, and other Asian states with ageing populations.

Studies in a language other than English or German were excluded. Also, studies with other topics such as those involving specific disease patterns (e.g., myocardial infarction, apoplexy) or medical therapies, studies without socioeconomic context, and those with age cohorts younger than 65 years were excluded.

This applied to titles and abstracts in the determined selection of the sources. The selection of relevant publications was conducted in three steps: First, the titles of the publications were read. In the next step, publications meeting the inclusion criteria were included in a further screening process during which the abstracts were screened. The eligible publications were then reviewed according to the inclusion and exclusion criteria, uncertainties were discussed in the review team, and the final selection of publications took place. The review team consisted of three persons.

The literature search in the CINAHL, PubMed, ProQuest, and Scopus databases was conducted over a 2-month period in December 2022 and January 2023. In addition, the Google Scholar search engine was used to include literature published elsewhere. Figure 2 presents the methodological procedure for the study selection. The database search and hand search were divided among three researchers as reviewers to avoid overlaps and to ensure transparency. Citavi 6 was used as the common literature management program

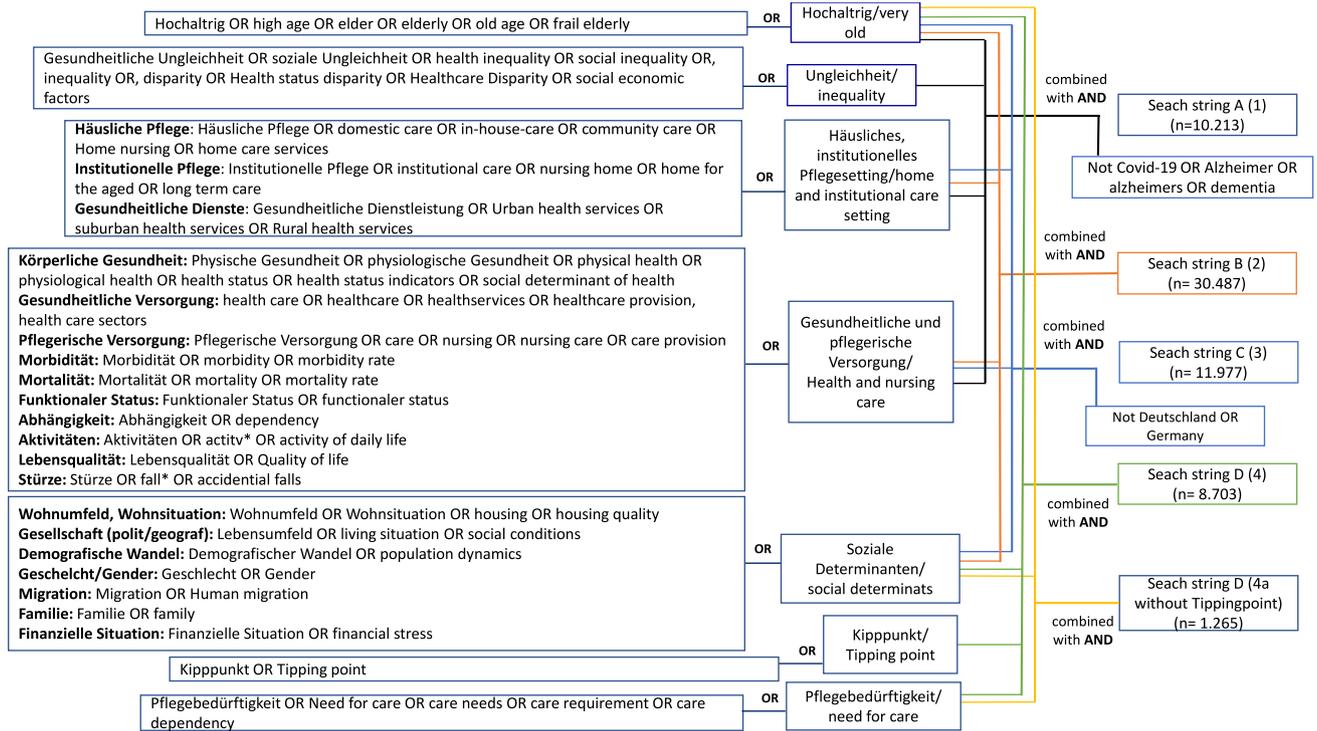
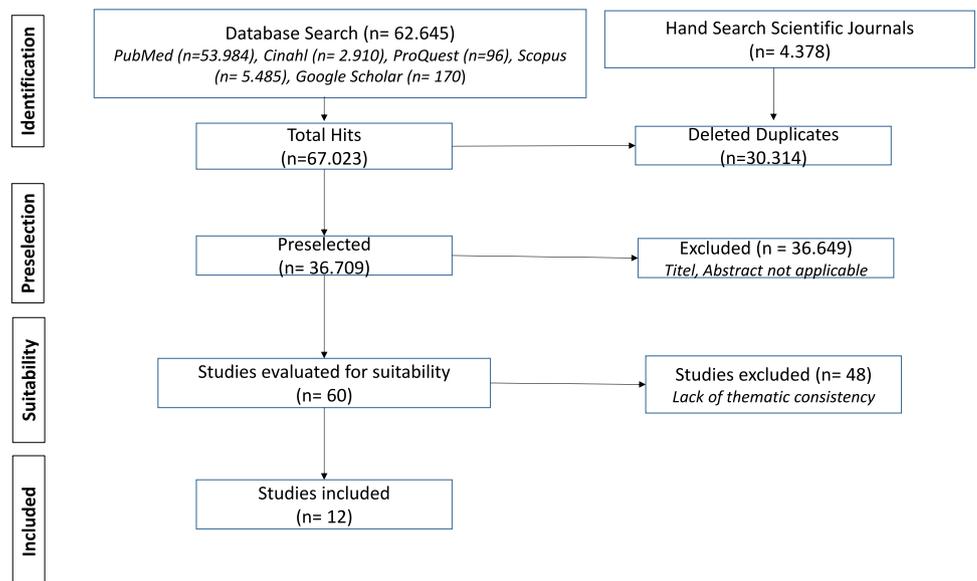


Fig. 1 Search strings German/English

Fig. 2 Flowchart of study selection process



for study selection. Ultimately, 12 studies were included, all of which worked with secondary data based on previous surveys, publications, and official surveys. The data extraction was performed through the creation of summaries of the publications’ core results in the form of a collaborative document. Given the explorative nature of a scoping review,

the listing of the data items was not applicable. The critical appraisal was conducted on a descriptive—i.e., nonstatistical—level in the form of the limits mentioned in the publication. No additional statistical methods were used for the critical review of the publications’ results.

Results

Evidence on social inequalities in health and long-term care for the very old in home and institutional long-term care settings

All included studies used secondary data based on previous surveys, publications, and official surveys. Studies 1 and 2 analyzed data from the Survey of Health, Ageing and Retirement in Europe (SHARE): Study 1 interpreted data from the first and second waves of the survey from four European countries (Denmark, Germany, France, Italy). Study 2 evaluated data from 136 administrative regions from 12 European countries (Austria, Belgium, Croatia, Czech Republic, Estonia, France, Germany, Italy, Poland, Spain, Sweden, Switzerland). Study 3 relied on domestic political and statistical data (Norway, Denmark, Sweden, Finland) and the relevant research literature. Study 4 drew on data from the English Longitudinal Study of Ageing (ELSA), 6th–9th survey rounds 2012–2018.

Structural orientation of long-term care system

It is clear that inequalities in care are associated with the structural orientation of the system. Albertini and Pavolini (see Table 1) highlighted the observation that stronger inequalities can be expected in market-oriented systems of health and nursing care (in this case, Germany and Italy) than in systems with a more publicly funded delivery system (Albertini and Pavolini 2017). The likelihood of receiving professional care services varied among the countries surveyed in the SHARE study ($N=9824$) (Walkner et al. 2018): France was first, where most SHARE survey participants

reported receiving care services from public or private providers (33% of respondents), followed by Denmark (23%). In contrast, the proportion in Germany (9%) and Italy (8%) was less than 10%. The likelihood of receiving informal personal care services from providers outside the household was higher in Italy and Germany (5% each, rounded) than in France (4%) and Denmark (2%). The situation was similar for informal care provided by members of ones' own household (Italy 12%, Germany 8%, France 7%, Denmark 4%). The authors assumed that the likelihood of receiving professionally provided long-term care services is thus higher in supply-oriented countries such as Denmark and France than in market-oriented countries such as Italy and Germany (Albertini and Pavolini 2017).

De-familialization as a conditioning factor

Floridi et al. cited the degree of de-familialization as another conditioning factor for inequalities in long-term care (study 2, see Table 1) (Floridi et al. 2021). De-familialization is defined as the degree to which the provision of care services does not depend on family resources and rather is provided to a significant degree through publicly funded care providers. The opposite is familialization, where the provision of long-term care depends on the family resources and the availability of market-oriented service providers, an aspect which is also mentioned by Albertini and Pavolini (2017). The number of beds in long-term care was cited as an indicator (Floridi et al. 2021): the lower the number of beds, the more common family-based care becomes. Economically disadvantaged individuals or groups are more likely to benefit from de-familialization, i.e., the presence of inpatient care structures.

Table 1 Included studies search string 1 (question 1)

No	Year	Authors	Aim	Major findings
Study 1	2017	Albertini, Pavolini	Research on stratification of formal care among older Europeans	<ul style="list-style-type: none"> • Stronger inequalities in market-oriented systems of health and nursing care
Study 2	2021	Floridi, Carrino, Glaser	Investigation of inequalities in home care use in regional long-term care systems in Europe	<ul style="list-style-type: none"> • A lower number of beds in long-term care facilities is related to more family-based care • Economically disadvantaged individuals/groups benefit from more beds in long-term care facilities
Study 3	2022	Rostgaard, Jacobsen, Kröger, Peterson	Reflection concerning the Nordic long-term care model for older people	<ul style="list-style-type: none"> • Inequalities in long-term care are increasing in the Scandinavian model with respect to curtailment and prioritization of resources and informalization of care
Study 4	2022	Hu, Cartagena-Farias, Brimblecombe	Examination of functional disability and utilization of long-term care in the English older population	<ul style="list-style-type: none"> • Trajectories of need did not correspond to the utilization of services • Risk of unmet need is likely to increase with level of need

Changes in the Scandinavian model

However, Rostgaard et al. showed that the Scandinavian model (or the different variants in Norway, Sweden, Denmark, and Finland) can no longer maintain its old egalitarian claim due to the unequal and unfair distribution of care provision, the curtailment and prioritization of resources, informalization (in terms of family-based care), and privatization (study 3, Table 1) (Rostgaard et al. 2022). This development has created a parallel market-oriented care system, in which plentiful personal economic resources are advantageous for the use of these additional services (OECD/EU 2023). Services are no longer geared towards the broad (older) population, and geographical inequalities (urban vs. rural) and economic inequalities (poor vs. rich) as well as gender inequalities are the expected consequences (OECD/EU 2023).

Failing correspondence of care needs and service utilization

Hu et al. described how socioeconomic status, ethnicity, and relationship status influence the need for and utilization of long-term care services (see study 4, Table 1) (Hu et al. 2022): The variance in the need for care showed that the trajectories of needs did not correspond to utilization of services (e.g., highly pronounced needs, but only moderately pronounced intensity of care). The risk of unmet need is likely to increase with the level of need. Also, persons with high care needs can no longer obtain adequate care from formal care services due to the discontinuation of care by a spouse. Therefore, not only will the availability of care services be an issue, but the adequate coverage of needs will become a priority issue as well. In the future, formal care services will not be able to meet the care needs of individuals. Overall, it is clear that inequalities in care appear to be dependent on the structure of health and long-term care services systems. This aspect is likely to be adopted in other contexts or countries as well.

Difference in health and nursing care provision according to social determinants, gender, and region

Study 5 (Fu and Chui 2020) is a cross-sectional study with 556 subjects aged 70 to 101 years in 10 cities in China (see Table 2). It examined patterns of need, the role of living conditions, and the impact of Confucian filial piety on the aforementioned aspects. Studies 6 to 10 are secondary data analyses of previously conducted surveys: Study 6 (Hu et al. 2020) analyzes the Social Survey of Older People in Urban China, and study 7 (Lei et al. 2016) examines the Chinese Longitudinal Healthy Longevity Survey. Study 8 (Jang

and Kawachi 2019) considers the sixth wave of the Korean Longitudinal Study of Ageing survey (see all listed studies in Table 2). Study 9 (Steinbeisser et al. 2018) refers to a regional survey in Germany. Study 10 (Spijker and Zueras 2020) refers to the second (2006, $n = 266$) and fifth (2013; $n = 787$) survey waves of the SHARE study, using data from individuals aged 65 years and older (see Table 2).

Four of the included publications are from the Asian region (China and South Korea), two from Europe (Germany and Spain). Definite differences exist between the Asian and European countries with regard to status and access to social security systems. Cultural values may also have an indirect influence here. In this sense, social, gender and regional determinants are joined by cultural determinants.

Filial piety and long-term care

In the Chinese context, these determinants seem to cluster in the involvement of the elderly or very old in family and regional or spatial structures when it comes to the use of informal and formal care services by service providers. Fu and Chui highlight here the limited access to publicly funded formal care services in China (Fu and Chui 2020). There is a tendency to fall back on the family, thus forgoing formal assistance even when needs are high. Furthermore, the cultural norm of “Confucian filial piety” has an indirect effect on this renunciation. The cohabitation of elderly people with their children must also be taken into account here with regard to the assumption of costs for informal care services by the children.

Spatial and local proximity as determining factors

Another determining factor in the Chinese context of Hu et al. might be the spatial or local proximity of care services that are used or purchased formally or informally (Hu et al. 2020). If external services are not in accessible proximity, they are not used. In this kind of a family-centered system with relatively late-established and high-threshold social protection for long-term care of the elderly, single people with no entitlement to formal care services represent a definite risk group.

Moreover, the delicate family (informal) care system will be overburdened by demographic change and labor mobility (Lei et al. 2016). Accordingly, income, living conditions, and neighborhoods constitute determinants of the availability and affordability of informal services to care for the elderly.

Acceptance of formal assistance as cultural topic

Similar to China, the Korean system is strongly family-oriented (Jang and Kawachi 2019). The determinants of

Table 2 Included studies search string 2 (question 2)

No	Year	Authors	Aim	Major findings
Study 5	2020	Fu, Chui	Research on patterns of need for home- and community-dwelling older people in China and the role of living arrangements and filial piety	<ul style="list-style-type: none"> • Limited access to publicly funded formal care services leads to family involvement in long-term care depending on regional or spatial structures • Confucian filial piety is a (nonstatistical) strong determinant of the involvement of the family in long-term care
Study 6	2020	Hu, Li, Wang, Shi	Examination of receipt of services and sources of payment for older people in urban China	<ul style="list-style-type: none"> • Spatial or local proximity of care services, formally or informally purchased, determines the receipt of services
Study 7	2016	Lei, Feng, Wu	Examination of the availability and affordability of long-term care for disabled older people in China	<ul style="list-style-type: none"> • Income, living conditions, and neighborhoods determine the availability and affordability of informal care services for older people
Study 8	2019	Jang, Kawachi	Research on care inequality in Korea	<ul style="list-style-type: none"> • Women, according to their longer life expectancy, will be more dependent on external assistance later in life • The acceptance of formal care services is likely higher in women than men • Men exclude themselves from informal and formal care services
Study 9	2018	Steinbeisser, Grill, Holle, Peters, Seidl	Research on the determinants for utilization and transitions in long-term care among older German adults	<ul style="list-style-type: none"> • Predisposing factors for long-term care are advanced age, female gender, multimorbidity, and high levels of disability • Predisposing factors for utilization of services are living alone, availability of high income, and the degree of disability
Study 10	2020	Spijker, Zueras	Examination of old-age care provision in Spain under a new care system	<ul style="list-style-type: none"> • The introduction of a state support system externalized long-term care for the family • The economic crisis and the paying of allowances for relatives has led to re-familialization of long-term care

long-term care for the elderly are considered to be female gender due to women's longer life expectancy, male gender due to male role perception, and limited public resources. While women, due to their longer life expectancy, will later be dependent on external assistance, the availability thereof is uncertain in the future. Because of their social role, men do not accept formal assistance despite an existing need. Instead, they accept formal assistance when they take care of their wives or assume the responsible role for this. In addition, there are intra-family inequalities, as children are more likely to support their mothers with informal assistance. In a sense, men exclude themselves from informal and formal long-term care. However, economic factors have an influence on the use of informal care services by women. This concerns poorer elderly/high-aged mothers who do not want to burden their children financially by using informal or purchased care services.

Predisposing factors of long-term care

The two studies from the European context point to less family-centered systems of long-term care for the very old. They show a stronger tendency toward externalization of support services. In this regard, the study by Steinbeisser et al. identified the following predisposing factors of long-term care (Steinbeisser et al. 2018): advanced age, female gender, multimorbidity, and high levels of disability. With regard to utilization, living alone, availability of high income, and the expression of the degree of disability constitute dispositional factors for utilization.

Re-familialization of long-term care

The Spanish example of Spijker and Zueras highlights the importance of economic crises and their resonance in the social safety net (Spijker and Zueras 2020). Originally, long-term care for the elderly, which was within the family, was externalized through the introduction of a state support

system. As a result of the economic crisis, the receipt of formal services from this social security system was prioritized or restricted. Instead of formal services, allowances were paid to children who cared for their elderly parents. Because of the high unemployment rate, allowances for unemployed relatives led to re-familialization or combined informal assistance systems with public funds.

As a result, a risk group for underprovision appears to be single persons without family ties and with insufficient economic resources. However, this may also apply to divorced persons at old age in the future. Overall, the impression is that the main distinguishing determinants of long-term care provision can be seen as the orientation of long-term care toward a service to be provided primarily by the family and the possibility of having recourse to public funds and benefits. However, health care was not the primary focus of the articles, so no conclusions can be drawn here.

Aspects of health and long-term care that address social, health, and gender inequalities identified on an international level

The literature review identified a few publications which directly refer to aspects of health and long-term care that relate to social, health, and gender inequalities. However, these are also part of the findings presented earlier (see Table 3). Because of this overlap, the synthesis of results is given directly under this heading.

Contrast between market- and supply-oriented systems

The main aspect is the contrast between market-oriented and supply-oriented systems, which can also be described as the contrast between "de-familialization" and "familialization." Another aspect is socioeconomic status. In the context of the European Union, Albertini and Pavolini reported that the structure of the long-term care system can be seen as a

Table 3 Included studies search string 3 (question 3)

No.	Year	Authors	Aim	Major findings
Study 1	2017	Albertini, Pavolini	Research on stratification of formal care among older Europeans	<ul style="list-style-type: none"> • Strong market orientation leads to stronger familialization • Major influence of socioeconomic status regarding receipt of care services • Women are mainly the caregiver
Study 2	2021	Floridi, Carrino, Glaser	Investigation of inequalities in home care use in regional long-term care systems in Europe	<ul style="list-style-type: none"> • Lower number of institutionalized long-term beds leads to a familialization of long-term care
Study 7	2016	Lei, Feng, Wu	Examination of the availability and affordability of long-term care for disabled older people in China	<ul style="list-style-type: none"> • Social and gender inequalities are directly related to limited publicly funded long-term care services • Cultural norms correlate indirectly with social and gender inequalities in long-term care

Table 4 Included studies search string 4 (question 4)

No.	Year	Authors	Aim	Major findings
Study 11	2017	Harrison, Walesby, Hamilton, Armstrong, et al.	Prediction of factors concerning discharge from acute hospitalization to long-term care	<ul style="list-style-type: none"> • Considerable heterogeneity in the terminology of the studies • Lack of defined terms of “nursing home” or type of care concepts
Study 12	2018	Wolff, Mulcahy, Roth, Cenzer, et al.	Development of a prognostic model of the risk for long-term nursing home entry	<ul style="list-style-type: none"> • Overload of family or informal care system could be a predictive factor

cause of social inequalities and indirectly of gender inequalities (Albertini and Pavolini 2017). The stronger the market orientation, the stronger the familialization of the care system. At the same time, from the authors’ perspective, this results in a major influence of socioeconomic status with regard to the receipt of care services (OECD/EU 2023). Due to familialization, women are mainly involved in providing and receiving care services. In this context, Floridi et al. also elaborated on the importance of structured services in the form of institutionalized long-term care beds (Floridi et al. 2021). If a region has few long-term care beds, more pronounced familialization of the long-term care system is to be expected.

Limited welfare state services and cultural norms

The study from China by Lei et al. describes similar constellations, whereby the welfare state offer seems to be more restricted than in Europe (Lei et al. 2016). In addition, there is a cultural factor in the form of Confucian filial piety. Due to the limited publicly funded long-term care services, people who are socioeconomically poorly off or who have no or no strongly developed family resources are affected by social inequality. Lei et al. described this inequality as a lack of coverage of physiological and psychological needs that can otherwise be addressed by the family. Indirectly, social and gender inequalities can be derived from this when viewed as a whole, since women will not only take over care in more family-based systems, but also have longer-lasting care needs due to their longer life expectancy. At the same time, and this is particularly highlighted by Lei et al., demographic changes and job-related mobility are thinning family networks.

Given the limited studies or literature, a salient aspect of inequality in long-term care that can be noted is the structural orientation of care systems toward family-based—i.e., market-oriented—long-term care. Indirectly, this presumably results in social, health-related, and gender-specific

inequalities with regard to ensuring long-term care for the very old.

“Tipping point” of the progressive aging process, including developments in health and nursing impairment that define the use of long-term care services

Factors predictive of long-term care

The first included study is a systematic review (see Table 4) including 23 studies from Europe, North America, and Hong Kong (Harrison et al. 2017). The sample size of the studies varies significantly between 94 and 262,345 participants and a study duration between 3 months and 10 years. The proportion of participants who were admitted to a nursing home after an acute hospitalization ranged from 3% to 77%, although the proportion could not be calculated in three studies in the review. In addition, there is considerable conceptual heterogeneity in the terminology used in the reviewed studies, as none of the studies had clearly defined the term “nursing home” or the type of care concepts; also, none of the studies were judged to be at low risk of bias in all domains. In selecting participants, the samples were often nonconsecutive, and the exclusion criteria were restrictively defined. At the same time, variables that led to bias in the results were noted. The authors focused on the phenomena of “dementia” and “delirium.”

Prognostic model of risk for entry into long-term care

The second study examined data from the 1999 and 2004 National Long-Term Care Survey (NLTC) and the 2011 National Health and Ageing Study (NHATS) caregiver surveys regarding older adults in the United States as part of a secondary data analysis (Table 4) (Wolff et al. 2018). The objective was the testing of a predictive model for early detection of risk for entry into long-term inpatient care among older adults. At the same time, Medicare enrollment data were used and data from the Informal Caregiver

Survey 1999 and 2004 and the National Study of Caregivers 2011 regarding family caregivers were considered. In the final sample of the latter study, data from 2676 older adult–caregiver relationships were analyzed. Admission to a long-term care home was defined as a stay of more than 100 days or stay until death. Nursing home episodes were determined using minimum data sets (MDS). Time of death was determined using Medicare enrollment files. Wolff et al. highlight the overload of the family or informal care system as a possible predictor (Wolff et al. 2018).

A definitive “tipping point” as a definable term or phenomenon cannot be identified in the international literature. Rather, the literature from the United States is concerned with identifying factors or predictors that can determine the risk for the transition from acute inpatient hospitalization or from home to inpatient care. Factors include physical worsening conditions combined with US-specific gender- and ethno-cultural-related aspects (i.e., female gender, white skin), a tendency to live alone, and an increase in accidental events in the foreground (Harrison et al. 2017). The identified aspects thus point to a multifactorial phenomenon of the transition of very old people into institutionalized long-term inpatient care.

Discussion

This scoping review aimed to explore the link between social inequalities and health/long-term care among the very old (≥ 80 years). This issue is under-explored, despite demographic shifts that predict a doubling of this population by 2050 in OECD countries. The findings revealed significant inequalities, particularly in market-oriented health care systems where family-based care plays a substantial role, raising concerns about accessibility, quality, and equity in health and long-term care. This is particularly important given the demographic shift in OECD countries, where the population aged 80 years and older is expected to double by 2050 (OECD/EU 2023).

The findings from the scoping review highlight a significant research gap in empirically based studies on the relationship between health and social inequalities in older age. This gap is most evident in the methodological limitations of the majority of the studies included. The literature primarily focuses on the European and Asian contexts, with less emphasis on the United States. In addition, the studies provide insights predominantly into long-term care, while health care is either not addressed or not explicitly differentiated from long-term care services. The lack of clarity regarding what constitutes long-term care further complicates the analysis. Moreover, much of the existing research relies heavily on retrospective secondary data analyses,

particularly involving populations aged 65 and older, with limited attention to the very old.

Key findings on inequalities in long-term care provision

The review highlighted that **market-oriented systems** (e.g., Germany, Italy) show higher levels of inequality in care provision than supply-oriented, more egalitarian systems like those in Scandinavian countries. This inequality often stems from the system’s reliance on family support, with fewer institutional care options available, leading to what is termed **familialization** of care. This reliance on family resources exacerbates inequalities, especially for those without family support or with limited economic means.

Conversely, Scandinavian countries, despite their reputation for more egalitarian systems, are beginning to show signs of increased inequality due to resource prioritization and the informalization of care. This trend highlights a shift from fully public care models to more privatized systems, creating care gaps that disproportionately affect economically disadvantaged individuals and regions, especially in rural areas.

An interesting observation from the SHARE study is that countries with the oldest populations tend to have the most market-oriented health and long-term care systems. This raises the question of whether there are links between a population’s age structure and the economic orientation of its health care system. Furthermore, it is important to explore how these factors might exacerbate social and health inequalities in older age, as well as the potential disadvantages faced by family caregivers. In contrast, Scandinavian countries, traditionally characterized by their egalitarian health systems, appear to be shifting toward privatization and the prioritization of services. This trend, as noted by Hu et al. (2022), suggests that even egalitarian systems may be moving in a direction that could introduce new forms of inequality in care provision. In light of these findings, a hypothesis can be proposed that **market-oriented health care systems exacerbate social and health inequalities in old age**. This is supported by trends observed in Scandinavian countries, where increasing privatization of long-term care has led to concerning impacts on the care available to older populations (Rostgaard et al. 2022). As a result, even in these systems, rising inequalities in care provision are anticipated. To maintain an egalitarian model, these countries are progressively integrating market-based mechanisms, which are likely to generate new forms of inequality. This observation aligns with the accumulation thesis proposed by Kohli et al. (2005) and Leopold and Engelhardt (2011), which suggests an increase in vertical inequality factors in older age. The scoping review provides some evidence in support of this hypothesis, showing that even egalitarian nations like

those in Scandinavia are shifting toward market-based solutions for long-term care, thereby contributing to the development of social and health inequalities. However, it remains necessary to explore the extent and nature of these inequalities, and whether they are comparable to those found in traditional market-oriented health care systems. Notably, no studies have yet examined the effects of different health care system structures and financing models on social and health inequalities in older populations, particularly with regard to service utilization, needs-based care, defined outcomes, and quality of life.

An important finding in response to the first research question of this scoping review is that **income level appears to play a more significant role than educational status** in determining access to formal care services. However, the relationship between education and income—particularly at retirement age—remains unclear in terms of how it affects the likelihood of utilizing health and long-term care services. It is possible that older adults with higher incomes also exhibit higher levels of health literacy, potentially masking disparities in education. Nonetheless, none of the studies included in this review specifically addressed the role of health literacy in older populations or its connection to social and health inequalities. This oversight is particularly surprising given that health science research has long recognized the association between health literacy and health outcomes (Chesser et al. 2016; Vogt et al. 2018). The question of why health literacy in older adults has not been more comprehensively examined in the context of social and health inequalities remains unanswered. It is plausible that age-related stereotypes have influenced the focus of research on these issues (Albertini and Pavolini 2017; Rostgaard et al. 2022; Hu et al. 2022).

Further research is also needed to explore whether countries with market-oriented health care systems, which rely more heavily on informal care and family contributions, experience greater social and health inequalities in older individuals. These systems may also be more likely to leave certain populations underserved compared to more egalitarian health care models. However, the effects of these systems on key health indicators, patient outcomes, and the adequacy of both health and long-term care services remain unaddressed in the existing literature.

Gender and regional determinants in care access

A consistent theme across the studies reviewed was the **gendered nature of care**. Women, who have a longer life expectancy, are more likely to depend on both formal and informal care services. Conversely, men are more likely to be excluded from such services, especially informal care, due to cultural norms and roles within the family. In regions like East Asia (e.g., China, South Korea), **cultural norms**

like filial piety further deepen gender-based disparities, as care responsibilities are disproportionately borne by women. Moreover, regional disparities were found to exacerbate these inequalities, with rural areas suffering from poorer access to institutional care, thus relying more on family-based support. This unequal distribution of resources leads to an **urban–rural divide** in the quality of care provided. The included literature primarily focuses on publications from China and South Korea, where a deontological view of old age, as described by Kornadt and Rothermund (2011), significantly influences the role of families in caring for the very old. This familial care model operates within the framework of a high-threshold long-term care system (Fu and Chui 2020; Hu et al. 2020). However, the process of **familialization** comes with notable challenges. Sociodemographic and economic changes are gradually eroding the viability of family-based care, leading to the emergence of socioeconomic inequalities (Lei et al. 2016). In this context, it is anticipated that women, given their longer life expectancy, may face greater disparities in care, while single individuals without family support are also at significant risk (Hu et al. 2020).

South Korea presents a unique case within this cultural framework, where men tend to exclude themselves from both familial care and an underdeveloped state care system, even when their own care needs arise (Jang and Kawachi 2019). In contrast, European countries exhibit a more complex situation. While expanded, market-oriented social systems have created a stronger reliance on external long-term care services, the reliability of such services, particularly in Germany, remains uncertain (von Elm et al. 2019). At the same time, economic crises can prompt **re-familialization** of care, as evidenced in Spain, where family-based care has resurged under the pressure of austerity measures (Spijker and Zueras 2020).

In this context, it is critical to discuss how existing inequalities may be reinforced and exacerbated in market-oriented care systems, such as those in Germany and Spain. Moreover, it is essential to evaluate the cultural images and age-related stereotypes that shape long-term care for the very old in market-oriented and family-based systems outside of Asia. This discussion also raises important questions about whether such social inequalities are justified in the name of cost savings (Kornadt and Rothermund 2011).

The impact of economic status on long-term care

The **economic determinants** of inequality in long-term care were also evident. Higher-income individuals tend to have better access to institutionalized care, while lower-income groups are more reliant on family care. This raises important questions about how economic policies and health care financing systems might perpetuate these inequalities.

In countries like Spain, economic crises have led to a re-familialization of care, where government allowances have encouraged family-based caregiving, further deepening inequality. The results of this scoping review show that **familialization**—the reliance on family members for elder care—emerges as a structural feature with significant potential to perpetuate inequalities. Additionally, the presence or absence of a **universal and low-threshold insurance system** plays a crucial role in shaping access to care (Floridi et al. 2021; Lei et al. 2016). The literature also demonstrates that **economic conditions** influence the extent of family involvement in care. In countries with higher unemployment rates and economic challenges, families are more likely to bear the responsibility for elder care, leading to further social and health inequalities. From these findings, it can be inferred that this dynamic contributes to increasing disparities within families and communities. Albertini and Pavolini (2017) suggest that social inequalities are especially pronounced in **market-oriented care systems** such as Germany's, where familial support plays a larger role. As a result, family members who provide care may face adverse **health and social consequences**, including the deterioration of their own well-being and unmet care needs as they age. However, these relationships between market-oriented systems, familial care, and inequality remain under-explored and warrant further research.

Tipping points and the transition to long-term care

A notable gap identified in the literature is the absence of a well-defined “tipping point” at which individuals transition from needing general health care to requiring long-term care. The review suggests that this transition is often influenced by a combination of factors including **age, disability, and economic circumstances**, but remains poorly understood, particularly in how these factors interact with social and health inequalities. Identifying such a tipping point could help in designing preventive interventions and timely support to mitigate the burden of long-term care on both families and formal care systems. In sum, a specific **tipping point** for the transition to long-term care could not be clearly identified in this review. US-based literature generally suggests that the transition from acute care, whether from a hospital setting (Harrison et al. 2017) or home care (Wolff et al. 2018), to long-term inpatient care is influenced by multiple factors rather than a single, definable moment. These transitions often highlight the **overreliance on home-based care**, which tends to be family-centered. However, these studies largely emphasize the cost considerations of social insurance programs in the United States, which are shaped by age-related stereotypes that influence policy decisions (Baltes and Mittelstrass 1992; Kühne 2005; Kessler 2012; Kornadt and Rothermund 2011, 2012; Filipp and

Mayer 2005; Göckenjan 2010; Wurm and Huxhold 2012; Schulz 2023).

Given this context, it is crucial that we explore how these tipping points can be more clearly conceptualized, taking into account the systemic logic behind them. Such an understanding would support the development of an internationally applicable framework for addressing these transitions in long-term care.

In conclusion of this discussion, the findings from the scoping review underscore the urgent need for more targeted research on social and health inequalities among the very old. The reliance on family-based care in market-oriented systems and the increasing privatization of care services in traditionally egalitarian systems both pose significant risks for deepening inequality. Addressing these issues will require not only further research but also the development of policies that ensure equitable access to long-term care services, regardless of gender, income, or region.

Despite significant demographic developments in most countries, the population aged 80 years and older has not yet become a well-defined focus of research on social and health inequalities. Several factors may explain this, including the potential influence of **age-related stereotypes** on research agendas, funding priorities, and policy decisions (Kühne 2005; Kessler 2012; Kornadt and Rothermund 2012; Filipp and Mayer 2005; Göckenjan 2010; Wurm and Huxhold 2012; Remmers 2015; Wurm et al. 2013). However, the findings of this scoping review suggest that it is not only the health care system alone that determines whether families assume responsibility for the health and long-term care of older adults, or whether external services are utilized; **old age** itself plays a critical role in these decisions.

Given the complexities of aging, it becomes more likely that health care services outside the family will need to be accessed as individuals age. Yet, access to these services is shaped by several factors, including the structure and financing of health care systems, the concepts guiding these systems, and the reliance on family-based services. Individuals' social milieu also influences whether the health care and nursing services they receive in old age are truly aligned with their needs.

Limitations

Given the research context, this review was limited to studies predominantly based on secondary data analyses. This includes the works of Albertini and Pavolini (2017), Floridi et al. (2021), and Spijker and Zueras (2020), who analyzed data from the SHARE study. Other secondary data analyses included in this review were conducted by Hu et al. (2022) using data from the ELSA survey, Hu et al. (2020) from the Social Survey of Older People in Urban China, Lei et al.

(2016) drawing on the Chinese Longitudinal Healthy Longevity Survey, and Steinbeisser et al. (2018), who analyzed data from a regional survey in Germany. Further secondary analyses were carried out by Jang and Kawachi (2019) using data from the Korean Longitudinal Study of Ageing, and Wolff et al. (2018), who utilized data from the NLTC (1999–2004) and NHATS (2011).

Only Fu and Chui (2020) conducted primary research through a Chinese cross-sectional study, while Harrison et al. (2017) performed a systematic review. Rostgaard et al. (2022) relied on government statistics and policy documents. Some cases, particularly those drawing from SHARE, NLTC, and NHATS, were based on survey waves that are now somewhat outdated, meaning the data may not fully reflect current conditions. Another limitation identified is the **imprecision in terminology** used in several studies, particularly concerning long-term care systems and the range of services covered (Albertini and Pavolini 2017). In addition, certain surveys did not cover inpatient care (Floridi et al. 2021; Steinbeisser et al. 2018).

Several studies failed to report limitations, including Lei et al. (2016), Spijker and Zueras (2020), and Wolff et al. (2018). The study by Rostgaard et al. (2022) similarly did not discuss limitations and remained largely descriptive. Hu et al. (2022) acknowledged potential biases in the ELSA survey, such as random attrition and cohort effects, while Hu et al. (2020) and Steinbeisser et al. (2018) discussed information bias. As such, many of the included studies are based on **heterogeneous concepts** (e.g., Harrison et al. 2017, for the US context), particularly concerning the legal frameworks of long-term care for older adults. Moreover, the issue of **health inequalities** remains unclear, particularly with respect to **ethno-cultural disparities**—albeit without the problematic lens of the term “race” (Amesberger and Halbmayr 2005).

Therefore, while this scoping review cannot claim to offer complete or high-evidence results, it does provide important insights into the topic and highlights the urgent need for further research in this area.

Conclusions

The shifting demographics in the OECD countries demonstrates the high relevance of the question of health and nursing care for very old people. However, only since the 1990s and 2000s has the research literature critically reflected on the impact of the social and health situation of very old people, for example, in terms of morbidity and mortality differences, and utilization of family or non-family health and care services.

Age stereotypes have been discussed theoretically in the gerontology research literature for several years, but their

role in research (for example, how they guide questions about health and social inequalities at advancing age) is unclear. In addition, it remains unclear how they shape health and long-term care at older age in the design of service provision in different countries, and how age stereotypes related to membership in social milieus influence perceptions of very old people.

This scoping review indicates that health and care disparities in the care of the very old are more likely to occur in market- and family-based systems than in public-egalitarian systems of care. However, there are tendencies in the latter systems to prioritize services that are seen as promoting inequities in care for the elderly. This is likely to have a detrimental effect on the provision of care and associated inequalities, and thus there is an urgent need for consistent terms and primary studies in this area of research.

The results of the scoping review indicate very clearly that the very old population, in relation to the question of social and health inequalities, has not yet become the focus of health science research in a differentiated way. In many cases, the population group over 65 years is considered in research analyses. Nevertheless, it must be questioned whether the situation of the very old is similar. In particular, gerontological assumptions on social and health inequalities leave much room for speculation.

Only a few publications have focused on social and health inequality in very old populations (Zimmermann et al. 2022; Fey and Wagner 2021). Against this background, diverse research desiderata arise:

1. An interdisciplinary conceptual groundwork is needed to define social inequality in the group of the very old, to investigate the effects of inequality in relation to its determinants, indicators, and the utilization of health care services.
2. A theoretical model should be drawn from the conceptual groundwork regarding the presence of informal care, age stereotypes, health literacy, financing and orientation of the health and care system, gender and sex, gender role attributions, society, culture, economic conditions, social class affiliation, determinants of health and social inequality, and so on.
3. There is a need for differentiated research regarding the correlations of old age and social and health inequalities. It should focus on the demographic development (Schulz 2023) from a public health perspective with regard to appropriate research-based measures and interventions addressing diverse social milieus and status groups.
4. This includes a further differentiated research basis on the question of the “tipping point,” the transition to the need for long-term care, as well as whether and how social and health inequalities in the course of life, but also at old age, might promote this transition. The ques-

tion arises as to what extent past and current health behavior, influences of occupational biography, life- and environment-related factors in the course of life, type of financing, and offers in the health care system influence the emergence and deterioration of the transition to the need for health and care at old age. So far, it remains unexplored how concepts such as Healthy Ageing and other preventive services at old age can influence this “tipping point” in order to postpone the need for long-term care.

5. The literature search and evaluation reveal that the concept of “long-term care” is understood differently depending on the country (structures, financing, etc.), making it difficult to compare empirical results. In the published contributions, it was not clear whether, according to international understanding, “long-term care” also subsumes health care services or exclusively nursing measures and interventions. It seems that a good, sound conceptual analysis based on international literature reviews on the term “long-term care” would be useful.

The gerontological theses on the effects of social and health inequalities at old age seem to be implicit in the studies included in this scoping review. However, there appears to be an urgent need to develop this into a public health research topic. Demographic trends are expected to result in a larger population of the very old in countries’ health care systems in the future. Differentiated findings on the consequences of social and health inequalities at old age will provide a significant database for these health systems to develop population group-oriented measures of health and care provision in order to prevent disadvantageous care situations.

At the same time, it is clear that many studies have been conducted in the form of secondary data analyses. It is therefore recommended that interdisciplinary study concepts be developed based on the above suggestions and implemented to generate primary data. There is a need for well-founded studies on the question of what effects differently financed and organized health care systems have on defined indicators, outcomes, and adequacy of health and nursing care for the very old.

Author contributions Martina Hasseler: Conceptualization, Writing—original draft.

Sven-Nelson Ruppert: Project administration, Investigation, Writing—methodology, Visualization, Review.

André Heitmann-Möller: Project administration, Investigation; Writing—results, Editing, Review.

Enno Nowossadeck: Editing, Review, Additional scientific information.

Judith Fuchs: Editing, Review, Additional scientific information.

Deborah Hahm: Investigation, Editorial support.

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Code availability Not applicable.

Declarations

Ethical statement This research was focused on relevant literature. No data were sampled from and no interventions were conducted on humans. According to the rules of the ethical review board of the Ostfalia University of Applied Sciences, no formal approval was required prior to conducting the research.

Ethics approval Not applicable.

Consent to participate Not applicable.

Consent for publication Not applicable.

Conflicts of interest The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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