Understanding Research Articles/ Cleveland Clinic WOC Nursing Education

Name of student: ____Kelsi Critzer_____

Points criteria:

Criteria	Under performance <3 points per criteria	Basic 3 – 3.9 points per criteria	Proficient 4.0 – 4.4 points per criteria	Distinguished 4.5 – 5 points per criteria
Required content objectives	Content objectives are missing or sparsely covered.	Content objectives are not consistently addressed. Demonstrates minimal understanding of content.	Content objectives consistently addressed. Demonstrates understanding of content.	Content objectives consistently addressed. Demonstrates mastery of content.
Academic writing standards	Writing lacks scholarly tone & focus. Sparse content. Multiple grammatical, spelling, & factual errors. Reliance on bullet points rather than effective writing in speaker notes. 4 or more direct quotes per project.	Writing is unclear and/or disorganized. Inconsistent scholarly tone. Inadequate depth of content. Grammatical and spelling errors. No more than 3 direct quote of less than 40 words per project.	Writing demonstrates general exploration of content. Responses are clearly written using scholarly tone. Few grammatical and/or spelling errors. No more than 2 direct quote of less than 40 words per project.	Writing demonstrates comprehensive exploration of content. Responses are clearly written using scholarly tone. Rare grammatical and/or spelling errors. No more than 1 direct quote of less than 40 words per project.
APA formatting	References and citations have multiple errors or are missing.	References and citations have errors.	References and citations have few errors.	References and citations have rare errors.

Carefully review the above rubric and the directions for each of the following pages. Select from **one** of the two articles provided in the course discussions area. Based on the type of research selected, respond to the questions on the following pages.

References: *See the course syllabus for specific requirements on references for all assignments.*

Part A: Select just one (not both) of the articles from the week two DQ assignment thread. Determine whether the article is qualitative or quantitative research, then, using an academic voice & APA formatted citations/references, formulate a 150-300 word response to each of the following sections and enter your responses into the textboxes below.

1. **Using APA format, enter the reference for the article you reviewed. Explain the rationale for selecting this research article and how it relates to your own practice.**

Dai, T., Lv, L., Liu, X., Chen, J., Ye, Y., & Xu, L. (2020) Nasal pressure injuries due to nasal continuous positive airway pressure treatment in newborns. *Journal of Wound, Ostomy, and Continence Nursing, 47*(1), 26-31.

This research article aims to explore and calculate the prevalence of nasal pressure injuries in newborns, specifically those requiring nasal continuous positive airway pressure (NCPAP) treatment. This research highlights multiple interventions used to prevent pressure injuries from occurring, however this is an ongoing problem in the hospital setting. Oftentimes newborns require respiratory support, this is available via prongs or a mask, both of which apply pressure to the newborns nose. While respiratory support takes priority, the integrity of the infant's skin should not be overlooked, as this could lead unnecessary discomfort, possible infection, or disfigurement of the nose that could later require plastic surgery (Dai et al, 2020). By uncovering the incidence of nasal pressure injuries occurring in newborns utilizing nasal continuous positive airway pressure treatment and the extent of those injuries, healthcare providers can collaborate to reduce the occurrence of these injuries.

2. **Describe how you determined whether the selected research article is qualitative or quantitative.**

This article is an example of a quantitative research article because it uses numerical data to validate and explain the relationship between nasal pressure injuries and nasal continuous airway pressure treatment (R.B. Turnbull, Jr. MD School of WOC Nursing Education, 2022). Researchers implement a standardized classification of pressure injuries to categorize identified injuries during the study. The number of identified nasal pressure injuries is then staged, which is then grouped accordingly and then calculated to determine the number of pressure injuries noted by assessed stage (Dai et al, 2020).

<u>Part B:</u> Based on the selected research, formulate a response to each of the following 8 questions associated with the selected research type (qualitative or quantitative). Enter your thoughtful responses to the textboxes below. Each response should be 150 – 300 words and cited using APA style from your reference list.

1. **Why is IRB/informed consent an important part of research? Determine if Institutional Review Board (IRB) approval/informed consent obtained. If the research was done outside of the United States, the review body may go under a different name.**

Informed consent and institutional review boards (IRB) are important to research because they protect the research participants. Informed consent and institutional review boards ensure the research being conducted is ethical and humane (American Psychological Association, 2020). Institutional review boards make sure ethical standards are being followed. Informed consent is the researcher asking the research participant for their permission to be included in the study and the expectation of them in the study. Informed consent must be presented in a way that is easily understood by the participant. For the nasal pressure injury study in newborns, the hospital ethics committee review and approve of the study. Informed consent was obtained from each participant (newborn) parents or legal guardian (Dai et al, 2020).

2. **Describe (based on selected research type)**
    a. **Qualitative article:** the purpose statement **– or –**
    b. **Quantitative article:** the problem and purpose of the research

The problem these researchers aimed to address was the actual relationship between nasal continuous positive airway pressure (NCPAP) treatment and nasal pressure injuries in newborns. Previous studies identified relationships between the two, but with very different results likely related to no standardized classification system in place (Dai et al, 2020). The purpose of this study was to identify the number of nasal pressure injuries, stage of pressure injury, and additional risk factors related to nasal continuous positive airway pressure (NCPAP) treatment in newborns.

3. **Describe (based on selected research type)**
    a. **Qualitative article:** research design **– or –**
    b. **Quantitative article:** the research questions

The researchers aimed to answer several questions regarding the relationship between newborn nasal injuries and the use of nasal continuous positive airway pressure treatments. They looked to determine the severity of injuries in newborns. They recorded occurrence date to verify the injury was due to the treatment. They answered the question of what treatments and remedies were conducted for the newborns who had a nasal injury. They collected data twice a week and the nasal injuries were classified using the National Pressure Ulcer Advisory Panel and the European Pressure Ulcer Advisory Panel pressure injury classification system. It is important to have a uniform way to determine injury severity using these

panels. The questions the researchers aimed to answer created a good basis to determine the relationship between nasal injuries in newborns and the use of nasal continuous positive airway pressure treatments.

4. **Explain in your own words a summary of the literature review used in the selected article.**

The researchers used previous studies that aimed to determine the relationship between newborn nasal injuries and the use of nasal continuous positive airway pressure treatments. However, in the previous studies there was no standardized classification panel, such as the one used in this study, the National Pressure Ulcer Advisory Panel. The researchers believe that because of the lack of a uniform classification system, the previous data collected was skewed because the severity of the injury was left up to the judgement of the assessor. This study used the guidelines of an advisory panel to avoid collecting data that was subject to judgement and observation. The data collected in this study was considered better than the previous because it had a p value of .05 meaning that similar studies would likely find the same results, this indicates that the study was conducted properly, which is likely due to the difference of collection methods. The previous study found that nasal injuries were in the range between 20% and 100%. The newer study found injuries in one hundred forty-nine newborns or 34.7%. However, the limitation of the new study is that it was only conducted in one neonatal intensive care unit and data was collected by only one research nurse.

5. **Identify (based on selected research type)**
    a. **Qualitative:** the data collection method(s) **– or –**
    b. **Quantitative:** the study design, including sample, setting, & data collection methods.

The study design was a prospective observational. This means the researchers draw inferences from the data collected from the population. For example, this study was conducted in one unit and the data was collected by one research nurse. The researchers then analyzed the data and determined the conclusions. The sample is from a 50-bed neonatal intensive care unit that treated between 700 and 800 newborns in 2017. This study followed 461 patients that were treated with nasal continuous positive airway pressure methods. The data was collected twice a week by a single nurse who used standardized advisory panel to determine severity of injury. The nurse recorded onset of injury, treatment methods, and outcomes. The data collected was subject to two formulas: cumulative incident injuries equals number of newborns affected divided total number of newborns in sample multiplied by one hundred, the incidents density = number of newborns with pressure injury divided by number of days newborn was followed multiplied by one thousand. The data was then put through Statistical Package for Social Sciences to run advanced statistics (Dai et al, 2020).

6. **Analyze (based on selected research type)**
    a. **Qualitative:** the results of the research study **– or –**
    b. **Quantitative:** the data collection tool used; is the tool validated?

The data collector was a single research nurse. This leads to limitations such as bringing attention to the study within the neonatal intensive care unit. This would allow the other nurses to look for these injuries and to try and prevent them which may have skewed the data. The tool used to determine demographic and other pertinent medical records were provided by anonymous computer engineers that used random medical record numbers. This would not negatively affect data. The data was then ran through a computer program, Statistical Package for Social Sciences, which provides descriptive statistics of the population that included gestational age, birth weight, treatment days, and total days stayed in the unit. This program would not provide any bias within the study and is validated. Post hoc analysis was used using the same system to compare the gestational age, birth weight, treatment days and unit days stayed to the severity of the injury (Dai et al, 2020).

7. **Summarize (based on selected research type)**
    a. **Qualitative:** conclusions and implications for further research **– or –**
    b. **Quantitative:** study results, including strengths & limitations.

The study conducted found that 461 of the 900 newborns treated in the neonatal unit were treated with nasal continuous positive airway pressure methods. 32 of those patients were excluded because they received treatment for less than 24 hours. (6.9% of the sample). A final sample size of 429 comprising of 5,536.7 observational days. Within the 429 newborns observed, 149 developed pressure injuries related to the use of nasal continuous positive airway pressure treatments, or 34.7%. Stage 1 injuries were present in 99 patients, 48 classified as stage 2, and 3 were classified as deep tissue injury. This indicates that there were 27 nasal pressure injuries per 1000 days. The data indicated that the severity of nasal pressure injuries was inversely correlated with birth weight and gestational age. Furthermore, the likelihood of developing a nasal pressure injury is almost 4 times higher in neonates with a gestational age of less than 32 weeks as indicated by the 3.728 odds ratio. Surprisingly, birth weight and unit days stayed were not associated with an increased likelihood of developing a nasal pressure injury, even those variables are usually related to the other variables in the study (Dai et al, 2020). A major strength of this study is that it was conducted following standardized panels to determine severity of injury. This helped remove human error that was prevalent in previous studies. Another strength is using a single nurse, who likely had a specific way of observing and determining the answers to the multitude of questions in the study. When there are several data collectors, the method to record data and the timeliness may be affected, therefor skewing some data. A major limitation of this study is that it was conducted in only one hospital. The results indicated that another study would likely find similar results but it impossible to generalize a population. More studies need to be conducted using patients from varying units and varying countries to determine whether the study is truly reliable. Another limitation of being conducted in only one unit is that the type of treatment devices were the same throughout all treatments, making it very difficult to determine if the type of device was resulting in injury or the treatment in general.

8. **Discuss why is this research important to the body of WOC nursing knowledge**

This research takes a closer look at the relationships between newborn nasal pressure injuries and the use of nasal continuous positive airway pressure treatment. This research is helpful in providing numerical evidence of incidence. This data will be beneficial to finding better ways to treat patients requiring respiratory treatment. The data also identifies related risk factors that may be useful in the production of new policies. WOC nursing is continuously applying new research into practice to provide patients with the best-known care. There would be no new evidence available to upgrade standards of practice if this research was not being conducted. By continuously exploring and examining current practices, WOC nurses can assist and contribute information that may not be considered by other healthcare providers. WOC nurses offer a unique and specialized perspective that promote better patient outcomes.

9. **Use APA format to list your references for this assignment:**

American Psychological Association. (2020). *Publication manual of the American Psychological Association* (7th ed.).

Dai, T., Lv, L., Liu, X., Chen, J., Ye, Y., & Xu, L. (2020) Nasal pressure injuries due to nasal continuous positive airway pressure treatment in newborns. *Journal of Wound, Ostomy, and Continence Nursing, 47*(1), 26-31.

R.B. Turnbull, Jr. MD School of WOC Nursing Education. (2022). *Applying research & evidence to WOC nursing care.* [PowerPoint slides]. Vimeo@CCF.