

The DNP Project

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Abstract

The Doctor of Nurse Practitioner (DNP) project is a scholarly project that is part of the DNP education. Where PhD Nurse Practitioners create evidence through research, DNPs apply that evidence to practice. The DNP project reflects this in how it is structured and carried out. A PICOT question is developed through performing systematic literature reviews and in obtaining evidence through the best sources and databases. The PICOT question is structured in a way to identify a healthcare problem or issue and to apply an intervention or solution to the problem. A theoretical framework or model is an additional element applied to the DNP project for structure and organization of concepts. Many things need to be considered throughout the DNP project including ethical reviews in research on human subjects and the evaluation and dissemination of the project once it is complete. This paper explores all of the elements and considerations needed to complete the DNP project.

Structure of the Doctor of Nurse Practitioner Project

Leaders in any major profession are motivated individuals who advance their education and knowledge in order to advance not only their own career, but their profession as a whole. These leaders are major contributors to the status and respect for that discipline. Leaders are frequently scholars who will take on the education and work with the imagination and creativity needed to move their profession forward. In the nursing profession, there are several groups of leaders. One of those groups is the Doctor of Nursing Practice (DNP) prepared practitioners.

The DNP is an advanced terminal degree in nursing that was originally developed by the American Association of Colleges of Nursing (AACN; Lucci, 2019). Before the DNP was created, however, there were several existing advanced degrees that nurses could obtain including the PhD Nurse Practitioner (PhD NP) degree. PhD NPs do research and obtain evidence in which nurses can base their practice. While PhD NPs were creating evidence that could be applied to practice, the AACN saw a need for another group of leaders who could interpret and apply that evidence into practice (Lucci, 2019). This is when the AACN created the advanced degree program for DNP prepared practitioners.

In 2010, the Institute of Medicine (IOM) paired with the AACN and released their report *The Future of Nursing: Leading Change, Advancing Health* (Lucci, 2019). The IOM saw the DNP program as an opportunity to lead change and transform nursing into a workforce who could help meet the needs of populations by assisting organizational practices and collaborating with physicians (Lucci, 2019). The IOM also saw the potential for the DNP programs to move the nursing profession forward as well as healthcare in general. Since the release of the 2010 report, *The Future of Nursing: Leading Change, Advancing Health*, DNP programs have spread

rapidly to colleges throughout the country, and DNPs are quickly gaining their place in healthcare.

The Difference Between a PhD Dissertation and a DNP Project

A PhD dissertation is the PhD NPs' educational project. The intent of the dissertation is to show the student's knowledge of a significant problem or issue in his or her field of study. Methodologies, scholarly approach, originality, and contributions to the field of study should all be elements of the PhD dissertation (Ketefian & Redman, 2015). The PhD NPs' focus, however, is research. To gain more knowledge to put in the bank of evidence that can be used in nursing practice.

The DNP project is not yet well defined. It may be a research project like the PhD dissertation, or it may be an evidence-based, change, leadership, synthesis, or translational project for research (Ketefian & Redman, 2015). The DNP program, however, was created to apply research to practice and should contain more elements of application and interventions for nursing practice. This will guide the DNP student's education in evidence-based practice application.

The AACN created guidelines on the structure of the DNP program that outlined the DNP project. Barriers to nurses in advancing their education through the DNP programs were advocated to be removed with the development and release of the 2010 *The Future of Nursing: Leading Change, Advancing Health* report by the IOM (Lucci, 2019). The DNP project is possible because of the AACN who actually created the DNP program and the IOM who lifted barriers for the program in order for DNPs to move forward as a formally regarded profession.

Project Ideas

Where the profession of the DNP is applying evidence to practice, education is an ideal project to undertake because education is an intervention that applies evidence to practice. DNPs can collect evidence-based data derived from PhD NPs, and incorporate that data into education. Education can be applied to patients, communities, and even other healthcare providers, so the range of populations that education can be applied to is broad. One of those populations could be cancer patients.

Cancer is a broad set of over 100 different diseases that are extremely complex and can have many factors to consider as far as treatment, detection, prevention and so on (Rote, 2019). Cancer is also a very prevalent disease, with it being the leading cause of death and suffering in developed countries around the world (Rote, 2019). While prevention, detection, and treatments are far advanced today, there is still no known cure. Until a cure is found, there is a lot more that can be done in advancing awareness of the more effective treatments and preventions that are known. This awareness can be done through exploring possible complications of the disease and how to prevent them.

For over a century, it has been known that cancer is a hypercoagulative state (Falanga et al., 2017). Hypercoagulability is a state when a person can develop a thrombosis which in turn can become a venous thromboembolism (VTE) that is an extreme complication of an already devastating disease, cancer. Cancer patients are at high risk for VTE development and education on ways to reduce this risk could be a very beneficial intervention for them.

Inactivity is a risk factor for VTE development, and severe levels of fatigue are a risk factor for inactivity (Taylor et al., 2019). Fatigue is one of the most reported symptoms of cancer and cancer therapy (Boing et al., 2018). Fatigue can have a tremendous effect on physical

function, which can decrease levels of activity and exercise. Inactivity caused by fatigue coupled with the already hypercoagulative state of cancer puts cancer patients at an extremely high risk of developing a VTE and further complicating their path to wellness.

Exercise therapy has been found to be very beneficial in helping relieving fatigue in cancer patients (Boing et al, 2018). In helping to relieve fatigue, exercise therapy should in effect help reduce periods of inactivity for cancer patients. Education on how exercise therapy helps reduce fatigue which reduces the risk of VTE development could give cancer patients knowledge to help manage their illness by reducing risk of complications and the contributing burden of symptoms.

PICOT question

PICOT is an acronym for a question that frames a DNP project. It is a structured question that organizes and provides direction to a project. The acronym for PICOT is (P) population, (I) intervention or issue, (C) control or comparison, (O) outcome desired, and (T) time frame. A question used to guide something like a clinical trial should at least contain the PICOT criteria because a poorly devised question could negatively affect the design of the study and therefore will not show clinical significance (Lira & Rocha, 2019). The project will fail in its function to bring about positive healthcare change and clinical significance if the question being used does not have the effective structure like the PICOT question.

PICOT question sample. Provided is a sample question in the PICOT format that could be used for the concept of education in exercise therapy for treating fatigue and thereby reducing risks for VTEs:

(P) Would cancer patients benefit from (I) education in treating symptoms of fatigue with exercise therapy (C) in comparison to no education in treating symptoms of

fatigue with exercise therapy (O) as indicated by reports of significantly fewer signs or symptoms of VTEs in the (T) first 6 months of cancer treatment?

Please note that this PICOT question is vague. It was done in this way for discussion of further considerations and refinements that should be done later in this article.

Systematic Literature Review

Systematic reviews are a group of findings done from multiple randomized clinical trials that were gathered on a specific subject. Randomized clinical trials are considered one of the best sources of evidence (Rosenfeld, 2017). There are multiple pyramids that have been created to show the hierarchy of evidence considered when gathering evidence, with the strongest evidence sources the top of the pyramids and the weaker less reliable sources of evidence at as the bottom or base of the pyramids. The pyramid done by Dartmouth College and Yale University places background information and expert opinions at the very base, with case-controlled studies and reports above that, then cohort studies above that, randomized controlled trials above that, critically-appraised individual articles above that, critically-appraised topics above that, and systematic reviews at the very top of their pyramid (Rosenfeld, 2017). In this pyramid, systematic literature reviews are the highest quality or the best sources of evidence.

The best sources of evidence will produce the most clinical significance to a study or project. Often, the more scientific rigor applied to the study methodology, the more significant the evidence (Rosenfeld, 2017). Healthcare providers who have a solid clinical background are likely to have the basic competence in appraising the strength of evidence that comes from a study and will be able to understand the significance the data brings to the clinical setting. When combining guidelines obtained from hierarchal pyramids of evidence and clinical competence in

assessing data, the DNP project should contain the best sources of evidence to support the project.

Library databases like CINAHL (Cumulative Index to Nursing and Allied Health Literature), MEDLINE, and Pubmed are major databases that data can be obtained from (Reavy, 2016). Medline, PubMed, and Google Scholar are also frequently used databases that many providers use when looking for evidence-based practice articles (Rosenfeld, 2017). These databases contain thousands of journal articles that can be accessed on a computer within a matter of minutes. Elements like publication date ranges, peer review, full text, and language can be filtered through the searches, so the journal articles resulting from a search can fit a narrow subject matter that is more applicable to a project.

Documenting a search strategy is important in order to be able to duplicate the search results, making it easier to find articles that can be used in a document if the researcher ever needs to go back and review the article in the future.

Websites can be another source of data. Systematic review websites, U.S. government websites, and international websites are valid sources of data (Reavy, 2016). It is good to remember, however, to critically analyze the source of the data before using it. International websites and U.S. government websites are created by experts who provide trustworthy data.

Search terms are the words entered into a search bar in a major database like CINAHL that will limit the search of articles to a narrow range of subjects. Using words like “AND” between two words or phrases in the search bar will result in articles with both elements in the article (Reavy, 2016). For example, to search for treatments for fatigue in cancer patients, input “cancer AND fatigue treatment.” If the researcher enters something like “cancer fatigue treatment,” it is likely that the results will include thousands and thousands of results for just

cancer. More limiters that can be used are “OR” and “AND NOT.” The researcher will have to go through many more articles than needed before finding the most relevant article without using limiters. Therefore, strategies like setting limiters will help eliminate wasted time going through irrelevant articles for the project.

Systematic Approach; Theoretical Framework

A theoretical framework can act as a guide for thinking and organization by grouping concepts that are applicable to the researcher’s approach to clinical practice and the DNP project. If the concepts that are being used are not assembled in an organized manner, then the clinical significance may not be adequately understood or interpreted through the project.

There are different types of nursing theories used to guide nursing practice. There are grand theories, middle-range theories, and situation specific theories. Grand theories contain a broad set of concepts that can be applied to multiple populations and can be used by different professions, such as psychology and sociology. Middle-range theories can be used for different populations with a similar set of phenomena, whereas situation specific theories are used for a specific set of phenomena that applies to a specific population (Meleis, 2018). Integration of multiple theories may be helpful in doing the DNP project. For example, a grand theory can be used to organize concepts around how illness in general can affect a patient’s behavior and functioning. A middle range theory can supplement the grand theory by narrowing down how a similar set of concepts like fatigue and inactivity can affect patients with similar illnesses. Finally, a situation specific theory can narrow the concepts down even farther to incorporate levels of fatigue specific to cancer patients. Combining theories may help guide researchers’ concepts from broad to narrow or narrow to broad, in order to convey a more holistic view of the problem addressed by the DNP project.

An example of incorporating theoretical frameworks to guide a project using the sample PICOT question listed above would be a combination of one grand theory, one middle range theory, and one situation-specific theory. King's (1981) Theory of Goal Attainment is a grand theory that can be applied to education because King's theory is a transactional theory where education would be what is being transacted between nurse and patient. A middle range theory that can be used would be Riegel et al.'s Self Care of Chronic Illness (2019) where they consider the importance of self-care in managing chronic illnesses. The concepts in Self Care of Chronic Illness can be useful as concepts used in the education promoting exercise therapy to manage fatigue and in preventing VTEs. The situation-specific theory can explain the specificity of fatigue that cancer patients suffer. Armstrong (2003) created a theory about how symptoms may precipitate other symptoms as well as decrease the patient's functioning level. There are consequences to these symptoms' precipitation of other symptoms (Armstrong, 2003). In the case of a cancer patient being less active because of fatigue, the consequence to the symptom of fatigue precipitating inactivity, would be the development of a VTE. This concept could also be incorporated into the education being created for patients in order to help them understand the consequences of inactivity and in not managing their symptoms effectively.

Human Subjects

Training in research ethics is required before a student begins the DNP project. There are so many ethical considerations when conducting research, especially when considering human subjects, so it is important that adequate education is done before a research project is allowed. Training can be done through sites like the CITI program (CITI, n.d.). Training helps guide what different types of research can be done and what different types of review will be required before research can begin.

Any time research includes interventions or interactions with live human subjects, Institutional Review Boards (IRBs) are responsible in reviewing the research projects and the ethical implications before the researchers are allowed to do the research (Lynch, 2018). IRB's can approve, modify, or reject researchers' applications according to the ethical considerations that they hold as reasonable. If the IRB finds any ethical implications that show the risks to the subjects as being more than minimal and cannot be justified with the possible benefits that come from that research, the IRB can reject the application and the researcher will not be allowed to conduct the research (Lynch, 2018).

There are three different types of IRB reviews; full, expedited, and exempt. Researchers who are applying interventions or who are interacting with human subjects will usually need full review from an IRB (Lynch, 2018). Where intervention is a piece of the PICOT question that is part of the DNP project structure, it is likely that research required for the DNP project will include an intervention. Therefore, full review by an IRB before conducting research for the DNP project should be expected by DNP students.

Evaluation

Any good research should be evaluated for effectiveness, otherwise there is no clinical significance or use of the information contain therein. According to Rosenfeld (2017), there is a structured way to question and critique information or evidence such as in a journal article. Rosenfeld sites six considerations when reviewing an article: 1. Purpose of the research; were the objectives clear?, 2. Population or sample; is the population clearly defined with inclusion criteria and a specific number of people who participated?, 3. Measurement; what type of data is being considered; qualitative or quantitative?, 4. Research design and methodology; does the design of the study claim match the data gathering process?, 5. Results and findings; are the

results vague and open to interpretation?, and 6. Limitations and discussions; are the limitations clearly stated and can they be generalized to findings in other populations?. Many of these considerations can be made through critical evaluation by a competent practitioner. Clearly written claims, clearly written processes, and consistency in data throughout the article are the highlights of how one can find value in the data.

The critical review process of journal articles can be applied to the DNP project. However, the actual project has to be done in a specific and organized way in order for the written part of the DNP project to reflect the conciseness and consistency in data gathered from research. Therefore, the six considerations Rosenfeld (2017) cited as a critical review process can be used to for the DNP to self-evaluate their project.

The purpose and goal should be clearly stated. This can be done through the PICOT format as described above. The intervention or issue of interest (I) should be clear as to what is being accomplished through research. The entire project revolves around the problem and the proposed solution, otherwise, what is the purpose of the research and how is it applicable to clinical practice?

Specificity should be done for the population being considered. For example, in the sample PICOT question mentioned above, the population is cancer patients. Unfortunately cancer patients is a very large population. There are pediatric cancer patients, middle age cancer patients, female and male cancer patients, and so on. Different variables can influence response to illness, such as age. More specificity is needed in the “cancer patients” because it is less feasible to generalize a treatment used when there is uncertainty to what other variables may have influenced the findings in the research. Inclusion criteria (Rosenfeld, 2017) such as age, gender, and type of cancer should be included in order for the findings to be applicable in a real

clinical setting. For example; in the sample PICOT question, the population used could be female post-mastectomy radiation therapy breast cancer patients between the ages of 50 and 70 years old. The populations that the data and intervention can be applied to are specific and do not have as many variables that could influence the results of the research.

The methodology used should also be clearly done and written (Rosenfeld, 2017). Mixing methodologies can confuse what the actual results are for the study. For example, using an online multiple choice questionnaire for half of the population and then using a differently worded open ended questionnaire at a clinical site for the other half of the population. Unless it is specified that the methodologies were mixed, the results of the actual outcomes could be diluted and vague.

Establishing a baseline is also a good idea to incorporate into measurement and methodology. For example, in assessing activity levels in cancer patients, it would be beneficial to know if they were previously active or sedentary. If their lifestyle was sedentary before they were diagnosed with cancer, then their activity level might not be as significant as someone who was athletic and very active prior to their diagnosis of cancer.

Results and finding should be clearly measured and interpreted (Rosenfeld, 2017). If the findings of the study are inconclusive, then it should be written that the findings are inconclusive. This can be something that other researchers can build on and use in considerations for their studies.

Like results and findings, limitations and discussions should also be clear (Rosenfeld, 2017). For example, in a population as specific as female post-mastectomy radiation therapy breast cancer patients between the ages of 50 and 70 years old may also be undergoing other treatments like chemotherapy. Chemotherapy could skew the results when measuring fatigue and

activity levels in that patient population. That should be clearly written so the data contained within the DNP project can be trusted as being transparent.

Dissemination

Dissemination of the DNP project starts with the initial presentation of the project at the institution the project was done through (Reavy, 2016). The audience of peers, stakeholders, project participants, and funding agencies, if any, will be the initial audience that the project information is disseminated to. Other ideas to disseminate the project would be to apply and submit the project to applicable professional organizations. Careful review of the applicability of the data to different organizations will help guide in knowing where to start submitting the project. For example, the Oncology Nursing Society (ONS; n.d.) would be an appropriate organization to submit a project done in education of prevention of complications of cancer and cancer treatment.

Professional organizations also have guidelines that should be adhered to when considering publication (Resnick, 2013). Organizations may not even take the time to look at the article outlining the DNP project submitted if their guidelines have not been met in the project. Many of these organizations are online and can be explored on the internet. Inquiry by email may also be beneficial if the guidelines are not available online. Being a member of the organization may also be helpful because of access to other articles that they distribute. Not only will these articles help in having current information on evidence-based practice in that particular field, but the other articles may contain a standard template that the organization generally considers in the articles that they publish and distribute.

Summary

The DNP project is of great value to the nursing profession. To the DNP student, it gives them a thorough understanding of how research is obtained and reviewed. It helps them organize their concepts into a theoretical framework to guide their thought process in patient care. Development of a research question like the PICOT question adds to the structure and organization of the thought process needed in patient care. Through systematic reviews of journal articles to obtain evidence to support their DNP project, the DNP student gains knowledge in how to critique the results and data obtained in journal articles. Practical application can also be learned through systematic reviews of journal articles. Overall, the DNP project adds to the base of the DNP student's knowledge and education in order to prepare them for the real clinical setting as a practicing DNP. To the practicing DNP, the DNP projects that are published can be added to the evidence that they can apply to practice. It can be more knowledge added to the bank of evidence-based practice that can be utilized in order to provide optimal care for current and future patients.

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