

Review

# The Impact of Long-Term Care Needs on the Socioeconomic Deprivation of Older People and Their Families: Results from Mixed-Methods Scoping Review

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**Abstract:** Background: Long-term care (LTC), poverty, and socioeconomic deprivation are globally significant social issues. Ongoing population aging trends and the recent social and health emergencies caused by the COVID-19 pandemic crisis have highlighted the need for macro-level LTC and welfare system sustainability strategies. Aims: This scoping review (ScR) explores the relationship between LTC needs, the health status of older people, and the risk of socioeconomic deprivation for their households. Methods: The methodology considers different relevant sources: (a) the guidelines for ScR proposed by Lockwood et al.; (b) the recommendations of Munn et al.; (c) the PRISMA guideline for scoping reviews; and (d) the Joanna Briggs Institute (JBI) checklist. Sixty-three papers are included in the mixed-methods analysis. Results: The findings reveal the existence of a debate that seeks to understand the different characteristics of the relationship between the investigated issues. Relevant gaps in the literature are identified in terms of the concepts and approaches of the studies analyzed. Conclusions: The results indicate that the reciprocal relationship between LTC needs, supply, and the risk of socioeconomic deprivation is understudied. Future studies should focus on the causal relationship between the two phenomena and identify any internal factors that may be involved.

**Keywords:** aging; older people; long-term care; poverty risk; household; review



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## 1. Introduction

In recent decades, the literature has revised the concept of poverty, which was traditionally defined in terms of income level [1], offering a vision of poverty as a more complex, articulated, and multidimensional phenomenon [2,3] that is characterized by an intrinsic interconnectedness between different dimensions, including economic, social, and human opportunities (e.g., school and health system accessibility, job availability, households structures, territorial availability of resources, and accessibility to services) [4]. This is well-reflected in the international plans developed to counteract multidimensional poverty, such as those identified by initiatives including “Transforming our world, the 2030 Agenda for sustainable development” and the “Third ten-year action plan for the eradication of poverty (2018–2027)” [5], which promote the dissemination of studies for a more in-depth understanding of the dimensions of deprivation in order to target better those population segments characterized by specific social needs, for instance, those related to long-term care (LTC) conditions.

The impact of population aging on health and welfare systems around the world is widely recognized [6–8], resulting in an increase in the demand for formal and informal

care [9] and making LTC a priority for national and international policies [10–14]. In this regard, European LTC schemes are complex combinations of health and social policies, services, and interventions [6,15], whose sustainability is threatened by demographic and fiscal circumstances [16] and, to an even greater extent, by the recent COVID-19 pandemic. In this context, reducing inequalities in health and LTC provision remains a central pillar for many countries' sustainable development [17,18].

Previous studies underlined the higher risk of social exclusion and social inequality for informal carers, who are often women who frequently feel compelled to limit their work and social lives to care for their relatives [19]. Over and above the indirect cost of LTC provision, out-of-pocket expenditure for private care is rising, even in advanced social protection systems [20]. For these reasons, Mitra and colleagues have recommended that future research should focus on the private side of LTC expenditure borne by families [21]. Within this framework, several studies have investigated and found that older people living in materially deprived conditions have a diminished ability to cover their own care needs [22,23], a situation that has a significant impact on both their psychosocial well-being [24,25] and cognitive health [26]. Despite these efforts, the literature largely overlooks the effects of health conditions on the socioeconomic status and related risk of socioeconomic deprivation (SED) of either dependent older people or the family members who care for them. Similarly, at the policy level, initiatives and schemes supporting family carers do not seem to underpin these situations fully and are, therefore, unable to adequately counteract the risk of poverty and social exclusion arising from informal care activities for dependent people [27]. In light of the current state of affairs, there is an urgent need for a greater focus on the relationship between LTC needs and the risk of socioeconomic deprivation and poverty to understand better the dynamics underlying this phenomenon and how innovative policies can be formulated globally to tackle it. This scoping review study (ScR) seeks to contribute to the debate on this specific issue, thereby supporting future research on how health-related LTC expenses affect the financial situation of care recipients and the family members who care for them. Specifically, this study identifies the primary research gaps and examines how the scientific literature addresses the multidimensional perspective of the socioeconomic deprivation concept.

This study is conducted within the framework of the Family International Monitor (FIM) and the "Socio Economic deprivation related to effect of the presence of Dependent older people: strategies for Innovative Policies in Europe SereDIPE project (Horizon 2020 MSCA-IF-2019 Grant Agreement No. 888102). Using a multidimensional perspective of the concepts of "family" and "deprivation" [28], both projects are concerned with familial material and social deprivation, with a particular focus on care needs.

## 2. Materials and Methods

To ensure the highest possible standards of reporting, this ScR is based on a methodology that considers the recommendations formulated by the following relevant sources: (a) the guidelines for ScR proposed by Lockwood et al. [29]; (b) the Munn et al. [30] recommendations; (c) the PRISMA guideline for scoping reviews [31]; and (d) the Joanna Briggs Institute (JBI) checklist [32]. The chosen guidelines were coherent and non-overlapping, as possible risks (e.g., Lockwood, including suggestions from PRISMA guidelines and the JBI checklist) were adequately considered. The full details of this study protocol are described in Martarelli et al. [33]. Combining these methods ensured that the review's path remained linear and focused, according to Lockwood and Munn's recommendations. At the same time, the PRISMA and JBI approaches concurrently limited the loss of potentially valuable papers on the topic.

Moreover, specific guidelines supported different aspects, such as the suitability of the chosen methods (JBI checklist) and the analysis of data (PRISMA). Lastly, incorporating these suggestions enabled the authors to consider the pre-planning phase as the starting point for the design of the ScR study protocol. This allowed the authors to focus on a

complex and multidimensional issue, such as the relationship between LTC needs and care strategies and the risk of SED. Figure 1 depicts the ScR's flowchart.

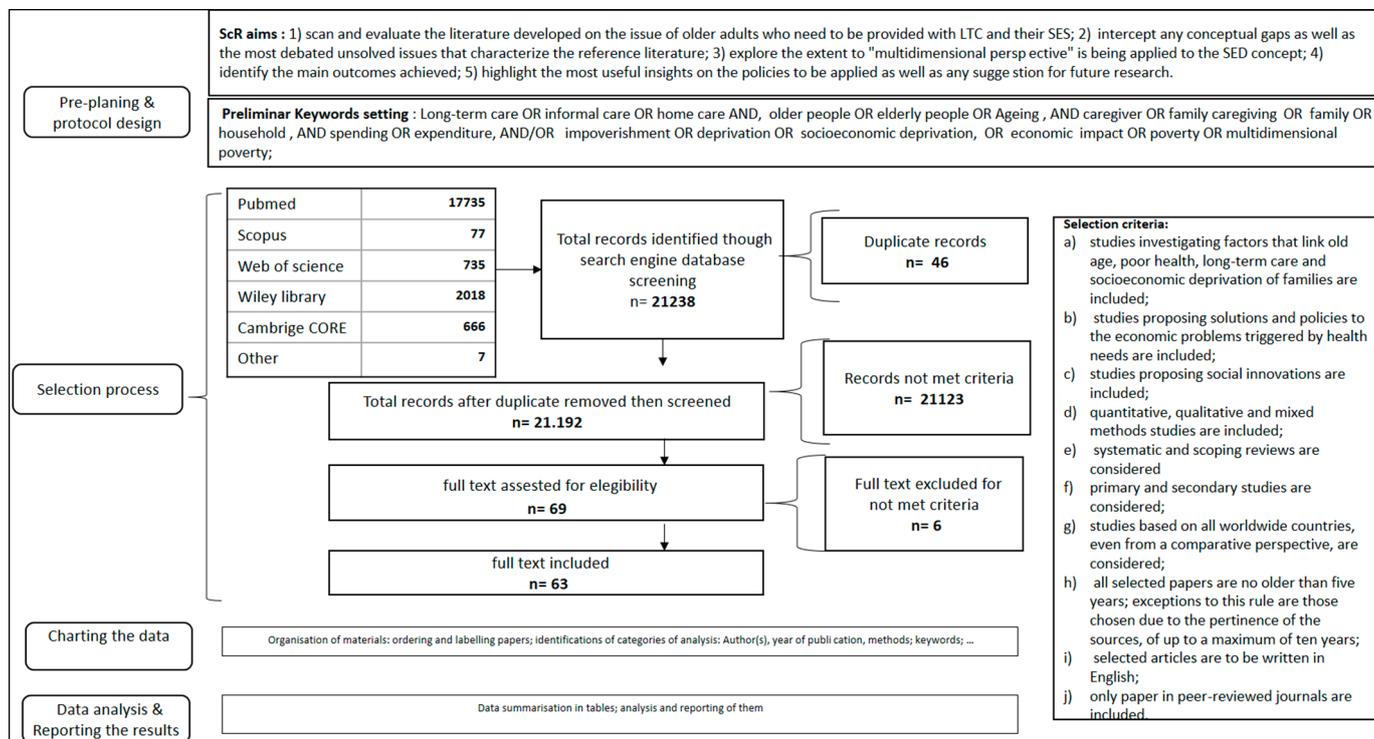


Figure 1. Flowchart of scoping review.

### 2.1. Pre-Planning

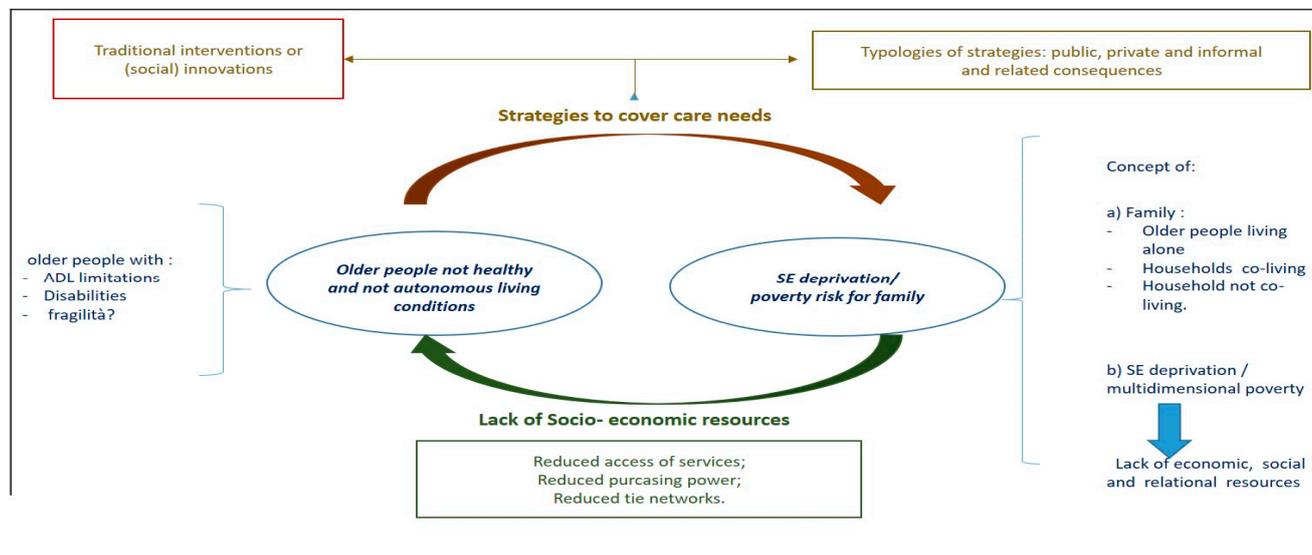
Lockwood and colleagues [29] pointed out that pre-planning was the phase that determined a review project's success. The brainstorming and brief preliminary research conducted during this phase enabled the authors to clarify the conceptual framework, determine specific research questions, and identify the set of keywords necessary to implement the search.

### 2.2. Conceptual Framework

The relationship between LTC care needs and SED risk is composed of three main elements: (a) care needs, often expressed through the identification of a specific target of study; (b) socioeconomic deprivation, understood as a multidimensional factor; and (c) the characteristics of the relationship between these two factors.

Figure 2 illustrates that there are two possible directions in which this relationship can develop. The first relates to the situation of people, including those in later life, who live in SED conditions and can therefore count on the reduced availability of social, health, and economic resources [22,23], which in turn contributes to a diminished self-care capacity, as well as the deterioration of their health, autonomy, and overall living conditions [23–28,33]. The other direction concerns dependent older people with a reduced self-care ability, who seek to cover their LTC needs via healthcare-seeking behaviors based on cost-coping mechanisms, such as the direct buying of care provision [34,35] or via informal care (e.g., a reduction in employment income) [36,37]. Independently of personal economic conditions and welfare state characteristics of the country, these mechanisms impact directly or indirectly (e.g., by taxation rate) on the socioeconomic status and, consequently, the associated SED risks for both older people and their family caregivers (co-residing or otherwise) [38,39]. To analyze these mechanisms, this study used the concept of multidimensional deprivation based on Erikson's theory [40], as it allowed us to emphasize that SED encompassed more than just material deprivation and economic impoverishment

and to underline that economic and social inclusion aspects were core dimensions to take into account when examining the effects of care strategies for dependent older people and family caregivers.



**Figure 2.** Conceptual framework of the relationship between LTC needs and socioeconomic deprivation (SED) risk.

2.3. Research Questions, Methods, and Keyword Identification

This review examined the scientific literature to explore the relationship between LTC needs and the risk of socioeconomic deprivation for older people and their caregiving relatives. At the end of the pre-planning phase, three specific research questions were formulated to address this general objective: (1) to scan the literature on the topic of older adults who required LTC and their socioeconomic status; (2) to identify any conceptual gaps and the most debated unresolved issues in the literature; and (3) to determine the extent to which the so-called “multidimensional perspective” was applied to the SED concept. To this end, the authors chose a mixed quantitative and qualitative approach based on frequency and content analysis. Table 1 shows an overview of the analytical categories considered concerning the three research questions and relative tables in the Section 3.

**Table 1.** Study aims/research questions by selected analytical categories, analysis types, and table n. results.

	Table n.	Categories	Aims/Research Questions		
			No. 1	No. 2	No. 3
Quantitative analysis	2	Target of population	x	x	
	3	Distribution of deprivation dimensions <sup>1</sup>			x
	3	Multidimensional deprivation level <sup>2</sup>			x
	4	Focus (aims) of the study <sup>3</sup>	x	x	x
	4	Perspective on the health–SED relationship <sup>4</sup> Direction of health–SED relationship	x	x	x
	5	Countries involved in the selected studies	x	x	
	5	Income level of the countries	x	x	
	6	Type of data (primary or secondary)	x	x	

Table 1. Cont.

	Table n.	Categories	Aims/Research Questions		
			No. 1	No. 2	No. 3
Quantitative analysis	6	Typologies of design (longitudinal or cross-sectional studies)	x	x	x
	A2	Content results on the studied relationship	x	x	x
	A2	Suggestions for future studies	x	x	x

X: yes; <sup>1</sup>: All the dimensions through which people—according to the authors of the selected articles—experienced deprivation (considering that this ScR aims to find out whether or not monetary and non-monetary dimensions were simultaneously included); <sup>2</sup>: articles were scored on the basis of the number of dimensions considered; <sup>3</sup>: purposes as contextualized and expressly argued by the authors (focus on title words, abstracts or, if present, dedicated paragraphs); <sup>4</sup>: how the authors argued about the cause–effect relationship between the investigated factors, i.e., whether they used the one-way or the two-way concepts of the health–SED relationship (the former involves having a default setting whereby either health directly affects SED or SED directly affects health; the latter implies addressing the issue of bi-directionality).

As shown in Figure 2, the authors identified a set of keywords to cover the chosen conceptual framework’s concepts and relationships. As detailed in the protocol paper [33], the authors searched various databases using the keywords defined in the pre-planning phase that were strictly related to the abovementioned objective. Thirteen keywords were included in the first set of searches: “long-term care”, “older people”, “elderly”, “aged”, “caregiver(s)”, “family caregiving”, “impoverishment”, “deprivation”, “socioeconomic deprivation”, “economic”, “economic impact”, “poverty”, and “multidimensional poverty”. After the initial exploratory searches, additional keywords were added progressively in order to refine the search: “household”, “expenditure”, “healthcare expenditure”, “spending”, “payments”, “economic impoverishment”, “costs”, “burden”, “socioeconomic status”, “socioeconomic/socioeconomic”, “household”, “social differences”, “informal care”, “care”, “carers”, “(inter)generational”, “activities of daily living”, “ADL limitations”, “functional limitations”, “disability”, “life expectancy”, “health”, “health problems”, “income”, “low-income”, and “low-income countries”. Forty-one keywords were used since they were deemed congruent with the conceptual framework (Figure 2).

#### 2.4. Selection Process

The entire search process was conducted between March 2021 and April 2022. Four crucial research databases were accessed: Pubmed, Scopus, Web of Science, and Wiley Online Library. A few items were also extracted from non-digital archives or other electronic databases, i.e., “Journal Storage” (JSTOR) and “Cambridge Core” (the books and journals platform from Cambridge University Press). As indicated above, all of the selected search terms were English words. Figure 3 details the search strings used in the different search engines.

As a result of the 24 different keyword combinations emerging from the search process (see [33] for details), 21,200 items, excluding duplicates, met the criteria for selection. They were screened for the scoping review, i.e., included or excluded according to the study protocol’s criteria.

1	(((caregiver[Title]) AND (poverty[Abstract])) OR (socioeconomic deprivation[Abstract])) AND (older people [Abstract]) <sup>1</sup>
3	(((("2019/01/01"[Date—Publication]: "2019/12/31"[Date—Publication])) AND (long term care[Title])) AND (socioeconomic deprivation[Abstract]) OR (poverty[Abstract]) <sup>2</sup>
6	(((poverty) AND (older people)) AND (informal care[Title/Abstract])) OR (home care[Title/Abstract]) <sup>3</sup>
8	(((family caregiver[Title/Abstract]) AND (socioeconomic deprivation[Title/Abstract])) OR (poverty[Title/ Abstract]) <sup>4</sup>
10	(((home care[Title/Abstract]) OR (informal care[Title/Abstract])) AND (older people[Title/Abstract])) OR (elderly[Title/Abstract]) AND disability[Title/Abstract]) <sup>5</sup>
11	(((("Age and ageing"[Journal]) AND (long term care[Title])) AND (socioeconomic deprivation[Title/Abstract])) OR (poverty[Title/Abstract]) <sup>6</sup>
16	(((("Australasian journal on ageing"[Journal]) AND (intergenerational)) OR (ageing)) AND (costs) <sup>7</sup>
17	(((poverty[Title/Abstract]) OR (multidimensional poverty[Title/Abstract])) AND (disability[Title/Abstract])) OR (functional limitations[Title/Abstract]) AND (low-income countries) <sup>8</sup>
19	((((disability[Title]) AND (poverty[Title/Abstract])) OR (deprivation[Title/Abstract])) OR (economic costs [Title/Abstract]) AND (older people[Title/Abstract])) OR (elderly[Title/Abstract]) AND (low income) <sup>9</sup>
20	(((poverty[Title]) OR (multidimensional poverty[Title])) OR (deprivation[Title])) AND (age[Title/Abstract]) OR (ageing[Title/Abstract]) <sup>10</sup>
21	(((socioeconomic[Title]) OR (socio-economic[Title])) AND (health[Title/Abstract])) OR (health problems [Title/Abstract]) AND (care[Title/Abstract]) OR (ADL limitations[Title/Abstract]) <sup>11</sup>
22	(((life expectancy[Title/Abstract]) AND (social differences[Title])) OR (elderly[Title])) AND (socioeconomic status[Title/Abstract]) <sup>12</sup>
23	(((poverty[Title]) OR (healthcare expenditure[Title])) AND (income[Title/Abstract])) OR (low-income countries[Title/Abstract]) AND (deprivation[Title/Abstract]) OR (payments[Title/Abstract]) <sup>13</sup>
24	(((family caregiver[Title]) OR (older[Title])) AND (burden[Title/Abstract])) OR (socioeconomic status[Title/ Abstract]) AND (activities of daily living[Title/Abstract]) OR (functional limitations[Title/Abstract]) <sup>14</sup>

<sup>1</sup>Filters (2): Abstract; Journal; <sup>2</sup>Filters (5): Abstract; Journal Article; English; MEDLINE; Aged: 65+ years; <sup>3</sup>Filters (6): Article; Last 5 years; English; MEDLINE; Aged 65+; 80 and over; <sup>4</sup>Filters (5): Article; Last 5 years; English; Aged: 65+; 80 and over; <sup>5</sup>Filters (7): Article; last 5 years; English; 80+; 45+; 45–64; 65+; <sup>6</sup>Filters (4): Journal Article; from 2019/1/1 to 2019/12/31; English; MEDLINE; <sup>7</sup>Filters(4): Journal Article; time span: from 2016/1/1 to 2019/12/31; English; MEDLINE; <sup>8</sup>Filters (3): Article; 1/1/2017–31/12/19; English; <sup>9</sup>Filters (3): Articles; last 10 years; English; <sup>10</sup>Filters (5): Article; English; 01/01/2019–present; 65+ and 80+ years; <sup>11</sup>Filters (3): Article; English; last 10 years; <sup>12</sup>Filters (3): 45–64 years; aged: 65+ years; time span: from 01/01/19 to 31/12/2019; <sup>13</sup>Filters (3): from 01/01/2019 to 31/12/20; article; English; <sup>14</sup>Filters (3): from 01/01/2019 to 31/12/20; article; English.

## (A)

2	"intergenerational" anywhere and "ageing" anywhere and "expenditure" anywhere published in the "Australasian Journal on Ageing" <sup>1</sup>
4	keywords to enter: ageing; generational; spending; family <sup>2</sup>
5	(ABS(expenditure) AND KEY (older AND people) AND ABS (family)) <sup>3</sup>
7	TOPIC: (impoverishment) AND TOPIC: (household) AND TOPIC: (caregiver) OR TOPIC: (deprivation) OR TOPIC: (poverty) AND TOPIC: (elderly) AND TOPIC: (aged) AND DOCUMENT TYPES: (Article) AND LANGUAGE (English) <sup>4</sup>
9	(TITLE-ABS-KEY ("older AND people" OR elderly) AND TITLE-ABS-KEY ("household AND impoverishment") OR ABS (deprivation) AND KEY (economic)) AND (LIMIT-TO (SUBJAREA, "MED") OR LIMIT TO (SUBJAREA, "SOCI")) <sup>5</sup>
12	"informal care" OR "home care" anywhere and "older people" OR "elderly" anywhere and "carers" in Abstract <sup>6</sup>
13	"informal+care"+OR+"home+care" anywhere and "older people" OR "elderly" anywhere and "carers" in Abstract <sup>7</sup>
14	"economic" anywhere and "older people" OR "aged" anywhere and "family" anywhere and "caregivers" in Abstract and "intergenerational" anywhere <sup>8</sup>
15	"poverty"+OR+"multidimensional poverty" in Abstract and "health" OR "informal care" OR "long term care" in Abstract <sup>9</sup>
18	"informal care" OR "long term care" in Abstract and "family" anywhere and "aged" OR "elderly" in Abstract and "carers" anywhere <sup>10</sup>

<sup>1</sup>Wiley Online Library; <sup>2</sup>Cambridge University Press. Filters (3): Journal "Ageing & Society"; 2016–2021; "only show content I have access to"; <sup>3</sup>Scopus. Filters: not applied; <sup>4</sup>Web of Science. Categories: (health care sciences services OR sociology OR health policy services OR social issues). <sup>5</sup>Scopus; <sup>6</sup>Wiley Online Library. Filters (3): 2012–2021; *Health & Health care*; Journals; <sup>7</sup>Wiley Online Library. Filters (5): journals; all dates; Health Economics; Australasian Journal on Ageing; Scandinavian Journal of Caring Sciences; <sup>8</sup>Wiley Online Library; <sup>9</sup>Wiley Online Library. Filter: 2015–2010; <sup>10</sup>Wiley Online Library. Filter: 2015/2019.

## (B)

**Figure 3.** Search strings in Pubmed (A) and other search engines (Scopus, Web of Science, and Wiley Online Library) (B).

The following articles were chosen for inclusion on the basis of these selection criteria: (a) those focused on the relationship between poor health and the aging process, long-term care needs, and the socioeconomic deprivation of chronically ill older people and their families; (b) those proposing solutions to the economic problems triggered by health needs; (c) those proposing social innovation policies; (d) those based on a specific method (quantitative or qualitative) or mixed methods (i.e., either of these categories); (e) both surveys and systematic or scoping reviews; (f) those referring to “primary” or “secondary” studies; (g) those conducted in high-income or low- and middle-income countries (i.e., either one of the latter two; articles based on a comparative perspective were also included); (h) those that were published within the past five years (exceptions to this rule were articles chosen due to the relevance of the sources, published within the past ten years as a maximum); (i) those written in English; and (j) those published in peer-reviewed journals. Two researchers (GC and RM) independently screened the extracted items based on the titles and abstracts. Ultimately, 21,131 articles were excluded for failing to meet the criteria. Therefore, a total of 69 articles were provisionally selected. A second check of excluded and included papers was undertaken, including a total of 63 papers in the ScR. No other references were found by manual searching or by analyzing the references of included articles. Appendix A contains the complete list of selected papers, including their bibliographic data.

### 2.5. Data Extraction

In order to organize the information for analysis purposes, the authors arranged the collected papers by date, from oldest to newest, then numbered and labeled them sequentially from 1 to 63. Based on a modified JBI data extraction form, a set of 9 analysis categories were determined per the ScR goals and typologies of analysis (Table 1). Two researchers (GC and RM) independently extracted the items based on the identified categories. To collect common information, a thematic and content analysis [41] based on the ex-post categorization of variables [42,43] was performed to (1) detect the presence of variables in each selected study and (2) identify the selected variable’s different modalities. Moreover, a specific dataset was realized to collect the qualitative data to detect: (1) the main content results on the relationship between LTC needs, the health status of older people, and SE conditions of families; (2) identify suggestions for future studies and insights for policymakers; and (3) make them easy to read based on the classification and summarization of specific contents. A summarized table of the content data collected is detailed in Table A2.

### 2.6. Data Analysis and Reporting

The quantitative analysis was based on the frequency calculation of internally determined modalities for each selected category and summarized in reporting tables (Tables 2–6). Given their complexity, additional details were provided for three of the variables in order to clarify their internal definitions better. First, 11 different modalities were identified based on the nine dimensions used by Erikson’s theory to measure the multidimensionality of the deprivation concept utilized by the selected studies. The authors decided to separate “material state” from “network ties” and “social integration” for a better correspondence with the dimensions utilized in the articles and to provide a more accurate evaluation of the deprivation concept’s multidimensional degree. The final list of dimensions is detailed in Table 4. Secondly, the degree of multidimensional deprivation was calculated by adding the number of dimensions used by each article. The definition of three multidimensional levels (low, medium, and high) facilitated the observation of the distribution of levels in the deprivation’s multidimensional concept. Lastly, the World Bank classifications of the country’s income level (low, medium–low, medium–high, and high) were applied and are reported in Table 5. The qualitative part of the study used a descriptive interpretative approach to provide an in-depth understanding of the contents of reviewed papers. After an in-depth reading of the reviewed articles, two authors (RM, GC) identified 22 papers

relevant to their contents. According to the explorative aim of the scoping review strategy, the two authors used thematic and content analyses in this selection of papers to better focus the qualitative analysis on significant results.

**Table 2.** Target population investigated.

Targets	n.	%
Older people	23	36.5
Households and/or heads of households	15	23.8
Caregivers	13	20.6
No specific target	7	11.1
Not applicable	5	7.9
Total	63	100

**Table 3.** The concept of deprivation: dimensions and multidimensional deprivation levels.

Dimensions of Deprivation	n.	%
Material wealth (e.g., income; savings; assets)	53	84.1
Health status (self-reported health, health insurance coverage, and health services accessibility)	51	81
Education/social status	47	74.6
Occupational status	35	55.6
Social network ties	35	55.6
Marital status	35	55.6
Housing	30	47.6
Social integration level (e.g., presence or absence of barriers that prevent people from participating in society)	16	25.4
Work–life–leisure balance (e.g., caregiving burden in terms of lack of spare time)	4	6.3
Perceived safety	3	4.8
Political participation	2	3.2
Total	63	
<b>Multidimensional deprivation level (score 1–10)</b>	<b>n.</b>	<b>%</b>
High (range: 7–9)	17	27.0
Medium (range: 5–6)	27	42.9
Low (range: 2–4)	10	15.9
Not applicable	9	14.2
Total	63	100

**Table 4.** Focus and direction of the investigated relationship between health, care needs, and SED.

Focus of the Study	n.	%
Relationship between health and socioeconomic deprivation (SED) factors	15	23.8
Relationship between health and material deprivation factors	14	22.2
Financial burden due to chronic conditions and healthcare consumption	24	38.1
General purposes	10	15.9
Total	63	100
<b>Direction of health–SED relationship</b>	<b>n.</b>	<b>%</b>
Health affects of socioeconomic conditions (health as an explanatory variable)	24	38
Socioeconomic conditions affect health (health as a dependent variable)	24	38
Two-way concept of the health–SED relationship (they mutually influence each other)	10	16
Other (i.e., indirect relationship)	5	8
Total	63	100

**Table 5.** Territorial representativeness.

Number of Countries Involved in the Selected Studies	n.	%
One country (national or sub-national levels)	51	81
Two or more countries (cross-national research)	11	17.5
Not applicable (no country list)	1	1.5
Total	63	100
Income level of the countries involved in the selected studies	n.	%
Middle income	27	42.8
High income	32	50.8
HMICs	3	4.8
Low income	1	1.6
Total	63	100

**Table 6.** Typologies of study: data and design.

Data Typology	n.	%
Secondary data analysis	53	84.1
Theoretical studies	7	11.1
Primary research studies	3	4.8
Total	63	100
Type of design	n.	%
Longitudinal	13	20.6
Cross-sectional	27	42.9
Others	23	36.5
Total	63	100

### 3. Results

The ScR found 63 papers in the ten years covered. This study's first finding was that there was a certain level of interest in the scientific literature regarding the association between older people's health and socioeconomic conditions. The quantitative results are summarized in Section 3.1 according to the selection of variables identified in Table 1 for the quantitative analysis. Section 3.2 refers to qualitative results from selecting 22 papers identified for other content relevance by the authors, as explained in the Section 2 Materials and Methods.

#### 3.1. Descriptive Quantitative Results

##### 3.1.1. LTC Needs Defined by Targets: Older People, Caregivers, and Households

As for the relationship between people's LTC needs and deprivation dimensions, 80% of the analyzed articles targeted a specific population (Table 2). Specifically, older people were the most researched target (23 of 63 articles), followed by households (15 articles; 23.8%) and caregivers (13 articles; 20.6%).

The in-depth analysis of the data reported in Table 2 confirms the prevalent research strategy of targeting older people by mixing the groups of the oldest old (80 years or older) and younger senior population (65–75 years old) in order to estimate the potential level of care needs.

A case in point was provided by Flores-Flores et al. [44], who focused on the impact of poverty on health insurance opportunities and the use of preventive services. Their study included three different age groups: 65–70, 71–75, and 76–80 years old. The study also showed a higher incidence of limitations in activities of daily living among the oldest old, whose rate of disability was about five times that of people aged 36 to 64 years. The study by Wilkinson. et al. [45] also offered a clear example, as it targeted Medicare beneficiaries aged 65+ years to emphasize their needs for all the services that Medicare, the well-known federal health insurance program in the USA, does not cover (i.e., long-term services and

support for personal care and assistive devices). This article investigated the extent to which the financial burden of older Americans was commensurate with the level and intensity of their care needs.

Moreover, some studies applied a different concept of “older age” due to the need to investigate not only the age group to which an individual belongs, but also whether or not the average age at first infirmities tended to change significantly over time. They not only looked into how old “older people” were, but also the age at which older adults were “really old”. To this end, they covered a broad spectrum of individuals aged 60 years and older. For example, Murayama et al. [46] conducted a study on the long-term changes in a functional capacity among older people in Japan (2020). Based on the data drawn from the National Survey of the Japanese Elderly (NSJE), this study focused solely on those aged 60 years and older at baseline. The Myanmar Aging Survey (MAS) also used a sample of persons aged 60 years and older, as described by Teerawichit Chain et al. [47]. Their article defined “older people with long-term care needs” as those reporting one or more physical difficulties, not only the inability to perform activities of daily living—both instrumental and non-instrumental activities, i.e., IADL and ADL, respectively—but also difficulties with physical functions, such as “lifting 5 kg in weight”, “walking up and down stairs”, “walking 200 to 300 m”, “crouching/squatting”, and “using fingers to hold things”.

The second-largest category of studies, comprising nearly a quarter of the 63 papers analyzed, concerned those who saw the household or the head of the household as their main research target. In this case, the research focused on the relationship between the health conditions of older family members and eventual material deprivation aspects for a specific member (e.g., an older member, head of the household) or the entire family. An example of this approach was provided by Guerchet et al. [48], whose investigation focused on how the presence of care-dependent older members affected the economic functioning of their households, classified according to disease evolution and level of persistence (for instance, by distinguishing between “chronic-care households” and “incident-care households”). This 2018 study was characterized by its use of reliable financial strain indicators (e.g., loans, shares, and extra work) and examination of a wide range of household income components (both stable and transitory). The article by Salari et al. [49] on the most relevant household characteristics associated with “catastrophic health payments” is another example in this regard. Based on the data from the Kenya Household Health Expenditure and Utilization Survey 2018 (KHHEUS), this study concluded the impoverishment effect of the presence of older members, particularly regarding the health-seeking behavior of those afflicted with chronic diseases. In addition, Zhao et al. [50] investigated the caregivers as the study’s primary research target, explicitly focusing on informal care contexts and the implications on caregivers’ quality of life and social and material deprivation. Belonging to this group, the study by Zhou et al. [51] is one of the few articles focusing on the relationship between the health status of caregivers and that of “care recipients”, e.g., spouses or older parents requiring care. This is important since informal caregivers often complain about their mental state (anxiety, depression, exhaustion, etc.). This study also explains how the income level of adult children influences caregiving decisions, since the likelihood of receiving assistance from one or more adult children appears to increase as their average income decreases. Butrica et al. [52] also focus on caregivers, although their article almost exclusively investigates the direct costs of parental or spousal caregiving. Carers are repeatedly described here as having few job opportunities and a lower percentage of asset growth.

Additionally, the article by Messer [53] can be cited as evidence that material deprivation among sick older people is occasionally partially self-imposed since they are ashamed to admit to their economic and health requirements. This is also one of the few qualitative studies we found, allowing us to observe how easily health costs may lead to a tense family environment.

Finally, in the seven papers that do not disclose a specific target in their objectives, older people emerge as the primary care recipient category, confirming that some literature tends to consider this category as a proxy for identifying care needs.

### 3.1.2. The Material Dimension of Deprivation Attracts the Most Attention

Table 3 depicts the distribution of each deprivation dimension utilized by the reviewed articles. The data emphasize a traditional view of deprivation, as material wealth is the most frequently analyzed dimension (84.1% of publications), followed by health status (81%) and educational/social status (47%). Occupational status, social network ties, and marital status are mentioned in 35 cases, while the housing context is discussed in 30 of them. The level of social integration (16), work–life balance (4), perception of safety (3), and political participation (2) are the least cited dimensions.

Despite the trend to focus on material impoverishment, the definition of deprivation in 54 articles (85%) includes at least two dimensions. In ten of these papers (15.9%), the concept of deprivation comprises a low number of dimensions. Table 3 highlights that 44 studies (around 70%) applied a medium (42.9%) or high (27%) level of multidimensionality to the deprivation concept. From an overall analysis of the results presented in Table 3, it is possible to conclude that the material dimensions (e.g., material wealth, educational level, occupational level, and marital status) are preferred over others for describing deprivation. In most cases, multidimensional definitions of deprivation include at least one or more of them. These findings underline that social dimensions are viewed only as secondary or integrative components of the primary, largely material characteristics of the SED state of older people and their families.

### 3.1.3. Little Room for a Two-Way Perspective of the Relationship between Healthcare Needs and SED

The emphasis placed on poverty and material deprivation by most studies impacts the design of the studies themselves. More often than not, the relationship between health and the deprivation of older people and families is examined by focusing on material impoverishment. Around 24% of publications included in the ScR (15 out of 63) discuss socioeconomic deprivation, while 60% (38 out of 63) examine the material impoverishment of people from the perspective of health conditions (Table 4).

In particular, 24 articles (38.1%) discuss the financial impact by focusing on the financial burden as a result of chronic diseases and the subsequent healthcare consumption. In contrast, the relationship between people's health and material deprivation is dealt with by 14 cases (22.2%). In ten papers (15.9%), the study objectives do not focus on the direct association between health and deprivation issues; instead, they only offer general reflections on the health and deprivation situations of older people and families, as is typical of review studies.

Forty-eight papers (76%) preferred to present a linear, one-way perspective of the relationship between older people's health status and SE conditions. Ten articles (16%) adopted a two-way perspective to describe the relationship, therefore providing a more comprehensive view of this complex theme, and five publications (8%) approached the topic by discussing the indirect connection between the health status of older people and SE circumstances. Table 4 highlights that there is no favored route for observing the relationship: the number of studies (24) analyzing the health problems of older people as a factor impacting the SE situation corresponds to the number of investigations focusing in the opposite direction of the relationship.

### 3.1.4. Paucity of Comparative Studies and Analyses of Primary Data

The ScR analysis enables the emergence of specific characteristics of geographical representativeness. More than 80% of the reviewed papers focus on a single country, while comparative studies are in the minority (17.5%).

Table 5 emphasizes that the vast majority of the research is undertaken in high- and middle-income countries; only one publication focuses on the issue in a low-income country. This is the article by Gabani et al. [54], which examines the percentage of Liberian households living below the so-called "poverty line" before and after taking out-of-pocket (OOP) health expenditures into account.

In relation to the considerably more regular availability of data for high-income countries, it is relevant to note that 84% of the papers reviewed are based on secondary data studies. In contrast, less than 5% are based on primary research studies (Table 6).

This may be due to the greater availability of cross-sectional studies (42.9%) compared to longitudinal studies (20.6%).

### 3.2. Qualitative Contents Results

#### 3.2.1. The Main Findings on the Relationship between LTC Needs and SE Condition

A selection of articles underlines how the socioeconomic condition of individuals or families influences the health conditions of older people and their relative autonomy. The limits of the ADL are unevenly distributed by socioeconomic strata [55], and the mortality risk in poor older people is 1.71-times higher than in non-destitute elderly [56]. An in-depth reading of selected papers allows for identifying the socioeconomic factors affecting older adults' health conditions. First, the socio-demographic characteristics are related to the level of education, gender, and marital status. Rising education levels correlate with better health or lower levels of disability in older people [24,57].

Furthermore, having a spouse counteracts the deterioration of health conditions in old age [58]. However, women are more frequently affected by disabilities than men [59]. Secondly, living in an area of social and material deprivation, e.g., a rural area and a disadvantaged neighborhood—is correlated with a higher disability rate, even though single socioeconomic factors can mitigate the risk of having poor health [60]. Agreeing with these results, Lima-Costa and colleagues [61] found that the provision of home care was inversely related to the socioeconomic gradient, identifying some particularities. The provision of formal care increased if education and family assets increased.

In contrast, informal care is less socioeconomically stratified but depends on the way of life of older people (e.g., living alone or living together). Indeed, families' assets determine the ADL needs that will be covered [61]. In this regard, Aguila's study [62] underlined how cash benefits seemed not to influence the familial caregiving asset: primary caregivers maintained their care-giving role and relative burden.

Due to the burden of care, the health of informal caregivers appears to deteriorate more rapidly and push them to retire 14 months earlier than those without caregivers [63,64], resulting in economic stress and a prolonged reduction in their assets [65,66]. Relatives are directly involved in financially supporting the coverage of the care costs of their older family members [49,67]. People receiving care, especially women, are at a high risk of impoverishment due to catastrophic healthcare spending [45,68–70].

Furthermore, a study conducted in South Korea in 2020 showed how the presence of disabled householders increased the risk of household multidimensional deprivation, with "poverty" being a concept inclusive of monetary and non-monetary dimensions. Park and Nam [71], the authors, went beyond income and asset measurements, identifying other crucial dimensions, such as subjective health condition, type and location of the house (e.g., basement floor; rooftop; non-residential building; or permanent/national rental apartment), and family and social relationships (i.e., satisfaction level).

In 2020, Del Pozo and colleagues [72] pointed out that cash benefit policies were ineffective in covering the need for care and protecting the family from ES deprivation. Furthermore, impoverished people could encounter difficulties accessing insurance or LTC schemes, promoting a circular causal process between SE deprivation, deteriorating health, and individual autonomy conditions [44].

#### 3.2.2. Suggestions for Future Studies

The selected studies widely expressed the need for future studies to focus on the causal relationship between the two phenomena studied [57,58,60]. Additionally, the studies invite future research to use better concepts relevant to an in-depth understanding of the relationships between LTC needs, the health condition of the elderly, and the risk of SE deprivation for individuals and families. First, socioeconomic deprivation enhances its

multidimensional character [66,71] and the aspects of social exclusion that compose it. In particular, the studies examined encourage us to consider more the effects of (a) informal care on the loss of availability of working hours for carers [59,65] and on their retirement plans [63]; (b) living in a deprived neighborhood [60]; and (c) the living arrangements of dependent older people [56,61].

Secondly, the definition of informal carers should be open to neighbors and not only to cohabiting relatives [49,61,72]. Third, to measure the LTC needs, future studies should try to overcome the detection of health status, particularly if self-reported, preferring the use of ADLs limitations [57,72].

Moreover, the selected articles encouraged a better understanding of the relationship between SE conditions and (a) out-of-pocket expenditure burden [65,68,70], (b) implemented policies, and access to services and insurance schemes [62,72]. Lastly, longitudinal studies are auspicated to detect better the changes in long-term periods [55,59–61].

### 3.2.3. Policies Implications

To reduce the financial and supply impacts related to the growing demand for care needs of LTC and welfare systems, some of the documents examined insisted on improving the prevention actions aimed at well-being and healthy aging in long-life courses [55–57,69]. Furthermore, several authors suggested paying greater attention to the welfare and social policies dedicated to individuals and families considered fragile and vulnerable due to their precarious health conditions [64] or their socioeconomic disadvantages [56,58,61]. Lima-Costa and colleagues [61] suggested considering dispositions and living conditions as relevant features of the profiles of deprived people to whom specific interventions should be dedicated. In particular, policymakers should pay attention to people living in rural areas and disadvantaged neighborhood contexts, where the level of unmet care and social security needs are usually higher than in urban and developed areas [24,59].

Considering the demographic trend and the reduction in household size, some papers push for reforming LTC and welfare systems and improving the quality of public formal service provision [63,65,67]. In this regard, Gabani and Guinness [54] suggested better integrating formal and informal assistance as a first step for improving interventions in support of informal caregivers. Supportive policies and interventions should be addressed to help working carers—mostly women—to maintain their jobs and balance their working and private lives [63,65,67,68], even in relation to cash benefit schemes to reduce the care burden [62].

## 4. Discussion

The analysis of the scientific literature demonstrated that there was an interest in the causal link between LTC needs and SED. However, it is often studied through a particular focus and unilateral way. Consequently, the ScR's results highlight several gaps. The first relates to the definition of LTC needs. The widespread use of older population targets as proxies for the volume of LTC needs precludes a comprehensive analysis of the entire concept in all its complexity, including its composition in terms of the demand for health- and social care services [44,73].

Second, the use of older people as a proxy for identifying LTC needs contributes to an overrepresentation of care recipients in studies focusing on older people, even when the investigated problems are not strongly linked to the health- or social care received, and instead focus on the economic and social aspects.

However, the ScR identified some studies whose primary research target was caregivers and families, often defined by the “head” of the household. These two groups, however, are not jointly considered in the literature, indicating that the research usually prefers to focus on (and deal with) a single specific target rather than choosing a multiple-target population, which would more accurately reflect the complexity of most real-life LTC caregiving situations [6,73].

A third issue is that LTC needs are frequently defined in terms of health status or disability conditions, as opposed to ADL/IADL limitations, thus promoting a health-centered view of care needs. A similar simplification approach is also found about the multidimensional deprivation concept, which is greatly influenced by material and other easily measurable dimensions, resulting in the use of an idea of deprivation referring to the most traditional poverty and social inclusion definitions in most cases [74–77]. Consequently, when defining the socioeconomic conditions of families, the aspects connected to social life often remain undervalued. However, many studies identify them as pillars of informal carers and care recipients' well-being and quality of life [78–80].

Nonetheless, SED and its core characteristics are gradually gaining prominence in policymakers' formulations of the suggestions and recommendations for establishing LTC policies. Cash benefit schemes and support policies for working caregivers continue to be the main initiatives proposed to partially mitigate the effects of caregiving's out-of-pocket financial burdens, even if their effectiveness is debated in the literature [27]. The more extensive availability of single-country studies and secondary data sources confirms that the scientific research in this field, in an effort to reduce the complexity of the triangle "LTC needs, health conditions of older people, and socioeconomic conditions", has not yet found methodological and economically sustainable solutions that permit the gathering of more cross-national and primary data.

The multidimensional concept of SE is still lowly applied, even if the literature often pushes the need for this approach for future studies to use a more extensive idea of the target, including non-family members and informal carers. In the future decades, population aging will significantly accelerate in the countries of the global South [5], posing a new challenge. The lack of attention dedicated to date to low-income countries has created a significant gap in the evidence pertaining to these countries, thereby prohibiting an in-depth, urgently required analysis of the future sustainability of their developing welfare, health-, and social care systems [81]. Finally, the simplification strategy applied to many studies to lessen the complexity of the topic under investigation precludes an in-depth debate on some additional aspects. These include the understudied two-way relationship between LTC needs, supply, and the risk of socioeconomic deprivation; the marginal consideration of caregiving and SED's social components in the majority of research; the widespread use of material poverty as a synonym for SED, which increases the risk of losing the numerous social exclusion aspects; and the lack of comparative or longitudinal studies. The multidimensional concept of SE is still lightly applied, even if the literature often encourages the need for this approach for future studies to use a more extensive concept of the target, including non-family members and informal carers. This suggestion supports the idea of the need for a widespread innovative systemic approach to care and welfare policies based on integration, and coordinated and preventive policies that want to respond to complex issues, taking into consideration the multidimensional aspects related to socioeconomic and care aspects. Table 7 summarizes the main suggestion coming from this ScR.

Despite the wealth of information provided by this scoping review, some limitations should be considered when interpreting the results. These limitations are primarily attributable to the study's exploratory objectives. In light of the dearth of literature recognizing ADL limitations in order to measure LTC needs, the set of keywords was broadened to include health conditions and disabilities. These two concepts do not always refer to dependent people. A similar search strategy was applied to the SED concept in conjunction with poverty and other material deprivation-related keywords, thus diminishing the selective power to offset their overrepresentation in the analyzed literature. The decision to use frequency distributions provided a user-friendly format for describing the results but precluded the detection of potential internal links among the selected variables. The exploratory perspective of this study also conditioned some methodological choices, excluding the use of a method for the quality analysis of the literature. A future systematic review on this topic will allow specific tools to evaluate the quality of the literature (e.g., MMAT).

Moreover, in this scoping review, the descriptive exploration of territorial characteristics (n. studied countries and income level of countries) did not consider the differences related to the welfare states and care regimes that could influence the SED risk and health conditions of care recipients and their caregivers. To our knowledge, and despite these limitations, this study was the first to attempt to provide an overview of the literature examining the relationship between LTC needs and SED in both care recipients and caregiving families.

**Table 7.** Summarized results and suggestions of study aims.

Aims	Main Results/Suggestions
To scan the literature on the topic of older adults who require LTC and their socioeconomic status	<ul style="list-style-type: none"> <li>- Literature interests of the causal link between LTC needs and SED.</li> <li>- Several studies focus on the following questions, favoring the analysis of only one sense of the relationship: how does SED impact health conditions/disability, or how do health conditions affect SED conditions?</li> <li>- Specific issues are often studied to explain the relationship between LTC needs and SED (e.g., financial burden due to chronic conditions and healthcare consumption).</li> <li>- Literature underlines how living in socioeconomic deprived conditions and contexts affects the health status of older people, increasing the mortality rate of poor older people.</li> <li>- Education and gender are the socioeconomic characteristics that make a difference, even in the access and use of formal care services, while the provision of informal care does not show social stratification.</li> <li>- Health expenditure strongly influences the risk of poverty among older individuals and their families. In particular, the presence of disabled householders increases the risk of household multidimensional deprivation.</li> <li>- The literature underlines how supporting policies and cash benefits measures are ineffective in contrast to the adverse effects regarding SED risk and to support the health of older people and their caregivers.</li> </ul>
To identify any conceptual gaps and the most debated unresolved issues in the literature	<ul style="list-style-type: none"> <li>- Informal care as a focus of the studies is still under-explored. In particular, its open conception should be encouraged, including neighbors and/or friends.</li> <li>- The SED effects on working carers' lives are still poorly studied.</li> <li>- The existing literature does not yet involve low-income countries in the studies of the issues.</li> <li>- Despite the existing literature, the burden of out-of-pocket expenditure on the SED risk of care recipients and caregivers must be studied in-depth.</li> <li>- The results underline how the impacts of policies and measures must be better studied.</li> <li>- Longitudinal and comparative studies are suggested.</li> </ul>
To determine the extent to which the so-called "multidimensional perspective" is being applied to the SED concept	<ul style="list-style-type: none"> <li>- The multidimensional perspective of SEDs is still hardly adopted in the literature, in particular, the material and social components (social participation and inclusion).</li> <li>- The results suggest that future studies should focus on the causal relationship between the two phenomena studied, based on an in-depth analysis of two concepts (LTC needs and SED) and their multidimensional characters.</li> </ul>

## 5. Conclusions

This ScR explored the relationship between LTC needs and the risk of socioeconomic deprivation for older people and their caregiving relatives. Detecting the interest in the literature on the issues, this ScR identified the main literature gaps and investigated the use of the multidimensional character of the SED concept. The relationship between LTC needs, the health status of older people, and the risk of socioeconomic deprivation for their families attracted the interest of specialized literature. Many studies adopted a simplification strategy to easily explore the high complexity of concepts and the crucial two-way relationship between LTC needs/supply and the risk of socioeconomic deprivation. This strategy did not allow for gaining in-depth knowledge of this relationship. Future studies should thoroughly analyze the causal relationship between the two concepts and uncover the underlying factors that characterize them. Systematic reviews and longitudinal studies should also be encouraged to foster a comprehensive understanding of the bidirectional influence between the two phenomena.

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## Appendix A

**Table A1.** Citation details of selected articles.

	Paper Citation
1	Falkingham JC, Chepngeno-Langat G, Kyobutungi C, Ezeh A, Evandrou M. Does socioeconomic inequality in health persist among older people living in resource-poor urban slums? <i>J Urban Health</i> . 2011; 88(Suppl 2):381-400. DOI: 10.1007/s11524-011-9559-4.
2	Doryńska A, Pajak A, Kubinova R, Malyutina S, Tamosiunas A, Pikhart H et al. Socioeconomic circumstances, health behaviours and functional limitations in older persons in four central and eastern european populations. <i>Age Ageing</i> . 2012; 41(6):728-735. DOI: 10.1093/ageing/afs114. ISSN: 00020729. PMID: 22923605.
3	Gori C. Home care in Italy: a system on the move, in the opposite direction to what we expect. <i>Health Soc. Care Community</i> . 2012; 20(3):255-264. DOI: 10.1111/j.1365-2524.2011.01052.x.
4	Cullinan J, Gannon B, O'Shea E. The welfare implications of disability for older people in Ireland. <i>Eur J Health Econ</i> . 2013; 14(2):171-183. DOI: 10.1007/s10198-011-0357-4.
5	Fine M. Intergenerational perspectives on ageing, economics and globalization. <i>Australas J Ageing</i> . 2014; 33(4):220-225. DOI: 10.1111/ajag.12208.
6	Tareque MI, Begum S, Saito Y. Inequality in disability in Bangladesh. <i>PLoS ONE</i> . 2014; 9(7):e103681. DOI: 10.1371/journal.pone.0103681.
7	Amaya-Lara JL. Catastrophic expenditure due to out-of-pocket health payments and its determinants in Colombian households. <i>Int. J. Equity Health</i> . 2016; 15(1):182. DOI 10.1186/s12939-016-0472-z.

Table A1. Cont.

	Paper Citation
8	Lima-Costa MF, Mambrini JV, Peixoto SV, Malta DC, Macinko J. Socioeconomic inequalities in activities of daily living limitations and in the provision of informal and formal care for noninstitutionalized older Brazilians: National Health Survey, 2013. <i>Int. J. Equity Health</i> . 2016; 15(1):137. DOI: 10.1186/s12939-016-0429-2.
9	National Academies of Sciences, Engineering, and Medicine. 2016. "Economic Impact of Family Caregiving". Pp: 123-158 in <i>Families Caring for an Aging America</i> , edited by Richard Schulz and Jill Eden. Washington, DC: The National Academies Press. DOI: 10.17226/23606. ISBN-13: 978-0-309-44806-2.
10	Riedel M, Kraus, M. Differences and similarities in monetary benefits for informal care in old and new EU member states. <i>Int. J. Soc. Welf</i> . 2016; 25(1):7-17. DOI: 10.1111/ijsw.12157.
11	Arrighi Y, Rapp T, Sirven N. The impact of economic conditions on the disablement process: A Markov transition approach using SHARE data. <i>Health Policy</i> . 2017; 121(7):778-785. DOI: 10.1016/j.healthpol.2017.05.002.
12	Balagopal G. Care and Support Arrangements Among Elderly Residents of an Urban Slum in Tamil Nadu State, India. In: S. Irudaya Rajan and Gayathri Balagopal (eds.), <i>Elderly Care in India—Societal and State Responses</i> (Edition Number: 1). Singapore: SPRINGER NATURE SINGAPORE PTE. LTD. 2017:223-244. DOI: 10.1007/978-981-10-3439-8_13. <a href="https://doi.org/10.1007/978-981-10-3439-8">https://doi.org/10.1007/978-981-10-3439-8</a> . eBook ISBN: 978-981-10-3439-8.
13	Banks LM, Kuper H, Polack S. Poverty and disability in low- and middle-income countries: A systematic review. <i>PLoS ONE</i> . 2017; 12(12):e0189996. DOI: 10.1371/journal.pone.0189996.
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15	Doebler S, Glasgow N. Relationships Between Deprivation and the Self-Reported Health of Older People in Northern Ireland. <i>J Aging Health</i> . 2017; 29(4):594-619. DOI: 10.1177/0898264316641079.
16	Heap J, Fors S, Lennartsson C. Coexisting Disadvantages in later Life: Demographic and Socio-Economic Inequalities. <i>J. Popul. Ageing</i> . 2017; 10(3):247-267. DOI: 10.1007/s12062-016-9158-y.
17	Nortey ST, Aryeetey GC, Aikins M, Amendah D, Nonvignon J. Economic burden of family caregiving for elderly population in southern Ghana: The case of a peri-urban district. <i>Int. J. Equity Health</i> . 2017; 16(1):16. DOI: 10.1186/s12939-016-0511-9.
18	Serrano-Alarcón M, Perelman J. Ageing under unequal circumstances: A cross-sectional analysis of the gender and socioeconomic patterning of functional limitations among the Southern European elderly. <i>Int. J. Equity Health</i> . 2017; 16(1):175. DOI 10.1186/s12939-017-0673-0.
19	von dem Knesebeck O, Vonneilich N, Lüdecke D. Income and functional limitations among the aged in Europe: A trend analysis in 16 countries. <i>J. Epidemiol. Community Health</i> . 2017; 71(6):584-591. DOI: 10.1136/jech-2016-208369. ISSN: 14702738. PMID: 28062642.
20	Al-Janabi H, Carmichael F, Oyebode J. Informal care: choice or constraint? <i>Scand J Caring Sci</i> . 2018; 32(1):157-167. DOI: 10.1111/scs.12441.
21	Butrica BA, Karamcheva NS. The Impact of Informal Caregiving on Older Adults' Labor Supply and Economic Resources. <i>National Tax Journal—Proceedings. Annual Conference on Taxation and Minutes of the Annual Meeting of the National Tax Association</i> . 2018; 111:1-27. <a href="https://www.jstor.org/stable/26939416">https://www.jstor.org/stable/26939416</a> .
22	Flores-Flores O, Bell R, Reynolds R, Bernabé-Ortiz A. Older adults with disability in extreme poverty in Peru: How is their access to health care? <i>PLoS ONE</i> . 2018; 13(12):e0208441. DOI: 10.1371/journal.pone.0208441.
23	Guerchet MM, Guerra M, Huang Y, Lloyd-Sherlock P, Sosa AL, Uwakwe R et al. A cohort study of the effects of older adult care dependence upon household economic functioning, in Peru, Mexico and China. <i>PLoS ONE</i> . 2018; 13(4):e0195567. DOI: 10.1371/journal.pone.0195567.
24	Niimi Y. Does providing informal elderly care hasten retirement? Evidence from Japan. <i>Rev. Dev. Econ</i> . 2018; 22(3):1039-1062. DOI: 10.1111/rode.12395.
25	Teerawichitchainan B, Knodel J. Long-Term Care Needs in the Context of Poverty and Population Aging: the Case of Older Persons in Myanmar. <i>J. Cross. Cult. Gerontol</i> . 2018; 33(2):143-162. DOI: 10.1007/s10823-017-9336-2. ISBN/ISSN: 01693816.
26	Aguila E, López-Ortega M, Angst S. Do Income Supplemental Programs for Older Adults' Help Reduce Primary Caregiver Burden? Evidence from Mexico. <i>J. Cross. Cult. Gerontol</i> . 2019; 34(4):385-402. DOI: 10.1007/s10823-019-09374-8.
27	Agyemang-Duah W, Peprah C, Peprah P. "Let's talk about money": how do poor older people finance their healthcare in rural Ghana? A qualitative study. <i>Int. J. Equity Health</i> . 2019; 18(1):47. DOI: 10.1186/s12939-019-0927-0. PMID: 30894183.

Table A1. Cont.

	Paper Citation
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Table A1. Cont.

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**Table A2.** Content data collected from the 22 selected papers for qualitative analysis.

Authors (n. Table A1)	Main Findings of the Health–SED Relationship	Future Research	Policy Suggestions
Cullinan et al., 2013 (4)	The main focus is on the impact of SED on the health trajectories (i.e., functional health transitions) of young-old and oldest-old people in Europe (data to be referred to a cohort of individuals aged 50 years and over). The authors underline that socioeconomic disparities in the transition from F (frailty) to R (robustness) are more substantial than those in the reverse direction. Additionally, ADL disabilities (D) are the most unequally distributed health problem among the socioeconomic strata. The authors specify that their study is the first investigation of the socioeconomic determinants of the “bi-directional transitions” within disablement processes (e.g., F↔D; F↔R). They strongly emphasize the importance of using longitudinal data and exploring the time-dependent change in functional health transitions along with the most relevant individual-level characteristics, which affect both the occurrence and direction of these transitions (e.g., poor and less educated).	The authors specify that their study is the first investigation of the socioeconomic determinants of the “bi-directional transitions” within disablement processes (e.g., F↔D; F↔R). They strongly emphasize the importance of using longitudinal data and exploring the time-dependent change in functional health transitions along with the most relevant individual-level characteristics, which affect both the occurrence and direction of these transitions (e.g., poor and less educated).	Since health limitations are often determined by a disablement process that experts can either interrupt or postpone, it is necessary to provide medical prevention services, which should be used as the best strategy for reducing public spending on long-term care, i.e., policy makers had best not focus solely on the problems related to the allocation of existing health and social care resources.
Tareque et al., 2014 (6)	Objective: associations between disability and access to healthcare. Many poor older Peruvians still face SIS insurance scheme access difficulties. Additionally, extremely poor older people with ADL disabilities (mainly aged 76–80 years and without an education) have a 63% lower probability of obtaining extensive insurance coverage when compared with their healthier counterparts. Disabled people living in urban areas experience lots of difficulties addressing health insurance barriers. Additionally, more than one-third of poor older people have never had any insurance scheme.	There needs to be (more) analyzable data on the relationship between health impaired conditions (particularly ADL disabilities) and (barriers to) healthcare access. Further evidence that extremely poor older people are the most penalized by such an inequitable access system should be found.	Peruvian government should make an effort to achieve greater increases in health insurance coverage, but will need to implement such corrective actions together with improved service quality and distribution. Too many problems in service delivery: extremely poor older people only receive the benefits of preventive services that do not require extensive logistics.
National Academies of Sciences, Engineering, and Medicine, 2016 (9)	This study aims at analyzing the additional out-of-pocket expenses that impaired older people bear to meet their long-term needs (due to both functional and cognitive impairments). Older MEDICARE (American federal insurance program) beneficiaries in great need of long-term services and support (LTSS) are twice as likely as those with no LTSS needs to skip meals; they are also more likely to be unable to pay for rent and basic utilities.	MEDICARE coverage has long been the main focus of interest for health research, and thus there is a need for information about: (a) the full scope of the out-of-pocket burden experienced by older people requiring LTSS; (b) their expense adjustments and living arrangements.	The sustainability of the MEDICARE program is a major worry for policy makers; however, the beneficiaries’ OOP (out of pocket) burden seems to receive far less attention. The authors suggest containing Medicare spending—by reducing avoidable hospitalizations—and addressing housing and food insecurity problems (i.e., social health determinants).

Table A2. Cont.

Authors (n. Table A1)	Main Findings of the Health–SED Relationship	Future Research	Policy Suggestions
Banks et al., 2017 (13)	<p>Informal caregivers of chronically ill older people also shift from middle age to old age. Moreover, an increasingly large number of female caregivers can be observed. This raises the issue of inequalities between caregivers and non-caregivers, which is the main theme of the study. The comparison between households with and without caregivers shows that the latter group has a per capita income USD 150 higher than the former. Interestingly, a ten-percentage-point increase in the poverty rate of households with caregivers emerges after using the multidimensional poverty concept.</p>	<p>The inequity outcomes related to informal caregiving (i.e., many caregivers under the poverty line) turn out to be inexorably determined by the (number of) deprivation dimensions considered. Factors, such as education, health, job, social security, housing environment, and networks and social cohesion, should be used to identify the extent to which caregivers incur caring related inequalities. The authors also warn researchers not to use the National Socio-Economic Characterisation (CASEN) survey and relative data to estimate the exact prevalence of dependency among Chilean people, because of the absence of questions aimed at identifying people with dementia.</p>	<p>There is an urgent need to modify health and social security systems operating in Chile. Population aging induces policy makers to face growing LTC needs and resources allocation problems that, in turn, cause many disparities: neither healthcare policies nor social support networks adequately address the widening socioeconomic gap between caregivers and non-caregivers.</p>
Serrano-Alarcón and Perelman, 2017 (18)	<p>Longitudinal studies should be conducted to focus on the temporal relationship between the type of care that impaired older people rely on (formal or informal care) and socioeconomic indicators or living arrangements.</p>	<p>Longitudinal studies should be performed to focus on the temporal relationship between the type of care that impaired older people rely on (formal or informal care) and socioeconomic indicators or living arrangements.</p>	<p>Considering the tendency for informal care to substantially decrease, because of the increasingly small household size/the increasingly large number of couples without children, social policies should better account for older people at the intermediate and lowest socioeconomic strata, which are the vast majority of people requiring informal care.</p>
Niimi, 2018 (24)	<p>Family caregivers in southern Ghana incur a significant economic burden. Most of them—they are mainly parental caregivers—affirm that they are forced to spend some of their own savings to cover caregiving costs. In detail, about 87% of informal caregivers claim to have a high level of financial stress. Average cost of caregiving per month: USD 186.18. Females bear a relatively higher burden level than males (because of their multiple caring roles).</p>	<p>As far as indirect costs are concerned, the study highlights the issue of the direction of the relationship between caregiving for older people and labor market participation. The research should clarify whether informal caregiving causes unemployment or the other way around. Little information about the extent to which direct costs may determine financial difficulties. In spite of the nature of the sample, a random sample, the authors also affirm that their findings are not to be generalized: they should only refer to family caregivers who live in the area under observation.</p>	<p>Social protection programs should include both a larger number of older people and their economically overwhelmed family caregivers. Additionally, the Ghanaian healthcare system urgently needs to be reformed to provide specialist care to older people (no geriatric specialists). Tax incentives could be offered to attract and speed up corporate social responsibility practices.</p>

Table A2. Cont.

Authors (n. Table A1)	Main Findings of the Health–SED Relationship	Future Research	Policy Suggestions
Teerawichitchainan et al., 2018 (25)	Objective: to investigate the relationship between wealth and disability (i.e., the issue of SE inequalities in disability). Older people (65 years and older) are about 42-times more likely to have a disability than people aged 5–14 years. After controlling for the selected confounders (education, marital status, place of residence, and division), significant income-related health advantages persist. Disability clearly tends to decrease as wealth—to be considered in terms of assets—increases, i.e., when moving from the bottom 40 percent to the highest quintile of the wealth index. Women are more frequently affected by disabilities than males.	It would be better if the relationship between wealth and disability was investigated using longitudinal data, which should be employed to conduct health transition analyses. To measure the level of material well-being, the authors recommend using wealth indexes rather than income or consumption measures (i.e., wealth indexes would be more permanent indicators). Even though the authors pay attention to the SED of people with health/ADL limitations (their model regards wealth as the main explanatory variable), they derive the findings from cross-sectional data. Therefore, the opposite hypothesis remains to be verified (i.e., the hypothesis that one experiences poverty as a result of one or more disabilities that, in turn, determine the working end earning incapacity).	Considering the divisional differences of disability, particularly the fact that most disabled people live in deprived areas, disability-related policies should pay more attention to the rural population (e.g., Rajshahi division).
Aguila et al., 2019 (26)	The authors aim to delve into the socioeconomic status of disabled householders using multidimensional poverty indices. The multidimensional poverty rate in the HD group (households headed by disabled persons) is higher than that in the control group (NDHC group, i.e., no disabilities). Additionally, the HD group has a higher level of poverty in all six deprivation dimensions considered. Low correlation between the monetary and non-monetary dimensions of poverty.	It is necessary to define multidimensional poverty and explain why it is associated with the main demographic characteristics of disabled (older) people. The authors emphasize how important it is for the research to identify a minimum number of deprivation dimensions, and thus they argue for a comprehensive diagnosis of poverty (diagnosis to be aimed at providing adequate social services for disabled households).	Aspects of life (including housing) as well as income supplemental programs should be considered more in policymaking. Moreover, increasing the employment rate of disabled people should be the most important goal to pursue (i.e., non satisfactory governmental efforts).
Dash and Mohanty, 2019 (29)	The neighborhood dimension is critical for health, particularly for older people’s health, because of their well-known reduced willingness to leave their living areas. This study aims to find out whether or not health deterioration is associated with a summative neighborhood dissatisfaction score and/or objective neighborhood deprivations. The relationship between objective neighborhood deprivation factors and the self-rated (poor) health conditions of older adults is significantly mediated (i.e., counteracted) by socioeconomic individual factors. The mediating role of subjective neighborhood deprivation factors is not significant.	Neighborhood-effects research tends not to consider objective and subjective neighborhood deprivation factors simultaneously. Therefore, it is necessary to improve the research on the causal links between health (longitudinal individual-level data) and neighborhood characteristics.	Importance of age-friendly neighborhoods: living in deprived neighborhoods, which do not encourage satisfying lifestyles (because of safety/air quality/local services problems), can translate into objectively poor health conditions, even though the inverse relationship (poor health versus neighborhood dissatisfaction) should be investigated as well.
Del Pozo-Rubio et al., 2019 (30)	Focus on the relationship between absolute income—and adequacy of disposable income as well—and self-rated health among older people aged 60 years and older. Self-rated health is associated with the level of absolute monthly income (poor health: <USD 4000); however, the association between poor health and having just enough/insufficient disposable income is higher (ORs: 2.0 and 3.6, respectively).	Two measures particularly recommended: adequacy of disposable income (rather than absolute income) and self-rated health. Disposable income should always be used—as a socioeconomic indicator—when the primary focus is on retired older population.	Since the relationship between disposable income adequacy and self-rated health tends to be affected by neighborhood-level social determinants of health, social sustainability-targeted interventions should be undertaken (with the intention to “humanize” built-up urban areas, e.g., outdoor spaces and buildings; housing, etc.).

Table A2. Cont.

Authors (n. Table A1)	Main Findings of the Health–SED Relationship	Future Research	Policy Suggestions
Lampert and Hoebel, 2019 (37)	Object: funding mechanisms used by frail or chronically ill poor people. One of the most important sources of funds for healthcare for poor older people aged at least 65 years old—who spend between GHS 20 and 250 on drugs, laboratory tests, and hospitalizations—is family. Additionally, social support provides important information on healthcare services. Health defines poverty more strongly for those already affected by poverty (poverty–health vicious cycle). However, both health and economic problems are significantly counteracted by family support.	The study is the first in its kind in Ghana, and thus it is not possible to validate its findings. Therefore, the authors encourage further research efforts to strengthen this knowledge area, particularly studies on the healthcare financing mechanisms used by active and non-active NHIS enrollees.	Considering that family is so critical for good healthcare, social policy is called upon to “reshape” family support systems, which should be strengthened by the Department of Social Welfare in the various assemblies across the country, as well as by traditional authorities and media (education, advocacy, and awareness creation).
Liu et al., 2019 (39)	The focus is on the financial burden due to out-of-pocket (OOP) health payments. The presence of an older family member as well as the household SES and hospitalizations make the risk of catastrophic spending prominent. Using the WHO threshold of 40% of capacity to pay, the incidence of CHE turns out to be equal to 1.77%. Otherwise, at the 10% threshold for TOTAL consumption expenditure, it is equal to 12.8%.	The study shows that the probability of incurring catastrophic health expenditure (CHE) varies considerably by the thresholds used. The WHO threshold results in concentration indices that emphasize the vulnerability of households with low non-food expenses (as a result of the income inelasticity of food expenditure).	The scarceness of resources available to the healthcare system makes it unable to cope with the health-related financial burden borne by many Moroccan households. It is necessary to correct the imbalance between the supply and demand for assistance and to reduce household contributions by expanding insurance coverage.
Niederstrasser et al., 2019 (42)	The authors use commodity-based relative deprivation indicators to explain how relative deprivation tends to be associated with mortality among Japanese older adults aged 65 years and older. After adjusting for relative poverty (i.e., monetary poverty), the relationship between relative deprivation and mortality risk remains highly significant, i.e., mortality risk in deprived older people is 1.71-times higher than that in non-deprived older people.	Although based on changing living standards, i.e., unsuitable for international comparative studies, the relative deprivation index allows researchers to capture social determinants of healthy aging. It also captures poverty conditions (including unhealthy lifestyles) better than a relative income approach. Improved relative deprivation indicators should be used in order to cover the full range of daily resources among Japanese older people.	The fact that relative deprivation—along with relative poverty—is strongly associated with unhealthy aging should better orient policy decisions. A life course perspective should be followed, as relative deprivation in old age represents only one of the cumulative disadvantages to deal with.
Saito et al., 2019 (44)	Considering the increasingly frequent occurrence of age-related health problems, particularly chronic diseases requiring long-lasting treatment, it is necessary to evaluate the effects of both the presence and age of older family members on healthcare cost that their households deal with. The authors find a significant association between the number of older members and healthcare expenses (IRR +390,000 for a one unit increase) and medical costs (+195,000). The highest and the least cost increases are, respectively, due to the presence of seniors aged 75–79 years old and 80 years or older.	Future studies should alternatively: (1) address supportive strategies and policies for the households with one or more older family members in need of care; (2) explore how to better reduce healthcare costs in these households.	Since the presence of older members accounts for the sharp increase in the amount of healthcare to be paid for, future policies should be planned to support older-individual households. It is recommended that policy makers implement interventions to: (a) expand home care and health counseling; (b) empower older people; (c) promote education and self-care; (d) prevent the health needs of future generations of seniors.

Table A2. Cont.

Authors (n. Table A1)	Main Findings of the Health–SED Relationship	Future Research	Policy Suggestions
Salari et al., 2019 (45)	<p>The aim is to estimate the economic burden associated with long-term care. Precisely, one of the most interesting issues raised by the authors is that of the monetary value of caregiving hours provided by non-professional caregivers (i.e., family caregivers). The average government benefit granted to families with impaired older members provided with informal LTC amounts to EUR 1179.15 per year, i.e., one-third of the amount that families can receive (the shadow cost sharing (resulting from difference between the maximum potential amount of money that these families can receive and the amount that they actually receive). This represents only 7.28% of the annual monetary value of informal extended care. More than 90% of the amount of informal care time is not covered by the benefits received.</p>	<p>The authors remark on the fact that the technique for the assessment of informal care is not neutral. Additionally, they draw attention to the fact that, while the instruments for measuring health- and/or caring-related productivity losses have been long studied, we do not know enough about the informal care assessment methods to be used. Although the so-called opportunity cost method prevails, a growing use of different methods is being recommended.</p>	<p>Potential catastrophic economic consequences for households with impaired older members. Failed attempt at creating a system whereby disabled older people rely almost exclusively on formal care, i.e., urgent need to modify the Dependency Act (DA). It is also necessary to provide professional services and support to informal caregivers. A higher level of integration of formal and informal care resources should also be achieved.</p>
Spies-Butcher and Stebbing, 2019 (46)	<p>The focus is on socioeconomic differences in health among Swedish people aged at least 76 years old. The probability of reporting coexisting disadvantages, including limited financial and social resources, increases by an average of 1.3 pp for every one-year increase in age. Demographic and social class differences in the probability of reporting coexisting disadvantages, e.g., divorced people and unskilled manual workers are likely to experience a pattern of physical health problems and limited financial resources. Particularly, marital status is a significant “stratifying” characteristic in older people.</p>	<p>The finding that SE differentiations emerge only when the focus is on older people with coexisting disadvantages is aligned with the previous statements about the relationship between the number of deprivation dimensions experienced by the poor and the extent to which their SE characteristics differ from those of non-poor people. Future studies have to determine the causal factors whereby certain (patterns of) disadvantages are relatively independent of each other.</p>	<p>Policy makers should take into account the fact that different combinations of disadvantages imply different needs/kinds of hardship. It is such an important issue that a series of targeted interventions (i.e., respectful of the variety of vulnerability profiles) should be rapidly implemented.</p>
Wilkinson et al., 2019 (48)	<p>The study aims to provide insights into household characteristics associated with catastrophic health expenditure. It also provides an updated assessment of both the Kenyan financial protection system and the impact of the Universal Health Coverage (UHC) pilot program. Regardless of health payments, 46.9% and 41.2% of people living, respectively, in deprived/rural and urban areas are under the national poverty line. Major findings: 2.2 percentage-point increase in the poverty head count after accounting for out-of-pocket payments, i.e., between 1 and 1.1 million individuals fall into poverty (in terms of monthly poverty gap: KES +124 in rural areas).</p>	<p>Since the study provides county-level data, it is to be regarded as the baseline to find out and monitor changes in financial risk protection in the four Universal Health Coverage pilot counties and in subsequent scale-up counties.</p>	<p>Financial protection is becoming worse. While it decreased between 2007 and 2013, the number of individuals pushed into poverty increased in 2018. This can be attributable to the removal of user fees enacted in 2013, which resulted in a substantial increase in people seeking care, i.e., facing health-related costs (e.g., drugs and transport). The subsequent reforms (2013–18) do not properly address the issue of insurance coverage of outpatient treatments. There needs to be targeted interventions (e.g., poor and/or chronic patients).</p>

Table A2. Cont.

Authors (n. Table A1)	Main Findings of the Health–SED Relationship	Future Research	Policy Suggestions
Willink et al., 2019 (49)	<p>This study particularly takes into account the ways in which disadvantaged people aged in multiple deprivations receive the type of support they need. Adult children—primarily males—are the most important source of economic support for poor older people in need of care, particularly for older males. Therefore, older females profit more than males by government transfers. On the other hand, older ill males depend on spousal caregiving a lot more than their wives, as females are more significantly provided with social support and care by: (a) adult children (particularly daughters); (b) large social networks.</p> <p>High burnout levels observed among family caregivers. Most of them experience the burden of caregiving together with that of paid and/or domestic work (64%).</p>	<p>This research, based on primary data, seems to draw many important insights from a combination of all three approaches identified by Lowenstein and Daatlan (2006) in the field of intergenerational solidarity:</p> <ol style="list-style-type: none"> <li>(1) retrospective theories (e.g., focus on the role of cultural practices);</li> <li>(2) situational influences (competing obligations and interpersonal relationships);</li> <li>(3) perspective theories (future influences).</li> </ol> <p>The authors themselves cite the aforementioned approaches.</p>	<p>Many poor people are excluded from promotional and preventive social security, i.e., the poor enter old age with “accumulated entitlement failures” due to low educational levels and low-paid employment. A low level of health insurance coverage is paired with the absence of free healthcare. While government health facilities are free, indirect costs, such as transport and “bribes” paid to the staff, remain.</p> <p>On the other hand, private healthcare facilities imply considerable out-of-pocket expenses.</p> <p>Formal—home-based—care mechanisms should be planned. It is also necessary to correct gender asymmetry in caregiving.</p>
Pinilla-Roncancio et al., 2020 (58)	<p>This study primarily aims to find out whether or not income supplemental programs for older adults improve their socioeconomic status (SES) and that of their caregivers. The national program under observation does not modify caregiving decisions, and thus primary caregivers maintain their caring role and relative burden: on average, they provide more than 70 h per week. There are no changes in payments from older people (both males and females) for primary caregiver services. More than 98% of informal caregivers remain unpaid.</p>	<p>There are not many studies on the impact of supplemental income programs on caregiving and caregivers’ characteristics.</p> <p>The crowd-out effects of public transfers on familiar transfers to older impaired family members attract an increasing amount of research; however, little is known about the effect of actual care provision.</p>	<p>The absence of formal social care services has left family members with the main responsibility for caregiving, particularly for disabled and older adults.</p> <p>Income supplemental programs do not help family caregivers (particularly primary caregivers) reduce their caregiving burdens. Therefore, policy makers should better consider the main roles of moral and social obligations.</p>
Zhao et al., 2020 (61)	<p>This is a study on the role of socioeconomic factors in predicting functional limitations in post-communist countries, such as Russia (Novosibirsk), Poland (Krakow), and the Czech Republic (six towns).</p> <p>Education is strongly—negatively—associated with functional limitations for both genders. Impaired conditions are also associated with material deprivation and economic inactivity. In spite of the highest mortality rate, health limitations do not prevail in Russia.</p>	<p>The authors underline the fact that functional limitations diagnosed by means of (a battery of) suitable measurement tools (i.e., objective measures) are more likely to be a more robust measure than a single question on self-rated health. The relationship between disability and poverty needs additional research, especially to determine which causal factors it depends on. Additionally, physical function can play an important mediating role.</p>	<p>It is necessary to raise awareness of the large socioeconomic differentials of functioning in middle-aged people in Central and Eastern Europe. Health policies should help people avoid their health limitations at relatively young ages.</p>

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