

## Case Report: Resident in Late-Stage Dementia Exercising at a Fitness Center

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### *Background*

Mrs. Kendall (pseudonym) was an 83 years old White widow. She had eight years of education. She worked at the family-owned restaurant for decades and later on ran a sportswear company.

At the onset of the study, Mrs. Kendall lived in a low cognitive functioning unit (secured dementia unit) of an assisted living residence for four years.

During the study period, Mrs. Kendall was reported in her Service Plan to be in the early late-stage of her dementia (report date: 4.23.08). Mrs. Kendall did not have a cognitive test score because her low cognitive status did not allow the staff of the Psychiatry Department of the local Medical Center where she was diagnosed to evaluate her. Specifically, the following was noted in her evaluation from 6.13.2003 when she was diagnosed with dementia: “Unable to assess” and “Unable to understand what is being asked of her.”

Her clinical records indicate that she is “disoriented to day/month/season/year as well as unable to identify place.” In addition, early on in the study, her son reported, “She thinks this (i.e. the dementia unit’s dining room) is her restaurant.” He quoted her saying, “We were so busy today” or “These girls do not know what they are doing” or quoted saying to one of the CNAs, “You work so hard...let the other girls help you.”

Her son added, “She thinks that her mother is still alive.” Most of the time she thinks her son is her husband though occasionally she does recognize him.

Furthermore, the nature of the behavioral expressions in which Mrs. Kendall engaged while living on the dementia unit suggest that she was in the advanced stages of dementia. These include: serious hygiene problems (such as frequently touching her feces after using the toilet; smearing feces on the toilet, sink, and walls; washing her diaper with feces on it; picking up trash from garbage cans); flooding a public bathroom; collecting items excessively; misplacing items; engaging in aggressive behaviors with other residents (e.g. “verbally combative when her space is invaded”) and staff (“she will attempt to hit housekeeping staff when they try to take her laundry;” tried to stab staff and residents with a fork and a knife; “often resistive to care and changing clothes;” “verbally abusive at times...using swearing language”). Mrs. Kendall was also reported to become irritated if left alone too long.

A report in her medical record indicated that she suffered from PTSD and experienced hallucinations. Her son reported that she sees and hears things that are not there as well as being suspicious, accusative, and paranoid.

Moreover, one of the managers reported that two years prior to the study, while she was living at the assisted living residence, “she removed her teeth with her fingers.” The receptionist who knows her well reported that she did it when she was nervous.

### *Physical Health*

Mrs. Kendall's son reported about his mother at the onset of the study: "Physically she is fantastic." She did, however, have osteoporosis, osteoarthritis (causing her frequent pain), tinnitus, and deafness in her left ear.

### *Daily Function*

Mrs. Kendall needed regular assistance in personal care such as in taking showers and using the toilet. At times, she needed assistance with eating and frequently needed cueing while eating. In addition, she was reported by staff to be "at risk of falls due to disturbed gait and cognitive decline." Indeed, during the study she has fallen a few times. Beyond, these gate problems, she was able to walk independently on most days.

### *Meaningful Activities*

During the study, Mrs. Kendall enjoyed visiting with toddlers, pet-therapy, music-based activities, exercising in the Fitness Center, and simply spending time with certain staff members and the receptionist with whom she developed a close trusting relationship.

### ***Exercising at the Fitness Center***

The following observation excerpt describes an exercise session which took place on 12.20.07 at a Fitness Center of the assisted living residence (located outside the dementia unit). During the session, Mrs. Kendall participated for a total of 20 minutes (11:40am-12:00pm). She actively exercised for 15 minutes on five devices. The Fitness Center Instructor (FCI) reported that, "All the equipment here simulates what the residents do in their daily function."

The session was led by the FCI with the assistance of a Certified Nursing Assistant (CNA). No other person was present at the Fitness Center during the activity. I conducted the observation unobtrusively while standing by the center's entrance.

#### *Observation excerpt:*

Mrs. Kendall and the CNA enter the Fitness Center.

11:40 a.m. – The FCI is directing Mrs. Kendall to the 1st exercise device called the "Trieep Press." The intended motion on this device is pushing with both hands downward, simulating getting up from a chair.

Mrs. Kendall says in response: "I can't get in there."

CNA: "Push back...sit back...all the way back." Mrs. Kendall tries to get into the seat.

FCI: "Slide back."

When Mrs. Kendall sits as intended, the FCI tells her: "Just push 15 times."

A few seconds later the FCI says, "One." Mrs. Kendall starts to push.

FCI: “Two.” Mrs. Kendall pushes.

Mrs. Kendall to FCI: “I don’t want to break that thing.”

The FCI kneels, makes an eye contact with Mrs. Kendall, and tells her: “Go ahead...keep going.” [Focuses her on the task]. Mrs. Kendall continues to push down.

While pushing down, Mrs. Kendall says: “I have one of these things...my brother” and adds: “I am fine dear. How about you?”

Mrs. Kendall finished a set of 15 pushes and is now being directed to the 2nd device called “Leg Press.” This device is designed to strengthen the muscles of the legs for example for standing up from a chair.

The FCI directs Mrs. Kendall to sit on the device.

Mrs. Kendall: “There...ma ma mia...”

When the FCI explains what she’d like her to do on the device, Mrs. Kendall says [playfully]: “I am gonna pinch her.”

FCI: “I knew you’re gonna do that.”

When Mrs. Kendall is seated on the device, the FCI tells her: “Push [Mrs. Kendall’s first name].”

The CNA cues her: “With your foot.”

Mrs. Kendall pushes and says: “It’s a nice one” and then starts to sing: “La la la...” while pushing the exercise device’s plate with both legs.

The FCI tells me: “You may want to come on another day because this is really a good day. I am shocked right now.”

When Mrs. Kendall starts to talk about her mother, the FCI refocuses her: “Okay [Mrs. Kendall’s first name], push push” and few seconds later adds: “Push...you’ve got 8 more.” Mrs. Kendall pushes.

Mrs. Kendall: “That’s nice.”

Mrs. Kendall notices a mobile hanging outside the Fitness Center by the window and says: “Oh, that’s beautiful.”

After few seconds the FCI refocuses her: “Okay, come on.”

When the CNA walks with Mrs. Kendall to the 3rd device, Mrs. Kendall says: “I am glad that they took the place.” The FCI tells me and the CNA: “The other day was absolutely impossible.” The FCI was referring to a similar session she facilitated with Mrs. Kendall a couple of days ago.

The 3rd device is called the “Compound Row.” The device intends to strengthen the hands’

muscles that allow the person to pull different objects, for instance, from the refrigerator.

Mrs. Kendall sits on the seat and the FCI directs her to pull the two handles. Mrs. Kendall pulls the two handles but not at the same time.

The FCI cues her: "Same time...both hands...like you row the boat."

Mrs. Kendall pulls the two handles at the same time.

FCI: "Yes, row the boat." Mrs. Kendall pulls the handles but again not at the same time.

FCI: "No honey." The FCI illustrates how to pull the two handles at the same time.

Mrs. Kendall now pulls the handles together at the same time.

FCI: "That's it."

Mrs. Kendall: "You...my sweetie...my darling." Mrs. Kendall laughs.

FCI refocuses her: "Come on [Mrs. Kendall's first name]...come on honey...come on, pull."

CNA: "[Mrs. Kendall's first name], do it together."

Mrs. Kendall pulls the two handles at the same time.

Mrs. Kendall: "These are really strong" and starts to sing: "La la la la..."

The CNA cues her: "[Mrs. Kendall's first name], right here...together."

Mrs. Kendall pulls the two handles together.

Mrs. Kendall sits on the seat of the device facing the window through which trees covered with snow can be seen. Music is playing on the radio. Mrs. Kendall finishes working out on this device.

FCI: "That's your last one...over here." On her way to the 4th device, Mrs. Kendall says: "We're gonna go over here."

FCI: "Have a sit in the rocking chair." This device is called "Lower Back" and Mrs. Kendall now sits on it.

FCI: "Bring your feet up."

CNA: "Your feet up."

Mrs. Kendall: "Oh my God...this is a different thing."

Mrs. Kendall starts to push with her back backwards.

FCI asks her: “Can you count for me?” and then encourages her: “Come on [Mrs. Kendall’s first name], keep going.”

Mrs. Kendall does not push and says: “I took it from one of the boys.”

CNA refocuses her: “[Mrs. Kendall’s first name], push with the back.”

Mrs. Kendall: “This is a nice big [missed word].”

11:54 a.m. – Mrs. Kendall starts to push backwards with her back and sings: “La la la la la la la...” While she pushes backwards, she says: “We have pickles...pickles.”

Mrs. Kendall pushes backwards, looks at the CNA, and laughs...while the FCI is cueing her.

Mrs. Kendall tilts her body to her left and starts to look at a certain part of the device and seems somewhat concerned (as if that part is broken).

CNA refocuses her: “[Mrs. Kendall’s first name], come here” while making a gesture as if asking her to straighten herself up.

Mrs. Kendall immediately says: “Yes honey” and straightens herself up.

Mrs. Kendall is directed to go to the 5th device, which is called “Vertical Chest.”

On her way to the device Mrs. Kendall says: “So where do we go? Here?”

CNA: “Yeah.”

Mrs. Kendall: “Right here.”

CNA: “Yeah.”

FCI: “Slide back...bring your feet up.”

FCI and CNA: “Right here [Mrs. Kendall’s first name].”

FCI is giving Mrs. Kendall the device’s handles.

Mrs. Kendall: “Oh, I can’t do it this way.”

CNA [encourages her]: “Come on [Mrs. Kendall’s first name].”

CNA: “[Mrs. Kendall’s first name].”

Mrs. Kendall sings: “La la la la la...boom. Ta elie da boom boom.”

While Mrs. Kendall pushes, she says: “These are heavy. I haven’t seen ones like that.”

CNA refocuses and encourages: “Keep going [Mrs. Kendall’s first name].”

Mrs. Kendall: “My arms are tired.”

FCI: “They are supposed to.”

Mrs. Kendall: “Is that right?”

FCI: “Yeah.”

Mrs. Kendall: “I did too much this morning.”

FCI: “Alright...okay...we’re done hurting her.”

CNA: “Are you ready [Mrs. Kendall’s first name]?”

Mrs. Kendall: “Oh yeah.”

CNA: “Say bye bye.”

Mrs. Kendall stands about one meter from the FCI. She now makes a couple of steps towards the FCI, opens her arms wide, and says: “I’ll give you a little hug.”

FCI: “Oh.” Mrs. Kendall gives the FCI a hug.

Mrs. Kendall stands holding one hand in the other while the CNA speaks with the FCI.

12:00 p.m. – When Mrs. Kendall and the CNA leave the Fitness Center, Mrs. Kendall shakes the hand of the FCI and tells her: “Thank you. I enjoyed it.”

The CNA and Mrs. Kendall leave the Fitness Center. Mrs. Kendall seems content.

### ***Reflection***

The case report demonstrates that when the conditions for success are created, certain long-term care residents in late-stage dementia are able to participate meaningfully for significant periods in physical activities – in this case exercising at the Fitness Center.

The report is consistent with and adds to previous research showing that, with verbal cueing, physical prompting, demonstration, and encouragement, nursing home residents in late-stage dementia (i.e., Mini-Mental State Examination Score lower than 10) are capable of participating actively and meaningfully in various forms of therapeutic activities (such as pet therapy, reminiscing, music therapy, exercising, cooking, sensory experiences such as aromatherapy and massage therapy, and spiritual activities) (Kovach & Magliocco, 1998).

In accordance, the keys to the success of Mrs. Kendall’s activity at the Fitness Center appeared to be the personal attention provided to her throughout the activity. Specifically, the skilled and attentive guidance provided by the FCI combined with the presence and encouragement of the CNA who had a very close and trusting relationship with her for several years.

During the session Mrs. Kendall fully cooperated with the FCI and the CNA and followed their instructions. When she did not do what she was instructed to do, the FCI and the CNA patiently, gently, and compassionately guided, demonstrated, cued, and encouraged her. When Mrs. Kendall occasionally became distracted, the FCI and CNA quickly and gently refocused her to the task and enabled her to get back on track.

Review of Mrs. Kendall's life history revealed that she always liked to exercise so the activity seemed to be a good fit with her lifelong interests and current preferences. As reported by her son: "My mom went for two years to an exercise class at the Fitness Center...twice a week...She loves to compete. When she sees someone doing 20 pounds she will do 30..."

In addition, the quiet conditions at the Fitness Center and the soft and soothing music played in the background reduced distractions to minimum and provided Mrs. Kendall with what seemed to be optimum level of tolerable stimulation.

Mrs. Kendall verbal and non-verbal expressions throughout the activity showed that she enjoyed it. This was demonstrated in her general positive affect, comments, singing, and laughter as well as her verbal appreciation and hug she initiated giving the FCI at the end of the session.

The regular participation of Mrs. Kendall in this activity could have potentially improved her physical strength, gait, daily function, and health. A review of the literature by Penrose (2005) examined the effects of exercise on persons with dementia and identified the following benefits: decrease in restlessness, improved sleep and physical status. By contrast, only minimal changes in cognitive function were reported following exercise interventions.

Reflecting back on these exercise sessions at the Fitness Center, Mrs. Kendall's son reported, "The exercise improved her strength...you can see it in her walking and when she gets out of the car she can do it by herself..."

Could a coordinated and adequately reimbursed public health initiative with the aim of engaging people in late-stage dementia in various forms of personally adapted and dementia-friendly physical activities be implemented to improve their health, physical function, and well-being?

## References

Kovach, C.R. & Magliocco, J.S. (1998). Late-stage dementia and participation in therapeutic activities. *Applied Nursing Research*, 11(4), 167-173.

Penrose, F. (2005). Can exercise affect cognitive functioning in Alzheimer's disease? A review of the literature. *Activities, Adaptation, & Aging*, 29(4), 15-40.

Note: The case report is based on Dr. Eilon Caspi's doctoral dissertation study (citation below) in two dementia units of an assisted living residence in Massachusetts. The study, which received UMass Boston's IRB approval, was conducted between August 2007 and May 2008.

Caspi E. (2010). Preventing agitated behaviors and encouraging positive emotions among elders with memory-loss in an assisted living residence (Unpublished doctoral dissertation).