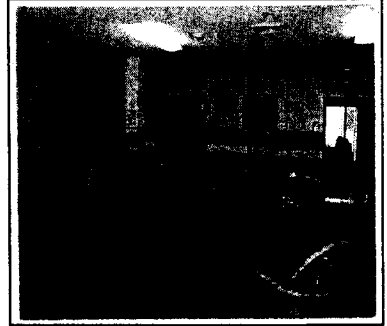


Background and Significance



IMPROVING DINING FOR PEOPLE WITH DEMENTIA

Introduction

Meals are much more than an opportunity to consume necessary calories and nutrients. They are social experiences that can be pleasant or unpleasant. Inviting friends and family to share a special meal is central to social occasions. Holiday events are often organized around a main meal of the day. However, the long term care literature describes most nursing home dining rooms as noisy places where residents are seated long before meals are served, with companions chosen for comparable level of dependence rather than social compatibility (Griffin, 1995). It is argued that modifying the dining environment and making mealtime a pleasurable experience can enhance the quality of life of nursing home residents. The environment can change the dining experience supporting the rehabilitation process and contributing to overall nutrition (Hiatt, 1981). There are clearly situations in which residents do not perform to their full potential because the environment is not supportive. The environment should ultimately help to compensate for impairments and be easily modifiable to compensate for future impairments as residents' needs change.

For example, as a person ages one experiences alterations in the eye such as a thickening and yellowing of the lens, a decrease in pupil size, a decrease in pupil reaction time, and a loss in elasticity of the lens that make it more difficult to negotiate the environment (Baucom, 1996; Pentecost, 1984). As the surface of the eye lens thickens, the amount of light the eye receives is reduced. This thickening also increases glare, as the light is diffused as it passes through the lens (Baucom, 1996). Glare from windows is a common problem and can be blinding to residents, especially those with existing vision deficits. This glare can make it difficult for the residents to see the food in front of them, as the eyes of an older adult are more sensitive to glare than a younger person's eyes (Baucom, 1996). Simple actions such as drawing blinds or angling a table so that no one faces the light can be helpful. Indirect dining room lighting, rather than direct recessed down light luminaries are an easy solution to avoiding glare (IESNA, 1998). Tablecloths can also be helpful to reduce glare caused by light hitting a shiny table surface, as well as orient to mealtime versus another activity.

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Aging eyes receive less light spectrum wavelengths for color, which affects how color is perceived. Therefore, Baucom (1996) recommends that color selection focus on color clarity as defined by brightness and environmental contrast. In addition, people with Alzheimer's disease have difficulty judging colors and contrast, depth perception, and spatial orientation (Zgola, 1999; Calkins & Chafetz, 1996). Research has demonstrated that people with Alzheimer's disease are able to read more quickly and easily when contrast is increased (Koss & Gilmore, 1998), and that lighting has a significant role in the character of the visual environment (Calkins & Chafetz, 1996). Dim lighting is equally difficult for residents, as all food items may appear to blend together, making it difficult to identify or put food onto utensils.

Lighting has a significant role in the character of the visual environment.

Physical and social environmental characteristics contribute to making mealtime one of the most challenging activities for the institutionalized elderly (Hiatt, 1981; Griffin, 1995). The number of residents in the dining room, level of assistance available, noise, odors, colors and contrasts of table setting, height, shape, and configuration of tables can challenge an individual's level of functioning (Perez et al. in press; Hiatt, 1981). For example, for people with impaired cognition and attention who are easily affected by auditory and visual distractions, the frequency and volume of stimulation in the dining room is critical to their functioning. It is much more difficult for them to concentrate on a task if there is background noise or movement. Therefore being in a dining room with 30 or 40 other individuals (common number of people in dining areas) may be overwhelming. In addition, staff has an impact on residents' intake, as evidenced by research that has found that eating improves in the elderly when staff provides directed verbal prompts and positive reinforcement (Coyne and Hokins, 1997).

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Characteristics of a pleasant dining environment include proper ventilation (Brooks, 1994), small, sturdy tables of the proper height (Brook, 1994; Beck, 1981), appropriate lighting that prevents glare, avoids shadows, and balances ambient light (Rutledge, 1987; Beck, 1981; Griffin, 1995), and tranquility (Griffin, 1995). The Illuminating Engineering Society of North America recommends light intensity levels of 50 Fc for a senior dining room. Rogers

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and Snow (1982) examining the eating behaviors of the institutionalized elderly, noted that dining environments that were crowded, noisy, poorly lit, containing unpleasant odors, and in which residents were seated with nothing to do one hour before the meal did not support good eating habits.

A study by Steele et al. (1997) recorded the presence of mealtime difficulties in 349 nursing home residents. The researchers found that 87% of the residents had difficulties that included chewing and swallowing problems, poor oral intake, positioning problems, or challenging behaviors. Further, sixty-eight percent of the residents presented with difficulty swallowing, which compromises one's ability to enjoy the meal experience and consume the necessary calories for nutrition. Clearly, there are significant issues for a large percentage of residents, and food intake is critical to health and quality of life.

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Although researchers and health care professionals frequently point out that dining environment contributes to food intake (Griffin, 1995; Hotlaing, 1990; Beck, 1981; Brooks, 1994) there is little research demonstrating that changes in the environment will directly and positively affect intake, behaviors, or independence during meals. A program called "Caring Hands" was instituted at a nursing facility in Connecticut to ensure food intake and weight gain (Griffin, 1995). Staff were trained about the stages of dementia, communication skills, modification of the dining environment, development of a dysphagia team, and pureed food formation. Griffin reported several favorable outcomes such as reduction of behavior problems and increased independence. Griffin (1995) noted that some caregivers might interpret an increase in challenging behaviors during meals as a disinterest in food, when in fact the resident may resume eating if excess environmental noise is reduced. Denney (1997) found that playing music described as peaceful, quiet, and relaxing during meals can reduce agitation and aggressive behaviors. "Facilitating a quieter, more harmonious mealtime environment may have unexplored nutritional benefits" (Denney, 1997).

A recent study by Koss and Gilmore (1998) evaluated 13 resident's food consumption during the evening meal before and after improving the table setting lighting and

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visual contrast. Based on a scale from 1 to 10 (0 indicated nothing was eaten and 10 indicated everything was eaten), intake was measured by the nursing staff, and only residents who ate independently were considered in the study analysis. The number of agitated behaviors that occurred in the day, evening, and night was also reported by nursing staff. The researchers found that by moving the tables directly under existing ceiling fixtures and providing table settings with maximum visual contrast during dinner, residents with dementia ate more and fewer displayed negative behaviors than during baseline. These encouraging results indicate that simple environmental interventions can indeed have a positive impact on mealtime experiences and oral intake of persons living in long term care settings.

Building on the research by Koss and Gilmore, the purpose of this pilot study was to examine the impact of improved lighting and table setting contrast on residents' oral intake, communicative interaction, ability to feed themselves, and behaviors during meals in both assisted living and nursing home environments serving people with dementia. This study applied the intervention to all three meals, rather than just dinner, followed a strict calorie counting procedure as established by a clinical dietitian, and used screening instruments developed for use in long term care. It was our goal to identify aspects of the environment that are both easy to modify and that may facilitate increased mealtime caloric intake.

Improving the amount of food residents consume has not only obvious health benefits, but financial benefits as well. Residents who are able to receive their needed nutrients during meals are less likely to require costly nutritional drink supplements. Nutritional drinks are provided for residents who do not meet their daily required nutrition through intake during meals, or to those who require additional nutrients for medical reasons. It is not uncommon for nursing homes to provide supplements to one quarter to one third of their residents. When choosing long term care facilities for this study, each facility stated that supplement costs were a significant part of the dietary budget, an expense they would like to curtail.

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