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The impact of nutritional status on the health and quality of life of older adults

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The impact of nutritional status on the health and quality of life of older adults

Disciplines

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The impact of nutritional status on the health and quality of life of older adults

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CLINICAL SCENARIO:

Adequate nutrition has been shown to be a cornerstone of health and wellness. As people grow older, disease, injury, cognition, pain, fatigue and environment act together to limit their ability to access, prepare and ingest adequate nutrition. As the percentage of older adults in society continues to increase this is becoming an issue that impacts all levels of society. This study looks at how environment and organizational processes in a variety of long-term-care mealtime settings affects the resident's nutritional status and quality of life. Occupational therapists (OT) have expertise in observation and analysis of environments, activities, biomechanics and psychosocial issues. It is important for OTs to be educated about the importance of nutrition in the health of older adults, and to use their skills to help older clients engage in healthful eating habits and improve access to adequate nutrition.

<h3>FOCUSSED CLINICAL QUESTION:</h3>

<p>What is the impact of nutritional status on the health and quality of life of older adults?</p>
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<h3>SUMMARY of Search, 'Best Evidence' appraised, and Key Findings:</h3>
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<p>The writer created five critically appraised papers (CAP) using peer reviewed articles related to the clinical question.</p>

<p>These articles were selected from a group of twenty-seven articles retrieved from three databases, one online journal publication and multiple Pacific University Library and Internet searches.</p>

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| <ul style="list-style-type: none"> • A qualitative, ethnographic study conducted by Sydner and Fjellstrom (2005) concluded that the mealtime setting, food preparation and food selection of older adults are not individually chosen according to the person's needs or preferences. Instead it is a product of the person's living environment and the social and political structure surrounding them. They presented evidence that older adults are not permitted to be active consumers, but are made to be passive recipients in regards to food selection, presentation, timing and setting of meals when in a public or long term residential setting. • A quasi experimental, single case design study was performed by Wikby, Ek and Christensson (2009). In-group study results indicated that staff education about geriatric nutritional needs and providing personalized nutritional care reduced the number of residents in the experimental group who showed protein energy malnourishment (PEM). Residents in the experimental group also showed improved motor and cognitive function. These changes were not seen in the control group receiving "usual care" from nursing staff at meal times. There were no statistical differences according to biochemical or anthropomorphic measures between the two groups. The authors concluded that the intervention of educating nursing staff about nutritional needs of elderly had a positive effect on residents. However, a more thorough study needs to be done, with improved compliance to the study protocol by participating nursing staff. • A cross-sectional study performed by Dong, Simon, and Evans (2009) analyzed factors related to health, psychosocial and socio-demographic characteristics compared with reported elder self-neglect. The researchers emphasized the importance of multidisciplinary efforts between medical disciplines and social service agencies that address the impacts of |
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social networks and social engagement on elderly persons. Environment, behavior, roles and routines influence an elder's level of self-care or self-neglect. Self-neglect results from a combination of circumstances and conditions; many of which contribute to nutritional deficits that affect physical health, cognition, depressive symptoms and overall quality of life.

- A population-based multi-disciplinary cross-sectional study was performed by Scott et al. (2006). The authors believe that understanding the links between nutrition and cognition will allow the development of new therapies and supplementation standards specific to the geriatric population. If further studies find that B vitamins improve cognitive function, use of dietary supplements and interventions might increase quality of life for older adults and reduce the public health care costs related to dementia. The alternative possibility is that no such connection will be found. Such knowledge would also be important and allow redirection of research resources elsewhere.
- Simmons and Schnelle (2006) completed a descriptive, single case design study. Data showed that the staff time required to assist nursing home residents with meals was longer than the times specified by the Resource Utilization Groups version III (RUGS III) reimbursement estimate. RUGS III specifies that more physically dependent individuals require more staff time for assistance. The authors concluded that regardless of the resident's individual level of need, a similar amount of time (30-40 minutes) is required for sufficient oral food and liquid to be ingested. The authors also observed that the time needed to adequately assist residents at meals was significantly more than is currently allotted in most long term care facilities. Finally, the authors reported that "usual care" standards in most facilities do not meet the regulatory standards and best practice guidelines; and that each resident should be individually assessed upon admission to determine appropriate feeding assistance care needs.

CLINICAL BOTTOM LINE:

Many factors are correlated with the older adults' ability to remain nutritionally sound: environmental factors, socio-economic status, underlying health conditions, medications, cognitive abilities, age, race and sex (Dong, Simon, & Evans, 2009). The interrelationship between nutritional status and health is a complicated one. Malnutrition and vitamin deficiencies play a part in cognitive losses and chronic health conditions (Scott et al., 2006). Hindered by these impairments older people find themselves with less autonomy and personal control over food selection, preparation, time allowed to eat, and preferred eating environments.

In this article, the authors presented evidence of how the mealtime organizational processes and environment impacted residents in long-term care facilities in three different dining settings. From the data it is obvious that based on setting and health, older residents have very different opportunities to eat healthy foods and supplements. They stressed that governments and facilities have a responsibility to ensure that all citizens have adequate nutrition. Services must be offered in a manner which allows individual autonomy and meets cultural and social needs. Addressing these factors will improve the older resident's quality of life, and thereby improve social participation and overall health.

Limitation of this CAT: A master's of occupational therapy student created this critical appraisal of the topic. The literature review was not exhaustive. The CAT has been reviewed by a university professor and another occupational therapy student; it has not been peer reviewed.

SEARCH STRATEGY:**Terms used to guide Search Strategy:**

nutrition gerontology elderly people social engagement
aging community nursing home feeding assistance

- **P**atient/Client Group: Older adults, geriatric, elderly
- **I**ntervention (or Assessment): Occupational therapy, nutritional status, mealtime environment
- **C**omparison: None
- **O**utcome(s): Social interaction, quality of life, nutritional intake, weight, health status.

Databases and sites searched	Search Terms	Limits used
CINHAL Ebsco Host	Search keyword “nutrition” AND “elderly people” (243 found) Refined search; ADD “aging”, (5 found; one used: Sydner, Y.M., & Fjellstrom, C. 2005)	Written after 1990; English language
Pubmed.gov	Search keyword “aging” AND “nutrition” AND “community” (445 found; one used: Scott, T.M., Peter, I., Tucker, K., Arsenault, L., Bergethon, P., Bhadelia, R., ...Folstein, M. et al. 2006).	Written after 1990; English language
EBSCO Host Academic Search Premier	Search keyword “gerontology” AND “social engagement” AND “community” (46 found; one used: Dong, X., Simon, M., & Evans, D. 2010).	Written after 1990; English language
The Journal of the American Geriatrics Society	Search keyword “feeding assistance” AND “nursing home” (found 27, used one: Simmons, S.F., & Schnelle, J.F. 2006).	Written after 1990; English language
Data mined from references of dissertation “Linköping University Medical Dissertations No. 1154 Self-Perceived Health and Nutritional Status among Home-Living Older People A prospective study Yvonne Johansson Division of Nursing Science	Wikby, K, Ek A.C., & Christensson, L. 2009). Implementation of a nutritional programme in elderly people admitted to resident homes.	No Limits

INCLUSION and EXCLUSION CRITERIA

- **Inclusion:** Older adults over 55 years of age; peer reviewed articles; English language
- **Exclusion:** Studies written before 1990; studies not written in English

RESULTS OF SEARCH

Five relevant studies were located and categorised as shown in Table 1 (based on Levels of Evidence, Centre for Evidence Based Medicine, 1998)

Table 1: Summary of Study Designs of Articles retrieved

Study Design/ Methodology of Articles Retrieved	Level	Number Located	Author (Year)
Qualitative / ethnographic	N/A	1	Y.M. Sydner and C. Fjellstrom. (2005)
Quasi-experimental / single case design	2b	1	K. Wikby, A.C. Ek and L. Christensson (2009)
Cross-sectional study / non-intervention	3	1	X. Dong, M. Simon, and D. Evans (2009)
Cross-sectional study / non-intervention	3	1	T.M. Scott, K. Tucker, L., Arsenault, P. Bergethon, R. Bhadelia ... M. Folstein et al. (2006)
Single case design study / descriptive	3	1	S.F. Simmons and J.F. Schnelle (2006)

BEST EVIDENCE

The following paper was identified as the 'best' evidence and selected for critical appraisal. Reasons for selecting this study were:

- Qualitative ethnographic observational study provides information not available from interviewing
- Empirical study providing new insight into complexities of food provision, mealtimes, nutritional status and nutritional impact of environments on elderly people.
- Daily comprehensive documentation of field notes and observations (100 pages)
- Research diary of insights, preliminary analyses and data interpretation
- Data analysis identifying themes and patterns to inform of differences and allow comparison of caring environment contexts
- 300 hours of direct observations

SUMMARY OF BEST EVIDENCE

Table 2: Description and appraisal of Food provision and the meal situation in elderly care – outcomes in different social contexts. An ethnographic, qualitative study by Y.M. Sydner and C. Fjellstrom (2005)

Aim/Objective of the Study/Systematic Review:

Study Design:

Qualitative ethnographic study: An empirical study of the social contexts influencing the delivery and intake of food and fluids by elderly persons in long term care facilities. Observation of care recipients and staff/caregivers was overt. Most subjects were aware that a study of food provision for the elderly was being performed.

Data collection:

Most observations were made between the hours of 7:00 a.m. and 3:00 p.m. when the majority of food and meals were provided. The researcher noted information about the location, the care recipients and caregivers who were present, the type of activity and observed social interactions and communications. The researcher alternated between four care centres; visiting each centre between 7 and 11 times. Family, friends and visitors of the care recipients were excluded from the observation documentation.

The authors are considered experts in the field of nutrition and are well qualified to observe and analyse participants and their environments in relation to mealtime and food provision. Sydner is a member of the faculty of the Department of Food and Nutrition at Umea University in Sweden and has co-authored at least five articles published in peer reviewed journals. Fjellstrom is a member of the Department of Domestic Sciences at Uppsala University, Sweden and has authored or co-authored at least 20 articles and books and has been published in peer reviewed journals.

The article did not describe the authors' decision process regarding depth of information, or if redundancy in data was reached.

Procedural rigor in data collection was observed. Researchers performed 300 hours of observation. Each site was visited between 7 and 11 times at varying meal times and dining locations.

Analyses methods:

Setting:

The study took place in two urban districts in Stockholm, Sweden. Four elderly care centres were observed during mealtimes. Each site offered different contexts for meals, which ranged from a café/restaurant style, buffet line, assisted living (part-of-day care) dining room, and 24-hour (round-the-clock) care dining room. Four restaurants, four assisted living care units and three 24-hour care units were observed.

Participants:

The sampling method for this study was purposeful. The care centres shared common characteristics: they were independently managed, had several kinds of special housing (apartments, part-of-day care and round-the-clock care) for elderly residents and had a variety of environments (restaurants, dining rooms, private rooms) for provision of meals to residents. To allow for a broad analysis, participants included all centre residents (elderly people) and the staff members providing their care. Family, friends and visitors were not included in the study, as they did not represent the focus of the study (elderly people living in long term care). Permission to visit the care centres was given by the managers; individual informed consent was not solicited from residents and staff.

Analytical Rigor:

Data analysis was inductive. Researchers analysed data according to a search process identifying characteristic themes and patterns in staff member and resident behaviours, the time of day, and location. Their conclusion was based on the general pattern of differences between environmental contexts and the effects of these differences on residents' experience.

Themes:

-Organization of meals

- Choices and possibilities available to residents
- Time to consume a meal

Findings:

The Swedish government has created policies which focus on treating every care recipient as a “subject” (persons with rights to free choices and influence over their own lives) whether they are living in their own home or are a resident of an institution. In the past, the view of care recipients has been matriarchal. Recipients of care were treated as objects and it was assumed that the professionals responsible for delivering their care were also responsible for making all decisions related to their care. Other studies have shown that older adults as a whole are at risk for increased malnutrition, especially those elderly and/or frail people living in long term care facilities (Saletti et al., 1997; Steen, 2000; Persson, 2002). The authors expressed their belief that as a welfare state, Sweden has a responsibility to the older adults in long term care facilities to ensure that residents have access to adequate, nutritionally sound meals, and that their cultural and psychosocial needs should be met in the way that their food is delivered.

In this study, Sydner and Fjellstrom observed and evaluated how resident’s needs were met in a variety of different care settings. The method of food presentation, types of food offered, social aspects of dining and mealtime assistance to residents differed based on the type of setting.

Organization of Meals:

Each restaurant was privately managed and operated independently within the care centres. They were open for longer periods (11:00 a.m. to 4:00p.m.) and provided between 250-590 portions per day. Guests were not limited to residents; service was open to the public, staff members and residents. Guests had to be ambulatory or had an assistant as they pushed a tray along the counter to collect self-service items such as silverware, condiments and drinks. Restaurant staff portioned and plated the main course options to the resident and accepted payment for the meals.

The elderly residents who visited the restaurants lived in private apartments where they had the option to store and prepare their own foods. The restaurant was a convenient outlet for them to take their meals but was not their only source of nutrition. Restaurants did not employ staff or management trained in diet and nutrition, nor did they display any nutritional information about the foods served.

The restaurants also provided foods in the form of take-out boxes and other food and meals to the ‘part-of-day’ and ‘round-the-clock’ units of the centre. They did not provide any foods enriched with supplements and did not prepare ‘special’ food such as pureed foods or thickened liquids.

The ‘part-of-day’ care residents also had their own apartments, with the option to prepare and store their own foods. The meals provided for these units were delivered from the restaurant kitchens. The care unit staff then portioned the food to plates and presented to the residents in a group dining area at designated meal times.

Not all of the facilities presented these group meals in the same manner. Three of the four centres attempted to offer a socially stimulating meal setting and actively tried to engage the residents. In these units, residents were encouraged to make decisions about food selection. The fourth unit did not permit individual choices during meals. There was a set amount of time allowed and residents ate what was presented. Typically, the residents in these units were less mobile and in poorer health than the older people living in unassisted apartments. They were more likely to choose to go to the dining room than prepare foods in their own room.

The ‘around-the-clock’ settings also provided a group meal setting for most residents. A few residents took their food in their rooms. These units also received bulk foods from the restaurant kitchens which was plated and served by the unit staff. In this setting, residents had no method of storing or preparing their own foods and were entirely dependent on the facility staff to meet their nutritional needs. The

population of elderly people in these units was typically older, more frail and with more serious health conditions than the other two types of unit.

Choices and Possibilities:

Residents eating in the restaurants were able to select from a variety of attractively arranged fruits, vegetables, main courses, drinks (including alcoholic), desserts and condiments. They could choose different amounts and mix and match foods as desired. Traditional Swedish foods were offered every day along with appropriate condiments. The older people were free to choose with whom they would sit and how long they would stay in the restaurant. The restaurants attempted to accommodate clients and added extras such as whipped cream and a choice of condiments to enhance the customer's experience. Older people with a good appetite were pleased with the generous portions and received good value for their money. Those with less appetite, who desired smaller portions, had to pay almost the same price as those who ate much more.

In the four 'part-of-day' units, seating was assigned and residents ate with the same people at every meal. Alcoholic beverages were not available. Even though the food amounts were less and choices were limited the residents had to pay the same price as would have been paid in the restaurant. In these units there were also no supplemental drinks or in-between meal snacks for guests not able to consume adequate amounts during scheduled meal times.

Three 'part-of-day' units encouraged social engagement among the residents. Residents were permitted to make a selection between two or three main dishes and provided some condiments, salt, bread and butter at the tables. Staff offered a choice of drink and asked if guests wanted extra helpings.

The fourth 'part-of-day' unit did not make choices accessible to guests. Breakfast, lunch and dinner were offered at specific times of day; everyone ate the same main course with few condiments available. Bread and butter were offered on the table but second helpings were not offered. Choices of other food and drink were few.

Residents in 'around-the-clock' units had few choices; they could not choose to add or substitute foods but were allowed to exclude or refuse foods if they desired. These guests did not receive bread and butter or additional spices; it was uncommon for additional servings or condiments to be provided. Vegetables were not often provided and were usually served raw even though older people frequently had trouble chewing them. Meals were served at the same time each day; residents also had designated seats and ate with the same people every meal. Meals in this environment were included in the cost of total care and supplemental drinks were provided for residents that staff determined needed them. While it was not offered, residents who were still hungry could request extra portions either at meals or between meals.

Time to consume a meal:

Three restaurants were available for breakfast, lunch and dinner to residents between the hours of 11:00 a.m. to 4:00 p.m. One restaurant restricted service to staff members between 11:00 a.m. and 11:30 p.m. One of the restaurants permitted staff to cut in front of residents in the serving and purchasing of food. During lunchtime and busy restaurant hours, guests were primarily staff or people from the community; residents came at less busy hours. In one restaurant, out of 250 portions served in a typical day, only about 40 residents purchased meals.

Mealtimes in the three 'part-of-day' care units where social engagement was valued, afforded the residents plenty of time to eat. In two centres staff encouraged conversation and social interaction at the table. The meals were not rushed; staff did not bring the next course until everyone was ready to move on. It was interesting that the extra time for the meal resulted in some clients feeling stress related to the length of meal time. When some residents tried to leave or rush other guests, the staff intervened in an effort to maintain a friendly, enjoyable eating environment.

At the 'round-the-clock' care units, staff members were methodical and regimented in mealtime management. Residents were encouraged to eat their food; however, food often was served without guests being told in advance what they were going to receive. The staff focused on getting through mealtime as quickly as possible; most clients were served dessert as soon as their main course was finished. Often, when other residents saw a guest being served dessert they would stop eating their main course, losing valuable nutrition as the rest of the meal was discarded. In one unit, the entire meal from soup, main course, coffee and dessert was delivered to residents and finished within a thirty minute time period. This focus on speed and efficiency did not allow residents time to eat, ask for additional food or enjoy their meals.

Original Authors' Conclusions:

This analysis showed that an elderly person's access to adequate, appealing and nutritious food is directly related to where they live, who is providing their meals, and the policies guiding how those meals are presented. Contrary to stated government and care-facility policies (to treat residents with respect as individuals, with the right to make choices and be in control of their own lives) the delivery of food to elderly residents in long term care facilities is based more on the economics of time and efficiency, than the needs, abilities and desires of their elderly clients. The organization and delivery of food in the public sector takes active older consumers and converts them into passive recipients of mealtime care and food provision. Current systems do not consistently recognize the psychosocial importance of mealtimes or provide adequate, accessible food to elderly residents. It is clear from this study that the more frail and dependent you are, the less likely you are to have access to adequate nutritional intake, delivered in a psychosocially satisfying way, with enough time and assistance to eat it. Another finding is that elderly people who are more able to ambulate and perform activities of daily living are not necessarily able to independently acquire, prepare and ingest adequate nutrition for good health. The author's bottom line is that caring facilities are not providing equal opportunities for all individuals to receive adequate nutrition, while being respected and treated as the unique individuals they are.

CRITICAL APPRAISAL OF BEST EVIDENCE

Table 3: Appraisal of a qualitative, ethnographic study conducted by Sydner and Fjellstrom (2005)

Auditability:

The authors did not define the decision trail used to determine themes and patterns. However, the detailed description of observations and comparisons between caring environments and the patterns of behaviour of residents and staff were deemed sufficient by this author to analyse and interpret the data.

Overall Rigour:

Credibility of the evidence was enhanced by the use of multiple institutions and types of food delivery while observing how the organization of mealtimes and staff members' behaviours related to older residents experience at meals. The observations took place over a period of time and each site was visited repeatedly.

Triangulation of results was addressed by having more than one researcher. The authors did not report member checking of observations. Only one method of research, observation was used, however the authors report keeping a research diary of insights, preliminary results and data interpretation throughout the study.

Transferability to similar populations is supported by other studies where results are similar to those found by the authors (Allison 2002, Keller 1993). Reinforcing the transferability is the fact that the results of observations remained consistent over all four care centres observed, and the different food service entities within them. The authors explained the food service process and settings with sufficient detail to allow future researchers to make reasonable comparisons of populations and circumstances.

Dependability of the data would have been enhanced had the authors made available an audit trail showing how themes and patterns were developed.

Confirmability was not specifically addressed by the researchers. It was enhanced by the use of more than one researcher to limit bias; but could have been strengthened by enlisting other experts to discuss

interpretation of data and audit decisions made regarding themes and patterns in the documented observations.

Conclusions and Implications:

The study was well executed, with clearly stated observations of behaviours; it provided a good description of the subjects, persons and environments. The author's conclusions were reasonable and easy to follow based on the presentation of the data.

Limitations to the study were:

- A significant weakness was the lack of an audit trail explaining how themes and patterns were derived.
- Redundancy of data was not addressed
- Overall trustworthiness could have been increased by enlisting other experts or performing member checking with residents and staff.

Conclusions:

Data collected within the four studies proved to emphasize how vulnerable older people are to being placed in the passive role of "object". As the person's strength, mobility and health decline, they are moved into more and more dependent roles within their environment.

-Staff in all environments treated mealtimes as a routine chore, needing to be completed as efficiently as possible. Some units were more invested in providing a good dining experience than others; but all fell short on being client centric. None of the facilities had management or staff trained in nutrition and dietetics.

-The oldest, most frail people living in the 'round-the-clock' units had the least access to adequate quantities of food, choice of foods or social environment, and adequate time or assistance to eat the foods. Meals were at set times, seating was designated, the only food choices permitted were to reject foods not desired, portions were limited and mealtimes were rushed. Although nutritional supplement drinks were given and residents could ask for more food if they were still hungry, they had little control and were completely dependent on the facility to meet all of their nutritional needs.

The younger more mobile populations in the independent apartments and 'part-of-day' care units seemed to have adequate freedom to make choices and obtain adequate nutrition; however, when examined closely, a number of problems became apparent:

-They were assumed to be able to manage their own dietary needs because they had cooking facilities in their apartments; hence, no supplemental drinks or between meal snacks were made available to them.

-Restaurants were busy at usual meal-times with staff and community customers. The staff members were permitted to cut in front of residents and retrieving food from the service counter was difficult for people with pain, fatigue or who were not feeling well.

-Residents who were too tired or uncomfortable to prepare evening meals had no good alternative for a nutritious dinner.

-Meals in 'part-of-day' care units offered perhaps the best option to ensure that residents had adequate food and ease of access to meals. However, they were charged the same amount as those in the restaurants but received smaller portions, had fewer choices in menu items, and nutritional supplements and snacks were not provided as they were deemed able to supplement their diet on their own.

-Meals were at designated times and they had to get themselves from their apartment to the dining room independently.

The authors observed that in theory, while the government and facilities agree older care recipients should be treated as 'subjects' who are able to make their own decisions; they continue to be treated as

passive objects. In the case of meal provision, this lack of attention to what the individual wants and needs has the potential to negatively impact them both physically and psychosocially. There needs to be further education and recognition that people at all stages of fitness and ability living in long term care facilities require individualized assessment and appropriate levels of assistance to ensure access to adequate food intake and a pleasant environment to enjoy it in.

Table 4: Characteristics of included studies

Study 1: Wikby, Ek, and Christensson (2009).

Intervention investigated:

Quasi-experimental, single case design. The study included pre and post-tests to evaluate if staff education about geriatric nutritional needs and providing personalized nutritional care would improve the nutritional status as well as the functional abilities of elderly persons who were newly admitted to residential facilities.

Comparison intervention:

Not applicable

Outcomes used:

The tests were multiple and thorough; including objective nutritional assessment, functional capacity and overall cognitive function. The anthropometric and biochemical measures were carried out by one person (the first author).

- Data such as medical diagnosis, prescription medications, actions regarding eating and events interrupting eating: Information was obtained from the residents and their records. If necessary, a proxy and the staff who knew the residents well answered the questions.
- Anatomical Therapeutical Chemical Classification (ATC) system (2007), and medical diseases according to the International Classification of Diseases (9th revision ICD-9).
- Data was collected by measuring height, body weight, mid-arm circumference (MAC), triceps skinfold thickness (TSF), arm muscle circumference (AMC), serum albumin and transthyretin, to assess residents as having PEM or non-PEM.
- Activity Index (AI) was used to assess functional capacity
- Mini-Mental State Examination (MMSE)
- Time consumption related to the use of the dietary plan and the food record completed by the nurse's assistants (NA): All NAs in the experimental and control units were asked to fill in the questionnaire before the intervention was implemented and another questionnaire one year later.

Findings:

The data collected by anthropometric and biochemical measure did not show any statistically significant differences between the experimental and control groups. However, the control group did show improved health and reduced malnutrition after nursing staff received education and training in nutrition and feeding techniques. This promising outcome may be related to the intervention; however, differences between the groups and incomplete compliance of the nurses in maintaining patient dietary logs do not allow a conclusive statement at this time. Adequate nutrition is critical to the health of elderly patients in long term care; more carefully designed and implemented studies are needed to provide evidence of how to best provide adequate nutritional intake among elderly patients.

Study 2: Dong, Simon, and Evans (2010)

Intervention investigated:

The study did not utilize an intervention; it was a prognostic study comparing community dwelling subjects reported for suspected self-neglect in the Chicago Health and Aging Project (CHAP) against those CHAP subjects not reported for self-neglect. The cross-sectional study was performed by analyzing factors related to health, psychosocial, and socio-demographic characteristics to determine

relationship with elder self-neglect. The study was done using data gleaned from the epidemiological study CHAP.

Comparison intervention:

Not applicable

Outcomes used:

Subsets of the CHAP participants reported for suspected self-neglect were compared with the group of unreported CHAP participants.

Logistical regressions were used to evaluate the relationship between psychosocial and socio-demographic factors and self-neglect in community dwelling older adults.

Findings:

The author's found an independent association between low levels of socioeconomic status and social engagement, poor health, and the risk for self-neglect among elders. Not surprisingly, the degree (severity) of self-neglect among those elders reported, showed a direct relationship with their levels of income, education, current health conditions and social support systems. The study shows that a better understanding of the elements associated with the risks and protective factors related to self-neglect is necessary to reduce the incidence of self-neglect among the elderly.

Study 3: Scott et al. (2006).

Intervention investigated:

The study did not utilize an intervention; it was a prognostic study to evaluate the relationship between nutritional factors and cognitive impairment. The purpose of the population-based, multi-disciplinary, cross-sectional study was to analyze the importance of micronutrients in homebound elderly people in regards to cognitive functioning. Its goal was to enhance the development of new therapies to improve quality of life for older adults by developing reasonable, specific, prevention and supplementation recommendations. It is hoped these efforts will result in improved cognitive function in older adults, and reduce publicly funded health costs related to dementia in the elderly.

Comparison intervention:

Not applicable

Outcomes used:

- | | |
|--|--|
| <ul style="list-style-type: none"> - Cognitive Function Test - Mini-Mental State Exam - North American Adult Reading Test (NAART)^b - Supraspan Learning WMS-III Word List - Auditory Retention WMS-III - Attention/Mental Digit Symbol-Coding - Trail Making Test - WAIS-III Digit Span - WAIS-III Block Design - WAIS-III Matrix Reasoning - Controlled Oral Word Association Test - Naming Objects and Fingers test - Self-Rating Anxiety Scale (SRAS)ⁱ - Center for Epidemiological Studies Depression Scale (CES-D) - Wechsler Memory Scale-3rd edition - Wechsler Adult Intelligence Scale-3rd edition - Fasting blood draws using standard procedures. - Food Frequency Questionnaire - General background and socioeconomic status Questionnaire | <ul style="list-style-type: none"> - Self-report and detailed questionnaires were completed for health related covariates such as hypertension, diabetes, and behavioural factors such as smoking and alcohol use - Blood pressure, pulse rate, height, weight, and waist circumference were measured - Modified Activities of Daily Living (ADL) and Instrumental Activities of Daily Living (IADL) scales - National Institutes of Health Stroke Scale (NIHSS) - Tinetti Gait and Balance scores - TOAST criteria - Hamilton Rating Scale for Depression - Clinical Dementia Rating Scale - Magnetic Resonance Imaging - Quantitative segmentation of CSF - Qualitative gradings of WMH severity, and cortical, ventricular, and hippocampal atrophy - The NINCDS-ADRDA criteria / diagnosis of possible or probable Alzheimer's disease |
|--|--|

- NINDS-AIREN criteria / diagnosis of possible or probable vascular dementia.
 - Other dementias diagnosed according to DSM-IV criteria (APA, 1994).
 - Major Depression and 'other' neuropsychiatric disorders are
- diagnosed according to DSM-IV criteria.
- University of Texas Peripheral Neuropathy Questionnaire.

Findings:

This study provided evidence of how vulnerable this population is to the health risks posed by the effects of malnutrition, common disease processes associated with aging, depression and dementia. The study focused on homebound elderly; many of whom face nutritional challenges related to poor physical health, isolation, low socio-economic status and inadequate social support systems. The data found that there is an association between the intake and absorption of micronutrients and the cognition of elderly persons. The authors propose that if B vitamins are shown to reduce loss of cognitive function it will lead to simple interventions and reduced dementia and suffering for the elderly population, while simultaneously reducing the public and private health costs of dementia. Conversely, if the evidence does not support this conclusion, the funds and resources should be used to investigate other promising avenues of study in the area of elderly cognition.

Study 4: Simmons, S.F. and J.F. Schnelle (2006)

Intervention investigated:

A descriptive, single case design study used direct observation of staff and residents during mealtimes over a two day period. These data were compared with subsequent observations after intervention (trained individualized feeding assistance) by research staff provided over a two day period. The levels of assistance for the study were identified as social stimulation, verbal cueing, physical guidance or full physical assistance.

Comparison intervention:

Not applicable

Outcomes used:

Percentage of difference in the amounts of foods eaten by residents in the two days before the intervention and after the two days of research staff feeding assistance. This percentage was averaged over the course of 6 meals for each group.

Amount of time nursing home staff and research staff spent providing feeding assistance. This percentage was averaged over the course of 6 meals for each group.

The two day intervention period was evaluated for average of total amount eaten, staff time required and the level of assistance provided.

Levels one, two and three were combined, and then compared with level four and level 5. Method was to compare average total percentage eaten and the time to provide assistance both within control and intervention groups; follow-up t-tests and variance analysis were used.

Subjects showing 15% or greater intake during the two day trial were compared to subjects showing less than 15% gain during the same time. Chi-square analyses were used for categorical measures and t-tests were used for independent samples for continuous measures. The characteristics measured were demographic, functional and nutritional factors.

Findings:

Data showed that the staff time required to assist nursing home residents with meals was longer than the times specified by the RUGS III reimbursement estimate, which specify that more physically dependent individuals require more staff time for assistance

The study demonstrates that methods relying on staff self-report (such as RUGS III) and documentation of usual-care practice are not likely sufficient to determine a resident's physical dependency for eating and associated care; because usual care is not reflective of regulatory and best practice guidelines. The authors propose instead, that a performance-based assessment (such as the one in this study) should be used to determine a resident's feeding assistance care needs. The evidence strongly suggests that usual nursing home care practices should be expanded to include methods utilizing standardized assessments of the individual's physical dependency, as well as staff time to care for resident's with a range of levels of dependency, to set reimbursement rates.

IMPLICATIONS FOR PRACTICE, EDUCATION and FUTURE RESEARCH:

In this study, the researchers shed light on the ways that environment and policy can affect an elderly person's ability to participate in the important activity of daily living that is eating. While subjects in the study lived in long term care environments, this author believes that the principles of ensuring adequate time for intake of food, improving access to supplemental foods, and assisting elders to take in adequate amounts of food can reasonably be applied to elders in all environments.

In the United States and around the world, the number of older adults living in the community and in long term care facilities is increasing. Research has shown that elderly people living at home experience less depression and a higher quality of life than those in long term care facilities (Karakaya, Bilgin, Ekici, & Otman, 2009) and that good nutritional status allows older adults to stay in their own homes longer, reducing incidence of hospitalization and admittance to long term care facilities (Young, Bunn, Trivedi, & Dickinson, 2011).

All of the studies reviewed for this CAT showed that significant barriers to an older adult's ability to care for themselves and experience a high quality of life, are poor physical health, cognitive deficits and nutritional status. The NAME research thoroughly studied the biochemical effects of micronutrients on cognitive function in older adults as well as personal and psychosocial factors. They showed evidence to support that better nutrition improves cognition though more work remains to be done. One thing that is clear, however, is that there is a complex relationship between nutrition, cognition and the elderly person's overall health and wellness.

Dong, Simon and Evan's (2010) findings on self-neglect in community living elders demonstrated how social environments affect a person's ability to care for themselves. Older people with fewer resources, more severe health conditions and few social supports were the ones most likely to be reported for self-neglect. Significant factors in self-neglect were shown to be malnutrition and cognitive deficits. Those elders reported for severe self-neglect were most often moved into long term care facilities. As we have seen from three of the five studies examined, long term care facilities, regardless of the resident's level of independence, do not typically provide adequate assistance, nutritional intake, time, personal choice or appropriate social settings for a quality mealtime experience.

Wikby, Ek and Christenson's (2009) study further informed us that up to a third of elderly people living in the community have protein energy malnutrition, brought on by a variety of factors similar to those observed in the four Swedish care centres and presented in the other studies. A high number of elders being moved from community homes into long term care are admitted with malnutrition. In this nutritional programme study, the experimental group received additional assistance and time for meals, and showed significant improvement in nutritional status, motor activity and cognitive status compared to the control group.

All of these studies contribute convincing evidence that improving nutritional status can have widespread influence on the financial status, health and quality of life of older individuals, their families, caregivers and society in general. Perhaps more importantly, they highlight the vulnerability of the elderly population to poorly planned and executed policies. Too much priority is placed on time and expediency in order to increase the reimbursement to expense ratio.

The profession of occupational therapy can play an important role in educating elderly people and their caregivers about the healthy eating activities necessary for good nutritional status. OT interventions can be used to increase elderly peoples satisfaction in the psychosocial aspects related to eating and mealtimes.

The Occupational Practice Framework [OTPF] (AOTA, 2008) supports that it is within the domain of OTs to act as educators to older adults, policy makers, family members, caregivers, facility management and staff members regarding:

- The importance of quality nutrition
- Appropriate level of feeding and mealtime assistance
- Techniques of feeding assistance
- Activity analysis and environmental adaptation to facilitate adequate nutritional intake
- Respect for the older person's right to make choices and influence their own life
- Pleasant mealtime experiences

OTs also have a responsibility to be attentive to the nutritional needs of every client regardless of referral diagnosis, to provide treatment interventions, and to refer to other disciplines appropriately. The practice of OT in both the community and in institutional settings is being increasingly driven by third party billing requirements and less emphasis is placed on treating the client holistically (Simmons & Schnelle 2006). OT's must find ways to creatively integrate nutritional and mealtime evaluations and intervention into treatment sessions. When gathering information for the patient's occupational profile, make it a standard part of your interview process to inquire into eating and feeding habits and environments; ask about the quantities and types of food they are eating. Once you have this knowledge, find ways to incorporate it into functional occupational interventions used to treat for the referring diagnosis, as well as educate patients, family and care-providers about the client's needs.

This is a relatively unexplored field in the OT world, yet is integral to the health and quality of life of elderly people. More research into effective, adaptive methods of increasing the nutritional status of client's needs to be done, allowing evidence based, standardized, and individualized assessments to be developed. Avenues to inform facility management about the problems inherent in current mealtime procedures should be explored. This is an area of practice where the field of OT could be expanded and expertise gained to help facilities and families improve current processes.

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