

Additional file 1

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Supplementary Table S1 Characteristics and reported parameters of included studies (n=82), 2020 to 2024

Author(s), publication year	Country	Study design	Nursing homes (n)	Participants (n)	Parameters				
					Pandemic- related data	Facility level	Staff level	Resident level	Relative level
Aghili et al., 2022 (1)	Iran	Case-control study	6	409 residents	Preliminary signs and symptoms of SARS-CoV-2 infection (residents)	- Infection prevention and control principles - Environmental and staff characteristics		Predisposing factors of SARS-CoV-2 infection	
Akdeniz et al., 2022 (2)	Turkey	Cross-sectional research design	30	154 nursing home staff			- Workload - Work stress		
Akhtar-Danesh et al., 2022 (3)	Canada	Retrospective cohort study	-	106,765 residents		Ownership		- Index of neglect - Mortality data - Frailty index - Changes in Health, Endstage Disease, Symptoms and Signs (CHESS) co-morbidity score	
Altintas et al., 2022 (4)	France	Survey	4	129 nursing home staff	Staff fears of COVID-19		- Emotional exhaustion - Care quality experience		

Author(s), publication year	Country	Study design	Nursing homes (n)	Participants (n)	Parameters				
					Pandemic-related data	Facility level	Staff level	Resident level	Relative level
Arpacioğlu et al., 2021 (5)	Turkey	Cross-sectional and descriptive design	43	133 individuals (nursing home and community-dwelling)				- Thinking and witnessing death, ambiguity of death, and pain - Satisfaction with life - Depression, anxiety, stress	
Backhaus et al., 2021 (6)	The Netherlands	Mixed methods study (survey, documentation analyses)	64	-	COVID-19 infections	Dealing with infections	Impact on well-being	- Visits, activities and daily life in care homes - Impact on well-being	Impact on well-being
Bielza et al., 2021 (7)	Spain	Retrospective cohort study	55	630 residents with COVID-19	30-day mortality, and associated factors - Symptoms of a COVID-19 infection (dyspnea, consciousness) - Risk of severe COVID-19 progression	Hospitalisation rate of residents		Frailty	

Author(s), publication year	Country	Study design	Nursing homes (n)	Participants (n)	Parameters				
					Pandemic-related data	Facility level	Staff level	Resident level	Relative level
Blain et al., 2020 (8)	France	Retrospective cohort study	1	79 residents	• COVID-19 infections • Symptoms of COVID-19 infections • COVID-19 deaths				
Blanco-Donoso et al., 2021 (9)	Spain	Cross-sectional study	-	228 nursing home staff	• Staff fears of contagion	• Staff and personal protection equipment • Co-worker and supervisor support	• Workload • Social pressure from work • Contact with death and suffering • Secondary traumatic stress		
Blanco-Donoso et al., 2022 (10)	Spain	Cross-sectional study	-	335 nursing home staff			• Additionally: • Emotional exhaustion • Professional satisfaction • Job demands and resources during the COVID-19 crisis		

Author(s), publication year	Country	Study design	Nursing homes (n)	Participants (n)	Parameters				
					Pandemic-related data	Facility level	Staff level	Resident level	Relative level
Brady et al., 2023 (11)	Ireland	Two cross-sectional surveys	42	Survey 1: 390 nursing home staff Survey 2: 229 nursing home staff	Staff perceptions: health fear, doubts about protective equipment, dissatisfaction with infection control-related systems and processes		- Post-traumatic stress symptoms - Wellbeing - Suicidal ideation and planning - Moral injury - Coping styles - Social isolation - Job stress - Altruistic acceptance of risk - Work ability - Needing support		
Braun et al., 2020 (12)	USA	Cross-sectional study	11,470	-	COVID-19 cases and deaths	- Ownership - Staffing shortages - Supplies of personal protective equipment		Deaths by any cause	

Author(s), publication year	Country	Study design	Nursing homes (n)	Participants (n)	Parameters				
					Pandemic-related data	Facility level	Staff level	Resident level	Relative level
Bußmann & Pomorin, 2023 (13)	Germany	Longitudinal cohort study	2	Survey 1: 93 nursing home staff Survey 2: 94 nursing home staff			• Psychosocial working conditions • Psychosocial impact of dealing with residents receiving palliative care • Psychosocial impact of contact with relatives • COVID-19: organisation/communication • COVID-19: operational measures and overall assessment		
Coffey et al., 2023 (14)	USA	One-time survey	2	57 residents	• Feeling of safety from COVID-19 infection • Risk reduction for severe course or death through vaccination			• Compulsory wearing of masks • Desire for group activities • Acceptance of COVID-19 tests and daily COVID-19 screening • Quality of life	

Author(s), publication year	Country	Study design	Nursing homes (n)	Participants (n)	Parameters				
					Pandemic-related data	Facility level	Staff level	Resident level	Relative level
Conejero et al., 2023 (15)	France	Cross-sectional study	66	537 nursing home staff		- Centre organisation - Nursing home COVID-19 exposure	- Probable post-traumatic stress disorder - Anxiety - Depression - Burnout of nursing home staff		
De Souza Oliveira et al., 2023 (16)	Spain	Prospective study	3	301 residents				- Cognitive status - Presence of chronic diseases and chronic treatments - Frailty status - Sarcopenia - Functional status - Nutritional status - Anthropometrical and biochemical markers	
Dini et al., 2020 (17)	Italy	Cross-sectional study	12	150 residents	- COVID-19 infections - Symptoms of COVID-19 infections				

Author(s), publication year	Country	Study design	Nursing homes (n)	Participants (n)	Parameters				
					Pandemic-related data	Facility level	Staff level	Resident level	Relative level
Dora et al., 2020 (18)	USA	Prospective cohort study	1	150 residents	- COVID-19 infections - Symptoms of COVID-19 infections				
Echeverria et al., 2020 (19)	Spain	Prospective cohort study	169	10,347 residents	- COVID-19 infections - COVID-19 mortality - Symptoms of COVID-19 infections - Number of staff isolated with suspected COVID-19			Mortality by any cause	
El Haj et al., 2020 (20)	France	Online survey	-	58 residents				- Anxiety - Depression	

Author(s), publication year	Country	Study design	Nursing homes (n)	Participants (n)	Parameters				
					Pandemic-related data	Facility level	Staff level	Resident level	Relative level
Estabrooks et al., 2023 (21)	Canada	Repeated cross-sectional survey	35	181 managers			- Care Managers - Mental health and well-being outcomes - Job satisfaction - Burnout - Organizational citizenship behaviours - Mental and physical health - Burden of worry - Intention to leave		
Gao et al., 2022 (22)	China	Cross-sectional study	4	381 residents				- Status of depressive symptoms - Physical function	
Gibson & Greene, 2020 (23)	USA	Cross-sectional study	13,445	-		- Supply of personal protective equipment - Staff shortage			

Author(s), publication year	Country	Study design	Nursing homes (n)	Participants (n)	Parameters				
					Pandemic-related data	Facility level	Staff level	Resident level	Relative level
Graham et al., 2020 (24)	UK	Prevalence study	4	394 residents 70 nursing home staff	• COVID-19 infections (residents and staff) • Symptoms of COVID-19 infections	• Testing for COVID-19 infections among staff • Testing for COVID-19 infection among residents		• All-cause mortality	
Gustafsson et al., 2022 (25)	Sweden	Prospective national study	-	11,782 residents				• Perceived loneliness • Self-rated health • Worries and anxiety problems • Mobility limitations	
Hering et al., 2022 (26)	Germany	Retrospective online survey	-	811 nursing home staff	• COVID-19-related anxiety of staff • COVID-19-related burden of staff		• Working demands • Satisfaction with COVID-19-related management • Stress, anxiety, and depression • Generalised anxiety disorder • Patients health questionnaire • Social relations at work		

Author(s), publication year	Country	Study design	Nursing homes (n)	Participants (n)	Parameters				
					Pandemic-related data	Facility level	Staff level	Resident level	Relative level
Hoben et al., 2023 (27)	Canada	Cross-sectional study	9	689 residents	COVID-19 outbreak	Facility data	- Care unit-levels of care aide burnout - Care aide data	- Quality of life - Access to geriatric professionals	
Hoel et al., 2022 (28)	Germany	Cross-sectional study	-	417 managers	Cases of SARS-CoV-2	Structural characteristics	Staff training to implement and use technology	- Social participation - Behavioural and psychological symptoms of dementia - Use of pharmacological therapy	
Houben et al., 2023 (29)	The Netherlands	Retrospective cohort study	60	-	- Community incidence - Number of cases among staff	- Mechanical recirculation of air - Ward size - Providing psychogeriatric care - Restrictions on staff movement between wards and facilities			

Author(s), publication year	Country	Study design	Nursing homes (n)	Participants (n)	Parameters				
					Pandemic-related data	Facility level	Staff level	Resident level	Relative level
Husky et al., 2022 (30)	France	Cross-sectional online survey	6	127 nursing home staff	• COVID-19 infection status of staff • Staff experiences during lockdown; COVID-19-related fears		• Probable generalised anxiety • Panic attacks • Depression • Posttraumatic stress • Substance use disorders • Prior mental health problems		
Khairat et al., 2021 (31)	USA	Cross-sectional study	14,690	-	• Spread of COVID-19 within the nursing home's neighbourhood	• Star rating • Case mix • For-profit status • Bed size			
Kittang et al., 2020 (32)	Norway	Retrospective observational study	3	-	• COVID-19 infections (residents and staff) • Symptoms of COVID-19 infections • Mortality associated with COVID-19 • Staff quarantine	• Hospitalisation rate of residents		• Recovery	

Author(s), publication year	Country	Study design	Nursing homes (n)	Participants (n)	Parameters				
					Pandemic-related data	Facility level	Staff level	Resident level	Relative level
Kühl et al., 2022 (33)	Germany	Retrospective online survey	1,010	1,010 managers	• COVID-19 cases • COVID-19 incidence on the state level	• General characteristics of nursing homes • COVID-19 impact on general practitioners' care • Visiting restrictions for general practitioners • Deficits in general practitioners' care	• COVID-19-related burden by nursing home managers		
Ladhani et al., 2020 (34)	UK	Cohort study	6	264 residents 254 nursing home staff	• COVID-19 infections (residents and staff) • Symptoms of COVID-19 infections • Mortality associated with COVID-19	• Hospitalisation rate of residents		• Recovery	

Author(s), publication year	Country	Study design	Nursing homes (n)	Participants (n)	Parameters				
					Pandemic-related data	Facility level	Staff level	Resident level	Relative level
Levere et al., 2021 (35)	USA	Quantitative analysis of resident-level assessment data	224	29,097 residents				- Any depressive symptoms - Weight loss - Pressure ulcer - Incontinence - Cognitive functioning - Activities of daily living	
Li et al., 2021 (36)	USA	Cross-sectional study	14,062	-	Resident and staff COVID-19 cases	- Ownership - Supply of personal protective equipment			
Lipsitz et al., 2020 (37)	USA	Longitudinal cohort study	360	-	- COVID-19 infections (residents and staff) - Mortality associated with COVID-19 - County COVID-19 prevalence	Hospitalisation rate of residents			
Louie et al., 2021 (38)	USA	Cross-sectional study	4	-	- COVID-19 infections (residents and staff) - Mortality associated with COVID-19	- Testing for COVID-19 infections among staff and residents - Hospitalisation rate of residents			

Author(s), publication year	Country	Study design	Nursing homes (n)	Participants (n)	Parameters				
					Pandemic-related data	Facility level	Staff level	Resident level	Relative level
Marossy et al., 2021 (39)	UK	Cross-sectional study	37	2,455 residents and nursing home staff	- COVID-19 infections (residents and staff) - Symptoms of COVID-19 infections	Testing for COVID-19 infections among staff and residents			
Martinchek et al., 2021 (40)	USA	Retrospective chart review	1	209 residents				Weight loss	
McArthur et al., 2021 (41)	Canada	Retrospective chart review	7	765 residents				- Depression - Delirium - Behavioural problems	
McConeghy et al., 2020 (42)	USA	Retrospective cohort study	416	4,669 residents	COVID-19 infections (residents)	Testing for COVID-19 infections among residents			
McDermid et al., 2023 (43)	UK	Comparative analysis of baseline data from two studies	S1: 69 S2: 149	S1: 1006 residents S2: 666 residents		- Size (total number of residents; number of residents with dementia) - Staffing information		- Antipsychotic prescriptions - Neuro-psychiatric symptoms	

Author(s), publication year	Country	Study design	Nursing homes (n)	Participants (n)	Parameters				
					Pandemic-related data	Facility level	Staff level	Resident level	Relative level
McGarry et al., 2020 (44)	USA	Cohort study	15,035	-	Resident and staff COVID-19 cases	- Shortage of personal protective equipment - Shortage of staff - Case mix - Quality score			
Monin et al., 2020 (45)	USA	Cross-sectional survey	-	161 relatives				- Positive emotions - Negative emotions	- Communication methods other than physical visits (e.g., phone, video-conference, e-mail, and letters) - Positive emotions - Negative emotions

Author(s), publication year	Country	Study design	Nursing homes (n)	Participants (n)	Parameters				
					Pandemic-related data	Facility level	Staff level	Resident level	Relative level
Montoya et al., 2021 (46)	USA	Retrospective cohort study	3	215 residents	• COVID-19 infections • Mortality associated with COVID-19 • Symptoms of COVID-19 infections • Risk of severe COVID-19 progression	• Testing for COVID-19 infections among residents • Hospitalisation rate of residents • Pandemic-related control measures: cohorting of COVID-19 positive residents; personal protective equipment reeducation, and use			
Nash et al., 2021 (47)	USA	Cross-sectional survey	-	512 relatives					• Sadness • Trauma • Anger • Frustration • Helplessness • Anxiety • Four overarching themes: 1) isolation 2) rapid decline 3) inhumane care and 4) lack of oversight

Author(s), publication year	Country	Study design	Nursing homes (n)	Participants (n)	Parameters				
					Pandemic-related data	Facility level	Staff level	Resident level	Relative level
Navarro Prados et al., 2022 (48)	Spain	Cross-sectional survey	-	340 nursing home staff	Organisational characteristics of the job related to COVID-19		- Sense of Coherence - Burnout syndrome		
Navarro Prados et al., 2024 (49)	Spain	Cross-sectional survey	-	165 nursing home staff			- Professional characteristics - Burnout - Resilience - Experiential avoidance and psychological inflexibility - Satisfaction with life - Depression		
O'Caoimh et al., 2020 (50)	Ireland	Cross-sectional survey	-	202 relatives					- Loneliness - Psychological well-being - Quality of life - Satisfaction with care - Perception of staff support
Oliveira et al., 2023 (51)	Spain	Prospective study	3	301 residents 119 nursing home staff 51 relatives			- Anxiety - Depression - Perception about the meaning of suffering - Burnout status	- Anxiety - Depression - Perception about the meaning of suffering - Social support	

Author(s), publication year	Country	Study design	Nursing homes (n)	Participants (n)	Parameters				
					Pandemic-related data	Facility level	Staff level	Resident level	Relative level
Patel et al., 2020 (52)	USA	Prospective cohort study	1	126 residents	• COVID-19 infections • Mortality associated with COVID-19 • Symptoms of COVID-19 infections	• Testing for COVID-19 infections among residents • Hospitalisation			
Pérez-Rodríguez et al., 2021 (53)	Spain	Observational study	4	435 residents				• Clinical data • Functional, cognitive, and nutritional data • Mental status • Depression • Body mass index	

Pförtner et al., 2021 (54)	Germany	Cross-sectional study	-	299 managers (outpatient and inpatient long-term care facilities)	Concerns about SARS-CoV-2 infections among residents and employees	- Infection control equipment - Compliance with hygiene guidelines - Testing for SARS-CoV-2 infection (patients, employees) - Isolation of SARS-CoV-2 infected patients - Compliance with contact restrictions for relatives - Work-related information for care facilities and employees - Provision of funding to address the pandemic - General demands: staff shortage, staff overload, compliance with regulations on working hours, compliance with staffing ratio, loss of income, high intensity and			
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Author(s), publication year	Country	Study design	Nursing homes (n)	Participants (n)	Parameters				
					Pandemic- related data	Facility level	Staff level	Resident level	Relative level
						density of work, implementation of service meetings, fear for the well- being of patients, image, family doctor care, availability of external staff, expectations of relatives			
Preuß et al., 2022 (55)	Germany	Two cross- sectional surveys	1,067	-	• General spread • Residents deaths	• Number of residents • Number of staff • Nursing home characteristics			
Prins et al., 2021 (56)	The Nether- lands	Cross-sectional study	-	958 relatives					• Contact frequency • Resilience • Worries about the person with dementia • Loneliness

Author(s), publication year	Country	Study design	Nursing homes (n)	Participants (n)	Parameters				
					Pandemic-related data	Facility level	Staff level	Resident level	Relative level
Queiroz et al., 2023 (57)	Brazil	Prospective cohort study	13	289 residents	• Covid-19 diagnosis			• Lifestyle assessment • Clinical Assessment • Anthropometric Assessment • Functional Assessment	
Rawle et al., 2020 (58)	UK	Retrospective cohort study	-	64 residents	• Symptoms of COVID-19 infections • Mortality associated with COVID-19 • Risk of severe COVID-19 progression	• Lengths of hospital stay		• Frailty • Anorexia	
Riello et al., 2020 (59)	Italy	Online survey	33	1,071 nursing home staff			• Anxiety • Post-traumatic symptoms		

Author(s), publication year	Country	Study design	Nursing homes (n)	Participants (n)	Parameters				
					Pandemic-related data	Facility level	Staff level	Resident level	Relative level
Rojo-Perez et al., 2022 (60)	Spain	Secondary data analysis (survey)	-	447 residents				• Perception of the residential environment • Perception of safety and management • Mobility • Personal situation with regard to the pandemic • Objective physical health • Self-perception of health • Mental health • Feelings and coping • Performance of leisure and participation activities • Quality of life • Self-perception of ageing	

Author(s), publication year	Country	Study design	Nursing homes (n)	Participants (n)	Parameters				
					Pandemic-related data	Facility level	Staff level	Resident level	Relative level
Rutten et al., 2020 (61)	The Netherlands	Prospective cohort study	-	4,007 residents with clinically suspected COVID-19	• COVID-19 infections • Symptoms of COVID-19 infections • Mortality associated with COVID-19 • Risk of severe COVID-19 progression				
Ryskina et al., 2021 (62)	USA	Cross-sectional study	11,585	-	• COVID-19 cases among staff • Local COVID-19 prevalence • Confirmed resident cases	• Number of beds • Ownership • Shortage of personal protective equipment			

Author(s), publication year	Country	Study design	Nursing homes (n)	Participants (n)	Parameters				
					Pandemic-related data	Facility level	Staff level	Resident level	Relative level
Sacco et al., 2020 (63)	France	Retrospective cohort study	1	87 residents 92 nursing home staff	• COVID-19 infections (residents and staff) • Symptoms of COVID-19 infections (residents) • Mortality associated with COVID-19 (residents) • Risk of severe COVID-19 progression (residents)	• Testing for COVID-19 infections among residents and staff		• Falls • Altered consciousness • Anorexia	
Savci et al., 2021 (64)	Turkey	Descriptive and correlational study	1	103 residents				• Global cognition Mini Mental State Exam • Resilience • Loneliness • Quality of Life • Fear of COVID-19	
Schulze et al., 2022 (65)	Germany	Cross-sectional study with quantitative and qualitative data	37	177 nursing home staff			• Psychosocial burden at work		

Author(s), publication year	Country	Study design	Nursing homes (n)	Participants (n)	Parameters				
					Pandemic-related data	Facility level	Staff level	Resident level	Relative level
Senczyszyn et al., 2020 (66)	Poland	Online survey	-	178 nursing home staff		• Availability of personal protective equipment • Safety guidelines	• General health (somatic symptoms, anxiety, insomnia, social dysfunction, depression) • Access to psychiatric and psychological support at the workplace	• Mood • Cognition, • Dependency • Dealing with COVID-19 restrictions	
Shi et al., 2020 (67)	USA	Retrospective cohort study	1	389 residents	• COVID-19 infections • Symptoms of COVID-19 infections • Mortality associated with COVID-19 • Risk of severe COVID-19 progression • Staff residence			• Frailty • Delirium • Anorexia	

Author(s), publication year	Country	Study design	Nursing homes (n)	Participants (n)	Parameters				
					Pandemic-related data	Facility level	Staff level	Resident level	Relative level
Takahashi et al., 2022 (68)	Japan	Large-scale web-based survey	284	676 nursing home staff	• Infections at facilities	• Infection protection • Changes in nursing home users • Cooperation with other medical institutions • Prejudice/discrimination	• Depression and anxiety		
Tang et al., 2020 (69)	USA	Retrospective cohort study	15	1,970 residents	• COVID-19 infections • Symptoms of COVID-19 infections • Mortality associated with COVID-19 • Risk of severe COVID-19 progression	• Hospitalisation			
Tebbeb et al., 2022 (70)	France	Qualitative and quantitative survey	12	373 nursing home staff			• Experience of the COVID-19 crisis • Perceived stress • Anxiety/depressive symptoms • Post-traumatic stress disorder		

Author(s), publication year	Country	Study design	Nursing homes (n)	Participants (n)	Parameters				
					Pandemic- related data	Facility level	Staff level	Resident level	Relative level
Telford et al., 2021 (71)	USA	Evaluation study	24	2,580 residents	Infection prevalence	Infection prevention and control adherence to current guidelines for key indicators across five categories: hand hygiene, disinfection, social distancing, personal protective equipment and symptom screening			

Author(s), publication year	Country	Study design	Nursing homes (n)	Participants (n)	Parameters				
					Pandemic-related data	Facility level	Staff level	Resident level	Relative level
Urlings et al., 2023 (72)	The Netherlands	Cross-sectional survey	59	59 managers or quality officers	• Infections in the nursing home • Progress of the vaccination campaign of residents and staff • Effects of vaccination on the daily lives of staff • Effect of the prolonged COVID-19 pandemic and protective restrictions on staff • Effects of vaccination on the daily lives of residents	• Compliance with protective measures • Plans to further relax protective measures • Pressure and support experienced by nursing homes	• Sick leave and experienced work pressure by staff	• Effect of the prolonged COVID-19 pandemic and protective restrictions on residents	• Effect of the prolonged COVID-19 pandemic and protective restrictions on family members
van der Roest et al., 2020 (73)	The Netherlands	Online survey	-	193 residents 623 nursing home staff 1,387 relatives				• Loneliness • Mood • Happiness • Sadness • Agitation • Depression • Anxiety • Irritability • Appetite disorders	

Author(s), publication year	Country	Study design	Nursing homes (n)	Participants (n)	Parameters				
					Pandemic-related data	Facility level	Staff level	Resident level	Relative level
van Dijk et al., 2022 (74)	The Netherlands	Cross-sectional multilevel study	10	1,669 nursing home staff	COVID-19 contact, infections and worries (staff)		- Job demands - Work functioning - Depressive symptoms - Burnout		
Vandael et al., 2022 (75)	Belgium	COVID-19 surveillance	1,542	-	- Residents with COVID-19 infection - COVID-19 deaths - Staff with COVID-19 infections	- Nursing home characteristics - Hospitalizations due to COVID-19			
Verbeek et al., 2020 (76)	The Netherlands	Mixed methods study	26	26 managers, quality or policy officers, nursing home staff		- Context of the nursing home - Application of national guidelines	Well-being	- Visits - Well-being	- Compliance with local protocol - Well-being
von der Warth et al., 2022 (77)	Germany	Cross-sectional study	40	419 residents				- Quality of life - Self-rated nursing care satisfaction - Medical care satisfaction - Visits of relatives	

Author(s), publication year	Country	Study design	Nursing homes (n)	Participants (n)	Parameters				
					Pandemic-related data	Facility level	Staff level	Resident level	Relative level
Wammes et al., 2020 (78)	The Netherlands	Cross-sectional survey	-	1,997 relatives					• Perspectives regarding nursing home visiting restrictions • Communication access to residents • Adverse effects of visiting restrictions • Potential protective effect of visiting restrictions • Important aspects for relatives during and after visiting restrictions
Watts et al., 2023 (79)	USA	Quarterly cross-sectional data from Minimum Data Sets	-	96 residents				• Cognitive function • Transfer ability • Depression • Rejecting care • Falls • Urinary tract infections • Physical conflict • Verbal conflict	

Author(s), publication year	Country	Study design	Nursing homes (n)	Participants (n)	Parameters				
					Pandemic-related data	Facility level	Staff level	Resident level	Relative level
Xu et al., 2020 (80)	USA	Cross-sectional study	11,920	-	Resident and staff COVID-19 cases	- Availability of personal protective equipment - Shortage of staff - Case mix			
Yan et al., 2023 (81)	USA	Observational study based on the Minimum Data Set and Medicare claims	15,751	2,787,961 residents		- Certified nursing assistants' staffing hours per bed per day in a quarter - Facility-level characteristics		- Antipsychotic use during a quarter - Aggressive behaviour - Cognitive impairment	
Ye et al., 2021 (82)	USA	Retrospective chart review	15	963 residents		Dealing with residents within Advanced Care Planning		Care preference changes/ changes of personal goals of care within Advanced Care Planning	

Supplementary Table S2 Overview of identified parameters related to COVID-19 in nursing homes with the corresponding references (n=82), 2020 to 2024

Identified parameters	References
Pandemic-related data	
Pandemic progression:	
Local COVID-19 incidence/prevalence	(29, 31, 33, 37, 55, 62, 67)
COVID-19 outbreak/infection rate in nursing home (number of residents)	(6, 8, 12, 17-19, 24, 27, 28, 32-34, 36-39, 42, 44, 46, 52, 57, 61-63, 67-69, 71, 72, 75, 80)
COVID-19 outbreak/infections among staff/staff absences	(19, 24, 29, 30, 32, 34, 36-39, 44, 62, 63, 74, 75, 80)
Progress in the vaccination campaign for residents and staff	(72)
Staff level:	
Symptoms of a COVID-19 infection	(24, 34, 38, 39)
Staff fears and concerns (... of infecting themselves, residents, or their relatives)	(4, 9, 11, 26, 54, 74)
Impact of vaccination on the daily lives of staff	(72)
Impact of the prolonged COVID-19 pandemic and protective restrictions on staff	(26, 30, 48, 72)
Resident level:	
Risk of severe COVID-19 progression (especially male gender, age, chronic renal insufficiency, dementia, haematological/oncological diseases)	(7, 46, 58, 61, 63, 67, 69)
Symptoms of a COVID-19 infection	(1, 7, 8, 14, 17-19, 24, 32, 34, 39, 46, 52, 58, 61, 63, 67, 69)
Mortality related to COVID-19	(7, 8, 12, 32, 34, 37, 38, 46, 52, 55, 58, 61, 63, 67, 69, 75)
Impact of vaccination on the daily lives of residents	(14, 72)
Facility level: epidemiological and general data	
Nursing home characteristics:	
Nursing home size/number of beds/number of residents	(28, 31, 33, 43, 55, 62, 75, 76, 81)
Size of the care units	(29)
Ownership of the nursing home	(3, 12, 28, 31, 36, 55, 62, 76, 81)
Specialised units	(28, 29, 55)
Case mix	(31, 44, 80)
Separate sleeping areas/single-occupancy or shared rooms	(64, 76)
Nursing home quality of care	(31, 44)
Staff deployment:	
Number of staff/staffing ratio/staff shortages	(1, 9, 12, 23, 28, 43, 44, 54, 55, 75, 80, 81)
Staffing plan or adjustment of staff assignment (assignment of tasks/changes to the scope of work/changes to processes and procedures/formation of stable teams/availability of external staff/absence rules for staff with COVID-19 infection)	(1, 54, 76)
Feeling of being well informed and advised	(54)
Burdens on the management level	(21, 33)

Facility level: pandemic-related protective and control measures	
Use of air filters	(29)
Contact reduction (e.g. visiting bans/access restrictions for relatives/volunteers/external service providers)	(71)
Change in contact options (tablet, telephone, digital communication)/offer of alternatives: communication through window panes, outdoor events, hygiene protection wall/separators	(28, 78)
Cancellation of social activities	(28)
Cohorting/relocation/transfer/isolation of COVID-19 infected residents within the facility	(46, 54)
Testing for COVID-19 infections among staff	(24, 38, 39, 54, 63)
Testing for COVID-19 infections among residents	(24, 38, 39, 42, 46, 52, 54, 63)
Provision of hygiene material and personal protective equipment	(9, 12, 23, 36, 44, 46, 54, 62, 66, 76, 80)
Implementation of hygiene rules or information from public authorities/pandemic plan	(54, 56, 66, 71, 72, 76)
Training of nursing staff (protective clothing, special hygiene instructions, dealing with highly infectious residents)	(46, 71)
Facility level: nursing and health care	
Access restrictions for general practitioners and medical specialists	(33)
General practitioners' or medical specialists' care deficit (in routine or acute cases)	(33, 54)
Acute inpatient care (hospitalisation rate of residents)	(7, 32, 34, 37, 38, 46, 52, 69, 75)
End-of-life care/dealing with residents in palliative situations	(82)
Cooperation with external institutions or persons	(27, 54, 68)
Staff level	
Psychosocial factors at the workplace:	
Impact of changing work requirements and flexibility requirements	(10, 26, 65, 74)
Work intensity and work intensification	(2, 9, 54, 65, 72)
Workload	(2, 26)
Psychosocial effects of dealing with palliative care residents	(9, 13, 51)
Uncertainties regarding the implementation of frequently changing regulations and guidelines (sometimes daily-changing rules), role ambiguities	(48, 54, 65, 74)
Needs of nursing staff (e.g. recognition and appreciation of care, coronavirus bonus, supervision for nursing staff during the pandemic)	(9, 11, 26, 48, 66)
Psychosocial effects of interacting with relatives	(13)
Considerations of changing or leaving the profession	(21, 65)
Job satisfaction	(2, 10, 21, 65)
Satisfaction with the quality of nursing care	(4)
Effects on the general health status	(11, 65, 66)
Burnout	(9, 10, 15, 21, 27, 48, 49, 51, 65, 74)
Effects on presenteeism	(65)
Personal burden, stress, anxiety, depression, fatigue, panic attacks, helplessness, loss of control	(2, 9, 11, 15, 26, 30, 49, 51, 59, 65, 66, 68, 70, 74)
Physical and mental overload of staff	(4, 11, 48)
Substance abuse	(30)

Suicidal thoughts and plans	(11)
Experiences of prejudice and discrimination	(54, 68)
Staff well-being	(6, 11, 21, 49)
Fear for the well-being of the residents	(54)
Coping strategies, resilience	(11, 48, 49)
Resident level	
General health status:	
Functional status	(16, 22, 53, 57, 60)
Nutritional status (body mass index)	(16, 35, 40, 53, 57, 58, 63, 67)
Frailty	(3, 7, 16, 58, 67)
Cognition and orientation/delirium	(16, 35, 41, 53, 63, 64, 66, 67, 79, 81)
Participation:	
Visits (number, location and visitors)	(6, 56, 76, 77)
Relationships with significant others and loss of significant others (staff, residents, family, friends)	(56, 60)
Possibility of social participation/external participation	(28, 56, 60)
Possibility of internal participation	(14)
Social isolation, social distancing and loneliness	(60, 64, 73)
Physical and psychological effects:	
Mood and enjoyment of life	(45, 66, 73)
Sadness, listlessness	(45, 73)
Depression/depressive symptoms	(5, 20, 22, 25, 35, 41, 51, 53, 60, 73, 79)
Anxiety and stress	(5, 20, 25, 51, 64, 73)
COVID-19-related anxiety and coping strategies/resilience	(60, 64)
Behaviour and psychiatric symptoms of dementia (BPSD)/psychotropic drugs	(28, 41, 43, 73, 81)
Sleep problems	(64)
Quality of life and well-being	(5, 6, 14, 25, 27, 60, 64, 77)
Need for support	(51)
Dealing with protective measures/sense of security/requests	(14, 60, 66)
Satisfaction with nursing and health care	(77)
Recovery	(32, 34)
All-cause mortality	(3, 12, 19, 24)
Evaluation of nursing care:	
Mobility/falls	(25, 63, 79)
Change in the general need for care	(35, 66)
Neglect (decubitus, dehydration, urinary tract infection)	(3, 35, 79)
Pain	(5)
Effects on health care provision	(82)
Dealing with dying and death	(5, 51, 82)

Relative level	
Relatives' expectations	(54)
Ways of communication with the facility and residents	(45, 78)
Perception of the health care situation	(47, 50, 56)
Support needs of relatives	(50)
Experience and acceptance of protective measures/sense of security/requests	(47, 56, 72, 76, 78)
Compliance with local visitation and hygiene protocol and its implications	(54, 72)
Perceived stressful situation of the relatives (feelings of anger and annoyance/feelings of despair/emotionally stressful conflicts/feelings of helplessness/sadness/frustration/fear/trauma/resilience)	(45, 47, 56, 78)
Loneliness/social isolation/social distancing	(50, 56, 78)
Quality of life and well-being of relatives	(6, 45, 50)

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