

**Subjective vs Objective Assessment
of Mealtime Difficulties
in Persons With Dementia
in the Acute Care Hospital**



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Mealtime Difficulty Defined

Any mealtime barrier in the preparation of the served meal (e.g., opening containers, cutting food), in the feeding by a caregiver, or in the mechanics of eating (e.g., denture fit, willingness to chew/swallow) (Aselage & Amella, 2010).

Background

- Frailty of hospitalized elderly increases their vulnerability to undernutrition and cascading deterioration of other body systems (Boltz, 2010).
- 25% under nutrition at admission (Halfens et al, 2013). Upon discharge 49-82% of inpatients are undernourished (Hersink, et al, 2010).
- Maintaining nutrition in persons with dementia (PWDs) is challenging due to mealtime difficulties (MTDs) (Aselage & Amella, 2013).

MTD research has been conducted in LTC settings and may not be generalizable to the acute care setting. Therefore it is necessary to explore MTD specific to the acute care setting.

Study Significance

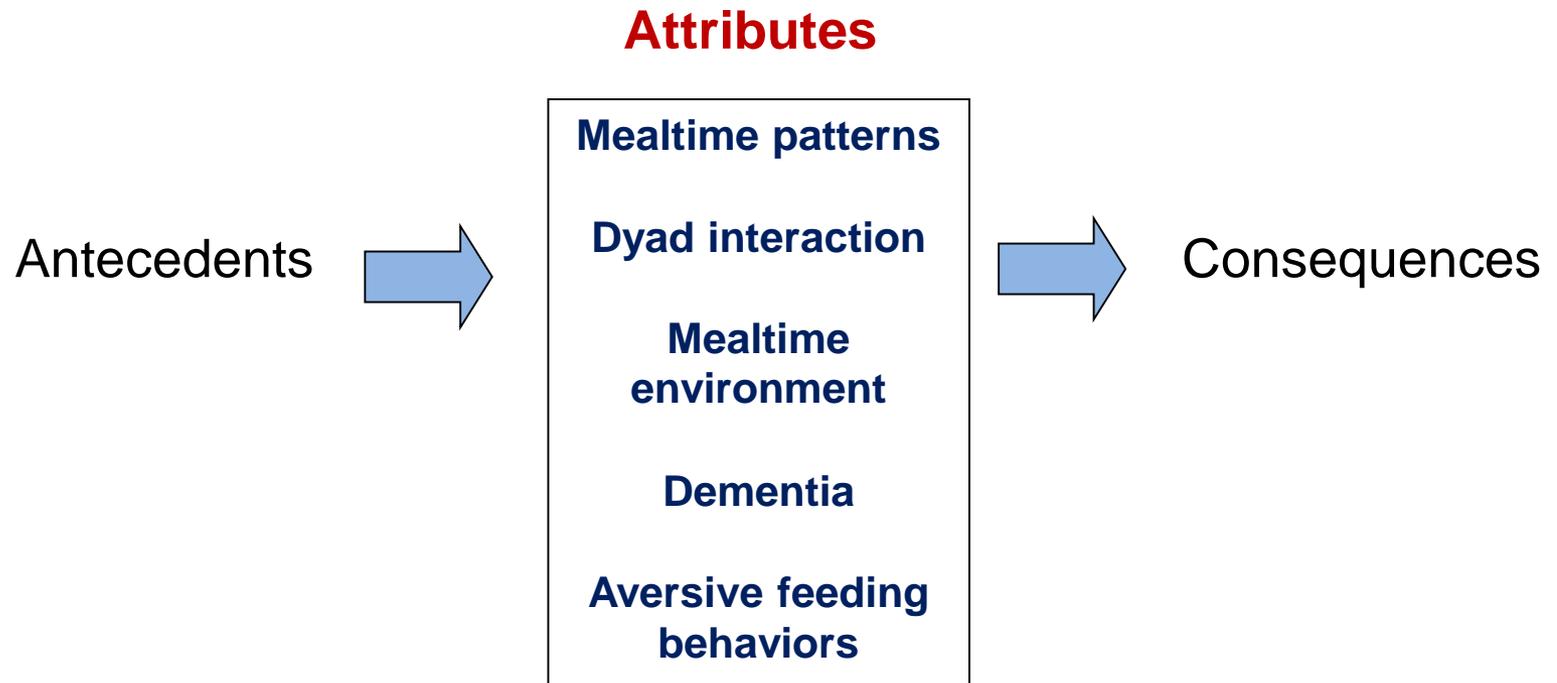
Hospitalized, PWD with mealtime difficulties

- **Contributes to hospital-acquired complications** (Westegren, et al, 2008).
- **Indicator of poor communication across care continuum** (Xia & McCutcheon, 2005).
- **High risk for hospital readmit or mortality** (Westegren, et al, 2008).
- **Complications & readmits increase healthcare expenses in the U.S.** (CMS, 2010).

Conceptual Model

Adaptation of Model for Mealtime Difficulties in Dementia

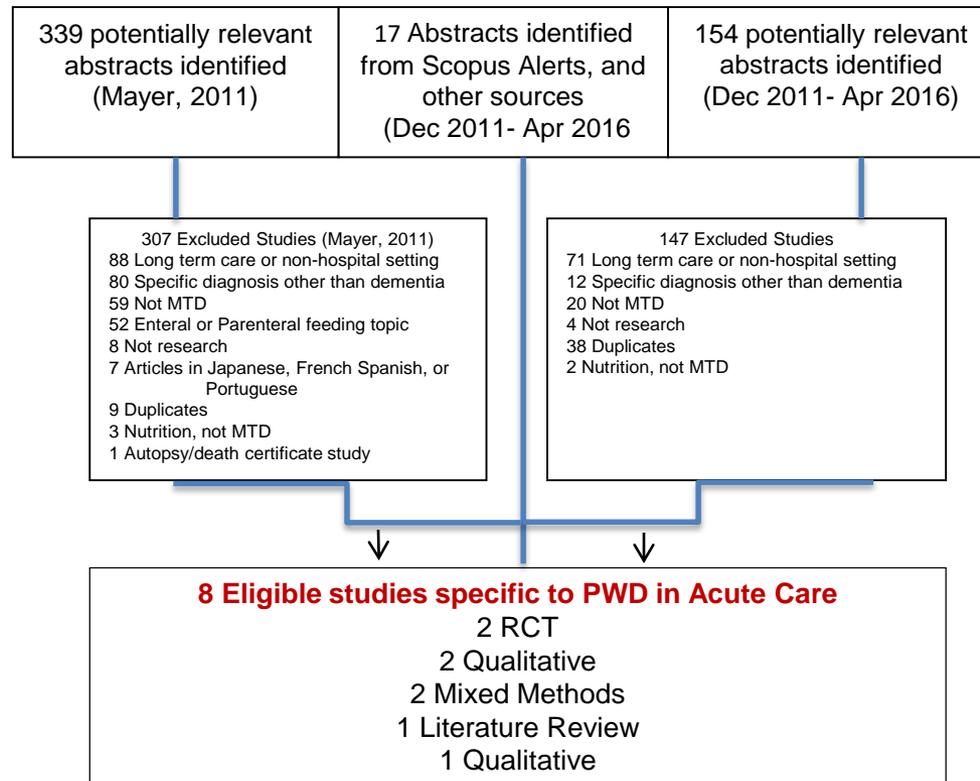
(Aselage & Amella, 2010)



Attributes guided investigation for literature review and study variables.

Integrative Literature Review

Purpose: A focused review of the literature to identify research studies on the attributes of mealtime difficulties specific to acute care and synthesize the evidence of mealtime care for PWD in inpatient environment.



Keywords: dementia, eat*, meal* with various combinations of Boolean Logic with English language, research, inpatient, aged 65 or older.

Discussion of Integrative Review

- Structured meal schedules contribute to missed meals
- Providing more food in quantity or frequency may not be solution
- Effectiveness of offering small snacks unknown
- Serving method- sips from beaker more effective than from straws
- Nurses report failure to feed patients
- Nurses observed in other care functions during mealtimes
- Volunteer programs have not demonstrated sustained improvements
- Efforts to improve environment or dedicated units for elderly have yet to accomplish improved nutrition
- Lack of fidelity in interview techniques

Conclusion of Integrative Review

The dearth of studies specific to MTD in inpatient settings presents opportunity to study nursing processes, hospital systems, care delivery models, and nutrition monitoring in an effort to reduce hospital-acquired undernutrition in a vulnerable elderly population.

Purpose

To determine if mealtime difficulties in hospitalized PWD are being adequately recognized by nurses and if higher cognitive functioning in PWD is an influencing factor in under-recognition of mealtime difficulties.

Pilot Study

Problems Encountered and Alternative Strategies:

- Re-education of research staff in RN recruitment without coercion.
- A barrier to patient subject recruitment prompted **re-education of all RN subjects that referrals needed to be all patients with a diagnosis of dementia**, with or without mealtime difficulties.
- A second barrier was **a lack of availability of the HPOA/decision-maker** to review written consents. IRB recommendation for a condensed telephone script of the consent.

Assessment of Mealtime Difficulties in Persons With Dementia Research Study

Study Aims

- 1) identify the level of agreement between RN subjective and objective assessment with the Feeding Abilities Assessment (FAA) and the Edinburgh Feeding Evaluation in Dementia Scale (EdFED) of mealtime difficulties during inpatient assessment
- 2) determine if there is an agreement between the two objective tools
- 3) determine if RN subjective identification of mealtime difficulties differs among the Mini Mental State Exam (MMSE-2) categorical levels of cognition (normal, moderate, or severe) in PWD.

Mealtime Difficulties Study

Design: This was an exploratory study

Outcome variables of interest were:

- (1) the determination of presence/absence of MTD between subjective and objective assessment
- (2) the determination of presence/absence of MTD by each the FAA and EdFED tools
- (3) the level of cognitive impairment (normal cognition, mild/moderate, severe impairment)

Fidelity

- A research **operation/training manual adequately described** the research team qualifications, training protocols, scripting, competency testing, monitoring activities, communication options for issues/concerns/questions, and follow-up monitoring. Available to research team members. **Reinforce need to keep PI name anonymous** during the RN education, recruitment, and consenting was indicated.
- **All research staff completed the CITI Basic IRB training** and modules on informed consent. Researcher training completed in one session. **Research staff blinded to the assessment result comparison** (subjective vs objective) until data analysis after close of study recruitment.
- **Researchers and RN subjects from the medical/surgical units were blinded to the others' assessment methods.** RN subjects not present during objective assessments to minimize contamination between conditions

Sample, Setting & Recruitment

RN subjects

40 volunteers recruited from medical/surgical units of 2 mid-western hospitals, one a major medical center and the other a community hospital in a suburban setting. Recruited by posted opportunity with session times for research info. One-on-one education sessions upon RN request.

Patient subjects

Convenience sample of 50 patients referred to the research team by RN subjects or CNLs.

Inclusion Criteria

RN subjects

- staff hired specifically to the studied medical/surgical units

Patient subjects

- convenience sample of male and female patients
- admitted for inpatient medical/surgical care
- prior diagnosis of dementia or newly diagnosed with any type or stage of dementia by any physician on the patient problem list or history and physical (H&P) in the electronic medical record
- able to ingest food orally

Exclusion Criteria

RN Subjects

- Float team or agency RNs since they would not have attended the informational sessions for components of the informed consent process

Patient Subjects

- Presence of NPO status, dysphagia, or parenteral nutrition during the patient inpatient hospital stay
- Presence of any physical impairment that would preclude self-feeding (e.g., upper-extremity paralysis, fracture, or amputation)
- Patients transferred from other care units, such as from an intensive care unit
- Non-English speaking subjects
- Patients without a diagnosis of dementia

Measures

Feeding Abilities Assessment (FAA) (LeClerc et al., 2004)

- Any 'no' score is indicative of MTD.
- Internal consistency with Cronbach's alpha=0.99, Inter-rater reliability 95% over total FAA, Kappa coefficient = .87 and intra-rater reliability $r=.92$, Construct validity, $p<.01$

Edinburgh Feeding Evaluation in Dementia (Ed-FED) (Watson, MacDonald, & McReady, 2001)

- Any score of 1 or more is indicative of MTD.
- Internal consistency with Cronbach's alpha=.865, Inter-rater reliability Pearson's correlation coefficient $r= .59$, and intra-rater reliability $r=.95$, Construct validity, $p<0.05$

Mini Mental State Exam (MMSE-2) (Folstein et al., 1975)

- Normal cognition ≥ 24 , mild/moderate = 18-23, severe impairment = 0-17

RN Demographic Characteristics

n=50

RN Subject Characteristics		
Age (n=50) (in years)	20-29	66%
	30-39	16%
	40 or greater	18%
Experience (n=50) (in years)	0-4	82%
	5-9	6%
	10-14	0%
	15 or greater	12%
Education level (n=50)	Associate Degree	4%
	Diploma	2%
	BSN	82%
	MSN	12%
Certification (n=50)	No	68%
	Yes	32%

Patient Demographic Characteristics (n=50)

Patient Subject Characteristics		
Gender	Male	46%
	Female	54%
Age (in years)	50-59	4%
	60-69	4%
	70-79	24%
	80-89	40%
	90-99	28%
Race	Caucasian	42%
	African American	50%
	Hispanic	4%
	Asian	4%
Patient Mini Mental State Exam (MMSE) Score (Normal 0-17, Moderate 18-23, Severe ≥24)	Normal	14%
	Moderate	14%
	Severe	72%
Setting prior to Admit	Home alone	22%
	Home with others	40%
	Assisted living	4%
	Long Term Care	34%

Data Analysis

Aim 1: Compare subjective versus objective nursing assessment of mealtime difficulties in hospitalized persons with dementia.

RN to FAA

- Moderate RN agreement with FAA ($\tau= 0.59$, $p= 0.0001$)

RN to EdFED

- Low-Moderate RN agreement with EdFED ($\tau=0.35$, $p=.002$)
- Clinically significant with 9.3% of failed RN assessment of mealtime difficulties resulting in FTT within 30 days of discharge.

Data Analysis

Aim 2: Determine if there is an agreement between the FAA, tested as interrater reliable for the inpatient setting and the Edinburg Feeding Evaluation in Dementia Scale (EdFED) tested only in long term care settings.

Moderate to Good Agreement of FAA with EdFED ($\tau=0.64$, $p=0.000$). .
However, the **remaining 20% were FAA failures to detect mealtime difficulties.**

Therefore, EdFED is the most precise mode of detecting mealtime difficulty.

Data Analysis

Aim 3: Determine if there is a difference of Mini Mental State Exam (MMSE-2) measured categorical level of cognition, normal, moderate, or severe, of the person with dementia and the subjective identification of mealtime difficulties.

- **No significant differences** in the RN Subjective MTD assessment were detected **among the 3 levels of cognition**, normal, moderate, or severe ($p=0.9$).

Discussion of Findings

When FAA negative- patient subjects were very willing to demonstrate their ability to feed themselves as instructed, yet...

Yet, EdFED positive- recognized MTD attributes of hiding of food or unwillingness to eat due to lack of appetite or taste bud changes.

Discussion of Findings

30-day Readmissions- 3 patient subjects referred a second time for the study when readmitted within 30 days **for PEG tube placement** prescribed for unwillingness to eat related to lack of appetite.

Mealtime difficulty

- **not recognized by RNs.**
- recognized utilizing the EdFED.

Limitations

- It is unknown if nursing staff would have stayed with the pt and then recognized the mealtime difficulty.
- Sampling from medical/surgical units of two hospitals may not reflect the clinical realities in the nursing professional community. However, we believe the investigation may have implications for clinical practice, as well as potential to modify assessment modalities.
- Some contamination of data through learning-- 12 RNs had more than one referral and improved recognition was evident in their 2nd referrals.

Conclusion

Hospitals should consider implementing the EdFED tool in assessment of PWD.

Geriatric integration in the curriculum is inadequate in teaching RN students about dementia regardless of education level.

Acknowledgements

Committee Members

Dr. Joyce Keithley, DNSc, RN, FAAN: Chairperson

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