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Gendered impact of the COVID-19 pandemic on unpaid care work and mental health in Europe: A scoping review protocol

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3 **Gendered impact of the COVID-19 pandemic on unpaid care work and mental health in**
4 **Europe: A scoping review protocol**
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6
7 **Corresponding author**

8 Gencer, Hande

9 Department of Prevention and Evaluation

10 Leibniz Institute for Prevention Research and Epidemiology - BIPS

11 Achterstr. 30

12 28359 Bremen

13 Germany

14 Email: gencer@leibniz-bips.de
15
16
17

18 **Co-authors**

19 Prof. Dr. Brunnett, Regina

20 Department of Welfare and Health Care

21 University of Business and Society Ludwigshafen

22 Ludwigshafen, Germany
23
24

25 JProf. Dr. Marchwacka, Maria A.

26 Faculty of Nursing Science

27 Vinzenz Palotti University (VPU)

28 Vallendar, Germany
29
30

31 Rattay, Petra

32 Department of Epidemiology and Health Monitoring

33 Robert Koch Institute

34 Berlin, Germany
35
36

37 Prof. Dr. Staiger, Tobias

38 Faculty of Social Welfare

39 Cooperative State University Baden-Wuerttemberg

40 Villingen-Schwenningen, Germany
41
42
43

44 Prof. Dr. Dr. Tezcan-Güntekin, Hürrem

45 Alice Salomon University of Applied Sciences Berlin

46 Berlin, Germany
47
48

49 Dr. Pöge, Kathleen

50 Department of Infectious Disease Epidemiology

51 Robert Koch Institute

52 Berlin, Germany
53
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56 **Words:** 2,184 (excluding title page, abstract, tables and references)
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ABSTRACT

Introduction

Women are more likely than men to provide unpaid care work. Previous research has shown that various forms of unpaid care work and work-family conflicts have negative impacts on caregivers' mental health, especially among female caregivers. COVID-19 containment measures may exacerbate existing gender inequalities both in terms of unpaid care work and adverse mental health outcomes. This scoping review protocol describes the systematic approach to review published literature from March 2020 onward to identify empirical studies on the gendered impact of COVID-19 containment measures on unpaid caregivers' mental health in Europe from an intersectional perspective.

Methods and analysis

This scoping review is informed and guided by Arksey and O'Malley's methodological framework. We will search the databases Medline, PsycInfo, Scopus, CINAHL, Social Sciences Abstracts, Sociological Abstracts as well as ASSIA and hand-search reference lists of selected studies to identify relevant studies. We will include peer-reviewed studies that report gender-segregated findings for mental health outcomes associated with unpaid care work in the context of COVID-19 containment measures in Europe. Two reviewers will independently screen all abstracts and full texts for inclusion. One reviewer will extract general information, study characteristics and relevant findings. Results will be synthesized narratively.

Ethics and dissemination

This study is a review of peer-reviewed articles gathered from scientific databases; ethics approval is not warranted. The findings of this study will inform public health research and policy. The results will be disseminated through a peer-reviewed publication and academic conferences.

Keywords

Caregivers, work-life balance, coronavirus, mental health, gender role

ARTICLE SUMMARY

Strengths and limitations of this study

- This study employs a rigorous and established methodology for conducting scoping reviews following Arksey and O'Malley as well as Levac et al.'s methodological enhancement.
- This scoping review will identify and map evidence on gender differences in unpaid caregiving and related adverse mental health outcomes in the context of COVID-19 containment measures in Europe.
- We will search seven electronic databases and hand-search reference lists to identify relevant studies without applying language limitations.
- As the outbreak of COVID-19 was declared a pandemic not so long ago, it is not possible to assess medium- or longer-term impacts of containment measures on unpaid care work and caregivers' mental health.
- This study is limited to empirical studies published in peer-reviewed journals and will exclude other types of publications and grey literature.

INTRODUCTION

The introduction of COVID-19 containment measures in European countries in March 2020 has resulted in increased demand for unpaid care work, especially for those with existing caregiving obligations towards small children and persons in need of personal care. Unpaid care work, including both caregiving to other people (e.g., childcare, care for the elderly, sick or disabled) and reproductive work (e.g., household responsibilities, day to day shopping) is predominantly performed by women.[1, 2] Reasons for the gendered division of unpaid care work are often rooted in cultural and institutionalized gender norms.[3] In addition to gender, other categories of social differentiation such as age, ethnic origin, migration status, sexual orientation, disability and various living circumstances (e.g., employment status, income, living with a partner and/or children, care arrangements) may be relevant for the uptake of and burden resulting from unpaid care work.[4]

The annual Gender Equality Report of the European Union 2021 shows that childcare and housework duties are unevenly distributed between gender groups.[5] Prior to the outbreak of the pandemic, women in the European Union spent an average of 13 hours more time on unpaid care work per week compared to men (38 vs. 25 hours).[6] Among employed couples with children aged 12 and younger, women spent 20 more hours on unpaid care work than men, while men spent an average of 10 more hours on paid work compared to women.[7] The 2016 European Quality of Life survey showed that informal caregiving to disabled or infirm family members, neighbors or friends is largely performed by women (3.2 hours vs. 1.8 hours per week for men). Women make up more than half of the informal caregivers in the 50-64 age group. Among informal caregivers in employment, female caregivers are overrepresented.[8] These findings suggest that over their life course, female caregivers are simultaneously or partially exposed to the combined burden of unpaid care work and paid work. The gender care gap has an impact on women's labor market participation: Women more often work part-time, contributing to gender gaps in employment, pay and pensions.[5]

The reconciliation of unpaid care work and paid work is rendered difficult by socio-structural contexts.[9, 10] Paid work structurally requires a dispensation from responsibility for care work while at the same time being a central prerequisite for securing one's means of subsistence, especially in old age.[11, 12] Previous research has shown that work-family conflicts, as well as long and delimited working hours have negative impacts on unpaid caregivers' mental health.[13-15] Compared to women, men experience less work-family conflict and greater stress when taking on childcare and other personal care duties.[16] Across European countries, informal caregivers report lower levels of mental wellbeing when compared to non-caregivers, especially when they are female and provide intensive care.[17-19]

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3 According to the first wave of Eurofound's COVID-19 online survey (April/May 2020), women spent
4 more hours per week on unpaid care work compared to men. This includes childcare (12.6 vs. 7.8
5 hours for men), informal caregiving (4.5 hours vs. 2.8 hours for men) as well as housework and
6 cooking (18.6 hours vs. 12.1 hours per week for men). The second wave of Eurofound's online survey
7 (July 2020) revealed, that employed women with children under 12 years of age spent an average of
8 54 hours per week on childcare (compared to 32 hours for employed men). Regardless of
9 employment status, working and non-working women spent more time on childcare and housework
10 than men.[20]
11

12 This scoping review aims to analyze the emerging evidence on the gendered impact of COVID-19
13 containment measures in Europe on unpaid care work and caregivers' mental health considering
14 intersectional perspectives. The overall objective is to identify subgroups of caregivers at the
15 intersection of gender and other categories of social differentiation that are most vulnerable to
16 changes in family, social and work life impacted by COVID-19 containment measures.
17

18 **Objectives**

19 This scoping review aims to map the current state of research on gender differences in the impact of
20 COVID-19 related changes on unpaid care work and caregivers' mental health, specifically to:
21

- 22 1. Identify changes in the distribution of unpaid care work between gender groups under COVID-19
23 containment measures.
- 24 2. Describe the impact of these changes on the mental health of various subgroups of caregivers.
- 25 3. Identify population groups that are particularly affected by restrictions in the context of
26 combating the pandemic and changed requirements in unpaid care work.
- 27 4. Provide recommendations for future public health research and potentially beneficial gender-
28 equality measures during and after the COVID-19 pandemic.
29

30 **METHODS AND ANALYSIS**

31 The scoping review is conducted according to the methodological framework for scoping studies
32 proposed by Arksey and O'Malley[21] and its enhancement by Levac et al.[22] consisting of the
33 following five stages: (1) identifying the research question; (2) identifying relevant studies; (3) Study
34 selection; (4) charting the data; (5) collating, summarizing and reporting the results. The Preferred
35 Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-
36 ScR) is used to ensure rigor and replicability of the scoping review (the checklist is available as an
37 online supplementary appendix A).[23] The literature searches will be completed in the spring of
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2022 and subsequent analyses of the findings will be completed in the summer of 2022. Stakeholders or other members of the public will not be consulted during the design and conduct of this study.

Stage 1: Identifying the research question

The research question was developed and refined in a collaborative effort by the research team (HG, RB, MM, PR, TS, HTG and KP). The review is guided by the first research question: What are the impacts of COVID-19 containment measures on the distribution of unpaid care work between gender groups? The second research question is: What are the mental health effects of these changes on subgroups of unpaid caregivers at the intersection of gender and other categories of social differentiation? We define unpaid care work as unpaid services to household members, relatives and friends including both caring for other people (e.g., for children, the elderly, disabled or ill) and reproductive work (e.g., household responsibilities, grocery shopping). Following the definition of the World Health Organization, we define mental health as the state of wellbeing in which an individual realizes their own abilities, can cope with the normal stresses of life, can work productively and is able to make a contribution to their community.[24] In line with this definition, we will apply a broad operationalization of mental health including objective measures and self-reported symptoms or disorders, as well as parameters of caregiver burden. We will include any type of COVID-19 containment measures introduced in Europe since March 2020, including contact restrictions, closures of workplaces, educational, leisure and cultural institutions, childcare, and other care facilities.

Stage 2: Identifying relevant studies

The search strategy includes searching for research evidence in seven electronic databases and hand-searching reference lists of relevant studies. The search will be limited to peer-reviewed studies published since March 2020. This date was chosen because it is representative of the time when the first COVID-19 containment measures were introduced in Europe. The databases Medline, PsycInfo, Scopus, CINAHL, Sociological Abstracts, Social Services Abstracts and ASSIA will be searched using English search terms. Reference lists of the selected studies will be hand-searched to identify further eligible references. The research questions and key concept definitions are used to establish the search strategy for electronic databases (Table 1). The search strategy will initially be developed on the Medline database (via OvidSp) and converted for each following database. To this end, titles and abstracts will be searched for using search terms of themes (1) and (2) combined with the Boolean operator AND. If further specification is needed, search terms of theme (3) will be added. MeSH-Terms will be translated into subject headings and thesaurus words for other databases. Adjacency operators (within 3 words between) will be translated into appropriate operators for other databases. The proposed search strategy is shown in the online supplementary appendix B.

Table 1: List of search themes and search terms for the search strategy

Search themes	Search terms
(1) Unpaid care work	((("Caregivers"[MeSH] OR "Work-Life Balance"[MeSH]) or ((informal OR unpaid OR family OR familial OR spous*) adj3 (care or carer* or caregiver* or caregiving or care-work or "care work" or "care giver*" or care-giver* or care-giving or "care giving")) or ((unpaid OR unwaged OR domestic OR reproductive OR family OR familial) adj3 (work or worker* or labor or labour or laborer* or labourer*)) or (childcare or "child care" or child-care or elder-care or "elder care" or housework or household or work-life-balance or "work-life balance" or "work-family-conflict" or "work-family conflict" or work-to-family-conflict or "work-to-family conflict" or "family nursing" or "family-centered nursing" or "family centered nursing"))
(2) COVID-19 containment measures	((("Coronavirus"[MeSH] OR "COVID-19"[MeSH] OR "SARS-CoV-2"[MeSH]) OR (covid OR covid-19 OR "covid 19" OR coronavirus* OR corona-virus* OR "corona virus*" OR 2019-nCov OR "2019 nCov" OR sars-cov-2 OR "sars cov 2" OR "pandemic" OR "Severe Acute Respiratory Syndrome Coronavirus 2")) AND (lockdown* OR lock-down* OR "lock down*" OR shutdown* OR shut-down* OR "shut down*" OR quarantine* OR "containment measure*" OR "shelter-in-place order*" OR "stay-at-home order*"))
(3) Mental health outcomes	((("Mental Health"[MeSH] OR "Mental Disorders"[MeSH] OR "Psychological Distress"[MeSH] OR "Stress, Psychological"[MeSH] OR "Anxiety"[MeSH] OR "Anxiety Disorders"[MeSH] OR "Caregiver Burden"[MeSH]) OR ("mental health" OR "mental disorder*" OR "psychological distress" OR "psychological stress" OR "anxiety" OR "anxiety disorder*" OR "caregiver burden" OR "psychological burnout" OR burnout OR "mental wellbeing" OR "mental stability" OR "mental balance" OR "mental health problem*" OR "emotional suffering" OR burden OR exhaustion OR stress OR "psychosocial risk factor" OR "psychosocial impact" OR "psychosocial problem" OR wellbeing OR well-being OR "life satisfaction" OR "quality of life" OR depression OR depressive OR psychosocial OR psychological OR mental OR emotional)

Articles must meet the eligibility criteria defined by population, exposition, comparison, outcomes and setting as shown in table 2. We will include published peer-reviewed articles and exclude methods reports, conference papers and grey literature. All study designs will be included.

Table 2: Population, Exposition, Comparison, Outcomes, Setting

Population	Persons who provide unpaid and non-professional care work
Exposition	Any type of COVID-19 related containment measures
Comparator	Outcomes must be reported by gender to allow for between-gender comparison
Outcomes	Any type of mental health measures including indicators of mental wellbeing (e.g., subjective wellbeing, aspects of life satisfaction, happiness), mental disorders (e.g., diagnoses of depression, schizophrenia, burnout, anxiety disorders; self-reported (symptoms) of mental disorders, use of mental health services, use of medications for mental disorders; help-seeking behavior regarding mental health problems, number of medical referrals for treatments of mental disorders; self-reported limitations in daily activities due to mental disorders; substance abuse including alcohol abuse) and perceived caregiver burden
Setting	Europe

Stage 3: Study selection

The study selection is an iterative process consisting of two main stages: (1) title and abstract screening and (2) full-text review. After exclusion of duplicates, titles and abstracts of identified references will be screened by two independent researchers applying pre-defined inclusion and exclusion criteria. After screening of an initial 20% of the identified search results, the research team will discuss any challenges or uncertainties related to the inclusion and exclusion criteria to reach a consensus. The search strategy will be refined if needed. Next, two reviewers will independently review the full articles for inclusion. In both stages, disagreements between two researchers will be discussed. Where consensus is not reached, a third reviewer will be consulted to determine final inclusion.

Stage 4: Charting the data

In this stage, data from the included studies will be extracted. To this end, the research team will develop and continually update a data-charting form to display study characteristics and main results. Study characteristics will include: author(s), publication year, country/region, time period, study design/research methods, study population characteristics, type of COVID-19 containment measure(s), type/definition of unpaid care work, mental health outcome(s), gender differences in outcome parameters, and results by subgroups of unpaid caregivers. Main results will include key findings and policy recommendations. The data extraction form will be tested by two independent reviewers separately extracting data from a sample of included articles. After discussing and refining the approach, data extraction will then be conducted by one reviewer. A second reviewer will

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3 independently extract data of 10% of the included full articles to allow for comparison and discussion
4 of the results within the research team.
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7 **Stage 5: Collating, summarizing, and reporting results**

8 The findings of the scoping review will provide an overview of the research with emphases on
9 categories of social differentiation that intersect with gender. To this end, data will be analyzed and
10 summarized descriptively, presented in tables and graphs as well as summarized in text following a
11 narrative method. According to our primary research question, we will describe changes in the
12 prevalence and intensity of unpaid care work resulting from COVID-19 containment measures. We
13 will then depict the impact of these changes on the mental health of caregivers (secondary research
14 question). Findings will be discussed in terms of gender differences at the intersection of further
15 categories of social differentiation to identify subgroups of unpaid caregivers at risk for adverse
16 mental health outcomes.
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25 **LIMITATIONS**

26 We limit our research to the COVID-19 pandemic. Given that more than one year and a half has passed
27 since the introduction of the first pandemic-related containment measures in Europe, our strategy
28 should cover all short- and medium-term studies related to our research question. However, we will
29 not discover longer-term studies or studies related to other global events (and respective global and
30 national policies involved) that may affect unpaid care work provision and its impact on unpaid
31 caregivers' mental health. Moreover, many studies are published in grey literature, which may not be
32 covered by our review. As common within scoping studies, we do not assess the quality of included
33 studies.
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42 **ETHICS AND DISSEMINATION**

43 As this is a literature search without collection of primary data, a formal ethical approval is not
44 required. Findings of this scoping review will be disseminated through professional networks,
45 conference presentations and publication in a peer-reviewed scientific journal.
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3 **Author Contributions:** HG and KP conceived the study. HG wrote the first draft, developed the study
4 methods and the search strategy. All authors worked collaboratively to edit and incorporate
5 suggestions. All authors read and approved the final manuscript.
6
7

8 **Funding:** This research received no specific grant from any funding agency in the public, commercial
9 or not-for-profit sectors.
10
11

12 **Competing interests:** None declared.
13

14 **Patient and public involvement:** This scoping review analyzes existing research and will not include
15 patients or members of the public in any of its stages including design, conduct, reporting and
16 dissemination.
17
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19 **Patient consent for publication:** Not required.
20

21 **Provenance and peer review:** Not commissioned, externally peer-reviewed.
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24 **ORCID-IDs:**

25 Hande Gencer: <https://orcid.org/0000-0002-1097-9609>

26 Regina Brunnett: <https://orcid.org/0000-0002-2158-7838>

27 Maria Marchwacka: <https://orcid.org/0000-0001-8933-9841>

28 Petra Rattay: <https://orcid.org/0000-0001-5093-2584>

29 Tobias Staiger: <https://orcid.org/0000-0002-2114-093X>

30 Hürrem Tezcan-Güntekin: <https://orcid.org/0000-0002-2045-1998>

31 Kathleen Pöge: <https://orcid.org/0000-0002-9274-6285>
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SUPPLEMENTARY MATERIALS

Appendix A: PRISMA-ScR 2018 Checklist

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
TITLE			
Title	1	Identify the report as a scoping review.	Reported
ABSTRACT			
Structured summary	2	Provide a structured summary that includes (as applicable): background, objectives, eligibility criteria, sources of evidence, charting methods, results, and conclusions that relate to the review questions and objectives.	Reported
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known. Explain why the review questions/objectives lend themselves to a scoping review approach.	Reported
Objectives	4	Provide an explicit statement of the questions and objectives being addressed with reference to their key elements (e.g., population or participants, concepts, and context) or other relevant key elements used to conceptualize the review questions and/or objectives.	Reported
METHODS			
Protocol and registration	5	Indicate whether a review protocol exists; state if and where it can be accessed (e.g., a Web address); and if available, provide registration information, including the registration number.	N/A
Eligibility criteria	6	Specify characteristics of the sources of evidence used as eligibility criteria (e.g., years considered, language, and publication status), and provide a rationale.	Reported
Information sources*	7	Describe all information sources in the search (e.g., databases with dates of coverage and contact with authors to identify additional sources), as well as the date the most recent search was executed.	Reported
Search	8	Present the full electronic search strategy for at least 1 database, including any limits used, such that it could be repeated.	Reported
Selection of sources of evidence†	9	State the process for selecting sources of evidence (i.e., screening and eligibility) included in the scoping review.	Reported
Data charting process‡	10	Describe the methods of charting data from the included sources of evidence (e.g., calibrated forms or forms that have been tested by the team before their use, and whether data charting was done independently or in duplicate) and any processes for obtaining and confirming data from investigators.	Reported
Data items	11	List and define all variables for which data were sought and any assumptions and simplifications made.	Reported
Critical appraisal of individual sources of evidence§	12	If done, provide a rationale for conducting a critical appraisal of included sources of evidence; describe the methods used and how this information was used in any data synthesis (if appropriate).	N/A
Synthesis of results	13	Describe the methods of handling and summarizing the data that were charted.	N/A

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
RESULTS			
Selection of sources of evidence	14	Give numbers of sources of evidence screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally using a flow diagram.	N/A
Characteristics of sources of evidence	15	For each source of evidence, present characteristics for which data were charted and provide the citations.	N/A
Critical appraisal within sources of evidence	16	If done, present data on critical appraisal of included sources of evidence (see item 12).	N/A
Results of individual sources of evidence	17	For each included source of evidence, present the relevant data that were charted that relate to the review questions and objectives.	N/A
Synthesis of results	18	Summarize and/or present the charting results as they relate to the review questions and objectives.	N/A
DISCUSSION			
Summary of evidence	19	Summarize the main results (including an overview of concepts, themes, and types of evidence available), link to the review questions and objectives, and consider the relevance to key groups.	N/A
Limitations	20	Discuss the limitations of the scoping review process.	Reported
Conclusions	21	Provide a general interpretation of the results with respect to the review questions and objectives, as well as potential implications and/or next steps.	N/A
FUNDING			
Funding	22	Describe sources of funding for the included sources of evidence, as well as sources of funding for the scoping review. Describe the role of the funders of the scoping review.	N/A

Appendix B: Search strategy

MEDLINE (via OvidSP), 01/03/2020-21/10/2021 (searched/exported: 21/10/2021)

1. exp caregivers/
2. exp work-life balance/
3. 1 or 2
4. ((informal OR unpaid OR family OR familial OR spous*) adj3 (care or carer* or caregiver* or caregiving or care-work or "care work" or "care giver*" or care-giver* or care-giving or "care giving")).ti,ab.
5. ((unpaid OR unwaged OR domestic OR reproductive OR family OR familial) adj3 (work or worker* or labor or labour or laborer* or labourer*)).ti,ab.
6. (childcare or "child care" or child-care or elder-care or "elder care" or housework or household or work-life-balance or "work-life balance" or "work-family-conflict" or "work-family conflict" or work-to-family-conflict or "work-to-family conflict" or "family nursing" or "family-centered nursing" or "family centered nursing").ti,ab.
7. or/3-6
8. exp coronavirus/
9. exp sars-cov-2/
10. exp covid-19/
11. or/8-10
12. (covid OR covid-19 OR "covid 19" OR coronavirus* OR corona-virus* OR "corona virus*" OR 2019-nCov OR "2019 nCov" OR sars-cov-2 OR "sars cov 2" OR "pandemic" OR "Severe Acute Respiratory Syndrome Coronavirus 2").ti,ab.
13. 11 or 12
14. (lockdown* OR lock-down* OR "lock down" OR shutdown* OR shut-down* OR "shut down*" OR quarantine* OR "containment measure*" OR "shelter-in-place order*" OR "stay-at-home order*").ti,ab.
15. 13 and 14
16. 7 and 15
17. limit 16 to yr="2020 -Current"
18. exp mental health/
19. exp mental disorders/
20. exp psychological distress/
21. exp stress, psychological/
22. exp anxiety/
23. exp anxiety disorders/
24. exp caregiver burden/
25. or/18-24
26. ("mental health" OR "mental disorder*" OR "psychological distress" OR "psychological stress" OR "anxiety" OR "anxiety disorder*" OR "caregiver burden" OR "psychological burnout" OR burnout OR "mental wellbeing" OR "mental stability" OR "mental balance" OR "mental health problem*" OR "emotional suffering" OR burden OR exhaustion OR stress OR "psychosocial risk factor" OR "psychosocial impact" OR "psychosocial problem" OR wellbeing OR well-being OR "life satisfaction" OR "quality of life" OR depression OR depressive OR psychosocial OR psychological OR mental OR emotional).ti,ab.
27. 25 or 26
28. 16 and 27
29. limit 28 to yr="2020 -Current"

PRISMA-ScR 2018 Checklist

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
TITLE			
Title	1	Identify the report as a scoping review.	Reported
ABSTRACT			
Structured summary	2	Provide a structured summary that includes (as applicable): background, objectives, eligibility criteria, sources of evidence, charting methods, results, and conclusions that relate to the review questions and objectives.	Reported
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known. Explain why the review questions/objectives lend themselves to a scoping review approach.	Reported
Objectives	4	Provide an explicit statement of the questions and objectives being addressed with reference to their key elements (e.g., population or participants, concepts, and context) or other relevant key elements used to conceptualize the review questions and/or objectives.	Reported
METHODS			
Protocol and registration	5	Indicate whether a review protocol exists; state if and where it can be accessed (e.g., a Web address); and if available, provide registration information, including the registration number.	N/A
Eligibility criteria	6	Specify characteristics of the sources of evidence used as eligibility criteria (e.g., years considered, language, and publication status), and provide a rationale.	Reported
Information sources*	7	Describe all information sources in the search (e.g., databases with dates of coverage and contact with authors to identify additional sources), as well as the date the most recent search was executed.	Reported
Search	8	Present the full electronic search strategy for at least 1 database, including any limits used, such that it could be repeated.	Reported
Selection of sources of evidence†	9	State the process for selecting sources of evidence (i.e., screening and eligibility) included in the scoping review.	Reported
Data charting process‡	10	Describe the methods of charting data from the included sources of evidence (e.g., calibrated forms or forms that have been tested by the team before their use, and whether data charting was done independently or in duplicate) and any processes for obtaining and confirming data from investigators.	Reported
Data items	11	List and define all variables for which data were sought and any assumptions and simplifications made.	Reported
Critical appraisal of individual sources of evidence§	12	If done, provide a rationale for conducting a critical appraisal of included sources of evidence; describe the methods used and how this information was used in any data synthesis (if appropriate).	N/A
Synthesis of results	13	Describe the methods of handling and summarizing the data that were charted.	N/A
RESULTS			
Selection of sources of evidence	14	Give numbers of sources of evidence screened, assessed for eligibility, and included in the review,	N/A

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
		with reasons for exclusions at each stage, ideally using a flow diagram.	
Characteristics of sources of evidence	15	For each source of evidence, present characteristics for which data were charted and provide the citations.	N/A
Critical appraisal within sources of evidence	16	If done, present data on critical appraisal of included sources of evidence (see item 12).	N/A
Results of individual sources of evidence	17	For each included source of evidence, present the relevant data that were charted that relate to the review questions and objectives.	N/A
Synthesis of results	18	Summarize and/or present the charting results as they relate to the review questions and objectives.	N/A
DISCUSSION			
Summary of evidence	19	Summarize the main results (including an overview of concepts, themes, and types of evidence available), link to the review questions and objectives, and consider the relevance to key groups.	N/A
Limitations	20	Discuss the limitations of the scoping review process.	Reported
Conclusions	21	Provide a general interpretation of the results with respect to the review questions and objectives, as well as potential implications and/or next steps.	N/A
FUNDING			
Funding	22	Describe sources of funding for the included sources of evidence, as well as sources of funding for the scoping review. Describe the role of the funders of the scoping review.	N/A

BMJ Open

Gendered impact of COVID-19 containment measures on unpaid care work and mental health in Europe: A scoping review protocol

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3 **Gendered impact of COVID-19 containment measures on unpaid care work and mental health**
4 **in Europe: A scoping review protocol**
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6
7 **Corresponding author**

8 Gencer, Hande

9 Department of Prevention and Evaluation

10 Leibniz Institute for Prevention Research and Epidemiology - BIPS

11 Achterstr. 30

12 28359 Bremen

13 Germany

14 Email: gencer@leibniz-bips.de

15
16
17
18 **Co-authors**

19 Prof. Dr. Brunnett, Regina

20 Department of Welfare and Health Care

21 University of Business and Society Ludwigshafen

22 Ludwigshafen, Germany

23
24
25 JProf. Dr. Marchwacka, Maria A.

26 Faculty of Nursing Science

27 Vinzenz Palotti University (VPU)

28 Vallendar, Germany

29
30
31 Rattay, Petra

32 Department of Epidemiology and Health Monitoring

33 Robert Koch Institute

34 Berlin, Germany

35
36
37 Prof. Dr. Staiger, Tobias

38 Faculty of Social Welfare

39 Cooperative State University Baden-Wuerttemberg

40 Villingen-Schwenningen, Germany

41
42
43 Prof. Dr. Dr. Tezcan-Güntekin, Hürrem

44 Alice Salomon University of Applied Sciences Berlin

45 Berlin, Germany

46
47
48 Dr. Pöge, Kathleen

49 Department of Infectious Disease Epidemiology

50 Robert Koch Institute

51 Berlin, Germany

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53
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ABSTRACT

Introduction

Women are more likely than men to provide unpaid care work. Previous research has shown that lack of support for various forms of unpaid care work and work-family conflicts have negative impacts on caregivers' mental health, especially among female caregivers. COVID-19 containment measures may exacerbate existing gender inequalities both in terms of unpaid care work and adverse mental health outcomes. This scoping review protocol describes the systematic approach to review published literature from March 2020 onward to identify empirical studies and grey literature on the mental health impact of COVID-19 containment measures on subgroups of unpaid caregivers at the intersection of gender and other categories of social difference (e.g., ethnicity, age, class) in Europe.

Methods and analysis

This scoping review is informed and guided by Arksey and O'Malley's methodological framework. We will search the databases Medline, PsycInfo, Scopus, CINAHL, Social Sciences Abstracts, Sociological Abstracts as well as ASSIA and hand-search reference lists of selected articles to identify relevant peer-reviewed studies. We will conduct a grey literature search using Google Scholar and targeted hand-search on known international and European websites and include reports, working papers, policy briefs, and book chapters that meet the inclusion criteria. Studies that report gender-segregated findings for mental health outcomes associated with unpaid care work in the context of COVID-19 containment measures in Europe will be included. Two reviewers will independently screen all abstracts and full texts for inclusion, and extract general information, study characteristics and relevant findings. Results will be synthesized narratively.

Ethics and dissemination

This study is a review of published literature; ethics approval is not warranted. The findings of this study will inform public health research and policy. The results will be disseminated through a peer-reviewed publication and conference presentations.

Keywords

Caregivers, work-life balance, coronavirus, mental health, gender role

ARTICLE SUMMARY

Strengths and limitations of this study

- This scoping review is the first to identify and map evidence on gender differences in unpaid caregiving and related adverse mental health outcomes in the context of COVID-19 containment measures in Europe.
- This study employs a rigorous and established methodology for conducting scoping reviews following Arksey and O'Malley as well as Levac et al.'s methodological enhancement.
- We will search seven electronic databases and hand-search reference lists to identify relevant studies without applying language limitations complemented by a grey literature search on Google Scholar and targeted hand-search on relevant websites.
- As the outbreak of COVID-19 was declared a pandemic not so long ago, it is not possible to assess medium- or longer-term impacts of containment measures on unpaid care work and caregivers' mental health.
- This study is limited to studies and reports in Europe which restricts the transferability of results to other geographical regions.

INTRODUCTION

The introduction of COVID-19 containment measures in European countries in March 2020 has resulted in increased demand for unpaid care work, especially for those with existing caregiving obligations towards small children and persons in need of personal care. Unpaid care work - unpaid services to household members, relatives and friends including both caring for other people (e.g., childcare, looking after members of the extended family) and reproductive work (e.g., household responsibilities, day to day shopping) - is predominantly performed by women.[1, 2] Reasons for the gendered division of unpaid care work are often rooted in cultural and institutionalized gender norms.[3] In addition to gender, other categories of social differentiation such as age, ethnic origin, migration status, sexual orientation, disability and various living circumstances (e.g., employment status, type of paid work, income, living with a partner and/or children, care arrangements, housing characteristics) may be relevant for the uptake of and burden resulting from unpaid care work.[4]

The annual Gender Equality Report of the European Union 2021 shows that childcare and housework duties are unevenly distributed between gender groups.[5] Prior to the outbreak of the pandemic, women in the European Union spent an average of 13 hours more time on unpaid care work per week compared to men (38 vs. 25 hours).[6] Among employed couples with children aged 12 and younger, women spent 20 more hours on unpaid care work than men, while men spent an average of 10 more hours on paid work compared to women.[7] The gender care gap translates into gender differences in labor market participation: Women more often work part-time, contributing to gender gaps in employment, pay and pensions.[5]

Another type of unpaid care work is informal caregiving to sick, disabled, or elderly family members or friends. According to the 2016 European Quality of Life survey informal caregiving is largely performed by women: Overall, 20% of female respondents provided informal care compared to 15% of male respondents. The largest gender difference was observed in the 50-64 age group (28% of women, 17% of men). The gender gap in informal caregiving was also observed among the population in employment: Altogether, 19% of employed women provided informal care compared to 15% of employed men. Again, the gender difference was highest among employees with caregiving responsibilities in the 50-64 age group (27% employed women vs. 17% employed men).[8] These findings suggest that over their life course, female caregivers are simultaneously or partially exposed to the combined burden of unpaid care work and paid work.

The reconciliation of unpaid care work and paid work is rendered difficult by socio-structural contexts.[9, 10] Paid work structurally requires a dispensation from responsibility for care work while at the same time being a central prerequisite for securing one's means of subsistence, especially

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3 in old age.[11, 12] Previous research has shown that work-family conflicts, as well as long and
4 delimited working hours have negative impacts on unpaid caregivers' mental health. [13–15] Across
5 European countries, informal caregivers report lower levels of mental wellbeing when compared to
6 non-caregivers, especially when they are female and provide intensive care.[16–18]
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10 Policy measures to contain the spread of the COVID-19 virus, including contact restrictions, closures
11 of workplaces, educational, leisure and cultural institutions, childcare, and other care facilities, may
12 exacerbate existing gender inequalities in unpaid caregiving and mental health. According to the first
13 wave of Eurofound's COVID-19 online survey (April/May 2020), women spent more hours per week
14 on unpaid care work compared to men. This includes childcare (12.6 vs. 7.8 hours for men), informal
15 caregiving (4.5 hours vs. 2.8 hours for men) as well as housework and cooking (18.6 hours vs. 12.1
16 hours per week for men). The second wave of Eurofound's online survey (July 2020) revealed, that
17 employed women with children under 12 years of age spent an average of 54 hours per week on
18 childcare (compared to 32 hours for employed men). Regardless of employment status, working and
19 non-working women spent more time on childcare and housework than men.[19]
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26 According to the concept of intersectionality, one's social location is influenced by interlocking
27 systems of privilege and oppression (e.g., (hetero-)sexism, classism, ableism, racism, ageism) that are
28 not simply additive, but interact in complex and uneven ways.[20] Gender inequalities need to be
29 addressed at the intersection to other social categories of differentiation (e.g., ethnicity, immigration
30 status, age, economic position) as intersections of social locations might heighten the risks for adverse
31 mental health outcomes for subgroups of unpaid caregivers.
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37 Early research from Europe indicates a differential impact of COVID-19 containment measures by
38 ethnicity and socio-economic status. A study from Berlin, Germany, shows that COVID-19 outbreaks
39 are clustered in neighborhoods with higher proportions of migrant residents.[21] In the UK,
40 racialized and migrant population groups were more likely to experience economic hardship[22],
41 showed a greater decline in subjective wellbeing[22, 23], and a higher death rate after being tested
42 positive for COVID-19 compared to White British people.[24] Migrant population groups are more
43 likely to have occupations in lower paid and precarious essential fields.[25] They may be less affected
44 by COVID-19 related furlough policies, layoffs, and loss of earnings[26], but they are at a higher risk
45 of contracting the virus. In Germany, healthcare workers – a majority of which are female and migrant
46 women in the EU[5] – contracted COVID-19 five times more often compared to other occupational
47 groups.[27] Living in high density households and having chronic medical conditions are risk factors
48 for reduced subjective wellbeing during the COVID-19 pandemic.[28] These factors in turn are more
49 likely to apply to migrant and lower income population groups.[25]
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3 The aim of this research study is to map the evidence on the gendered and intersectional impact of
4 COVID-19 containment measures in Europe with regards to unpaid care work and mental health. An
5 intersectionality approach allows researchers and policy makers to understand the social and
6 economic consequences of COVID-19 for women, men, and gender-diverse persons, including where
7 vulnerabilities coincide and where they diverge.[29] We expect that COVID-19 related containment
8 measures will differentially impact unpaid caregivers at the intersection of gender, ethnicity,
9 immigrant status, class, and other social categories. As none of these intersectional social locations
10 (e.g., a middle-class migrant mother) represent a homogenous group, further aspects such as socio-
11 economic characteristics (e.g., employment status, working hours, housing), living circumstances
12 (e.g., living with a partner, living with small children), and public and labor market policies (e.g.,
13 provision of public childcare, long-term care arrangement, reconciliation measures) that may impact
14 the way policy measure affect caregivers' mental health must be taken into consideration. In addition
15 to these social and systemic factors, caregiving characteristics (e.g., type of unpaid care work,
16 intensity of caregiving, relationship to care receiver, absence/presence of illness or disability of care
17 receiver, co-habitation with care receiver) may moderate the mental health impact of unpaid care
18 work under COVID-19 containment measures.

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29 The COVID-19 pandemic is a very recent and ongoing phenomenon. Due to the potential harmful
30 mental health impact of COVID-19 containment measures on subgroups of unpaid caregivers, we
31 sought to conduct a scoping review. Following the definition of the World Health Organization, we
32 understand mental health as the state of wellbeing in which an individual realizes their own abilities,
33 can cope with the normal stresses of life, can work productively and is able to make a contribution to
34 their community.[30] The overall objective is to identify subgroups of caregivers at the intersection
35 of gender and other categories of social differentiation that are most vulnerable to changes in family,
36 social and work life impacted by COVID-19 containment measures. A preliminary search of similar
37 studies was performed via hand-searching unpublished and published systematic and scoping
38 reviews on the topic in scientific registers, selected databases and on Google Scholar. To our
39 knowledge, this scoping review is the first to identify and map evidence on gender differences in
40 unpaid caregiving and related adverse mental health outcomes in the context of COVID-19
41 containment measures in Europe.

51 **Objectives**

52 This scoping review aims to map the current state of research on gender differences in the impact of
53 changes on unpaid care work and caregivers' mental health related to COVID-19 containment
54 measures, specifically to:
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- 3 1. Identify changes in the distribution of unpaid care work between gender groups under COVID-19
- 4 containment measures.
- 5
- 6 2. Describe the impact of these changes on the mental health of various subgroups of caregivers.
- 7
- 8 3. Identify population groups that are particularly affected by restrictions in the context of
- 9 combating the pandemic and changed requirements in unpaid care work.
- 10
- 11 4. Provide recommendations for future public health research and potentially beneficial gender-
- 12 equality measures during and after the COVID-19 pandemic.
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16 **METHODS AND ANALYSIS**

17 This scoping review consists of a systematic database search complemented by a grey literature
18 search on Google Scholar and a targeted hand-search on relevant websites. The database search is
19 conducted according to the methodological framework for scoping studies proposed by Arksey and
20 O'Malley[31] and its enhancement by Levac et al.[32] consisting of the following five stages: (1)
21 identifying the research question; (2) identifying relevant studies; (3) Study selection; (4) charting
22 the data; (5) collating, summarizing and reporting the results. The Preferred Reporting Items for
23 Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) is used to
24 ensure rigor and replicability of the scoping review (the checklist is available as an online
25 supplementary appendix A).[33] The literature searches will be completed in the spring of 2022 and
26 subsequent analyses of the findings will be completed in the summer of 2022. Policy measures to
27 contain the spread of COVID-19 have affected individuals with unpaid care responsibilities globally.
28 Our study focuses on findings from European countries. Although COVID-19-related containment
29 measures were similar on a global scale, there are substantial differences in reconciliation measures,
30 long-term care, healthcare, and other social security systems depending on the geographical region.
31 Within Europe we expect more homogeneity in terms of policies and arrangements compared to
32 other geographical regions.[34] As national policies might differ in terms of support arrangements
33 for unpaid caregivers, we will reflect on differences within European countries in our main
34 manuscript.

35 **Stage 1: Identifying the research question**

36 The research question was developed and refined in a collaborative effort by the research team (HG,
37 RB, MM, PR, TS, HTG and KP). The review is guided by the first research question: What are the
38 impacts of COVID-19 containment measures on the distribution of unpaid care work between gender
39 groups? The second research question is: What are the mental health effects of these changes on
40 subgroups of unpaid caregivers at the intersection of gender and other categories of social
41 differentiation? We define unpaid care work as unpaid services to household members, relatives and
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friends including both caring for other people (e.g., for children, the elderly, disabled or ill) and reproductive work (e.g., household responsibilities, grocery shopping). In line with the WHO definition[30], we will apply a broad operationalization of mental health including objective measures and self-reported symptoms or disorders, as well as parameters of caregiver burden. We will include any type of COVID-19 containment measures introduced in Europe since March 2020.

Stage 2: Identifying relevant studies

The database search strategy includes searching for research evidence in seven electronic databases and hand-searching reference lists of relevant studies. We will include peer-reviewed original research articles via systematic database search and exclude other publication types (e.g., methods reports, conference papers, commentaries, letters, opinion pieces, theses). Reference lists of the selected studies will be hand-searched to identify further eligible references. The search will be limited to references published since March 2020. This date was chosen because it is representative of the time when the first COVID-19 containment measures were introduced in Europe. The databases Medline, PsycInfo, Scopus, CINAHL, Sociological Abstracts, Social Services Abstracts and ASSIA will be searched using English search terms. These sources were chosen after assessing their thematic relevance and coverage of the literature based on the guidance from a librarian. The research questions and key concept definitions are used to establish the search strategy for electronic databases (Table 1). The search strategy will initially be developed on the Medline database (via OvidSp) and converted for each following database. To this end, titles and abstracts will be searched for using search terms of themes (1) and (2) combined with the Boolean operator AND. If further specification is needed, search terms of theme (3) will be added. MeSH-Terms will be translated into subject headings and thesaurus words for other databases. Adjacency operators (within 3 words between) will be translated into appropriate operators for other databases. The proposed search strategy is shown in the online supplementary appendix B.

Table 1: List of search themes and search terms for the search strategy

Search themes	Search terms
(1) Unpaid care work	((("Caregivers"[MeSH] OR "Work-Life Balance"[MeSH]) or ((informal OR unpaid OR family OR familial OR spous*) adj3 (care or carer* or caregiver* or caregiving or care-work or "care work" or "care giver*" or care-giver* or care-giving or "care giving"))) or ((unpaid OR unwaged OR domestic OR reproductive OR family OR familial) adj3 (work or worker* or labor or labour or laborer* or labourer*)) or (childcare or "child care" or child-care or elder-care or "elder care" or housework or household or work-life-balance or "work-life balance" or "work-family-conflict" or "work-family conflict" or work-to-family-conflict or "work-to-family

		conflict" or "family nursing" or "family-centered nursing" or "family centered nursing")
(2)	COVID-19 containment measures	((("Coronavirus"[MeSH] OR "COVID-19"[MeSH] OR "SARS-CoV-2"[MeSH]) OR (covid OR covid-19 OR "covid 19" OR coronavirus* OR corona-virus* OR "corona virus*" OR 2019-nCov OR "2019 nCov" OR sars-cov-2 OR "sars cov 2" OR "pandemic" OR "Severe Acute Respiratory Syndrome Coronavirus 2")) AND (lockdown* OR lock-down* OR "lock down*" OR shutdown* OR shut-down* OR "shut down*" OR quarantine* OR "containment measure*" OR "shelter-in-place order*" OR "stay-at-home order*"))
(3)	Mental health outcomes	((("Mental Health"[MeSH] OR "Mental Disorders"[MeSH] OR "Psychological Distress"[MeSH] OR "Stress, Psychological"[MeSH] OR "Anxiety"[MeSH] OR "Anxiety Disorders"[MeSH] OR "Caregiver Burden"[MeSH]) OR ("mental health" OR "mental disorder*" OR "psychological distress" OR "psychological stress" OR "anxiety" OR "anxiety disorder*" OR "caregiver burden" OR "psychological burnout" OR burnout OR "mental wellbeing" OR "mental stability" OR "mental balance" OR "mental health problem*" OR "emotional suffering" OR burden OR exhaustion OR stress OR "psychosocial risk factor" OR "psychosocial impact" OR "psychosocial problem" OR wellbeing OR well-being OR "life satisfaction" OR "quality of life" OR depression OR depressive OR psychosocial OR psychological OR mental OR emotional)

Articles must meet the eligibility criteria defined by population, exposition, comparison, outcomes and setting as shown in table 2. All study designs will be included.

Table 2: Population, Exposition, Comparison, Outcomes, Setting

Population	Persons who provide unpaid and non-professional care work
Exposition	Any type of COVID-19 related containment measures
Comparator	Outcomes must be reported by gender to allow for between-gender comparison
Outcomes	Any type of mental health measures including indicators of mental wellbeing (e.g., subjective wellbeing, aspects of life satisfaction, happiness), mental disorders (e.g., diagnoses of depression, schizophrenia, burnout, anxiety disorders; self-reported (symptoms) of mental disorders, use of mental health services, use of medications for mental disorders; help-seeking behavior regarding mental health problems, number of medical referrals for treatments of mental disorders; self-reported limitations in daily activities due to mental disorders; substance abuse including alcohol abuse) and perceived caregiver burden

Setting	Europe
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Stage 3: Study selection

The study selection is an iterative process consisting of two main stages: (1) title and abstract screening and (2) full-text review. After exclusion of duplicates, titles and abstracts of identified references will be screened by two independent researchers applying pre-defined inclusion and exclusion criteria. After screening of an initial 20% of the identified search results, the research team will discuss any challenges or uncertainties related to the inclusion and exclusion criteria to reach a consensus. The search strategy will be refined if needed. Next, two reviewers will independently review the full articles for inclusion. In both stages, disagreements between two researchers will be discussed. Where consensus is not reached, a third reviewer will be consulted to determine final inclusion.

Stage 4: Charting the data

In this stage, data from the included studies will be extracted. To this end, the research team will develop and continually update a data-charting form to display study characteristics and main results. Study characteristics will include: author(s), publication year, country/region, time period, study design/research methods, study population characteristics, type of COVID-19 containment measure(s), type/definition of unpaid care work, mental health outcome(s), gender differences in outcome parameters, and results by subgroups of unpaid caregivers. Main results will include key findings and policy recommendations. The data extraction form will be tested by two independent reviewers separately extracting data from a sample of included articles. After discussing and refining the approach, data extraction will then be conducted by two independent reviewers. Results of the data extraction will be compared and discussed within the research team.

Stage 5: Collating, summarizing, and reporting results

The findings of the scoping review will provide an overview of the research with emphases on categories of social differentiation that intersect with gender. To this end, data will be analyzed and summarized descriptively, presented in tables and graphs as well as summarized in text following a narrative method. According to our primary research question, we will describe changes in the prevalence and intensity of unpaid care work resulting from COVID-19 containment measures. We will then depict the impact of these changes on the mental health of caregivers (secondary research question). Findings will be discussed in terms of gender differences at the intersection of further categories of social differentiation to identify subgroups of unpaid caregivers at risk for adverse mental health outcomes. Where possible, we will discuss reported gender differences in unpaid

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3 caregiving considering the modalities of caregiving such as the quality of unpaid care work (i.e., in
4 terms of the type of tasks performed) and the intensity of caregiving (i.e., in terms of time spent on
5 caregiving).
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8 **Grey literature search**

9 We will also include grey literature to provide a balanced and complete picture of the available
10 evidence.[35] In line with previous research, we will use Google Scholar to identify relevant grey
11 literature complemented by a targeted hand-search of international and European organizations' and
12 institutions' websites including but not limited to WHO, OECD, UN Women, European Commission,
13 European Institute for Gender Equality, and Eurocarers.[36] We will apply the same inclusion criteria
14 as for the database search (see table 2) for documents published from March 2020 onward. Key
15 search terms for Google Scholar are derived from the database search strategy and include (a)
16 "unpaid care" or "informal care" or "caregiving" or "caregiver(s)" or "childcare" or "housework", AND
17 (b) "lockdown(s)" or "shutdown(s)" or "quarantine" OR "containment measure(s)" OR "shelter-in-
18 place order(s)" OR "stay-at-home order(s)". Two independent reviewers will screen all records from
19 both searches for eligibility. Selected documents will be limited to government, non-government, and
20 international organization reports, working papers, policy statements, and book chapters. Findings
21 from the grey literature search will be reported separately from the systematic database search as we
22 expect methodological differences between peer-reviewed original research articles and grey
23 literature research. A flow diagram of the review process is described in the online supplementary
24 appendix C.
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38 **LIMITATIONS**

39 We limit our research to the COVID-19 pandemic. Given that nearly two years have passed since the
40 introduction of the first pandemic-related containment measures in Europe, our strategy should
41 cover all short- and medium-term studies related to our research question. However, we will not
42 discover longer-term studies or studies related to other global events (and respective global and
43 national policies involved) that may affect unpaid care work provision and its impact on unpaid
44 caregivers' mental health. This scoping review is limited to studies and reports in the geographical
45 region of Europe. We acknowledge that a regional focus on Europe might affect the results of our
46 scoping review in terms of transferability of results to other geographical regions. Comparability of
47 different study results might be limited due to methodological differences, different study
48 populations, and heterogeneity across European countries. Emerging differences that might hinder
49 the comparison of findings within studies will be discussed in our main manuscript. As common
50 within scoping studies, we do not assess the quality of included studies.
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ETHICS AND DISSEMINATION

As this is a literature search without collection of primary data, a formal ethical approval is not required. We will disseminate our results in the form of an open access publication and international conferences. Findings from this work will also be shared with policy makers, stakeholders, and researchers via the Competence Network Public Health COVID-19, a public health research consortium consisting of scientific societies and organizations from Germany, Austria, and Switzerland.

For peer review only

Author Contributions: HG and KP designed the study. HG contributed to the design, in particular in relation to the research questions/objectives, the literature review and by developing the study methods and the search strategy. KP, RB, MM, TS, and HTG contributed to the design, in particular in relation to the research questions/objectives and the literature review. PR contributed to the design, in particular in relation to the research questions/objectives, the study methods, and the database search. HG drafted the first version of the manuscript. RB, MM, PR, TS, HTG, and KP critically revised the first version and approved the final manuscript.

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ORCID-IDs:

Hande Gencer: <https://orcid.org/0000-0002-1097-9609>

Regina Brunnett: <https://orcid.org/0000-0002-2158-7838>

Maria Marchwacka: <https://orcid.org/0000-0001-8933-9841>

Petra Rattay: <https://orcid.org/0000-0001-5093-2584>

Tobias Staiger: <https://orcid.org/0000-0002-2114-093X>

Hürrem Tezcan-Güntekin: <https://orcid.org/0000-0002-2045-1998>

Kathleen Pöge: <https://orcid.org/0000-0002-9274-6285>

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SUPPLEMENTARY MATERIALS

Appendix A: PRISMA-ScR 2018 Checklist

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
TITLE			
Title	1	Identify the report as a scoping review.	Reported
ABSTRACT			
Structured summary	2	Provide a structured summary that includes (as applicable): background, objectives, eligibility criteria, sources of evidence, charting methods, results, and conclusions that relate to the review questions and objectives.	Reported
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known. Explain why the review questions/objectives lend themselves to a scoping review approach.	Reported
Objectives	4	Provide an explicit statement of the questions and objectives being addressed with reference to their key elements (e.g., population or participants, concepts, and context) or other relevant key elements used to conceptualize the review questions and/or objectives.	Reported
METHODS			
Protocol and registration	5	Indicate whether a review protocol exists; state if and where it can be accessed (e.g., a Web address); and if available, provide registration information, including the registration number.	N/A
Eligibility criteria	6	Specify characteristics of the sources of evidence used as eligibility criteria (e.g., years considered, language, and publication status), and provide a rationale.	Reported
Information sources*	7	Describe all information sources in the search (e.g., databases with dates of coverage and contact with authors to identify additional sources), as well as the date the most recent search was executed.	Reported
Search	8	Present the full electronic search strategy for at least 1 database, including any limits used, such that it could be repeated.	Reported
Selection of sources of evidence†	9	State the process for selecting sources of evidence (i.e., screening and eligibility) included in the scoping review.	Reported
Data charting process‡	10	Describe the methods of charting data from the included sources of evidence (e.g., calibrated forms or forms that have been tested by the team before their use, and whether data charting was done independently or in duplicate) and any processes for obtaining and confirming data from investigators.	Reported
Data items	11	List and define all variables for which data were sought and any assumptions and simplifications made.	Reported
Critical appraisal of individual sources of evidence§	12	If done, provide a rationale for conducting a critical appraisal of included sources of evidence; describe the methods used and how this information was used in any data synthesis (if appropriate).	N/A
Synthesis of results	13	Describe the methods of handling and summarizing the data that were charted.	Not reported
RESULTS			
Selection of	14	Give numbers of sources of evidence screened,	Not reported

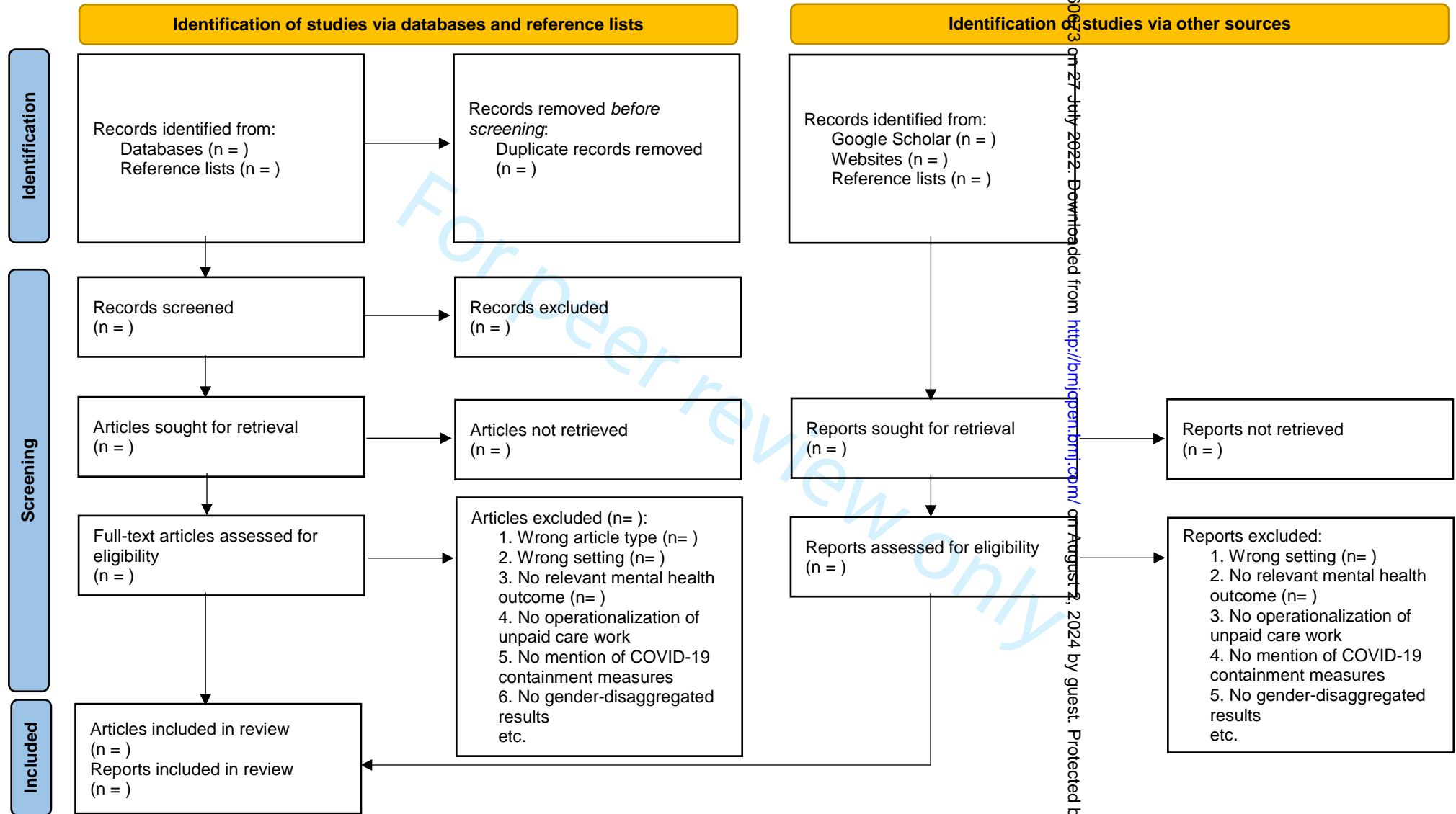
SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
sources of evidence		assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally using a flow diagram.	
Characteristics of sources of evidence	15	For each source of evidence, present characteristics for which data were charted and provide the citations.	Not reported
Critical appraisal within sources of evidence	16	If done, present data on critical appraisal of included sources of evidence (see item 12).	Not reported
Results of individual sources of evidence	17	For each included source of evidence, present the relevant data that were charted that relate to the review questions and objectives.	Not reported
Synthesis of results	18	Summarize and/or present the charting results as they relate to the review questions and objectives.	Not reported
DISCUSSION			
Summary of evidence	19	Summarize the main results (including an overview of concepts, themes, and types of evidence available), link to the review questions and objectives, and consider the relevance to key groups.	Not reported
Limitations	20	Discuss the limitations of the scoping review process.	Reported
Conclusions	21	Provide a general interpretation of the results with respect to the review questions and objectives, as well as potential implications and/or next steps.	Not reported
FUNDING			
Funding	22	Describe sources of funding for the included sources of evidence, as well as sources of funding for the scoping review. Describe the role of the funders of the scoping review.	N/A

Appendix B: Search strategy

MEDLINE (via OvidSP), 01/03/2020-21/10/2021 (searched/exported: 21/10/2021)

1. exp caregivers/
2. exp work-life balance/
3. 1 or 2
4. ((informal OR unpaid OR family OR familial OR spous*) adj3 (care or carer* or caregiver* or caregiving or care-work or "care work" or "care giver*" or care-giver* or care-giving or "care giving")).ti,ab.
5. ((unpaid OR unwaged OR domestic OR reproductive OR family OR familial) adj3 (work or worker* or labor or labour or laborer* or labourer*)).ti,ab.
6. (childcare or "child care" or child-care or elder-care or "elder care" or housework or household or work-life-balance or "work-life balance" or "work-family-conflict" or "work-family conflict" or work-to-family-conflict or "work-to-family conflict" or "family nursing" or "family-centered nursing" or "family centered nursing").ti,ab.
7. or/3-6
8. exp coronavirus/
9. exp sars-cov-2/
10. exp covid-19/
11. or/8-10
12. (covid OR covid-19 OR "covid 19" OR coronavirus* OR corona-virus* OR "corona virus*" OR 2019-nCov OR "2019 nCov" OR sars-cov-2 OR "sars cov 2" OR "pandemic" OR "Severe Acute Respiratory Syndrome Coronavirus 2").ti,ab.
13. 11 or 12
14. (lockdown* OR lock-down* OR "lock down" OR shutdown* OR shut-down* OR "shut down*" OR quarantine* OR "containment measure*" OR "shelter-in-place order*" OR "stay-at-home order*").ti,ab.
15. 13 and 14
16. 7 and 15
17. limit 16 to yr="2020 -Current"
18. exp mental health/
19. exp mental disorders/
20. exp psychological distress/
21. exp stress, psychological/
22. exp anxiety/
23. exp anxiety disorders/
24. exp caregiver burden/
25. or/18-24
26. ("mental health" OR "mental disorder*" OR "psychological distress" OR "psychological stress" OR "anxiety" OR "anxiety disorder*" OR "caregiver burden" OR "psychological burnout" OR burnout OR "mental wellbeing" OR "mental stability" OR "mental balance" OR "mental health problem*" OR "emotional suffering" OR burden OR exhaustion OR stress OR "psychosocial risk factor" OR "psychosocial impact" OR "psychosocial problem" OR wellbeing OR well-being OR "life satisfaction" OR "quality of life" OR depression OR depressive OR psychosocial OR psychological OR mental OR emotional).ti,ab.
27. 25 or 26
28. 16 and 27
29. limit 28 to yr="2020 -Current"

APPENDIX C: PRISMA Flow diagram



From: Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *BMJ* 2021;372:n71. doi: 10.1136/bmj.n71. For more information, visit: <http://www.prisma-statement.org/>

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PRISMA-ScR 2018 Checklist

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
TITLE			
Title	1	Identify the report as a scoping review.	Reported
ABSTRACT			
Structured summary	2	Provide a structured summary that includes (as applicable): background, objectives, eligibility criteria, sources of evidence, charting methods, results, and conclusions that relate to the review questions and objectives.	Reported
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known. Explain why the review questions/objectives lend themselves to a scoping review approach.	Reported
Objectives	4	Provide an explicit statement of the questions and objectives being addressed with reference to their key elements (e.g., population or participants, concepts, and context) or other relevant key elements used to conceptualize the review questions and/or objectives.	Reported
METHODS			
Protocol and registration	5	Indicate whether a review protocol exists; state if and where it can be accessed (e.g., a Web address); and if available, provide registration information, including the registration number.	N/A
Eligibility criteria	6	Specify characteristics of the sources of evidence used as eligibility criteria (e.g., years considered, language, and publication status), and provide a rationale.	Reported
Information sources*	7	Describe all information sources in the search (e.g., databases with dates of coverage and contact with authors to identify additional sources), as well as the date the most recent search was executed.	Reported
Search	8	Present the full electronic search strategy for at least 1 database, including any limits used, such that it could be repeated.	Reported
Selection of sources of evidence†	9	State the process for selecting sources of evidence (i.e., screening and eligibility) included in the scoping review.	Reported
Data charting process‡	10	Describe the methods of charting data from the included sources of evidence (e.g., calibrated forms or forms that have been tested by the team before their use, and whether data charting was done independently or in duplicate) and any processes for obtaining and confirming data from investigators.	Reported
Data items	11	List and define all variables for which data were sought and any assumptions and simplifications made.	Reported
Critical appraisal of individual sources of evidence§	12	If done, provide a rationale for conducting a critical appraisal of included sources of evidence; describe the methods used and how this information was used in any data synthesis (if appropriate).	N/A
Synthesis of results	13	Describe the methods of handling and summarizing the data that were charted.	N/A
RESULTS			
Selection of sources of evidence	14	Give numbers of sources of evidence screened, assessed for eligibility, and included in the review,	N/A

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
		with reasons for exclusions at each stage, ideally using a flow diagram.	
Characteristics of sources of evidence	15	For each source of evidence, present characteristics for which data were charted and provide the citations.	N/A
Critical appraisal within sources of evidence	16	If done, present data on critical appraisal of included sources of evidence (see item 12).	N/A
Results of individual sources of evidence	17	For each included source of evidence, present the relevant data that were charted that relate to the review questions and objectives.	N/A
Synthesis of results	18	Summarize and/or present the charting results as they relate to the review questions and objectives.	N/A
DISCUSSION			
Summary of evidence	19	Summarize the main results (including an overview of concepts, themes, and types of evidence available), link to the review questions and objectives, and consider the relevance to key groups.	N/A
Limitations	20	Discuss the limitations of the scoping review process.	Reported
Conclusions	21	Provide a general interpretation of the results with respect to the review questions and objectives, as well as potential implications and/or next steps.	N/A
FUNDING			
Funding	22	Describe sources of funding for the included sources of evidence, as well as sources of funding for the scoping review. Describe the role of the funders of the scoping review.	N/A