



# Management of BPSD in a Teaching Hospital - From a Geriatrician's Perspective

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## Abstract

The number of persons living with dementia increases by the minute all over the world. The elderly is currently the biggest consumer of the healthcare resources, especially the vulnerable elderly living with dementia who are more likely to be admitted and once admitted, stay longer and are more likely to develop complications in the hospital. The emergence of behavioral symptoms is common among the Persons with Dementia (PWD) and the behavioral symptoms are frequently challenging for the caregivers. In the hospital and institution setting, the PWD are often restrained for their safety, even though restraints have not been proven to be effective in reducing falls. The alternative strategy for managing the behavioral symptoms is non-pharmacological method, for which person-centered care is the best proven care model but it is time consuming and difficult to consistently follow in the hospital setting.

**Keywords:** Elderly; Dementia; BPSD; Person centered care; Restraints

## Introduction

Dementia comprises of over 70 diseases which are progressive and classified as neurodegenerative disorders. Dementia presents with cognitive and neuropsychiatric symptoms with progressive decline in function. The non-cognitive symptoms of dementia or neuropsychiatric symptoms, are also known as the Behavioral and Psychological Symptoms of Dementia (BPSD) affect almost 90% of the Persons with Dementia (PWD), are difficult to manage and are the main cause of caregiver stress and ill health. BPSD is well known to be associated with increased the risk of institutionalization. Behavioral symptoms also affect daily function and reduce quality of life for the PWD and their caregivers [1].

BPSD has an unpredictable clinical course with sporadic onset and symptoms which vary from patient to patient and varies in duration and time course, even within the same patient. As a result, the caregivers are left overwhelmed, and unprepared, which may lead to resentment, frustration and anger towards the Persons with Dementia (PWD). The caregivers occasionally feel that the PWD are deliberate in their acts to cause stress and pain to them, for being a bad child or spouse in the past. Managing BPSD is time consuming and many a time, frustrating and stressful, leaving the caregivers with anxiety and depression [2]. Successful management strategies which worked today may not work tomorrow and the caregivers therefore need to be innovative and creative in coming up with new ideas to cope with the behavioral symptoms. PWD with BPSD is known to be associated with more rapid disease progression, more rapid functional decline, reduces quality of life. The presence of behavioral symptoms, less so for the cognitive symptoms, has been associated with early nursing home placement and the usage of restraints.

In an acute hospital setting, PWD are more likely to be admitted. In fact, it was estimated that elderly PWD had more than three times hospital stays per year compared to the elderly without dementia. Utilization of healthcare resources for chronic medical conditions, such as stroke, cancers, diabetes, and coronary heart disease is increased among the elderly with dementia [3]. The elderly patients with dementia in an acute hospital are at high risk of being restrained, especially if they require assistance with their Activities of Daily Living (ADLs) and the most frequently cited reasons for restraint use are for the protection of the patients themselves, and to prevent interference with medical therapies. Physical restraint usage is between 33% to 68% among the elderly in hospitals [4].

## Spectrum of BPSD

It is helpful for the medical staff to classify BPSD into behavioral or psychological symptoms for treatment purposes, especially if pharmacotherapy is being considered (Table 1).

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**Table 1:** Spectrum of BPSD.

Behavioural	Psychological
<ul style="list-style-type: none"> <li>Physically aggressive- biting, pinching, agitation, scratching, sexual disinhibition.</li> <li>Physically non-aggressive- wandering, stripping, hoarding, pacing, blank stares, urinating/defecating in inappropriate places.</li> <li>Verbally aggressive- swearing, cursing, shouting, threats, screaming.</li> <li>Verbally nonaggressive- repetition, calling for attention.</li> </ul>	<ul style="list-style-type: none"> <li>Personality change</li> <li>Anxiety</li> <li>Depression</li> <li>Pathological crying</li> <li>Mood lability</li> <li>Hallucinations- visual/ auditory</li> <li>Delusions</li> <li>Apathy</li> <li>Elevated mood</li> <li>Sleep disorders</li> </ul>

Aggression can either be physical or verbal. Commonly described physically aggressive behavior includes biting, hitting, spitting, pinching, throwing objects, etc. Verbally aggressive behavior includes swearing, cursing, shouting, etc. Aggressive behavior is stressful for the caregivers, especially if the PWD turn combative when caregivers offer assistance with ADLs. Aggressive behavior increases caregiver burden. As a result, prescription of psychotropic medication (antipsychotic, antidepressant and sedatives) is a common pharmacological method for managing aggression. Aggressive behavior is associated with risk of institutionalization [5]. Aggression commonly occurs with agitation among the PWD. The combination of aggression and agitation causes more caregiver stress than either one occurring alone. The caregivers who have not been taught on management strategies for BPSD often express their frustrations towards the PWD, especially when the PWD turn aggressive. From the PWD's perspective, a frustrated caregiver comes across as angry and abrasive, which further exacerbate the PWD's aggression causing a vicious cycle of abusive communication [6,7]. The PWD often have limited understanding of spoken language, but they can still appreciate the non-verbal cues from their caregivers, especially the tone of voice or the caregivers' actions towards them [8].

Sexual disinhibition is classified under the umbrella of aggressive behavior. Sexual disinhibition can be categorized into sex talk (using foul language), sexual acts (acts of touching, grabbing, exposing the genitals or masturbating), and implied sexual acts (openly reading/watching pornographic material). Other authors gave more descriptive examples such as indecent exposure in public places, obscene sex language, public masturbation, touching others' breasts or genitals and inappropriate propositions to others [9,10]. Sexual disinhibition is a feature among persons with Alzheimer's Disease (AD), Vascular Dementia (VAD), Mild Cognitive Impairment (MCI), although it is more commonly reported in Frontotemporal Dementia (FTD). Sexual disinhibition is more commonly seen among men than women and has been reported among PWD in all stages of dementia.

Sexuality is expressed differently in different cultures and societies. Due to this heterogeneity, it is therefore difficult to define "an appropriate sexual behavior". Assessing what constitute an appropriate sexual behavior is largely subjective, influenced by the assessor's personal, social and cultural background. Adding to this is the assessor's own approving/disapproving attitudes, rather than the appropriateness of the described behavior. Clinicians should take into consideration that sexual desire among the elderly is still physiological and libido is present well into old age. Sometimes, sexually disinhibited behavior surfaces because of a lack of willing sexual partner, or what was considered as a disinhibited behavior in public is due to a lack of privacy for the sexual conduct, especially among the institutionalized elderly. Sexually disinhibited behavior can be extremely disturbing to the caregivers. Caregivers handling

PWD with sexual disinhibition reported anxiety, embarrassment and feeling of unease, in some cases, there were reports of sexual harassment or assault resulting in legal actions [11,12].

Depression is thought to be a risk factor and the prodromal stage of dementia. There is evidence to suggest that depression in the stage of MCI, which may overlap with Mild Behavioral Impairment (MBI), increases the risk of progression to dementia [13-15].

Depression is diagnosed across all stages of dementia. In AD, 20% to 30% of persons were diagnosed with depression at some point during their disease course. In VAD, the incidence is estimated to be present in 40% to 45%. Diagnosing depression among the elderly PWD is challenging due to the atypical presentations and poor insight. The PWD's mood has a bidirectional association with their caregivers' mood. The caregiver who is depressed is likely to be looking after a PWD who later develop depression. Similarly, a depressed PWD will eventually cause his/her caregiver to develop depression [16].

Apathy is defined as the "loss of initiative and motivation with goal directed behavior" and the symptom is often persistent. Apathy causes physical decline in function. Among the spectrum of BPSD, apathy is the commonest behavioral symptom described in AD. Data showed that up to 76% of patients with AD lives with apathy. Apathy is also common among other types of dementia such as behavior variant FTD, Parkinson's disease dementia and VAD. Apathy in AD is associated with higher disease burden and more severe behavioral symptoms [17,18].

The commonly described symptoms of apathy consist of emotional blunting and lack of engagement both to negative or positive events. In addition, the caregivers may report a lack of interest, lack of motivation/effort to perform basic daily activities of living, dependency on others to plan/structure activities and lack of concern for one's problems. Assessment of apathy is challenging among the PWD, where lack of motivation may be due to overlapping features due to other conditions like depression, delirium or medication side effects. Lack of engagement or motivation may also be due to cognitive decline resulting in reduced abilities to carry out tasks demanded of the PWD. Psychomotor retardation is a common feature of major depression, which is clinically similar to apathy. Usage of antipsychotics is a common practice in the management of BPSD. The side effects of antipsychotic include sedation, lethargy, emotional blunting, where the features are similar to apathy [19].

Psychotic symptoms include delusion- hallucination and delusion, are common in dementia. The older PWD often have underlying problems with visual and hearing impairment which, together with declining cognition, often misinterpret sensory stimuli and may seem like they experience hallucination or are delusional to their caregivers. The psychotic symptoms are different compared to the psychosis in Schizophrenia. PWD tend to experience visual

**Table 2:** Unmet needs causing BPSD [36].

Physiological needs	Toileting needs for urine or feces, hunger, thirst, fatigue.
Discomfort	Pain, full bladder, full rectum, soiled diapers, muscle spasms, contractures, prolonged posturing in the same position.
Emotional needs	Anxiety, depression, boredom, fear.
Environmental factors	Over/under stimulation, too hot/cold.
Social	Loneliness, need for social contact and meaningful activities.

hallucinations, rather than auditory hallucination [20].

The delusional ideation among PWD tends to involve theft and is a common complaint among PWD in institutions and the PWD living at home. The ideation of theft is likely due to their failing memory, having forgotten that they hid their valuables in a “safe place”. The inability to locate their hidden valuables causes frustration and subsequently blames their caregivers or fellow residents to have stolen their properties.

Spousal infidelity is another common feature. This occurs when the PWD is relocated in a new environment like an institution or when there is a caregiver who frequently interacts with their spouse for care plans. The accusation of infidelity is more likely if the caregiver is a member of the opposite gender to their spouse. These accusations may arise due to a feeling of abandonment, especially if they were being placed in an institution. This is commonly associated with feeling of loss of trust or betrayal. If the caregivers happen to live under the same roof as they do, they may feel that they have lost their roles in their own household. If the PWD has some insight, this leads to feelings of low self-esteem and depression, having declined in their cognitive abilities to carry on with the household tasks which they were in-charge of previously. The lived-in caregiver may also give rise to a false belief that their spouses had them replaced.

The PWD may think that their caregivers are imposters and may turn combative when the caregivers (unfamiliar to them) tried to assist them with ADLs. This is a frequent occurrence in a hospital and nursing home setting. Due to their declining cognition and agnosia, they may have difficulties trying to remember faces or names, and this is further exacerbated by frequent turnover of staff in institutions so they have to get used to a large number of unfamiliar caregivers. In the author's hospital, the caregivers, like nurses and allied health professionals are frequently reminded to introduce themselves every time they come in contact with the PWD, and to explain clearly and slowly in the PWD's mother tongue, their intentions before touching the PWD.

In severe stage of dementia, agnosia may cause the PWD anxiety as they fail to recognize their own image on the mirrors. This too, may give rise to the accusation of imposters being present in their house. This agnosia may cause fear and agitation when they walk past a mirror.

Sensory impairment has been well documented to be associated with delusional ideation and hallucination. Hearing and visual impairment may cause misinterpretation of stimuli or misidentification of objects especially in a new and unfamiliar environment, for instance public announcement systems may be perceived as alien communications.

Eating disorders are common among the PWD at different stages of dementia, such as problems with chewing, swallowing, changes in food preference, changes in appetite and food preference. Eating disorders are commoner among the FTD, presenting with eating

excessively, changes in eating habits compared to premorbid patterns, a new preference for sweet foods, or desiring for the same food over and over [21]. For patients with AD, early increase in appetite and preference for sweet foods occur with corresponding increase in body weight. The PWD may present with loss of appetite which in AD, may be due to concurrent depression. Amnesia may cause the PWD to have forgotten they had eaten, not recognizing satiety, they may ask for food again. In the late stages of dementia, weight loss is common and swallowing difficulty is a risk for aspiration. The diet is often recommended to be modified in consistencies to suit swallowing impairment due to dementia. Modified diets often suffer a decline in terms of food aesthetics and a depreciation of taste and texture. Also, at the severe stages of dementia, baseline metabolic rate is down adjusted so the overall caloric requirement and consumption is much reduced, causing weight loss in severe dementia. Acetylcholinesterase inhibitors may have GI side effects which affect the oral intake [22].

Towards the severe stages of dementia, the PWD often have a combination of swallowing disorders, anorexia, feeding apraxia leading to prolonged feeding time. Caregivers' worries of insufficient intake of food increase caregiver burden and diminish PWDs' quality of life, with excessive watchfulness and pressure to eat at mealtimes. In institution setting like nursing homes and hospitals, feeding times are rigid and rushed. There may also be insufficient staff trained specially for dementia care to supervise and assist the residents with dementia during meal time causing inadequate intake of calorie and nutrients with weight loss. Tube feeding is generally not advisable for management of poor feeding for PWD at severe stage of dementia, as tube feeding has not been shown to improve outcome, prolong survival or reduce aspiration pneumonia. On the contrary, tube feeding is associated with pressure sore and use of restraints and higher utilization of healthcare resources due to tube related problems [23,24].

Sleep disorders are present in up to 40% of patients with AD. The more commonly described sleep disorders in AD include fragmented sleep, with longer periods of wakefulness once awakened, and day time sleepiness with frequent day time naps. Lack of sleep and night time disturbance causes caregiver fatigue and stress. Sleep disorders among PWD has been shown to be a risk factor for nursing home placement. Sleep disorders among AD have been associated with mood lability, aggression, anxiety, fall risk, reduced concentration and cognitive performance dropped during the day. REM sleep disorders are known to be associated with DLBD. Sleep disturbance among the younger people in their 40s, due to primary insomnia increases the risk of dementia [25-27].

## Assessment and Evaluation of BPSD in the Hospital Setting

The presentation of behavioral symptoms among PWD should prompt a search for reversible causes of behavioral symptoms, especially if there is a report of a recent change in behavior. Even among the PWD who are known to have BPSD, any new changes

in behavioral symptoms should prompt for a search for delirium. The presence of delirium may worsen the background BPSD among the PWD. In the hospital setting, unlike nursing home setting where the residents stay for a long period of time, the caregivers are often unsure of the duration and spectrum of BPSD among the patients in the wards. In situations where distinction between delirium and background behavioral symptoms is unclear, it is safer to assume a diagnosis of delirium until proven otherwise. Delirium is a medical emergency and the syndrome is frequently caused by an underlying medical illness or medications and delirium is potentially reversible after resolution of the medical problems [28,29].

Diagnosis of delirium starts with a clinical suspicion, followed by a screening test. There are many validated screening tests available. Among the commonly used ones include Confusion Assessment Method (CAM), CAM-ICU, Delirium Rating Scale (DRS), 4AT, Nurses' Delirium Screening Checklist, Single Question for Delirium, etc. The CAM is the most widely used but requires specific training. The author's hospital uses the 4AT which is preferred by the nursing staff and takes about 2 min to perform [30,31].

The elderly PWD have a higher tendency to develop delirium compared to their peers without cognitive issues, and the threshold required to trigger an episode of delirium is lower among PWD [30]. Delirium superimposed on dementia carries with it, a poorer prognosis with increased healthcare cost, mortality and hospital readmissions [32-34]. Among the PWD who developed delirium, they are more likely to show behavioral disturbance compared to persons with dementia without delirium. The behavioral symptoms exhibited by patients with delirium superimposed on dementia include wandering, trying to leave, sleep problems and irrational behavior. In the hospital setting, the nursing and medical staffs are frequently untrained in the diagnosis of delirium and managing the challenging behavioral symptoms [35].

In the author's hospital, the nursing staffs are trained to screen for delirium, if the patients under their care show a new change in mental status or behavior. The patients who exhibit difficult to manage behavioral symptoms who require use of physical restraints are also screened for delirium. Having screened positive for delirium, the medical team will be prompted to request for work up for underlying causes of delirium [33].

## Management Strategies for Behavioral Symptoms

For a Geriatrician's perspective, the management strategy of choice for BPSD should be the non-pharmacological approach. There are currently no recommended treatment guidelines for specific management of BPSD. Pharmacological approach in the management of BPSD is often associated with side effects which are undesirable for the elderly. The older PWD often have multiple comorbidities on multiple prescription medications. The risk of drug associated adverse events is high resulting in hospital admissions in some cases. The more commonly observed adverse effects include fall risks due to sedation and extrapyramidal side effects, hepatic toxicity and cardiac toxicity. Antipsychotics carry a black box warning from the FDA as caution towards long term use in management of BPSD. In addition, the use of psychotropic medications may cause sedation and psychomotor slowing which may mask the underlying unmet needs.

Person Centered Care (PCC) is the preferred model of care for

the PWD with BPSD. For PCC, it helps to understand the underlying cause(s) of the various behavioral symptoms and management strategy include active search for reversible causes of BPSD, such as pain. The behavioral symptoms may be triggered by an underlying discomfort, coupled with communication deficit. The behavioral symptoms may also be an expression of frustrations expressed by the PWD, for their unmet needs or their caregivers' actions towards them. The underlying unmet needs known to cause behavioral symptoms are listed in Table 2. A vulnerability to stressors and reduced abilities to cope with changes and stress are possible causes for behavioral symptoms [36].

In the author's hospital, the goal of care for the vulnerable elderly in patients with cognitive issues is to maximize their function and minimize the use of physical restraints. The best model of care for this group of patients is Person Centered Care (PCC). PCC involves getting to know the PWD in order to understand the situations from their perspectives. PCC focuses on non-pharmacological management for BPSD and the main focus is in creating and designing meaningful and enjoyable activities for the PWD. Environmental manipulations such as noise level sign posting and temperature control all of which aim to provide comfort and reduce disorientation.

PCC is known to work in nursing home settings and has been shown to be associated with better patient outcome, like improvement in mood, staff satisfaction and reduced antipsychotic use [37]. PCC is usually adopted as the preferred care model in long term care setting like nursing homes where the residents stay for long term and there are opportunities to observe and fine tune management strategies for best outcome. In an acute hospital setting, PCC is challenging for most of the staff since only a small percentage had training in mental health and PCC is time consuming and patient turnover is rapid with short stay. In the author's hospital, there is a dementia ward which is specially designed to care for the seniors with behavioral symptoms due to dementia, delirium or delirium superimposed on dementia. The author's team designed a form known as the patient's life story (biography) for information collection to facilitate planning for PCC.

The information collected include patient's preferred name, hobby, interests, special skills, previous occupations (favorite job, if there were multiple career switches), favorite food/drink, sleep time, shower time, religious affiliation. The information collected aids in meal choices, patients' usual bed and shower time helps the staff plan the patients' ADL to assemble their usual routine as the hospital routine is unlike their routine at home. The hobbies and occupations help the occupational therapists in creating meaningful activities for the patients. Serving the patients their favorite food and drinks improve their oral intake, especially among the senior PWD who eat poorly. The staff also provides assistance for the patients by flavoring their food with seasoning and spices before serving them their meals. Assistance is always available during mealtimes for the patients who need supervision and assistance while eating.

In order to minimize restraint usage, the author felt a need to educate the nursing staff on the basics of dementia and delirium. There is hospital wide training program, divided in a 3-tier system to train up all the nurses to understand and manage dementia, delirium and the associated behavioral symptoms among the elderly patients. Tier one is the basic course consists of introduction and clinical features of delirium and dementia, with an understanding of behavioral symptoms of dementia. Tier 2 is focused on training how to practice and formulate care plans for PCC, with more in-depth



knowledge on delirium and dementia. Tier 3 of the program is for delirium/dementia champions.

For the staff in the dementia ward, they were all mandated to go through first tier of training, with the seniors attending the tiers 2 and 3. The senior staffs are also tutors and advocates for PCC for the rest of the hospital. The staff in the dementia ward express stressful work environment when the ward is busy and the patients are difficult to look after, but their job satisfaction scores were high and the turnover of staff is no higher than the rest of the hospital.

## Outcome

The author's teams have trained about 2000 nurses since the program started. Knowledge acquisition among the nurses pre and post course have improved to 95% post course. The patients on physical restraints hospital wide have dropped by about 40% since the program started, together with hospital wide inpatient falls have also dropped by about 30% to 40%, especially the injurious falls.

In the dementia ward of 20 beds, the patient cohort consists of the agitated and aggressive patients >65 with delirium and/or dementia with behavioral symptoms which are not manageable in the general wards, and these patients would otherwise be restrained physically [38]. The dementia ward has a no restraint policy, unless it is absolutely necessary. Chemical restraints were also kept to the lowest, being prescribed to <30% of the total patients. There were no falls for a total of 440 days. The rate of physical restraint use was restricted to 15 patients over the period of a year. The dementia ward has the highest commendation rate among all the wards in the hospital. The care model adopted in the dementia ward is the PCC model, rather than the usual task orientated model hospital wide. The fall rate is lower than the rest of the hospital and the staff turnover is no higher than the rest of the hospital.

## Conclusion

Behavioral symptoms are challenging for the caregivers, and are often due to miscommunication between the PWD and their caregivers. In the acute hospital setting, delirium is difficult to diagnose and is often missed by the care team, unless it is actively being screened for. Managing the behavioral symptoms non-pharmacologically is the preferred strategy for the PWD as there is no standardized treatment guideline. However, it is time consuming and stressful taking care of a PWD with behavioral symptoms and often lead to frustration among the untrained caregivers. In a hospital setting, it is possible to practice PCC with improved patient outcome and staff satisfaction, with continuing education and support. The work environment taking care of patients with behavioral symptoms is stressful and often frightening, and in order for the PCC model to work, the organization need to provide continuous support and lifelong learning and sharing between each other each other in the team is essential.

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