Using Evidence-Based Research to Promote Increased Hydration in Elderly Residents of Long-Term Care Facilities

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A standard mission set forth by the National Nursing Home Reform Act of 1987 was to place emphasis on the resident’s quality of life as well as the quality of care. This includes implementing services and training staff to promote increased quality of life. It has a component that mandates facilities meet nutrition and hydration needs of its residents (Burger, Kayser-Jones, & Bell, June 2000). This proposed project will help your facility promote an improved quality of life by encouraging proper hydration for the residents and improving staff knowledge of this important issue.

Context

- Dehydration has been reported as the most common fluid and electrolyte imbalance in the elderly.
- Mortality rates accompanying a diagnosis of dehydration in hospitalized older adults are as high as 45%-46% (Hodgkinson, Evans, & Wood, 2003).
- There is significant mortality noted with a hospitalized diagnosis of dehydration, 18% die within 30 days, and 31% die within the year.
- The rate of hospitalizations for older adults with a primary diagnosis of dehydration increased 40% from 1990 to 2000.
- In 1999 the cost of treating older adults with avoidable hospitalization with a primary diagnosis of dehydration was estimated to be $1.14 billion (Abdallah, Remington, Houde, Zhan, & Melillo, 2009).

Older adults are at risk for under hydration due to age-related changes (Garcia, 2001). Elderly, particularly those in nursing homes, who typically have some degree of self-care impairment, are at increased risk of maintaining hydration due to decreased thirst stimulus and/or decreased ability to gain access to fluids (Sullivan, 2005; Morley, 2000).

Project Description

The objectives of this Doctor of Nursing Practice Capstone Project will be to deliver a teaching intervention aimed at increasing nursing assistant awareness and knowledge on the issue of the importance of hydration in the elderly, and implement a hydration program, with a resulting increase in hydration status of the residents of a long-term care facility. Zembrzuski
(1997) reports that a successful hydration program in a nursing home needs to involve a comprehensive approach including facility-wide involvement. Implementation of this project will include a study to determine its effectiveness. Residents and next of kin will be given information on the study. Informed consent will be obtained from residents and next of kin as appropriate. Information on demographics and the top three primary diagnoses will be gathered on each participating resident. Residents that are on an ordered fluid restriction, moderate to severe congestive heart failure, or end-stage renal disease will be excluded from the study.

Information will be gathered from nursing assistants on their knowledge of hydration in the elderly before and after an in-service designed to increase awareness and knowledge of the importance of adequate hydration in the elderly. The teaching intervention will include a power point presentation, brochures, and conveniently placed reminders. Informative brochures will be provided to nursing assistants and residents. A forum will be included at the end of the presentation to obtain ideas from nursing assistants and staff as to the best ways to encourage fluid intake by the residents. A hydration program with adjustments made based on staff contribution will be developed and implemented.

- Studies have shown that Chernoff's standard of 1500 ml/day provides an adequate amount of fluid to prevent dehydration in the elderly (Garcia, 2001).
- Research has shown that the average daily intake of fluids in residents of nursing homes is only 1000 ml (Kayser-Jones, Schell, & Porter, 1999).
- The hydration program will focus on a goal of 1500ml/day of fluid consumption by the elderly residents.

Bioelectrical impedance analysis (BIA) will be used to assess the total body water (TBW) of each participating resident.

- BIA has been shown to be useful in monitoring changes in total body water over time (Olde Rikkert, van Hof, & Baadenhuysen, 1998).
- Studies have shown BIA measurements to be within 3% of actual TBW amounts (Ritz, 2001).
The total body water of the nursing home residents will be evaluated before, at 2 weeks, and at 4-weeks from initiation of a monitored hydration program.

- The age, sex, height, and weight will also be required for the calculations.
- The proposed timeline will have the power point presentation taking place in early October 2009, with the first and second TBW readings occurring in early November and early December.

Resources needed at the facility include a scale to measure weight and height. A validated and reliable bioelectrical impedance analyzer will be supplied for the study. Staff support will provide encouragement for implementation of the program with the residents and decrease barriers to compliance.

**Evaluation**

The effectiveness of the teaching intervention will be determined by the evaluation of a pre and post test given to the nursing assistants. The effectiveness of the hydration program will be determined by data analysis performed on the change in TBW readings prior to and during the hydration program. Demographic information will be collected and analyzed on the residents and the nursing assistants.

**Deliverables**

The facility will benefit from the institution of a hydration program that will meet federal guidelines for long-term care facilities. The successful implementation of this program will result in the reduction in health care expenditures related to avoidable admissions of dehydration and inadequate hydration related illnesses. Increased hydration will result in improved comfort of residents of the long-term health care facility. The teaching intervention will provide a tool for increasing the knowledge and awareness of hydration issues concerning elderly residents of long-term care facilities for nursing assistants.
References


Appendix A

1) Research Question:

In the elderly residents of nursing homes will promoting increased fluid intake result in an increase in total body water measurements as measured by bioelectrical impedance analysis?

2) Methodology:

Prospective Correlational study.

3) Project components:

A power point presentation, directed towards the nursing assistant, will be developed using evidenced based practice principles to impart knowledge of the importance of hydration in the elderly.

a. approximately 12 slides, presented on a 9th grade reading level.

b. 3 areas of content: why adequate hydration is important in the elderly, reasons why elderly may not consume enough fluids, and techniques that have been shown to increase fluid intake in the elderly.

c. pre/post test for nursing assistants, approximately 12 questions.

Hydration program consisting of visual reminders to consume adequate fluids, scheduled opportunities for consumption of a variety of beverages, use of visually appealing fluid dispensers and inclusion of additional suggestions by facility staff.

4) Planned instrumentation:

A questionnaire will be developed to gather data from the nursing assistant staff on their demographics and knowledge concerning the issue of hydration in the elderly. A pre/post test form will be used.

A survey tool will be developed to gather and organize demographic data, medical diagnoses, and total body water readings for participating subjects.

5) Proposed statistical analysis of project:

Determine if there is a correlation between changes in hydration (Total Body Water) and implementation of a hydration program.

Determine if physical activity status (ambulatory vs. bedridden) is a factor in whether there are changes in TBW with the implementation of a hydration program.
Determine if there are associations between various demographic data of residents and changes in TBW with the implementation of a hydration program.
Appendix B

1) Nursing assistant demographic questionnaire and pre/post test.

2) Demographic and project data collection tool for residents.

3) Bioelectrical impedance analyzer information from manufacturer:

   The Bodystat 1500 body composition monitoring unit produced by Bodystat Limited will be used to measure total body water in the subjects. This BIA has been used extensively in research to measure body fat and body water in a variety of subjects.

   www.bodystat.com/reference_papers.htm

4) Project Materials:

   A cardboard visual with sliding ruler to show amount of fluids consumed during the day will be distributed to each participating resident to assist in encouraging the intake of the recommended 1500mL of fluids per day.

   Power point presentation.

   Project Information Brochures.

   Posters reminding nursing assistants and residents to drink fluids.