

Information about the Critically Appraised Topic (CAT) Series

The objective of the Doctor of Nursing Practice (DNP) program at George Mason University is to prepare graduates for the highest level of nursing practice. Emphasis is placed on evaluating and applying the evidence that supports practice, understanding and creating practice delivery systems based on patient outcomes, and assuming leadership roles in practice settings. Graduates of the program will be able to assume many roles in the health care system, including direct patient care, clinical nursing faculty, practice management, and policy development.

All DNP students take an evidence-based practice course titled Evidence Based Practice in Nursing and Healthcare (NURS 883). This hallmark course for the DNP program builds on knowledge of research methodologies to analyze the selection and evaluation of research underlying evidence based practice. Emphasis is placed on the translation of research in practice, the evaluation of practice and the improvement of the reliability of health care practice and outcomes.

The first assignment students complete is a Critically Appraised Topic (CAT). CATs are mini-systematic reviews and considered a snapshot of the literature on a topic of interest. Students critically appraise literature related to a focused clinical question and summarize the best available research evidence on the topic of interest. CATs conclude with clinical bottom lines for practitioners to quickly take away for consideration in practice.

The CATs published in MARS (Mason Archival Repository Service; mars.gmu.edu) are submitted by students after they have been reviewed, revised, and approved by their instructor. All CATs are current at the time of original publication but will not be updated over time.

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Can comprehensive geriatric assessment compared with standard care help predict and prevent falls among older adults?

Purpose: To find out if comprehensive geriatric assessment can help predict and prevent falls among the older adults.

Appraised by: Ellen John

Date of completion: June 20, 2013.

Date of Review: June 08, 2013.

Question: Can comprehensive geriatric assessment compared with standard care help predict and prevent falls among older adults?

Search Strategies and Results: EBSCO HOST search engine was used to search MEDLINE, CINAHL and COCHRANE databases. Terms used included “comprehensive geriatric assessment and fall prevention” which yielded 8 articles and “comprehensive geriatric assessment and mobility” which yielded 41 articles of which 3 studies were selected. Forty six articles were not selected because they were either duplicates or did not meet the selection criteria. Criteria for selection included articles that reported relevant outcome measures in the areas of falls prediction or prevention with comprehensive geriatric assessment. Results were limited to English language but were not limited to settings.

Chosen articles

- Imhof, L., Naef, R., Wallhagen, M. I., Schwarz, J. & Mahrer-Imhof, R. (2012). Effect of an advanced practice nurse in-home health consultation program for community-dwelling persons aged 80 and older. *Journal of the American Geriatric Society*, 60(12), 2223-2231.
- Lihavainen, K., Sipila, S., Rantanen, T., Kauppinen, M., Sulkava, R., & Hartikainen, S., (2011). Effects of comprehensive geriatric assessment and targeted intervention on mobility in persons aged 75 years and over: a randomized controlled trial. *Clinical Rehabilitation*, 26(4), 314-326.
- Overcash, J. A. & Beckstead, J. (2008). Predicting falls in older patients using components of a comprehensive geriatric assessment. *Clinical Journal of Oncology Nursing*, 12(6), 941-949.

Evidence Retrieved:

Imhof et al: 461 convenience samples of German-speaking community dwelling individual's ≥ 80 years.

Study measured the effects of in-home health consultation program (n=231) vs. standard care (n= 230) on quality of life. Primary outcome measure was quality of life measured

with the German version of the World Health Organization Quality of Life Assessment short version, WHOQOL-Bref). Consists of 26 items that are rated on 5-point Likert scale. Secondary outcome measures consisted of incidence of acute events like falls, hospitalization and healthcare use. There was a significant difference in acute events e.g. falls between the intervention and control groups ($p = .007$).

Critically Appraised Topics (CATs)

Appraisal:

Strength: Instruments used in gathering and measuring data included, WHOQOL-Bref, OARS, AMSLER, TUG test, Mini Nutrition assessment, GDS, tandem stand and timed five-chair-rise test. These are all valid and reliable instruments and they add to the validity and reliability of the research outcome.

Weakness: The study had larger sample of women than men. Also there was heterogeneity of baseline health status which makes it difficult to measure the actual effect of the intervention. The study was not a blinded study.

The baseline rating on quality of life by participants was high and is not representative of the general population. This is a potential threat to the study's external validity.

Lihavainen et al: Sample of 781 Finnish persons from a research center and community assisted living facilities aged 75 years and older. The study compared comprehensive geriatric assessment and individually tailored intervention ($n = 404$) with standard care ($n = 377$). Primary outcome measure construct were mobility limitation measured using structured questionnaire on perceived ability to work 400m. Secondary outcome construct included musculoskeletal pain measured using structured question and self report. Both groups had improvements in the primary outcome. In the intervention group, effects remained significant one year-post intervention follow-up (OR 0.79, 95% CI 0.67 – 0.93).

Appraisal

Strength: Assignment to intervention and control groups was through randomization. 15-item Geriatric Depression Scale (GDS), Mini-Mental State Examination (MMSE) and Grimly Scale were used. These are common, valid and reliable self report instruments. Baseline characteristics of both groups were not statistically significant. The efficacy of the trial in whole sample was evaluated with the number needed to treat (NNT) over the difference between the proportion benefiting from the experimental intervention and proportion benefiting from the control intervention.

Weakness: The use of convenience sample is a potential threat to external validity. The design of the study involved a prolonged study with persons older than 75 years many of whom were lost during the study through death.

Overcash et al: A qualitative study consisting of 352 convenience sample from the Moffitt cancer center and research institute, and from the University of Florida senior outpatient clinic. The study evaluated the effectiveness of predicting falls in older persons with the components of a Comprehensive Geriatric Assessment, CGA. A logistic regression analysis was used to evaluate possible predictors of falls in the CGA component scores and age. The Activities of Daily Living Scale was found to be a significant predictor of falls ($p = 0.004$).

Appraisal

Strength: ADL scale, GDS, the MMSE, American Geriatric Society fall screening question and bio-data information. These are common valid and reliable instruments. The use of these instruments adds to the internal validity of the study and makes it easy to replicate.

Weakness: The study used a convenience sample of ethnically homogenous white population. Sample size in each was not equal; the general geriatric group was smaller than the other groups. The number of women participants was significantly larger than that of the men. The mean age of the general geriatric group was significantly older than that of the treatment group. This may likely have had an impact on the study outcome and is a potential threat to external validity.

Clinical Bottom Line:

It is difficult to have a longitudinal study with older adults with multiple chronic illnesses because some of them will be lost through illness or through death. Subsequent study periods should be shortened in order to capture all the data.

Falls in the older adult can lead to reduction in quality of life and can be fatal. Although we cannot prevent falls completely studies show that screening can help recognize some potential contributors to fall and assist in implementing interventions that will prevent or reduce fall-related injuries. Comprehensive Geriatric assessment is not commonly used in facilities currently. More research and education is needed to assess its usefulness in preventing and reducing the incidence of falls in the older adult.