Exploring dementia care dyads’ person transfer situations
To my beloved Mikael,

my beautiful children and their children
Exploring dementia care dyads’ person transfer situations from a behavioral medicine perspective in physiotherapy
Development of an assessment scale
Title: Exploring dementia care dyads’ person transfer situations from a behavioral medicine perspective in physiotherapy
Development of an assessment scale

Publisher: Örebro University 2015
www.oru.se/publikationer-avhandlingar

Print: Örebro University, Repro 08/2015

ISSN 1652-4063
ISBN 978-91-7529-090-4
Abstract

Individuals who suffer from severe dementia require assistance when performing activities of daily living. The highly important person transfer situation is influenced by complex, intertwined biopsychosocial factors that are related to the expression of personal, environmental and behavioral variables, which can interfere with the performance of dementia-care dyads’ transfer situations.

The overall aim of this study was to leverage a behavioral medicine perspective in physiotherapy to explore, intervene in, and develop an assessment scale for problematic person transfer situations including persons with dementia and the interaction with the caregiver in these transfer situations.

Interviews were performed with ten caregivers who were recruited to two focus groups and worked in a special care unit for persons with dementia; interviewees described their experiences pursuant to assisting persons with dementia in transfer situations (I).

Literature review and video recordings elicited 93 possible items for the new scale. Expert opinions and item-content validity indices reduced the number of items to 17 that spanned two areas. Eight items related to the actions of persons with dementias, whereas nine related to caregiver actions. The feasibility testing of the scale in eight person transfer situations showed that the scale was ready for inter- and intra-rated reliability testing (II). Inter- and intra-rater reliability was good (III). In two single-case experimental design studies, the new scale was shown to contribute to a substantial gathering of data on behaviors in care dyads’ person transfer situations (IV). In summary, the results of the thesis show that person transfer situations in dementia special care units are influenced by different biopsychosocial factors and that the new assessment scale can support decision-making about treatment strategies. These findings are important in promoting evidence-based behavior change strategies that can facilitate both sets of individuals—i.e., both persons with dementia and caregivers—in transfer situations. The results highlight important research issues that merit attention in future studies.

Keywords: Behavioral medicine in physiotherapy, Care dyad, Dementia, Intervention, Scale development, Transfer problems

Charlotta Thunborg, Faculty of Medicine and Health, School of Health and Medical Sciences, SE 701 82 Örebro University, Sweden
# Table of Contents

INTRODUCTION ........................................................................................................ 13

BACKGROUND ........................................................................................................ 14
Dementia incidence and prevalence ................................................................... 14
Person transfer situations .................................................................................... 15
Professional caregivers and the dementia-care dyad ........................................ 16
The behavioral medicine framework in physiotherapy ...................................... 17
   Dementia disease from a biomedical theoretical perspective ...................... 18
   Learning theories and dementia disease ....................................................... 19
Rehabilitation in dementia special care units .................................................... 22
Assessment of problematic person transfer behavior ...................................... 23
Development of a scale for dementia care ....................................................... 23
Validity and reliability of a scale ........................................................................ 24

RATIONALE FOR THE THESIS .......................................................................... 26

AIMS ....................................................................................................................... 27
Specific aims .......................................................................................................... 27

METHODS AND MATERIALS .............................................................................. 28
Design .................................................................................................................... 28
Participants and setting ....................................................................................... 29
   Study I ............................................................................................................... 29
   Study II ............................................................................................................. 29
   Study III .......................................................................................................... 30
   Study IV .......................................................................................................... 30
Data collection and procedure ......................................................................... 31
   Measurements and study-specific items based on different instruments ....... 34
   *The Mini Mental State Examination* .............................................................. 34
   *Resistiveness to Care Scale (RTC-DAT)* ...................................................... 34
   Study-specific items to measure the caregivers’ self-efficacy (SE) .......... 34
   Study-specific items to measure the caregivers’ catastrophizing thoughts .... 35
   Study-specific items to measure the caregivers’ perceived control and ability 35
   *The behavioral medicine intervention in Study IV* ....................................... 35
Original Papers

This study is based on the following original papers, which are referenced in the text by their corresponding Roman numerals:


III. Thunborg C, von Heideken Wågert P, Ivarsson A-B, Söderlund A, Inter- and intra-rater reliability of a newly developed scale, The Dyadic Interaction in Dementia Transfer Assessment Scale (DIDTAS). Accepted for publication in Physical and Occupational Therapy in Geriatrics

IV. Thunborg C, von Heideken Wågert P, Ivarsson A-B, Söderlund A, Functional Behavior Analysis-Guided Interventions for Improving Transfer-Related Behavior in Dementia Care Dyads – Two Experimental Single Cases
Submitted
Reprints have been made with the permission of the publisher
INTRODUCTION

The present thesis is predicated upon my understanding of the behavioral medicine perspective in physiotherapy of persons with dementia. The consequences of cognitive decline and physical impairment can be severe, resulting in the development of dementia and dependence on others to manage daily life. Suffering from dementia can also be manifested in mobility problems. Cognitive decline and motor skills disorders are often causes of admission to dementia special care units. My first interview with caregivers on the topic of “person transfer situations” gave me insight into the challenge of assisting persons with dementia in mobility tasks.

Persons with severe dementia require constant care. The front-line personnel who work in dementia special care units are predominantly nurse’s assistants and enrolled nurses. These caregivers provide hands-on assistance in person transfer situations. Physiotherapists practicing in nursing homes often give advice on mobility-related treatment approaches. Providing assistance in person transfer situations is associated with mutually problematic transfer-related behaviors of each individual of the care dyad (the care-recipient/person with dementia and the caregiver) along with contextual environmental factors.

My observations of this complex interdependence between the behaviors exhibited by each individual in the care dyad and environmental factors gave me reason to question the management offered for person transfer situations of dementia-care dyads. For physiotherapists to appropriately support care dyads according to their needs in person transfer situations, we must enhance our knowledge and understanding of the bidirectional influences of behavior, personal and environmental factors. Assessing the impact of interventions on outcomes of genuine interest to care dyads' transfer-related behaviors requires observation and mapping of these behaviors. The behavioral medicine perspective in physiotherapy involves the theoretical and practical underpinnings of physiotherapy interventions in dementia care. This current understanding was the starting point for my thesis.
BACKGROUND

Dementia incidence and prevalence

Dementia is an umbrella term that refers to cognitive and memory deficits that are related to the deterioration of brain function (i.e., neurons) and the death of nerve cells (1). The universal feature of dementia is memory loss (2). Several functions are impaired as well, such as abstract thinking, language, and motor skills. This deterioration is severe enough to interfere with daily social activities and occupational responsibilities. In Sweden, an estimated 160,000 people have dementia (3); throughout the world, as many as 35 million people have some type of dementia (4). In nursing homes in the USA, an estimated seven of ten residents have some form of cognitive impairment, with 29 percent having mild impairment, 23 percent having moderate impairment, and 19 percent having severe impairment (5). Approximately 63,000 of the 158,000 patients with moderate or severe dementia in Sweden receive some form of institutional care (6). An additional 30,000–50,000 patients are cared for at home with the help of family and home health services (3). Short-term care is provided for 3,900 elderly persons with dementia (6). The person lives in his/her own home and visits a day-care unit to participate in staff-supervised activities together with other persons with dementia.

The risk of dementia increases with age, and the prevalence of dementia has increased worldwide. Five to eight percent of people over the age of 65 have some form of dementia, and the number doubles for every 5 years beyond age 65 (1). Alzheimer’s disease is the most common form of dementia, with a prevalence rate of approximately 10% of the population aged 65 years and older and approximately 50% for those aged 85 years and older (7). A loss of activities of daily living (ADL) functions and progression of the severity of dementia increase the need for institutional care (8). In turn, this need for increased care puts higher demands on caregivers to manage these complex needs related to ADLs—for example, in person transfer situations (9).
Person transfer situations

Person transfers are performed frequently in nursing homes. One study has shown that caregivers performed 98 person transfers during an eight hour working shift (10). Person transfers have mainly been viewed as work tasks for caregivers related to the transferring of patients from one place to another (11). However, person transfer situations are more than a physical matter (12)—they are also about awareness of interactions, communication, functional ability, and mobility (13). The caregiver assists a person (patient) during transfers, (e.g., transfer from a bed to a wheel-chair) or in moving from one position to another (e.g., turning from supine to lying on the side in bed) (12).

Dementia affects mobility early in disease development (14). Physical function and mobility decline with increasing severity of dementia (15, 16), meaning that the prevalence of functional mobility limitations and falls is higher in people with dementia compared with cognitively healthy older adults (16, 17). In turn, this decline demands an increasing need for assistance during person transfers (18). Research has found that 89 % of nursing home residents have some type of mobility difficulty (18).

The concept of mobility refers to the ability to effectively and independently move about in the environment to accomplish goals or tasks (19). Further, mobility is ultimately related to cognition, muscle strength and vigilance and encompasses the body’s shifting in response to environmental demands (20). The maintenance of mobility and physical ability despite the aging process is associated with independent daily living (18).

The reduced cognitive awareness experienced by persons with dementia is a challenge for caregivers assisting individuals with dementia in nursing homes (13, 21). Wangblad et al. (9) found that the musculoskeletal load on the assistant caregiver was not related to the weight of the person with dementia; rather, communication difficulties and misunderstandings were associated with the experience of strain. Furthermore, there are different aspects related to mobility problems in dementia: the person may lack the incentive to move around, and the caregiver may need to change his or her bedside manner to provide encouragement and verbal assistance (22).

Physiotherapists who practice in nursing homes spend considerable time (44.0 %) working with patients who have a diagnosis of dementia (23). Physiotherapy is the basis for the treatment of patients with mobility problems in nursing homes and special care units (23). Physiotherapists provide recommendations to caregivers concerning strategies and individual care plans targeting functional mobility, the enhancement of motor skills and fall
prevention within dementia special care units (17). Furthermore, the physiotherapist who works in special care units instructs in-service caregivers in safe and proper lifting procedures for persons with dementia. Because persons with dementia decline cognitively, the current methods used in physiotherapy are insufficient to maximize outcomes in the later stages of the disease (23). To date, most mobility-related treatment approaches have comprised exercise programs (16, 24), fall- and injury-prevention programs (25, 26), and a variety of assistive mobility devices (27). To address treatments for mobility problems in special care units, a dyadic care approach needs to be established as the standard for dementia transfer-related problems. By definition, the care-dyad relationship comprises two people maintaining a sociologically significant relationship (28). Unfortunately, patients with severe dementia commonly communicate their needs via non-social-normative behaviors, making it difficult for caregivers to interpret the behavior (29).

**Professional caregivers and the dementia-care dyad**

Dementia changes the way a person interacts with his or her surroundings, and caregiver education about the behavior of a person with dementia is an essential component for effective care (30, 31). Many caregivers report an on-going stress process related to the dynamics that exist among caregivers’ stress, behavioral symptoms of dementia, and behavior-related reactions of caregivers (28). Sometimes, caregivers become upset and stressed, and their emotional responses start a chain of events in interactions with the person with dementia, who may sense the caregiver’s response but do not understand it (32).

The loss of abilities and disease progression increase the need for care (33); at the same time, the professional caregiver role is often described as stressful and demanding (34, 35). Special difficulties exist because persons with dementia become increasingly dependent, which in turn, makes the caregiver’s role critical in care (36, 37). The World Health Organization (WHO) considers dementia to be a high-priority public health issue and emphasizes the importance of providing better care and more support to caregivers (1).

The majority of research on dementia-care dyads has been performed based on caregivers who provide informal care to the care-receiver (i.e., person with dementia) (28, 38). However, viewing a care dyad as a unit (28) rather than as a set of individual members and exploring caregiver and care-
recipient outcomes and benefits should be the same in professional caregiving dyads as in care dyads in informal care. A significant point of the care dyad is to view the individuals as a unit and not to assess the level of dyadic congruence (39). Although the severity of dementia symptoms may contribute to the caregiver’s view of them as a problem or stressor, the caregiver’s personal features may also sway perception (40). Caregiver features are beginning to emerge as important predictors of their own psychological responses (41) and as predictors of outcomes in dementia-care dyads, regardless of dementia-related disability. This finding then means that caregiver stress may be as likely to influence behavioral problems as the symptoms are to cause caregivers stress in a bidirectional causation pattern (40). The reciprocal influence (42) on each individual is a highly relevant approach concerning persons with dementia and caregiver assistance in transfer-related ADLs.

The behavioral medicine framework in physiotherapy
This thesis is based on a biopsychosocial model (43, 44) and comprises central concepts of the behavioral medicine perspective (45). The focus is on the three key domains—biological, psychological, and social—and the relevant factors as they apply to the physiotherapy management of persons with dementia and their professional caregivers. The biopsychosocial model has indicated that our functioning as human beings results from the integration of biological, psychological and social factors in our lives (46). Because our thoughts are a function of our brain, the biopsychosocial model suggests that changes in our thoughts result in subsequent changes in the functioning of our brain and body (47).

The behavioral medicine perspective is a broad interdisciplinary field that incorporates knowledge from the biomedical, psychological, behavioral, epidemiological and social sciences (45, 48). In physiotherapy, the evidence for the behavioral medicine perspective is mostly drawn from pain research (49-51), alongside behavior modification in exercise behavior (52, 53).

The behavioral medicine theories relevant for this thesis are a) biomedical theories; b) operant and respondent theory; c) the social cognitive theory of reciprocity and the concept of “self-efficacy;” and d) theories of caring for persons with dementia. These theories offer a broad view for understanding this problem area. The theories and concepts are comprehensive; only the concepts with the greatest relevance to this research are presented and defined in this thesis.
Dementia disease from a biomedical theoretical perspective

Dementia develops due to either a biological cause or a physical event in the body (54). Neurodegeneration is the most commonly cited biological cause of dementia and often leads to Alzheimer's disease (4). Furthermore, late-onset Alzheimer's disease cases has a predominantly genetic effect (55). Alzheimer's disease accounts for the largest group of dementia diagnoses in Sweden (50-70 %), and vascular dementia is the second largest (20-25 %) (56). Other types of dementia include dementia with Lewy bodies, frontotemporal dementias, and Parkinson's disease dementia. The so-called “amyloid hypothesis,” which is the most common explanation, suggests that normal soluble amyloid β (Aβ) undergoes a conformational change that causes it to aggregate into a fibril-rich β-pleated sheet structure (57). Extracellular Aβ plaques are one of the two major hallmarks of Alzheimer’s disease (57). The second hallmark is the presence of intracellular neurofibrillary tangles (TAU) (58).

One risk factor for developing dementia is hyperlipidemia (59). Countries whose citizens have high dietary fat consumption also tend to have a higher prevalence of dementia. Furthermore, a growing body of research suggests that some risk factors for heart disease and stroke are associated with the development of Alzheimer’s disease and related dementias (2). Vascular disease risk factors have measurable negative effects on the brain and are associated with cognitive impairment (60)—in particular, that of frontal-executive function (61). This association is predominantly accounted for by small and large strokes, but non-vascular neurotoxic effects of homocysteine (e.g., decreased levels of B12 and B6) also play a role (62). No available treatment leads to the reversal or stopping of disease progression. Thus, current realistic treatment goals include the amelioration of the disease symptoms, which may delay institutionalization and reduce caregiver burden and cost (63).

Habitual physical activity is cited as a dementia-protective factor (64). There is a reciprocal causal relationship between physical activity and health in older people (65). Recently published studies show that low-intensity activities, such as walking or doing chores, are associated with a reduced risk of dementia. Furthermore, a higher level of social integration is also associated with reduced dementia risk (66). Depression contributes to emotional and social loneliness, which is associated with an increased risk of dementia (67). One theory holds that depression may damage the brain, leading to dementia. The release of cortisol in people who are under chronic stress and/or depression may result in a domino effect that can harm the brain...
Dealing with stress and prior experiences of handling (coping) with environmental stress in a favorable way seem to protect individuals from cognitive decline. These biological, psychological and social factors are closely related to learning theories.

**Learning theories and dementia disease**

Learning can be defined as the act of dealing with prior experiences and cognitive and environmental influences (69). Operant and respondent learning theories both describe a loop in which an antecedent or stimulus precedes a behavior and in which the consequences of a behavior are of importance in maintaining the behavior (operant theory). Both theories are associative, whereby involuntary reactions, such as emotions, or conditioned stimuli lead to behavior, which in turn elicits a response. The theory of operant learning describes how rewarding or punishing consequences stem from a behavior (70). We learn by recognizing the order of antecedents, behaviors, and consequences (using an A-B-C-log) of something that has happened and their connections to each other (71, 72). Antecedents and their subsequent consequences, viewed as reinforcements or punishments, are the core tools of operant conditioning. By monitoring the behavior (log conditions) and by stating a goal behavior, hypotheses can be generated about the A-B-C relationship.

Functional behavior analysis (FBA) (73) is a way to gather and record details about the events that predict and maintain a care-dyad problem behavior and includes the mapping and development of tailored behavioral medicine strategies. The purpose of FBA is to provide information that will be used to design effective behavioral medicine-tailored support plans.

In the context of dementia caregiving, operant theory is mostly used as the theoretical perspective of investigating learning and behavior related to challenging behavior, such as restless wandering, calling out, and toileting difficulties (74). Until recently, pharmacological treatments were used to treat these problematic behaviors (75); however, modest effects have called for non-pharmacological interventions, such as behavioral interventions or behavior modeling (76).

Respondent learning theory (i.e., respondent conditioning) (77) is involved in the etiology and maintenance of problematic behavioral conditions—for example, simple reflexive responses, such as those occurring due to phobic anxiety. The general principles by which people learn are that stimuli elicit responses via conditioning processes. Respondent learning is
important for the understanding of human behavior, particularly when it relates to emotional affect.

Social cognitive theory (42, 78, 79) examines factors such as the interrelationships of behavior, personal beliefs, and cognitive and environmental factors (42). This theory claims that people acquire new knowledge by observing others. Thus, modeling involves learning by watching and imitating the behaviors of others. Social cognitive theory emphasizes the self-regulation of behavior and de-emphasizes the importance of external reinforcers. Some behaviors are determined by paired experiences, and others are influenced by environmental consequences, whereas cognitive mediation guides the acquisition and regulation of a behavior. Hence, a behavior can still be learned even without engaging in a specific behavior, (78)

Two important social cognitive theory concepts are related to this thesis: “self-efficacy beliefs” (80) and “reciprocal determinism” (81). Self-efficacy reflects the belief that one can perform a specific task or behavior. Thus, self-efficacy beliefs are modifiable attributes (80). Research has demonstrated a relationship between self-efficacy for dementia-related caregiver tasks and symptoms of burden and depression in caregivers (82, 83) The concept of reciprocal determinism is presented by Lang (2005) (84) as follows: “Reciprocal determinism suggests that individuals function as a result of a dynamic and reciprocal interaction among their behavior, environment, and personal characteristics.” Personal characteristics include, e.g., one's thoughts, emotions, expectations, beliefs, and goals (79). Behavior is conceptualized as a person's skills and actions. Finally, the environment is considered to be a person's social and physical surroundings. All three systems interact with each other; therefore, a change in one will influence the others as well (42); see figure 1.

Research in dementia care initially focused on the care receiver; more recently, research has included emphases on the caregiver and on the initial studies of the care dyad (28). This positioning reflects a psychosocial trend in the field of dementia care (85). This new position sheds light on how the interaction of a person with his or her environment affects a person’s behavior, thoughts and feelings. From such a conceptual point of view, how we act depends on another’s interpretations of our actions, thereby providing reflections of our own self-awareness. Research indicates that retained awareness of self and functional communication skills at very late stages of dementia is possible (86). In turn, this retention means that the communication partner (i.e., the caregiver) must adopt to successfully facilitate the person with dementia to maximize the retained communication skills (86).
Persons with dementia do not lose their personhood; it can be maintained through social relationships (87). Personhood in dementia is defined as follows; “personhood is a standing or status that is bestowed upon one human being, by others, in the context of relationship and social being” (87). A good communication process is key, and such communication is called ‘positive person work’ (88). Good communication is also a factor that can influence the so-called behavioral and psychological symptoms of dementia (BPSD) (89, 90). BPSD (e.g., restless wandering, calling out, toileting difficulties, misidentifications) are seen in most persons with dementia (80-95 %) at some point during the disease course (91). Agitation or withdrawal are signs that indicate the degree of a patient's interest in the environment; unfortunately, persons with dementia often experience unmet needs because they lack the internal and external resources to meet them (92). This perspective is also conceptualized as the individual’s loss of defenses or coping mechanisms, including altered interpersonal relationships and reactions of others (93). A person experiencing the stress of dementia in these situations could be described as having a state of intensive mind-body activity (47). The assumption that the management of problems is related to dementia care and daily person transfers requires the assessment and evaluation of treatment effects.
Rehabilitation in dementia special care units

The goal of rehabilitation for persons with dementia is to help the individual maintain his or her functional abilities (94). The focus of interventions for individuals is on functional training; compensatory, non-pharmacologic approaches; and restorative or compensative for functional decline due to an acute insult (e.g., stroke or fall). This focus means modifying behaviors and/or the physical and social environment to help individuals cope with the disease-related functional impairment. Physiotherapists often work on a consultant basis in nursing homes and often report that it is challenging to gain the cooperation of persons with dementia that is needed for treatment/interventions (95). Most health professionals (e.g., physiotherapists, occupational therapists) remain unaware of how best to support caregivers and how to effectively engage individuals with dementia in intervention therapies (54). The mobility and independence of nursing home residents can be improved by functional training delivered by caregivers during daily activities (96). To find suitable rehabilitation interventions and to evaluate treatment/intervention effects, the assessment and analysis of the situation is an important part for science and in daily work at the clinic (97).
Assessment of problematic person transfer behavior

There is a vast number of assessment scales for health problems in dementia disease (98), including all aspects of mental and physical health (99). “Assessment in Old Age Psychiatry” presents 244 scales (100). There are 17 common scales for recording and assessing the ADLs of individuals with dementia (101). Measurements of ADLs often include transfer within a mobility sub-scale for individuals with dementia (96).

Additional relevant scales for assessment in dementia include global rating scales (102, 103), e.g., the Neuropsychiatric Inventory (104) and the Cohen Mansfield Agitation Index, which are frequently used in the clinic (92). However, global rating scales generally provide information regarding overall functioning of a problematic area, which is quite different from that of performance-based scales.

The primary outcome measure for a transfer situation is the general mobility of the person with dementia—more specifically, the person’s ability to stand from a chair (sit-to-stand), which is integral to a person’s ability to perform independent transfer (96). One example of assessment is the bed mobility item of the Minimum Data Set (MDS) of ADL, which assesses a specific transfer situation for individuals with dementia (105). The assistive relationship between the caregiver and the person with dementia is central to the meaning of mobility to the individual with dementia (106). Unfortunately, research on manual-handling (i.e., front-line caregiver assistance) interventions are lacking (96). Performance assessment scales that utilize the person with dementia’s physical and psychosocial function and the caregiver’s ability to provide assistance are also lacking.

Development of a scale for dementia care

The purpose of developing an assessment scale is to increase the precision involved in making decisions by reducing subjectivity and increasing objectivity (97). Rating scales are essential tools for generally diagnosing dementia, staging assessments, carefully monitoring symptoms and evaluating intervention effects (101). The term “scale” could be defined as “effect indicators,” i.e., items whose values are caused by an underlying construct (107). Systematic observation is an alternative to using the self-report of a variable or other types of reports (i.e., proxy reports) as the methods of measurement. Scores are frequently obtained from the proxy rating of a behavior in different research areas (e.g., disability or infant-parent care dyad studies) by the direct observation of the behavior (108). A main factor for
the complexity of assessment in dementia care is that many persons with dementia require the use of indicators that do not depend on self-report (101). The observation of persons with dementia interacting with others in their most comfortable settings for assessment differentially increases their understanding of the behavior (109) (e.g., transfer-related behavior). Measures and assessment methods that fall into sectors of behavioral competence, however, are complicated to develop (110).

Developing an assessment scale that is optimally suited to the research question requires understanding the subtleties of the underlying theory or theories (110). Different variables (e.g., behavioral expressions, subjective experience of pain, walking speed) call for different assessment strategies. Multiple items may capture the essence of such variables (e.g., the transfer situation). Furthermore, assessing the validity of observational variables in a scale is an important factor in the quality of a new assessment scale (111).

**Validity and reliability of a scale**

Basic concepts, such as validity and reliability, are highly important targets of exploration during the scale-development process (97, 111). Validity is defined as “the degree to which evidence and theory support the interpretations of test scores entailed by [the] proposed uses of tests” (110). According to this definition, there are no different types of validity but different types of validity evidence that support interpretations of instrument scores (111). This definition thus relies upon the assumption that the scales have been carefully and sensibly designed in the first place by rigorous application of formal qualitative methods (111). Reliability represents “the consistency of measures when the measurement procedure is repeated in a group of individuals with all things being equal.” Reliability reflects the number of errors associated with the assessment scale. Furthermore, reliability is not separated from validity: reliability is a necessary but insufficient condition for validity. The evidence of validity and reliability needs to be addressed in relation to the intended use of an assessment scale. Different statistical and psychometric methods have been developed for this purpose. A reliability coefficient is based upon classical test theory, which means that an observed test score can be divided into two parts, “true” scores and “false” scores (97). There is no such thing as the reliability of a test or a scale, only the reliability of a test as applied to a specific measurement situation. Thus, the reliability in one study is almost impossible to compare when a different study yields a different reliability coefficient (97).
In conclusion, the assessment and evaluation of treatment/interventions is a key priority area in physiotherapy that requires valid and reliable assessment scales. Additionally, the research undertaken in this thesis substantially drew on the scale development process and the behavioral medicine perspective in physiotherapy.
Rationale for the Thesis

Person transfer situations are challenging for persons with dementia and the assistant caregiver. Therefore, care dyads’ problematic transfer-related behavior is the topic of interest in this thesis. The dependence on a caregiver is significant for persons with dementia, and their needs can range from little help by guidance to greater assistance, such as moving, bathing and toileting. Standard transfer methods for handling problematic person transfers in dementia special care units do not exist. Persons with dementia often exhibit challenging behaviors, for example, fear or resistance, which obstructs the person transfers, and such obstruction in turn increases the stress and strain on the caregivers. The reciprocal influences of care dyad’s actions and environmental factors need to be addressed in research. To explore the complexity of these transfer situations in dementia special care units, the behavior of both individuals (i.e., the care dyad) participating in the transfer situation needs to be observed. Furthermore, assessment and evaluation of interventions and of interactive behavior of dementia-care dyads in transfer situations should be explored, measured and intervened upon using a behavioral medicine perspective in physiotherapy. No assessment scale describes the aspects of both individuals’ actions in this context. Interventions and outcomes of treatment strategies can be developed, leading toward evidence-based practice in dementia care and challenging person transfer situations. Empirical descriptions from caregivers and observation of behavior in transfer situations at dementia special care units, conducted within a behavioral medicine perspective, need to be pursued in physiotherapy treatment. To the best of my knowledge, problematic person transfers of dementia-care dyads have neither been explored nor evaluated using a behavioral medicine perspective in physiotherapy. No current assessment scale presumes that interactive transfer-related behaviors are influenced by a reciprocal action between the parties of a dementia-care dyad and the environment. In this gap lie questions that are important to the development of physiotherapy practice.
AIMS

The overall aim of this study was to employ a behavioral medicine perspective in physiotherapy to explore, develop an assessment scale for, and intervene in problematic person transfer situations of persons with dementia and interactions with their caregivers in these transfer situations.

Specific aims

- To describe caregivers’ experiences of person transfer situations involving persons with dementia (Study I).
- To develop an assessment scale for measuring actions during staff-assisted transfers involving residents and caregivers in dementia care facilities (Study II).
- To evaluate the new assessment scale for inter- and intra-rater reliability (Study III).
- To explore the effects of tailored behavioral medicine interventions guided by a FBA in dementia-care dyads’ problematic person transfer situations in a special care unit (Study IV).
METHODS AND MATERIALS

Design
Both qualitative and quantitative approaches have been applied in the present thesis. In studies I and II, the design was explorative. In study III, a descriptive and correlational design was used, and in study IV, two different experimental single-case designs were used. One case employed an A-B-design, and the other case employed an A-B₁-B²-B³ design. See table 1 for overview of the design, methods of data collection and data analyses.

Table 1. Overview of the study design, methods of data collection and data analysis

<table>
<thead>
<tr>
<th>Study</th>
<th>Design</th>
<th>Methods of data collection</th>
<th>Methods of data analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Exploratory</td>
<td>2 focus group interviews</td>
<td>Qualitative content analysis</td>
</tr>
<tr>
<td>II</td>
<td>Exploratory</td>
<td>Literature review, video observations, log book notes, expert opinions and feasibility testing by answering questions about the means of detection of items in the new assessment scales (rating video observations)</td>
<td>Digesting current knowledge from the literature, structured visual analysis of video-recorded transfer situations, calculation of the content validity index, description of expert discussions, qualitative description of scoring video observations with the first version of the new assessment scale, condensing and specifying items</td>
</tr>
<tr>
<td>III</td>
<td>Descriptive and correlational</td>
<td>Observation of video-recorded person transfers by scoring with the new assessment scale</td>
<td>Intra-class correlation coefficient (ICC) analyses with two-way analysis of variance (ANOVA)</td>
</tr>
<tr>
<td>IV</td>
<td>Experimental single case; 1) AB 2) AB₁B²B³</td>
<td>Gathering background information; structured video observations by scoring with the new assessment scale; evaluation using the Resistiveness to Care Scale to measure resistive behavior of the person with dementia by focusing on study-specific items to measure caregivers’ self-efficacy (SE), estimated control, and catastrophizing thoughts</td>
<td>Descriptive and visual analyses</td>
</tr>
</tbody>
</table>
Participants and setting
The participants in all four studies were persons with dementia and their professional caregivers. Additionally, experts (physiotherapists) in the area of person transfer situations in dementia caregiving facilities participated in studies II and III; see table 2. The setting in all four studies was a nursing home with special care units for persons with dementia. The nursing home was located in a medium-sized town in an urban area of Sweden. The nursing home was built for approximately 70-80 residents and is divided into six wards. Eight to twenty persons with dementia live in each ward. Nearly 60 to 70 caregivers in total worked at the nursing home.

Study I
Ten caregivers participated in study I. Inclusion criteria for the caregivers comprised the ability to understand and speak the Swedish language and current employment as a contact caregiver for one or more persons with dementia. In total, eight women and two men participated. In total, 19 caregivers were invited for two focus group interviews. Ten caregivers chose to participate; see the characteristics in table 2.

Study II
Study II was divided into four phases; fifteen care dyads, six research colleagues and fifteen experts (physiotherapists) participated. Phase one was gerature-based.

In phase two, three care dyads participated in collecting video data regarding transfer situations. One person with dementia (n=3) was female. Of the caregivers (n=10), two were nurse aides, and eight were nurse assistants. One of the nurse assistants was male; for further information on characteristics, see table 2. The inclusion criteria for the person with dementia comprised having difficulty standing, changing his/her position or changing location (18) (e.g., changing location from a bed to sitting down in a chair or from an apartment to a dining room). The inclusion criteria for the caregiver comprised working as a contact (i.e., frontline caregiver). Video-data transfer situations were as follows: 1) awaken, get out of bed, and walk to the day room (n=1); 2) awaken, get out of bed, and walk to the toilet (n=3); 3) get out of a chair, walk, and get into an armchair (n=1); 4) get out of bed, walk, and get into a wheelchair (n=1); and 5) get out of a chair in the day room, walk back to one’s own apartment, and lie down on the bed (n=1).

In phase three, 15 experts (physiotherapists) were included, comprising those who chose to participate from among 54 invited experts. The experts
were recruited from a specialist group of physiotherapists with background practicing in physiotherapy/rehabilitation in nursing homes for individuals with dementia and were used to assess and evaluate person transfer situations; see table 2 for expert characteristics.

In phase four, which included a discussion of the response score, an expert group of six research colleagues participated. Two professors and four PhD-level students who were within the area of health care and welfare, took part in the discussion. In the feasibility test in phase four, eight care dyads participated, including eight persons with dementia and nine caregivers. The ratings were performed by the author CT. Video recordings were randomized from an earlier data collection; see figure 2.

**Study III**
In study III, the participants were persons with dementia (n=15), caregivers (n=16) and physiotherapists (n=2), who were experts in the area of person transfer situations in dementia caregiving. The care dyads (n=15) all participated in video recordings (n=20) of person transfers from an earlier video data collection; see figure 2. The video data were randomized from the earlier video data collection if the videos were at least one minute long and the sound of the video file was of sufficient quality to identify the conversation of the care dyads. In total, 88 videos met the criteria. The two expert raters had bachelor degrees in physiotherapy and had worked 3 and 5 years in the dementia caregiving context; see table 2 for further information.

**Study IV**
In study IV, two care dyads participated; see table 2. In total, two persons with dementia and four caregivers were included. The study was divided into a baseline phase and an intervention phase. The total time for implementation of the two phases in care dyad 1 was 6 weeks and seven weeks for the implementation of the four phases in care dyad 2.
Table 2. Characteristics of persons with dementia, caregivers and experts participating in studies I-IV

<table>
<thead>
<tr>
<th></th>
<th>Study I</th>
<th>Study II</th>
<th>Phase 2 (Study II)</th>
<th>Study III</th>
<th>Study IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Persons with dementia</td>
<td>-</td>
<td>3</td>
<td>9</td>
<td>15</td>
<td>2</td>
</tr>
<tr>
<td>Male</td>
<td>-</td>
<td>2</td>
<td>5</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Female</td>
<td>-</td>
<td>1</td>
<td>4</td>
<td>12</td>
<td>1</td>
</tr>
<tr>
<td>Mean age (years)</td>
<td>-</td>
<td>83 (79-90)</td>
<td>86 (78-97)</td>
<td>88 (82-97)</td>
<td>76 and 88</td>
</tr>
<tr>
<td>Mean MMSE* (range)</td>
<td>-</td>
<td>4 (0-12)</td>
<td>2.9 (0-10)</td>
<td>3.4 (0-11)</td>
<td>0 and 8</td>
</tr>
<tr>
<td>Caregivers</td>
<td>10</td>
<td>10</td>
<td>8</td>
<td>16</td>
<td>4</td>
</tr>
<tr>
<td>Male</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Female</td>
<td>8</td>
<td>9</td>
<td>7</td>
<td>14</td>
<td>4</td>
</tr>
<tr>
<td>Nurse’s assistant</td>
<td>9</td>
<td>8</td>
<td>8</td>
<td>12</td>
<td>3</td>
</tr>
<tr>
<td>Nurse aide</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Years working in nursing home</td>
<td>45 (30-59)</td>
<td>43 (30-58)</td>
<td>39 (21-60)</td>
<td>41 (30-59)</td>
<td>39 (32-53)</td>
</tr>
<tr>
<td>Mean age (years)</td>
<td>-</td>
<td>47 (30-64)</td>
<td>-</td>
<td>27 and 44</td>
<td>-</td>
</tr>
<tr>
<td>Experts</td>
<td>-</td>
<td>15</td>
<td>-</td>
<td>2</td>
<td>-</td>
</tr>
<tr>
<td>Male</td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>0</td>
<td>-</td>
</tr>
<tr>
<td>Female</td>
<td>-</td>
<td>14</td>
<td>-</td>
<td>2</td>
<td>-</td>
</tr>
<tr>
<td>Mean age (years)</td>
<td>-</td>
<td>47 (30-64)</td>
<td>-</td>
<td>27 and 44</td>
<td>-</td>
</tr>
<tr>
<td>Years working as PT in a dementia SCU</td>
<td>-</td>
<td>18 (8-28)</td>
<td>-</td>
<td>3 and 5</td>
<td>-</td>
</tr>
</tbody>
</table>

*Mini mental state examination

**Data collection and procedure**

In studies I, II and IV, the head of the nursing home and the nurses in charge were informed about the aim and the design of each study. The time points for information collection were depicted with a time line for each data collection period. Participants in studies I, II and IV (i.e., persons with dementia and caregivers) were identified by the nurse in charge. To reach the next of kin of possible participants and briefly describe the study, the nurse in
charge contacted the participants’ relatives. The relatives were then provided with verbal (by a phone call) and written detailed information about the study. The relatives were asked if they opposed the participation of the person with dementia. The relatives were also asked to sign and return the informed consent letter. The contacted caregiver was also informed about the study procedure both verbally and with an information letter and was asked to provide their written consent to participate.

In study I, data were gathered by focus group interviews (112). The interview was led by a moderator and the interviewer. The moderator facilitated the interviewer and created follow-up questions. The two sessions lasted 40 and 60 minutes and were performed during working hours in a conference room at the special care unit.

In study II, Fayers and Machins’ (111) guidelines for scale development were applied along with the scale development process presented by Mahoney et al. (113). First, preliminary items were developed based on a purposive review of the literature, which was conducted from November 2012 to March 2013. The following databases were searched: PubMed, PsychInfo, CINAHL, and Google Scholar, and the following search terms were included: dementia care, assessment scale, daily activity, measurement, dementia caregiving, and interaction. Additionally, the observation of seven video-recorded person transfer situations (see also figure 2) contributed to the item pool.

Second, 93 potential items were formulated. Third, this item pool was sent via e-mail to 54 physiotherapist experts in elderly care. The experts were identified and invited through a network of physiotherapists in dementia caregiving. The purpose was to explore whether the items developed from the literature and the video recordings made sense to the experts. Fifteen of the 54 experts chose to participate. They were asked to rate the relevance on a five point Likert scale, from “highly relevant” to “not relevant at all.” Fourth, by observing eight video-recorded person transfers and rating the behavior of the care dyad using the new scale, a feasibility test of the scale was performed by observing possible means of detection of the items of the assessment scale. Additionally, the appropriate response scaling and the pros and cons of the points assigned to individual items (e.g., the points awarded to each item) were discussed in a meeting with research colleagues at the faculty.

In study III, the inter- and intra-rater reliability of the new assessment scale was studied. Two physiotherapists who were experts in the area of person transfer situations in dementia special care units participated. Each
expert observed 20 video-recorded person transfer situations and assessed them with the new assessment scale. The video data (n=20) included a randomized sample from 88 video recordings that met the inclusion criteria from 114 video recordings that were obtained during an earlier data collection, see figure 2. The first and second test situations occurred eleven days apart. The experts were told not to discuss the video recordings or the ratings during the break.

In study IV, data collection was conducted via a short interview with the caregiver to obtain the caregiver’s view of the problematic person transfer. Next, the transfer situation was observed in the apartment of the person with dementia. All transfer situation sessions were videotaped for observation and scoring. Care dyad transfer-related behaviors were assessed from video recordings using the new assessment scale. Repeatedly collected measures were gathered seven (care dyad 1) and four (care dyad 2) times during the baseline period.

Figure 2. Description of video data collection and the use of video data in this thesis, 2010-2014
Measurements and study-specific items based on different instruments

The Mini Mental State Examination
The Mini Mental State Examination (MMSE) (114) is the most commonly used instrument for screening cognitive function (115). The items test a patient's orientation in time and place from broad to narrow. In this thesis, the MMSE was administered to determine the cognition levels of the participating persons with dementia. The MMSE has a maximum score of 30 points. Inter-rater reliability was confirmed by Molloy and Standish (116) with an intra-class correlation coefficient (ICC) =.69. The cut-off points are 18-24 for mild dementia and 0-17 for severe dementia (117).

Resistiveness to Care Scale (RTC-DAT)
The Resistiveness to Care Scale-Dementia Alzheimer type (RTC-DAT) separately measures resistive behavior in terms of both intensity and duration (113) and was used in study IV, care dyad 2. The items of the RTC-DAT scale are paratonia grab object, say no, adduct, grab person, pull away, clench, cry, scream, turn away, push away, hitch/kick, and threaten (113). The RTC-DAT is scored with a range of 0–156. High scores refer to severe resistiveness and low to mild resistiveness. Reliability testing has shown coefficients of .82–.87 for internal consistency and good to excellent kappa coefficients (113). Criterion-related validity with observed discomfort and construct validity by factor analysis have supported the validity of the RTC-DAT.

Study-specific items to measure the caregivers' self-efficacy (SE)
Two self-efficacy items were designed to assess the caregivers' beliefs about performing daily person transfers at the special care unit. The two items were developed according to the recommendations of Bandura (80) and were used in study IV, care dyad 2. The first item addresses self-efficacy in handling the problematic transfer situation: “On a 0-10-scale (where 0 means no self-efficacy at all and 10 means the highest possible self-efficacy), at what degree of self-efficacy have you performed on the transfer situation?” The second item addresses the self-efficacy of problem solving during transferring if trying hard enough: “On a 0-10 scale (where 0 means no self-efficacy at all and 10 means highest possible self-efficacy, what degree of self-efficacy do you have that you can solve problems during transfer situations if you try hard enough?” The maximum score for self-efficiency was
20, and higher scores reflect higher self-efficacy. Self-efficacy was measured in study IV as a repeated measure in the single case study.

Study-specific items to measure the caregivers’ catastrophizing thoughts
Catastrophizing thoughts during the transfer were assessed with a one-item statement in study IV, care dyad 2: “The transfer situation is awful [,] and I feel it is impossible to perform it,” with the response scale of 0 (“totally disagree”) to 10 (“fully agree”). The item is adapted from the Catastrophizing subscale of the Coping Strategies Questionnaire (118). This item was used in study IV as a repeated measure.

Study-specific items to measure the caregivers’ perceived control and ability
Two items were designed to assess the caregivers’ perceived control over and the potential to decrease problems in the transfer situation; these items were used in study IV, care dyad 2. For the prompt “Given the subject, what you’re doing during in an ordinary day to handle the transfer situation...”, these items asked “To what degree can you control the transfer situations?” and “what is the chance for you to decrease the strain in the transfer situation?” These items were scored on a seven-point Likert scale with anchor points zero to six, with respective response categories of “no control,” “some control” and “fully control” and “no possibilities,” “some possibilities” and “all possibilities.” The maximum score for the estimated control items was 12, and higher scores indicated that the caregiver perceived that he or she could employ behavioral strategies that could ease problems in a complicated person transfer situation. These items were adapted from the perceived control and ability to decrease the problem in the Coping Strategies Questionnaire (119). The items were used in study IV as a repeated measure.

The behavioral medicine intervention in Study IV
The intervention in study IV included a structured video observation, assessment of transfer-related behavior (based on information from the new assessment scale) and tailored behavior change strategies based on the FBA (73). Tailoring and monitoring are fundamental to the FBA, and these steps were undertaken in study IV. Interviewing the caregiver, making video observations, rating items on the new assessment scale and tailoring of the behavior change strategies were previously performed by author CT.
The new assessment scale and the close monitoring of problematic transfer situations constituted the base for the development of behavior change strategies. Items from the new assessment scale could identify which behaviors were the most problematic during the transfer situation. An essential part of the FBA and the process of tailoring different behavior change strategies was to describe “What function does the behavior serve?” The hypothesis was formulated based on FBAs of possible associations between antecedents and consequences and the care dyad’s behavior. Individualized (tailored) behavior change strategy plans for problematic transfer-related behavior was based on the hypothesis. The author (CT) chose specific individualized behavior change strategies for each care dyads’ problem behavior. Plans to facilitate the change of the target behavior of the care dyad were implemented. Direct observation (i.e., video recording) and measurement of problem behavior were conducted under at least two conditions, involving manipulation of an environmental variable in an attempt to demonstrate a relation between the environmental factor and the behavior (120). The interventions were monitored to determine whether to continue or modify the intervention plan; see figure 3 for information about the FBA process and its steps.
Figure 3. Description of the steps to conduct an FBA data collection, step 1 to step 6, and to review, evaluate and continue or modify the tailored interventions.
Data analysis

Study I
The data analysis for study I was conducted using qualitative content analysis (121). First, the interviews were verbally transcribed to improve access to the material. Second, the meaning units that referred to the aim were transferred to an Excel file to create an overview. All meaning units were condensed and coded. The codes were grouped into categories; finally, one theme was outlined. See examples of meaning units, condensed meaning units, codes, and categories in table 3.

Table 3. Examples from the analysis process from meaning units to category

<table>
<thead>
<tr>
<th>Meaning Units</th>
<th>Condensed meaning units</th>
<th>Code</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Not too much talk, words, slowing down the process, the speech, and then” to the right, one and two…” there is nothing else; we are not talking about anything else, just…”</td>
<td>The ability to use one’s voice and speak slowly</td>
<td>Tone of voice</td>
<td></td>
</tr>
<tr>
<td>“I tell the widow who has been apartment since yesterday, I’ll make up a story that her friend is wondering when she will come to her, and then she wakes up.”</td>
<td>Pretending that a friend is waiting</td>
<td>White lie</td>
<td></td>
</tr>
<tr>
<td>“And this man, he likes sports, so I talk about athletics and I try to talk about the issue and some well-known athletes; it’s usually to the point.”</td>
<td>Creating a boundary through interests</td>
<td>Conversation Becoming familiar and making contact</td>
<td></td>
</tr>
<tr>
<td>“And sometimes, for example, to get him out of bed I do that, sit beside him and kind of show him, please get up”</td>
<td>Using one’s own body as an instrument</td>
<td>Body language</td>
<td></td>
</tr>
<tr>
<td>“I’ll just, like this, lean down and pull his legs backwards. Otherwise, if he puts them [his legs] like that, he won’t be able to stand up.”</td>
<td>Prepare his body for transfer</td>
<td>Cues</td>
<td></td>
</tr>
</tbody>
</table>
Study II
In study II, different data analysis methods were utilized. The study was conducted in four phases, with aims and methods designed for each phase. First, the literature search for existing assessment scales was inventoried, with a careful review made of the retrieved 42 papers. Fifteen papers were included that exhibited biopsychosocial factors of interest for item generation. In phase two, the video-recorded transfer situations were analyzed from a biopsychosocial perspective with respect to the transferring persons. In phase three, the experts’ ratings were analyzed by computing an item content validity index (I-CVI) (122). An I-CVI was computed for each item by summing the number of experts who rated the item “quite relevant” or “highly relevant” divided by the total number of experts rating the item. Additionally, through qualitative processing, some items were made more general or more specific as problems of expressions were identified. When possible, the experts’ suggestions for wordings were used to generate possible changes of scale items to enhance item validity. In phase four, the analyses were performed with a qualitative description of outcome of the scored video observations with the first version of the new assessment scale. Additionally, in phase four, the assessment scale and descriptions of expert discussions about the response scale (i.e., the 0–10 Numeric Rating Scale), the 7-point Likert scale and the number of points in the assessment scale were analyzed. The new assessment scale also comprised a manual with detailed instructions for each item; see appendix 1.

Study III
The data analyses in study III were conducted by calculating the two-way analysis of variance (ANOVA) (123) for the intra-class correlation coefficient (ICC). Analyses were calculated with two-way random-model ANOVAs for intra-rater reliability and two-way mixed-model ANOVAs for inter-rater reliability. Intra-rater reliability was analyzed between the first and second ratings for each rater. An average measure was chosen for ICC (3, 2) analyses between raters, and a single measure was chosen for ICC (2, 1) analyses within raters (124). The strength of ICC agreement has been classified as follows: poor—below .40, fair—from .40 to .59, good—from .60 to .74, and excellent—from .75 to 1.00 (125).

The ICC is defined as the correlation of one variable (measure) between two or more members within a group (123). The premise is to analyze components of variance rather than to produce a single test statistic with known distributional properties. The method relies on the principle of decomposing
the observed variance into different parts or components (123). However, there are subtle differences in whether we consider items and/or raters as fixed or random effects. For a fixed effect, the rater is a fixed factor, resulting in a two-way mixed model of ANOVA. If the raters are a random sample of raters, the rater factor is considered to be random, and a two-way random effects model is used (124). The numerical values for random and mixed model are identical; however, the interpretations under the two models are different. It is important to define the interpretation prior to conducting the analysis to maximize the trustworthiness of a study (123).

When applied to the context of observing and rating a behavior, ICCs can be used as indicators of inter- or intra-observer reliability or consistency across sessions or days, for example. The two-way ANOVA model considers raters or measures as the second factor in a reliability test, and ICCs are defined in terms of the proportion of variance, which allows for empirical estimates to be negative. In any measurement situation, there are multiple sources of error variance, and each estimate of reliability needs to identify, measure, and find strategies to reduce the influences of error (97). The ICC is superior because of its ability to isolate any factors affecting reliability; kappa coefficients, for example, are good enough for all factors except for the simplest 2 x 2 tables (97).

**Study IV**

The data analysis comprised trend lines in visual charts showing increases or decreases in problematic transfer-related behavior. From each session, the scores of the different outcome measures were illustrated graphically for visual inspection. The data were plotted by noting values from the session-by-session performance of the care dyads’ behavior over time (126). Levels (referring to the means scores within a phase) were calculated, and trend lines (referring to the slopes of the best-fitting straight lines of the data within a phase) were drawn (127). The data were plotted so the dependent measure was on the y-axis and the time variable was represented on the x-axis. Using this method, a change in level is evident when a sudden rise or fall in the care dyad’s performance across two or more phases results a change in the “magnitude” of the values between phases on the y-axis (i.e., 1 to 7 on the new assessment scale, 0 to 10 on items of self-efficacy and catastrophizing thoughts, and 0 to 6 on the estimated control and ability items). Changes in trend occur when there are differences in the direction in which the data pattern is moving. A slope change is reflected by the steepness of the data path across phases (126).
ETHICAL CONSIDERATIONS

The project was approved by the Regional Ethical Review Board in Uppsala, Sweden. Two different approvals were completed (viz., dnr 2009/359 and dnr 2012/146). Furthermore, an additional ethical approval was obtained for the use of video data from the earlier data collection (dnr 2009/359).

The participants (i.e., persons with dementia and caregivers) were informed verbally and/or in writing. The caregivers were also asked to provide written approval. Proxy consent was gathered from the person with dementias’ next of kin by asking, “Do you oppose that your next of kin participates?” Despite being fragile, persons with dementia are still viewed as individuals who are capable of self-determination, but because of severe dementia, they were unable to understand the information regarding participation in studies. Thus, they were carefully observed during video recordings throughout the entire process. Upon any signs of aversion or signs that they objected to participating, the video recording was terminated. It was possible to determine when the persons with dementia no longer wanted to participate. Moral sensitivity (128), proposed by Heggestad et al., guided the process of video recording individuals with dementia in the present thesis. The two experts were informed that their participation fell under terms of professional secrecy, and they were also informed that they could terminate their participation at any time.
RESULTS

Study I
The results of study I revealed one overarching theme: the reciprocal struggle in person transfer tasks. Assisting a person with dementia during transfer was perceived to be a complex work task. Pattern of actions that were characteristic of the transfer situations included being prepared for quick shifts in patient locomotion, seeing a stressed expression in the eyes of the person with dementia, being unable to help, and protecting someone from injury in the case of a fall. The caregivers described different strategies for coping with complicated transfer situations—e.g., calling for help from a colleague, telling nursing students to be quiet when they auscultated during person transfer situations. Strategies aimed at communication (verbal and non-verbal) and building relationships were often used. Difficulties associated with pain from one’s own body were significant when assisting with transfers. Despite the strain and stressful events they described, the caregivers characterized themselves as front-line personnel who were capable of identifying the needs of the person with dementia during a transfer situation. In summary, the results showed a complicated web of contextual environmental factors and internal dilemmas with respect to assisting persons with dementia. Additionally, cognitive and motor impairments in persons with dementia reciprocally influenced each other. Five categories were formulated; table 4 presents an overview of the categories and the overall theme.
Table 4. Overview of the categories and the theme

<table>
<thead>
<tr>
<th>Category</th>
<th>Theme</th>
</tr>
</thead>
<tbody>
<tr>
<td>Becoming familiar and making contact</td>
<td>Reciprocal struggle in person transfer tasks</td>
</tr>
<tr>
<td>Risking one’s own body to protect the resident from injury</td>
<td></td>
</tr>
<tr>
<td>Focused yet aware of the surroundings</td>
<td></td>
</tr>
<tr>
<td>Identifying what is needed to facilitate the person transfer</td>
<td></td>
</tr>
<tr>
<td>Struggling to be understood</td>
<td></td>
</tr>
</tbody>
</table>
Study II
The four phases of study II were outlined in the following sequences in a timeline, and the analysis of the results of each phase was followed by data collection in the next phase (see figure 4). The results of the first phase (literature review) showed that no papers addressed assessment scales in the specific topic of interest. Forty-two papers addressed transfer-related issues guided by the framework of the biopsychosocial model or the perspective presented by Social Cognitive Theory; 15 of these papers were retained for further analysis as these papers deal with the transfer related issues of interest. Three of the included papers addressed characteristics such as caregiver behavior (e.g., verbal and non-verbal caregiver strategies to facilitate communication) in daily caregiving situations.
Figure 4. Flowchart for the generation process (phases 1–4) of items (n). Phases 1-4 describing the item-inclusion and -exclusion processes for persons with dementia, the caregivers and the agreement of items. (For the exact item generation process, see the appendix of article two). *experts participating (n=15); **experts providing comments (n=7).
The literature review and the video recordings resulted in 93 preliminary items, which were sent by e-mail to 54 physiotherapists who were experts in the subject matter. The experts were recruited from a nationwide network of physiotherapists working with dementia disease.

The participating experts’ (n=15) ratings (I-CVI) resulted in the inclusion of 24 items, and the comments on the item formulation resulted in the elimination of seven items, leaving a 17-item assessment scale, the Dyadic Interaction in Dementia Transfer Assessment Scale (DIDTAS). The DIDTAS is a scale for the observation of transfer situations. Each item is rated with a seven-point response scale with anchor points of one (optimal) and seven (non-optimal) for each behavior (see table 6 for a description of the items). Lower scores indicate minor problems with the interactive transfer-related behavior in both areas. The feasibility test resulted in no obvious redundancy among items; all items could be identified and scored from the video observations.
Table 6. Description of the items from the Dyadic Interaction in Dementia Transfer Assessment Scale (DIDTAS)

<table>
<thead>
<tr>
<th>DIDTAS – Items for persons with dementia (PWDs)</th>
<th>DIDTAS – Items for caregivers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. PWD is able to remain attentive in the transfer situation</td>
<td>9. Caregiver provides instructions for transfer just before beginning transfer</td>
</tr>
<tr>
<td>2. PWD is able to actively participate in the transfer situation</td>
<td>10. Caregiver provides a clear verbal command about transfer</td>
</tr>
<tr>
<td>3. PWD has goal-orientated movement patterns in the transfer situation</td>
<td>11. Request for transfer is followed by the caregiver waiting for a PWD to respond</td>
</tr>
<tr>
<td>4. PWD moves at a goal-orientated tempo</td>
<td>12. If two caregivers are present, one of them assists with cooperation of the PWD</td>
</tr>
<tr>
<td>□ Not applicable</td>
<td>□ Not applicable</td>
</tr>
<tr>
<td>5. PWD has bodily control in relation to his/her surroundings</td>
<td>13. Transfer situations are performed in a safe manner for the PWD</td>
</tr>
<tr>
<td>6. PWD does not express discomfort through body language in the transfer situation</td>
<td>14. Caregiver adapts their actions to facilitate the transfer situation of the PWD</td>
</tr>
<tr>
<td>7. PWD does not express discomfort through words/sounds in the transfer situation</td>
<td>15. Caregiver maintains contact with the PWD during the transfer situation</td>
</tr>
<tr>
<td>8. PWD is independent in the transfer situation</td>
<td>16. Transfer aids are available before the start of the transfer situation</td>
</tr>
<tr>
<td>17. Interaction with the PWD is optimal for the transfer situation</td>
<td></td>
</tr>
</tbody>
</table>

**Study III**

The results supported an overall high reliability of the DIDTAS items, with some variation in inter- and intra-rater reliability. Inter-rater reliability analyses for the items from the person with dementia domain showed ICC values from .53 to .87. Intra-rater reliability for rater one showed ICC values from .52 to .83, and ICC values for rater two ranged from .66 to .87. Inter-rater reliability analyses for items of caregiver domain showed ICC values from .34 to .92. Intra-rater reliability for rater one showed ICC values from .63 to .92, and ICC values for rater two ranged from .29 to .92. For further information on the results, see table 7, and for a description of the DIDTAS items, see appendix 1.
Table 7. The results from the inter- and intra-rater reliability tests

<table>
<thead>
<tr>
<th>DIDTAS</th>
<th></th>
<th>Intra-rater reliability (ICC)</th>
<th>Inter-rater reliability (ICC)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Items for persons with dementia (PWDs)</td>
<td>Rater 1 ICC (95 % CI)</td>
<td>Rater 2 ICC (95 % CI)</td>
</tr>
<tr>
<td>1</td>
<td>PWD is able to remain attentive in the transfer situation</td>
<td>.79 (.52–.91)</td>
<td>.87 (.66–.95)</td>
</tr>
<tr>
<td>2</td>
<td>PWD is able to participate actively in the transfer situation</td>
<td>.83 (.60–.93)</td>
<td>.66 (.16–.87)</td>
</tr>
<tr>
<td>3</td>
<td>PWD has goal-oriented movement patterns in the transfer situation</td>
<td>.76 (.66–.95)</td>
<td>.74 (.45–.89)</td>
</tr>
<tr>
<td>4</td>
<td>PWD moves at a goal-oriented tempo</td>
<td>.85 (.66–.94)</td>
<td>.71 (.40–.87)</td>
</tr>
<tr>
<td>5</td>
<td>PWD has bodily control in relation to his/her surroundings</td>
<td>.52 (.10–.78)</td>
<td>.89 (.74–.95)</td>
</tr>
<tr>
<td>6</td>
<td>PWD does not express discomfort through body language in transfer situation</td>
<td>.56 (.16–.80)</td>
<td>.83 (.61–.93)</td>
</tr>
<tr>
<td>7</td>
<td>PWD does not express discomfort through words/sounds in transfer situation</td>
<td>.74 (.46–.89)</td>
<td>.79 (.52–.91)</td>
</tr>
<tr>
<td>8</td>
<td>PWD is independent in transfer situation</td>
<td>.73 (.43–.88)</td>
<td>.80 (.49–.92)</td>
</tr>
</tbody>
</table>
### Items for caregivers

<table>
<thead>
<tr>
<th>Items for caregivers</th>
<th>Rater 1 ICC (95 % CI)</th>
<th>Rater 2 ICC (95 % CI)</th>
<th>Test 1 ICC (95 % CI)</th>
<th>Test 2 ICC (95 % CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>9 Caregiver provides instructions for transfer just before beginning</td>
<td>.75 (.48–.90)</td>
<td>.79 (.53–.91)</td>
<td>.34 (.66–.74)</td>
<td>.76 (.39–.91)</td>
</tr>
<tr>
<td>10 Caregiver provides a clear verbal command about transfer</td>
<td>.72 (.40–.88)</td>
<td>.83 (.61–.93)</td>
<td>.72 (.28–.89)</td>
<td>.82 (.54–.93)</td>
</tr>
<tr>
<td>11 Request for transfer is followed by the caregiver waiting for a PWD</td>
<td>.92 (.79–.97)</td>
<td>.79 (.55–.91)</td>
<td>.92 (.81–.97)</td>
<td>.85 (.63–.94)</td>
</tr>
<tr>
<td>12 * If two caregivers are present, one of them assists with cooperation of the PWD</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>13 Transfer situations are performed in a safe manner for the PWD</td>
<td>.80 (.56–.91)</td>
<td>.92 (.81–.97)</td>
<td>.82 (.54–.93)</td>
<td>.86 (.64–.94)</td>
</tr>
<tr>
<td>14 Caregiver adapts their actions to facilitate the transfer situation of the PWD</td>
<td>.81 (.55–.92)</td>
<td>.84 (.64–.93)</td>
<td>.92 (.80–.97)</td>
<td>.91 (.76–.96)</td>
</tr>
<tr>
<td>15 Caregiver maintains contact with the PWD during the transfer situation</td>
<td>.63 (.26–.84)</td>
<td>.29 (.18–.65)</td>
<td>.35 (.65–.74)</td>
<td>.46 (.37–.79)</td>
</tr>
<tr>
<td>16 Transfer aids are available before the start of the transfer situation</td>
<td>.92 (.80–.97)</td>
<td>.73 (.44–.88)</td>
<td>.76 (.40–.91)</td>
<td>.91 (.78–.97)</td>
</tr>
<tr>
<td>17 Interaction with the PWD is optimal for the transfer situation</td>
<td>.69 (.33–.87)</td>
<td>.81 (.58–.92)</td>
<td>.88 (.69–.95)</td>
<td>.70 (.25–.88)</td>
</tr>
</tbody>
</table>

**Study IV**

In study IV, the assessment of the video observations of the transfer situations generated by the DIDTAS and of the caregiver interview was the starting point of each FBA. The DIDTAS items identified the most problematic transfer-related behaviors of the two care dyads. Study IV is represented in this thesis by care dyad 2.

For care dyad 1, the results are briefly described. (For more detailed information, see article four.) The FBA in care dyad 1 showed that the person...
with dementia's verbal discomfort behavior (DIDTAS item 7) was the most problematic transfer-related behavior; at the same time, the cooperation of the two assisting caregivers (DIDTAS item 12) in the transfer situation was suggestive of problems. The results of the tailored behavior change strategies for care dyad 1 showed a positive change in the trend line of the person with dementia’s verbal discomfort behavior. The trend was descending (positive change) when pain medication and breakfast were served before performing the transfer. Furthermore, the trend line for the cooperation of the two caregivers assisting in the transfer situation changed positively.

**Care dyad 2**

Care dyad 2 was formed by a 70-year-old man with Alzheimer’s-type dementia and the caregiver, a 38-year-old female nurse’s aide. The caregiver had been working as a contact of the patient for one year and in the special care unit for five years. The person with dementia often seemed to get upset and angry with the staff. He refused to be assisted by the caregiver when getting out of bed during morning care routines. He used a walker for transferring within the ward. The transfer situation was performed during morning care and comprised rising from a lying or a sitting position in the bed to standing upright. One caregiver was present during the transfer situation at baseline. When the caregiver entered the apartment and announced the transfer activity to be conducted, he answered, ‘What?’ The caregiver reformulated the command using both verbal (‘it is morning, time to get up’) and visual (draw the curtains) cues. Furthermore, the caregiver was moving around in the apartment while she gave different commands about transfer and dressing and breakfast. Music was playing on a radio. The person with dementia had problems cooperating with the caregiver: he asked, ‘What?’ several times and, while still lying on the bed, he drew the blanket closer to his body, turning away from the caregiver. During one transfer situation at baseline, the caregiver left the room and, while she was outside, the person with dementia got up from his bed and stood upright. (See figure 5 for the DIDTAS scores at baseline.)

Per their scorings, item 2, *Person with dementia is able to participate actively in the transfer situation,* and item 14, *Caregiver adapts his/her actions to facilitate the transfer situation of the person with dementia,* characterized the main problem behaviors of care dyad 2. For further information about or detailed descriptions of the transfer-related behavior by the respective items, see the manual, appendix 1.
The RTC was also included in light of its relevance; moreover, study-specific items measuring the caregiver’s beliefs of her self-efficacy (two items, SE 1 and SE 2), catastrophizing thoughts (one item, Cat 1), and perceived control (two items, control 1 and control 2) in the transfer situation were included. The caregiver interview revealed concerns about perceived difficulties associated with the given challenging transfer-related behaviors. The caregiver reported low scores on catastrophizing thoughts and low scores on self-efficacy (i.e., self-efficacy with respect to performance of and the problem-solving involved in the transfer situations) and perceived control in managing the problems related to the transfer situation. (See figure 6 for the score details at baseline.) The hypothesis about what restricted the chosen transfer situation was the person with dementia’s difficulties involving the behaviors associated with actively participating in the transfer situation (i.e., turning into the proper position, showing a readiness to move with appropriate body movements). Caregiver problematic behavior was associated with the instructions for the transfer situation, including intense wording; furthermore, the behavior was not adapted to facilitate the transfer situation of the person with dementia. The person with dementia turned away from caregiver, grabbed the blanket and said ‘no’ when the caregiver was verbally offering help with clothes and medicine. Additionally, he asked ‘what?’ several times when the caregiver presented the transfer activity, a reaction that might be related to communication problems (aphasia) and apraxia.

Behavior change strategies were composed with an A-B¹-B²-B³-design with different interventions; in phase B¹, avoiding competing stimuli (music or intense verbal attention) was introduced. In phase B², the order of routine tasks before the transfer was altered (i.e., not offering new clothes). In phase B³, the order of routine tasks was further altered via eliminating the distribution of medicines. Consultative discussions with the caregiver were performed whenever the transfer was video recorded, which was aimed at increasing her perceived self-efficacy, control, and ability and decreasing catastrophizing thoughts on the management of the problematic transfer situation.

A descending trend line emerged (positive change) in phase B¹, an ascending (negative trend) trend line emerged in phase B², and no change in trend (zero slope) emerged in phase B³ for the person with dementia's active involvement in the transfer situation. The caregiver’s adaption of her actions to facilitate the transfer situation showed a similar trend line. Caregiver self-efficacy was positively changed (i.e., manifested an ascending trend) at the
same time that the trend line of the person with dementia's resistiveness to care changed positively (i.e., manifested a descending trend) throughout the three intervention phases (B₁, B², B³; see figure 6 and table 8).

Figure 5. Trend line, data points and different phases for the transfer-related behaviors associated with item 2 (person with dementia is actively involved in the transfer situation) and DIDTAS item 14 (caregiver adapts their actions to facilitate the transfer situation of the person with dementia) for care dyad 2.
Figure 6. Trend line, data points and phases for the transfer-related behaviors associated with the person with dementia’s resistiveness to care (RTC) and the caregiver’s self-efficacy (SE2) for care dyad 2.

Table 8. Average scores for the caregivers’ beliefs of self-efficacy (SE1 and SE2), catastrophizing thoughts (Cat) and perceived control (Control 1 and Control 2) and the person with dementia’s resistiveness to care (RTC) in transfer situations during phases A, B1, B2 and B3.

<table>
<thead>
<tr>
<th>Phase</th>
<th>A</th>
<th>B1</th>
<th>B2</th>
<th>B3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item 2</td>
<td>5.5</td>
<td>4.2</td>
<td>2.8</td>
<td>4</td>
</tr>
<tr>
<td>Item 14</td>
<td>5.5</td>
<td>3.6</td>
<td>3.8</td>
<td>5.5</td>
</tr>
<tr>
<td>SE 1</td>
<td>2.6</td>
<td>3</td>
<td>4.8</td>
<td>5.7</td>
</tr>
<tr>
<td>SE 2</td>
<td>2.3</td>
<td>2.8</td>
<td>4.3</td>
<td>5.7</td>
</tr>
<tr>
<td>Cat</td>
<td>1.0</td>
<td>0.2</td>
<td>3.0</td>
<td>0.7</td>
</tr>
<tr>
<td>Control 1</td>
<td>0.7</td>
<td>2.2</td>
<td>2.5</td>
<td>3.3</td>
</tr>
<tr>
<td>Control 2</td>
<td>1.0</td>
<td>2.2</td>
<td>2.3</td>
<td>3.0</td>
</tr>
<tr>
<td>RTC</td>
<td>7.0</td>
<td>8.0</td>
<td>5.0</td>
<td>4.2</td>
</tr>
</tbody>
</table>
DISCUSSION

In this thesis, which comprises four studies, I determined that factors related to problematic person transfer situations in dementia special care units are subject to dyadic and reciprocal action influences. The study covered the biopsychosocial spectrum, and the hypothesis was that different behavioral medicine factors influence the transfer situation. By collecting the caregivers’ experiences through two focus-group interviews and developing and reliability testing a new assessment scale (DIDTAS), different problematic transfer situations were investigated. The conceptualization of person transfer situations in dementia special care units, where caregivers assist person with dementia, was explored from a new and possibly valuable approach. By adding the DIDTAS, which allows care personnel to investigate problematic person transfer situations from a behavioral medicine perspective, outcomes of problematic person transfers could be improved. The results of this thesis provide an opportunity for care personnel to tailor behavioral change strategies for potentially problematic person transfer situations and to increase the chances of a satisfactory outcome.

Main findings

The qualitative content analysis of the two focus group interviews showed that caregivers’ experiences of person transfer situations could be categorized in terms of *Becoming familiar and making contact*, *Risking one’s own body to protect the resident from injury*, [*Being*] focused yet aware of the surroundings, *Identifying needs to facilitate the person transfer* and *Struggling to be understood*. Furthermore, a theme of *reciprocal struggling in person transfer tasks* was present. The analysis also identified a dynamic process in which environmental factors and personal factors influenced how caregivers perceived their own and the person with dementia's transfer-related concerns.

The assessment scale development study was guided by the theoretical framework of the biopsychosocial model and the features of social cognitive theory, which provided a basis for the development process. Four phases resulted in a 17-item assessment scale (DIDTAS) that measures dementia-care dyads’ transfer-related behavior during staff-assisted transfer situations in dementia special care units. Furthermore, for care personnel (i.e., physiotherapists and occupational therapists) working in dementia care facilities,
the new scale provides proxy rating by observation of transfers of persons with dementia.

The reliability study showed that the DIDTAS was a reliable assessment scale in person transfer situations involving dementia-care dyads. Moreover, inter-rater reliability was achieved with ICC values that presented excellent strength of agreement overall; moreover, intra-rater reliability was assessed as having good strength of agreement.

In two single-subject design studies, evaluations of the effects of various FBA-based behavior change strategies for problematic person transfer situations in dementia special care units revealed various outcomes. The person-centered view offered by the FBA, problematic transfer-related behavior and the assessment of interactions among the care dyads’ behavior, personal characteristics and environmental factors illuminated how these difficulties can be approached. The FBA and tailored behavior change strategies are a highly relevant approach to transfer situations in dementia special care units.

Reciprocity in person transfer situations
Understanding reciprocal actions in a transfer situation is related to theories explaining reciprocal determinism (42). With respect to behavior and actions within social contexts, the interactions of two individuals of a care dyad and the contextual environmental factors are interrelated and are affected by the mutual influence of the behavior, the environment and the personal factors of each individual (42).

Previous research has discussed the value of observing interpersonal interactions when providing assistance in daily activities, mainly in regards to the caregiver-care recipient dyad in nursing homes (129, 130) and the family caregiving for a person with dementia (28, 131). To my knowledge, no study has examined the act of caregiver assistance of a person with dementia in person transfers from a dyadic and behavioral medicine perspective. This perspective is of importance for integrating the reciprocal influence of behavior, environmental and personal factors into perspective of person transfers, referring to the mechanisms of interaction among the factors. In accordance with social learning theory and the principle of reciprocal determinism, cognition and behavior influence each other in a dynamic learning process (78). Thus, the caregivers’ expressions similarly indicated that they had to handle the mutual influence of their own actions and the person with dementia’s actions, when they assisted daily person transfers (study I). To
minimize the physical impact of cognitive decline and motor impairment for a person with dementia, they used different approaches, both communica-
tive and environmental, for example, by switching caregivers. These salient
behavior change strategies were highly important for the success of transfer
situations and revealed the underlying complexity of transferring persons
with dementia in daily caregiving facilities (study IV). A previous study
dataed that helping a person with dementia to transfer was a highly prevalent
caring task in nursing homes (10). In this thesis (study I), ensuring
a dynamic approach that could be quickly adapted to the changing needs of
persons with dementia in these person transfer situations was also im-
portant.

Perceptions and beliefs about social normative caring behavior (i.e., de-
scriptive norms) and positive outcomes of caring in daily activities (e.g., giv-
ing assistance during person transfers) are both central cognitive constructs
according to social learning theory (69). Furthermore, the norms of nursing
home facilities are about the frequency of the giving-receiving-giving back
circle of reciprocity (78, 132). In terms of cognitive decline associated with
dementia, this socially accepted reciprocity is not in line with features of
how dementia disease is manifested. Instead of being an individual, suffer-
ing from dementia can be ascribed as deviance, someone who fails to con-
firm to accepted social norms (133). An individual’s emotions, thoughts and
actions are a state of being, and if these concepts expand beyond the defini-
tion of what a group has labeled as acceptable, it will leads to confusion
(134).

From the perspective of caregiving as a dyadic process, communication
is crucial (21). Because persons with dementia have difficulty understanding
situations and expressing their thoughts and emotions due to cognitive im-
pairment, they may misinterpret the verbal and non-verbal communication
of the caregiver (135), as was seen in study IV. This difficult was also clearly
expressed by the caregivers in study I, when they talked about the person
with dementia’s anxiety in person transfer situations, which was viewed as
stressful for both individuals of the care dyad. Furthermore, the caregiver’s
social interactive behavior could be viewed as an environmental stressor to
persons with dementia if the caregiver’s behavior exceeds the person with
dementia’s capacity (135), meaning a mismatch between the person’s ability
and the environmental stimulus (136, 137). This mismatch was observed
when a caregiver in study I expressed that the person with dementia was
unable to sit down when attempting to reach for the toilet, for example.
The caregivers who participated in the focus group interviews (study I) described how they occasionally used “white lies” to facilitate a transfer situation. Day et al. (138) explored the issue of lies. Their study showed that lies are considered to be acceptable if told in the best interests of those with dementia. To do something in the best interest of someone is a complex decision and is influenced by factors such as the person with dementia’s awareness of the lie and the caregiver's motivation for lying. Obviously, the telling of lies to increase motivation in transfer situations involves coping, which is regarded as major modifiers of the caregiving stress (139). Additionally, the lie is an ethical dilemma (140), and telling a lie could be a social construct in the person with dementia--caregiver hierarchy (134).

In this thesis (study I), the key features of problematic person transfers, as viewed by caregivers, were apraxia, mobility problems of the persons with dementia and decreased cognitive and executive functioning, all of which are hallmarks of dementia as viewed from a biomedical perspective (118). However, the general biomedical paradigm is limited insofar as it does not consider that psychological and environmental effects may interact with neurobiological changes in dementia disease (141).

The social contextual environment of persons with dementia living in special care units is to a large extent shaped by caregivers (134, 135) because they interact with persons with dementia on a regular basis. Furthermore, it is important to notice that each individual of the care dyad is part of the other individual’s environment, which in turn complicates the understanding of the interrelated relationship. Implicit in this understanding is the fact that social behavior is context dependent (109). Therefore, the creation of a joint transfer situation must be evaluated based on the context that the interactive behavior of a person with dementia is performed in his/her home (apartment) and, in the same sense, at work for a caregiver.

The caregivers (study I) conveyed that they were the ones identifying the need to facilitate person transfers. The caregiver’s unique knowledge in relation to the challenge of the consequences pursuant to the cognitive difficulties in a daily person transfer situations made them feel important and supportive during the transfer. In social cognitive theory, the perception of one’s own professional knowledge is related to the concept of self-efficacy (42). Caregivers’ high self-efficacy decreases subjective stress, both for informal (82, 83, 142) and professional (143, 144) caregivers. In study IV, a behavior change strategy addressing the professional caregiver’s self-efficacy in assisting during transfer situations attempted to foment a change in
the care dyad’s transfer situation as a whole. The degree to which a caregiver feels capable of successfully performing a person transfer situation is an important antecedent to the formation of new ways of facilitating a transfer situation. This finding was partly indicated by the caregivers’ own suggestions for the development of strategies for the facilitation of transfers.

**Assessing and developing interventions for reciprocity in person transfer situations**

In this thesis, the person transfer situations of dementia-care dyads were addressed as a joint performance of ADLs (e.g., the care dyads’ common activities). The main findings of study I showed that problematic person transfer situations in dementia special care units were described by the caregivers as *reciprocal struggling*. Caregivers faced many challenges when assisting with person transfer situations. In a reciprocal relationship, the caregiver had to adapt their own behavior to the environment to accommodate the different needs of a person with dementia. Furthermore, the caregivers expressed that the effect of an appropriate strategy might not have yielded the same outcome in the same type of person transfer situation the next day, nor would the person with dementia’s functional ability be the same (study I). Thus, the interaction in relation to each part of the care dyad was dynamic and changed from one occasion to the next. The dynamic process is also an important part of the nature of reciprocal determinism, as presented by Bandura (78). The dynamic nature of reciprocity described by Bandura refers to the interrelated social action of the individuals (behavior) and the environment. Referring to it as “dynamic”, the caregivers in study I presented the concept as the process occurring in the caregiver’s own perceptions for determining how to facilitate a person with dementia when the conditions seem to have changed. Variable conditions in dementia disease are important, and assessing decline has become increasingly important, as demonstrated by, among others, the authors of “Assessment Scales in Old Age Psychiatry” (100). The diagnosis of dementia disease itself comprises comprehensive assessment processes occurring at different stages (98).

Specific issues need to be addressed when designing a new assessment scale within the field of dementia disease. An earlier review of Alzheimer’s disease scales stated that the assessment criteria of cognition, communication, behavior and ADLs were the most clinically relevant areas to be included in a new scale (101). In study II, which reported the development of the assessment scale, these areas were addressed, thereby increasing the clinical relevance of the scale. Suffering from severe dementia also means having
problems in self-reporting and with following instructions—for example, during a gait or balance test. Moreover, most of the scales that measure the severity of dementia are truncated at the severe stages (145). In this thesis (study II), the severity of dementia is considered. Neither self-reports nor transfer instructions are needed for the proxy rating by observation of the DIDTAS’s items. This is a strength and means that the scale can likely be used in different stages of dementia.

For research in this area, although there are a large number of scales available for reference, no scale served our particular research purpose well; thus, we were forced to start from scratch, which is less than idea, according to the previous literature (100). In this thesis, (study II and study III), the scale sought for our specific purpose was not available; thus, scale development started from scratch. This necessity could be seen as a weakness. However, the scale development started by gathering data from reviews of previously published scales, and awareness of the range of existing and available assessment scales was essential for understanding the knowledge gap. The literature review also covered aspects from contiguous areas, which is recommended by Steiner et al. (97), and thus strengthened the development process. The fields of neuropsychological disability (146), autism disorders (147) and interaction-communication with infants (148) provided useful contributions to addressing the dyadic interactive behavior.

The intention behind using the DIDTAS was to elucidate a range of medical, social and psychological factors that are important in transfer situations. Thus, based on the theoretical perspective in behavioral medicine (149) and the interactive behavior with the caregiver, factors that are amenable to change could be identified. The caregiver’s behavior and transfer-related actions are important for the transfer situation as a whole but were challenging to assess. Nonetheless, from a behavioral medicine approach, the caregiver’s behavior could be viewed as a factor antecedent to the behavior of the person with dementia, which in turn influenced the outcome of the transfer (i.e., the consequence). The theories of operant learning and antecedent-behavior-consequence (A-B-C) analyses (73) are important for understanding the dyad’s behavior in person transfer situations and also for the development of behavior change strategies (study IV). The A-B-C approach of a FBA (150) could be viewed as a strength of study IV because it provided a chance to investigate the function of a specific transfer-related behavior of the dyad. This investigation, in turn, facilitated the tailoring of behavior change strategies in study IV. Exploring specific problematic triggering behaviors, evaluating their influence on the care dyads’ behavior, and
using a single case experimental design (126) enabled highly tailored interventions.

Previous studies of the development of assessment scales have been dominated by a bio-medical model that emphasizes the medical process of disablement in dementia disease (85). In contrast to applying theories from only one view, a broadened perspective, such as the behavioral medicine perspective (149) of transfer situations, can generate new insights into what the stated problem actually is. Furthermore, if the transfer situation was viewed as mutual actions comprising psychosocial processes and if the assessment involved both individuals, not merely to investigate the physical handling of transferring a person with dementia, further advantages could be gained. This investigation style could be viewed as a strength because most interventions for motor functioning decline cannot reverse many of the disabling conditions related to dementia; instead, the treatment needs to aim at helping persons with dementia cope with deficits that cannot be reversed by medical care (141). One method of coping could be to develop communication strategies for the caregiver, which in turn could facilitate assistance in the transfer of a person with dementia. For example, decreased intense verbal attention was tested in Study IV.

The emphasis on the transfer situation as being subject to communication and awareness of bodily movements by the caregiver has been discussed by Kindblom (151). The author described the behavior of grabbing something and sitting back as being related to fear. Grabbing behavior in turn could be viewed as a sign of the respondent behavior (152) of the person with dementia, occurring when he or she does not understand what is happening in the transfer situation. The grabbing behavior is included in the new assessment scale (study II and study III) and is described in one of the items (item 3): ‘The person with dementia has goal-orientated movement patterns in the transfer situation’ (i.e., not sitting back or grabbing the handle bars).

Furthermore, an earlier study showed that persons with Alzheimer’s disease had lost their capacity to prepare and execute efficient body motions (153). From a biomedical view, this description means that Alzheimer’s may affect the person’s ability to integrate higher levels of motor processes with the dynamics of the environment, which, in turn, increases the demands of awareness of the caregiver because they are the frontline personnel interacting with persons with dementia in daily transfers. This awareness was shown in study I, when caregivers expressed that they needed to maintain an awareness of the other residents while engaged in caregiving activities for someone else. This awareness was due to the risk of allowing a person...
with dementia to fall when he or she was actually unable to transfer on his or her own.

One central and well-acknowledged challenge in the field of dementia disease is the measurement of verbal and non-verbal behavior because severe dementia impairs a person’s ability to communicate effectively (154). The responsibility to facilitate communication lies with the caregiver (155), as seen in study I and study IV. Emphasis was therefore put on items that specifically addressed interactive behaviors (communication of the caregiver) that facilitated the person with dementia’s understanding of transfer situation (study II), which is a strength of this thesis. Furthermore, the items addressing the caregiver’s behavior (viz., facilitation by the caregiver, through item 11: ‘Request for transfer is followed by the caregiver waiting for a PWD’ and item 14: ‘Caregiver adapts their actions to facilitate the transfer situation of the PWD’) were also highly reliable (study III). This coverage strengthens the usefulness of the new scale because the random variability is low. Consequently, a high proportion of the variance in item 11 and item 14 in the observations are attributable to variations among patients (111).

Some individual items (study III) also had low inter-rater reliability scores (viz. Item 4: ‘PWD moves at a goal-orientated tempo’ and item 6: ‘PWD does not express discomfort through body language during the transfer situation’ which could be viewed as a weakness. A possible explanation is the test manual. The manual might have been too general in describing the behaviors in these items and thus negatively influenced the results. Nonetheless, the overall reliability results of the DIDTAS (study III) are in line with results from other proxy-rating-by-observation assessment scale studies (156, 157). The Simpson-Angus scale measures the extrapyramidal side effects (i.e., involuntary body movements) of medications in Parkinson’s disease and evidenced ICC values between .88 and .92, for overall items (156), and in the reliability study of the MOBID (mobilization–observation-behavior-intensity-dementia) pain scale, the inter-rater reliability for the pain intensity scores on separate MOBID pain items showed high-to-excellent ICC results, for example, alongside “pain noises” (k’s: 0.44 to 0.92) (158). Thus, proxy rating methods by observation of motor behavior in Parkinson’s disease and pain-related behavior in persons with dementia are sensitive to detection in cases of observation and rating on a scale, similar to the items in the DIDTAS in study III.
The DIDTAS has limitations. The items that express discomfort (item 6 and item 7) have wordings of negation (‘PWD does not express discomfort’). The negation could have complicated the ratings, and the agreement between raters might have been higher if the item had been reformulated to reflect the meaning without negation. However, the agreement of this item between raters was interpreted as good (110). Thus, the negative wording of the items did not appear to affect raters’ agreement.

For the purpose of gathering information for which the DIDTAS was used in study IV, the functional behavior was analyzed. When using FBA in research, it is important to specify the behavior under consideration; otherwise, the scientific knowledge drawn upon the findings might be biased (74). The behaviors are the observable actions of an individual related to the doing, thinking, and feeling of that person (159). The antecedent of a behavior can be viewed as a cue or a starter (i.e., a catalyst) for a behavior (160), such as an internal or external stimulus. Internal stimuli are those of inner body stimulation, for example, pain (159). An external stimulus (antecedent) of a behavior, could be interpreted by one of the items in the DIDTAS addressing delaying assistance following a verbal prompt (item 11). The caregiver’s skill in delaying physical assistance following a verbal prompt produces sustained reductions in agitation with persons with dementia (161). In turn, such reduced agitation could indicate that delaying physical assistance is also important for the transfer-related behavior of individuals with dementia. The high degree of agreement between raters on item 11 (Request for transfer is followed by the caregiver waiting for a PWD) strengthens the item’s usefulness for the DIDTAS because the random variability was low (111). Delaying assistance after presenting a verbal prompt could also be viewed as an effective antecedent behavior-change technique. The antecedent of lowering verbal attention could increase the person with dementia’s understanding of a transfer situation, which was the behavior change strategy used in study IV.

From the approach of reciprocal determinism (42), the person with dementia and the caregiver may each contribute to the problematic transfer-related behavior. Reciprocal determinism is relatively complex to assess and interpret, and many weaknesses may be present. Conducting research with a new approach, however, is important when trying to address new treatment strategies. New strategies for interventions could benefit both research and clinical work. In study IV, the FBA and the act of tailoring behavior change strategies were applied on a new area. The effects of various FBA-based behavior change strategies for problematic person transfer situations
in dementia special care units were evaluated. The advantage of this study (IV) was the so-called person-centered view (88) during transfer situations. The application of FBA on the transfer-related behavior of care dyads and environmental factors are all important outcome variables when addressing person-centered treatment interventions. Generally, mobility problems that are related to people suffering from severe dementia also concern aspects other than the effects of decreased mobility, e.g., unmet needs (29), challenging behavior (150), and interactive behavior deficits (162). Unfortunately, neither the tasks nor the strains on the caregiver are solved by the intervention of, for example, the use of assistive mobility devices. Technical mobility devices might be complicated for a person with dementia to interpret and to employ (163). This observation is true not only as regards cognitive impairment but also because of a person’s physical inability to cooperate with the caregiver (163). These factors (i.e., cognitive impairment and inability to cooperate) are among the reasons to analyze transfer-related problems using FBA (study IV). Earlier treatment approaches have been sparsely based on the examination of the functional determinants of behaviors of persons with dementia (73). However, no study prior to our study IV has employed management strategies that consider the characteristics of both the physical restrictions and behavioral characteristics of a care dyad as a unit.

Methodological considerations

General discussion on methodology and design
In the studies described in this thesis, strengths and limitations might have influenced the results and the conclusions. The rigor of the research findings is described using two sets of terminology. The quantitative paradigm uses validity and reliability, whereas the qualitative paradigm uses transferability and trustworthiness (164). This thesis is based on four small sample-size studies. However, the variations in designs, different types of data collection methods and different analysis methods enriched the results and increased the quality of the studies in this thesis in its entirety.

The first study was performed with focus group interviews using a qualitative explorative design. In qualitative explorative design, the goal is to find themes and patterns and to create representations for how, in this case, complex interactive behavior can be clarified (165). Given the aim of the first study—i.e., to capture the caregivers’ experiences of assisting persons
with dementia in transfer—the design and data collection method choices seemed relevant. The objective of qualitative methodology is to provide the researcher with an understanding of the participants' perspective on the topic of discussion, which is also shaped by multiple social contexts (120). In this study, the social context shaped the caregivers' experiences of the problematic person transfers because working in a dementia special care unit is associated with physical strain (9) in addition to the complex management of interactions with persons with dementia (78).

A qualitative method is a good starting point for considering the relevance of a hypothesis about something unknown. In this thesis, the exploration and discovery of the theme ‘reciprocal struggling’ in study I provided the foundation for study II, the development of a new assessment scale.

In study II, the design was again explorative and followed specific sequences occurring in four phases. First, an unstructured review of the literature was performed. This method is called theoretical-rational or deductive and follows substantive, structural and external processes (121). Different authors propose different strategies; however, the basic of the substantive and structural processes are the conceptualization and development of an initial item pool for a measure (87, 101, 128). The item development is iterative (101), as was the case in this study. The recommended expert opinions and field testing were also performed. Unfortunately, the expert opinions were only gathered at one point; this practice is not consistent with the recommendations made in the literature (97).

The psychometric evaluation of the ratings in study III was performed by calculating inter- and intra-rater reliability. Reliability testing refers to the consistency of a measure when the measurement process is repeated by a group of individuals with all other aspects being equal (122). The ratings were analyzed by two-way ANOVA, and the results are presented with ICCs.

An experimental single-case design (115) was chosen in study IV. The design was performed by careful investigation on a small scale of the effects of different interventions for problematic person transfer behaviors of dementia-care dyads. The experimental single-case design allows for the interpretation of results through a comparative analysis of the relative ratings of responses across experimental and control conditions (123). In this thesis, the interventions in problematic person transfer-related behavior were not developed beforehand. Instead, each intervention was tailored after a so-called FBA, which was the reason for choosing a small-scale study (i.e., to try the concept of tailored interventions).
Trustworthiness in terms of internal and external validity

Internal and external validity refer to the highest priority in research and concern the rigor of the study design (164). Unfortunately, it is not possible to design a study that can address all threats to internal validity (126).

The focus group interview in study I provided options to accomplish a complex and detailed understanding of the research question in this thesis (100).

The analysis of qualitative focus group interviews (Study I) is subject to threat to the internal validity concerning the influence of pre-understanding. Generally, a qualitative data analysis must include a discussion about the role of pre-understanding (164). Pre-understanding is defined as follows: every interpretation of an action or a text is assumed to be included in the next interpretation, and earlier understanding is not unprejudiced. The results of the focus group interviews were discussed several times by all authors to increase trustworthiness and decrease the role of pre-understanding. Additionally, providing excerpts from interviews is a way to gain rich descriptions, and these excerpts were made in study I. These excerpts increase the internal validity and trustworthiness of the data (166). Regarding external validity, the results of the qualitative analysis were not intended to be generalized (165). Instead, the results prompted ideas for the scale development study, which is a strength of this thesis because it was not possible to interview persons with dementia (study II) due to disease severity. Unfortunately, the interviews were not a part of the scale-development study (study II) in this thesis; nevertheless, the insights from study I were important (167) for the overall understanding and consideration of items for the new scale.

Interactions among the members in the focus group facilitated openness, which improved the data collection of study I. Unfortunately, the number of participants was low; thus, only two focus group sessions were performed, and in total, ten caregivers participated. In this study (I), the staff members’ working time was scheduled in shift, alongside staff sick leave—i.e., these contextual relevant aspects help understand the reason for the low number of participants. The low number of participants might have threatened the trustworthiness of the results because aspects of assisting persons with dementia in transfer situations might not have been included, which is a weakness of this thesis. However, the social context is highly relevant when exploring a new topic (168). Thus, the focus group interviews could also be considered to be a strength of this thesis.
The scale development study followed a four-phase process. First, the literature review (study II) was guided by the theoretical framework of the behavioral medicine approach (149), and the conceptual formulation comprised the ‘reciprocity of care dyads in transfer situations’, which had been previously developed. An articulated theoretical framework gives the researcher a set of interrelated theoretical concepts before embarking on scale development (167); this framework was the sound premise for the subsequent steps in study II. The internal validity of the results in a scale development study is subject to a rich description of each phase (167), a careful choice for the literature review (i.e., the previously developed assessment scales in the area) and a conceptual formulation that is clearly described. All of these parts were implemented in study II, which is considered a strength.

In study II, 15 experts on the assessment of person transfers in geriatric nursing homes participated and gave their views (providing comments) and ratings of each item in the item pool. Item selection strategies relied on at least one of two sources of information: test or item statistics and the experts’ judgments of item content (133). The selected experts who performed the ratings of item relevance is a highly important (111, 167) aspect of study II. The expert views and relevance ratings offer a structure for the validity of a new scale (111); if the experts are random persons without experience in problematic person transfers of dementia-care dyads, the scale's validity would have decreased. This decrease would then threaten the validity and reliability of further studies that might use the new scale. Ultimately, the tailored interventions might harm the subjects getting treatment if conclusions were drawn from the results using an invalid scale.

Unfortunately, the phase with the expert opinion was performed by only one Delphi round, which is surely a weakness. Delphi studies are usually performed until consensus is reached (107). The decision of which response format to use must have been made before the psychometric evaluation. In this thesis, the pros and cons of using a seven-point Likert scale and a numeric rating scale (0 to 10) were discussed with research colleagues, and the choice of a 1- to 7-point scale was decided to be more relevant. This response format is a strength of this study. The format has enough scale steps to discriminate changes but not too many steps for the rater to be confused when rating an item on the assessment scale (97). The feasibility testing procedure (in phase four) increased the external validity of the new assessment scale in this study. Using a representative sample (eight video-recorded person transfer situations), the general applicability of the scale was generated.
Each item could be detected and scored, which permitted consideration as items were detected in the clinical setting; moreover, these considerations would be transferable to transfer situations of dementia special care units, which supports the external validity.

In this thesis, 20 video observations were randomized for the test situation (study III) from a sample of 88 video observations of person transfer situations in dementia special care units. The randomization of test situations and the raters’ expertise are also important when performing reliability tests.

Randomization decreased the risk of bias and increased the chance of trustworthiness of the results because the researchers’ control over which transfers should be rated and analyzed was eliminated. Furthermore, using video recordings of daily person transfers, good to excellent inter- and intrarater reliabilities of the transfer-related behavior for each item were demonstrated in study III. However, this method of using video-recorded transfers to investigate several transfer situations may make the results less generalizable. In addition, a video camera was not typically available at the clinic to observe transfer situations at the clinic, which might be a weakness. Nonetheless, the DIDTAS was first and foremost designed for data collection to investigate the research question of this thesis: ‘exploring person transfer situations in dementia special care units’. In future studies, the testing of the feasibility of DIDTAS for direct observation would be of interest because utilization of the results of this thesis would be of benefit for care dyads’ daily person transfers.

Video observations in dementia caregiving facilities must also be discussed with respect to the ethical dilemma of video recording persons with dementia. We cannot always be certain that a person with dementia really understands what he or she is agreeing to; however, it is possible to observed when they no longer want to participate (128). In this thesis, video observations were used in three (study II, III and IV) of the four studies, and if the person with dementia demonstrated discomfort or aversion during filming, then filming was terminated.

In study IV, the single-case design was not intended to generate generalizable results (126); instead, it was an expressed limitation of the design. It is nevertheless important to consider the experimenter as a threat to the internal validity because the intervention effect can be restricted to the person with special skills, training or expertise (127). In this thesis, the risk of bias by the manipulation of the researcher is especially high. However, a
knowledgeable experimenter (researcher) is a prerequisite for the development of tailored interventions in study IV.

The natural context is an important condition because behaviors do not occur in vacuum; instead, treatment strategies are recommended for development in the context where the problematic behavior occurs (73). Using an FBA to analyze the problem behavior further strengthens the understanding of the function of the behavior in relation to its treatment effect. Physiotherapists’ clinical reasoning in general is an important part of treatment evaluation, especially when interventions are focused on clients' behavior change (169).

To minimize the influence of reporting bias in study IV, the reporting of the results included all instruments (i.e., all study-specific items of the instruments) that measured outcomes of the participants’ behavior related to the transfer situations, as recommended by Moniz-Cook et al. (73). This treatment of bias could be considered a strength of this thesis (study IV). Reporting all changes in the behavior under consideration is also an important part of trustworthiness. In this thesis, to minimize the ‘bias in performance’, the outline of the FBAs in study IV was reported and clearly described. The ‘usual care condition’ was described in detail along with the performance and outline of each intervention of the different phases. Additionally, the design of an A-B phase (case 1) and an A-B1-B2-B3 treatment (case 2) was intended to describe the function of behavior, which is of importance in detecting changes in behavior.

Antecedents and consequences of a behavior are important for investigation and assessment because of the effects these factors have on the outcome behavior, whether increasing the chance of repeating that behavior or decreasing the chance of the behavior (150).

In study IV, it was also important to explicitly include threats to internal validity stemming from increased attention from the experimenter as support during the different phases. Increased attention is also referred to as the Hawthorn effect (170); the fact that someone (i.e., the experimenter) was concerned about the caregiver’s work and the opportunities this attention gave to discuss the interventions were important to consider in this thesis (study IV). The attention might threaten the internal validity of the results and the ability to understand what caused the change in the behavior. Additionally, the structured measures (self-monitoring) of caregivers’ perceived control, self-efficacy and catastrophizing thoughts were subject to concerns of internal validity, for the attention reason. However, in this thesis, self-observation (study IV) was considered to be an agent for behavioral
change just as earlier studies have shown that mapping oneself, i.e., self-monitoring, is an effective strategy for changing behavior (171).

Purposive sampling was used in study I and study IV. Purposive sampling was chosen in study I to select information-rich cases to illuminate the research question and caregivers’ experiences on transfer-related problematic behavior of the care dyads and in study IV, which included care dyads that were subject to problematic person transfer situations at the suggestion of the registered nurse in charge. The sample sizes in the studies of the thesis were determined based on the potentially detailed data that could be generated. Although only two focus group interviews were performed in study I, the study revealed important insight of the experienced challenge of reciprocity in person transfer situations of dementia-care dyads. In study IV, the purposive sample was to generate rich data for an FBA. The intention of study IV was to include care dyads as a couple and to assess and tailor interventions for behavior change for these two individuals as a dyad. Unfortunately, this goal turned out to be more difficult than expected. It is impossible to know what such difficulty in recruiting and keeping caregivers actually means in regard to the study. The challenge of keeping the care dyad as a couple should be addressed in future studies.

**Psychometrics and the properties of a measurement instrument**
Validity and reliability relate to the interpretation of the psychometrics of an instrument (110). In this thesis, the validity of the new assessment scale could be considered weak. In study II, only one round of expert (physiotherapist) opinions was obtained. Likewise, these experts were the only experts who participated in study II. Preferably, different categories of experts are involved in the development process (111). Thus, the content validity (i.e., that the conceptual definitions of the scale covers all of the relevant issues) and the face validity could be weak, which in turn threatens the intended usefulness of the scale as a multi-item assessment scale for investigating and developing scientifically based interventions for problematic person transfers in dementia care.

Content validity could have been increased if the persons with dementia could have articulated their experiences (111) of suffering from dementia disease and requiring assistance in person transfers. Instead of the recommended interviewing of persons with dementia in study II, video observations of person transfers were used to obtain this content. However, the
focus group interviews in study I and the method for calculation of the content validity index (122) in study II might have improved the validity of the new assessment scale in some ways.

The extent of item coverage is not amenable to formal statistic testing; instead, item coverage depends upon ensuring that the scale has been developed according to a rigorous pre-defined method, for example, according to Fayers and Machin (111). Furthermore, it is important to remember that validity assessment is a never-ending task, and a scale can never be proved to be 100 % valid. Instead, the process seeks to accrue more and more evidence that the scale behaves as anticipated (111).

Reliability is an important concept in the development of an assessment scale (study II). This term refers to the consistency of measures when the measurement process is repeated on a group of individuals when all other factors remain equal (97, 111). Reliability is not distinct from validity but as a necessary condition for validity (111).

ICCs and their 95 % confidence intervals (95 % CIs) were used in this thesis to measure the agreement between raters. ICCs and 95 % CIs were calculated according to the method described by Shrout and Fleiss (123). Although any cutoff value is arbitrary, it was decided a priori that the value of ICCs should be greater than 0.5 for the criteria to be considered sufficiently reliable and greater than 0.65 to represent a high level of agreement. Each ICC formula is appropriate for specific situations, which are defined by the experimental design and the potential use of the results. In this thesis, the two-way ANOVA model for ICC was chosen because of its several advantages: (a) it can distinguish those paired assessments made by the same set of examiners from those made by different sets of examiners; (b) it distinguishes those sets of scores that are merely ranked in the same order from test to retest from those that are not only ranked in the same order but are in low, moderate, or complete agreement with each other; and (c) it corrects for the extent of test–retest (intra-rater and inter-rater) agreement expected with this method (172). Thus, the choice of ICC model could be considered a strength (113).

In study IV, study-specific items were developed to measure caregivers’ self-efficacy, perceived control, ability and catastrophizing thoughts during the transfer situation; these items were not tested for reliability. This omission is truly a weakness of this thesis. If these items had been tested for intra-rater reliability, this step would have increased the internal validity of study IV. However, FBA research should include repeated measures on different
factors related to the behavior under consideration (126). In turn, the investigation of someone’s self-efficacy, catastrophizing thoughts and estimated control in relation to the outcome behaviors of this study (IV) were important factors from a behavioral medicine approach (149), which increases the trustworthiness of study IV.

**Ethical aspects of research in dementia caregiving**

The demands of research and the integrity and protection of individuals related to study participation raise the specific ethical issue of whether the person with dementia is no longer able to give fully informed consent. There are special considerations related to advanced dementia, and their inability to self-determine classifies this population as vulnerable (173). Vulnerability could be exemplified through the act of video-observing persons with dementia in a transfer situation. Video recordings could generate distress. Researchers must ensure that those taking part in research will not be caused distress. Thus, participants were carefully observed during video recordings throughout the entire process. Any signs of aversion or that they objected to participate resulted in termination of the video recording.

In terms of one’s inability to self-determine, the person with dementia should still be involved in the decision-making process. In the different studies of this thesis, the decision-making process was considered, and participants were asked if they would participate each time as video recordings were performed in the three studies (studies II, III, and IV). If the person with dementia was unable to answer the question, the video observation was performed with even more receptive attention. Furthermore, it was possible to determine when the persons with dementia no longer wanted to participate.

The concept of proxy consent is important: any concerns the next of kin may have must be addressed. In this thesis, the next of kin was provided with information by a phone call and by mail, and they were encouraged to ask questions.

In Sweden, the ethical approval concerning proxy consent does not take the self-determination process away from a person with dementia. Instead, the relative or legal guardian can only be asked if they “oppose the participation of their next of kin.”

Another important aspect to remember is that vulnerability is context-specific and can be related to cognitive and communicative vulnerability (173). For example, the observation of a transfer situation for transferring
to the day room is quite different from transferring to the bathroom. If a planned transfer situation suddenly changed due to the needs of the person with dementia, the video recording was terminated. In this thesis, different contexts and conditions of the cognitive, physical and psychological health of persons with dementia required different approaches, and special considerations were adopted during all data collection.
CONCLUSIONS

This thesis demonstrates a new physiotherapy approach from a behavioral medicine perspective, systematically analyzing and intervening problematic person transfer-related behaviors of care dyads in dementia care.

The following conclusions can be drawn:

- According to the caregivers’ experiences of person transfer situations of persons with dementia, it was important to ensure a dynamic approach that could be adapted to the needs of the person with dementia while providing assistance during person transfers. Being a caregiver at a special care unit means being prepared for quick shifts in a patient’s locomotion and seeing a stressed expression in the person with dementia’s eyes without being able to help. These factors are interwoven in a complex manner with contextual environmental factors and inner dilemmas in relation to assisting persons with dementia in transfer situations.

- The development of a new assessment scale, the DIDTAS, which provides proxy-rating-by-observation of a dementia-care dyad’s transfer-related behavior, shows potential for assessing person transfer situations. For healthcare professionals working in dementia care facilities, the DIDTAS can be a useful tool in assessing this important ADL. To identify strategies for changing problematic person transfer situations in dementia special care units, the assessment of transfer-related behaviors of care dyads and the evaluation of intervention outcomes need to be included while conceptualizing the care dyads as a unit.

- The inter- and intra-rater reliability of the new assessment scale, the DIDTAS, appears to be moderate to strong. This reliability supports the usefulness of the DIDTAS for exploring and intervening upon dementia-care dyads' problematic person transfer situations.
The effects of tailored behavioral medicine interventions, guided by an FBA, in dementia-care dyads’ problematic person transfer situations, showed various results. However, FBA and tailored behavior change strategies could be relevant approaches in problematic transfer situations at dementia special care units. Increasing the knowledge of behavioral mechanisms and their impact on the care dyad’s behavior is important in transfer situations in dementia special care units.

Clinical implications

This thesis suggests that the concept of reciprocal determinism provides a valuable physiotherapy approach for the development of interventions targeting problematic person transfer situations. Therefore, the perspective of social cognitive theory on interactive behavior needs to be included in the physiotherapy treatment when addressing these problems in dementia special care units.

When choosing an appropriate assessment scale to meet clinical requirements, the DIDTAS could be of interest to everyone involved in assessing dyadic interactions during problematic person transfer situations of dementia-care dyads.

This specific assessment scale, the DIDTAS, and an evaluation of the outcomes of interventions for problematic person transfer situations are important in terms of care dyads' interrelated functioning in daily person transfer situations.

Shifting the focus from the care-receiver (person with dementia) and the caregiver as separate entities to care dyads and their joint performance of transfer situations can be fruitful in exploring problems related to daily person transfer situations.
• The behavior of persons with severe dementia is commonly communicated through needs via non-social-normative behaviors, making it difficult for caregivers to know that the person has a need and how to address that need. The FBA could be a strategy in the clinic to increase the knowledge of needs communicated by a person with dementia when transferring.

**Perspectives for future research**

• The problematic person transfer situations in dementia caregiving may be influenced by factors, such as the training of caregivers. Interventions addressing education on behavioral factors and focusing on reciprocity and its impact should be further studied. These insights may lead to improved ways to assess and evaluate problematic person transfers in dementia special care units.

• The new assessment scale, the DIDTAS, should be further evaluated with regard to its validity and reliability, while addressing its factor structure and its face validity and responsiveness to increase the usefulness of the scale.

• Based on the results of study IV, FBA and tailored behavior change strategies of problematic person transfer situations, future studies needs to make explicit assumptions about which single case experimental design (SCED) design best serves its purpose and meets a standard for high evidence. For example, studies should address which of the various designs (e.g., alternating design, A-B-A-B, multiple baseline) of single-case study standards best suits the context of dementia.

• The scientific credibility of single-case designs in problematic person transfer situations should be enhanced by including a randomized trial component in the evaluation of experimental interventions in future studies. This design will mean that FBA-tailored
behavior change strategies are randomized to an experimental alternating single-case study design.

- The most important factors for providing effective behavioral medicine-tailored interventions for problematic person transfer situations should be explicitly studied based on the complex psychosocial and environmental factors.

- In future studies, a group study would be of interest to increase the external validity of the tailored interventions for problematic transfer-related behavior of dementia-care dyads.

- For future studies, the development of a web application for data collection of the varying background information for the FBA would be of interest. This application could then provide guidance for development of tailored behavior change strategies, which would support physiotherapists working at dementia care facilities engaged in the assessment of daily person transfers. Additionally, a web application would increase utilization of the results from this thesis.
**SAMMANFATTNING PÅ SVENSKA**

Personer med demenssjukdom som bor på särskilt boende är ofta i stort behov av assistans i de dagliga aktiviteterna, så som förflyttningar. Flera kognitiva funktioner är påverkade vid demenssjukdom och dessa kan tillsammans vara viktiga i utförandet av en motorisk uppgift.


Denna avhandling har undersökt problematiska förflyttningssituationer i vården av personer med demenssjukdom utifrån en beteendemedicinsk approach i fysioterapi.

Fyra delstudier är genomförda; den första studien (I) syftade till att undersöka vårdpersonalens upplevelser av att assistera vid förflyttningssituationer på ett särskilt boende för personer med demenssjukdom. Studie II syftade till att utveckla ett bedömningsinstrument för att kunna undersöka och utveckla interventioner för problematiska förflyttningssituationer i vården av personer med demenssjukdom. Studie III syftade till att reliabilitetstesta (inter- och intra-bedömare reliabilitet) det nyutvecklade bedömningsinstrumentet. Studie IV var en single-case studie med två stycken s.k. ”vårdpar” (care dyads), med syftet att kartlägga, analysera och utföra en s.k. funktionell beteendeanalys, samt utifrån analysen skräddarsy olika beteendeförändringsstrategier för vårdparet i problematiska förflyttningssituationer.

I studie I beskrev vårdpersonalen att de upplevde att förflyttningarna kunde vara en utmaning både för dem själva och för personen med demenssjukdom, de beskrev att de använde olika underlättande strategier för att genomför förflyttningen. Trots deras ansträngningar var det inte säkert att en förflyttning nådde sin slutdestination. En påbörjad förflyttningssituation kunde stanna av och även vara tvungen att avbrytas. Det beskrev en ömse-sidig kamp för att kunna genomföra de dagliga förflyttningarna på boendet.

I studie II utvecklades ett bedömningsinstrument för undersökning av förflyttningssituationer i vården av personer med demenssjukdom. Studien innehöll fyra faser. Slutresultatet blev bedömningsinstrumentet, ”Dyadic Interaction in Dementia Transfer Assessment Scale”. Bedömningsinstrumenten-
tet innehåller 17 påståenden (items) vilka skattas på en sjugradig skala. Bedömningarna görs via skattning utifrån observation av förflyttningssituationen. Åtta påståenden berör personen med demenssjukdomens förflyttningsrelaterade beteenden och nio påståenden berör vårdpersonalens förflyttningssrelaterade beteenden.

I studie III testades bedömningsinstrumentet för inter- och intra-bedömare reliabilitet med hjälp av 20 st. videofilmade förflyttningssituationer. Två experter (fysioterapeuter) inom området, problematiska förflyttningar på vårdboenden för personer med demenssjukdom, deltog i reliabilitetsprövningen. Resultatet var blandat, från god till mycket god reliabilitet.

I studie IV undersöktes problematiska förflyttningssituationer med hjälp av en kartläggning med det nyutvecklade bedömningsinstrumentet. Förflyttningen observerades med videokamera och de olika förflyttningssrelaterad beteenden skattades sedan med det nya bedömningsinstrumentet. Olika individanpassade beteendeförändringsstrategier utvecklades för de två vårdparen. Resultatet var skiftande.

Grundat i denna avhandling är slutsatsen att undersökning, bedömning och behandling av problematiska förflyttningssituationer kan genomföras med en beteendemedicinsk tillvägagångssätt i fysioterapi. Förflyttningssituationerna i vården av personer med demenssjukdom är påverkade av komplexa inre och yttre faktorer hos vårdparet och mer forskning behövs för att förtydliga och ytterligare ta reda på vilka undersökningsmetoder och interventioner som skulle kunna fungera bäst för både den som tar emot hjälp och den som assisterar i förflyttningen.
ACKNOWLEDGEMENTS

First and foremost, I would like to thank all the wonderful people I have met during this doctoral student work for sharing your daily lives and daily work so openly.

Without four people, this work had been impossible. First, Professor Anne Söderlund, my main supervisor, my “rock”: I am deeply grateful for being able to share your expertise and knowledge and for all your patience with me and my ideas! Associate Professor Petra von Heideken Wågert, my co-supervisor: Thank you for your never-ending support, always wise and brilliant. I am ever so grateful for your question back in 2009: Would you like to be a doctoral student in a research project about dementia disease and person transfer situations?

Professor Ann-Britt Ivarsson: For being my anchor at Örebro University, for your knowledge in the field of my research and for your always-valuable comments on my work. My former co-supervisor, Eva Götel: Your successful funding was the starting point for this doctoral student project.

I would also like to thank all my colleagues at Mälardalen University for the good and instructive discussions we have had during seminars. To the “doctoral student family”, Sara Cederbom, Jessika Holmgren, Oona Lasennius and Viktoria Sander, thank you for making the doctoral student period such an enjoyable journey.

A special thanks to Mälardalen University for supporting me financially during my years as a doctoral student.

Margareta Lilja, professor at Luleå University and Liselotte Hermansson, Associated Professor at Örebro University: Thank you for your careful review and helpful comments, which definitely improved the “kappa”.

Thanks to my “assistant” at the dementia special care unit, Therese Vikner; my oldest friend Tomas Kyhlström, for being there whenever I need you; Niclas and Cecilia Schillberg Lindkvist, for support and close friendship; and Bettina Hellberg, my dear friend, the first day at Mälardalen University 2006 was amazing, and you are a beautiful mind.

To Martin Salzmann-Eriksson: Thank you for inspiring discussions and for guiding in new areas.

To my dear friend, Lotta Stenström: For your enthusiasm, saunas, swimming and cycling, or just for cheering me up.

Last but not least, I am most grateful to my family, Josefine, Jacob, and Julia; their partners, Dick, Efi and Philip; and their children. I love you all so very much ∞. To Mikael, my beautiful partner: I love you.
REFERENCES


32. Smith M, Buckwalter KC. Getting the facts: Communicating with the elderly. In. College of Nursing, University of Iowa.: The geriatric mental health training series for the hartford center of geriatric nursing excellence; 2006.


34. de Rooij AHPM, Luijkx KG, Declercq AG, Emmerink PMJ, Schols JMG. Professional caregivers' mental health problems and burnout in small-scale and traditional long term care settings for elderly people with dementia in the Netherlands and Belgium. J Am Med Dir Assoc 2012;13(5):486.e7-.e11.


86. Ellis MP. Maintaining personhood and self-image in dementia: an exploration of collaborative communication: University of St. Andrews. 2009


94. Gitlin LN, Earland TV, editors. Dementia (improving quality of life in individuals with dementia: The role of nonpharmacologic approaches in rehabilitation); 2010.


APPENDIX 1

Användarmanual för bedömningsskalan ”Förflyttningsrelaterat samarbete vid förflyttningssituationer i vården av personer med demenssjukdom”

Dyadic Interaction in Dementia Transfer Assessment Scale (DIDTAS)

Charlotta Thunborg¹,²
Petra von Heideken Wågert¹
Eva Götell¹
Ann-Britt Ivarsson²
Anne Söderlund¹

¹Mälardalens Högskola Akademin för hälsa, vård och välfärd
²Örebro Universitet Institutionen för hälsovetenskap och medicin

Korrespondens till: Charlotta Thunborg, Physiotherapist, PhD student
School of Health, Care and Social Welfare Mälardalen University, Västerås, Sweden
Box 883, 721 23 Västerås Sweden
Charlotta.thunborg@mdh.se
Dyadic Interaction in Dementia Transfer Assessment Scale (DIDTAS)

Syftet med detta bedömningsinstrument är att identifiera olika påverkningsbara förflyttningsrelaterade beteenden utifrån bio-psykosociala faktorer i förflyttningssituationer där personer med demenssjukdom (PMD) och deras vårdare är deltar. Bedömningsinstrumentet är uppdelat i två områden. Det första området innehåller påståenden som hör samman med personen med demenssjukdoms förflyttningsrelaterade beteende och det andra området innehåller vårdarens förflyttningsrelaterade beteenden.


Personer med demenssjukdoms (PMD) förflyttningsrelaterade beteenden

1/PMD klarar att hålla uppmärksamhet i förflyttningssituationen

- Uppmärksam: PMD håller fokus på det som sker i förflyttningen. Fokuserat uppmärksam under hela förflyttningen, lyssnar och följer instruktioner både när det gäller konversation och agerandet, trots stimuli utifrån.
- Inte uppmärksam: PMD klarar inte att hålla fokus på det som sker i förflyttningen, tappar tråden i konversationen, följer inte instruktionen och förstår inte det som sker. PMD är lättdistraherad vid yttre stimuli.
2/PMD klarar att delta aktivt i förflyttningssituationen

- Deltar aktivt: PMD deltar i förflyttningen. Sträcker sig t ex efter förflyttningshjälpmedel om sådana finns och/eller flyttar den egna kroppen i ett lage så att det syns att han/hon är redo att delta i förflyttningen.
- Deltar inte aktivt: PMD förflyttas med hjälp av lyft.

3/PMD har ett ändamålsenligt rörelsemönster

- Ändamålsenligt rörelsemönster: PMD rör/förflyttar den egna kroppen välanpassat och koordinerat i relation till den pågående förflyttningssituationen.
- Rörelsemönstret är inte ändamålsenligt: kan t ex vara att PMD lutar sig bakåt och/eller håller i fast i något och inte släpper taget om det som han/hon håller i.

4/PMD genomför förflyttningen i ett normalt tempo

- Ändamålsenligt tempo: förflyttningen utförs i ett välkoordinerat rörelsetempo som är anpassat till situationen.
- Tempot är inte ändamålsenligt: förflyttningen genomförs med lyft.

5/PMD har kontroll på kroppen i förhållande till omgivningen

- Fullständig kontroll: PMD klarar att t ex hantera gånghjälpmedlet och bedöma avstånd till möbler, dörrkarmar och/eller väggar i den fysiska omgivningen, klarar att sätta sig kontrollerat på sittplatsen.
- Ingen kontroll: innebär t ex att PMD inte kan bedöma avstånd till sittplatsen. Det kan också innebära att PMD råkar stöta in i, och/eller fastnar med gånghjälpmedlet i möbler, eller andra fysiska hinder i omgivningen.

6/PMD uttrycker inget obehag med kroppsspråk i förflyttningssituationen

- Inget obehag uttrycks med kroppsspråk: detta betyder t ex att PMD inte grimaserar, inte biter ihop käkarna, inte värjer sig med
armarna genom att skjuta bort den som ska hjälpa till i förflyttningen, eller viftar avvärjande till hjälpen.

- Obehag uttrycks med kroppsspråk: detta betyder att obehag tydligt observeras i förflyttningssituationen, t ex värjer sig PMD med armarna eller skjuter bort hjälpen, grimaserar och/eller biter ihop käkarna.

7/ PMD uttrycker inget obehag med ord/läten i förflyttningssituationen

- Inget obehag uttrycks med ord/läten: det betyder att inga verbala uttryck såsom ord och/eller läten som kan tolkas som obehag förekommer, t ex så varken stönar eller suckar PMD, inga skrik eller svordomar förekommer.
- Obehag uttrycks med ord/läten: detta betyder t ex att PMD stönar och/eller suckar, eller uttrycker obehag med ord eller andra läten, så som skrik och/eller svordomar.

8/ PMD är självständig i förflyttningssituationen

- Självständig: vårdaren ger en uppmaning om förflyttningen och PMD utför därefter förflyttningen helt självständigt.
- Inte självständig: förflyttningen utförs med lyft.

Vårdarens förflyttningsrelaterade beteenden

9/Vårdaren ger uppmaning om förflyttningen precis innan den startar

- Uppmaning ges precis innan start: En verbal uppmaning uttalas av vårdaren precis innan förflyttningen startar.
- Uppmaning ges inte innan start: Ingen verbal uppmaning uttalas innan förflyttningen startar.

10/Vårdaren ger ett tydligt verbalt kommando om förflyttningen

- Kommandot är tydligt: vårdaren ger ett kort och enkelt verbalt kommando om förflyttningen.
• Kommandot är otydligt: detta kan t.ex innebära att inget kommando uttalas i förflyttningssituationen, eller att överflödig information/prat ges som inte hör samman med förflyttningen.

11/ Uppmaningen om förflyttningen följs av att vårdaren väntar in PMD

• Vårdaren väntar in PMD i förflyttningen: innebär att vårdaren väntar in och avvaktar PMD:s eget initiativ i förflyttningssituationen i form av ett motoriskt beteende, t.ex att PMD sträcker sig efter sitt gånghjälpmedel eller liknande.

• Vårdaren väntar inte in PMD i förflyttningen: innebär att vårdaren startar förflyttningen utan att PMD visat med ett motoriskt beteende eller tagit initiativ som betyder att han/hon är redo att delta i förflyttningen.

12/Om två vårdare hjälper till är det en som styr samarbetet med PMD

• Samarbetet styrs av en vårdare: Innebär att en vårdare styr hela samarbetet med PMD och ger alla uppmaningar om förflyttningen, instruerar och visar. Vårdare nr. två är medhjälpare i förflyttningen, ställer t.ex fram hjälpmedel eller ger extra fysiskt stöd i vissa kritiska delar av förflyttningen.

• Samarbetet styrs inte av en vårdare: detta betyder t.ex att båda vårdarna interagerar med PMD samtidigt och ger instruktioner om förflyttningen. Likväl kan det betyda att båda vårdarna pratar om saker som inte är förflyttnings-relaterade.

• □ Ej relevant: innebär att det är endast en vårdare som assisterar i förflyttningen

13/Förflyttningssituationen utförs på ett säkert sätt för PMD

• Förflyttningssituationen är säker: detta betyder att förflyttningen är kontrollerad och utförs på ett säkert för PMD så att ingen fall eller annan skaderisk föreligger.

• Förflyttningssituationen är inte säker: förflyttningen utförs på ett okontrollerat och/eller riskfyllt sätt för PMD.
14/Vårdaren anpassar sina handlingar så att förflyttningssituationen underlättas för PMD

- Handlingarna är anpassade: innebär att vårdaren är flexibel i sitt arbetssätt för att underlätta förflyttningen för PMD, t ex genom att förstärka förflyttningskommandot med handlingar och/eller annan signal. Till ex att ”räkna in” en uppresning, och/eller säga ”ett, två”, för att hålla i takten under gångsekvensen.
- Handlingarna är inte anpassade: vårdaren är inte flexibel i sitt arbetssätt, anpassar t ex inte handlingar och/eller signaler för att underlätta förflyttningen för PMD.

15/ Vårdaren håller kontakt med PMD under hela förflyttningssituationen

- Kontakten upprätthålls inte: detta betyder att vårdaren inte uppåtthåller verbal och/eller icke verbal kontakt med PMD. T ex om vårdaren lämnar förflyttningssituationen en kort stund, t ex svarar på ett larm, eller om en annan boende kommer in i rummet.

16/Hjälpmedel finns till hands innan start av förflyttningssituationen

- Hjälpmedel finns till hands: detta betyder att alla hjälpmedel finns i den direkta närheten av förflyttningssituationen innan den startar, förflyttningen avbryts inte för att hjälpmedel saknas.
- Hjälpmedel finns inte till hands: detta betyder att inga hjälpmedel är förbereda och att förflyttningen måste avbryts för att vårdaren behöver hämta hjälpmedel.

17/Interaktionen med PMD är optimal i förflyttningssituationen

- Interaktionen är optimal: detta betyder att vårdaren koordinerar interaktionen med PMD på ett optimalt sätt så som situationen kräver.
• Interaktionen är inte optimal: detta betyder att vårdaren inte ko-
ordinerar interaktionen med PMD i förflyttningen även om det
behövs eller att interaktionen störs på ett eller annat sätt, t ex om
larmet ringer.
<table>
<thead>
<tr>
<th>Dyadic Interaction in Dementia Transfer Assessment Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Personen med demenssjukdoms (PMD) förflyttningsrelaterade beteenden</strong></td>
</tr>
</tbody>
</table>

1/ PMD klar att behålla uppmärksamhet i förflyttningssituationen

<table>
<thead>
<tr>
<th>Uppmärksam</th>
<th>Till viss del uppmärksam</th>
<th>Inte uppmärksam</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2/ PMD klar att delta aktivt i förflyttningssituationen

<table>
<thead>
<tr>
<th>Delta aktivt</th>
<th>Till viss del aktivt deltagande</th>
<th>Deltar inte aktivt</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3/ PMD har ett ändamålsenligt rörelsemönster i förflyttningssituationen

<table>
<thead>
<tr>
<th>Ändamålsenligt rörelsemönster</th>
<th>Till viss del ändamålsenligt rörelsemönster</th>
<th>Rörelsemönster är inte ändamålsenligt</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td>7</td>
</tr>
</tbody>
</table>

4/ PMD genomför förflyttningen med ett ändamålsenligt tempo

<table>
<thead>
<tr>
<th>Ändamålsenligt tempo</th>
<th>Till viss del ändamålsenligt tempo</th>
<th>Tempot är inte ändamålsenligt</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td>7</td>
</tr>
</tbody>
</table>

5/ PMD har kontroll på kroppen i förhållande till omgivningen

<table>
<thead>
<tr>
<th>Fullständig kontroll</th>
<th>Till viss del kontroll</th>
<th>Ingen kontroll</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6/ PMD uttrycker inte något obehag med kroppsspråk i förflyttningssituationen

<table>
<thead>
<tr>
<th>Inget obehag uttrycks med kroppsspråk</th>
<th>Till viss del obehag uttrycks med kroppsspråk</th>
<th>Obehag uttrycks med kroppsspråk</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td>7</td>
</tr>
</tbody>
</table>

7/ PMD uttrycker inte något obehag med ord/läten i förflyttningssituationen

<table>
<thead>
<tr>
<th>Inget obehag uttrycks med ord/läten</th>
<th>Till viss del obehag uttrycks med ord/läten</th>
<th>Obehag uttrycks med ord/läten</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td>7</td>
</tr>
</tbody>
</table>

8/ PMD är självständig i förflyttningssituationen

<table>
<thead>
<tr>
<th>Självständig</th>
<th>Till viss del självständig</th>
<th>Inte självständig</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vårdarens förflyttningsrelaterade beteenden</td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>9/Vårdaren ger uppmaning om förflyttningen precis innan start</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Uppmaningen ges precis innan start</td>
<td>Till viss del ges uppmaningen innan start</td>
<td>Uppmaningen ges inte innan start</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td><strong>10/ Vårdaren ger ett tydligt verbal kommando om förflyttningen</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kommandot är tydligt</td>
<td>Till viss del är kommandot tydligt</td>
<td>Kommandot är otydligt</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td><strong>11/ Uppmaningen om förflyttningen följs av att vårdaren väntar in PMD</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vårdaren väntar in PMD i förflyttningen</td>
<td>Till viss del väntar vårdaren in PMD</td>
<td>Vårdaren väntar inte in PMD i förflyttningen</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td><strong>12/ Om två vårdare hjälper till är det en som styr samarbetet</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Samarbetet styrs av en vårdare</td>
<td>Till viss del styrs samarbetet av en vårdare</td>
<td>Samarbetet styrs inte av en vårdare</td>
</tr>
<tr>
<td>□ Ej relevant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td><strong>13/Förflyttningssituationen utförs på ett säkert sätt för PMD</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Förflyttningssituationen är säker</td>
<td>Till viss del är förflyttningssituationen säker</td>
<td>Förflyttningssituationen är inte säker</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td><strong>14/Vårdaren anpassar sina handlingar så att förflyttningssituationen underlättas för PMD</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Handlingarna är anpassade</td>
<td>Till viss del är handlingarna anpassade</td>
<td>Handlingarna är inte anpassade</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td><strong>15/ Vårdaren håller kontakt med PMD under förflyttnings situationen</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kontakten hålls</td>
<td>Till viss del hålls kontakten</td>
<td>Kontakten hålls inte</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>16/ Hjälpmedel finns till hands innan start av förflyttningssituationen</td>
<td>Till viss del finns hjälpmedel till hands</td>
<td>Hjälpmedel finns inte till hands</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>17/ Interaktionen med PMD är optimal i förflyttningssituationen</th>
<th>Till viss del är interaktion optimal</th>
<th>Interaktionen är inte optimal</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>
Publications in the series
Örebro Studies in Medicine


35. Söderqvist, Fredrik (2009). Health symptoms and potential effects on the blood-brain and blood-cerebrospinal fluid barriers associated with use of wireless telephones.


41. Gustafsson, Sanna Aila (2010). The importance of being thin – Perceived expectations from self and others and the effect on self-evaluation in girls with disordered eating.

42. Johansson, Bengt (2010). Long-term outcome research on PDR brachytherapy with focus on breast, base of tongue and lip cancer.

43. Tina, Elisabet (2010). Biological markers in breast cancer and acute leukaemia with focus on drug resistance.


46. de Leon, Alex (2010). Effects of Anesthesia on Esophageal Sphincters in Obese Patients.


52. Loiske, Karin (2011). Echocardiographic measurements of the heart. With focus on the right ventricle.


64. Nordin Olsson, Inger (2012). *Rational drug treatment in the elderly: ”To treat or not to treat”.*


67. Thuresson, Marie (2012). *The Initial Phase of an Acute Coronary Syndrome. Symptoms, patients’ response to symptoms and opportunity to reduce time to seek care and to increase ambulance use.*


75. Gustavsson, Anders (2012): *Therapy in Inflammatory Bowel Disease.*


83. Lönn, Johanna (2013): The role of periodontitis and hepatocyte growth factor in systemic inflammation.


96. Sundh, Josefin (2013): Quality of life, mortality and exacerbations in COPD.


98. Palmetun Ekbäck, Maria (2013): Hirsutism and Quality of Life with Aspects on Social Support, Anxiety and Depression.


102. Söderström, Ulf (2014): Type 1 diabetes in children with non-Swedish background – epidemiology and clinical outcome

103. Wilhelmsson Göstas, Mona (2014): Psychotherapy patients in mental health care: Attachment styles, interpersonal problems and therapy experiences


109. Törös, Bianca (2014): Genome-based characterization of Neisseria meningitidis with focus on the emergent serogroup Y disease


120. Pelto-Piri, Veikko (2015): Ethical considerations in psychiatric inpatient care. The ethical landscape in everyday practice as described by staff.


