

## **Research Assessment #5**

**Date:** October 15, 2020

**Subject:** Risk of Dementia After Anesthesia and Surgery

**MLA:**

Chen, Pin-Liang et al. "Risk Of Dementia After Anaesthesia And Surgery". *British Journal Of Psychiatry*, vol 204, no. 3, 2014, pp. 188-193. *Royal College Of Psychiatrists*, doi:10.1192/bjp.bp.112.119610. Accessed 16 Oct 2020.

### **Assessment:**

During last week's assessment, I gained a lot of valuable information and understanding of my topic. Building off of that, I wanted to explore this topic in another article with different pieces of evidence and examples. That being said, I have read and annotated an article titled "Risk of Dementia After Anesthesia and Surgery" that has introduced a new case study that I can analyze and compare to previous studies I have found.

The study begins by describing their method and aims. Fortunately, two of the factors that I am specifically looking at for my original work, age and type of operation, were addressed in their study. Moreover the participants of this study generally matched the type of patients I had in mind for this research, which were older patients who had been under anesthesia multiple times(Chen 3). Moreover, the study was incredibly helpful for my research as the researchers had thought of multiple factors that I had never previously considered. An example of this is the addition of anesthesia type as a factor in my research(Chen 1). Now that I have read their study, it makes sense that they would include this as the amount of anesthesia, as well as the duration of dosage, can be important factors. The study also excludes multiple types of dementia that can be caused by other surgical complications like brain damage from a stroke(Chen 2). This is something I once again, did not think of, but has now made me more aware to be careful of overlaps or interferences in my study. The researchers also stated that long-term studies and data would need to be collected to make progress on this issue, which is

a conclusion I had previously read in my last assessment. This has me wondering if comparing data from hospitals from before anesthesia would also help with this study? Even though surgery was harder to conduct and more painful with the patient being awake, was there no evidence to support that the operation or surgical stress caused this negative complication? Is there a way to clarify if this brain damage is truly caused by anesthesia or if surgical stress is also a factor?

The results of this study are helpful to my original work because they mention key aspects I am focusing on in my research. To begin, the researchers divided the patients into two age groups, middle-aged and senior(Chen 3). This is very helpful to my research because it helps to further narrow the age group most at risk. When reading about the results of this study, I was expecting to see an increased risk for patients who were exposed to anesthesia more times within a singular year. However, the results of the study found no significant difference between the patients exposed once compared to the patients exposed at least twice(Chen 5). This has me wondering if this result would be different if the difference had been more drastic? Like instead of at least 2 dosages, what if the study was with patients that had been exposed to anesthesia at least five times compared to patients exposed only once? Similarly, I was also expecting an increased risk for dementia after anesthesia in older patients. This was confirmed by the results showing that “the incidence of dementia after anaesthesia with surgery was higher in senior patients than in middle-aged patients”(Chen 7). However, that does not mean only older patients are affected as the “results suggest that anaesthesia and surgery may speed up the process of neurodegeneration, and that this is not specific to older people”(Chen 7). This information also matches up with the study I analyzed last week about the different ways anesthesia can lead to brain damage. This information has also made me curious about other factors that can impact this data and lead to increased risks for dementia after being exposed to anesthetics? I wonder if there is another factor that is really unexpected or something that I have not yet considered?

Overall, this research study was incredibly helpful for my understanding of this research. This study is also helpful for my original work as it includes multiple factors I am focusing on in my research. Moving forward, I will continue to build off of this research by looking into more studies. Even if other studies show different results, by comparing their methods and patient backgrounds, I will be able to better understand the patients most and help determine what factors contribute most.