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Assessment of Behavioural and Psychological Symptoms of Dementia (BPSD) in Dutch Nursing Homes

and Recommendations for the Development of a New Daily Reporting Tool

Capstone Thesis by

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Abstract

Background: Behavioural and Psychological Symptoms of Dementia (BPSD), alternatively 'responsive' or 'misunderstood' behaviour ('onbegrepen gedrag' or 'probleemgedrag' in Dutch) affect up to 90% of dementia patients. In the Netherlands, BPSD management relies on the multidisciplinary Verenso guideline, rooted in the Biopsychosocial model. However, standard assessment instruments like the CMAI and NPI are frequently underutilized in nursing home practice, due to long administration time, retrospective recall bias, and a focus on quantification of behaviour instead of underlying triggers, resulting in a largely reactive rather than preventative system of care.

Objective: This study investigates the lived experiences, barriers, and requirements of Dutch nursing home healthcare professionals regarding BPSD documentation. The ultimate aim is to translate these frontline insights into core design principles for an integrated, multidomain daily reporting tool that enables early identification and prevention of BPSD.

Methodology: Utilizing a qualitative, descriptive research design with a bottom-up, co-design approach, semi-structured interviews were conducted with a purposive sample of six healthcare professionals (n=3 floor-staff caregivers/'Verzorgende IG', n=1 quality nurse, n=1 nurse specialist, and n=1 senior psychologist) in a Dutch psychogeriatric nursing home setting. Data were transcribed verbatim and analyzed using a hybrid inductive-deductive thematic analysis.

Results: Primary barriers to BPSD documentation included administrative overload, emotional strain, low familiarity with formal scales, and a linguistic struggle to objectively document sensitive events. Participants overall recognized that a standardized daily reporting infrastructure could enhance continuity of care, detect subtle behavioural shifts, and provide empirical data for non-pharmacological interventions. Frontline healthcare professionals identified seven core requirements for a practical tool: time efficiency (a Boolean "ticking" approach taking under 5 minutes), clear user interfaces, structural integration with existing digital systems, guiding questions to eliminate uncertainty in reporting, explicit incorporation of a resident's life history (e.g., past trauma or native language), staff co-creation, and demonstrable clinical utility.

Conclusion: Transitioning from retrospective, reactive BPSD assessment to proactive, within-person daily monitoring is desired by Dutch healthcare workers but requires a fundamental reduction in administrative burden. By incorporating an intuitive, multidomain Boolean reporting tool directly into existing digital systems, nursing homes can bridge the gap between frontline care and multidisciplinary analysis, facilitating timely, non-pharmacological interventions in alignment with the *Wet Zorg en Dwang*.

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1. Introduction

1.1 Problem Framing

Dementia represents one of the most pressing public health challenges of the century; as populations grow older, dementia becomes more and more common. Dementia is currently the seventh leading cause of death globally (Lancet Regional Health - Europe, 2022). Characterized as an umbrella term for over fifty different diseases affecting the brain - such as Alzheimer's disease, frontotemporal dementia, Lewy body dementia, and vascular dementia - the disorder causes progressive deterioration across multiple cognitive domains. Impairments accompanying dementia vary, but often include memory loss, language difficulties, difficulties in completing everyday tasks, and impulsiveness (National Institute on Aging, 2022). In the Netherlands, the epidemiological burden is pronounced: 1 in 5 individuals receives the diagnosis of dementia in their lifetime; a statistic that escalates to 1 in 3 for women (Alzheimer Nederland, n.d.).

In most cases, the progressive illness is accompanied by neuropsychiatric symptoms (Lancet Regional Health - Europe, 2022), often referred to as 'Behavioural and Psychological Symptoms of Dementia' (BPSD). These symptoms include a range of behavioural disturbances and psychiatric symptoms, such as (amongst many others) agitation, anxiety, disinhibition, and depression (Cerejeira et al., 2012; Lancet Regional Health - Europe, 2022). BPSD are estimated to affect up to 90% of all dementia patients, and can lead to adverse events for both patients and care providers (Cerejeira et al., 2012). Historically, these symptoms have been labeled as 'challenging behaviour', due to the significant operational and emotional strain they place on healthcare services and caretakers. However, contemporary Dutch psychogeriatric frameworks increasingly emphasize the use of this behaviour to express unmet needs; calling it 'responsive behaviour' or 'misunderstood behaviour' ('onbegrepen gedrag' or 'probleemgedrag' in Dutch) (ZorgVoorBeter, 2026).

Studies have highlighted the importance of a comprehensive and accurate evaluation of BPSD for appropriate nonpharmacologic or pharmacologic interventions (Monteiro et al., 2000), however, in 2018, only half of the residential facilities in the Netherlands had up-to-date policies, plans, or visions regarding BPSD that were actually implemented (Prins et al., 2018). The current status of structured BPSD assessment is unknown. While many assessment tools for BPSD exist, there seem to be many flaws; some have long administration times, others have a narrow scope, and many focus on reactivity instead of prevention, while early detection and intervention of BPSD is highlighted as crucial for patient quality of life (Lv et al., 2025). Current tools are primarily focused on quantifying the frequency or severity of behaviour, and less on identifying the underlying causes (Pozzi et al., 2023).

1.2 Research Objectives and Questions

To address this gap, this study explores how daily monitoring can change retrospective assessment into proactive, needs-based care within Dutch nursing homes. The primary objective is to investigate the lived experiences, perceived barriers, and practical requirements of Dutch nursing home healthcare workers regarding BPSD assessment and documentation.

The central question guiding this research is:

What are the practical strengths and weaknesses of existing BPSD documentation practices in Dutch nursing homes, and what do healthcare professionals need in practice to adequately identify and reduce the occurrence of Behavioural and Psychological Symptoms of Dementia?

To address this question comprehensively, this study addresses the following sub-questions with literature:

1. What constitutes BPSD globally, and what formal assessment tools are available?
2. How is BPSD currently assessed and documented within Dutch nursing homes?
3. What are the documented strengths and limitations of relying on periodic formal tools vs. daily nursing documentation?
4. What does existing research identify as the core barriers to effective BPSD reporting among frontline nursing staff?

Resulting in the following sub-questions to be answered by the interviews:

1. How do Dutch healthcare professionals currently define and recognize BPSD on a daily basis?
2. What practical difficulties and limitations do Dutch healthcare workers encounter when using current BPSD assessment and reporting methods?
3. What are the perceived benefits and risks of implementing a daily, multidomain BPSD reporting infrastructure?
4. What functional design features and support systems do Dutch healthcare workers need to make a daily BPSD reporting tool practical and sustainable?

2. Background

2.1 What constitutes BPSD globally, and what formal assessment tools are available?

2.1.1 Clinical Definitions and Categories of BPSD

Behavioural and Psychological Symptoms of Dementia (BPSD) encompass a range of behavioural and psychological issues associated with dementia, impacting both patient quality of life, healthcare costs, and caregiver burden (Schwertner et al., 2022). It describes behavioural disorders that are either 'harmful to the individual, challenging for those providing care to the individual, or considered objectionable by the public, or any combination thereof' (Gur, 2016). BPSD are estimated to affect up to 90% of all dementia patients. These symptoms can lead to many adverse consequences for both patients and healthcare workers, such as distress among patients and their caregivers, misuse of medication, and increased healthcare costs (Cerejeira, 2012).

BPSD refers to a heterogeneous set of disturbances in behaviour, mood, perception, and thought present in nearly all dementia patients (Pozzi et al., 2023). BPSD can be grouped into 1. Psychotic symptoms, 2. Affective symptoms, 3. Hyperactivity symptoms, 4. Euphoria, 5. Aberrant motor behaviours, 6. Sleep and nighttime behaviours, and 7. Appetite or eating disorders (Cho et al., 2021). Common BPSD include: aberrant motor behaviour, agitation, aggression, anxiety, apathy, delusion, depression, disinhibition, appetite abnormalities, euphoria, hallucinations, irritability, and sleep changes (Schwertner et al., 2022). Pozzi et al. (2023) also add 'harm to self' and 'uncooperativeness' to this list. In Table 1, you see these 7 overarching categories, with their 16 most prevalent categories of BPSD and their possible synonyms.

Table 1: The overarching categories, subcategories, and possible synonyms as explained by Cho et al. (2021) & Pozzi et al. (2023).

Overarching category	Subcategory	Possible synonyms
Psychotic Symptoms	Delusion	False accusations, disease denial or distortion, non-sense, and paranoia
	Hallucinations	Olfactory hallucinations, visual hallucinations, auditory hallucinations, and feeling of a presence
Affective Symptoms	Anxiety	Worrying, fearfulness,

		phobias, panic attacks, and fear of being left alone
	Apathy	Lack of energy, aspontaneity, and indifference
	Depression	Tearfulness, sadness, negativism, and anhedonia
	Harm to self	Dangerous behavior, suicidal, and intentional falling
Hyperactivity Symptoms	Agitation	Restlessness, fidgetiness, screaming, crying out loud, inability to sit still, attention seeking, complaining, and repetitive behavior or questions
	Aggression, physical	Physically threatening and destroying property
	Aggression, verbal	Raising the voice, quarreling with others, cursing, shouting, and demanding
	Disinhibition	Socially inappropriate behaviors, sexually inappropriate behaviors, and impulsivity
	Irritability	Arguing, complaining, and impatience
	Uncooperativeness	Refusing help and uncooperativeness to testing
Euphoria or Elation	Euphoria	Excitation and mania
Aberrant Motor Behaviours	Aberrant Motor Behaviours	Trying to leave home, wandering, rummaging, pacing, increased motor activity, fiddling, exit seeking, purposeless activity
Sleep and Nighttime Behaviours	Sleeping problems	Day/night reversal, day/night disturbances, being noisy at

		night, and wandering at night
Appetite or Eating Disorders	Eating	Pica, dietary changes, appetite loss, and hyperphagia

2.1.2 Theoretical Models Explaining BPSD

Cohen-Mansfield (2000) described the four influential explanatory models of BPSD. The first model is the ‘direct impact of dementia model’. This model explains BPSD as the result of the natural degeneration of the brain. A 2023 study of a community-based autopsy cohort by Ruth et al. aligns with this: BPSD assessment ratings were found to correlate with neuropathological changes of the brain. Lv et al. (2025) however, found that aggressive symptoms correlate with the severity of dementia, with a peak at moderate dementia, followed by a decline or stabilization in the final stages of dementia.

The second model is the ‘unmet needs model’. This model explains BPSD as complex phenomena, resulting from an interaction of cognitive impairment, physical health, mental health, past habits, personality, and environmental factors (Cohen-Mansfield, 2000). This model suggests that dementia both hinders patients to use their environment for their needs, and to effectively communicate their needs to others (Cerga-Pashoja et al., 2018). An important example of a somatic factor within this model, is pain. Pain was found to have a significant association with BPSD. Specifically, pain has a significantly positive correlation with aggression, depression, and agitation. However, pain was found to have a negative correlation with wandering (Tianyue et al., 2025). Cohen-Mansfield (2000) showed that verbal behaviours correlate with feelings of discomfort, such as depression and pain, and physical non-aggressive behaviour may correlate with a lack of stimulation.

The latter aligns with a third model explaining BPSD; the ‘environmental vulnerability model’. This model is also referred to as the ‘reduced stress-threshold model’, and it implies that BPSD may be a result of exceeding a patient's stress tolerance threshold. BPSD can then be triggered by environmental stimuli that the patient cannot process (Cerga-Pashoja et al., 2018). Schwertner et al. (2022) underscore the importance of environmental factors as a contributor to BPSD risk in long-term care facilities. They claim that hyperactivity symptoms may be caused by increased vulnerability to stressors and higher susceptibility to over- or understimulation, which can lead to symptoms such as agitation or irritability. A lack of stimulation may also result in behaviours aimed at relieving boredom, such as pacing or wandering.

The last model proposed by Cohen-Mansfield (2000), is the behavioural model. This model posits that BPSD is the result of conditioning. An example given for this theory is that understimulation can cause agitation in nursing home dementia patients, as they learn that this type of behaviour results in their desired attention from staff. These four models highlight that

BPSD is context-dependent and often multi-causal. Effective management requires tools that not only catalog behaviours retrospectively, but rather systematically capture possible contributing factors across the biological, psychological, social, and environmental dimensions.

2.1.3 Empirical Correlations of BPSD

A growing body of empirical literature supports the four theoretical models by Cohen-Mansfield (2000), demonstrating correlations between specific environmental, physical, and interpersonal factors and the occurrence of BPSD. Cho et al. (2021) conducted a comprehensive analysis mapping the seven overarching BPSD categories to specific environmental, physical unmet needs, interpersonal, or background factors. Table 2 displays the correlations between the BPSD categories and environmental, physical unmet needs, interpersonal, or background factors. Their findings provide a foundation for identifying which indicators should be prioritized in daily monitoring.

Table 2: Relationships between BPSD and environmental, physical unmet needs, interpersonal, and background factors as described by Cho et al. (2021).

	Psychotic	Affective	Hyper-activity	Euphoria	Aberrant Motor Behaviours	Sleep and Nighttime Distur-bances	Appetite or Eating Disorders
Environmental proximal factors							
Environmental change	+	+	+	+	+	+	+
Inadequate lighting	+	+			+		+
Noise		+	+		+	+	
Inadequate temperature		+			+	+	+
Physical unmet needs proximal factors							
Sleep disturbances	+	+	+		+	+	

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	Psychotic	Affective	Hyper-activity	Euphoria	Aberrant Motor Behaviours	Sleep and Nighttime Distur-bances	Appetite or Eating Disorders
Pain or discomfort	+	+	+		+		
Urination or bowel movement-related problems	+	+	+		+	+	+
Hunger or thirst	+	+	+		+	+	+
Greater levels of energy expenditure (100 kcal/hour)				-			
Interpersonal factors							
Interpersonal triggers		+	+	+			+
Background factors							
Educational attainment at the middle school level	+	+					
Greater impairment in ADLs*	+	+	+		+		
Taking sedatives	+		+		+		
Diagnoses of Alzheimer's				+			

	Psychotic	Affective	Hyper-activity	Euphoria	Aberrant Motor Behaviours	Sleep and Nighttime Distur-bances	Appetite or Eating Disorders
disease							
Bereavement or divorced status				+			
Higher K-MMSE score					+		
Older age					+		
Agreeable personality traits		+					
High conscientiousness traits	+			+			
High extroversion traits					+		
High openness traits							+

* ADLs: Activities of Daily Living + = Positive relationship - = Negative relationship

Table 3: Factors influencing BPSD, divided into subcategories, from most impactful to least impactful on BPSD occurrence (as described by Cho et al., 2021)

Environmental proximal factors	Amount of BPSD influenced	Interpersonal factors	Amount of BPSD influenced
Environmental change	7	Interpersonal triggers	4

Inadequate lighting	4	Background factors	Amount of BPSD influenced
Noise	4	Greater impairment in ADLs*	4
Inadequate temperature	4	Taking sedatives	3
Physical unmet needs proximal factors	Amount of BPSD influenced	Educational attainment at the middle school level	2
Urination or bowel movement-related problems	6	High conscientiousness traits	2
Hunger or thirst	6	Diagnoses of Alzheimer's disease	1
Sleep disturbances	5	Bereavement or divorced status	1
Pain or discomfort	4	Higher K-MMSE score	1
Greater levels of energy expenditure (100 kcal/hour)	1	Older age	1
		Agreeable personality traits	1
		High extroversion traits	1
		High openness traits	1

2.1.4 Existing BPSD Assessment Tools

To understand the limited use of standardized assessment tools in daily Dutch nursing practice, it is important to understand their strengths and weaknesses. The comprehensive review by Pozzi et al. (2023), 'Assessing behavioral and psychological symptoms of dementia: a comprehensive review of current options and future perspectives,' discusses 57 assessment tools for BPSD. Of these, 22 assessment tools met the inclusion criteria for this study: 1. Nursing home setting, 2. Availability in English or Dutch, 3. The rater being floor staff, and 4. The assessment tool being specific to the broad dementia population. In table 4 are all the assessment tools that passed the criteria. As can be seen in table 4, there is usually a trade-off between item count, number of BPSD measured, and the ease of use.

Table 4: Assessment instrument items, BPSD count, and ease of use, as described by Pozzi et al. (2023).
** Ease of use is calculated mainly by length and scoring rules*

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Instrument	Items	BPSD	Ease of use*
ABMI (Agitation Behavior-Mapping Instrument)	14	7	++
ABeS (Aggressive Behavior Scale (commonly abbreviated as ABS))	4	4	+++
ABS (Abe's BPSD score)	10	13	++
AWS (Algase Wandering Scale)	29	1	++
BARS (Brief Agitation Rating Scale)	10	3	+++
BSO-DOS (Dementia Observation System)	8+	6	++
CBS (Challenging Behavior Scale)	25	17	++
CBS-8 (Columbia Behavior Scale for Dementia)	8	9	+++
CMAI (Cohen-Mansfield Agitation Inventory)	29	10	++
COBRA (Caretaker Obstreperous-Behaviour Rating Assessment)	30	20	+
CPCE (Care Plan Checklist for Evidence of Person-Centered Approaches for BPSD)	8	6	+++
DBRS (Disruptive Behavior Rating Scale)	4	4	++
DBS (Disruptive Behavior Scale)	45	15	-
HBS (Harmful Behaviors Scale)	23	11	+++
NHBPS (Nursing Home Behavior Problem Scale)	29	13	+++
NPI (Neuropsychiatric Inventory)	10	14	++
PAS (Pittsburgh Agitation Scale)	4	4	+++
PEAR (Person-Environment Apathy Rating)	6	1	++
RAGE (Rating Scale for Aggressive Behavior in the Elderly)	21	10	++
RMBPC (Revised Memory and Behavior Problems Checklist)	24	9	++
RTC-DAT (Resistiveness to Care Scale)	13	1	++

Instrument	Items	BPSD	Ease of use*
SOAPD (Scale for the Observation of Agitation in Persons with Dementia of the Alzheimer's type)	7	1	-

Legend Table 4

	Items	BPSD	Ease of use*
Optimal	4-12	17-20	+++
Good	13-20	13-16	++
Acceptable	21-28	9-12	+
Poor	29-36	5-8	-
Unacceptable	37-45	1-4	

Existing assessment tools were primarily developed for scientific research and clinical practice (Trimbos-instituut, 2026). According to Penko et al. (2021), the primary motivations for utilizing behaviour assessment tools include identifying behavioural patterns or triggers, performing risk assessment, measuring treatment responses, guiding clinical decisions, and informing institutional policies. Furthermore, they noted that the resulting data is most frequently used for nursing, physician, and management reviews, as well as for securing resources and educating family members.

2.2 How is BPSD currently assessed and documented within Dutch nursing homes?

2.2.1 Context of the Dutch Healthcare System

Primary models of health and disease are the Biomedical model, the Biopsychosocial model, the Holistic model, and the Social model (Singh, 2020). The Biomedical model (or medical model) views health as the absence of disease, and patients as victims of external factors or internal abnormalities. Treatment is always biological or physical according to this model (e.g. operations or drugs). The physician is viewed as the absolute expert (Singh, 2020). The Holistic model (as described by Hoffman in 1960 and Guttmacher in 1979) on the other hand, considers health as a 'sense of wellbeing', and disease to be caused by a disharmony between social, psychological and spiritual dimensions of one's life. In this model, the accountability for health is placed more on the patient and less on the physician (Singh, 2020). The Biopsychosocial model is the most famous holistic model. This model was first proposed by George Engel in 1977, challenging the then dominant Biomedical model. Next to biological factors that are relevant to

health and disease, the BPSM also looks at the implications of psychological and social factors (Engel, 1977; Bolton, 2023). Lastly, the social model of health builds on the previously mentioned theories by adding political, economic, cultural, and environmental factors of health (Singh, 2020).

In the Netherlands, BPSD management is structured around a multidisciplinary approach, where the treatment team consists of at least a physician and a psychologist with expertise in dementia care. The Dutch system is heavily reliant on the Biopsychosocial model. Biological factors of BPSD are physical conditions or medications, and the type and severity of dementia. Psychological factors include psychopathy (other than the dementia itself), personality, coping style, cognition, mood, anxiety, and life-course factors. Social factors include the physical and social environment of the patient, and care factors (Verenso, n.d.). This ethos is operationalized through the national clinical guideline developed by Verenso (the Dutch Association of Elderly Care Physicians): ‘Richtlijn Probleemgedrag bij mensen met Dementie’ (guideline for ‘problem behaviour’ in people with dementia). This guideline is authorized by the Dutch Institution of Psychologists (NIP), the Dutch Association for Psychiatry (NVvP), the Dutch Association of Nurses and Caregivers (V&VN), and ‘Alzheimer Nederland’. This guideline dictates the 7-step sequence for managing BPSD (as can be seen in figure 1). First, the problem behaviour is identified; asking ‘does the problem lead to severe distress and/or danger for the person with dementia and/or those around them?’. Then the problem behaviour is analyzed, investigating whether the problem is biological, psychological, or social in nature. This is followed by the problem definition, formulating an explanatory hypothesis for the problem behaviour. This hypothesis is important in guiding treatment. Afterwards, the treatment goal(s) are formulated based on the problem definition, resulting in the development of the treatment plan (based on the explanatory hypothesis formed earlier on). This is followed by the actual execution of the treatment, which is lastly evaluated for its efficacy. This method is cyclical, meaning that in case of insufficient treatment effect, the cycle is (partly) rerun after the evaluation step (Verenso, 2018).

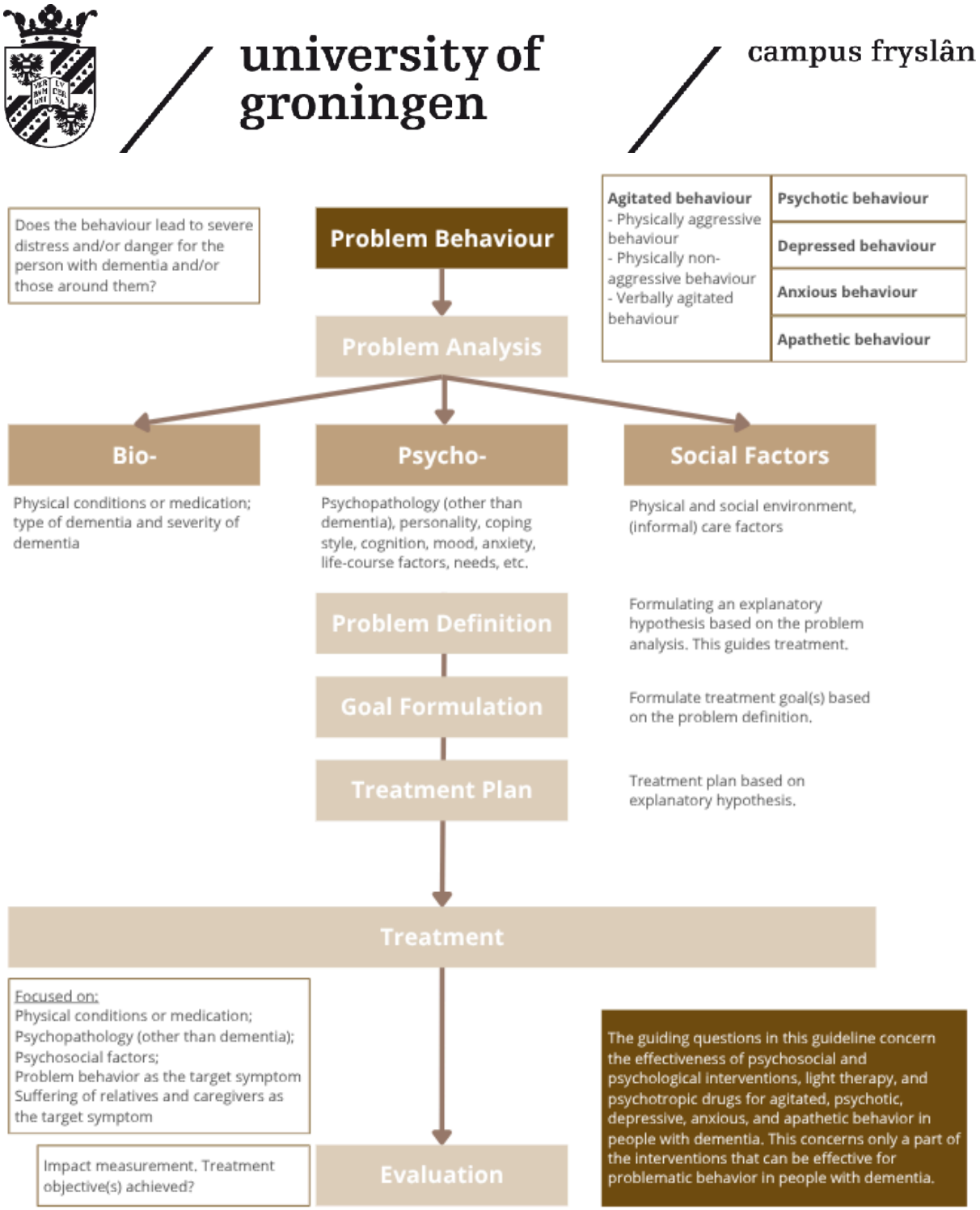


Figure 1: English translation of the Dutch guideline for analysis, treatment, and evaluation of 'problem behaviour' in people with dementia (Verenso, n.d.).

2.2.2 Management of BPSD in the Netherlands

The clinical operationalization of BPSD management within the Netherlands is guided by Verenso clinical guidelines. A key factor of Dutch dementia care is the prioritization of non-pharmacological interventions as a first-line treatment (Verenso, 2025). The use of

psychotropic medications (such as antipsychotics, anxiolytics, anti-depressants) is restricted by the ‘Wet zorg en dwang’ (the Care and Compulsion Act). Under this act, psychotropic drugs are seen as a form of involuntary care, which can only be given in case of behavioural disturbances that cause an immediate threat of harm to the resident or others, or cause severe distress that non-pharmacological approaches cannot alleviate. It is not a structural intervention and should only be used for up to a week (Zorg voor beter, 2023). These restrictions are supported by clinical evidence, highlighting both limited efficacy and increased risk of adverse events. Lv et al. (2025) noted that long-term psychotropic drug use correlates with an increase in overall BPSD severity, with limited evidence for its efficacy in controlling BPSD. To prevent escalation to psychotropic medications, early detection of behavioural changes is needed.

2.2.3 Assessment Tools in the Netherlands

Of the 22 assessment instruments described in 2.1.2, only two are used and validated in the Netherlands: the Cohen-Mansfield Agitation Inventory (CMAI) and the Neuropsychiatric Inventory (NPI) (Trimbos-instituut, 2026; Verenso, 2025). The CMAI consists of 29 items. Each item is a description of a specific behaviour (e.g. aimless wandering or hitting), which is rated between 1 (never) and 7 (multiple times) across a two-week timespan. The NPI consists of 12 items, which are each described in multiple sentences. Each item also has 7-9 subquestions, in case of doubt whether the behaviour is present. When the behaviour is present, it has to be rated on frequency between 1 (sometimes, less than once a week) and 4 (very often, once or more a day), severity between 1 (mild) and 3 (severe), and emotional strain between 0 (none) and 5 (extreme). Another validated assessment tool in Dutch nursing homes is the Cornell Scale for Depression in Dementia (CSDD) (Trimbos-instituut, 2026; Verenso, 2025). This tool consists of 5 categories, each of which has either 3 or 4 statements that are rated a (unable to assess), 0 (absent), 1 (mildly or intermittently present), or 2 (severe) (see appendices 1-3).

2.3 What are the documented strengths and limitations of relying on periodic formal tools vs. daily nursing documentation?

2.3.1 Limitations of Periodic Retrospective Scales

Historically, the monitoring of BPSD has relied on a division between standardized, periodic formal assessment tools and unstructured, daily nursing documentation. The primary strength of formal tools is their psychometric validation; they provide reliable, standardized data that is universally understood across clinical settings and research environments (Cummings et al., 1994). On the other hand, standard daily nursing notes capture specific, day-to-day contextual details, such as environmental triggers or specific caregiver interactions that formal scales often miss. However, daily documentation is frequently hindered by a lack of standardization, reliance on subjective free-text, and vulnerability to inconsistent reporting due to staff rotation and time constraints (Zuidema et al., 2006; Wang et al., 2021).While the NPI is very thorough, it takes between 4 and 26 minutes to complete per resident (Pozzi et al., 2023), making it impractical for

daily use. Furthermore, the retrospective recall window of 4 weeks may obscure daily fluctuations in behaviour and its triggers. The CMAI takes around 7 minutes to fill out. This instrument focuses only on aggressive and agitated behaviours, making its scope less broad than the NPI. The CMAI also does not include triggers for behaviour, and has a retrospective recall window of two weeks. The CSDD has the shortest recall window: 1 week. This tool, however, takes around 20 minutes to complete (Maust & Thase, 2012).

2.3.2 Shifting to a Dynamic Within-Person Approach

A promising direction for modern tool design is shifting from static, infrequent measurements toward dynamic, personalized data collection. Connelly et al. (2024) propose a within-person approach utilizing multiple daily reports or momentary assessments. By comparing an individual's behaviour against their own baseline across different days and occasions, clinicians can accurately identify temporal patterns of BPSD. Understanding these fluctuations has critical implications for developing "just-in-time" adaptive interventions that provide support exactly when risk escalates.

2.3.3 Literature Recommendations for New Tools

To address the limitations of existing assessment tools, future BPSD assessment tools must move beyond traditional design flaws. Many current tools are criticized for failing to distinguish between physical and verbal aggression, utilizing excessive item counts that cause rater confusion, and improperly incorporating cognitive variables that dilute the focus on BPSD. Furthermore, early scales lacked systematic trigger assessments, which severely hindered the development of tailored, non-pharmacological approaches as first-line treatment. To bridge these gaps, Pozzi et al. (2023) recommend that novel assessment tools be specific, brief, user-friendly, and treatment-oriented, while integrating objective biomarkers and contextual screening to proactively anticipate BPSD occurrences.

2.4 What does existing research identify as the core barriers to effective BPSD reporting among frontline nursing staff?

Currently, BPSD management remains largely reactive rather than preventative, and monitoring is too infrequent in routine practice to allow for timely intervention. Frontline nursing staff, who are first to observe behavioural changes, are often hindered by large administrative workloads, understaffing, and usability flaws of existing digital health reporting systems (Kruse et al., 2016; Gesner et al., 2022). To operationalize daily tracking, Malm et al. (2026) are developing Daily-BPSD, a digital monitoring tool. Their evaluation of the contextual factors surrounding the implementation of such a daily tool highlighted key operational barriers, needs, and facilitators. These findings, categorized into six core implementation themes, are outlined in table 5. :

Table 5: Key operational barriers, needs, and facilitators of a daily-BPSD monitoring tool, as described by Malm et al. (2026).

Implementation Theme	Key Requirements & Facilitators	Anticipated Barriers & Concerns
Implementation & Adoption	Robust institutional support structures and alignment with existing workflows.	Staff uncertainty, resistance to change, and concerns about integration into daily routines.
Usability & Accessibility	Efficient application design and intuitive navigation to ensure successful staff integration.	Misalignment with current workflows and complex user interfaces that increase administrative burden.
Communication & Collaboration	Clear, standardized communication channels and enhanced cross-professional collaboration	Lack of interdisciplinary data sharing.
Clinical Value	Demonstrable capacity for timely, individualized care and improved understanding of patient-specific needs.	Skepticism regarding tangible benefits for both staff and residents.
Training & Support	Provision of clear guidelines and ongoing technical support for initial and continuous learning.	Inadequate training and support, leading to low adoption.
Variable Selection	Careful selection of behaviours to monitor, balancing meaningful data collection with practical manageability.	Overwhelming staff with excessive data points, tracking non-meaningful clinical metrics.

3. Methodology

3.1 Research Design

This study utilizes a qualitative, descriptive research design centered on semi-structured interviews with Dutch healthcare professionals. The methodology is aligned with the core research question: understanding the practical strengths and weaknesses of current BPSD assessment and determining how clinical insights can guide the development of an integrated daily reporting tool. Historically, BPSD instrument design has relied on top-down approaches,

where academic researchers develop scales based on psychometric testing and push them into clinical settings, often resulting in low compliance due to a mismatch between theory and practice (Malm et al., 2026). This study uses a bottom-up approach, positioning front-line healthcare workers as primary co-designers. The qualitative approach allows for a detailed exploration of the institutional context, standard practices, and day-to-day challenges that influence how BPSD are documented in Dutch psychogeriatric care.

3.2 Sampling Strategy

Participants were selected using a purposive sampling strategy to ensure a broad representation of perspectives within the multidisciplinary care team responsible for BPSD management under the Verenso guidelines. A cohort of six healthcare professionals working in a Dutch psychogeriatric nursing home setting was recruited. In order to gain appropriate perspectives from daily practice, three floor-staff healthcare workers (‘Verzorgende IG’) were included in the study. A quality nurse (‘Kwaliteitsverpleegkundige’) was included to gain insights into protocols, and both a senior psychologist and a nurse specialist (‘Verpleegkundig Specialist Ouderenzorg’) were included to gain insights about behavioural analysis, diagnostic assessment, and (non-) pharmacological care formulation. This composition ensures that the data incorporates both front-line operational realities and the analytical requirements of professional clinical staff.

3.3 Data Collection Methods

Data collection was conducted using semi-structured interviews, guided by a pre-formulated interview guide (see Appendix 4). Four interviews were conducted one-on-one, and one interview was conducted with two healthcare workers at once. The semi-structured format ensured consistent exploration of core research themes while allowing participants to elaborate on specific operational realities. The interviews, lasting between 15 and 45 minutes, were conducted in Dutch, audio-recorded with explicit consent, and transcribed verbatim. The interviews were structured into five key areas: participant background, existing BPSD assessment tools, practical strengths and weaknesses of current BPSD documentation, reporting, and prevention, and the development of a new BPSD assessment tool.

3.4 Data Analysis

Four audio recordings were transcribed verbatim, using the University of Groningen AI Whisper tool, which is compliant with the General Data Protection Regulation (GDPR) of the European Union. The transcripts were afterwards evaluated, and any inconsistencies were corrected. The other interview, which was conducted with two healthcare workers simultaneously, contained identifying patient information; this interview was thus entirely transcribed by hand, and any patient information was not included in the transcript. All interviews were conducted, transcribed, and analyzed in Dutch. Coding and thematization was done in English, and specific

quotes used were translated in English before inclusion. The qualitative data were analyzed using thematic analysis to systematically identify, analyze, and report patterns and themes within the data. The analysis followed a hybrid inductive and deductive coding approach. Deductive codes were derived from the pre-established categories of the interview guide, while inductive codes were generated from unexpected insights raised by the participants. These codes were then grouped into broader conceptual themes and sub-themes.

3.5 Ethical Considerations

This study was conducted with the ethical approval of the Ethics Committee of the Faculty Campus Fryslân of the University of Groningen. This study was conducted in accordance with the European General Data Protection Regulation (GDPR), which is operationalized in the Netherlands as the Algemene Verordening Gegevensbescherming (AVG). Prior to data collection, each participant received an information letter detailing the study's scope and objectives, the voluntary nature of participation, and the right to withdraw consent at any time without repercussions. All participants provided written informed consent. To protect confidentiality, transcripts and datasets were anonymized, and all data were stored on the secure University's X- and Y-drives.

4. Qualitative Results

The thematic analysis of the transcripts revealed interconnected themes that define the operational reality of BPSD documentation in Dutch nursing homes. These findings highlight a gap between formal clinical guidelines (as described by Verenso, 2018) and front-line practice, while identifying clear requirements for the design of a new daily reporting tool. The themes are structured to answer the sub-questions:

1. How do Dutch healthcare professionals currently define and recognize BPSD on a daily basis?
2. What practical difficulties and limitations do Dutch healthcare workers encounter when using current BPSD assessment and reporting methods?
3. What are the perceived benefits and risks of implementing a daily, multidomain BPSD reporting infrastructure?
4. What functional design features and support systems do Dutch healthcare workers need to make a daily BPSD reporting tool practical and sustainable?

Which results in the guiding research question:

'What are the practical strengths and weaknesses of existing BPSD documentation practices in Dutch nursing homes, and how can the insights of healthcare professionals inform the development of an integrated, multidomain daily reporting tool that supports early identification and prevention of BPSD?'

4.1 How do Dutch healthcare professionals currently define and recognize BPSD on a daily basis?

To understand how BPSD are managed, it is first necessary to establish how healthcare workers define and recognize these behaviours on a daily basis. The interviews revealed that healthcare workers interpret BSPD in different ways. The definition of BPSD is very context-dependent. As the interview with the senior psychologist highlighted: *"A behaviour can be considered disruptive in one setting, and not in another. Wandering, for example, can be perceived as disruptive in the home setting, but not in the nursing home setting."*

4.1.1 BPSD as 'Out of the Ordinary' and Unexplainable Behaviour

Participants frequently defined BPSD as behaviour that deviates from a resident's normal behaviour, or that is 'out of the ordinary' for the resident, or for behaviour in general. An important characteristic as defined by staff, is the unpredictable nature of BPSD, sometimes characterized by sudden mood and behavioural changes (e.g. anger, yelling, aggressiveness). In its most acute forms, BPSD escalates into severe psychological distress, including delusions that pose immediate physical danger to staff. Because these behaviours represent an alternative, non-verbal mode of communication for a demented resident, identifying underlying causes is critical but often difficult. Furthermore, healthcare workers often categorize behaviour as BPSD when its origin is initially unexplainable or misunderstood. The interviews revealed that in many cases, staff feels a communicative disconnect with the resident, where they feel an 'inability to reach the resident', an inability to communicate effectively, including the resident not being able to tell them what is wrong.

4.1.2 The Subjectivity of 'Problem Behaviour'

Another theme that arose was the subjectivity of the classification of BPSD. Behaviour is often labeled problematic, when staff identifies it as an active problem or find it difficult to work with. One participant noted: *"For whom is it a problem? Sometimes it also has to do with how you view certain things. For example, if you're part of a care team that's really strict about how things should be done, and someone doesn't follow those rules, is that automatically a problem? Or is it just that someone does things a little differently?"*

4.1.3 Perceived Prevalence of BPSD

Healthcare professionals view BPSD not as isolated occurrences, but as a constant feature of psychogeriatric wards. They indicated that nearly every resident exhibits some form of BPSD, with often a daily prevalence. Additionally, it was noted that *"usually when residents start exhibiting BPSD, it just sticks"*, highlighting the chronic nature of BPSD on top of the high prevalence.

4.2 What practical difficulties and limitations do Dutch healthcare workers encounter when using current BPSD assessment and reporting methods?

The interviews highlighted a significant gap between formal diagnostic tools and the reality of daily practice in Dutch nursing homes. Healthcare staff identified multiple limitations of current BPSD documentation.

4.2.1 Knowledge Shortages, Subjectivity, and Self-Doubt

A primary barrier to effective BPSD reporting was perceived to be an underlying knowledge gap in floor staff. Floor staff themselves reported they often fail to recognize what is and what is not important to report, making it difficult to write a *"brief and to the point"* report of behaviour. Staff frequently find themselves struggling to isolate the core components relevant to a certain behaviour, and to report on it concretely, concisely, and objectively. The result is a documentation environment where there is often an overreporting of insignificant details, in which meaningful data gets lost or goes unread. Others indicated that floor staff sometimes fail to realize the nature of BPSD, misinterpreting BPSD as a purposeful game played by the resident in order to gain attention, rather than recognizing it as the shortest, most direct way for a dementia patient to express an unmet need. This knowledge gap creates uncertainty; with floor staff frequently doubting their own skills in documenting complex behaviours. All while floor staff handle BPSD daily, and possess a lot of implicit knowledge, a psychologist noted: *"I think in their day-to-day work, it's just kind of… And I don't mean that in a bad way or anything. But it's like they're on autopilot. That knowledge is just in their heads. So they actually do know how to do it. Or at least what works and what doesn't. Because they deal with it throughout the day. But if you ask them directly, they can't put it into words. But if you just sit down together for a moment and really ask, 'What are we actually seeing?' Then you actually come up with a lot. And the more people are there, the more people say, 'Oh yeah, I've seen that too. And then I always do this.'"*

4.2.2 Limitations in BPSD Documentation

The interviews identified multiple limitations of current BPSD reporting practices. While the ABC (Antecedent - Behaviour - Consequence) method should be used systematically, in practice it turns out that floor staff often fails to provide context (antecedent and consequence; the trigger of the behaviour and how it was handled), and mainly only report the behaviour itself. With this, staff fail to reflect on how their actions affect residents; and this is very unfortunate: *"Ultimately, the care worker is their own most important tool.*
And they're also the one… that's easiest to adapt to the situation. Because residents aren't always adaptable. You can't necessarily control them, especially if dementia is involved. And the environment is the environment—it's fairly stable. For example, if someone is sensitive to noise, you can turn off the sound. But then you, as a care worker, still have to do that. You have to know that that person can't handle those stimuli, and that there are a lot of noise stimuli at that moment, so you have to turn that off." Furthermore, it was noted that floor staff often fail to

document when they found a successful way of managing a behaviour, leading to colleagues remaining uninformed, and the intervention not becoming standard practice. On top of that, chronic BPSD is often normalized; behaviour that has been prevalent over a long period is often not reported, leading to an inaccurate representation of a resident's current mental state.

4.2.3 Underutilization of Existing Assessment Tools

Participants recognition of standardized BSPD assessment tools differed significantly, with floor staff not being able to identify any, and claiming to never have used any assessment tools, and clinical staff commonly identifying a range of the following: Neuropsychiatric Inventory (NPI), Cohen-Mansfield Agitation Inventory (CMAI), GIP, GDS, Cornell Scale for Depression in Dementia (CSDD), and the ABC-method. The only tools that were identified as used in practice, were (inconsistently) the ABC-method and the Cornell Scale for Depression in Dementia. The reasons for this underutilization, based on tool limitations, were: some tools were paper-based, and papers are always *"lost or tossed"*, many questionnaires are lengthy and take too long to complete in daily practice, tools are used reactively rather than proactively, and are used to infrequently for staff to make them *"their own".* A point of criticism mentioned multiple times, was the fact that data that is entered into an assessment tool, is not automatically synced with digital patient files, necessitating double manual reporting labour.

4.3 What are the perceived benefits and risks of implementing a daily, multidomain BPSD reporting infrastructure?

When discussing the development of a daily, multidomain BPSD reporting infrastructure, participants reacted similarly; seeking the balance between clinical utility and anxiety of increased administrative burden.

4.3.1 Perceived Benefits

A perceived benefit of daily BPSD documentation was the prevention of escalation; it was noted that tracking BPSD early on may allow staff to identify environmental or somatic triggers, and intervene before behaviour escalates. Another identified benefit, was that by consistently tracking BPSD, it becomes evident more quickly when a patient's needs have outgrown the care the ward can provide (specifically on the mixed somatic-psychogeriatric ward), and a patient needs to transition to a specialized psychogeriatric ward. Mapping BSPD structurally also provides insights into which interventions work or when an intervention should be applied, including when medication should be administered or changed. Some respondents highlighted that a daily tool may reduce the overall administrative burden; if a tool would be introduced where only the 'out of the ordinary' things need to be reported, and most things can be reported by simply 'ticking' yes or no (this design idea will be expanded on in 4.4), respondents thought that reporting time could decrease, which was perceived as a large benefit.

4.3.2 Perceived Risks

On the other hand, the introduction of a daily reporting system was perceived to come with certain risks. The largest identified worry was about potential increased administrative burden, and multiple respondents added that they feared this time would be reduced from the time they can spend with residents; one respondent highlighted that this time is already scarce: “My vision is *“seeing the person,”... we don’t really get around to that here. Sometimes I’d like to just sit quietly with a resident. I wish we didn’t have to write so many reports, only the important things.”* Almost all respondents noted that *“staff will resist change at first”*, and introducing such a change should be done effectively at once *(“people aren’t as patient the second time”)*, and people should experience the tool as helpful. Another perceived risk, was that of data overload; if staff are forced to fill out lengthy questionnaires about behaviours that might not even be present in a resident, the system will be unsustainable and lose its practical utility.

4.4 What functional design features and support systems do Dutch healthcare workers need to make a daily BPSD reporting tool practical and sustainable?

To transform behavioural documentation from an administrative burden into a functional clinical tool, Dutch healthcare professionals expressed specific needs regarding the design and implementation.

4.4.1 Functional Design Features

Healthcare workers emphasized that the structure and layout of a new BPSD tool must minimize cognitive load and must be streamlined with existing documentation practices. Time constraints emerged as the most important determinant of tool sustainability. Participants noted that they already lose large amounts of time due to repetitive reporting (often of insignificant things), while they prefer spending this time interacting with residents. Healthcare workers proposed *“reporting by exception”*, where only things out of the ordinary, or things that have changed have to be reported. This tool should make use of a Boolean structure, allowing staff to simply ‘tick’ yes or no. Upon selecting yes, a textbox should appear in which they can elaborate.

To prevent reporting fatigue, the tool must be intuitive, avoiding jargon or complicated medical phrasing. The tool should also be efficient, utilizing clear, guided prompts that reduce the active ‘thinking time’. By providing specific, structured items to assess, the tool reduces staff insecurity regarding what is relevant to report, while standardizing reporting across different care workers and shifts.

A factor that was indicated as crucial for tool success, was the integration into the existing digital system. A standalone application or paper tool would per definition not work, according to participants. As one participant noted, direct integration ensures the tool is *“always at your fingertips”*, allowing users to *“just fill it in, and it’ll generate the results.”* By integrating the tool

effectively into the digital system, it was noted that psychologists and physicians would also have easier access to all the data, which is beneficial for treatment.

4.4.2 Holistic Approach to BPSD Documentation

Beyond tracking the BPSD itself, participants also emphasized that a sustainable tool must allow them to capture the holistic context in which the behaviour is developed, rather than looking at symptoms alone. A limitation identified in current practices, is the failure to connect behaviours to underlying somatic or environmental triggers. Staff proposed a design in which not only BPSD itself is reported, but also somatic and environmental factors; *"Actually, it would be nice to have a way to... to consolidate that information. To create a sort of summary... a summary of the behavior, so to speak, the "ABC" each time. And then include the other reports as well. For example, someone might become very agitated if they haven't had a bowel movement for several days."* Some participants also highlighted the importance of a resident's background story to be able to effectively manage behaviours or to be able to explain why certain behaviours occur; noting *"Sometimes you only learn about someone's life story at their funeral, and then I think, 'I wish I'd known that sooner. Now I understand why they reacted that way.'"* This could for example be traumatic events in someone's past, that result in distress during care provided by the opposite gendered staff. Furthermore, contextual triggers such as linguistic adjustments were noted to have significant effect on BPSD management. A participant mentioned an example where a resident displayed unmanageable BPSD, but was instantly calmed by them speaking their regional dialect, illustrating the importance of familiarity in a sense of safety.

4.4.3 Implementation Support Systems

The interviews indicated that the successful adoption of a new tool relies on the provided support systems. Participants highlighted the need for a bottom-up co-creation approach; specifically asking floor staff *"Guys, do you have any feedback? Is there anything else that should be included?"* This was confirmed by the psychologist, highlighting *"When virtually the whole team is together, the plan gets more support from the team. I've come up with ideas before, and then it's like, "Yeah, but you're sitting at your computer, and you'll just come tell us about it." Well, then it doesn't get done. I can explain why something works based on a specific clinical picture or on how I think the ABCs work, but if we don't create such an approach plan together, you often find that there are always a number of healthcare workers who won't do it."* Another key point was that the acceptance of a new BPSD reporting tool is reliant on whether staff is able to see its benefits, either in reduced administrative burden, or increased resident welfare. And lastly, a new tool should be properly introduced and staff should be provided with guidance and explanation of the new system.

5. Discussion

The primary objective of this study was to examine the practical strengths and weaknesses of current BPSD documentation practices within Dutch nursing home care and to determine how the insights from frontline healthcare professionals can inform the design of an integrated, multidomain daily reporting tool. By utilizing a bottom-up approach that prioritizes the lived experiences of frontline caregivers (‘Verzorgende IG’), this study illustrates the contrast between formal clinical guidelines and practical realities. The findings highlight that while systematic tracking of BPSD is theoretically valued, standard assessment instruments are frequently underutilized due to practical barriers, emphasizing the need for an efficient, integrated reporting structure.

5.1 Interpretation of Findings in the Context of Current Literature

The lived experiences of the interviewed healthcare workers align closely with current theoretical frameworks of BPSD. Frontline workers primarily view BPSD not merely as clinical symptoms, but rather as alternative, non-verbal forms of communication indicating unmet needs or physical or emotional distress. This finding supports the ‘unmet needs model’, proposed by Cohen-Mansfield (2000), which posits that BPSD results from an interaction of physical health, mental health, cognitive impairment, and environmental factors. Furthermore, the study confirms that traditional BPSD assessment tools, such as the NPI and CMAI, face significant practical barriers in daily care. Participants reported a large perceived administrative burden, with time constraints, and a linguistic struggle to document ‘shortly but briefly’, while also sensitively. This is in line with Pozzi et al. (2023), who posit that assessment tools such as the NPI (which can take up to 26 minutes to administer and utilizes a four-week retrospective recall window) are often impractical for routine, proactive daily use, and may conceal subtle, daily fluctuations in behaviour. The participants’ emphasis on understanding and mapping a resident’s personal history, including past traumas and their native language, is in line with Cho et al. (2021), who found that background factors and interpersonal triggers play a crucial role in the manifestation of BPSD. With this contextual data, caregivers noted being better able to prevent BPSD escalation.

5.2 Implications for the Design of a New Daily Reporting Tool

Transitioning from a retrospective, primarily reactive BPSD assessment model to a proactive, within-person daily monitoring system is desired by the interviewed healthcare professionals, if the administrative burden is significantly reduced. Analysis of the interviews resulted in the finding of seven core principles necessary for a practical reporting tool: 1) Time and efficiency: a new tool should take under five minutes to complete, ideally making use of a Boolean “ticking” approach, where staff only elaborate in a text box when behaviours are out of the ordinary. 2) Ease of use and comprehensiveness: The system must be intuitive, easy to read, and clear, eliminating confusion based on the usage of jargon or the wrong interpretation of questions. 3)

Integration in current systems: to prevent workflow inefficiencies, the tool must be integrated into existing digital care systems rather than functioning as a standalone application or paper list. 4) Clarity on what to report: The tool must come with specific guiding questions that yield clinically relevant answers, which saves thinking time and ensures consistency across different users. 5)Staff involvement in decision-making: encouraging co-creation is essential for minimizing resistance to change. 6) Demonstrating effectiveness: to ensure consistent use, users must see tangible benefits in using the tool, such as decreased BPSD occurrences for residents or reduced administrative time for caregivers. 7) Understanding the context of the patient: the system must incorporate the patient's background, including things like past trauma and native language, to aid staff in interpreting behaviours and shaping care. By incorporating an intuitive, multidomain Boolean reporting tool directly into existing digital systems, nursing homes can improve their documentation infrastructure comprehensively, allowing them to integrate frontline care observations with multidisciplinary analysis. By supporting the early detection of temporal behavioural patterns, this improved system supports psychologists and care physicians in designing targeted, non-pharmacological interventions. Therefore, this aligns proactive daily care with the Dutch multidisciplinary Verenso guidelines and the legal structure of the Wet zorg en dwang.

5.3 Limitations

While the research did provide valuable qualitative insights into BPSD documentation practices, certain methodological limitations should be addressed. The main limitation of this research is the reliance on a purposive sample that consists of six healthcare professionals. Although the sample included diverse roles from floor-staff caregiver to a senior psychologist, providing a varied multidisciplinary perspective, the small sample size inherently restricts the broader applicability of the results. Additionally, the conduction of the research was entirely done within a single Dutch psychogeriatric nursing home setting. So while the bottom-up, descriptive design did identify specific operational challenges and daily needs, the resulting recommendations may be closely tied to this single institutional context and the specific structure of the Dutch Verenso clinical guidelines. Therefore, the generalizability of the findings to other nursing facilities or other international healthcare systems remains limited.

5.4 Future Directions

Future research should focus on the active co-creation, implementation, and clinical validation of the proposed multidomain Boolean reporting tool. As highlighted by the findings and supported by Malm et al., staff involvement in the decision-making process and demonstrable clinical utility are crucial to overcoming resistance to change. Successive research should evaluate whether the introduction of such a tool measurably reduces administrative burden, improves the timely application of non-pharmalogical interventions, and ultimately decreases the frequency and severity of BPSD in nursing home residents.

6. Conclusion

The management of Behavioural and Psychological Symptoms of Dementia (BPSD) represents a critical challenge within Dutch psychogeriatric care. While formal guidelines such as the Verenso guidelines emphasize a multidisciplinary and biopsychosocial approach, this study identified a clear inconsistency between the clinical theory and the frontline practice. The standard assessment instruments, like the NPI and CMAI, are often underutilized by nursing home staff due to administrative limitations, extended administration duration, and a retrospective focus. Consequently, current BPSD management often remains reactive rather than preventative. To address this, this research utilized a qualitative, bottom-up approach to investigate the lived experiences and practical documentation challenges of frontline healthcare professionals. The findings show that caregivers face daily emotional strain and verbal difficulties when trying to objectively report on complex and sensitive behavioural events. Through these frontline insights, the study established seven fundamental design requirements for an effective daily reporting structure: time efficiency utilizing a Boolean ¨ticking¨ approach, intuitive user interfaces, structural integration with existing digital systems, guiding questions to standardize the reporting, the inclusion of a resident´s life history, active staff involvement in tool co-creation, and the demonstration of the clear clinical effectiveness of the tool. Transitioning toward a proactive, within-person daily monitoring system is highly desired by the healthcare workers if it indeed effectively reduces the current administrative burden. Implementing an integrated, multidomain Boolean reporting tool into the daily workflows enables the early detection of temporal behavioural patterns and their triggers. The systematic data collection supports the multidisciplinary team, including psychologists and elderly care physicians, in developing and evaluating targeted, non-pharmacological interventions. Therefore, the proposed reporting structure not only resolves operational documentation challenges but also supports the legal and clinical directives of the Wet zorg en dwang, assisting preventative, needs-based dementia care.

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Appendix 1: CMAI

Cohen-Mansfield Agitation Inventory (CMAI) - lange vorm (1986).

Vertaling J.F.M. de Jonghe, versie 1997

Factor structure and validity of the Dutch version of the Cohen-Mansfield Agitation Inventory (CMAI-D)
J Am Geriatr Soc. 1996 Jul;44(7):888-9.

Lees alle 29 geagiteerde gedragingen en omcirkel hoe vaak (van 1-7) dit voorkwam gedurende de laatste 2 weken.

		Nooit 1	Minder dan eens per week 2	1 à 2 keer per week 3	Meerdere keren per week 4	1 à 2 keer per dag 5	Meerdere keren per dag 6	Meerdere keren per uur 7
1.	IJsberen, doelloos rondlopen	1	2	3	4	5	6	7
2.	Verkeerd kleden of uitkleden	1	2	3	4	5	6	7
3.	Spugen (ook tijdens maaltijden)	1	2	3	4	5	6	7
4.	Vloeken of verbale agressie	1	2	3	4	5	6	7
5.	Voortdurend, buitensporig vragen om aandacht of hulp	1	2	3	4	5	6	7
6.	Telkens herhalende zinnen of vragen	1	2	3	4	5	6	7
7.	Slaan (ook zichzelf)	1	2	3	4	5	6	7
8.	Schoppen	1	2	3	4	5	6	7
9.	Anderen vastpakken	1	2	3	4	5	6	7
10.	Duwen	1	2	3	4	5	6	7
11.	Gooien met voorwerpen	1	2	3	4	5	6	7
12.	Vreemde geluiden (ook ongepast lachen of huilen)	1	2	3	4	5	6	7
13.	Gillen, krijsen	1	2	3	4	5	6	7
14.	Bijten	1	2	3	4	5	6	7

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		Nooit 1	Minder dan eens per week 2	1 à 2 keer per week 3	Meerdere keren per week 4	1 à 2 keer per dag 5	Meerdere keren per dag 6	Meerdere keren per uur 7
15.	Krabben	1	2	3	4	5	6	7
16.	Weglopen (bijv. een andere kamer, gebouw)	1	2	3	4	5	6	7
17.	Opzettelijk vallen	1	2	3	4	5	6	7
18.	Klagen	1	2	3	4	5	6	7
19.	Negativisme	1	2	3	4	5	6	7
20.	Ongeschikte stoffen eten of drinken	1	2	3	4	5	6	7
21.	Zichzelf of anderen bezeren (sigaret, heet water etc.)	1	2	3	4	5	6	7
22.	Verkeerd gebruik van voorwerpen (verplaatsen meubels, spelen met eten)	1	2	3	4	5	6	7
23.	Voorwerpen verstoppen	1	2	3	4	5	6	7
24.	Voorwerpen verzamelen	1	2	3	4	5	6	7
25.	Voorwerpen verscheuren of eigendommen kapotmaken	1	2	3	4	5	6	7
26.	Telkens herhalende gedragingen (schuiven met voeten, plukken e.d.)	1	2	3	4	5	6	7
27.	Verbale sexuele toespelingen	1	2	3	4	5	6	7
28.	Lichamelijk sexuele toenadering zoeken	1	2	3	4	5	6	7
29.	Algemene rusteloosheid	1	2	3	4	5	6	7

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Appendix 2: CSDD

CORNELL SCALE FOR DEPRESSION IN DEMENTIA

(ned. Vertaling: R.M. Dröes, Vakgroep Psychiatrie, Vrije Universiteit, Amsterdam, 1993)

Naam : _____
Geboren : _____
Datum : _____
Naam invuller : _____

Scoringssysteem

a = niet te beoordelen
0 = afwezig
1 = licht of wisselend aanwezig
2 = ernstig

De beoordelingen zijn gebaseerd op symptomen en kenmerken zoals waargenomen in de week voorafgaande aan het interview. Er dient geen score te worden gegeven wanneer symptomen het resultaat zijn van lichamelijke beperkingen of ziekte.

A. Stemmingsgerelateerde kenmerken

1.	Angst angstige gezichtsuitdrukking, peinzend, zorgelijk	a 0 1 2
2.	Verdrietig verdrietige gezichtsuitdrukking, verdrietige stem, huilerig	a 0 1 2
3.	Reageert niet op plezierige gebeurtenissen	a 0 1 2
4.	Prikkelbaarheid gauw kwaad, slecht gehumeurd	a 0 1 2

B. Gedragsstoornissen

5.	Agitatie rusteloos, handenwringen, haarplukken	a 0 1 2
6.	Vertraging trage bewegingen, langzame spraak, trage reacties	a 0 1 2
7.	Meervoudige lichamelijke klachten (scoor 0 indien GI symptomen)	a 0 1 2
8.	Interesseverlies t.a.v. gebruikelijke activiteiten (scoor alleen indien er een plotselinge verandering is opgetreden, d.w.z. binnen een periode van 1 maand)	a 0 1 2

C. Lichamelijke kenmerken

9.	Vermindering van eetlust eet minder dan gewoonlijk	a 0 1 2
10.	Gewichtsverlies (scoor 2 indien meer dan 2 kilo in 1 maand)	a 0 1 2
11.	Gebrek aan energie gauw moe, niet in staat activiteiten vol te houden (scoor alleen indien er een plotselinge verandering is opgetreden, d.w.z. binnen een periode van 1 maand)	a 0 1 2

D. Cyclische functies

12.	Dagelijkse stemmingsschommelingen 's morgens meer symptomen	a 0 1 2
13.	Moeite met inslapen later dan gewoonlijk voor deze persoon	a 0 1 2
14.	Wordt 's morgens meerdere malen wakker	a 0 1 2
15.	Wordt 's morgens vroeg wakker vroeger dan gewoonlijk voor deze persoon	a 0 1 2

E. Stoornissen in de gedachteninhoud

16.	Suïcide gedachten vindt het leven niet de moeite waard, heeft doodswensen of doet een poging tot zelfmoord	a 0 1 2
17.	Lage zelfwaardering zelfverwijten, minacht zichzelf, gevoel te falen	a 0 1 2
18.	Pessimisme verwacht het ergste	a 0 1 2
19.	Wanen die overeenstemmen met de stemming wanen m.b.t. armoede, ziekte, verlies	a 0 1 2

Appendix 3: NPI

(N.V.T.)

A. WANEN

Is hij/zij overtuigd van bepaalde gedachten, waarvan u weet dat ze niet waar zijn? Beweert hij/zij bijvoorbeeld dat andere mensen hem/haar kwaad willen doen of van hem/haar stelen. Heeft hij/zij gezegd dat familieleden **anderen** zijn dan ze zeggen te zijn of denkt hij/zij dat 't huis niet het huis is waar ze in wonen? Ik vraag u niet naar een beetje achterdochtig zijn, maar ik wil weten of hij/zij ervan **overtuigd** is dat deze zaken hem overkomen. Dus, of hij/zij denkt dat het **echt zo is**.

NEE (indien nee, stel dan de volgende screeningsvraag) **JA** (indien ja, stel dan de subvragen)

Subvragen:

1. Gelooft hij/zij dat er gevaar dreigt, dat anderen van plan zijn om hem/haar te kwetsen of pijn te doen? ..... _____
2. Denkt hij/zij dat anderen hem/haar bestelen ..... _____
3. Denkt hij/zij dat zijn/haar partner vreemd gaat of ontrouw is? ..... _____
4. Denkt hij/zij dat er ongenode gasten in zijn/haar huis verblijven? ..... _____
5. Gelooft hij/zij dat zijn/haar partner of anderen niet zijn wie ze zeggen dat ze zijn? _____
6. Gelooft hij/zij dat hij/zij niet in zijn/haar eigen huis woont? ..... _____
7. Denkt hij/zij dat familieleden hem/haar in de steek willen laten? ..... _____
8. Gelooft hij/zij dat personen van televisie of uit tijdschriften ook daadwerkelijk aanwezig zijn in huis? (Praat hij/zij met hen, of zoekt hij op een andere manier contact?) ..... _____
9. Gelooft hij/zij andere ongewone of vreemde zaken die ik hier nog niet genoemd heb? ..... _____

Als de subvragen de screeningsvraag bevestigen, bepaal dan de frequentie en de ernst van de wanen.

Frequentie:
1. Soms - minder dan een keer per week
2. Regelmatig - ongeveer één keer per week
3. Vaak - meerdere malen per week, maar niet iedere dag
4. Heel vaak - één of meerdere keren per dag

Ernst:
1. Licht - wanen zijn aanwezig maar lijken onschuldig en benauwen, beangstigen patiënt niet of nauwelijks
2. Matig - patiënt raakt overstuur en ontregeld door de wanen
3. Ernstig - de wanen zijn zeer verstorend en vormen de belangrijkste bron van gedragsproblemen (indien neuroleptica zijn voorgeschreven, dan betekent dit dat de wanen ernstig tot zeer ernstig zijn)

Emotionele belasting: Hoe emotioneel belastend is dit gedrag voor u?

0 geen
1 minimaal
2 licht
3 matig
4 ernstig
5 zeer ernstig of extreem

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(N.V.T.)

B. HALLUCINATIES

Hallucineert hij/zij?; ziet of voelt hij/zij iets dat er niet is of hoort hij/zij stemmen die een ander niet kan horen? Ik bedoel met deze vraag niet vergissingen, zoals het idee hebben dat iemand nog leeft terwijl deze al overleden is. Ik vraag echter of hij/zij abnormale ervaringen heeft wat betreft iets horen, zien of voelen.

NEE (indien nee, stel dan de volgende screeningsvraag) **JA** (indien ja, stel dan de subvragen)

Subvragen:

1. Zegt hij/zij dat hij/zij stemmen hoort of gedraagt hij/zij zich alsof hij/zij stemmen hoort?..... _____
2. Spreekt hij/zij tegen mensen die er niet zijn?..... _____
3. Zegt hij/zij iets te zien dat een ander niet ziet of gedraagt hij/zij zich alsof hij/zij iets ziet wat een ander niet kan zien (zoals mensen, dieren, lichten, enz.)? ... _____
4. Zegt hij/zij iets te ruiken wat een ander niet ruikt? ..... _____
5. Zegt hij/zij iets te voelen op zijn/haar huid? Of lijkt het alsof hij/zij iets voelt kruipen of kriebelen of dat iets hem/haar aanraakt? ..... _____
6. Zegt hij/zij iets te proeven zonder dat daar een duidelijke reden voor is? ..... _____
7. Heeft hij/zij u over andere ongewone gewaarwordingen verteld?..... _____

Als de subvragen de screeningsvraag bevestigen, bepaal dan de frequentie en ernst van de hallucinaties.

Frequentie:
1. Soms - minder dan één keer per week
2. Regelmatig - ongeveer één keer per week
3. Vaak - verscheidene keren per week maar niet iedere dag
4. Heel vaak - één of meerdere keren per dag

Ernst:
1. Licht - hallucinaties zijn aanwezig maar onschuldig en beangstigen of benauwen patiënt niet of nauwelijks
2. Matig - patiënt raakt overstuur en ontregeld door de hallucinaties
3. Ernstig - de hallucinaties zijn zeer verstorend en vormen de belangrijkste bron van gedragsproblemen (neuroleptica kunnen geïndiceerd zijn om de hallucinaties te behandelen)

Emotionele belasting: Hoe emotioneel belastend is dit gedrag voor u?

0 geen
1 minimaal
2 licht
3 matig
4 ernstig
5 zeer ernstig of extreem

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(N.V.T.)

C. AGITATIE/AGRESSIE

Komt het voor dat hij/zij weigert mee te werken, of zich niet laat helpen door een ander?
Is hij/zij lastig om mee om te gaan?

NEE (indien nee, stel dan de volgende screeningsvraag) **JA** (indien ja, stel dan de subvragen)

Subvragen:

1. Raakt hij/zij overstuur of wordt hij/zij kwaad op anderen die hem/haar willen verzorgen? Of verzet hij/zij zich bij het aankleden of wassen? ..... _____
2. Is hij/zij koppig of eigenwijs? Wil hij/zij dat alles moet gaan zoals hij/zij het wenst? ..... _____
3. Werkt hij/zij niet goed mee? Verzet hij/zij zich als anderen helpen? ..... _____
4. Zijn er andere gedragingen die het moeilijk maken om hem/haar te begeleiden? ..... _____
5. Vloekt of schreeuwt hij/zij kwaad? ..... _____
6. Slaat hij/zij met deuren, schopt hij/zij tegen meubilair of smijt hij/zij met voorwerpen? ..... _____
7. Probeert hij/zij anderen pijn te doen of anderen te slaan? ..... _____
8. Is hij/zij nog op een andere manier agressief of geagiteerd? ..... _____

Als de subvragen de screeningsvraag bevestigen, bepaal dan de frequentie en de ernst van de agitatie.

Frequentie:
1. Soms - minder dan één keer per week
2. Regelmatig - ongeveer één keer per week
3. Vaak - verscheidene keren per week, maar niet iedere dag
4. Heel vaak - één of meerdere keren per dag

Ernst:
1. licht - het gedrag is verstorend maar is positief te beïnvloeden door afleiding of geruststelling
2. Matig - het gedrag is verstorend en moeilijk bij te sturen of te corrigeren
3. Ernstig - de agitatie is zeer verstorend en de belangrijkste bron van problemen; het kan zijn dat de patiënt fysiek bedreigend is naar zijn omgeving. Vaak is medicatie geïndiceerd.

Emotionele belasting: Hoe emotioneel belastend is dit gedrag voor u?
0 geen
1 minimaal
2 licht
3 matig
4 ernstig
5 zeer ernstig of extreem

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(N.V.T.)

D. DEPRESSIE/DYSFORIE

Lijkt het alsof hij/zij verdrietig of depressief is? Zegt hij/zij dat hij/zij zich verdrietig of depressief voelt?

NEE (indien nee, stel dan de volgende screeningsvraag) **JA** (indien ja, stel dan de subvragen)

Subvragen:

1. Heeft hij/zij perioden dat hij/zij snel >vol schiet= of veel huilt, wat er op wijst dat hij/zij verdrietig is?..... _____
2. Doet of zegt hij/zij iets waaruit op te maken valt dat hij/zij verdrietig of >down= is? ..... _____
3. Haalt hij/zij zichzelf naar beneden of zegt hij/zij zichzelf niets waard te vinden, een mislukkeling te vinden? ..... _____
4. Zegt hij/zij dat hij/zij een slecht persoon is of straf verdient? ..... _____
5. Lijkt hij/zij erg ontmoedigd of zegt hij/zij dat de toekomst hem/haar niets te bieden heeft? ..... _____
6. Zegt hij/zij dat hij/zij anderen tot last is of dat familieleden beter af zouden zijn zonder hem/haar? ..... _____
7. Zegt hij/zij liever dood te willen zijn of zegt hij/zij zichzelf wat aan te willen doen, er een einde aan te willen maken? ..... _____
8. Zijn er andere signalen waaruit blijkt dat hij/zij verdrietig of depressief is? ..... _____

Als de subvragen de screeningsvraag bevestigen, bepaal dan de frequentie en de ernst van de depressie.

Frequentie:
1. Soms - minder dan één keer per week.
2. Regelmatig - ongeveer één keer per week
3. Vaak - verscheidene keren per week maar niet iedere dag
4. Heel vaak - in essentie continu aanwezig

Ernst:
1. Licht - de depressie veroorzaakt leed, maar klaart meestal op bij afleiding of geruststelling
2. Matig - de depressie veroorzaakt leed, depressieve symptomen worden spontaan geuit door patiënt en deze zijn moeilijk te verlichten
3. Ernstig - de depressie veroorzaakt veel leed en vormt de belangrijkste bron van lijden voor de patiënt

Emotionele belasting: Hoe emotioneel belastend is dit gedrag voor u?

0 geen
1 minimaal
2 licht
3 matig
4 ernstig
5 zeer ernstig of extreem

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E. ANGST

Is hij/zij erg nerveus, bezorgd, of schrikachtig zonder duidelijke reden? Lijkt hij/zij erg gespannen, rusteloos of zenuwachtig? Is hij/zij bang om alleen te zijn, zonder U?

NEE (indien nee, stel dan de volgende screeningsvraag) **JA** (indien ja, stel dan de subvragen)

Subvragen:

1. Zegt hij/zij dat hij/zij zich zorgen maakt over uitjes of activiteiten die gepland zijn? ..... _____
2. Voelt hij/zij zich wel eens trillerig, niet in staat zich te ontspannen of erg gespannen? ..... _____
3. Komt het voor dat hij/zij last heeft van kortademigheid, het moeten happen naar lucht, of zuchten (of klaagt hij/zij hierover), zonder duidelijke reden anders dan nervositeit? ..... _____
4. Klaagt hij/zij over kriebels in zijn/haar buik of over hartkloppingen die samengaan met nervositeit? [niet i.h.k.v. bijkomende ziekte] ..... _____
5. Vermijdt hij/zij bepaalde plaatsen of situaties die hem/haar nerveus maken, zoals autorijden, het ontmoeten van vrienden, of naar een plek gaan waar veel mensen zijn? ..... _____
6. Wordt hij/zij zenuwachtig of overstuur wanneer u (of verzorgende) weggaat? Houdt hij/zij zich dan krampachtig aan u vast om dat voorkomen? ..... _____
7. Is er nog iets anders dat erop wijst dat hij/zij angstig is? ..... _____

Als de subvragen de screeningsvraag bevestigen, bepaal dan de ernst en de frequentie van de angst.

Frequentie:
1. Soms - minder dan één keer per week
2. Regelmatig - ongeveer één keer per week
3. Vaak - verscheidene keren per week maar niet iedere dag
4. Heel vaak - één of meerder keren per dag

Ernst:
1. Licht - de angst veroorzaakt leed, maar reageert meestal gunstig op afleiding of geruststelling
2. Matig - de angst veroorzaakt leed, angst symptomen worden spontaan geuit door patiënt en deze zijn moeilijk te verlichten
3. Ernstig - de angst veroorzaakt veel leed en vormt de belangrijkste bron van lijden voor de patiënt

Emotionele belasting: Hoe emotioneel belastend is dit gedrag voor u?

0 geen
1 minimaal
2 licht
3 matig
4 ernstig
5 zeer ernstig of extreem

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(N.V.T.)

F. EUFORIE/OPGETOGENHEID

Lijkt hij/zij te vrolijk, opgewekt of blij zonder duidelijke aanleiding? Ik bedoel niet de normale opgewektheid wanneer men vrienden ontmoet, een cadeau krijgt of tijd doorbrengt met familie. Ik vraag of hij/zij voortdurend een *abnormaal* goed humeur heeft of ergens om lacht waar een ander de humor niet van inziet.

NEE (indien nee, stel dan de volgende screeningsvraag) **JA** (indien ja, stel dan de subvragen)

Subvragen:

1. Lijkt hij/zij zich te goed of te opgewekt te voelen, vergeleken met hoe hij/zij normaal gesproken is? ..... _____
2. Vindt hij/zij iets grappig of lacht hij/zij ergens om waar een ander de humor niet van inziet? ..... _____
3. Lijkt het net alsof hij/zij een kinderachtig gevoel voor humor heeft en giechelt of ongepast lacht? (Bijvoorbeeld als iemand iets vervelends overkomt) ..... _____
4. Vertelt hij/zij moppen of plaatst hij/zij opmerkingen die hij/zij zelf wel grappig vindt, maar waar anderen niet om kunnen lachen? ..... _____
5. Haalt hij/zij kinderachtige streken uit, zoals verstoppertje spelen of iemand knijpen, gewoon voor de grap? ..... _____
6. Schept hij/zij op, bijvoorbeeld door te zeggen dat hij/zij rijk is of iets bijzonders kan, terwijl dat niet zo is? ..... _____
7. Is er nog iets anders waaruit blijkt dat hij/zij zich te goed of te opgewekt voelt? .... _____

Als de subvragen de screeningsvraag bevestigen, bepaal dan de frequentie en de ernst van de euforie.

Frequentie:
1. Soms - minder dan één keer per week
2. Regelmatig - ongeveer één keer per week
3. Vaak - verscheidene keren per week maar niet iedere dag
4. Heel vaak - in essentie constant aanwezig

Ernst:
1. Licht - uitgelatenheid valt op bij vrienden en familie maar is niet storend
2. Matig - de uitgelatenheid is duidelijk abnormaal
3. Ernstig - de uitgelatenheid is zeer opvallend; patiënt is eufoor en hij/zij vindt alles amusant en grappig

Emotionele belasting: Hoe emotioneel belastend is dit gedrag voor u?

0 geen
1 minimaal
2 licht
3 matig
4 ernstig
5 zeer ernstig of extreem

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(N.V.T.)

G. APATHIE/ONVERSCHILLIGHEID

Is hij/zij niet langer geïnteresseerd in de wereld om hem/haar heen? Heeft hij/zij geen belangstelling meer om iets te doen of ontbreekt de motivatie om aan iets nieuws te beginnen? Is hij/zij moeilijker te betrekken in een gesprek of het doen van huishoudelijke klusjes? Is hij/zij apathisch of onverschillig?

NEE (indien nee, stel dan de volgende screeningsvraag) **JA** (indien ja, stel dan de subvragen)

Subvragen:

1. Lijkt hij/zij minder spontaan en minder actief dan gewoonlijk? ..... _____
2. Begint hij/zij minder vaak een gesprek? ..... _____
3. Toont hij/zij minder affectie of misschien wel helemaal geen emoties, vergeleken met hoe hij/zij normaal gesproken was? ..... _____
4. Helpt hij/zij minder bij huishoudelijke klussen? ..... _____
5. Lijkt hij/zij minder geïnteresseerd in de activiteiten en plannen van een ander? ..... _____
6. Heeft hij/zij geen belangstelling meer voor vrienden of familie? ..... _____
7. Is hij/zij minder enthousiast over zaken die hem gewoonlijk interesseren? ..... _____
8. Is er nog iets anders waaruit blijkt dat hij/zij geen interesse heeft om iets nieuws te gaan doen? ..... _____

Als de subvragen de screeningsvraag bevestigen, bepaal dan de ernst en de frequentie van de apathie.

Frequentie:
1. soms - minder dan één keer per week
2. Regelmatig - ongeveer één keer per week
3. vaak - verscheidene keren per week maar niet iedere dag
4. heel vaak - bijna continu aanwezig

Ernst::
1. Licht - apathie valt op maar interfereert niet met de dagelijkse bezigheden; is slechts een beetje anders dan het gewone gedrag van patiënt; hij/zij reageert op uitnodigingen om deel te nemen aan activiteiten
2. Matig - apathie is evident; verzorgende kan er mee omgaan door op patiënt in te praten of aan te moedigen; slechts indringende gebeurtenissen leiden tot een spontane reactie, zoals het bezoek van naaste familieleden
3. Ernstig - de apathie is evident en reageert niet langer op aanmoediging of gebeurtenissen in de omgeving

Emotionele belasting: Hoe emotioneel belastend is dit gedrag voor u?

0 geen
1 minimaal
2 licht
3 matig
4 ernstig
5 zeer ernstig of extreem

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(N.V.T.)

H. ONTREMD GEDRAG

Lijkt hij/zij impulsief te handelen, zonder er bij na te denken? Doet of zegt hij/zij iets wat men normaal gesproken niet in het openbaar zegt of doet? Brengt hij/zij u of iemand anders in verlegenheid met wat hij/zij doet?

NEE (indien nee, stel dan de volgende screeningsvraag) **JA** (indien ja, stel dan de subvragen)

Subvragen:

1. Handelt hij/zij impulsief zonder over de gevolgen na te denken? ..... _____
2. Praat hij/zij tegen volstrekt onbekenden alsof hij/zij ze goed kent? ..... _____
3. Maakt hij/zij kwetsende of tactloze opmerkingen tegen anderen? ..... _____
4. Maakt hij/zij botte of seksueel getinte opmerkingen, die hij/zij normaal gesproken nooit gezegd zou hebben? ..... _____
5. Praat hij/zij openlijk over zeer persoonlijke of privé zaken, waarover men gewoonlijk niet spreekt in het openbaar? ..... _____
6. Gaat hij/zij te ver of is hij/zij handtastelijk of knuffelt hij/zij anderen, op zo=n manier dat het niet past bij zijn/haar karakter? ..... _____
7. Is er nog iets anders dat er op wijst dat hij/zij zijn/haar impulsen minder onder controle heeft? ..... _____

Als de subvragen de screeningsvraag bevestigen, bepaal dan de frequentie en de ernst van het ontremde gedrag

Frequentie:
1. Soms - minder dan één keer per week
2. Regelmatig - ongeveer één keer per week
3. Vaak - verscheidene keren per week maar niet iedere dag
4. Heel vaak - in essentie continu aanwezig

Ernst:
1. Licht - ontremd gedrag is aanwezig, maar reageert op afleiding en begeleiding
2. Matig - ontremd gedrag is duidelijk aanwezig en moeilijk voor de verzorgende om mee om te gaan.
3. Ernstig - ontremd gedrag neemt niet af, wat de verzorgende ook probeert, het brengt anderen in verlegenheid of is een bron van ergernis

Emotionele belasting: Hoe emotioneel belastend is dit gedrag voor u?

0 geen
1 minimaal
2 licht
3 matig
4 ernstig
5 zeer ernstig of extreem

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(N.V.T.)

I. PRIKKELBAARHEID/LABILITEIT

Is hij/zij snel geïrriteerd of uit evenwicht? Is zijn/haar stemming nogal veranderlijk? Is hij/zij erg ongeduldig? Ik bedoel niet dat hij/zij zich gefrustreerd voelt over de vergeetachtigheid of alledaagse taken die niet meer lukken. Ik wil graag weten of hij/zij erg prikkelbaar en ongeduldig is of dat hij/zij snel van humeur verandert, anders dan u van hem/haar gewend bent?

NEE (indien nee, stel dan de volgende screeningsvraag) **JA** (indien ja, stel dan de subvragen)

Subvragen:

1. Is hij/zij opvliegend, schiet hij/zij gemakkelijk uit z=n/haar slof om iets kleins? ..... _____
2. Verandert hij/zij snel van stemming, het ene moment is alles nog goed en het andere moment is hij/zij kwaad? ..... _____
3. Heeft hij/zij plotselinge woede-uitbarstingen? ..... _____
4. Is hij/zij ongeduldig? Kan hij/zij moeilijk omgaan met een vertraging of het moeten wachten op een activiteit die gepland is? ..... _____
5. Is hij/zij humeurig of snel geïrriteerd? ..... _____
6. Gaat hij/zij snel in discussie en is het moeilijk met hem/haar op te schieten? ..... _____
7. Is er nog iets anders wat er op wijst dat hij/zij prikkelbaar is? ..... _____

Als de subvragen de screeningsvraag bevestigen, bepaal dan de frequentie en de ernst van de prikkelbaarheid/labiliteit.

Frequentie:
1. Soms - minder dan één keer per week
2. Regelmatig - ongeveer één keer per week
3. Vaak - verscheidene keren per week maar niet iedere dag
4. Heel vaak - in essentie continu aanwezig

Ernst:
1. Licht - prikkelbaarheid wordt opgemerkt, maar is d.m.v. geruststelling of afleiding te corrigeren
2. Matig - prikkelbaarheid is evident aanwezig en moeilijk mee om te gaan voor de verzorgende
3. Ernstig - prikkelbaarheid is evident aanwezig, is niet bij te sturen door de verzorgende en is zeer belastend

Emotionele belasting: Hoe emotioneel belastend is dit gedrag voor u?

0 geen
1 minimaal
2 licht
3 matig
4 ernstig
5 zeer ernstig of extreem

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(N.V.T.)

J. DOELLOOS REPETITIEF GEDRAG

Loopt hij/zij doelloos rond, te ijsberen? Doet hij/zij een handeling telkens weer, zoals keer op keer een la opentrekken, aan iets zitten te plukken of touwtjes of draadjes opwinden?

NEE (indien nee, stel dan de volgende screeningsvraag) **JA** (indien ja, stel dan de subvragen)

Subvragen:

1. Loopt hij/zij doelloos rond in huis? ..... _____
2. Loopt hij/zij rond te zoeken en te rommelen met spullen, zoals het openen van laden en het leeghalen van kasten? ..... _____
3. Kleedt hij/zij zich herhaaldelijk aan en dan weer uit? ..... _____
4. Zijn er gewoonten of activiteiten die hij/zij constant herhaalt? ..... _____
5. Doet hij/zij telkens dezelfde handeling zoals peuteren aan knopen, ergens aan plukken, draadjes opwinden, etc.? ..... _____
6. Beweegt hij/zij zenuwachtig, alsof hij/zij niet stil kan blijven zitten, of schuift hij/zij met de voeten heen en weer of trommelt hij/zij vaak met de vingers? ..... _____
7. Zijn er andere activiteiten die hij/zij telkens weer herhaalt? ..... _____

Als de subvragen de screeningsvraag bevestigen, bepaal dan de frequentie en de ernst van het doelloos repetitieve gedrag

Frequentie:
1. Soms - minder dan één keer per week
2. Regelmatig - ongeveer één keer per week
3. Vaak - verscheidene keren per week maar niet iedere dag
4. Heel vaak - in essentie continu aanwezig

Ernst:
1. Licht - doelloos repetitief gedrag wordt opgemerkt, maar interfereert nauwelijks met de dagelijkse bezigheden
2. Matig - doelloos repetitief gedrag is duidelijk aanwezig, maar de verzorgende weet er mee om te gaan
3. Ernstig - doelloos repetitief gedrag is duidelijk aanwezig, is nauwelijks te corrigeren door de verzorgende en vormt een grote belasting

Emotionele belasting: Hoe emotioneel belastend is dit gedrag voor u?

0 geen
1 minimaal
2 licht
3 matig
4 ernstig
5 zeer ernstig of extreem

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K. NACHTELIJKE ONRUST/SLAAPSTOORNIS

Heeft hij/zij moeite met slapen? (*scoor als 'niet aanwezig' indien patiënt slechts een of twee keer per nacht opstaat om naar het toilet te gaan en daarna weer meteen in slaap valt*). Is hij/zij 's nachts op? Loopt hij/zij 's nachts rond, kleedt hij/zij zich aan of verstoort hij/zij uw nachtrust?

NEE (indien nee, stel dan de volgende screeningsvraag) **JA** (indien ja, stel dan de subvragen)

Subvragen:

1. Heeft hij/zij moeite met in slaap vallen? ..... _____
2. Staat hij/zij 's nachts op? (scoor als afwezig indien patiënt een of twee keer opstaat om naar het toilet te gaan en snel weer inslaapt) ..... _____
3. Loopt hij/zij 's nachts doelloos rond, te ijsberen of is hij/zij dan bezig met ongebruikelijke activiteiten? ..... _____
4. Maakt hij/zij u 's nachts wakker? ..... _____
5. Wordt hij/zij 's nachts wakker en kleedt hij/zij zich dan aan in de veronderstelling dat het al morgen is en tijd om aan een nieuwe dag te beginnen? ..... _____
6. Wordt hij/zij 's ochtends te vroeg wakker (vroeger dan hij/zij gewend was)?..... _____
7. Slaapt hij/zij buitensporig veel overdag? ..... _____
8. Is hij/zij 's nachts nog met iets anders bezig dat u hindert, waar we het nog niet over gehad hebben? ..... _____

Als de subvragen de screeningsvraag bevestigen, bepaal dan de ernst en de frequentie van de slaapproblemen en nachtelijke onrust

Frequentie:
1. Soms - minder dan één keer per week
2. Regelmatig - ongeveer één keer per week
3. Vaak - verscheidene keren per week maar niet iedere dag
4. Heel vaak - in essentie continu aanwezig

Ernst:
1. Licht - nachtelijke onrust komt voor maar is niet echt hinderlijk
2. Matig - nachtelijke onrust komt voor, is storend voor de patiënt en voor de nachtrust van de verzorgende. Meerdere gedragingen kunnen zich per nacht voordoen.
3. Ernstig - nachtelijke onrust komt voor; er kunnen meerdere gedragingen voorkomen; patiënt is zeer ontdaan en verstoort in ernstige mate de nachtrust van de verzorgende

Emotionele belasting: Hoe emotioneel belastend is dit gedrag voor u?

0 geen
1 minimaal
2 licht
3 matig
4 ernstig
5 zeer ernstig of extreem

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(N.V.T.)

L. EETLUST/EETGEDRAG VERANDERING

Is hij/zij veranderd qua eetlust, gewicht of eetgewoonten (*beoordeel NVT als de patiënt niet in staat is om zelf te eten en gevoed moet worden*)? Is er verandering gekomen in het soort eten dat hij/zij lekker vindt?

NEE (indien nee, stel dan de volgende screeningsvraag) **JA** (indien ja, stel dan de subvragen)

Subvragen:

1. Is zijn/haar eetlust verminderd? ..... _____
2. Is zijn/haar eetlust toegenomen? ..... _____
3. Is hij/zij afgevallen? ..... _____
4. Is hij/zij aangekomen in gewicht? ..... _____
5. Is zijn/haar eetgedrag veranderd, zoals te veel eten tegelijkertijd in de mond stoppen? ..... _____
6. Is zijn/haar voorkeur voor bepaald eten veranderd? Bijvoorbeeld, heeft hij/zij veel meer trek gekregen in zoetigheid of iets anders? ..... _____
7. Heeft hij/zij bepaald eetgedrag ontwikkeld, zoals elke dag precies hetzelfde willen eten of alles in dezelfde volgorde opeten? ..... _____
8. Zijn er andere veranderingen in de eetlust en het eetgedrag die ik hier nog niet genoemd heb? ..... _____

Als de subvragen de screeningsvraag bevestigen, bepaal dan de ernst en de frequentie van de veranderingen in eetgedrag en eetlust.

Frequentie:
1. Soms - minder dan één keer per week
2. Regelmatig - ongeveer één keer per week
3. Vaak - verscheidene keren per week maar niet iedere dag
4. Heel vaak - in essentie continu aanwezig

Ernst:
1. Licht - veranderingen in eetlust en eetgewoonten zijn aanwezig, maar hebben niet geleid tot een verandering in het gewicht en zijn niet storend.
2. Matig - veranderingen in eetlust en eetgewoonten zijn aanwezig en leiden tot kleine toe- of afname in lichaamsgewicht
3. Ernstig - er zijn duidelijke veranderingen in eetlust en eetgewoonten aanwezig die leiden tot toe- of afname in lichaamsgewicht, gênant zijn, of anderszins storend zijn voor patiënt

Emotionele belasting: Hoe emotioneel belastend is dit gedrag voor u?

0 geen
1 minimaal
2 licht
3 matig
4 ernstig
5 zeer ernstig of extreem

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university of groningen / campus fryslân

Appendix 4: Interview guide

Introduction

Thank you for participating in this interview/ This study focuses on assessment tools for challenging behaviour in people with dementia. We will talk about which ones are and are not used in practice—as well as their strengths and weaknesses, and what an ideal assessment tool would look like. This interview is estimated to take around 30 minutes. Participation is voluntary and you can quit at any time. With your permission, I would like to record the interview. Your responses will be treated confidentially. Do you have any questions before we begin?

Area of interest	Question	Probe
Background	1. What is your role and experience working with people with dementia?	
	2. What do you personally consider to be 'challenging behaviour' in people with dementia?	
	3. How often do you work with residents who exhibit challenging behaviour?	
	4. How do you usually deal with challenging behaviour?	Observation? Communication with colleagues/family? (Non-)pharmacological interventions? Reporting/documentation?
Existing assessment tools	5. Which assessment tools for challenging behaviour/BPSD are you familiar with?	AMBI - Agitation Behavior-Mapping Instrument ABeS - Aggressive Behavior Scale (commonly abbreviated as ABS) ABS - Abe's BPSD score AWS - Algase Wandering Scale BARS - Brief Agitation Rating Scale BSO-DOS - Dementia Observation System CABOS - Computer-Assisted Real-Time Observation CBS - Challenging Behavior Scale CBS-8 - Columbia Behavior Scale for Dementia CMAI - Cohen-Mansfield Agitation Inventory COBRA - Caretaker Obstreperous-Behaviour Rating

		Assessment CPCE - Care Plan Checklist for Evidence of Person-Centered Approaches for BPSD DBRS - Disruptive Behavior Rating Scale DBS - Disruptive Behavior Scale HBS - Harmful Behaviors Scale NHBPS - Nursing Home Behavior Problem Scale NPI - Neuropsychiatric Inventory PAS - Pittsburgh Agitation Scale PEAR - Person-Environment Apathy Rating RAGE - Rating Scale for Aggressive Behavior in the Elderly RMBPC - Revised Memory and Behavior Problems Checklist RTC-DAT - Resistiveness to Care Scale SOAPD - Scale for the Observation of Agitation in Persons with Dementia of the Alzheimer's type
	6. Which assessment tools have you actually used in practice?	
	7. Are there assessment tools not listed here that you have used before?	
	8. Which assessment tool do you use most often?	
	9. In which situations are these tools typically used?	Daily care? During escalations? Multidisciplinary meeting? Evaluation of interventions? Care planning?
Strengths and weaknesses	10. Which assessment tool do you think works best and why?	
	11. What do you consider to be the strengths of current assessment tools?	Ease of use? Clear structure? Helps identity patterns/triggers? Improves communication? Useful for interventions?
	12. What do you consider to be the weaknesses	Time-consuming? Too subjective?

	or limitations of current tools?	Difficult to interpret? Not practical in daily care? Not preventive (enough)?
	13. How well do these tools help you understand the causes or triggers of challenging behaviour/BPSD?	
	14. To what extent do they help guide interventions and/or preventive care?	
	15. Are there situations where assessment tools are not helpful or not used? Why?	
Reporting and prevention	16. How important is daily reporting of challenging behaviour in your work?	
	17. Do you think a daily reporting system could help with early detection or prevention of challenging behaviour? Why or why not?	
	18. Do you think such a reporting system would be feasible in practice?	Time investment? Staff workload? Ease of use? Digital integration?
	19. What challenges do you currently experience with reporting or documenting challenging behaviour?	
Future assessment tool	20. If a new assessment tool were developed, what would you like it to include?	
	21. What components should definitely be part of such a tool?	Triggers/causes? Environmental factors? Severity/frequency? Emotional state? Care interventions? Visual trends over time?
	22. What would make a new assessment tool practical and easy to use in daily care?	
	23. Would you prefer a digital or paper-based tool? Why?	
	24. Do you think a new reporting system should replace existing tools or function as a supplement to them?	
	25. What would encourage you to use a new	

	assessment tool consistently?	
Closing questions	26. Is there anything else you would like to add (about assessment tools or challenging behaviour in dementia care)?	
	27. Do you have any recommendations for improving assessment or reporting in practice?	

Closing

Thank you for participating in this interview. Your insights will help to gain insight into current assessment tools, and will help guide the development of a new practical assessment tool.