PALM BEACH ATLANTIC
UNIVERSITY
SCHOOL OF NURSING

Research Critique 2 Rubric and Example: Worth 7%

1. Restate the Research Goal in STANDARD FORMAT.	0.5
2. Identify the **stated** population of interest	0.5
3. Identify the Inclusion and Exclusion Criteria and the resulting experimental unit	1
4. Identify the **operationalized** population of interest and ask yourself, "Self, does this make sense?" Write down the results of your judgment call and whether it matches the stated population of interest. How will any conclusions drawn be influenced as a result?	1.5
5. **Describe the sampling method used and classify it.** Discuss the appropriateness/limitations of the sampling method used. Critique the overall process of going from the stated population of interest to the actual sample including bias and issues identified by the article.	1.5
6. Identify the Response variable(s) and classify them	.5
7. Identify Factors and classify them as study or extraneous; qualitative or quantitative	.5
8. Identify the **study design** and time perspective	.5
9. Summarize the Research	.5
Total	7%

Watando, A., Ebihara, S., Ebihara, T., Okazaki, T., Takahashi, H., Asada, M., & Sasaki, H. (2004). Daily oral care and cough reflex sensitivity in elderly nursing home patients. *Chest, 126*(4), 1066 – 1070.

1. **Research Goal:** To study the relationship between intensive oral care and cough reflex sensitivity in elderly patients.
2. **Stated Population of Interest:** all elderly adults
3. **Inclusion /Exclusion Criteria:**
    a. **Inclusion:**
        i. Patient at nursing home in Sendai, Japan, where the investigators were
        ii. Physical and cognitive symptoms must be stable for 3 months
    b. **Exclusion:**
        i. Chronic pulmonary diseases such as COPD, bronchial asthma, pulmonary fibrosis, and chronic cough.
    c. **Experimental Unit**: A stable patient in a Sendai nursing home who does not have a chronic respiratory disease
4. **Actual Population of Interest:** All stable patients in a Sendai nursing home who do not have a chronic respiratory disease

    Impact:

    The Not so good: Rather than all elderly patients, the operationalized population of interest only includes elderly patient who are in a nursing home and do not have any chronic respiratory illnesses, yet these are often the most likely to end up in a nursing

home. It does not include any independent elderly persons, so the results are not generalizable to the larger elderly population. By only including patients in Sendai Japan, the researchers are mixing their operationalized population of interest and their sampling technique (Dr. Heyman thinks it is sloppy research practice). The resulting population of interest (and sample) may have regional bias and perhaps bias caused by the standard of care at the nursing home studied.
The okay: The stable patient criteria keeps the study from being skewed by patients who may have already been declining, but unfortunately keeps us from knowing if intensive oral hygiene is a good intervention for a patient whose condition is declining. The exclusion criteria makes sense in that patients who have chronic pulmonary diseases are more at risk for pneumonia and have altered cough reflex already, but again, we will not know whether intensive oral hygiene is a good intervention for these patients.
Conclusion: In the end, this study can only tell us whether intensive oral hygiene can increase cough sensitivity for stable patients who do not have any other pulmonary problems (those who need it the least).

5. **Sampling technique:** The actual sampling method used is not stated. It appears that the researchers studied every patient at the nursing home that met the inclusion/exclusion criteria and signed informed consent. (This is a special case, because the researchers combined their inclusion/exclusion with their sampling method. Generally speaking, although this technique is fairly common, it blurs the line between operationalization of the population of interest and the sampling technique. In reality, it's convenience sampling.) The implications for the conclusions are the same as listed above in number 4 (don't put this down unless your article does the exact same thing or you will lose points).
6. **Response variable**: Cough reflex sensitivity: as measured by the log of the concentration of citric aerosol necessary to cause at least 5 coughs in one minute while breathing the aerosol; it is continuous.
7. **Factors**: Study factors: intensive oral care: yes or no (qualitative)
   Extraneous factors: age (quant), Serum substance P (quant), cognitive function (quant), ADLs (quant); gender (qual); dentures (qual)
8. **Study type:** Prospective study; clinical trial (investigators assigned patients to the study factors)

Summary:
Impaired cough reflex is a risk factor for aspiration pneumonia. Investigators randomly assigned nursing home patients to either intensive oral care or no intensive oral care. Intensive oral care was performed by the caregiver after every meal for a month. Patients assigned to no intensive oral care performed their usual oral hygiene for a month. Investigators measured serum substance P concentration, cognitive function, activities of daily living, and cough reflex sensitivity at baseline, 3 days, 10 days, and 30 days.

The two test groups were comparable for all extraneous factors. After 30 days, there was no change in cough reflex sensitivity for the usual care group. There was a significant increase in cough reflexivity in the treatment group (log 1.5 to log 1.2, $p < 0.01$). The odds ratio improvement of cough reflex sensitivity was 5.3 (95% CI, 1.7 to 16, $p < 0.005$). There were no changes in substance P concentration, cognitive function or ADLs. Conclusion: intensive oral

care provided by caregivers after every meal may reduce aspiration pneumonia by improving cough reflex sensitivity.