

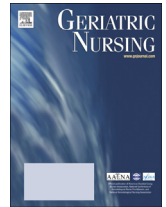


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## Feature Article

## Feasibility of a web-based dementia feeding skills training program for nursing home staff



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## ABSTRACT

Nursing home (NH) staff do not receive adequate training for providing feeding assistance to residents with dementia who exhibit aversive feeding behaviors (e.g., clamping mouth shut). The result is often low meal intake for these residents. This feasibility study tested a web-based dementia feeding skills program for staff in two United States NHs. Randomly assigned, the intervention staff received web-based dementia feeding skills training with coaching. Both groups participated in web-based pre-/post-tests assessing staff knowledge and self-efficacy; and meal observations measured NH staff and resident feeding behaviors, time for meal assistance, and meal intake. Aversive feeding behaviors increased in both groups of residents; however, the intervention NH staff increased the amount of time spent providing assistance and meal intake doubled. In the control group, less time was spent providing assistance and meal intake decreased. This study suggests that training staff to use current clinical practice guidelines improves meal intake.

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## Introduction

By the year 2050, the number of persons in the United States (US) aged 65 and older who have dementia is expected to nearly triple, from 5 million to over 13 million.<sup>1</sup> As the disease progresses, persons with dementia become increasingly dependent on caregivers, and often require nursing home (NH) care. In US NHs, 64% of

residents have Alzheimer's disease or some other form of dementia.<sup>1</sup> A cornerstone of basic nursing care is providing nutritional support,<sup>2,3</sup> and many residents with dementia are reliant on NH staff to provide assistance in meeting their basic nutritional needs. Mealtimes involve complex processes that encompass environmental, cultural, and social factors and are the most time-intensive of the activities of daily living.<sup>4</sup> Meals offer the greatest opportunity for socialization; however, meals are often viewed as simply a task to be completed by NH staff.<sup>4–7</sup> This has major clinical implications for resident outcomes related to weight loss. In the US during the year December 2013 to September 2014, the rate of “long-stay residents who lose too much weight” was 7.1% – a rate higher than falls (3.2%), and pressure ulcers (6.0%).<sup>8</sup> Malnutrition in the NH remains a major public health problem, yet over the past 30 years, research related to mealtime difficulties has been primarily correlational or descriptive<sup>9</sup>; research designs inadequate to alleviate this problem. Only one dementia feeding skills training program has been published, and was implemented in Taiwan.<sup>10,11</sup>

In the moderate to late-stages of dementia, residents may exhibit aversive feeding behaviors (e.g., turning head away, clamping mouth shut) that make managing mealtimes difficult for NH staff.<sup>12,13</sup> When these difficult feeding behaviors arise, NH staff tend to rely on past clinical experiences coupled with personal beliefs,

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rather than problem-solving based on current clinical practice guidelines.<sup>4,5,13–15</sup> For example, NH staff may misinterpret difficult feeding behaviors as “resistant” and cease feeding attempts. The consequences of this type of response for residents include weight loss, malnutrition, dehydration, and/or feeding tube placement.<sup>16,17</sup>

NH staff are often not aware that hand feeding is the current recommendation over tube feeding.<sup>13,18,19</sup> It is also not widely known that there are three hand feeding techniques: direct, hand under hand, and hand over hand feeding. The distinctions between the three hand feeding techniques have been published elsewhere.<sup>20</sup> To this author’s knowledge, only one hand feeding technique has ever been used in a scientific study, hand over hand, but the technique itself was not the focus of the study.<sup>13,20–22</sup> Direct hand feeding is widely recognized as an acceptable and effective strategy for providing feeding assistance to residents with dementia. For an activity that impacts the quality of life for so many NH residents, no evidence exists on how or when to use any hand feeding technique at any stage of the illness.

Currently, NH in-service training varies widely and is not necessarily evidence-based.<sup>23,24</sup> All NH staff must meet continuing education requirements annually; but the quality and focus of the content are not regulated. Barriers to evidence-based training include lack of staff development coordinator training, lack of access to evidence-based literature, and limited resources.<sup>24</sup> Many NHs are gaining internet access for NH staff, historically used only for Minimum Data Set (MDS) completion, and web-based training is increasing in popularity.<sup>25,26</sup> Thus, web-based training on dementia feeding skills could be convenient for NH staff by allowing controlled time away from patient care and learning at an individual pace.<sup>27</sup>

This feasibility study tested a web-based version of a dementia feeding skills educational intervention, and examined the efficacy of the approach. The educational intervention (initially developed for home caregivers of persons with dementia),<sup>28</sup> was revised into a web-based platform, and tested as part of a larger study (the Feeding Intervention In Elderly Late-stage Dementia), referred to as the FIELD Trial training.<sup>29</sup> In addition to feasibility questions, we proposed that (1) NH staff who received this dementia feeding skills training would demonstrate greater increase in knowledge and self-efficacy for providing feeding assistance, and spend more time providing feeding assistance than control group staff, and (2) intervention group residents would show greater increases in meal intake and decreases in aversive feeding behaviors than control group residents.<sup>29,30</sup>

## Methods

### Design

Two southeastern US NHs were invited to participate in the study based on similarities in number of beds, corporate status (for profit), and similar rates of weight loss for long-stay residents per the NH Compare website.<sup>8</sup> The NHs were randomly assigned to intervention or control by flip of a coin by a remote statistician. NH staff and residents were recruited into the study. Intervention NH staff received the web-based FIELD training and group coaching sessions, and control NH staff continued to deliver routine care. Meal observations were conducted in both NHs for two consecutive days during lunchtime at baseline, and weeks 2 and 8 following the FIELD training ( $N = 6$  total meals). Six trained research assistants, blind to study outcomes, collected meal observation data (3 per NH).

The study was approved by the Institutional Review Boards (IRB) of Investigator’s university. Federal Wide Assurances were obtained to designate the “IRB of Record” for participating NHs. The

informed consent and on-going assent procedures published as the “Partnership of Consent” were followed at every data collection point.<sup>31,32</sup>

### Participants

Residents were eligible for the study if they: were over the age of 65, had been residents in the participating NH for the previous 6 weeks, had a legally authorized representative to sign informed consent, had a medical diagnosis of dementia in their medical record, required some level of feeding assistance, were dependent for activities of daily living, and had a Mini Mental State Examination (MMSE) score of 19/30 or lower. Residents were excluded if they had a diagnosis of a neurodegenerative disorder (e.g., Parkinson’s, human immunodeficiency virus, amyotrophic lateral sclerosis) or cancer, had a swallowing disorder requiring active Speech-Language Pathology, or had an Advance Directive indicating desire for feeding tube placement.

NH staff were eligible to participate in the study if they currently worked the 7 a.m. to 3 p.m. shift when lunch was served and had been employed in the NH for the previous 30 days. NH staff were excluded if they were not able to read English.

### The intervention

The web-based training module provided evidence-based information on mealtime difficulties using a three-pronged problem solving approach: change the person (with dementia), change the people (NH staff approach), or change the place (environment).<sup>33</sup> The training was expanded from a previously developed and tested home caregiver dementia feeding skills training program to incorporate clinical practice guidelines for formal caregivers.<sup>28,29,34</sup> Aversive feeding behaviors were framed as “unmet needs” through the Need-Driven Dementia-Compromised Behavior Model.<sup>35</sup> The training provided examples of common mealtime problems and discussed appropriate use of evidence-based nursing interventions.<sup>34</sup> Additional content was provided on the three different hand feeding techniques, but no guidance was provided as to when to use each one; as no evidence exists to date. The training contained a 30-min narrated PowerPoint presentation, followed by a 4-min video demonstrating implementation of the problem-solving approach. NH staff were offered in-person group coaching sessions during the lunch meal that followed the training at Weeks 3 and 5. The coaching sessions were to provide support for practicing use of the hand under hand technique, and to answer questions regarding individual resident challenges NH staff faced.

### Measures and instruments

#### Feasibility outcomes

Feasibility outcomes were grouped into five areas: (1) NH staff and resident identification and recruitment processes, (2) data collection tools, (3) quality and fidelity of intervention delivery, (4) current status and change in NH staff knowledge and attitudes, and (5) intervention impact trends on resident outcomes (see [Table 1](#)). Outcomes for NH staff included dementia feeding skills knowledge and self-efficacy, feeding skills behaviors, and time spent providing assistance. Outcomes for residents included aversive feeding behaviors and meal intake.

#### Web-based measures and instruments

Staff knowledge was tested by the *NH Staff Knowledge of Feeding Assistance*, a 10-item measure that includes 8 multiple choice questions, and 2 true/false questions.<sup>28</sup> The 10 questions cover content related to basic understanding of dementia, signs of

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