A Retrospective Chart Review to Determine the Prevalence of Malnutrition in the Elderly and the Effects of Nutrition Interventions

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Abstract

Background: The prevalence of malnutrition in elderly patients continues to increase with an aging population.[1] Patients with malnutrition are at risk for longer hospital stays, increased risk of frailty, at higher risk for having a poor quality of health, poor health outcomes and increased mortality.[1]

Objectives: Evaluate the effectiveness of new nutritional interventions to help correct malnutrition diagnosis criteria

Setting: Presbyterian Home and Services an Acute Rehab and Long Term Care Nursing Facility

Participants: 27 elderly patients initially met the malnutrition criteria, at the time of the interventions there were only 20 patients

Study Design: Retrospective Study to evaluate the effectiveness of nutritional interventions. That data was utilized to help develop new nutritional interventions.

Methods: The newly developed interventions were implemented and the data was collected over a 3 week span. data was collected on weight change, Pre and Post-BMI. The data was analyzed utilizing SPSS Software.

Intervention: A high calorie diet was implemented for patients that met the criteria for malnutrition, patients with BMI of 23 were screened to prevent BMI <22, whole milk was programmed in house diet in place of 2% milk

Results: 100% of the patients had a beneficial wt gain of .10 to 1.25#. This was clinically relevant as evidenced by the score of the paired T-test. During the time frame of the interventions none of the patients had their malnutrition criteria diagnosis corrected.

Conclusions: Early screening and implementing nutritional interventions can help prevent malnutrition. Once a patient is diagnosed with malnutrition it is difficult to correct.

Introduction

- Malnutrition can lead to increased hospital stays and length of stay, increased mortality, frailty and poor health outcomes.[1]
- Malnutrition can be diagnosed by 7 criteria set by AND/ASPEN
- There are multiple factors that can lead to malnutrition including but not limited to genetics, chewing/swallowing difficulty, age, co-morbidities, self-feeding difficulty, medication interactions, poor appetite[1].
- Elderly nursing home residents have a 16-70% higher prevalence of malnutrition compared to other older adults.[1]
- After an inpatient hospital stay, the prevalence of malnutrition is 30% higher than older adults that are not hospitalized.[1]
- The purpose of this study was to evaluate newly developed nutritional interventions and their impact on malnutrition criteria

Methods

- This study was conducted at the Presbyterian Home an acute rehab and long term care nursing facility
- Initially 27 patients met the criteria for malnutrition, when the interventions were implemented only 20 patients participated
- The interventions developed were to implement a higher calorie diet, replace 2% milk in the house diet with whole milk, and screen patients with BMI of 23 to prevent BMI <22
- Quantitative data was collected over a 3 week time frame on weight gain, pre and post BMI
- The data was determined to be normally distributed. A paired t-test was conducted to determine statistical significance with the P value set at <0.05. Statistical test were run using SPSS software.

Results

- The original sample size decreased by 26%
- The sample size that data was collected on was 20 patients 14 women and 6 men
- The result of the Paired T-test was 0.03 for the pre-and post BMI's, P was set at <0.05.

Population Demographics	
Sample: 20	
Original Sample: 27 loss of 7 patients (26%)	
Male: 6/30%	
Female: 14/70%	
Mean age: 85year olds	
Mean Pre-BMI: 19.28	
Mean Post-BMI: 19.405	
Mean Wt Gain: 0.655#	

Table 1: The demographics of the sample population, that includes data on sex, age ,pre and post BMI and weight gain

Pre-BMI Standard Deviation	+/- 0.35
Post BMI Standard Deviation	+/- 0.35
Paired T-Test	0.03

Table 2: P<0.05, table of significant values computed by SPPS software, rounded to the nearest 0.01.

Results(Continued)

Median Weight Gain: 0.6250#	
Mean Weight Gain: 0.6550#	
Range of weight gain: 0.10# to 1.25#	
Paired T-Test: 0.03	

Table 3: The most common weight gain, the average weight gain and the range of weight gain after interventions were implemented

Discussion

- Strengths of the study were the high calorie diet did promote beneficial weight gain to improve BMI
- The t-test showed statistical significance at 0.03 of the pre- and post BMI's
- The results were significant as it is known that as a person gains weight their BMI improves
- This study did allow for the RD to review current interventions and develop new interventions to help treat or prevent malnutrition
- Weaknesses and limitations to the study were the sample size and limited time frame to monitor the interventions
- Other studies have also found that it is difficult to maintain adequate nutritional status in the elderly population due to multiple factors despite nutritional interventions

Conclusion

- Malnutrition continues to be a contributing factor that leads to longer hospital stays, increased mortality and decline in health outcomes of the elderly population
- Early screening to implement interventions to treat malnutrition are key to prevent a patient from meeting the AND/ASPEN criteria for malnutrition
- Higher calorie fortified foods and supplements should be utilized to help prevent malnutrition In the elderly

References

1. O'Keeffe M, Kelly M, O'Herlihy E, O'Toole PW, Kearney PM, Timmons S, O'Shea E, Stanton C, Hickson M, Rolland Y, Sulmont Rossé C, Issanchou S, Maitre I, Stelmach-Mardas M, Nagel G, Flechtner-Mors M, Wolters M, Hebestreit A, De Groot LCPGM, van de Rest O, Teh R, Peyron MA, Dardevet D, Papet I, Schindler K, Streicher M, Torbahn G, Kiesswetter E, Visser M, Volkert D, O'Connor EM; MaNuEL consortium. Potentially modifiable determinants of malnutrition in older adults: A systematic review. Clin Nutr. 2019 Dec;38(6):2477-2498. doi: 10.1016/j.clnu.2018.12.007. Epub 2018 Dec 11. PMID: 30685297.