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## APPENDIX A

**Table 1. Data collected at baseline (B) and 12 months follow-up (F12) in DOSES**

Information level	Items	Source	Measurement	Time point
Nursing home	Demographic measures (nursing home manager)	SM	Age, education, seniority, previous experience working as eldercare worker, sickness absence (only F12)	B, F12
Nursing home	Organizational changes	SM	Organizational changes within the last 2 years (12 months in F12), planned organizational changes the upcoming 2 years	B, F12
Nursing home	Workplace characteristics	SM	Number of residents, number of workers	B, F12
Nursing home	Polices on workplace health and safety	SM	Frequency and usefulness of workplace evaluation, frequency of courses in patient handling	B, F12
Nursing home	Pain	SM	Nursing home managers' perception of the percentage of eldercare workers having LBP and NSP	B, F12
Nursing home	Pain management	SM	Nursing home managers' involvement in pain management, pain management interventions offered	B, F12
Nursing home	Communication	SM	Communication between nursing home managers' and local authority and team managers, staff meetings and social events, nursing home managers' presence at the wards, communication between the nursing home managers' and eldercare worker about health and working environment	B, F12
Nursing home	Physical work demands	SM	Nursing home managers' perception of the eldercare workers' physical load	B, F12
Nursing home	Psychosocial work demands	SM	Nursing home managers' perception of the eldercare workers' emotional demands and satisfaction with the working environment	B, F12
Nursing home	Influence at work	SM	Nursing home managers' perception of the eldercare workers' influence at work	B, F12
Nursing home	Justice at work	SM	Nursing home managers' perception of the justice in the way the workload is distributed among the eldercare workers, nursing home managers' perception of how the eldercare workers' find justice in the way the workload is distributed	B, F12
Nursing home	The architecture and design of the workplace	WW	Number of floors, training facilities, meeting rooms, kitchen, elevators and functional status of elevators	B
Ward	Demographic measures (team manager)	ST	Age, education, seniority, experience working as eldercare worker, sickness absence (only F12)	B, F12
Ward	Workplace characteristics	ST	Number of residents, number of workers in day and evening shifts, isolated work from colleagues, team managers' location of office, team managers' presence at the ward	B, F12
Ward	Resident handling and ergonomic	ST	Team managers' perception of the eldercare workers' knowledge on use of assistive devices, compliance with guidelines regarding resident handling, reasons for non-compliance, assigned ergonomic advisor to the ward	B, F12

Ward	Pain	ST	Team managers' perception of the percentage of eldercare workers having LBP and NSP	B, F12
Ward	Pain management	ST	Team managers' involvement in pain management, pain management interventions offered	B, F12
Ward	Communication	ST	Communication between nursing home managers' and team managers, staff meetings at the ward, allocated time for the eldercare workers to meet and plan the work, time overlaps between work shifts, allowed breaks for the eldercare workers	B, F12
Ward	Physical work demands	ST	Team managers' perception of the eldercare workers' physical load	B, F12
Ward	Psychosocial work demands	ST	Team managers' perception of the eldercare workers' emotional demands and satisfaction with the working environment	B, F12
Ward	Influence at work	ST	Team managers' perception of the eldercare workers' influence at work	B, F12
Ward	Justice at work	ST	Team managers' perception of the justice in the way the workload is distributed among the eldercare workers, team managers' perception of how the eldercare workers' find justice in the way the workload is distributed	B, F12
Ward	Distribution of residents	ST	Process of allocation of the residents	B, F12
Ward	The architecture and design of the ward	WW	Flooring, computers, laundry, space to manage residents in wheelchairs, placement and functional status of different assistive devices, accessibility of the assistive devices, meeting rooms, kitchen, phones, joint call system, internal e-mail system, intranet, system for documentation, rails for ceiling lifts in every room, accessibility to ceiling lift in every resident room, manually or electronically adjustable beds	B
Ward	The architecture and design of residential rooms	WW	Living space (square meters), number of rooms, door steps, flooring, toilet, bath, little kitchen, space at the toilet and bath, space in front of the bed	B
Resident	Functional level of the resident	L	Physical functional level, psychosocial functional level, body weight	B, F3
Resident	Type of activity where the resident need care	O	Morning routine, evening routine, feeding, other situation	B
Resident	Work environment hazards in the resident room	O	Resident smokes in the room, furniture needs to be moved around to do the caring activities	B
Resident	Support from colleague during caring activity	O	Colleague are present in the resident room	B
Resident	Type of resident handling needed in the care of the resident	O	Lifting, repositioning, turning of the resident, help with support stockings, pushing/pulling resident in portable chair, eldercare worker squatting when performing tasks	B
Resident	Determinants of the physical load to the eldercare worker	O	Type of assistive devices used, help from colleagues or others, substantial physical help from the resident	B

Resident	Barriers for carrying out the care for the resident	O	Interruptions, impediments	B
Resident	Psychosocial interactions between the resident and eldercare worker during the caring activities	O	Verbal aggression, physical aggression, verbal resistance, physical resistance, verbal appreciation and physical appreciation from the resident	B
Eldercare worker	Objectively measured health and physical capacity	HC	Height, body weight, BMI, fat percentage, blood pressure, isometric back extension endurance [1,2]	B
Eldercare worker	Physical activity type, body postures and movements during work and leisure	AG	Lying, sitting, standing, moving, walking, running, walking on stairs, cycling, number of steps, upper body inclination, arm inclination [3–5]	B
Eldercare worker	Work demands	WS	Residents assigned to the eldercare worker for care provision (measured per day during a 3 week period)	B, F3
Eldercare worker	Socio-demographic measures	SE	Age, gender, ethnicity, country of birth, marital status, children living at home, education, seniority, shift work (day/evening/night work)	B
Eldercare worker	Lifestyle and well-being	SE	Smoking, leisure physical activity, disease determined by a medical doctor, seriously life events	B
Eldercare worker	General health	SE (B), I (F12)	General health [6]	B, F12
Eldercare worker	Mental health	SE (B), I (F12)	Mental health 5 item questionnaire [7]	B, F12
Eldercare worker	Medicine use	SE (B), I (F12)	Use of pain killers	B, F12
Eldercare worker	Workability	SE (B), I (F12)	The single-item work ability question from the Work Ability Index [8,9]	B, F12
Eldercare worker	Recovery	SE (B), I (F12)	Need for recovery [10]	B, F12
Eldercare worker	Sickness absence	SE (B), SMS (F3)	General and LBP/NSP-related sickness absence [11]	B, F3
Eldercare worker	Pain: LBP, NSP	SE (B), SMS (FM)	Pain (days), pain intensity on a scale from 0-10 (A slightly modified Nordic Musculoskeletal Questionnaire [12])	B, FM
Eldercare worker	Pain: Elbows, hands/wrist, hips, knees, feet/ankles	SE (B), I (F12)	Pain (days), pain intensity on a scale from 0-10 (A slightly modified Nordic Musculoskeletal Questionnaire [12])	B, F12
Eldercare worker	Pain related interference	SE (B), SMS (FM)	Interference from LBP and/or NSP with daily work activities (days), interference from LBP and/or NSP with leisure activities (days) (only B), interference from LBP and/or NSP with social activities (days) (only B) [6]	B, FM
Eldercare worker	Kinesiphobia	SE	Perceptions on having pain and move when you are in pain [13]	B
Eldercare worker	Physical exertion during work	SE (B), SMS (F3)	Physical exertion during work [14] (only B), number of resident handlings during a shift, the heaviness of the	B, F3

Eldercare worker	Physical work environment factors	SE	resident handlings on a scale from 0-10 Knowledge on necessary/required use of assistive devices, reasons for non-compliance with guidelines regarding resident handling, participation in course on resident handling technique	B
Eldercare worker	Emotional exertion during work	SE (B), SMS (F3)	Emotional exertion during work (scale from 0-10)	B, F3
Eldercare worker	Psychosocial work environment factors	SE	Emotional demands, quantitative demands, work pace, influence at work, social support from colleagues, quality of leadership [15,16]	B
Eldercare worker	General work climate	SE	Satisfaction with the general work climate (scale from 0-10) [17]	B

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#### Source

SM: self-administered questionnaire of manager; ST: self-administered questionnaire of team managers; WW: workplace walkthrough performed by researcher; L: list provided from team managers; O: observations; WS: work schedules filled out by every eldercare worker; SE: self-administered questionnaire of eldercare worker; HC: measurements performed by researchers at a health check session; AG: accelerometer measurements; SMS: text messages; I: structured telephone interview

#### Time point

B: baseline; FM: follow-up monthly for 12 months; F3: follow-up every 3<sup>rd</sup> months for 12 months; F12: follow-up at 12 months

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