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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 |

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| 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 |

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| 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 |

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| | | | resident handlings on a scale from 0-10 | |
| Eldercare worker | Physical work environment factors | SE | 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 |

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$^{rd}$ months for 12 months; F12: follow-up at 12 months

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