

Informal long-term care and its gender distribution: a systematic review

Journal of
Integrated Care

17

Barbara Gösenbauer

*Institute Health Management, IMC University of Applied Sciences Krems,
Krems, Austria*

Alexander Braun

*Institute Health Management, IMC University of Applied Sciences Krems,
Krems, Austria;*

*Centre for Evidence-based Health Services Research,
University for Continuing Education Krems, Krems, Austria and*

*Institute for Management and Economics in Health Care,
UMIT TIROL Private University for Health Sciences and Technology GmbH,
Hall in Tirol, Austria, and*

Marcel Bilger

*Institute for Social Policy, Vienna University of Economics and Business,
Vienna, Austria*

Received 18 October 2024
Revised 10 January 2025
Accepted 11 January 2025

Abstract

Purpose – European countries are experiencing a phenomenon known as “double aging,” which is placing long-term care regimes under considerable strain. The majority of long-term care is provided by relatives, and this informal care is vital for the functioning of care regimes. Most of this informal long-term care (iLTC) is provided by women. The consequences of the unequal distribution of care within society are a crucial, yet poorly addressed aspect of social policy research. We address this research gap and provide insights into the socio-economic impacts of the unequal gender distribution of iLTC.

Design/methodology/approach – For the review, systematic database searches were performed in PubMed and EBSCO CINAHL, using the SPIDER methodology. A total of 7,385 abstracts were screened, whereof 11 studies were included. A critical appraisal tool, the PRISMA checklist and a qualitative synthesis were applied.

Findings – Three analytical themes were identified: (1) Social Experiences and Norms, (2) Informal Caregivers’ Labour Market Participation and (3) Economic Costs of iLTC. The results showed that women and men are impacted differently: Women are quantitatively discriminated, while caregiving men are likely to face qualitative discrimination within their tasks due to role expectations and gender norms.

Originality/value – Novel insights emerge from embedding fragmented empirical findings into a holistic societal perspective, opening possibilities for addressing (adverse) outcomes together on a policy level. The findings are of interest for policy makers developing measures to ensure sufficient care supply whilst taking action against gender inequality.

Keywords Long-term care, Informal care, Social sustainability, Europe, Systematic review, Gender, Socioeconomic

Paper type Literature review

Introduction

In our society formal elderly care is an increasingly scarce good: Due to demographic changes of longer life expectancy and declining birth-rates, European societies struggle with double

© Barbara Gösenbauer, Alexander Braun and Marcel Bilger. Published by Emerald Publishing Limited. This article is published under the Creative Commons Attribution (CC BY 4.0) licence. Anyone may reproduce, distribute, translate and create derivative works of this article (for both commercial and non-commercial purposes), subject to full attribution to the original publication and authors. The full terms of this licence may be seen at <http://creativecommons.org/licences/by/4.0/legalcode>

The authors thank the Society for Research Funding in Lower Austria for granting the PhD with the “FTI Call 2020: Dissertationen”.



Journal of Integrated Care
Vol. 33 No. 5, 2025
pp. 17-35

Emerald Publishing Limited
e-ISSN: 2042-8685
p-ISSN: 1476-9018

DOI 10.1108/JICA-10-2024-0058

aging (Kingston *et al.*, 2018; Spasova *et al.*, 2018). As care needs, that health systems globally currently struggle to meet, will increase in extent and complexity (Rahman *et al.*, 2022; Spasova *et al.*, 2018), the demand for care services is rising. At the same time, the supply is challenged by a decline in professional workforce and aging care suppliers (Spasova *et al.*, 2018).

To address this increasing gap between demand and supply of formal care, informal care is often provided by relatives, spouses or friends to complement or substitute professional services (Bonsang, 2009; European Union, 2021; Firgo *et al.*, 2020; Gannon and Davin, 2010) and can be understood as part of an integrated care approach to ensure that care needs are not only met, but in an optimal and holistic way (Goodwin, 2016). Due to aging carers, a growing number of single households and the cost-oriented care policies in most European countries, the question of substitution of formal care with informal care became evident. European studies show that with more complex needs, informal care could not sufficiently substitute formal care (Firgo *et al.*, 2020; Gannon and Davin, 2010).

Informal long-term care (iLTC)

In contrast to formal or professional care, *informal care* is understood as unpaid care work performed by non-professionals (Barrett *et al.*, 2014). Based on increasing care demand and scarce formal long-term care supply, it is obvious that iLTC is necessary to avoid unmet care needs in a society.

iLTC can be straining: psychologically, relationally, socioeconomically, health-related and physically (Bom *et al.*, 2018; Deufert, 2013; Gérain and Zech, 2019; Labbas and Stanfors, 2023) – defined as caregiver burden (Deufert, 2013). Due to demographic and societal changes, the share of informal care work and its burden will increase for caregivers (Collins, 2014; Heitmueller and Inglis, 2007). Demographic developments like longer life expectancy and therefore a higher share of multimorbidity and frailty in the population in conjunction with declining birth rates entail growing care needs on a societal level that fewer potential caregivers struggle to meet (European Union, 2021). With women's increasing labour market participation and changes in family structures (European Union, 2021), the pressure on (potential), mostly female, individual caregivers rises. Therefore, more care needs are supposed to be met by relatively fewer potential caregivers, who need to compensate for a growing gap between professional care supply and demand as well as a relatively smaller group of potential informal caregivers compared to more care recipients. While individual drivers towards providing iLTC (e.g. the quality of the respective relationship, the employment status of a potential informal caregiver as well as his or her health status, etc.) have been addressed (Canta *et al.*, 2021; Plöthner *et al.*, 2019; Verbakel *et al.*, 2017), research lacks a *holistic societal perspective regarding outcomes* of iLTC in Europe. This research aims to contribute to an understanding of the effects of mostly female informal care provision for European societies by analysing socioeconomic outcomes arising from the care situation by gender.

A gendered distribution of iLTC provision

It is well-researched that unpaid care work in Europe is mainly provided by women (European Union, 2021; Skinner and Sogstad, 2022) – contributing to a higher economic vulnerability (Folbre, 2018) or adverse health effects for the caregivers (Bom *et al.*, 2018). Although the share of male carers is rising, this phenomenon still prevails (Deufert, 2013; Heitmueller and Inglis, 2007). Despite male carers quantitatively stepping into the picture across Europe, there remain qualitative differences: Men tend to undertake tasks that are less complex and less time-consuming as compared to women, leaving women rather with long-term care (Estrada Fernández *et al.*, 2019; Skinner and Sogstad, 2022). This unequal distribution can to some extent be explained by gender norms and role expectations: Women are viewed as responsible for caregiving (Zygouri *et al.*, 2021) – leading to female carers taking up help later than male carers (Deufert, 2013).

According to Giddens's *Theory of Structuration* societal conditions are on the one hand shaping, on the other hand (re)produced by human action (Giddens, 1984; Turner, 1986) – including gender relations and identities, which are (re)negotiated within care situations (Zygouri et al., 2021). Gender norms are a guiding structure or cause for, as well as an outcome of social agency. Hence, the theory of structuration explains the social patterns on macro- and micro-level of care responsibilities, including social policy within the care-regime, from a gender perspective. Gender norms shape care regimes which in turn (re)produce gender norms that become hegemonial in social policy. Besides different role expectations, female and male carers differ in their characteristics, entailing different economic, social, cognitive and physical resources to manage the care situation as well as mitigate negative effects of it (Zygouri et al., 2021). Therefore, differentiated policies are required to enable and support male and female informal care.

To work towards ensuring care supply in a socially sustainable way and mitigate (gendered) discrimination, we address the question *What are socioeconomic outcomes of the gender-unequal distribution of the provision of informal long-term elderly care towards female caregivers in Europe?* By gendered discrimination we mean the unequal and unjust treatment of individuals based on their gender, that is often rooted in societal norms, stereotypes and gender imbalances. We seek to embed various gender-relevant outcomes of the provision of informal long-term elderly care in a theoretical framework addressing European society as a whole and therefore provide a more comprehensive understanding of the gender-unequal distribution of the provision of iLTC.

Methods

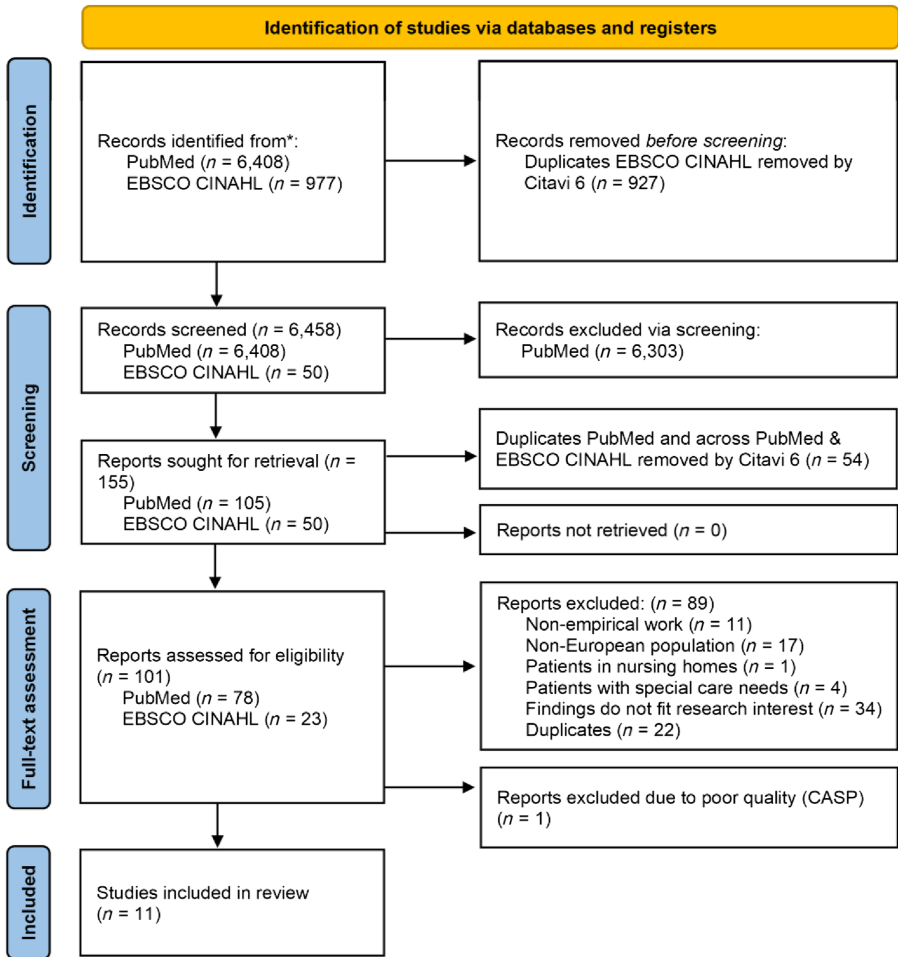
We address the research interest in socioeconomic outcomes of the gender-unequal distribution of iLTC with a systematic review using the databases PubMed and EBSCO CINAHL in May, June and November 2022 – including a final search in November 2023 – and following the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA; Page et al., 2021) (Figure 1). Two investigators (BG, AB) developed a search strategy, validated the search process by inclusion and exclusion criteria and screened all abstracts independently. The findings are presented within a qualitative systematic evidence synthesis (Booth et al., 2012), underlying a comprehensive societal perspective based on Anthony Giddens's *Theory of Structuration* (Giddens, 1984; Turner, 1986).

Search strategy

To capture socioeconomic outcomes of unequal distribution of providing iLTC, we used the following search query based on the SPIDER model: (*gender OR gender**) AND ((*elder* OR "older people" OR longterm OR long-term*) AND (*family OR spousal OR informal*) AND (*care OR caring*)) in the databases PubMed and EBSCO CINAHL. To validate the search process both investigators developed inclusion and exclusion criteria together (shown in Table 1) and screened the abstracts independently via the Abstrackr literature evaluation tool, which is a software for semi-automatic citation screening (Wallace et al., 2012).

Data extraction and analysis

After screening titles and abstracts via Abstrackr (Center for Evidence Synthesis in Health (CESH), 2022), removing duplicates via Citavi (Swiss Academic Software, 2022) and applying a critical appraisal (Critical Appraisal Skills Programme, 2018), we performed open coding using MAXQDA (VERBI, 2022) on the remaining material and generated memos to qualitatively grasp the meaning of the findings and possible implications in a first step. In a second step these passages were assigned to inductive categories to provide an overview of gendered empirical evidence of effects of providing iLTC for hereby it is important that socio-economics male and female caregivers in Europe. The results therefore include aspects



Source(s): Figure created by the authors based on Page *et al.* (2021)

Figure 1. PRISMA flow diagram

stemming from the informal care situation that affect female and male caregivers *differently*; aspects that vary by caregivers' gender. In general, there are more than these outcomes of informal care that either affect caregivers irrespectively of their gender or have not been explored across their (possible) gender dimension yet.

Critical appraisal. The checklist of the Critical Appraisal Skill Programme was used for the critical appraisal (Critical Appraisal Skills Programme, 2018). For this purpose, all included studies were independently assessed by two reviewers with regard to the quality of the research question, the study design, the sampling methodology, the adequacy of the methodology to answer the research question and the contribution to the overall research question. As both qualitative and quantitative study designs were included in the synthesis, the checklists for qualitative study designs and cross-sections were merged and assessed according to the study design. Conflicting judgements were discussed and documented in sequential discussions between the reviewers. The critical appraisal at study level can be found in the [supplements](#).

Table 1. Inclusion and exclusion criteria – SPIDER model

Criteria	Included	Excluded
Sample	informal caregivers, European population	professional caregivers, non-European population, care-recipients
Phenomenon of Interest	informal long-term elder care situations (sole or shared with some professional care)	special needs care situations (e.g. end-of-life care, care for specific illnesses), formal care settings (e.g. nursing homes, sole professional home care, hospitals), other forms of care (e.g. childcare)
Design	qualitative, quantitative and mixed methods designs and secondary analyses, that perform an analysis or report findings on potential gender differences	non-empirical work, work that does not analyse the gender dimension
Evaluation	economic and social (relational) outcomes for informal caregivers	emotional, psychological, cognitive, physical health outcomes for informal caregivers, outcomes for care-recipients
Research type	peer-reviewed empirical studies that were available in full-text version in English	non-empirical and/or not peer-reviewed work (e.g. reviews, grey literature), studies not available, studies in other languages

Source(s): Table created by the authors

Thematic analysis. To arrive at our final themes, we applied open coding of the material and generated memos to qualitatively grasp the meaning of the findings and possible implications in a first step. In a second analytical step, after finalising the code system, the openly coded passages were assigned to the respective categories they addressed to provide an overview of (until today) found *gendered* empirical evidence of effects of providing informal care for male and female caregivers in Europe. The results therefore include aspects stemming from the informal care situation that affect female and male caregivers *differently*; aspects that vary by caregivers' gender. In general, there are more than these outcomes of informal care that either affect caregivers irrespectively of their gender or have not been explored across their (possible) gender dimension yet.

Results

Included studies

The review includes studies with European populations that operate at least on two levels: 1) They examine the influence of the provision of iLTC for elderly patients from the caregiver's perspective, and 2) differentiate the caregivers by gender. To meet the inclusion criteria, papers needed to contain empirical evidence concerning social and/or economic outcomes from the caregivers' perspective. Studies focusing on special needs care that differ from elder care in general and studies focusing on family members of nursing home patients were excluded from the analysis.

Our search yielded 7,385 results. We proceeded to 155 full papers and found twelve papers fitting all inclusion criteria. After a critical appraisal, we dropped another one due to poor quality. In total, eleven studies were further analysed. Conflicts during the whole process were resolved by discussion and consensus.

Of all eleven studies, seven included (potential) informal caregivers directly in their sample (Bainbridge *et al.*, 2021; Heger and Korfhage, 2020; Heitmüller and Inglis, 2007; Kotsadam, 2012; Maresova *et al.*, 2020; Mortensen *et al.*, 2017; Swinkels *et al.*, 2019), three used a proxy sample of the respective care-recipient (Bywaters and Harris, 1998; Kolodziej *et al.*, 2018; Schneider *et al.*, 2013), and one study worked with a sample of the general population in Germany (Zwar *et al.*, 2021). Seven studies performed a secondary analysis (Bainbridge *et al.*, 2021;

Heger and Korfhage, 2020; Heitmueller and Inglis, 2007; Kolodziej *et al.*, 2018; Kotsadam, 2012; Mortensen *et al.*, 2017; Swinkels *et al.*, 2019), four collected their own data (Bywaters and Harris, 1998; Maresova *et al.*, 2020; Schneider *et al.*, 2013; Zwar *et al.*, 2021) – two directly from informal caregivers or the national population (Maresova *et al.*, 2020; Zwar *et al.*, 2021). The study descriptives are presented in Table 2.

Three dimensions of socioeconomic outcomes

In the thematic analysis, three themes emerged: 1) social experiences and affected norms, 2) informal caregivers' labour market participation and 3) economic costs of iLTC.

Since iLTC is mostly provided by women, women are facing what we call *quantitative discrimination* – while caregiving men are *qualitatively discriminated* against within their tasks due to role expectations and gender norms. Male carers face an even bigger lack of support compared to female ones, despite their increasing share in caregiving. This might result in men providing less care and therefore reinforce the *quantitative discrimination* towards women.

Theme 1: social experiences and affected norms. Considering *societal expectations and norms*, there is evidence that gender egalitarianism values shape caregiving decisions (Bainbridge *et al.*, 2021) – which is in line with the dualism of structure and agency (Giddens, 1984). Where there are less gender role differences and more gender egalitarianism, women and men seem to share care tasks more equally (Bainbridge *et al.*, 2021). Hand in hand with a general expectation for females to take on care tasks goes increased public stigma and increased social distance towards male carers compared to female ones for acting outside their role (Zwar *et al.*, 2021). Moreover, Bywaters and Harris (1998) found that professionals have certain gendered expectations towards caregivers, which result in different responses to female and male informal carers and biased planning and assessing of services. While this public stigma could lead to negative consequences for male carers – such as lack of support – it also fosters disadvantages for female caregivers (Zwar *et al.*, 2021) and more adverse effects (Maresova *et al.*, 2020): The qualitative discrimination of male caregivers might reinforce the quantitative discrimination of women.

Contrary to expectations stemming from these considerations and findings, Bainbridge *et al.* (2021) not only found a constant level of elder care provision among females if gender egalitarianism increases, but even a reduction in male caregiving for the elderly. For possible explanations they suggest that in more gender egalitarian countries, men might allocate more time primarily to childcare – time they take from other activities. Countries with greater gender egalitarianism usually also have more accessible possibilities to outsource elder care to healthcare providers, which men might use more often (Bainbridge *et al.*, 2021). These considerations suggest that caring for children seems to be a stronger-valued form of informal care than providing care for elders.

In addition, spouses might be expected to take on care tasks, for example by care professionals (Bywaters and Harris, 1998), reflecting role expectations connected to the state of marriage. This is also depicted in Swinkels *et al.*'s (2019) work, stating that burden increases. Within spousal caregivers, women seem to face higher expectations and therefore less suggestions and pressure towards support offers, whereas male carers are better supported when it comes to day and respite care (Bywaters and Harris, 1998). On average, the burden of partner-caregivers seems to increase over time – especially for older and female carers (Swinkels *et al.*, 2019). While the physical functioning has a higher detrimental impact on male carers' burden, relational problems have a significant influence on female caregivers' burden. Therefore, they suggest that "(...) women in particular may benefit from interventions that help them deal emotionally (...), whereas men may benefit from reducing the burden of care related to severe physical impairment." (Swinkels *et al.*, 2019).

In this situation, professional or other support does not necessarily help *per se* – it rather depends on the context and the support directed at the caregiver:

(continued)

Table 2. Literature grid of included studies

Authors	Year	Title	Journal	Objectives/RQ	Sample	Definition informal caregiver	Theoretical framework/ models/ concepts	Study design/ Methodology	CASP remarks	Findings	Theme(s)
Bainbridge, Palm, Fong	2021	Unpaid family caregiving responsibilities, employee job tasks and work-family conflict: A cross-cultural study	Human Resource Management Journal	By what process does gender affect work-family conflict? Under what conditions does gender affect work-family conflict? We assess the influence of context by examining how societal values in the form of a gender egalitarianism shape the association between gender and job tasks	EWCS sample: respondents whose primary activity was employment and were caregivers (n = 8,692)	caregivers are mostly female; caregiver helps with company (49%), shopping (42%), cleaning and property upkeep (34%), mobility (33%), cooking (32%), finance and administration (30%), dressing (27%), bathing/showering (24%), feeding (23%) and coordinating professional carers	attachment theory, conservation of resources theory	secondary analysis, 2 level design, multilevel regression with random intercepts		gender egalitarianism seems to widen the gender care gap rather than decreasing it: with rising gender egalitarianism female care remains constant, while male care decreases (contrary to findings in family and child care research); the mediated relationship between gender and work-family conflict is moderated by gender egalitarianism	labour market participation; social experiences and norms

Table 2. Continued

Authors	Year	Title	Journal	Objectives/RQ	Sample	Definition informal caregiver	Theoretical framework/ models/ concepts	Study design/ Methodology	CASP remarks	Findings	Theme(s)
Bywaters, Harris	1998	Supporting carers: is practice still sexist?	Health and Social Care in the Community	to compare the support services which were offered to male clients with female spousal carers and those allocated to female clients with male spousal carers	proxy sample: spousal carers via care recipients ("clients") and professional workers, UK	people providing unpaid care work for elderly	0 (just hypothesis of pattern: female carers receive/ are offered less support than male carers)	primary analysis; three parts: 1) type, frequency and duration of services was analysed (clients), 2) two vignettes to test professional care worker's response to certain situations, 3) questionnaire to ask care manager's opinions about service provision to male and female carers		(numbers too small for statistical significance! $n = 54$) although female spousal caregivers face higher dependency among their "patients", male spousal caregivers seem to receive more support/support at an earlier stage; female and male clients (=care-recipients) received different support in different tasks (-> diff. support for male/female caregivers); care managers tend to give more support to male clients (with female caregivers) (but $n = 13$) -> support services might be used differently depending on caregivers' gender (bc. of assumptions made for them/bc. they ask for different support?)	social experiences and norms

(continued)

Table 2. Continued

Authors	Year	Title	Journal	Objectives/RQ	Sample	Definition informal caregiver	Theoretical framework/ models/ concepts	Study design/ Methodology	CASP remarks	Findings	Theme(s)
Heger, Korfhage	2020	Short- and Medium-Term Effects of Informal Eldercare on Labor Market Outcomes	Feminist Economics	This paper analyses how caregiving to parents affects mature caregivers' labor market participation in the short and medium terms. (Heger and Korfhage, 2020, S. 3)	SHARE sample: 50–70 yr olds in Europe and Israel that have given practical or household help within the last 12 months - > older carers (n = 16,295)	person who provided daily or almost daily care to a parent; women more likely to provide care than men	substitution effect, income effect, opportunity costs	secondary analysis, 2 step regression model (IV approach), stratified by gender		female caregivers rather adjust working hours; male caregivers rather exit the labour market (retirement)	labour market participation
Heitmüller, Inglis	2007	The earnings of informal carers: Wage differentials and opportunity costs	Journal of Health Economics	to explore whether informal carers engaging in gainful employment face wage discrimination (Heitmueller and Inglis, S. 3)	caregivers/potential caregivers, BHPS (UK), only individuals who are aged 16–64 (59 for women), residing in England and not working for the armed forces or in self-employment have been included (Heitmueller and Inglis, S. 3)	working age individuals looking after sick, disabled or elderly people living in the same household/not living in same hh	substitution effect, income effect, opportunity costs	secondary analysis; decomposition of wage differentials		there are opportunity costs for individuals as well as opp. costs on policy level - > individual trade-off and policy trade-off	labour market participation; economic costs
Kolodziej, Reichert, Schmitz	2018	New Evidence on Employment Effects of Informal Care Provision in Europe	Health Services Research	To estimate how labor force participation is affected when adult children provide informal care to their parents. (Kolodziej <i>et al.</i> , S. 1) examine the effect of informal care provided by adult children to their dependent elderly parents on labor market participation (Kolodziej <i>et al.</i> , S. 3)	proxy sample of SHARE-respondents (50 and older) with a health status indicating they are in need of care, 2004 - 2013, n=15.662	adult children, who provide care to their dependent parents	0	secondary analysis; OLS regressions with and without accounting for endogeneity, linear probability model		caregiving to a parent in need decreases the probability of working (effect is larger for men, but not significant); differences between Northern and Southern/Eastern European countries	labour market participation

(continued)

Table 2. Continued

Authors	Year	Title	Journal	Objectives/RQ	Sample	Definition informal caregiver	Theoretical framework/ models/ concepts	Study design/ Methodology	CASP remarks	Findings	Theme(s)
Kotsadam	2012	The employment costs of caregiving in Norway	International Journal of Health Care Finance and Economics	Hence, while there is a clear negative effect of being an intensive informal caregiver on employment in Anglo-Saxon welfare states, much less is known about the relationship in other contexts. There are conflicting evidence as well as divergence in theoretical hypotheses on the Nordic welfare states, and the present study aims to enhance the discussion by taking a close look at the effects of informal care on the probability of being employed, the number of hours worked and wages in Norway	LOGG sample: Norwegian respondents 18–65 with at least 1 parent alive (n = around 7,000–8,000 - different models)	supportive efforts from family and other parties, such as friends, neighbours and volunteers in long-term elderly care; people in Norway that have given regular help with personal care such as eating, getting up in the morning, getting dressed, bathing or using the toilet over the last 12 months (small children excluded)	opportunity costs	secondary analysis, IV approach (2 level regression model)		being an intensive caregiver in Norway is negatively correlated with being employed (being a caregiver <i>per se</i> too, but not significant) - but not on wages; macro-level (institutional) factors are important in mediating effects of caregiving on employment-related outcomes	labour market participation; economic costs
Maresova, Lee, Fadeyi, Kuca	2020	The social and economic burden on family caregivers for older adults in the Czech Republic	BMC Geriatrics	to determine the economic burden of informal caregivers	convenience sample: asked professional workers in Czech care centers/ agencies to bring them inf caregivers (n= 155 informal caregivers)	person providing home care: home care as the provision of nursing care, meals and personal care, as well as administration of drugs and injections, among other activities. (Maresova <i>et al.</i> , S. 4)	opportunity costs	primary analysis, quantitative questionnaire, Spearman rank correlation; secondary analysis of publicly available sources for complementation		annual economic costs of ~40,000€ per caregiver -> since women provide the most iLTC in Czech Republic, they might be most affected [weak finding - actually just an interpretation of descriptives]	social experiences and norms; economic costs

(continued)

Table 2. Continued

Authors	Year	Title	Journal	Objectives/RQ	Sample	Definition informal caregiver	Theoretical framework/ models/ concepts	Study design/ Methodology	CASP remarks	Findings	Theme(s)
Mortensen, Dich, Lange, Alexanderson, Goldberg, Head, Kivimäki, Madsen, Rugulies, Vahtera, Zins, Rod	2022	Job strain and informal caregiving as predictors of long-term sickness absence: A longitudinal multi-cohort study	Scandinavian Journal of Work, Environment and Health	to investigate the joint exposure of job strain and informal caregiving as predictors of long-term sickness absence	caregivers and potential caregivers from GAZEL (France), FPS (Finland), Whitehall II (UK), total $n = 26,800$	person providing unpaid assistance with ADLs for sick, disabled or elderly relatives >4 h a week	role accumulation theory	secondary analysis, recurrent-events Cox regression in random-effects meta-analyses (5_14_mortensen, S. 2)	4 & 5: can't tell (secondary analysis)	iLTC is a predictor of longterm sickness absence among women (and also job strain); combination of iLTC and job strain is a predictor for longterm sickness absence among women, but not more than expected from each component individually (no interactive effect) compared to women without high job strain/caring responsibilities	labour market participation; social experiences and norms

(continued)

Table 2. Continued

Authors	Year	Title	Journal	Objectives/RQ	Sample	Definition informal caregiver	Theoretical framework/ models/ concepts	Study design/ Methodology	CASP remarks	Findings	Theme(s)
Schneider, Trukeschitz, Mühlmann, Ponocny	2013	"Do I stay or do I go" - Job change and labor market exit intentions of employees providing informal care to older adults	Health Economics	to examine whether providing informal eldercare predicts employees' intentions to change jobs or exit the labor market and which aspects of caregiving and their current work environment shapes these intentions	proxy sample of federal LTC allowance recipients 60 years and older living in private households in Vienna (p. 1236), n=902	main caregiver: family member, neighbor or friend who provided the largest share of informal help	turnover model, human capital decision framework, opportunity costs	primary analysis; multinomial logistic regression (human capital model)	7: not reported	there is a gender difference in care-related change/exit of labour market; informal carers=/= homogenous group; more hours of eldercare -> higher risk of anticipated LM exit for male workers; LM exit/job change less likely for female workers with eldercare, if working flexitime; with rising nr of ADLs the care-recipient is helped with -> higher chance of LM exit for male workers; if there is a need for care-recipient to be overseen -> lower LM exit for female workers (work as respite)	labour market participation

(continued)

Table 2. Continued

Authors	Year	Title	Journal	Objectives/RQ	Sample	Definition informal caregiver	Theoretical framework/ models/ concepts	Study design/ Methodology	CASP remarks	Findings	Theme(s)
Swinkels, van Groenou, de Boer, van Tilburg	2019	Male and Female Partner-Caregivers' Burden: Does It Get Worse Over Time?	The Gerontologist	This study examines to what degree and why partner-caregiver burden changes over time	partner/spousal caregivers from TOPICS-MDS (n= 722), Netherlands	partner/spousal care - help when partner experiences health problems	wear-and-tear model, adaptation model	secondary analysis; 1 year interval, multilevel regression analysis, stratified by gender (Swinkels <i>et al.</i> , S. 1)		caregiver burden increased over time for male and female caregivers; spousal care is more burdensome for female carers than male carers; more support for wear-and-tear-model: impact of care-recipient's health on caregiver's burden increases over time while impact of fulfillment to alleviate burden decreases; only 1 supporting finding for adaptation-model: impact of combining care with other activities on burden decreased for female carers over time	social experiences and norms

(continued)

Table 2. Continued

Authors	Year	Title	Journal	Objectives/RQ	Sample	Definition informal caregiver	Theoretical framework/ models/ concepts	Study design/ Methodology	CASP remarks	Findings	Theme(s)
Zwar, Angermeyer, Matschinger, Riedel-Heller, König, Hajek	2021	Are informal family caregivers stigmatized differently based on their gender or employment status?: a German study on public stigma towards informal long-term caregivers of older individuals	BMC Public Health	to analyze if the society expresses a different stigma towards female or male, and towards working or nonworking caregivers. In other words, this study analyzes if the gender and working status of informal caregivers is of relevance for the public stigma expressed towards them by the general population	German general population (n= 1,038 adults), quota sample	In this study informal care is defined as family care for a person aged ≥65 years (aged care recipient), provided by adult children (Zwar <i>et al.</i> , S. 2)	stigma: public stigma, courtesy stigma,	primary analysis; vignettes within online survey, cross-sectional		reading about a male instead of female carer was significantly associated with increased social distance scores; same for male working caregivers; increased appreciative statements towards working female carers compared to non-working female carers -> overall: female cg. appreciated when working; male cg. stigmatized, especially when not working/cutting back in working hours -> societal preference for combination of work and care and female caregivers!	labour market participation; social experiences and norms

Source(s): Table created by the authors

It is not the mere presence of other helpers that serves as a resource in the caregiver process; it is more who is present, how they meet the needs of the spousal caregiver, and how the spousal caregiver stays in control of the caregiving process. (Swinkels *et al.*, 2019)

They further found that the burden-reducing effect of feelings of fulfilment, which are improved by appreciation for the care work, decrease over time for female caregivers (but not for male ones), suggesting that fulfilment is not a suitable long-term coping mechanism for female carers.

Working caregivers might face less social distance or stigma and increased appreciation than non-working caregivers (Zwar *et al.*, 2021), suggesting a latent societal preference towards maintaining employment while caregiving. This is true for female working caregivers, while male (working) caregivers are shown more stigma and less appreciation than their female counterparts (Zwar *et al.*, 2021). Zwar *et al.* (2021) conclude that “(. . .) while women extending their gender roles may be appreciated, men seem to be stigmatized for leaving as well as for extending their traditional gender roles.”

While both caregiving and being employed are supposed to be time-consuming and probably burdensome, Mortensen *et al.* (2017) found no interaction between high job strain and informal care work and therefore suggest that (1) working and caregiving might act as a stress-buffer or (2) that there is a self-selection of people with greater personal resources taking on care tasks more frequently and therefore are less likely to suffer negative consequences.

Despite employment's potential to act as a buffer, high appreciation of working while caregiving may not necessarily lead to a reduction in stress and burden for female caregivers: it might even counteract it, for example by preventing them to modify their working life by reducing working hours, etc.

There are changes in gender roles, showing female working caregivers more appreciation than female non-working carers (Zwar *et al.*, 2021). This indicates that gender roles are a strong influence for shaping care situations, but that market logic of employment might even be more important. Females are seen as primarily responsible for care provision, but the societal obligation to take part in gainful employment might be dominant.

Theme 2: informal caregivers' labour market participation. Regarding informal caregiving for the elderly, labour market participation currently seems to be the best-researched theme – and connected to Analytical theme 3: Economic costs of iLTC. For example, in Norway informal caregiving seems not to reduce the probability of being employed, the amount of working hours or employment decisions in general – unless being an intensive caregiver, providing care more than 20 times a month for someone in the same household (Kotsadam, 2012). These intensive caregivers, are less likely to be employed (Kotsadam, 2012), which means that this *per se* more vulnerable group faces additional disadvantages due to the intensive caregiving situation. Again, women as a societal group are more affected, as most of these caregivers are women, but there were no different effects for male and female intensive caregivers (Kotsadam, 2012).

Informal carers are less mobile on the labour market, more often wish to reduce working hours than employees without care responsibilities and face reduced labour force participation (Kolodziej *et al.*, 2018) – because of time restraints as well as expectations of wage discrimination, increasing non-participation of informal carers in the labour force (Heitmueller and Inglis, 2007).

While care provision seems to have negative effects on employment rates and working hours irrespectively of caregiver's gender (Kolodziej *et al.*, 2018; Kotsadam, 2012), other studies found different labour market behaviour between male and female caregivers: Bainbridge *et al.* (2021) suggest that with increasing gender egalitarianism, men tend to provide even less care while women's share did not change. Women rather reduce their job tasks or change their job with increasing hours of caregiving, amongst others to lessen family-conflicts (Bainbridge *et al.*, 2021; Schneider *et al.*, 2013). Schneider *et al.* (2013) point out that for female (but not male) employees with eldercare responsibilities, flexible working time arrangements facilitate their labour market and job attachment.

In the short run, informal caregiving reduces women's as well as men's probability of being employed, but increases only women's probability of retirement (Heger and Korfhage, 2020). Being a caregiver reduces the probability for women not only to work full-time, but also part-time or being self-employed (Kolodziej *et al.*, 2018). After care responsibilities, females "face a persistent reduction of paid working hours by 6.6%, on average" (Heger and Korfhage, 2020).

Theme 3: economic costs of iLTC. In a lot of European countries informal caregiving is accompanied by monetary and timely disadvantages (Heitmueller and Inglis, 2007; Maresova *et al.*, 2020). For example, informal carers might face burden stemming from constantly allocating their time between care responsibilities, leisure activities and gainful employment. Opportunity costs arise from wage penalties and foregone wages by labour market exit or reduction in working hours (Heitmueller and Inglis, 2007). Wage penalties are seen as an individual as well as opportunity cost: A wage penalty occurs as employees with care responsibilities might be systematically viewed as, for example less committed or reliable when asking for more flexible working hours – resulting in fewer promotion opportunities and lower wages. This seems not to apply if caregivers reduce hours, since they might only temporarily work part-time compared to non-caregiving "genuine part-time workers" at a lower hourly wage (Heitmueller and Inglis, 2007).

While there might not necessarily be a relationship between the time spent caregiving and caregiver's gender (Maresova *et al.*, 2020), a study found a financial difference between male and female caregivers: When separated by gender women have a greater wage penalty for taking on care tasks than male carers (Heitmueller and Inglis, 2007). This translates into women being most affected by adverse effects on the socioeconomic status stemming from the provision of informal elderly care (Maresova *et al.*, 2020).

Finally, the reduced informal caregivers' labour market participation also leads to economic costs. Aside from individual costs, informal caregivers might be confronted with a subsequent withdrawal from the labour market, which constitutes opportunity costs at a macro level. If employees with care responsibilities must expect wage discrimination when asking for flexible arrangements, it is possible they rather exit the labour force completely (Heitmueller and Inglis, 2007). In other words, a (looming) decrease in labour supply caused by non-participation or wage discrimination of informal carers must be (financially) compensated by the welfare state. These costs consist of direct, and indirect costs (Maresova *et al.*, 2020).

Discussion and conclusion

While informal caregivers as a societal group face certain adverse effects stemming from the care situation, these outcomes additionally tend to affect male and female carers differently. It is highly important for policy makers to support the heterogeneous group of informal carers with well-tailored measures and initiatives within an integrated care approach rather than applying a one-size-fits-all model.

Besides fostering affordable and accessible *professional services* to address rising care needs of the population and minimize informal caregivers' burden, social policy needs to *address informal carers explicitly* as their work is inevitable for future care supply due to demographic changes. The insights this paper offers not only inform policies to help informal carers perform a task essential for society – yet burdensome and inequality-fostering – but also to allocate resources accurately and more effectively.

Assuming a societal preference towards gainful employment, even when care responsibilities exist (Zwar *et al.*, 2021), the call for *flexible working time arrangements* – in particular for female workers (Schneider *et al.*, 2013) – appears even more urgent to prevent family conflicts (Bainbridge *et al.*, 2021) and to ease the burden on caregivers. In this context, societal norms of reciprocity and gendered role expectations need to be addressed and counteracted by economic incentives and well-tailored supporting offers for the diverse group of informal carers. This also implies the aspect of *public stigmatisation* towards male

caregivers (Zwar *et al.*, 2021). We stress that the qualitative discrimination men are facing when taking on informal care tasks is underestimated in current social policy approaches and in research (Zygouri *et al.*, 2021). Besides strengthening different types of support for informal caregivers in general, it is necessary to additionally provide support that differentiates by gender and especially targets male carers (Zygouri *et al.*, 2021). This might be accomplished by *participation procedures* to capture the caregivers' views and struggles and include them in the policy making process.

The policy implications of this review are threefold: (1) Social policy approaches should be gender-sensitive and adaptive towards the tight linkages between social experiences and norms, economic burden of iLTC and the challenges of labour market integration. (2) Social policy should address the different forms of discrimination between genders. Although most informal carers are women, setting the focus only on female carers bears the risk of leaving male carers under-addressed, leading to a qualitative discrimination of the latter which might reinforce women's quantitative discrimination. (3) Social policy should beware of enacting pressure on either care task or labour market participation, but rather provide support offers, ranging from financial help and opportunities for flexible time arrangements or care leaves at the workplace to respite offers to reduce psychological and emotional burden.

Limitations

This systematic review includes empirical work in English with European populations that examine social and economic effects of caregiving on informal caregivers along a gender dimension. The review is limited to available studies meeting these criteria.

The conclusions should be interpreted with caution, as some studies depict findings that might be country-specific. However, the included studies cover – besides SHARE and EWCS data – populations in the UK, France, the Netherlands, the Czech Republic, Austria, Norway, Finland and Germany.

References

- Bainbridge, H.T.J., Palm, E. and Fong, M.M. (2021), "Unpaid family caregiving responsibilities, employee job tasks and work-family conflict: a cross-cultural study", *Human Resource Management Journal*, Vol. 31 No. 3, pp. 658-674, doi: [10.1111/1748-8583.12333](https://doi.org/10.1111/1748-8583.12333).
- Barrett, P., Hale, B. and Butler, M. (2014), *Family Care and Social Capital: Transitions in Informal Care*, Springer Netherlands, Dordrecht, doi: [10.1007/978-94-007-6872-7](https://doi.org/10.1007/978-94-007-6872-7).
- Bom, J., Bakx, P., Schut, F. and van Doorslaer, E. (2018), "The impact of informal caregiving for older adults on the health of various types of caregivers: a systematic review", *The Gerontologist*, Vol. 59 No. 5, pp. e629-e642, doi: [10.1093/geront/gny137](https://doi.org/10.1093/geront/gny137).
- Bonsang, E. (2009), "Does informal care from children to their elderly parents substitute for formal care in Europe?", *Journal of Health Economics*, Vol. 28 No. 1, pp. 143-154, doi: [10.1016/j.jhealeco.2008.09.002](https://doi.org/10.1016/j.jhealeco.2008.09.002).
- Booth, A., Papaioannou, D. and Sutton, A. (2012), *Systematic Approaches to a Successful Literature Review*, SAGE, London.
- Bywaters, P. and Harris, A. (1998), "Supporting carers: is practice still sexist?", *Health and Social Care in the Community*, Vol. 6 No. 6, pp. 458-463, doi: [10.1046/j.1365-2524.1998.00134.x](https://doi.org/10.1046/j.1365-2524.1998.00134.x).
- Canta, C., Pestieau, P. and Schoenmaeckers, J. (2021), "Blood and gender bias in informal care within the family?", Discussion Paper, Université catholique de Louvain.
- Center for Evidence Synthesis in Health (CESH) (2022), *Abstracts*, Brown University, Providence, RI.
- Collins, C. (2014), "Men as caregivers of the elderly: support for the contributions of sons", *Journal of Multidisciplinary Healthcare*, Vol. 7, pp. 525-531, doi: [10.2147/JMDH.S68350](https://doi.org/10.2147/JMDH.S68350).
- Critical Appraisal Skills Programme (2018), "CASP checklist: for qualitative research", available at: <https://casp-uk.net/casp-tools-checklists/qualitative-studies-checklist/> (accessed 4 February 2025).

- Deufert, D. (2013), "Genderaspekte in der Angehörigenpflege", *Zeitschrift für Gerontologie und Geriatrie*, Vol. 46 No. 6, pp. 520-525, doi: [10.1007/s00391-013-0544-2](https://doi.org/10.1007/s00391-013-0544-2).
- Estrada Fernández, M.E., Gil Lacruz, A.I., Gil Lacruz, M. and Viñas López, A. (2019), "Informal care. European situation and approximation of a reality", *Health Policy*, Vol. 123 No. 12, pp. 1163-1172, doi: [10.1016/j.healthpol.2019.09.007](https://doi.org/10.1016/j.healthpol.2019.09.007).
- European Union (2021), *2021 Long-Term Care Report. Trends, Challenges and Opportunities in an Ageing Society*, Social Protection Committee (SPC); European Commission (DG EMPL), Luxembourg, No. 1.
- Firgo, M., Nowotny, K. and Braun, A. (2020), "Informal, formal, or both? Assessing the drivers of home care utilization in Austria using a simultaneous decision framework", *Applied Economics*, Vol. 52 No. 40, pp. 4440-4456, doi: [10.1080/00036846.2020.1736500](https://doi.org/10.1080/00036846.2020.1736500).
- Folbre, N. (2018), "The care penalty and gender inequality", in Averett, S.L., Argys, L.M. and Hoffman, S.D. (Eds), *The Oxford Handbook of Women and the Economy*, Oxford University Press, pp. 748-766, doi: [10.1093/oxfordhb/9780190628963.013.24](https://doi.org/10.1093/oxfordhb/9780190628963.013.24).
- Gannon, B. and Davin, B. (2010), "Use of formal and informal care services among older people in Ireland and France", *The European Journal of Health Economics: HEPAC: Health Economics in Prevention and Care*, Vol. 11 No. 5, pp. 499-511, doi: [10.1007/s10198-010-0247-1](https://doi.org/10.1007/s10198-010-0247-1).
- Gérain, P. and Zech, E. (2019), "Informal caregiver burnout? Development of a theoretical framework to understand the impact of caregiving", *Frontiers in Psychology*, Vol. 10, p. 1748, doi: [10.3389/fpsyg.2019.01748](https://doi.org/10.3389/fpsyg.2019.01748).
- Giddens, A. (1984), *The Constitution of Society*, University of California Press, Berkeley, Los Angeles.
- Goodwin, N. (2016), "Understanding integrated care", *International Journal of Integrated Care*, Vol. 16 No. 4, p. 6, doi: [10.5334/ijic.2530](https://doi.org/10.5334/ijic.2530).
- Heger, D. and Korfhage, T. (2020), "Short- and medium-term effects of informal eldercare on labor market outcomes", *Feminist Economics*, Vol. 26 No. 4, pp. 205-227, doi: [10.1080/13545701.2020.1786594](https://doi.org/10.1080/13545701.2020.1786594).
- Heitmueller, A. and Inglis, K. (2007), "The earnings of informal carers: wage differentials and opportunity costs", *Journal of Health Economics*, Vol. 26 No. 4, pp. 821-841, doi: [10.1016/j.jhealeco.2006.12.009](https://doi.org/10.1016/j.jhealeco.2006.12.009).
- Kingston, A., Comas-Herrera, A. and Jagger, C. and MODEM project (2018), "Forecasting the care needs of the older population in England over the next 20 years: estimates from the Population Ageing and Care Simulation (PACSim) modelling study", *The Lancet Public Health*, Vol. 3 No. 9, pp. e447-e455, doi: [10.1016/S2468-2667\(18\)30118-X](https://doi.org/10.1016/S2468-2667(18)30118-X).
- Kolodziej, I.W.K., Reichert, A.R. and Schmitz, H. (2018), "New evidence on employment effects of informal care provision in Europe", *Health Services Research*, Vol. 53 No. 4, pp. 2027-2046, doi: [10.1111/1475-6773.12840](https://doi.org/10.1111/1475-6773.12840).
- Kotsadam, A. (2012), "The employment costs of caregiving in Norway", *International Journal of Health Care Finance and Economics*, Vol. 12 No. 4, pp. 269-283, doi: [10.1007/s10754-012-9116-z](https://doi.org/10.1007/s10754-012-9116-z).
- Labbas, E. and Stanfors, M. (2023), "Does caring for parents take its toll? Gender differences in caregiving intensity, coresidence, and psychological well-being across Europe", *European Journal of Population*, Vol. 39 No. 1, p. 18, doi: [10.1007/s10680-023-09666-3](https://doi.org/10.1007/s10680-023-09666-3).
- Maresova, P., Lee, S., Fadeyi, O.O. and Kuca, K. (2020), "The social and economic burden on family caregivers for older adults in the Czech Republic", *BMC Geriatrics*, Vol. 20 No. 1, p. 171, doi: [10.1186/s12877-020-01571-2](https://doi.org/10.1186/s12877-020-01571-2).
- Mortensen, J., Dich, N., Lange, T., Alexanderson, K., Goldberg, M., Head, J., Kivimäski, M., Madsen, I.E., Rugulies, R., Vahtera, J., Zins, M. and Rod, N.H. (2017), "Job strain and informal caregiving as predictors of long-term sickness absence: a longitudinal multi-cohort study", *Scandinavian Journal of Work, Environment and Health*, Vol. 43 No. 1, pp. 5-14, doi: [10.5271/sjweh.3587](https://doi.org/10.5271/sjweh.3587).
- Page, M.J., McKenzie, J.E., Bossuyt, P.M., Boutron, I., Hoffmann, T.C., Mulrow, C.D., Shamseer, L., Tetzlaff, J.M., Akl, E.A., Brennan, S.E. and Chou, R. (2021), "The PRISMA 2020 statement: an updated guideline for reporting systematic reviews", *BMJ*, Vol. 372, p. n71, doi: [10.1136/bmj.n71](https://doi.org/10.1136/bmj.n71).

- Plöthner, M., Schmidt, K., de Jong, L., Zeidler, J. and Damm, K. (2019), "Needs and preferences of informal caregivers regarding outpatient care for the elderly: a systematic literature review", *BMC Geriatrics*, Vol. 19 No. 82, doi: [10.1186/s12877-019-1068-4](https://doi.org/10.1186/s12877-019-1068-4).
- Rahman, Md.M., Rosenberg, M., Flores, G., Parsell, N., Akter, S., Alam, M.A., Rahman, Md.M. and Edejer, T. (2022), "A systematic review and meta-analysis of unmet needs for healthcare and long-term care among older people", *Health Economics Review*, Vol. 12 No. 1, p. 60, doi: [10.1186/s13561-022-00398-4](https://doi.org/10.1186/s13561-022-00398-4).
- Schneider, U., Trukeschitz, B., Mühlmann, R. and Ponocny, I. (2013), "DO I stay or do I GO?'-JOB change and labor market exit intentions of employees providing informal care to older adults: job change and labor market exit intentions of informal caregivers", *Health Economics*, Vol. 22 No. 10, pp. 1230-1249, doi: [10.1002/hec.2880](https://doi.org/10.1002/hec.2880).
- Skinner, M.S. and Sogstad, M. (2022), "Social and gender differences in informal caregiving for sick, disabled, or elderly Persons: a cross-sectional study", *SAGE Open Nursing*, Vol. 8, 237796082211305, doi: [10.1177/23779608221130585](https://doi.org/10.1177/23779608221130585).
- Spasova, S., Baeten, R., Coster, S., Ghailani, D., Peña-Casas, R. and Vanhercke, B. (2018), *Challenges in Long-Term Care in Europe: A Study of National Policies 2018*, European Commission, Brussels.
- Swinkels, J.C., Broese van Groenou, M.I., de Boer, A. and Tilburg, T.G.van. (2019), "Male and female partner-caregivers' burden: does it get worse over time?", in Castle, N.G. (Ed.), *The Gerontologist*, Vol. 59 No. 6, pp. 1103-1111, doi: [10.1093/geront/gny132](https://doi.org/10.1093/geront/gny132).
- Swiss Academic Software (2022), "Citavi", Swiss academic software GmbH".
- Turner, J.H. (1986), "The theory of structuration *the Constitution of society: Outline of the Theory of structuration*. Anthony Giddens", *American Journal of Sociology*, Vol. 91 No. 4, pp. 969-977, doi: [10.1086/228358](https://doi.org/10.1086/228358).
- Verbakel, E., Tamlagsrønning, S., Winstone, L., Fjær, E.L. and Eikemo, T.A. (2017), "Informal care in Europe: findings from the European Social Survey (2014) special module on the social determinants of health", *European Journal of Public Health*, Vol. 27 No. suppl_1, pp. 90-95, doi: [10.1093/eurpub/ckw229](https://doi.org/10.1093/eurpub/ckw229).
- VERBI (2022), *MAXQDA 2022*, VERBI – Software. Consult. Sozialforschung. GmbH, Berlin.
- Wallace, B.C., Small, K., Brodley, C.E., Lau, J. and Trikalinos, T.A. (2012), "Deploying an interactive machine learning system in an evidence-based practice center: abstract", *IHI '12: Proceedings of the 2nd ACM SIGHIT International Health Informatics Symposium, presented at the IHI '12: ACM International Health Informatics Symposium*, Miami, Florida, USA, pp. 819-823.
- Zwar, L., Angermeyer, M.C., Matschinger, H., Riedel-Heller, S.G., König, H.-H. and Hajek, A. (2021), "Are informal family caregivers stigmatized differently based on their gender or employment status?: a German study on public stigma towards informal long-term caregivers of older individuals", *BMC Public Health*, Vol. 21 No. 1, p. 1868, doi: [10.1186/s12889-021-11955-7](https://doi.org/10.1186/s12889-021-11955-7).
- Zygouri, I., Cowdell, F., Ploumis, A., Gouva, M. and Mantzoukas, S. (2021), "Gendered experiences of providing informal care for older people: a systematic review and thematic synthesis", *BMC Health Services Research*, Vol. 21 No. 1, p. 730, doi: [10.1186/s12913-021-06736-2](https://doi.org/10.1186/s12913-021-06736-2).

Supplementary material

The Supplementary material for this article can be found online

About the authors

Barbara Gösenbauer holds a Master's degree in Socio-Economics from the University of Business and Economics Vienna and is a PhD Candidate for Social Policy. Barbara Gösenbauer is the corresponding author and can be contacted at: barbara.goesenbauer@gmail.com

Alexander Braun is Professor for Health Economics and Policy at the University of Applied Sciences Krams in Austria. His research is in economics of aging societies and economic evaluation of prevention strategies.

Marcel Bilger is Professor of Health Economics and Health Policy at the University of Business and Economics Vienna. His research is focused on socio-economics for health care delivery.

For instructions on how to order reprints of this article, please visit our website:

www.emeraldgroupublishing.com/licensing/reprints.htm

Or contact us for further details: permissions@emeraldinsight.com