

Understanding Research Articles/ Cleveland Clinic WOC Nursing Education

Name of student: Pamela Pirrello _____

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.

Understanding Research Articles/ Cleveland Clinic WOC Nursing Education

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.

The research article I chose was Nasal Pressure Injuries Due to Nasal Continuous Positive Airway Pressure Treatment in Newborns (Dai et al., 2020). The rationale for choosing this research article was based on practicality. It was what I personally wanted to get out of the learning assignment as per the topics available to choose from. This was based on my area of interest and what I can relate to, learn from, and make extensions of improvement in my specialty work area. Although both articles were interesting, I sought out what I found more relevant to my area of work at this time. I was more interested in evaluating a study based on techniques used and looking at the outcomes and comparison outcomes from the other studies mentioned. I work in a surgical specialty where many times the nuts and bolts after surgery deal with skin integrity. Both physiological and appliance issues affect the skin. Despite the difference in age and content to what I see in my specialty, I was intrigued and wanted to learn more about the subject. This journal was something I found better use of now since I will be starting a class on ostomy care. I wanted something based on action and results. The variables in this journal also evoked an interest. It's been a long time since pediatric studies; and it was a refresher to review the variables used.

Reference

Dai, Tian, Lv, Limin, Liu, Xiaojuan, Chen, Jin, Ye, Yalan & Xu, Lixuan. (2020). Nasal pressure injuries due to nasal continuous positive airway pressure treatment in newborns: A prospective observational study. *Journal of Wound, Ostomy & Continence Nursing*, 47, 26-31.
<https://doi.org/10.1097/WON.0000000000000604>

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

Understanding Research Articles/ Cleveland Clinic WOC Nursing Education

The research article I selected is a quantitative study. A quantitative study is formal. There is a systematic process with collected numerical data that is used to answer the research question. It uses variables. The data collected is then formulated to answer a clinical question. In this study there is a P value (R.B. Turnbull, Jr. MD School of Wound, Ostomy, Continence Nursing, 2022). At first glance in the abstract, I was able to get sufficient information that allowed me to determine that this research study was quantitative in nature. This study analyzed statistical methods. This method of collecting number data and analyzing the results is quantitative. Quantitative studies use these methods of collecting information to derive to the conclusion for the purpose of the study. The study was objective not subjective which also indicates it is a quantitative study. The study's purpose was to collect data on incidence, severity, and risk factors of nasal injuries that were associated with the use of positive airway pressure (NCPAP) treatments in the newborn in the NICU setting (Dai et al. 2020).

Part B: 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.

In the past there have been many unethical research studies. The Tuskegee syphilis study, Jewish chronic disease hospital study, and the Nazi experiments are a few examples of how bad research studies compromised the safety, values, and dignity of humans (Kearney-Nunnery,2020). As a result, strict rules that must be followed have been put in place. This is so that mistakes that were made in the past do not occur once more. The Institutional review board (IRB) and informed consent are important in research because when dealing with human subjects there are moral, ethical values that must be respected. The subjects or legal representative must be educated and advised of the proposed research in order to give consent. "Both IRB and informed are non-negotiable parts in research" (R.B. Turnbull, Jr. MD School of Wound, Ostomy, Continence Nursing, 2022). The research study was done in the NICU department in a hospital in Xiamen China. The hospital is associated with

Understanding Research Articles/ Cleveland Clinic WOC Nursing Education

Xiamen University. The review body is the Ethics Committee of the First Affiliated Hospital of Xiamen University. Consent for each patient in the study was obtained by either the patient's 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

Quantitative article: the problem and purpose the research

The problem is skin breakdown caused by treatment devices used on the skin. The purpose is to measure the occurrences, how bad it is, and what causes it to occur. Many NICU babies need nasal continuous positive airway pressure support (NCPAP) as a treatment modality associated with newborn respiratory distress. For positive airway pressure support treatments to function effectively providing positive airway pressure they must be fitted firmly with a good grip as opposed to lightly, risking an air leak. The device is fitted on the nasal area using nasal prongs and masks. This tight fit which puts constant pressure on the skin can cause nasal skin breakdown. Because NICU babies are underdeveloped they are also more vulnerable and susceptible to skin breakdown. Some of the consequences can be pain, infection, and even trauma that may need surgical intervention at some point. The purpose of the research was to determine the occurrence, gravity, and what may cause nasal injuries associated with the use of nasal NCPAP devices (Dai et al.2020).

3. Describe (based on selected research type)

a. **Qualitative article:** research design - or -

b. **Quantitative article:** the research questions

Understanding Research Articles/ Cleveland Clinic WOC Nursing Education

The research questions from this article derive from the problem of nasal pressure injuries secondary to nasal continuous positive airway pressure treatments in newborns. To be more precise, the focus is on newborns in NICU. It is not the airway pressure itself that causes the injury but the fact that it needs to be placed in contact with the nasal skin and fitted tight enough to work. The evaluation is on the delivery method of continuous positive airway pressure, nasal prongs. The hospital has evaluated other studies from different areas and is conducting a study of this issue. The question is, if the process this hospital takes causes a problem. If it causes a problem at what point in the treatment is the problem occurring. Who is it occurring to? Does gestational age or birth weight influence occurrence? Is the length of stay in NICU a factor? Is the duration of days on continuous positive airway pressure associated with occurrence? How severe is the breakdown in skin? What are the results of the measures taken when skin breakdown occurs? Does the skin breakdown improve? How long does it take for the improvement or resolution? The study results will also be compared to results of other studies that were reviewed to evaluate if there are similarities in results.

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

In the literature reviewed there were similarities and differences. Overall, the studies that were reviewed suggested that there is a significant proportion of NICU patients who develop nasal skin breakdown associated to the method of nasal delivery of continuous positive airway pressure treatments (NCPAP). The literature reviewed showed that there were higher incidence results than the study conducted. There is literature that reports cases of up to 100% in occurrence of skin injury. These injuries ranged from mild to severe tissue necrosis. This is with the use of one type of nasal prong used for NCPAP delivery system. There are also cases that skin damage needs surgical intervention. In the literature review there were patients that weighed less than the study conducted. In the reviewed literature NICU patients weighing less than 1500g and whose length of stay was more than 14 days were more prone to develop skin breakdown. This differed from the study conducted that showed no correlation between NICU stay and birth weight but that less than 32 weeks gestational age and more than 6 days with NCPAP was a factor in occurrence.

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.

Understanding Research Articles/ Cleveland Clinic WOC Nursing Education

Quantitative: the study design, including sample, setting, & data collection methods

The study design is a prospective observational study. The study was conducted in Xiamen, China in the First Affiliated Hospital of Xiamen University. The setting was in NICU where the sample patients were newborns. The subjects were admitted between March 2017 and February 2018. The target sample consisted of newborns that received NCPAP treatment. Those who received treatment for less than 24 hours were excluded from the sample. The skin was assessed at the time of NCPAP application. The skin was also assessed every 4 to 6 hours as per their routine. If assessment findings showed that nasal tissue became erythematous then the nasal prongs were changed to nasal masks. All the incidences of skin injury were documented by date of occurrence, the severity of the injury, and interventions were documented. Outcomes were then recorded. There was a research nurse that collected all the data with documentation 2 times a week. The injuries were classified using the National Pressure Ulcer Advisory Panel/European Pressure Ulcer Advisory Panel pressure injury classification system. This system identified injuries as Stage 1 -Stage 4. Stage 1 consisted of non-blanchable erythema, Stage 2 partial -thickness skin injury, Stage 3 full- thickness skin injury, and finally Stage 4 full thickness tissue loss. The findings showed only up to Stage 2 injuries.

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?

Understanding Research Articles/ Cleveland Clinic WOC Nursing Education

Quantitative: the data collection tool used; is the tool validated?

The data collection tool used was computers. The population study and clinical data were taken from medical records with the assistance of computer engineers. All data collection which included date of incidence, stage of skin breakdown, what treatments were made, outcomes was recorded in the computer. Injury occurrence was calculated using 2 formulas. The formulas consisted of cumulative incidence (CI, %) = number of newborns with pressure injuries/total number of newborns in the sample x 100 and the incidence density (ID, person per 1000 days) = number of newborns with pressure injury/number of days newborn were followed x 1000. A *P* value of 0.05 was regarded as statistically worthy. The tool is validated. There were several tools used to analyze data including Statistical Package for Social Sciences Armonk, New York. They used descriptive statistics for demographic data, and Post hoc analysis, Spearman correlation analysis and logistic regressions were also done.

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

Quantitative: study results, including strengths and limitations

The study results showed that 900 newborns were admitted in NICU at the time of the study. Out of 900 patients a total of 461 (51.2%) of these patients were treated with NCPAP. There were 32 (6.9%) of patients that were not included in the study because they received NCPAP for less than 24hrs. This resulted in a total of number of 429 patients used in the study that was equivalent to 5536.7 observation days. Out of the total number of participants 149 (34.7%) developed skin injury. The injuries were divided into stage 1 and stage 2. For stage 1 nasal skin breakdown was seen in 99 (66.4%) of the patients. For stage 2 nasal skin breakdown was observed in 48 (32.21%) of patients. There were 2 patients that were noted to develop deep tissue injuries but for purpose of statistics they were added into stage 2 numbers. The study results showed that gestational age played a factor in development of skin injuries not weight. There were 10 newborns (38.5%) with a gestational age less than 28 weeks. In 28-31 weeks, 72 newborns (52.5%) had skin injuries. There were 60 cases (27.3%) with gestational age of 32 to 36 weeks, and finally 7 cases (15.2%) full term newborns (greater than or equal to 37 weeks gestation). The findings showed NICU patients with less than 32 weeks gestation had higher risk of developing skin injuries (odds ratio [OR], 3.728; 95% [CI], 1.18-11.77; $P \leq 0.025$). Studies showed that the average

Understanding Research Articles/ Cleveland Clinic WOC Nursing Education

onset of nasal skin injuries was 4.72 days from the time NCPAP was initiated, with Stage 1 pressure injuries average of 5.08 days, and Stage 2 pressure injuries of 3.88 days. It was observed that in Stage 2 skin breakdown injuries 19 cases had preceded by Stage 1. In Stage 1 injuries 80 cases did not advance to Stage 2. The time to heal in both stages was 6.38 days. The studies showed that most of the skin injuries occurred in the first 6 days of starting treatment (OR, 0.262; 95% CI. 0.087-0.787; $P \leq 0.017$). Regular assessments conducted as part of the study with appropriate interventions of prophylactic dressings and replacement of the nasal prongs to nasal masks when indicated prevented worsening skin injuries. The limitations were that the study was done in only 1 NICU. The same type of nasal prong and mask devices were for the delivery of NCPAP. There were also no low birth-weight newborns used in the study. This limited the findings because they were excluded from the study. Researcher intervention as part of the study may have also been an influencing factor in nursing skin care.

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

This research is important to the body of WOC nursing knowledge because a big focus of WOC revolves around skin integrity. Whether it is new wounds or chronic wounds, a basic understanding of how different wounds occur is essential to the practice. An understanding of preventative measures that are needed to promote healthy skin and prevent skin breakdown is imperative. The WOC needs a well-rounded understanding of risk factors associated with skin breakdown. A comprehension of susceptible risks at different stages of life is necessary to be able to assist a variety of patients at different levels of care. This study is also valuable because it is through these types of studies that growth on the topic occurs. Preventive measures occur through knowledge acquired through research. The study also identified that similar research studies showed similar findings. The findings identified a problem with medical equipment devices on the skin causing skin breakdown for this patient type. Literature review is important to have a deeper understanding of the topic from previous research studies.

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

References

Dai, Tian, Lv, Limin, Liu, Xiaojuan, Chen, Jin, Ye, Yalan & Xu, Lixuan. (2020). Nasal pressure injuries due to nasal continuous positive airway pressure treatment in newborns: A prospective observational study. *Journal of Wound, Ostomy & Continence Nursing*, 47, 26-31.
<https://doi.org/10.1097/WON.0000000000000604>

Kearney-Nunnery, R. (2020). SECTION I: Professional Bases for Practice: CHAPTER 5: Evidence -Based Practice. *Advancing Your Career: Concepts of Professional Nursing (7th Edition)*, 7th, 79-95

R.B. Turnbull, Jr. MD School of Wound, Ostomy, and Continence Nursing. (2022). *Applying research & evidence to WOC nursing care* [PowerPoint slides].