Understanding Research Articles

Using an academic voice & APA formatted citations/references, respond to each of the following learning objectives in this grid, & the questions on page two. Each response should be between 150-350 words & entered into the table grid below. See assignment rubric on page three of this document for specific details on how points are awarded. Important, this is *not* a paper, enter your responses to the grid below**

Learning Objective	Response
1. Select one research (quantitative or qualitative) article from the two provided (see discussion questions area for the article choices).	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 & Continence Nursing, 47*(1), 26-31.
2. Explain how the selected research is qualitative or quantitative.	The selected research article would be classified as nonexperimental quantitative research. The researchers formally and objectively collected numeric data from nursing assessments and the electronic medical record. This data then underwent statistical analysis to find associations or causal relationships to explain the phenomena of pressure injuries in neonates treated with NCPAP (R.B. Turnbull, Jr. MD School of WOC Nursing Education, 2021). A prospective cohort study design was chosen as the investigators aimed to follow a group of NICU patients receiving nasal continuous airway pressure via nasal prongs longitudinally over a finite time frame to measure the cumulative incidence of medical-device-related nasal pressure injury (Melnyk & Cole, 2011). Additionally, the study gathers numeric data such as patient age, birth weight, NICU length of stay, and duration of NCPAP treatment and statistically manipulates that data to determine if these variables are predictive of an outcome such as the incidence of NCPAP pressure injuries.
3. Based on the selected research type, respond to the questions below.	Write response here
Answer questions 1-8 from page two based on selected research type	The research study was conducted in China, and it is clearly stated that it was approved by an ethics committee (Ethics Committee of the First Affiliated Hospital of Xiamen University), which one might presume is the Chinese national equivalent to the United States' Institutional Review Board (IRB). Additionally, it is stated that consent was obtained by guardians of participants enrolled in the study. However, there is a fundamental difference between informed consent and implied consent. Curiously, the study authors did not specify which type they obtained, and no

	supporting documentation (e.g., written consent form used) is presented to verify the type (Finkelman, 2016, p. 49), which calls into question whether the ethics committee who approved this study can safely be viewed as an analogous counterpart to the IRB. As Finkelman (2016) notes, neonates (who are the subject of this study) fall into the category of "vulnerable populations that need extra protection in research as guided by ethics codes" (p. 374). Some healthy skepticism about whether this study upheld extra protection is warranted.
	Dai et al. (2020) present that a standard treatment modality for neonatal intensive care (NICU) hospitalized patients in respiratory distress is nasal continuous positive airway pressure (NCPAP) via nasal cannula. Due to the inherently delicate nature of nasal ala and septal tissue, neonate's fragile skin, and the snug fit necessary for this intervention to be effective, this treatment modality can cause nasal pressure injuries (Dai et al., 2020). The authors assert that the research calculating the incidence of medical-device-related nasal pressure injuries in NICU-hospitalized neonates receiving NCPAP via nasal cannula is lacking. The authors also hypothesize that the body of research that exists on this topic presents too broad a range of incidence to represent "actual occurrence" and more likely "reflects absences of standard of a standard definition and classification of a nasal pressure injury" (Dai et al., 2020, p.26). The purpose of their research is to quantify the incidence and severity of nasal pressure injuries in this population by utilizing a specific, standardized nasal pressure injury classification system. The authors express that an additional aim of their study is to reveal statistically relevant risk factors for these injuries (Dai et al., 2020).
	First and foremost, Dai et al. (2020) are trying to get a sense of the scale of this problem by asking the question: What is the incidence of NCPAP via nasal cannula-related nasal pressure injuries in a level 3 NICU? The additional research questions spawned from that initial inquiry are as follows: • What percentage of neonates in a NICU population is affected by this problem? • What is the incidence of nasal pressure injuries by severity? • Are there patient-specific demographics (e.g., birth weight, age) that increase the likelihood of this problem occurring? • Are there treatment-related factors (e.g., NICU length of stay, NCPAP treatment duration) that increase the likelihood of this problem occurring? • Do current NCPAP protocols adequately prevent and address nasal pressure injuries? • Will studying this problem enhance clinicians' awareness of its prevalence and improve the care they provide?

	• Will studying this problem influence current NICU protocols to reduce nasal pressure injuries, leading to better health outcomes for the patient?
	The sources utilized in this study's literature review are well-targeted to the studies' research question and support the central premise motivating their study: that nasal injuries from NCPAP are prevalent. All of their references appear to be from reputable academic journals and represent different levels of research evidence (e.g., cohort studies, integrative reviews). Most importantly, the authors located a systematic review of their topic (Imbulana et al., 2018), which is the highest level of research evidence (R.B. Turnbull, Jr. MD School of WOC Nursing Education, 2021). This systematic review provided the authors of this study with the broad range of reported incidence (20-100%) of nasal pressure injuries with NCPAP that forms the basis of their research question. By utilizing a systematic review, the authors have effectively avoided replicating a prior study and asking an already answered question while understanding what prior research on their topic has been done and what conclusions were drawn. It also ensures that their own study's research question is relevant and expounds on current knowledge. Through their literature review, the authors identified the need for further detailed investigation into nasal pressure injury incidence with the application of stricter assessment criteria and the potential for identifying additional associated risk factors.
	Dai et al. (2020) refer to their work as a prospective observational study, which is also commonly referred to as a prospective cohort study and is a type of nonexperimental study design (Melnyk & Cole, 2011). Per Melnyk & Cole (2011), "A cohort study follows a group of subjects longitudinally over a period of time to describe incidence of a problem or to determine the relationship between a predictor variable and an outcome" (p. 413), making it the perfect and most appropriate study design to meet this research topic's objectives. An experimental study design, such as a randomized controlled trial where a group of neonates would be randomly assigned to the intervention of NCPAP, would be unethical; therefore, an inappropriate study design choice. The study's researchers focused on neonates receiving NCPAP in the setting of a level 3 NICU located in a hospital in Xiamen, China, in the time frame between March 20, 2017-February 28, 2018. They collected data from 900 patients admitted to the NICU during that time via the electronic medical record. Once investigator-defined exclusion criteria were applied, they ended up with a sample of 429 neonates who received NCPAP. Unfortunately, there is no indication that any statistical power analysis was performed before this study to determine that the sample size of

	429 was adequate enough to minimize findings caused by chance (O'Mathúna et al., 2011). In this particular NICU, a standardized NCPAP protocol was in place before data collection commenced. Per this protocol, NICU physicians determined which patients met clinical criteria for needing NCPAP and managed their respiratory care. Furthermore, the protocol defined NCPAP nursing care assessments, most notably, when they were to be performed (every 4-6 hours), how to classify and document nasal pressure injuries (if present) by severity, and when to intervene and switch a patient from nasal cannula to a mask. The authors of this study enlisted a research nurse to collect and record information from these nursing assessments on their investigator-developed form twice a week.
	The investigators followed a quality-assuring data collection strategy by utilizing approved protocol and standardized data-capturing tools such as the EMR. These quality assurance measures are a means for obtaining valid results (Yamanaka et al., 2016). An example of this was how data was mined from patient's electronic medical records. The investigator specified critical demographic and clinical data points they wanted from these records but was blinded from data extraction. Engineers whose job is to maintain EMR records and ostensibly have no vested interest in this study, extracted the data instead. Additionally, the investigators prevented any selection bias by working only with medical record numbers and no other patient identifiers. The enlistment of a research nurse to collect and document data onto an investigator-generated form was another way to keep the investigator independent from the data source, further ensuring validity in the data collection process. Utilizing the NICU established protocol-driven assessments, with its standardized procedures and classification system rubric for nurses to follow, ensured reliability of the data collected. After the data collection process, data was analyzed using the common statistical package software, SPSS version 22.0. They ran several statistical analyses that added statistical power, further enhancing validity to their study.
	The Dai et al. (2020) study found a cumulative incidence of 34.7% of newborns treated with NCPAP via nasal cannula in their facility developed nasal pressure injuries. The majority (66.44%) of those injuries were Stage 1 injuries, followed by Stage 2 injuries (32.21%), and only two injuries (1.25%) were classified as deep tissue injuries. They also found that neonates <32 weeks of gestational age and newborns receiving NCPAP > six days more frequently developed nasal pressure injuries and had a higher risk for developing a more severe injury. No correlation

	between nasal injuries and birth weight or length of NICU stay was observed. A strength of this study is the lengths the investigators took to maintain data collection integrity and independence. By enlisting engineers to extract data from the EMR, hiring a research nurse to collect bedside assessments, and using medical record numbers as the only patient identifier, the investigators have eliminated the potential for conflict of interest and selection bias. Moreover, the utilization of protocol-driven nursing assessments strengthened the reliability of the data. Dai et al. (2020) accurately point out that their study lacks generalizability. They recommend exercising caution when attempting to apply their findings to other NICUs where other protocols may be in place or other medical devices are being used, all of which may result in different outcomes. Confounding factors can be a limitation to a study's strength as they challenge cause and effect associations detected in cohort studies, which is certainly true for this study (Melamed & Robinson, 2018). For instance, concluding that age is causal in the increased frequency and severity of nasal pressure injuries observed in neonates less than 32 weeks of gestational age is flawed. Perhaps the neonates less than 32 weeks of gestational age observed in this study had more complicated or severe disease processes that significantly impaired their nutrition and skin integrity when compared to their counterparts greater than 32 weeks of age, leading to their overall increased risk for more frequent and severe nasal injuries. Surprisingly, the investigators did not explain their decision to disregard the diagnoses precipitating the need for NCPAP as a potential risk factor for nasal injuries. There are also environmental confounding factors not discussed that one should consider as they may have impacted the study's cumulative incidence estimate. A hypothetical example of this would be: Did data collection occur during a terrible influenza season where an outbreak of this on the unit caused more neonates to experience respiratory distress, necessitating NCPAP? This confounding factor could be addressed by continuing this study over a longer time frame, including successive flu seasons. Lastly, as mentioned previously, there is no explicit indication that a power analysis was conducted before the study to determine the precise sample size needed to minimize associations due to chance and ensure the validity of their study (O'Mathúna et al., 2011).
	Research such as this can expand the scope of WOC nursing practice into clinical areas beyond the typical opportunities where their services are sought. WOC nurses have specialized knowledge

	in wound prevention strategies and experience with therapeutics that a clinical area like the NICU might not be aware of and could benefit from in practice. WOC nurses can effectively use this research as a talking point when initiating a new or revised WOC intervention to a clinical area, advocating for additional WOC training or resources, or marketing their services to a practice that may not have a wound nurse on staff. It also provides a platform for future avenues of WOC nursing-led inquiry (R.B. Turnbull, Jr. MD School of WOC Nursing Education, 2021). A related study might look at increasing the frequency of nursing skin assessments for patients <32 weeks gestational age receiving NCPAP and patients treated with NCPAP > 6 days in length to see if this decreases the incidence and frequency of nasal injuries.
References *See the course syllabus for specific requirements on references for all assignments.*	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 & Continence Nursing, 47*(1), 26-31. Finkelman, A. (2016). *Leadership and management for nurses: Core competencies for quality care* (3rd ed.). Pearson. Imbulana, D.I., Manley, B.J., Dawson, J.A., Davis, P.G., & Owen, L.S. (2018). Nasal injury in preterm infants receiving non-invasive respiratory support: a systematic review. *Archives of Disease in Childhood - Fetal and Neonatal Edition, 103*(1), 29-35 Melamed, A., & Robinson, J.N. (2018, December). A study design to identify associations: Study design: observational cohort studies. *BJOG (125)*: 1, 1776.https://doi.org/10.1111/1471-0528.15203 Melnyk, B.M., & Cole, R. (2011). Generating evidence through quantitative research. In B.M. Melnyk & E. Fineout-Overholt (Eds.), *Evidence-based practice in nursing & healthcare* (2nd ed.) (pp.397-434). Wolters Kluwer Health/Lippincott Williams & Wilkins. O'Mathúna, D.P., Fineout-Overholt, E. & Johnston, L. (2011). Critically appraising quantitative evidence for clinical decision making. In B.M. Melnyk & E. Fineout-Overholt (Eds.), *Evidence-based practice in nursing & healthcare* (2nd ed.) (pp.81-134). Wolters Kluwer Health/Lippincott

	Williams & Wilkins. R.B. Turnbull, Jr. MD School of WOC Nursing Education (2021). *Applying research & evidence to WOC care* [PowerPoint Slides]. file:///Users/ham/Downloads/2021%20Applying%20research%20to%20WOC%20care%20(1).pdf Yamanaka A, Fialkowski MK, Wilkens L, et al. (2016, September 2). Quality assurance of data collection in the multi-site community randomized trial and prevalence survey of the children's healthy living program. *BMC Res Notes, 9*(1):432. doi:10.1186/s13104-016-2212-2

****Once you have entered all of your answers into the above grid, save your work with the name of the assignment and your last name in the file title. Upload to the corresponding dropbox in the classroom.**

Select just one (not both) of the articles from the week two DQ assignment thread, determine if the article is qualitative or quantitative then answer the corresponding (e.g. qualitative or quantitative) questions below:

Qualitative Research Questions

Enter your 150-300 word response to each of the **8 question**s for the corresponding research type into the grid on page one of this form.

1. 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.
2. Discuss the purpose statement.
3. Discuss the research design.
4. Explain in your own words a summary of the literature review used in the selected article.
5. Identify the data collection method(s).
6. Analyze the results of the research study.
7. Identify conclusions and implications for further research.
8. Formulate answer(s) to the question: Why is this research important to the body of WOC nursing knowledge?

OR

Quantitative Research Questions

Understanding Research Articles

Enter your 150-300 word response to each of the **8 question**s for the corresponding research type into the grid on page one of this form.

1. Determine if Institutional Review Board (IRB) approval/informed consent obtained. If the research was done outside of the
2. Describe the problem and purpose of the research.
3. Discuss the research question(s).
4. Explain in your own words a summary of the literature review used in the selected article.

5. Identify the study design, including sample, setting, & data collection methods.
6. Describe the data collection tool used; is this tool validated?
7. Summarize study results, including strengths & limitations.
8. Formulate answer(s) to the question: Why is this research important to the body of WOC nursing knowledge?

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.