Needs Assessment of Podcast Use for Professional Development and Lifelong Learning in

CRNAs

Sydney Loesing

Marian University

Leighton School of Nursing

Chair: Bradley Stelflug, DNAP, CRNA

_____ DNAP, CRNA

Committee Member(s):   Christina Pepin, PhD, RN, CNE

_____
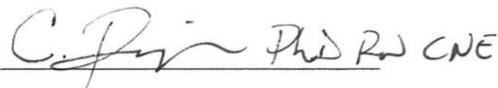
Date of Submission: December 11, 2020

Table of Contents

Abstract

In the rapidly evolving world of medical education and content, professional development is not just a choice, it is an obligation. Despite the rising popularity of podcast use over the last 10 years, there is still little-known if they effectively meet the needs of professional development and lifelong learning for anesthesia experts, specifically CRNAs. A needs assessment was performed to determine if anesthesia-focused podcasts are a valuable component to professional development and lifelong learning. The needs assessment survey encompassed 14 questions that looked at participant demographics, overall outlooks and preferences on current anesthesia-focused podcasts, desired modes of professional development, and if they considered podcasts to be a valuable component of professional development and lifelong learning in nurse anesthesia. After data analysis was completed, results from the survey responses indicated that anesthesia-focused podcasts are perceived as a valuable component to professional development and lifelong learning. In-person lectures/professional meetings were the most preferred mode of professional development (75% of responses). Podcasts were the 2nd most preferred mode of professional development (52.27% of responses). Relevant (92.86%), Credible (71.43%), Quality-focused (50%), and accessible (50%) were found to be the most valuable principles of professional development and lifelong learning. Although there is no research on podcast-use as an alternative method to achieving professional development and lifelong learning, this project demonstrates how anesthesia-focused podcasts have the potential to become a valuable component to the future of the nurse anesthesia profession.

Keywords: Podcasts, lifelong learning, professional development, nurse anesthesia, continued education (CE), SRNA, CRNA

Needs Assessment of Podcast Use for Professional Development and Lifelong Learning in

CRNAs

In the chaotic and complex surgical environment where health care professionals are highly independent, it is obligatory for nurse anesthesia providers to remain updated in knowledge, understanding, and skillset. Regardless of the continual shift in job requirements and expectations, Certified Registered Nurse Anesthetists (CRNAs) uphold credentials which validate just how important it is to engage in professional development and lifelong learning within the anesthesia profession (NBCRNA, 2020). Professional development is a continuous process that verifies the importance of lifelong learning, because by maintaining credentials, individuals are given the opportunity to build on an established set of skills, competencies, and experiences to better navigate their career pathways (Papadakis & Parr, 2019). According to Bradberry & Greaves (2012), a lifelong learner is one who is "constantly looking for ways to improve his or her skills as well as develop new ones" (p. 11). By engaging in lifelong learning, a mentor and/or leader are using gained knowledge to "develop their abilities along many dimensions" (Bradberry & Greaves, 2012, p. 11).

CRNAs are not only Advanced Practice Registered Nurses who deliver and manage anesthesia in the operating room, but they are also frontline leaders who are recognized for practicing with a high degree of autonomy and professional respect (AANA, 2019). As the expectations of leadership in the workforce continues to rise, it will be imperative for the nursing profession to continue fostering a safe learning environment by promoting individuals who engage in professional development and lifelong learning. Participating in professional development and lifelong learning allows individuals to stay informed of evidence-based research in order to effectively translate the most current research into the clinical setting.

It is evident that professional development is an essential component to the nursing profession as a whole. According to the ANA "professional development is a vital phase of lifelong learning in which nurses engage to develop and maintain competence, enhance professional nursing practice, and support achievement of career goals" (Gaines, 2019). Professional development is also known to be the heart of the American Association of Nurse Anesthetist's (AANA) mission (AANA, 2020). To maintain professional development, CRNAs are required to be recertified under the Continued Professional Certification (CPC) program in order to safely practice. This program was developed by the National Board of Nurse Anesthetists (NBCRNA) and officially went into effect in 2016 (AANA, 2020). The CPC core modules encompassed in the program are created and designed to provide a dynamic, microlearning environment while also delivering an engaging learning experience that fits the busy schedules of CRNAs (AANA, 2020). Although the CPC Program offers a wide variety of educational activities such as meetings, workshops, and online courses, educational anesthesia-focused podcasts have not been approved and are currently not an option as an activity for completing these CPC core modules.

E-learning tools, such as anesthesia-focused podcasts, can be utilized as an educational resource and basic fundamental refresher for clinical skills and knowledge. They also have the aptitude to enhance continuous learning opportunities within the nurse anesthesia profession. To optimize professional development and lifelong learning among CRNAs, it will be imperative to gather information through a needs assessment to identify preferred modes of professional development and lifelong learning, understand what key principles of professional development and lifelong learning are most desired, and determine if anesthesia-focused podcasts are a valuable component of professional development and lifelong learning for CRNAs.

Background and Significance

The market for continuing education, professional development, and lifelong learning within the healthcare profession is continuously emerging through ongoing advancements in technology. Technology, particularly used for educational purposes, has developed rapidly over the years. With that, emerging technologies are becoming an essential asset to our growing culture. In the complex, multifaceted, and intricate world of anesthesia where providers are expected to be highly autonomous, anesthesia-focused podcasts are a technological tool that have the aptitude to meet the current expectations of professional development and lifelong learning within the anesthesia workforce.

Scope of Nurse Anesthesia Practice

Since 1980, when the *Scope of Practice* statement was first published as a guideline for the AANA organization, the profession of nurse anesthesia has remarkably evolved (AANA, 2020). CRNAs are partaking in independent, professional judgment, as well as taking accountability by maintaining competency to enhance patient outcomes across all anesthesia services (AANA, 2020). AANA's (2020) most current *Scope of Nursing Anesthesia Practice* states that "the scope of an individual CRNA's practice is determined by education, experience, local, state and federal law, and organization policy" (p. 1). This project will allow readers to gain a better understanding on why professional development and lifelong learning are fundamental to the CRNA scope of practice. The growing demands and complexity of patients and procedures, along with the everchanging medical content and healthcare environment, are just a few of the many reasons why professional development and lifelong learning within the nurse anesthesia profession is mandated. The educational process that is required to become a CRNA is an extensive, challenging journey, and one that certainly never ends. From completing

an undergraduate nursing program and gaining experience in the critical care setting as a

Registered Nurse to finishing a comprehensive didactic and clinical practice curriculum at an

accredited nurse anesthesia graduate program, the education process has only just begun.

According to the AANA (2020),

> CRNAs are accountable to the public for professional excellence through lifelong
>
> learning and practice, continued certification, continuous engagement in quality
>
> improvement and professional development, and compliance with the Standards for
>
> Nurse Anesthesia Practice and Code of Ethics for the Certified Registered Nurse
>
> Anesthetist. (p.1)

It is evident that in order for a CRNA to adequately fulfill their scope of practice, they are

required to remain updated in knowledge and skillset and maintain the necessary credentials until

the very end of their career. To achieve this, engagement in professional development and

lifelong learning should be more than just an intrinsic motivation.

For a quality nurse anesthesia provider to make ethically sound decisions, they must

translate the best evidence-based research into clinical practice. McFadden & Thiemann (2009)

rationalize that evidence-based research, provider expertise, patient preferences, and standards of

practice are all aspects that back up a clinician's decisions. They also support that establishing an

evidence-based nurse anesthesia practice is a means of engaging in lifelong learning to

strengthen decision-making skills, which in time, will facilitate quality education onto the next

generation of CRNAs (McFadden & Thiemann, 2009). The AANA (2018) Code of Ethics deems

that it is a CRNA's ethical responsibility to "engage in continuing education and lifelong

professional development related to area of nurse anesthesia practice, including clinical practice,

education, research, and administration" (p. 2).

There are several professional nurse anesthesia organizations that promote and support the concepts of professional development and lifelong learning. According to the Journal of Nursing Professional Development (2015), "commitment to lifelong learning and ongoing personal and professional development is reflected in active membership in nursing professional organizations" (p. 57). The NBCRNA is a professional organization that has certified over 54,000 CRNA's. Their overall mission is to protect the public by ensuring that practicing CRNA's have met predetermined qualifications for providing nurse anesthesia services and carry out the knowledge base and skillset required to practice safely and effectively (NBCRNA, 2020). To accomplish this, lifelong learning is highly encouraged through developed credentialing programs, ongoing recertification, and continued education, all of which are vital components to maintaining an active CRNA license.

History of Podcasts

Podcasts are a technological modality that provide infrastructure while addressing the rapidly changing educational environment and future challenges of medical education (Guze, 2015). Over the last ten years, the percent of the U.S. population who have listened to podcasts has risen from 11% to 40% (Goldberg, 2017). The 2019 Podcast Trends Report focuses on understanding the current podcast market, where people listen to podcasts, and how long they are listening to them for. This report showed that in 2019 82.4% of people listen to podcasts for more than 7 hours each week, compared to 76.8% in 2018 and 66.8% in 2017 (Goldberg, 2019). Data continues to show a rapid growth since the mainstream adoption of podcasts in 2000 (Goldberg, 2019). With ongoing technological advancements, along with the growing population of APRNs, evidence-based anesthesia-focused podcasts have the potential to be a valuable and desirable tool for CRNAs to gain knowledge throughout every stage of their career.

Although podcasts are still greatly under-explored as an alternative educational modality within the anesthesia community, the increasing popularity and use in medical education suggests that they could be an important adjunct to delivering the most current research through desired anesthesia topics and content. Additionally, promoting anesthesia-focused podcasts to the anesthesia community may enhance CRNA educational resources while bringing evidence-based research into practice much quicker than other modes of professional development and lifelong learning. Since there are no CE activities that are currently being offered in the podcast format, anesthesia-focused podcasts could be offered as an additional avenue for meeting professional development requirements.

Problem Statement and PICO

Although studies have found podcasts to be an effective educational tool as an alternative learning mode for students in the medical field, there is no literature to support that anesthesia-focused podcasts are a useful adjunct to promoting professional development and lifelong learning for CRNAs.

This led to the following PICO question: 'Can anesthesia-focused podcasts meet the needs for professional development and lifelong learning among CRNAs compared to other current modes of knowledge dissemination?'

Review of Literature

The review of literature was executed from November 2019 to July 2020 to gain a comprehensive understanding on podcast-use as a way to promote professional development and lifelong learning in nurse anesthesia. The initial search utilized CINAHL, Pubmed, MEDLINE—Ovid, and ERIC databases. Search terms that were used in various combinations included: *podcasts*, *lifelong learning*, *professional development*, *nurse anesthesia*, *continued education*,

SRNA, and *CRNA*. Date limitations were set to articles published in the last 5 years. After reviewing the title and abstract of articles, 6 articles were retrieved and included in this literature review.

Final article selection was extremely rigorous and only included literature that appeared to be relevant to this project. Article selection criteria included studies that were specific to podcast use as an alternative learning tool for advanced medical education and continued educational opportunities. Literature regarding podcast use among undergraduate students was excluded from this review. Unfortunately, there were a few articles with titles that seemed applicable to this review; however, they were not able to be analyzed or used because they were unable to be accessed.

Most of the literature found focused on podcast-use as an alternative learning strategy compared to traditional educational modalities for students in the classroom setting. Despite the growing evidence indicating that podcasts are currently being used as a quality educational adjunct and an effective learning tool (Cho, Cossimini & Espinoza, 2017), there is no research on podcast usage as a means for professional development. There were also no articles found specific to lifelong learning and professional development within the anesthesia profession. Although there is a lack of literature on this desired topic, this review of literature is centered towards podcast use in advanced medical education and continued education. By focusing on these more explored topics, the importance of utilizing anesthesia-focused podcasts as an alternative adjunct to achieving professional development and lifelong learning among CRNAs may be better understood.

Podcast Use in Advanced Medical Education

Anesthesia and Critical Care Reviews and Commentary (ACCRAC) was the one of the first medical podcasts to focus on anesthesia and critical care-related topics. In April of 2017, just one year after being created, the podcast gained over 7,000 anesthesiology learners and providers. Wolpaw & Toy (2018) performed a cross-sectional survey centered towards capturing the demographics and views of ACCRAC podcast listeners. The listeners who participated in the survey included attending physicians, CRNAs, CRNA students, critical care RNs, fellows, medical students, and residents (Wolpaw & Toy, 2018). Results from the study found that a majority of these listeners were anesthesiology residents who preferred podcasts over other forms of learning, therefore, it is assumed that the format of learning this podcast had to offer is strongly desired by them (Wolpaw & Toy, 2018). This study also demonstrated that 79% of those who frequently listened to the podcast found themselves listening to at least 1 episode per week (Wolpaw & Toy, 2018). Additionally, the ability to listen to the podcasts while accomplishing other things (such a working out or commuting) was found to be a main reason why participants preferred podcasts over textbooks (Wolpaw & Toy, 2018). According to Wolpaw & Toy (2018), "results suggest that there is a demand for podcasts among learners and that those who listen to podcasts do so frequently and value them because they support multitasking and provide flexible access to pertinent information" (p. 4). Overall, the users found the podcast to be extremely useful for learning (Wolpaw & Toy, 2018).

Back et al. (2017) designed a randomized controlled trial (RCT) which compared pre- and post-tests of 2 groups of medical students to evaluate differences in the gain of knowledge with the use of podcasts versus textbooks when learning about orthopedic diseases. The use of podcasts led to not only a significantly higher gain of knowledge but also showed a significantly higher rate of satisfaction and approval than the textbooks did (Back et al., 2017). Despite the

students who were in favor of podcasts as the learning tool, the podcasts also revealed a higher gain in knowledge to those students who did not have a positive attitude toward them (Back et al., 2017).

Podcast Use for Continued Education

Qalehsari et al. (2017) performed a systematic review to identify lifelong learning strategies in nursing. Although findings were specific to nursing students, it was found that lifelong learning strategies are a necessity to the nursing profession and will lead to increased quality of education, development of professional competency, and increased quality of patient care (Qalehsari et al., 2017). According to Qalehsari et al. (2017) personal, professional and social development were found to be the strongest motivators for continuing education. Results of this study implied that lifelong learning positively influences the overall growth of employees.

Cuppett (2001) executed a 3-part survey study "to determine the self-perceived continuing education needs of current certified athletic trainers and the factors that affect those needs" (p. 388). According to Cuppett (2001), "the mandatory continuing education movement arose out of the perception that professionals need to be committed to lifelong learning to maintain and improve their competence" (p. 388). Cuppett (2001) found that the main factors contributing to the increased need of continued education are due to the continuous change in knowledge, the increasing diversity of employment settings, the restructuring of professional requirements, the influence of technology on assessment and treatment procedures, and the ever-changing health care system. Additionally, findings from the study allowed Cuppett (2001) to conclude that mandatory continuing education hours required by most professions was not the motivating factor for professionals to attend and participate in continuing education activities and programs.

Patrick et al. (2019) performed a descriptive study which targeted post-graduate pediatric healthcare providers who had an interest in continuing medical education. They began their study by developing a podcast platform called *PediaCast CME* where they produced 26 podcast episodes that incorporated quality criteria medical education and offered free accredited continued medical education to the podcast listeners (Patrick et al., 2019). From the production of their first podcast episode in March 2015 to the production of their last podcast episode in May 2017, they had a cumulative total of 91,159-episode downloads (Patrick et al., 2019). They found that overtime, podcast listenership grew, and results from their study showed that audio podcasts appeared to be an effective means of communicating pediatric knowledge content for continuing medical education opportunities (Patrick et al., 2019).

The article that was found to be most relevant to this project was a qualitative study that was carried out by Malecki et al. (2019). Through interviews, this study was performed to obtain a better understanding of why individuals incorporate podcasts into ongoing medical education and professional development (Malecki et al., 2019). Listeners of The Rounds Table (TRT), a medical podcast created by physicians who summarize, analyze and contextualize new research in internal medicine, were interviewed to determine the podcasts perceived impact on learning and practice (Malecki et al., 2019). Of the 17 participants that were interviewed, 2 of them were medical students, 8 were residents, and 7 were staff physicians. Thematic analysis yielded 4 main themes in regards to medical podcast usage: (1) TRT optimized efficiency, (2) TRT endorsed individuals to stay up-to-date in medical literature, (3) listeners used TRT as a form of both education and entertainment ('edutainment'), and (4) listeners felt that TRT expanded their overall knowledge base and allowed them to translate gained knowledge into the clinical setting (Malecki et al., 2019). It was also found that listeners across all stages of practice turn to medical

podcasts for various reasons, such as giving them the ability to multitask. Additionally, the findings of the study highlight how podcasts, developed for continuing professional development, are oftentimes used as informal adjuncts to promote learning (Malecki et al., 2019).

Practice Gap Analysis

Podcasts are beginning to address the changing educational environment while providing a foundation that addresses the future challenges of medical education. After performing a literature review, nearly all the studies found were specific to podcast-use as an educational adjunct for medical students and residents, not to anesthesia providers. Although podcasts have become a unique technological advancement to our growing culture and continue to be a spotlight as a newer approach to effectively delivering medical education, there is no research on how podcasts optimize professional development and promote lifelong learning for individuals within the nurse anesthesia profession. By performing a needs assessment on podcast use for professional development and lifelong learning in CRNAs, we can gain a better understanding on how anesthesia-focused podcasts can be a fundamental way to obtaining knowledge, disseminating the most current medical information, and appreciate how podcasts can be an alternative and more desired adjunct to obtaining continued education credits.

Theoretical Framework

The CRNA scope of practice is constantly evolving to meet the needs of our expanding healthcare system as newer research and technologies continue to emerge. Lifelong learning is a concept that has been discussed as early as 1970. There are several meanings of lifelong learning, however, Longworth (1999) defines it as:

The development of human potential through a continuously supportive process which

stimulates and empowers individuals to acquire all the knowledge, values, skills, and

understanding they will require throughout their lifetimes and to apply them with

confidence, creativity and enjoyment in all roles, circumstances, and environment. (p.2)

Today, lifelong learning is used as a framework to enable individuals to engage in learning

wherever, whenever, and however it may align to one's learning styles and needs. According to

Vander Ark & Ryerse (2017), professional development is one of the most common types of

lifelong learning and happens on a daily basis at work through job training and skill acquisition.

Professional development allows individuals to engage in activities that guide them in

maintaining competency to enhance their overall professional practice. Tricia Kurtt, an

instructional coach and education teacher adds that "in order for professional development to

influence what matters most, every individual needs to engage in the learning process so they

embrace and model what it means to be a lifelong learner" (Kurtt, 2016).

For this DNP project, The National Qualifications Framework (NQF) was chosen as a

guide to determine which principles are most desired and valued in popular anesthesia-focused

podcasts, today. The NQF, established in 1995 in South Africa, is a foundation for a system of

efficient education and training through lifelong learning. The NQF encompasses eleven key

principles which were developed to evaluate if lifelong learning in a workplace and/or profession

was achieved. These key principles include credible, coherent, relevant, quality-focused, flexible,

accessible, articulation, portable, responsive, reflective, and progressive (Motshekga-Sebolai,

2003). The establishment of this theoretical framework is grounded by these principles. The

framework provides a definition for each of these eleven principles, which can be found in

Appendix A.

Although these principles are defined and specific to lifelong learning in South Africa's

education system, they can be interpreted in a way that articulates how educational podcasts

meet the needs of all these principles, and therefore, have the ability to promote professional

development and lifelong learning. For example, Motshekga-Sebolai (2003) describes quality-

focused as the "willingness to learn and continually update knowledge" (p. 23). Newer

developed technologies that offer e-learning, such as podcasts, are being used to quickly deliver

the most current and up-to-date evidence-based information to health professionals. One study in

particular found that healthcare professionals are not only using podcasts to augment knowledge

but are also using them as a way to stay current with the newest medical literature (Malecki et

al., 2019). Accessibility, another principle from the NQF, emphasizes on expanding open public

services in order to promote learning opportunities for everyone (Motshekga-Sebolai, 2003). One

of the great things about podcasts is that they are made available to nearly everyone. Today, most

medical-related podcasts fall under the concept of 'Free Open Access Medical' (FOAM)

education, which enables all individuals to conveniently access podcasts on mobile devices,

social media platforms, or through common applications such as Apple iTunes and Spotify

(Andrejco et al., 2017).

Portability and accessibility are two more principles of the NQF that offer flexibility and

convenience, which are both extremely important concepts when it comes to time management

(Motshekga-Sebolai, 2003). Work-life balance is not always easy to manage, especially for

healthcare professionals who are always pressed for time. With that said, trying to find additional

time to engage in professional development and lifelong learning on an already overwhelming

workload is not always attainable. Podcasts, however, give individuals the opportunity to

multitask and listen to them while on the go such as while driving/commuting to and from work, while doing household chores, or even while exercising.

Furthermore, relevance is a principle that fosters professional growth and the ability to confidently cope with change and uncertainty, especially since learning is conditional and never stops (Motshekga-Sebolai, 2003). Another principle, responsive, implies that the anesthesia workforce will adequately respond to the needs of the healthcare system and nurse anesthesia providers will acquire all the necessary skills to accommodate ongoing changes in the surgical setting. According to Motshekga-Sebolai (2013) changes in the nature of work mandate different ways of performing your job which can be quite overbearing, however, these challenges can be successfully addressed through lifelong learning. By providing several examples on how the principles comprised in the NQF parallel lifelong learning in nurse anesthesia, it is apparent that these eleven principles could be valuable components to building a foundation for professional development and lifelong learning through anesthesia-focused podcasts.

Purpose and Aims

Although job expectations are constantly changing, CRNAs are required to stay informed on the most current medical content while maintaining an expert-level skillset to deliver quality patient care within the surgical setting. To overcome these challenges and demands, CRNAs should be given the opportunity to engage in other modalities of continued education and professional development, such as anesthesia-focused podcasts. Podcasts continue to transform the face of medical education and have the capability to enhance knowledge, optimize personal and professional development, and endorse lifelong learning for CRNAs. The purpose of this project is to determine if anesthesia-focused podcasts are a valuable technological alternative to achieving professional development and lifelong learning for nurse anesthesia professionals. The

aims of this project are: (1) to survey CRNAs on their overall viewpoint on anesthesia-focused podcasts, (2) to identify preferred modes of professional development and continued education (CE) within the nurse anesthesia community, (3) to determine content, length, and essential principles that are most desired in anesthesia-focused podcasts, and lastly, (4) to distinguish if anesthesia-focused podcasts are seen as a valuable component of professional development and lifelong learning in nurse anesthesia.

Project Design

This needs assessment project targeted professionals within the nurse anesthesia community, specifically CRNAs. A needs assessment was performed to determine what the most desired content, length, and key principles of an anesthesia-focused podcast are currently most desired by CRNAs. This project used a descriptive design and was selected to gain a greater understanding on if anesthesia-focused podcasts are seen or have the potential to be a valuable component of professional development and lifelong learning in nurse anesthesia. This design may also help future projects and/or research studies determine if anesthesia-focused podcasts are a fundamental asset to the nurse anesthesia profession.

Setting

This needs assessment was carried out as an online survey. The project site varied for all participants in the project, because they were given the opportunity to take the survey on their own time and in any type of setting that they chose to do so.

Population

The participants of this project were initially targeted towards people within the nurse anesthesia profession, specifically CRNAs and SRNAs. CRNAs are licensed professional who have obtained a master's and/or doctoral degrees in anesthesia delivery and have been providing

anesthesia care to patients in the United States for more than 150 years (AANA, 2019).

According to Merritt Hawkins (2019) "there are approximately 49,000 registered CRNAs in

active practice the United States, excluding students and those who are not in active patient care

roles" (p. 3).

The population of this project was targeted through a CRNA/SRNA Facebook group.

This group, which now has over 27,000 members, was created on October 24, 2010 by a CRNA

named Betsy Majma. To gain access to the group, you must provide photographic proof of your

CRNA/SRNA identity by sending a picture of your AANA or NCRNA identification badges.

Inclusion/Exclusion Criteria

Originally, the survey included both CRNAs and SRNAs, who were members of the

CRNA/SRNA Facebook group. However, after data collection was completed it was decided that

the needs assessment should only include the CRNA respondents. Although literature shows that

podcasts are just as effective as other teaching methods in the classroom setting, professional

development and lifelong learning are not required or necessary until SRNAs enter the phase of

their careers when they are out of school and working as CRNAs. By excluding them, the focus

was directed more towards understanding podcast use as a means of professional development

and lifelong learning exclusively in CRNAs.

<div align="center">

Methods

</div>

Measurement Instrument

The survey was created, managed, and analyzed through a statistical analysis software

program called Qualtrics Survey Software. This software program was made available through

Marian University Center for Teaching and Learning.

Survey questions were tailored to find trends, patterns, and/or gaps based on demographics, overall outlooks and preferences on current anesthesia-focused podcasts, preferred modes of professional development, and most importantly, if podcasts are perceived as a valuable component of professional development in nurse anesthesia. After the initial survey was created, several alterations were made to enhance the overall quality of the needs assessment survey. Such alterations included modifying the wording and phrasing to make survey questions and answers more succinct and eliminating survey questions that did not correlate to the four aims of the project. The survey was also sent to a well-known anesthesia podcast host, Jon Lowrance, for additional guidance and expertise. In receiving advice from Jon Lowrance, several additional changes were made to achieve content and face validity, and the survey was finalized.

This needs assessment survey can be found in *Appendix B*. The first four questions of the survey were included to obtain participant demographics such as provider status, age range, highest degree obtained, and number of years practicing as a CRNA. To best determine if anesthesia-focused podcasts are a valuable technological alternative to achieving professional development and lifelong learning for nurse anesthesia professionals, ten survey questions were designed to address the four key aims of the project:

Aim 1. To gain a better understanding on the participants' overall perspective on podcast use as an alternative educational and reinforcement tool for professional development and lifelong learning in nurse anesthesia, five questions (questions 6-8 and 12-13) were asked. One of these was a multiple-response type question asking the participant which anesthesia-focused podcast(s) they currently listen to. The other four were single-response questions covering topics including: how often the participant listens to podcasts, how/when the participant listens to

podcasts, what would make podcasts more meaningful to the participant, and if the participant would prefer shorter lengths of podcast episodes presented as a series if content is complicated.

Aim 2. Question 5 was encompassed to identify the participants' preferred modes of professional development and CE within the nurse anesthesia community. This was a multiple-response type question. The six options of preferred modes of professional development that were given included the common CE activities that are currently offered through NBCRNA, along with Podcasts.

Aim 3. Three questions (questions 9-11) were incorporated to determine content, length, and essential principles that are most desired in anesthesia-focused podcasts. Two of these were formatted as multiple-response type questions, whereas the other was a single-response question.

Aim 4. The last question (question 14) was asked to determine if anesthesia-focused podcasts are seen as a valuable component of professional development and lifelong learning in nurse anesthesia. A Likert-scale format was used and the participants were given the option to select strongly agree, agree, neutral, disagree, or strongly disagree.

Additionally, four of the fourteen questions in the survey were given an 'other' option where participants could choose to add something if it was not included as an option for them to select from the already given response choices.

Data Collection Procedures

After obtaining approval from the Marian University IRB in December of 2019, participants were recruited through Facebook, which is a social media platform where individuals can connect with family, friends, colleagues, co-workers, etc. Facebook offers users to join public or private groups where people with common interests can communicate, express

opinions, and interact with one other. A private group on Facebook called 'CRNAs and SRNAs'

is where the participants from this project were found and recruited.

Prior to recruitment request, permission was obtained from the creator and owner of the

group, Betsy Majma through Facebook messenger. As shown in *Appendix C*, the initial

recruitment post included a brief introduction of the researcher, detailed the project that was

being performed, and provided thorough instructions on how to access the survey. It was also

mentioned that by choosing to select the link and complete the survey, the participants were

consenting to participate in the project.

Qualtrics offers a feature that allows survey creators to specify a date and time for the

survey to open and close, which prevents participants from completing the survey outside the

allotted time frame. The survey was made available for all participants to complete on a

voluntary and confidential basis over a 2-week period. A reminder message about completing the

survey was sent out at the 1-week mark. The survey opened on Wednesday, April 1st at 3:22 pm

(EST) and closed on Wednesday, April 15th at 11:59 pm (ET). The "Prevent Ballot Box

Stuffing" option that is given on Qualtrics places a cookie on the respondent's browser after they

complete the survey (Qualtrics, 2020). This function was used for this survey so that respondents

could not skew the results by taking the survey numerous times.

Data Analysis

To determine if anesthesia-focused podcasts are a valuable technological alternative to

achieving professional development and lifelong learning for nurse anesthesia professionals, data

analysis was carried out to meet the four aims of this project. Data analysis encompassed

descriptive statistics including frequency distributions. Utilizing descriptive statistics for nominal

and ordinal data through frequencies and percentages was found to be the best method in

analyzing the collected data from the survey. Since the project only focused on one population and included a single needs assessment survey, there was no data that needed to be compared. Additionally, there were no continuous variables; therefore, interval and ratio data were unable to be measured, and central tendencies such as mean, median, range, standard deviation, and confidence intervals were not applicable.

There were 'other-specify' options included in four of the survey questions. These 'other-specify' responses that were suggested did not fit into any of the pre-existing categories, and there were not enough similar responses to where they could be grouped into their own separate category. Due to this finding, content analysis was not performed, and these responses were excluded from the dataset and study.

Results

Approximately half of the respondents were SRNAs; however, since they were excluded, the population sample size was 44 CRNAs. These respondents answered all of the survey questions. After data analysis was performed through Qualtrics, the obtained frequencies and percentages from each survey question were transferred into three separate tables which were created on Microsoft Word software program to identify trends and patterns from the retrieved data. As shown in Table 1, participant demographics were broken down into age range, highest degree obtained, and length of time practicing as a CRNA. Participants that were 51 years and older made up 25% of the study population, and almost 35% of the participants were 35 years and younger, leaving the remaining 40% falling under the ages 36-50 years old. Regarding the highest degree obtained, nearly 70% of the participants have their master's degree, while the remaining 30% have their doctoral degree. Over 20% of the participants within the study have

been practicing as a CRNA for over 20 years; however, almost 60% of the participants only have

been practicing as a CRNA for under 10 years.

Table 2 encompasses the survey questions specific to aim 3 to gain a better understanding

on the participants' overall outlook and use on podcasts. In table 2, there is one 'select all that

apply' which displays the percentage of cases, whereas the other single answered questions are

displayed as just a percentage. Nearly half (47.73%) of the participants claimed that they listen to

podcasts less than once a month, and about 30% of the participants stated that they listen to

podcasts anywhere from at least once a week (15.91%) to daily (13.64%). Roughly half

(47.73%) of the participants preferred for the duration of a single podcast episode to be 16-30

minutes. When participants were asked how they listened to podcasts, 61.36% were found to

listen to them while driving or in the car. Furthermore, intraoperative emergencies (62.79%),

pharmacology (60.49%), and anesthesia management and considerations based on co-existing

diseases (58.14%) were the top three out of eleven most desired anesthesia-related podcast

topics. Lastly, 32 out of the 44 participants (72.73%) stated that having the option to get

continued education (CE) credits for podcasts episodes would make podcasts more meaningful to

them.

Table 3 includes survey questions that are specific to aim 2 and cover topics regarding

outlooks on professional development and lifelong learning. The data obtained from the two

questions included in this table are retrieved from 'select all that apply' questions, which are

displayed as percentage of cases. The participants were given 6 options when asked what their

preferred mode of professional development were. In person lectures or professional meetings

was the most selected answer, and it was selected 33 times (75% of responses). Videos and

online lectures/courses (59.99%) and podcasts (52.27%) were the other two top selected answers

of the six options that were given. For this project, the chosen theoretical framework was used to determine which principles are most desired and valued in popular anesthesia-focused podcasts today. The NQF embodied eleven key principles to evaluate if lifelong learning in a workplace and/or profession was achieved. In the survey, participants were asked which of these eleven principles regarding lifelong learning and professional development were most valuable to them. Relevant was the most selected principle in 39 out of the 44 responses (92.86%). Credible (71.43%), quality focused (50%), and accessible (50%) were the next most popular choices of the eleven key principles that were listed.

Figure 1 is a pie chart that deciphers if the participants of this project find podcasts to be a valuable component of professional development and lifelong learning. The question was asked on a 5-point Likert scale and the respondents were given the options to 'strongly agree,' 'agree,' 'neutral,' 'disagree,' or 'strongly disagree' when asked if they considered podcasts to be a valuable component of professional development and lifelong learning. As demonstrated in Figure 1 of Appendix D, 25% strongly agreed, 36% agreed, 32% remained neutral, and 7% disagreed. There were no respondents that selected 'strongly disagree.'

Interpretation/Discussion

Findings obtained from the collected survey data showed that anesthesia-focused podcasts have the aptitude to be an alternative and valuable component to professional development and lifelong learning. Overall, the data collected from this needs assessment survey indicate that anesthesia-focused podcasts are perceived as a valuable component to professional development and lifelong learning. As podcast use in the anesthesia community continues to rise, anesthesia podcast platforms and hosts can use the information from this project and adjust their podcasts to better meet the needs of CRNAs who currently use them. If CRNAs were given the

option to listen to anesthesia-focused podcasts as a means of obtaining CE credits, podcast in the

anesthesia community could gain significant popularity as an additional alternative educational

adjunct. Additionally, since podcasts were found to be most listened to while driving, CRNAs

can make better use of their time and busy schedules by listening to them on their commutes to

and from work.

Limitations of this study include non-respondent bias, small sample size, and lack of

prior research on the topic. Due to the small response rate, non-respondent bias can be assumed

which can limit the results of the study. The obtained data may not accurately represent the

targeted population, thus, leading to inconclusive research. By recruiting participants through a

Facebook group, it is easy to assume that the survey did not reach all members of the targeted

sample. If this study was repeated or used for future research implications, participants should be

recruited on other social media platforms and/or via email to members of all nurse anesthesia

organizations, such as the AANA. By limiting the sample size and only recruiting participants

through Facebook, certain age groups may be less likely to participate in the study. By obtaining

a larger sample size, it would be interesting to see if the age or number of years an individual has

been practicing as a CRNA is correlated to the preferred professional development and lifelong

learning modality. Location of employment, duties required in a job, generational learning

differences, age range and even hours worked per week may have a significant impact on how an

individual would prefer to engage in CE activities.

Timeline

After getting approval on the proposal of the project, IRB documentation was sent out on

December 4, 2019 and exempted on December 13, 2019. Following IRB exemption, the

implementation phase of the project began which consisted of creating and sending out the needs

assessment survey and collecting/analyzing data. Recruitment and data collection occurred from April 2020 to May 2020, while data analysis occurred from May 2020 to August 2020.

Ethical Considerations/Protection of Human Subjects

The Marian University's Institutional Review Board (IRB) approval was obtained prior to initiating this DNP project. On December 13, 2019, the submitted protocol was reviewed and deemed exempt *(Appendix F)*. Additionally, confidentiality regarding survey responses was guaranteed through the Qualtrics Software program that was used to complete the survey. Through the anonymous survey link provided by Qualtrics, participants were not required to provide any personal information in the survey.

Conclusion

This needs assessment highlights how CRNAs view anesthesia-focused podcasts as an alternative way to engage in professional development and lifelong learning. Although there is no research on podcast-use as an alternative method to achieving professional development and lifelong learning, this project demonstrates how anesthesia-focused podcasts have the potential to become a valuable component to the future of the nurse anesthesia profession. As the popularity of anesthesia-focused podcasts continues to rise to meet the educational needs of a CRNA, it will be interesting to see if podcasts will be offered as a CE activity in order for CRNAs to obtain credits. Understanding how emerging technologies, such as anesthesia-focused podcasts, can optimize continued medical education has the ability to enhance and facilitate better learning opportunities throughout every stage of a CRNA's career. Due to the paucity in this literature, future research can further explore podcast use to better understand this continually emerging topic.

References

American Association of Nurse Anesthetists. [AANA]. (2020). *Scope of nurse anesthesia practice.* 1-3. https://www.aana.com/docs/default-source/practice-aana-com-web-documents-(all)/scope-of-nurse-anesthesia-practice.pdf?sfvrsn=250049b1_2

American Association of Nurse Anesthetists. [AANA]. (2019). *Certified registered nurse anesthetist fact sheet.* https://www.aana.com/membership/become-a-crna/crna-fact-sheet

American Association of Nurse Anesthetists. [AANA]. (2018). *Code of ethics for the certified registered nurse anesthetists.* 1-5. https://www.aana.com/docs/default-source/practice-aana-com-web-documents-(all)/code-of-ethics-for-the-crna.pdf

Andrejco, K., Lowrance, J., Morgan, B., Padgett, C., & Collins, S. (2017). Social media in nurse anesthesia: A model of a reproducible educational podcast. *American Association of Nurse Anesthetists (AANA) Journal, 85*(1), 10-16. www.aana.com/aanajournalonline

Back, D. A., von Malotky, J., Sostmann, K., Hube, R., Peters, H. & Hoff, E. (2017). Superior gain in knowledge by podcasts versus text-based learning in teaching orthopedics: A randomized controlled trial. *Journal of Surgical Education, 74*(1), 154-160. http://dx.doi.org/10.1016/j.jsurg.2016.07.008

Bradberry, T., & Greaves, J. (2012). *Leadership 2.0*: San Diego, CA: Talent Smart.

Cho, D., Cosimini, M., & Espinoza, J. (2017). Podcasting in medical education: A review of the literature. *Korean Journal of Medical Education, 22*(4), 229.

Cuppett, M. (2001). Self-perceived continuing education needs of certified athletic trainers. *Journal of Athletic Training, 36*(4), 388-395. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC155434/

Gaines, K. (2019). You should join a nursing organization. Here's why. *Full Beaker, Inc.*

https://nurse.org/articles/benefits-of-nursing-organizations/

Goldberg, Kevin. (2017). The history of podcasts. *Discover Pods.* https://discoverpods.com/

    history-of-podcasts/

Guze, P. A. (2015). Using technology to meet the challenges of medical education. *Transactions*

    of the American Clinical and Climatological Association, 126, 262-270.

    https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4530721/

Journal for Nursing Professional Development. [JNPD]. (2015). The role of nursing professional

    development in the future of nursing. *Wolters Kluwer Health, Inc.,* 56-57.

    https://www.nursingcenter.com/pdfjournal?AID=2714576&an=01709760-201501000-

    00015&Journal_ID=54029&Issue_ID=2714125

Kurtt, T. (2016). Professional development for lifelong learning. *ASCD In Service.*

    https://inservice.ascd.org/professional-development-for-lifelong-learning/

Longworth, N. (1999). *Making lifelong learning work: Learning cities for a learning century.*

    Sterling, VA: Stylus Publishing Inc.

Malecki, S. L., Quinn, K. L., Zilbert, N., Razak, F., Ginsburg, S., Verma, A. A. & Melvin, L.

    (2019). Understanding the use and perceived impact of a medical podcast: Qualitative

    study. *JMIR Medical Education, 5*(2). doi:10.2196/12901

McFadden, J. J. & Thiemann, L. J. (2009). Evidence-based practice for lifelong learning. *AANA*

    Journal, 77(6), 423-426. https://www.aana.com/docs/default-source/practice-aana-com-

    web-documents-(all)/evidence-based-practice-for-lifelong-

    learning.pdf?sfvrsn=a02f44b1_2

Merritt Hawkins. (2019). *CRNA supply, demand, and recruiting trends.* https://www.merritthawk

    ins.com/uploadedFiles/Merritt_Hawkins_CRNA_Whitepaper_2019.pdf

Motshekga-Sebolai, M. E. (2003). Theory of lifelong learning. *A Study of Lifelong Learning in*

    Academic Institutions (pp. 20-49). https://repository.up.ac.za/bitstream/handle/2263/26726/

    02chapter2.pdf?sequence=3&isAllowed=y.

National Board of Certification and Recertification for Nurse Anesthetists. [NBCRNA]. (2020).

    Your credential matters. https://www.nbcrna.com/about-us/your-credential-matters

Papadakis, E. & Parr, M. (2019). *How credential transparency can drive lifelong learning access*

    and impact. https://evolllution.com/programming/credentials/how-credential-transparency-

    can-drive-lifelong-learning-access-and-impact/

Patrick, M., Stukus, D., & Nuss, K. (2019). Using podcasts to deliver pediatric educational

    content: Development and reach of of Pediacast CME. *Digital Health, 5*, 1-9.

    https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6393949/

Qalehsari, M. Q., Khaghanizadeh, M. & Ebadi, A. (2017). Lifelong learning strategies in

    nursing: A systematic review. *Electronic Physician, 9*(10), 5541-5550.

    http://dx.doi.org/10.19082/5541

Qualtrics. (2020). *Survey protection: Preventing respondents from taking your survey more*

    than once. https://www.qualtrics.com/support/survey-platform/survey-module/survey-

    options/survey-protection/

Vander Ark, C. & Ryerse, M. (2017). 10 reasons why lifelong learning is the only option.

    Getting Smart. https://www.gettingsmart.com/2017/01/10-reasons-why-lifelong-learning-

    is-the-only-option/

Wolpaw, J. & Toy, S. (2018). Creation and evaluation of an anesthesiology and critical care

    podcast. *The Journal of Education in Perioperative Medicine, 19*(4), 1-16.

    https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5991777/pdf/i2333-0406-20-1-1f.pdf

Appendix A: NQF Principles and Definitions

2.9   THE PRINCIPLES OF NATIONAL QUALIFICATION FRAMEWORK

- **Credible**: The principle calls for education to be credible both in South Africa and around the world
- **Coherent**: The education should provide clear learning pathways.
- **Relevant**: Learning is provisional and never stops, what makes a person successful today might not in future, hence the need for professional growth and the ability to deal with change and uncertainty with confidence and relevance.
- **Quality focused**: It is important to have the workforce that is willing to learn and continually update their knowledge. A willingness to learn continually is far more important than the qualification a person has at the moment. Quality will only improve through continual updating of the previous knowledge.
- **Flexible**: Technological change modifies or eliminate some other type of jobs thereby rendering many workers obsolete. The affected individuals will need reskilling in order to be active workers. The NQF will prevent career barriers. A person will not be trapped in one learning situation but will be able to move between different fields of education. Learners will be able to transfer credits from one place of learning to the other. Flexibility will encourage appropriateness.
- **Accessible:** A means of expanding learning opportunities to all individuals for the well-being of the nation. Services should be open, with no age or sex restrictions. Prior learning will be recognised and assessment criteria will be put in place to deal and control the process.
- **Articulation**: Articulation will allow students to move between providers of education
- **Portable:** The NQF principles offer occupational flexibility where people are able to readily move among related job qualifications. Reskilling, when the work becomes obsolete means a second chance, even for people who for any reason dropped out of school.
- **Responsive**: It is important for a country to have an adaptable and flexible workforce. The workforce that is responsive to the needs of industry and the country as a whole, is capable of acquiring whatever skills may be relevant to the changing times. Forms of work are likely to change to take account of not only new technology, but also changing industrial and societal demands. Changes in the workplace and the nature of the workforce requirements have changed and will keep on changing. For example, in South Africa today there is a demand for mathematics and science teachers. Teachers will have to acquire new skills to be responsive and adaptation. They need new skills for job changes
- **Reflective**: It is important that curricula be compiled in close consultation with stakeholders, to ensure that students graduate with qualifications that are applicable to today's workplace demands. People trained for a job should be ready for immediate utilisation in their workplace.
- **Progressive**: The principles of NQF offers occupational flexibility where people are capable of readily moving between levels and higher up the ladder of the levels.

Retrieved from Motshekga-Sebolai, M. E. (2003). Theory of lifelong learning. *A study of lifelong learning in academic institutions* (pp. 20-49)

Appendix B: Needs Assessment Survey

Needs Assessment of Podcast Content for Professional Development of CRNAs

Q1. Please indicate your provider status.

- o a. Certified Registered Nurse Anesthetist (CRNA)

- o b. Student Registered Nurse Anesthetist (SRNA)

Q2. Please select the age range you fit into.

- o 20-25

- o 26-30

- o 31-35

- o 36-40

- o 41-45

- o 46-50

- o 51+

Q3. Please select highest degree obtained.

- o Associate's degree

- o Bachelor's Degree

- o Master's Degree

- o Doctoral Degree

Q4. Please select number of years you have been practicing as a CRNA.

- o 1-2 years

- o 3-5 years

- o 6-10 years

- o 11-15 years

- o   16-20 years

- o   21+ years

- o   I am a SRNA

Q5. Please indicate your preferred mode of professional development (Select all that apply)

- o   In person lectures/Professional meetings

- o   Videos/Online lectures or courses

- o   Podcasts

- o   Textbooks

- o   Peer reviewed literature (journals, articles)

- o   PowerPoint slides/notes

- o   Other (Please specify)

Q6. How often do you listen to podcasts?

- o   Less than once a month

- o   1-2 times per month

- o   At least once a week

- o   Daily

Q7. How do you typically listen to podcasts?

- o   I don't listen to podcasts

- o   While driving/in car

- o   While doing household chores

- o   While exercising

- o   While doing nothing but solely listening to the podcast

- o   Other (Please specify)

Q8. What anesthesia-related podcasts do you currently listen to? (Select all that apply)

- o   None

- o   'Anesthesia and Critical Care Reviews and Commentary' (ACCRAC) hosted by Jed

   Wolpaw

- o   'Depth of Anesthesia' hosted by David Has

- o   'From the Head of the Bed' hosted by Jon Lawrence

- o   'Apex Live Anesthesia Podcast' hosted by Sass Elisha

- o   'Anesthesia Deconstructed: Science, Politics, Realities' hosted by Michael MacKinnon

- o   Other (Please specify)

Q9. National authorities have recommended eleven key principles to promoting professional

development and lifelong learning. When thinking about the anesthesia-related podcasts that you

enjoy listening to the most, which of the following principles are most valuable to you? (Select

all that apply)

- o   Relevant

- o   Quality-focused

- o   Accessible

- o   Portable

- o   Responsive

- o   Credible

- o   Coherent

- o   Articulation

- o   Reflective

- o   Progressive

o   Flexible

Q10. What is the ideal duration of a podcast episode?

- o   5-15 minutes
- o   16-30 minutes
- o   31-45 minutes
- o   46-60 minutes
- o   60+ minutes

Q11. What anesthesia-related content do you desire most for future podcasts? (Select top 3)

- o   Pharmacology
- o   Anatomy
- o   Physiology
- o   Regional Anesthesia
- o   Airway Management
- o   Fluid Management
- o   Pain Management (Acute & Chronic)
- o   Patient Positioning
- o   Intraoperative Emergencies
- o   Anesthesia management/considerations based on specific populations (Geriatrics, Pediatrics, Obstetrics, Obese, etc).
- o   Anesthesia management/considerations based on co-existing diseases
- o   Other (Please specify)

Q12. What would make podcasts more meaningful to you?

- o   Continuing education (CE) credits for podcast episodes

- o Having the option to watch audio recorded podcasts in a video format

- o Being able to interact and engage with podcast host and guests

- o Having more didactic review of basic core content

Q13. If content is complicated I would you prefer shorter lengths of podcast episodes that are presented as a series.

- o Strongly agree

- o Agree

- o Neutral

- o Disagree

- o Strongly disagree

Q14. Overall, podcasts are a valuable component of professional development as a CRNA.

- o Strongly agree

- o Agree

- o Neutral

- o Disagree

- o Strongly disagree

Appendix C: Participant Recruitment Post

Initial Post on 'CRNA SRNA Facebook Group' Page
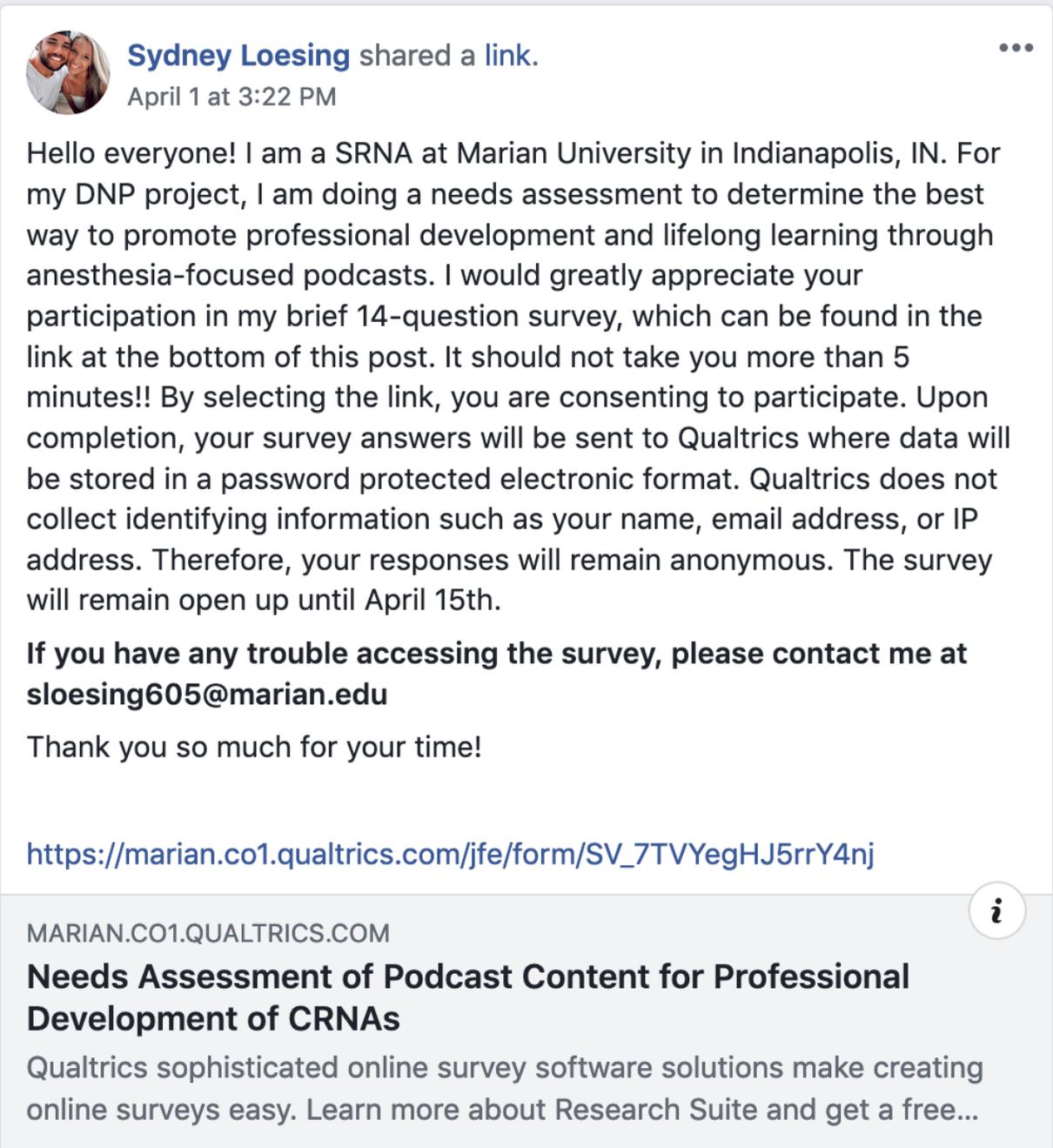
Sydney Loesing shared a link.

April 1 at 3:22 PM

Hello everyone! I am a SRNA at Marian University in Indianapolis, IN. For my DNP project, I am doing a needs assessment to determine the best way to promote professional development and lifelong learning through anesthesia-focused podcasts. I would greatly appreciate your participation in my brief 14-question survey, which can be found in the link at the bottom of this post. It should not take you more than 5 minutes!! By selecting the link, you are consenting to participate. Upon completion, your survey answers will be sent to Qualtrics where data will be stored in a password protected electronic format. Qualtrics does not collect identifying information such as your name, email address, or IP address. Therefore, your responses will remain anonymous. The survey will remain open up until April 15th.

If you have any trouble accessing the survey, please contact me at sloesing605@marian.edu

Thank you so much for your time!

https://marian.co1.qualtrics.com/jfe/form/SV_7TVYegHJ5rrY4nj

MARIAN.CO1.QUALTRICS.COM

Needs Assessment of Podcast Content for Professional Development of CRNAs

Qualtrics sophisticated online survey software solutions make creating online surveys easy. Learn more about Research Suite and get a free...

Appendix D: Survey Data Analysis

Table 1
Participant Demographics

	Characteristics	Frequency	Percentage
Age range (years)	26 – 30	4	9.09
	31 – 35	10	22.73
	36 – 40	9	20.45
	41 – 45	5	11.36
	46 – 50	5	11.36
	51 +	11	25.00
Highest degree obtained	Bachelors	1	2.27
	Masters	30	68.18
	Doctoral	13	29.55
Length of time practicing as a CRNA (years)	1 - 2	6	13.95
	3 – 5	11	25.58
	6 – 10	7	16.28
	11 – 15	6	13.95
	16 – 20	2	4.65
	20 +	11	25.58

Note. n=44

Table 2
Podcast Use in CRNAs

	Characteristics	Frequency	Percentage
How often participants listen to podcasts	Less than once a month	21	47.73
	1 – 2 times per month	10	22.73
	At least once a week	7	15.91
	Daily	6	13.64
How do participants listen to podcasts	While doing nothing but solely listening to podcast	7	15.91
	While exercising	5	11.36
	While driving/in car	27	61.36
	Do not listen to podcasts	5	11.36
Desired duration of a single podcast episode	5 – 15 minutes	10	22.73
	16 – 30 minutes	21	47.73
	31 – 45 minutes	10	22.73
	46 – 60 minutes	3	6.82
*Most desired anesthesia-related podcast content	Pharmacology	26	60.47
	Anatomy	8	18.60
	Physiology	17	39.53
	Regional Anesthesia	14	32.56
	Airway Management	15	34.88
	Fluid Management	11	25.58
	Pain Management (Acute & Chronic)	11	25.58
	Patient Positioning	3	6.98
	Intraoperative Emergencies	27	62.79
	Population-specific anesthesia management and considerations (Geriatrics, Pediatrics, Obstetrics, etc).	22	51.16
	Anesthesia management and considerations based on co-existing diseases	25	58.14
What would make podcasts more meaningful	Having more didactic review of basic core content	5	11.36
	Being able to interact and engage with podcast host and guests	3	6.82
	Having the option to watch audio recorded podcasts in a video format	4	9.09
	Continuing education (CE) credits for podcast episodes	32	72.73

*Note.* *=Select all that apply (percentage of cases). n=44

Table 3

Professional Development in CRNAS (Select All That Apply)

	Characteristics	Frequency	Percentage of cases
Preferred mode of professional development	In person lectures or professional meetings	33	75.00
	Videos/Online lectures or courses	26	59.09
	Podcasts	23	52.27
	Textbooks	5	11.36
	Peer reviewed literature (journals, articles)	19	43.18
	PowerPoint slides/notes	7	15.91
Most valuable principles of professional development	Relevant	39	92.86
	Quality-focused	21	50.00
	Accessible	21	50.00
	Portable	12	28.57
	Responsive	2	4.76
	Credible	30	71.43
	Coherent	17	40.48
	Articulation	9	21.43
	Reflective	4	9.52
	Progressive	10	23.81
	Flexible	6	14.29

Note. n=44

Figure 1
Do CRNAs consider podcasts to be a valuable component of professional development?
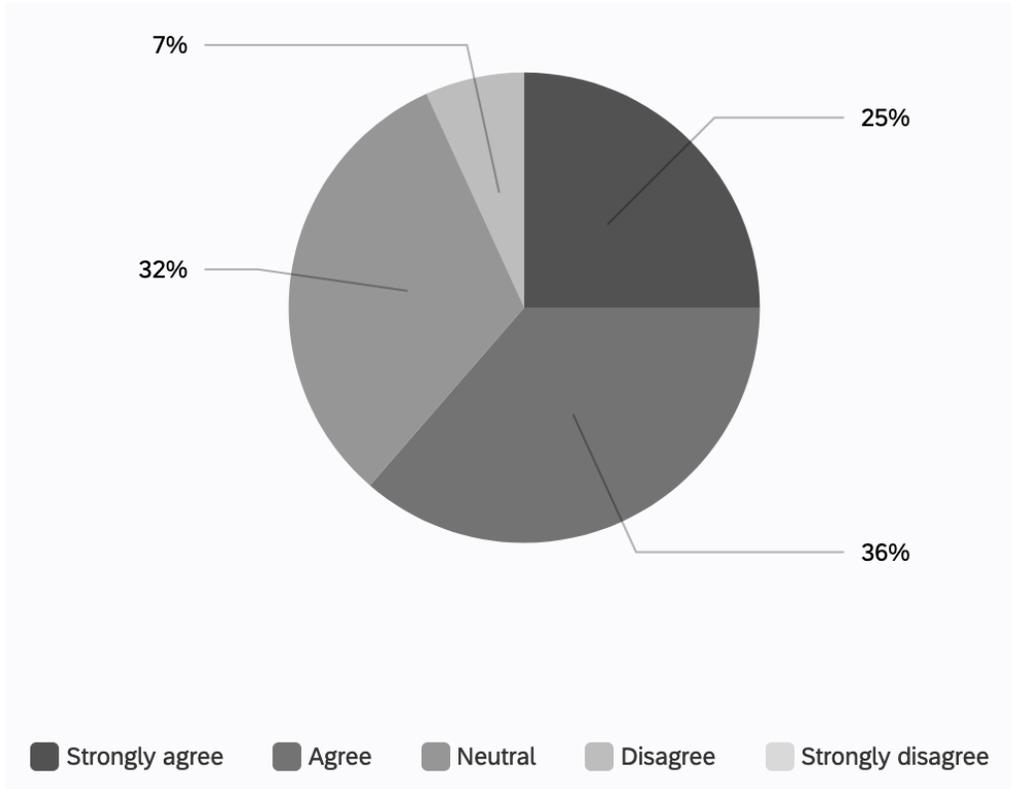
Appendix E: Timeline of Project

Task Name	Start Date	End Date	Duration (Days)	Status
AIM 1: DNP Project I (NSG-706)	8/26/19	12/2/19		
Planning Phase	8/26/19	12/2/19		
PICOT Question	8/26/19	9/15/19	21	**Completed**
Approved PICOT Question	8/26/19	9/15/19	21	**Completed**
Faculty Chair	8/26/19	9/29/19	30	**Completed**
Clinical Site and Stakeholder(s)	8/26/19	12/2/19	98	**Completed**
DNP Team Agreement Form	8/26/19	12/2/19	98	**Completed**
Research	8/26/19	12/2/19		
Annotated Bibliography	8/26/19	12/2/19	98	**Completed**
Literature Review Matrix	8/26/19	11/13/19	80	**Completed**
SWOT Analysis	8/26/19	11/8/19	75	**Completed**
CITI Training	8/26/19	11/5/19	72	**Completed**
Draft Project Proposal	8/26/19	12/2/19	98	
Introduction	8/26/19	12/2/19	98	**Completed**
Background and Significance	8/26/19	12/2/19	98	**Completed**
Problem Statement/PICOT	8/26/19	12/2/19	98	**Completed**
Review of Literature	8/26/19	12/2/19	98	**Completed**
Theoretical Framework	8/26/19	12/2/19	98	**Completed**
Goals, Objectives, and Expected Outcomes	8/26/19	12/2/19	98	**Completed**
Project Design	8/26/19	12/2/19	98	**Completed**
Project Site	8/26/19	12/2/19	98	**Completed**
Methods	8/26/19	12/2/19	98	**Completed**
Measurement Instruments	8/26/19	12/2/19	98	**Completed**
Data Collection	8/26/19	12/2/19	98	**Completed**
Data Analysis	8/26/19	12/2/19	98	**Completed**
Timeline	8/26/19	12/2/19	98	**Completed**
References	8/26/19	12/2/19	98	**Completed**
Timeline	8/26/19	12/2/19	98	**Completed**
AIM 2: DNP Project II (NSG-707)	12/3/19	5/1/20	110	
Project Design	12/3/19	5/1/20		
IRB Exemption	12/4/19	12/13/19	9	**Completed**
Informal Presentation	1/16/20	2/3/20	9	**Completed**
Implementation				
Survey Created	3/15/20	3/31/20	16	**Completed**
Survey Opened for Recruitment of Participants	4/1/20	4/15/20	14	**Completed**
Data Analysis	4/16/20	5/15/20	29	**Completed**
Final Paper	12/4/19	12/11/20	373	**Completed**
AIM 3: DNP Project III (NSG-708)	5/11/20	12/11/20	214	

Appendix F: IRB Exemption Form

MARIAN UNIVERSITY
—— Indianapolis ——®

Institutional Review Board

DATE: 12-13-2019

TO: Sydney Loesing

FROM: Institutional Review Board

RE: IRB #S19.130

TITLE: Podcasts and Lifelong Learning for CRNAs

SUBMISSION TYPE: New Project

ACTION: Determination of Exempt Status

DECISION DATE: 12-13-2019

The Institutional Review Board at Marian University has reviewed your protocol and has determined the procedures proposed are appropriate for exemption under the federal regulations.   As such, there will be no further review of your protocol and you are cleared to proceed with your project. The protocol will remain on file with the Marian University IRB as a matter of record. Please be mindful of the importance of reporting only de-identified, HIPAA-compliant information about the patient in any exhibit or publication.

Although researchers for exempt studies are not required to complete online CITI training for research involving human subjects, the IRB **recommends** that they do so, particularly as a learning exercise in the case of student researchers. Information on CITI training can be found on the IRB's website: http://www.marian.edu/academics/institutional-review-board.

It is the responsibility of the PI (and, if applicable, the faculty supervisor) to inform the IRB if the procedures presented in this protocol are to be modified or if problems related to human research participants arise in connection with this project. Any procedural modifications must be evaluated by the IRB before being implemented, as some modifications may change the review status of this project. Please contact me if you are unsure whether your proposed modification requires review. Proposed modifications should be addressed in writing to the IRB. **Please reference the above IRB protocol number in any communication to the IRB regarding this project.**

Bryan Larsen, Ph.D.
Chair, Marian University Institutional Review Board

Appendix G: Committee Membership

Marian University
Leighton School of Nursing
Graduate Department

Notice of DNP Project Committee Membership

Name of DNP Student: Sydney Loesing

Title of DNP Project: Needs Assessment of podcast Use for Professional Development and Lifelong Learning in CRNAs

*I hereby agree to serve as the **Chairperson** of the DNP Project Committee for the above-named student.*

Signature: _Brad Stelflug_   Date: 12/17/2020
Printed/Typed Name: Bradley Stelflug

*I hereby agree to serve as a **Member** of the DNP Project Committee for the above-named student.*

Signature: _C. Pepin_ PhD RN CNE   Date: 6/1/2020
Printed/Typed Name: Christina Pepin

Additional Members of the DNP Project Committee for above-named student (if needed).
Signature: n/a   Date: —

Approval:
Signature: _Brad Stelflug_   Date: 12/17/2020
FNP or CRNA Program Director or Assistant Program Directors or Graduate Chairperson

Please Note:
- *FNP DNP students will have a Chairperson (faculty) and an "outside the university" practice mentor (does not have to be doctorally prepared) on the committee.*
- *CRNA DNP students will have a Chairperson (faculty), PhD Project 1st Reader, and an "outside the university" practice mentor (does not have to be doctorally prepared) on the committee.*