# PROVIDERS' BELIEFS AND PRACTICES OF POSTPARTUM EDUCATION

A Doctoral Project
submitted to the Faculty of the
Graduate School of Arts and Sciences
of Georgetown University
in partial fulfillment of the requirements for the
degree of
Doctor of Nursing Practice

By

Tayla Diane Tingstad, B.S.N

Washington, DC
October 5, 2022

PROVIDERS' BELIEFS AND PRACTICES OF POSTPARTUM EDUCATION

Tayla Diane Tingstad, B.S.N.

Thesis Advisor: Kelly Walker, D.N.P.

## ABSTRACT

High maternal and infant morbidity and mortality rates in the United States have illuminated the importance of the postpartum period. Professional organizations have differing recommendations regarding the schedule for postpartum visits and types of educational topics. This project investigates health care providers' beliefs and practices regarding postpartum education and care. A cross-sectional survey was electronically distributed to approximately 500 postpartum providers in the western United States. The survey addressed different aspects of postpartum care including which educational topics the provider believes are most important and how often they address the topics at the postpartum visit. Additional survey questions examined the effectiveness of telemedicine for postpartum care, barriers to postpartum appointment attendance, and timing of postpartum visits.

Postpartum providers completed 31 surveys, with the majority of the providers being midwives. Data analysis included descriptive statistics and Spearman's correlation. Providers surveyed reported common barriers to postpartum care as lack of transportation or childcare, depression, exhaustion, financial barriers, and lack of understanding regarding the importance of the visit. Almost 90% of providers believed telemedicine was a feasible option for postpartum care. Approximately half of providers believed that an early visit within one to three weeks was the most effective, however, a third of providers agreed that multiple postpartum visits is ideal. Providers ranked mental health issues, intimate partner violence, breastfeeding, C-section

complications, vaginal birth complications, and contraceptive counseling as the most import postpartum topics to discuss. Providers most often educated clients on postpartum depression, contraceptive counseling, breastfeeding, and resuming sexual activities. There was a positive correlation between the importance and frequency of the postpartum topics: chronic conditions, safe sleep for baby, pelvic exam, weight trajectory, transitioning to a primary care provider, and healthy sleep for mom.

This project's findings indicate gaps in postpartum care where improvements can be made. Addressing barriers to care can increase postpartum visit attendance and allow more clients to receive important care and education. Incorporating telemedicine into postpartum care can increase clients' access to care. Providing early and multiple postpartum visits allows additional time for postpartum care and education in order to reduce potential postpartum complications.

ACKNOWLEDGEMENTS

The completion of this DNP project is dedicated to my two daughters, Myla and Lana. Anything is possible if you set your mind to it and put in the hard work and effort. A special thank you to everyone who has supported me through this arduous journey.

Many thanks,
Tayla Diane Tingstad

## TABLE OF CONTENTS

# Chapter I

## Introduction

The postpartum period is a pivotal time where providers are responsible for educating clients on important topics and dangerous warning signs. According to the National Partnership for Women & Families (NPWF) (2020), the U.S. ranked worst in maternal and infant mortality rates when compared to 10 other high-income nations. The inadequacies of maternity care are complex, but health care providers can be a contributing barrier to care. Providers often lack the time and resources to adequately educate clients on all of the vital postpartum information. A pregnant person attends approximately 12 to 17 prenatal appointments during the span of their pregnancy (Karrar & Hong, 2021). However, according to the American College of Obstetricians and Gynecologists (ACOG) (2018a), traditional postpartum care involves only one postpartum visit at approximately six weeks after birth. The current recommendation by ACOG (2018a) is that postpartum care should be an ongoing process with multiple visits. Many postpartum health care providers continue to follow traditional approaches to postpartum care with one single encounter.

This project investigated health care providers' beliefs and practices regarding postpartum education and care. Health care providers completed a validated survey tool that examined their postpartum practices and opinions. Current evidence suggests that providers inadequately prepare birthing people for the postpartum period. In order to improve maternal and infant morbidity and mortality, providers should spend additional time educating clients on postpartum care.

## Significance of Problem

With high maternal morbidity and mortality rates in the United States, more emphasis has been put on postpartum care and the importance of the "fourth trimester" (ACOG, 2018a). There are multiple professional organizations who have published guidelines of care for the postpartum period. Although the guidelines may vary, it is apparent that the traditional approach of one visit is inadequate and may lead to a lack of follow-up (Walker et al., 2019). It is estimated that approximately 40% of clients do not attend their postpartum visits (ACOG, 2018a). Without proper postpartum follow-up, clients are at an increased risk of exacerbation of chronic comorbidities, shorter interpregnancy intervals, preterm birth, and overall higher morbidity and mortality (ACOG, 2018a). Postpartum clients with limited resources are more likely to miss their postpartum visits and further contribute to health inequities (ACOG, 2018a).

**Maternal and Infant Morbidity and Mortality**

The postpartum period is a vulnerable time for parents and newborns. After the birth of an infant, multiple complications can lead to maternal and infant morbidity and mortality. The United States has poor maternal and infant mortality and morbidity rates. According to the Centers for Disease Control and Prevention (CDC) (2020), the maternal mortality rate in the United States is 17.4 deaths per 100,000 live births. The infant mortality rate in the United States is 5.7 deaths per 1,000 live births (CDC, 2018). In Save the Children's Mothers Index, the U.S. ranks 33$^{rd}$ among world nations (NPWF, 2020). This index is synthesized based on different factors such as maternal health, child wellbeing, education, and economic security (NPWF, 2020). It is evident that changes must be made in order to improve maternal care in the U.S. and to decrease the risks associated with pregnancy and the postpartum period. Almost 50% of maternal mortality occurs postpartum and about half of these deaths are preventable (Suplee et al., 2017b). The leading causes of pregnancy-related deaths include cardiovascular conditions,

hemorrhage, infection, embolism, cardiomyopathy, mental health conditions, preeclampsia, and eclampsia (CDC, 2019a). Improved postpartum care, including thorough client education, is an opportunity to decrease morbidity and mortality. Understanding providers' postpartum education practices can illuminate gaps in care.

Racial and ethnic disparities negatively impact maternal and infant mortality and morbidity rates. According to the Centers for Disease Control and Prevention (CDC) (2019b), black women and other minorities are three times more likely to die from pregnancy complications than white women. The pregnancy-related mortality ratio (PRMR) for blacks is 40.8, which is 3.2 times higher than for whites (CDC, 2019b). The PRMR for American Indian/Alaska Natives is 29.7, which is 2.3 times higher than for whites (CDC, 2019b). Black women were more likely to die from cardiomyopathy and hypertensive disorders than whites (CDC, 2019b). Providing standardized care can help to impact these disparities (CDC, 2021). The CDC (2021) also recommends educating postpartum people about urgent warning signs and listening to any concerns. Race and ethnicity have been linked to poor maternal outcomes through mechanisms such as minority stress, perceived racism, the "weathering" phenomenon, and health care provider bias (Wang et al., 2020). Additional social determinants of health, such as insurance and education, are also related to maternal morbidity and mortality (Wang et al., 2020). Lack of insurance may lead to delayed or inadequate prenatal care, as well as worse quality of care (Wang et al., 2020). A lower level of education in birthing people can also negatively impact pregnancy and the postpartum period (Wang et al., 2020). Health care providers can decrease rates of maternal morbidity and mortality by addressing implicit bias and analyzing their current practices and client education.

**Timing of Postpartum Visits**

There have been recent changes to the recommendations for the frequency and timing of postpartum visits. Postpartum care was previously one six-week appointment after birth (ACOG, 2018a). According to ACOG (2018a), postpartum care visits should be individualized and seen as an ongoing process with a postpartum visit within the first three weeks of delivery, continuing as needed, and ending with a comprehensive visit no later than 12 weeks after birth. The schedule of postpartum care visits varies. Recommendations for postpartum visits include a two-week and six-week office visit with potential phone calls and home visits as needed (King et al., 2019). The World Health Organization (WHO) (2022) recommends a minimum of four postnatal care contacts with the first as early as 24 hours after birth. The additional schedule includes a postnatal contact between 48 and 72 hours, between seven and 14 days, and at six-weeks (WHO, 2022). Although professional organizations recommend multiple postpartum visits, some providers continue to follow the traditional approach of one postpartum visit.

Telemedicine is another way to increase the number of postpartum visits and provide appropriate counseling and education. Telemedicine appointments can be arranged at the two-week and six-week postpartum points (Markwei & Goje, 2021). The coronavirus pandemic has increased the accessibility and usage of telemedicine to limit exposure to the disease (Markwei & Goje, 2021). Virtual lactation classes and check-ins also allow for additional education opportunities (Markwei & Goje, 2021). Postpartum clients may be unable to attend in-person visits for a variety of reasons, such as, lack of transportation and childcare issues. Offering postpartum appointments in multiple modalities allows for flexibility and increased attendance for those who would have otherwise been unable to attend. It is also important to note that access to a device with video and internet may not be feasible for all clients.

**Postpartum Education Topics**

There is a large amount of variability in recommendations regarding which postpartum education topics should be addressed. Providers must educate parents on many important postnatal topics during the transition from the intrapartum to the postpartum period. Several areas essential to postpartum care include mental health, infant care, contraception, fatigue, physical recovery from birth, chronic disease management, and health maintenance (ACOG, 2018a). Additional postpartum education topics include breastfeeding, smoking cessation, social support, and substance use (Stuebe et al., 2021). Thorough postpartum education should include the most common postpartum topics, with emphasis on potential complications and warning signs, as well as any specific concerns that the client may have.

The Association of Women's Health, Obstetric and Neonatal Nurses (AWHONN) (2018) has developed the acronym POST-BIRTH that describes potentially life-threatening warning signs during the immediate postnatal period. POST-BIRTH stands for [P] pain in chest, [O] obstructed breathing, [S] seizures, [T] thoughts of hurting yourself or someone else, [B] bleeding, [I] incision that is not healing, [R] red or swollen leg, [T] temperature of 100.4°F or higher, and [H] headache (AWHONN, 2019). In one study by Suplee et al. (2017b), the POST-BIRTH handout, used in conjunction with other educational tools, was helpful for increasing client understanding of possible postpartum complications. The vast amount of postpartum education topics that needs to be addressed is often rushed, leading to a lack of client understanding. Postpartum education should not occur during one encounter or visit, but instead should happen over months and begin in the prenatal period (Walker et al., 2019).

## PICOT Question

In providers who care for postpartum people, what are their beliefs and practices regarding postpartum education? The population [P] is providers who care for postpartum

people. Providers may include nurse practitioners, midwives, or physicians. The intervention [I] in this project is a validated survey tool. There is no comparison group [C] in this project. The outcome [O] is the beliefs and practices regarding postpartum education. The time [T] is not specific, the survey was active for approximately six weeks.

## Search Criteria

There were three professional databases used in the conduction of the literature search including CINAHL, PubMed, and Google Scholar. All searches were limited to articles published within the last five years. Articles were chosen that related to the project question and aims for this project. The phrases "postpartum education," "postnatal care," and "education" were combined with the Boolean operator "or." The terms "provider," "provider belief," "provider practice," and "provider opinion" were also combined with the Boolean operator "or." The results of these two searches were then combined with the Boolean operator "and." There is extensive literature on the topic of postpartum care, however there is minimal research specific to providers' beliefs and practices of postpartum care. Therefore, additional articles were examined that related to the different aspects addressed in the survey used in this project.

The search included articles focusing on postpartum telemedicine appointments and home visits. These search terms included "telemedicine" and "telehealth" combined with the Boolean operator "or," as well as "maternity care," "postpartum care," and "postpartum" again combined with the Boolean operator "or." These two searches were then also joined by the Boolean operator "and." The term "home visit" was also combined with the phrases "maternity care," "postpartum care," and "postpartum" using the Boolean operator "and." Articles that explored postpartum education in rural countries or that focused solely on one specific educational topic were not reviewed. The results of the literature review revealed a total of 16

relevant articles. The studies included four quality improvements (Brown & DeNicola, 2020; Kleppel et al., 2016; Suplee et al., 2017b, Whittington et al., 2020), three mixed-method studies (Handler et al., 2019; Hu et al., 2019; Rodin et al., 2019), two cross-sectional studies (Krishnamurti et al., 2020; Suplee et al., 2017a), two qualitative studies (Beasley et al., 2018; Henderson et al., 2016), two systematic reviews (Jones et al., 2019; Yonemoto et al., 2017), one prospective cohort design (Almalik, 2017), one scoping review (Crowther et al., 2019), and one clinical opinion (Tully et al., 2017).

## Literature Review

A literature review of the evidence revealed articles that addressed the limitations of postpartum education, guidelines for care, and recommendations for improving care.

### Conceptualization of the Problem

The topics examined in the studies varied widely due to the complexities of postpartum education and care. All of the articles explored postpartum care, however, some analyzed the practicality of postpartum home visits, telemedicine appointments for maternity care, postpartum visit attendance, and provider counseling. Only one article by Krishnamurti et al. (2020) specifically addressed postpartum providers' beliefs and practices and provided the survey used in this project. A similar study examined the nursing perspective of postpartum education (Suplee et al., 2017a). The majority of the literature focused on the inadequacies of postpartum education and initiatives to improve care (Almalik, 2017; Crowther et al., 2019; Kleppel et al., 2016; Suplee et al., 2017b; Tully et al., 2017). Current guidelines and provider practices do not always align with the goals of postpartum clients (Tully et al., 2017). If providers are able to better understand the postpartum client's goals, they can individualize their practices. Another common theme found in the literature review was strategies to improve postpartum care for low-

income and ethnic minority groups (Henderson et al., 2016; Hu et al., 2019; Jones et al., 2019; Rodin et al., 2019). Providers believe that barriers to postpartum care exist at the client, provider, and health care system level (Henderson et al., 2016). Providers also explain that transitioning between the prenatal and postpartum period can be difficult and that quality of care can vary greatly (Henderson et al., 2016). Several articles discussed how telemedicine may be beneficial for postpartum people and may aid in the transition from the perinatal to postnatal period (Brown & DeNicola, 2020; Whittington et al., 2020). Postpartum providers can use telemedicine to increase follow-up in clients who lack transportation. Providers can also incorporate telemedicine in their postpartum visits in order to increase the number of encounters and discuss additional postpartum concerns and complications. The topic of postpartum home visits is also a growing area of interest (Beasley et al., 2018; Handler et al., 2019; Yonemoto et al., 2017).

**Findings**

The literature review revealed significant findings in regard to postpartum education. Krishnamurti et al. (2020) determined that there was a discrepancy between providers' priorities of postpartum education topics and actual care they provided. Postpartum providers report an average of only 24 minutes spent on a postpartum visit (Krishnamurti et al., 2020). Also, approximately 25% of providers believed telemedicine for postpartum care was feasible (Krishnamurti et al., 2020). Suplee et al. (2017a) also reported a very short time spent on discussing postpartum complications. Postpartum registered nurses spend less than 10 minutes covering these topics (Suplee et al., 2017a). Almost 100% of nurses correlated postpartum education with mortality, however, less than 80% believed it was their responsibility to provide this education (Suplee et al., 2017a). Since nurses do not spend adequate time on postpartum education, it is critical that provider education is thorough and comprehensive.

Multiple articles in the literature review addressed the current problem of inadequate postpartum education and suggested areas of improvement. Postpartum people often feel insufficiently prepared for the postnatal period which can lead to worse maternal and infant outcomes (Almalik, 2017). Individual needs of postpartum people are frequently unmet due to inconsistent guidelines of care and infrequent postpartum visits (Tully et al., 2017). Socioeconomic and racial inequities further result in worse postpartum outcomes and lower postpartum visit attendance (Jones et al., 2019). Barriers to postpartum visit attendance included lack of transportation and childcare, out-of-date client contact information, and discontinuity in care (Rodin et al., 2019). Providers also identified additional barriers to adequate postpartum care included varying quality of care depending on provider and organization, inability of providers to dedicate the needed time, and insurance restrictions (Henderson et al., 2016).

There are multiple national initiatives to improve postpartum care in order to reduce maternal and infant morbidity and mortality (Kleppel et al., 2016). Suplee et al. (2017b) recommended implementing the use of multiple postpartum tools, such as the POST-BIRTH warning signs, to assist in postpartum education. Crowther et al. (2019) suggests implementing a post-birth care plan to provide consistent education and individualized care. Additional early home visits by nursing staff may be an effective way to improve postpartum education and care (Handler et al., 2019). In a Cochrane systematic review, the evidence is unclear whether postpartum home visits decrease maternal and infant mortality and morbidity rates (Yonemoto et al., 2017). However, postpartum home visits can increase breastfeeding and maternal satisfaction rates as well as decrease postpartum depression (Yonemoto et al., 2017). It is important to educate staff and providers of the benefits of home visits, in order to have full participation and support (Handler et al., 2019). Telemedicine visits have the ability to increase access to

postpartum care for clients who live in rural areas or do not have transportation (Whittington et al., 2020). Telemedicine can also reduce the workload of postpartum providers with busy schedules (Whittington et al., 2020). Many providers believe that telemedicine can be a feasible option for postpartum care, however many current practices do not offer this alternative (Krishnamurti et al., 2020). Overall, the findings of the literature review revealed significant problems with current postpartum education and offer multiple solutions. Assessing providers' beliefs and practices regarding postpartum care can illuminate areas for improvement and expand on recommendations to decrease maternal morbidity and mortality.

**Methodological Rigor**

The studies found in the literature review had varying degrees of rigor. The quality of the studies was graded with the Let Evidence Guide Every New Decision (LEGEND) Scale (Cincinnati Children's Hospital Medical Center, 2012). The highest level of evidence was a Cochrane systematic review by Yonemoto et al., (2017) that was rated 1a. Another systematic review by Jones et al. (2019) was of slightly lesser quality, rated 1b, but still added value to the body of literature. Almalik (2017) completed a lower quality prospective cohort study rated 3b. Krishnamurti et al. (2020) performed a high-quality cross-sectional study that was rated 4a. Another high-quality study, 4a, was a quality improvement project by Suplee et al. (2017b). Multiple studies were qualitative reviews with adequate sample sizes, but were still rated as lesser quality 4b due to barriers throughout the studies (Beasley et al., 2018; Henderson et al., 2016; Rodin et al., 2019). There were also a few mixed-methods studies that were rated lesser quality 4b, related to bias and issues of validity (Handler et al., 2019; Hu et al., 2019). Quality of the studies varied depending on sample size, sampling method, generalizability, and statistical analysis.

## Strengths and Limitations

The strengths and limitations of the studies found in the literature review contributed to the overall quality of the body of evidence. For example, Almalik (2017) used a small sample size of 150 postpartum people selected through convenience sampling. This type of sampling may not accurately depict a diverse population and therefore may be limited in the generalizability. However, Krishnamurti et al. (2020) randomly selected 600 postpartum providers across the United States. This method allows for results that may be extrapolated to a larger population. Small sample sizes are typical of qualitative studies, however, Beasley et al. (2018) specifically reports this as a limitation in their study. Surveys and self-report may lead to response bias and inaccurate results, limiting generalizability as reported by Hu et al. (2019). Although there were no randomized control trials found in this literature review, the majority of the studies were still well executed and had significant findings that could impact postpartum practices and improve quality of care.

# Theoretical Framework

The theoretical framework used in this project is the Knowledge-to-Action (KTA) framework. The KTA framework was originally developed by Graham et al. (2006). There are two main components to the KTA framework. The first component is knowledge creation and the second component is the action cycle. Knowledge creation is represented as a funnel that includes knowledge inquiry at the top, knowledge synthesis in the middle, and knowledge tools and products at the bottom. According to Graham et al. (2006) knowledge inquiry is defined as the vast amount of primary studies or information that is available in its natural state. Knowledge synthesis is described as the aggregation of existing knowledge and is developed by appraising information related to specific questions (Graham et al., 2006). An example of knowledge

synthesis is a systematic review or meta-analysis (Graham et al., 2006). Knowledge tools and products are defined as synopses, such as practice guidelines, that clearly present knowledge and provide recommendations (Graham et al., 2006). Each phase can be refined and tailored in order to be more useful to users and stakeholders (Graham et al., 2006).

There are eight phases of the action cycle. The first phase is problem identification (Graham et al., 2006). In this project, the problem identified is inadequate postpartum education. The second phase is to identify the knowledge related to the problem (Graham et al., 2006). This step was done by completing a literature review of the evidence related to the PICOT question. The next phase is to adapt the knowledge to the local context (Graham et al., 2006). This was accomplished by analyzing the selected studies from the literature review in the context of the PICOT question. The next step is to assess barriers to using the knowledge (Graham et al., 2006). This is done by analyzing potential barriers to implementing the online provider survey. The next phase is to implement the intervention and promote the use of knowledge (Graham et al., 2006). This is accomplished by distributing the online survey to postpartum health care providers. The next phase is to monitor knowledge use (Graham et al., 2006). This is accomplished by monitoring survey completion and response rate. The following phase is to evaluate outcomes (Graham et al., 2006). This is done by analyzing provider survey responses. The last phase is to sustain knowledge use (Graham et al., 2006). This is accomplished by disseminating the findings of this project and adding to the available knowledge on this topic.

## Definition of Terms

*Postpartum* and *postnatal*: The period after a person gives birth to a newborn. The postpartum period can be divided into different phases, lasting up to six months after birth (Romano et al., 2010).

*Health care provider*: Someone who provides medical services or is paid for health care (National Archives and Records Administration, 2021). This project is specifically looking at postpartum health care providers such as certified nurse-midwives (CNMs), women's health nurse practitioners (WHNPs), and obstetrician-gynecologists (OB-GYNs).

*Belief*: The health care provider's opinion.

*Practice*: The health care provider's actions in the clinical setting.

*Telemedicine*: The exchange of electronic communication in order to improve health (Brown & DeNicola, 2020).

## Specific Aims

There are two specific aims for this project. The primary aim is to identify obstetrical providers' beliefs and practices regarding postpartum education. This was done by surveying providers, with a validated tool, about which postpartum topics they believe are important and which topics they provide postpartum education in practice. The postpartum education topics in the survey include potential complications, postpartum depression, intimate partner violence, breastfeeding, contraception, safe sleep for baby, and smoking (Krishnamurti et al., 2020). Other concepts that postpartum providers were asked about include barriers to attending postpartum visits, feasibility of telemedicine, timing of postpartum visits, as well as demographic questions (Krishnamurti et al., 2020).

The secondary aim is to evaluate discrepancies between postpartum providers' beliefs and their current practices of postpartum care. Analyzing the differences between the providers' beliefs of the importance of postpartum education and how they currently practice will help to identify gaps in care. Providers' postpartum practices can also be compared to current guidelines

and recommendations. This allows for future quality improvement projects that can address inconsistencies between current practices and recommendations for postpartum care.

## Rationale

Postpartum education and care in the United States is severely lacking (Martin et al., 2014). Maternal and infant mortality and morbidity are inexcusably high when compared to other developed nations (NPWF, 2020). Postpartum people often feel unprepared for the challenges and potential complications that may arise after birth (Tully et al., 2017). There is extensive evidence on the inadequacies of postpartum education and many recommendations for how to improve care. However, little is known on current postpartum provider practices. Only one previous study has been done in order to examine providers' opinions on postpartum care (Krishnamurti et al., 2020).

Health care providers are the change agents for improving postpartum education. It is necessary to determine current provider beliefs and practices in order to compare them to current recommendations. Surveying postpartum providers allows for evaluation of current practices as well as the potential for future quality improvement projects to align postpartum education with existing guidelines of care. Understanding the perceived important postpartum topics of providers can depict which topics need additional focus. Evaluating discrepancies between providers' beliefs of important postpartum topics and actual practices can illuminate areas for improvement.

## Conclusion

The high maternal and infant morbidity and mortality in the United States were discussed. Although there are many contributing factors to these outcomes, this project focuses on the inadequacies of postpartum education at the provider level. Current evidence reveals that

providers spend limited time educating clients regarding postpartum care and potential complications. This project aims to investigate postpartum providers' beliefs and practices regarding education and care.

# Chapter II

## Methods

Postpartum health care providers completed a validated survey tool in order to describe their current practices and beliefs regarding postpartum education and care. De-identified data from the survey were analyzed to better understand postpartum providers' attitudes towards postpartum care. Providers' opinions on the importance of specific postpartum education topics were compared to how often they educate clients on these topics.

### Design

The project type is an exploratory clinical inquiry. The design of this project is a cross-sectional survey. The survey was generated through Qualtrics and sent to health care providers electronically. The survey tool was previously developed and disseminated by Krishnamurti et al. (2020). Provider selection was based on convenience and snowball sampling methods. Providers' information was de-identified. The majority of the providers came from a local chapter of the American College of Nurse-Midwives (ACNM), in the Western United States.

A description of the survey was sent out in a newsletter for the ACNM chapter. The survey was then electronically distributed by a selected liaison within the Western chapter of ACNM. After approximately six weeks, the data collected in Qualtrics was transferred to the Statistical Package for the Social Sciences (SPSS). The SPSS spreadsheet was securely shared with a statistician for data analysis.

A $50 Amazon gift card was used as an incentive to encourage participants to complete the survey. One provider was randomly chosen to receive the gift card. All participants who completed the postpartum provider survey were then linked to an optional separate survey where

they were able to leave their email address. The email address was only used to send out the electronic Amazon gift card to the winning provider. The survey results were not associated with the email addresses in order to maintain confidentiality.

## Human Subject Review

The project was sent to the Georgetown Institutional Review Board (IRB) and approved. The intervention is the online survey and therefore the project is very low-risk and no expected harm is to come from completing the survey. Informed consent was implied by clicking the "next" button at the beginning of the electronic survey. Participants were able to stop the survey at any point and were not required to complete the entire survey. The potential benefit to the participants was the chance to win a $50 Amazon gift card. All information is kept confidential and no names or email addresses are associated with the data.

## Population

The population in this project is providers who care for postpartum people, such as, CNMs, WHNPs, and OB-GYNs. The electronic survey was sent out to providers belonging to ACNM. The group of providers consisted of all midwives from a local ACNM chapter in the Western United States. There are approximately 500 providers in the group with the majority being Certified Nurse-Midwives. The survey was also sent out to one OB-GYN provider in the Southwestern United States through convenience sampling.

## Procedures and Timeline

The procedures for this project include disseminating the electronic survey, collecting the results, and analyzing the data. The survey was distributed through email by a provider liaison at ACNM. When each participant completed the survey, their responses were anonymous. The participants' names do not appear on the survey results and are not available to the researchers.

The data that was collected included the self-reported survey responses, a small section of demographic data, and an optional link to leave an email address for the Amazon gift card. The email addresses were not associated with the survey responses. The data from the survey results, not including email addresses, were then securely transferred to a statistician for assistance with analysis. This project took approximately six weeks to complete.

## Tool, Validity, and Reliability

The survey tool that was utilized in this project is titled "Healthcare Provider Opinions on Postpartum Care" (Krishnamurti et al., 2020). The survey includes nine questions and nine demographic questions. There is also a section for participants to make additional comments at the end of the survey. The survey consists of a five-point Likert-scale ratings, multiple choice, binary choice, and open-ended questions.

The survey addresses multiple aspects of postpartum care including which educational topics the provider believes are most important. The three open-ended questions discuss the providers' beliefs regarding the benefits and barriers to postpartum care. The two Likert-scale ratings rank how important certain postpartum topics are and how often the provider addresses the topics. The remaining questions examine the effectiveness of telemedicine for postpartum care, timing of postpartum visits, how often clients attend postpartum visits, and how much time the provider spends at the visit. The demographic section includes questions about what type of health care provider they are, how long they have been in practice, what region they practice in, their percentage of Medicaid clients, who provides the postpartum care, their gender, ethnicity, and level of education (Krishnamurti et al., 2020). The survey takes approximately 15 minutes for the provider to complete.

This survey tool was developed for a previous study by Krishnamurti et al. (2020), "Competing Demands in Postpartum Care: A National Survey of U.S. Providers' Priorities and Practice." Dillman's Total Design Method was used to format the survey in order to improve validity (Krishnamurti et al., 2020). Krishnamurti et al. (2020) acknowledged a gap in postpartum care due to insufficiencies in provider education.

## Data Analysis Plan

Data was securely transmitted and analyzed with a statistician. A power analysis was completed with the assistance of a statistician. Using G*Power 3.1.9.7, a minimum sample size of 84 surveys was required to achieve a power of 0.80 with an alpha of 0.05 and a small correlation of 0.3. The survey responses were collected through Qualtrics. Qualtrics is a secure survey system that is password protected. The responses are anonymous and no names or personal information is associated with the results in order to protect the providers' confidentiality. After approximately six weeks of data collection, the de-identified data from Qualtrics was transferred to SPSS. The SPSS spreadsheet was stored on a password protected computer with firewalls. The SPSS spreadsheet was securely shared with the statistician. Only the lead researcher and the statistician had access to the spreadsheet. After the project is finished, the data stored in Qualtrics will remain for three years. When three years have passed, all data will be cleared from Qualtrics and the researcher's hard drive.

## Conclusion

The cross-sectional survey examined health care providers' opinions and practices regarding postpartum education. The population in this project includes OB-GYNs, WHNPs, and CNMs. The survey tool inquires multiple topics such as telemedicine, barriers to postpartum

care, importance of educational topics, and demographic information. De-identified data from the postpartum providers' surveys was analyzed in conjunction with a statistician.

# Chapter III

## Results

Approximately 500 surveys were disseminated to postpartum providers. A total of 55 online surveys were initiated, however, only 31 surveys were completed and included in data analysis. Once data collection was completed through Qualtrics, the data was exported to SPSS. Data analysis was then completed with the assistance of a statistician.

## Analysis of Data

The composition of the electronic survey included open-ended questions, Likert-scale ratings, and multiple-choice questions. The lead researcher reviewed all of the responses to the first three open-ended questions. They then completed a qualitative analysis in order to assess common themes within the answers.

Descriptive analysis was performed on the two questions with Likert-scale ratings. Frequencies were used to count responses for each of the five-point rankings. The first question inquires about the importance of postpartum education topics and has a Likert-scale with responses including *not at all*, *slightly*, *moderately*, *very*, and *extremely*. The second question addresses the frequency of postpartum education topics and has a Likert-scale with responses including *never*, *rarely*, *sometimes*, *often*, *always,* and *not this visit*. The relationship between rating of importance and frequency was assessed using a Spearman's correlation. For example, the relationship between how important providers believed safe sleep for babies was and how often the provider discussed it was assessed.

Descriptive analysis and frequencies were again used for questions regarding feasibility and effectiveness of telemedicine and timing of postpartum care. Statistical analysis including

mean, median, standard deviation, minimum, and maximum were used for questions pertaining to the number of clients scheduling and attending postpartum visits, the frequency of client interactions, and the length of the postpartum visit. The remainder of the survey questions were regarding demographic information. Descriptive statistics and frequencies were used to analyze provider type, gender, race, and level of education. Statistical analysis including mean, median, standard deviation, minimum, and maximum were used for questions regarding years in practice and percentage of Medicaid clients.

## Summary of Findings

Of the 31 survey participants, 29 were currently practicing Nurse-Midwives, one was a retired midwife, and one was an OB-GYN physician, all were female, and all cared for postpartum clients. Providers, who participated in the survey, cited that clients attended their six-week postpartum visit in order to address breastfeeding concerns, receive a physical exam, be screened for perinatal mood disorders such as postpartum depression, discuss role transitioning, and obtain contraceptive counseling. Providers cited reasons that clients did not attend their six-week postpartum visit such as lack of transportation, lack of childcare, inability to take time off of work, financial barriers, being too depressed or exhausted, client relocation, or client does not understand the importance of the visit. Providers identified solutions to overcoming barriers to attending postpartum care included telemedicine and home visits, increased access to transportation, allowing children to attend appointments, discussing the importance of postpartum visits during the prenatal period, and having multiple postpartum visits before the six-week mark. From the survey, providers reported that an average of 89% of clients schedule a postpartum visit, however, only about 79% of clients attend this visit. Therefore, 10% of clients

are lost to follow-up in the postpartum period and approximately 20% of clients are not seen for a postpartum visit.

Approximately 87% of providers believed that telemedicine is a feasible option and is already used in their practice. However, 54.8% of providers did not believe that telemedicine was as effective as an in-person visit for the six-week postpartum appointment. The main reasons that providers did not feel telemedicine was as effective were the inability to perform a physical exam, place contraception, or fully assess mood. Only16.1% of providers believed that the standard six-week postpartum visit was the most effective timing for postpartum care. Almost half of providers believed a visit within one to three weeks was more effective. Approximately 19% of providers viewed a four-week postpartum visit as being effective and 29% thought that there should be multiple postpartum appointments. Roughly half of providers see their clients throughout their pregnancy and 25.8% of providers have an ongoing primary or obstetric care relationship with their clients. The average length of time for a postpartum visit was 29 minutes, with the shortest visit at eight minutes and the longest visit at 60 minutes.

**Demographics**

Over 90% of providers were CNMs with 74.2% having a Master's degree and 19.4% with a Doctoral degree. Almost 80% of providers were white, 10% were Hispanic, 10% identified as "other," and 3.2% were black. The average number of years in practice was 23.8 with a minimum of two years and a maximum of 50 years. Approximately 35% of clients had Medicaid insurance. For a full breakdown of participant characteristics, see Table 1. In the providers' practice, 83.9% of clients saw a CNM at their six-week appointment, 29% saw a physician, and 19.4% saw an NP.

Table 1. *Participant Characteristics*

| | *n* | *%* |
|---|---|---|
| Type of Provider | | |
| Certified Nurse Midwife | 29 | 93.5 |
| Ob Gyn | 1 | 3.2 |
| Other | 1 | 3.2 |
| Race/Ethnicity | | |
| White/Caucasian | 24 | 77.4 |
| Black/African American | 1 | 3.2 |
| Hispanic/Latina | 3 | 9.7 |
| Other | 3 | 9.7 |
| Education | | |
| Bachelor's degree | 1 | 3.2 |
| Master's degree | 23 | 74.2 |
| Medical degree (MD/OD) | 1 | 3.2 |
| Doctoral degree | 6 | 19.4 |
| | | |
| | *M* (*SD*) | Min - Max |
| Years in Practice | 23.8 (14.4) | 2 - 50 |
| Percentage Patients with Medicaid | 34.7 (35.1) | 0 - 100 |

**Importance of Postpartum Topics**

The majority of providers rated mental health issues (87.1%), intimate partner violence (77.4%), breastfeeding (71%), C-section complications (67.7%), vaginal birth complications (64.5%), and contraceptive counseling (54.8%) as *extremely important* topics to discuss at a postpartum visit. Postpartum topics such as opioids, healthy sleep for mom, resuming sexual activity, and smoking were ranked mainly as *moderately*, *very*, or *extremely important*. The remaining postpartum visit topics including chronic conditions, transition to primary care, safe sleep for baby, weight trajectory, and pelvic exam were rated as less important to discuss. Providers also believed that topics such as diastasis recti and exercise guidance were important to cover at postpartum visits. For a list of the ratings of importance of topics, see Table 2.

Table 2. *Ratings of Importance of Topics to Discuss at Six-Week Postpartum Visit*

| Level of Importance: | Not at all | Slightly | Moderately | Very | Extremely |
|---|---|---|---|---|---|
| Topic | *n* (%) | *n* (%) | *n* (%) | *n* (%) | *n* (%) |
| Postpartum depression and other mental health issues | 0 (0.0) | 0 (0.0) | 1 (3.2) | 3 (9.7) | 27 (87.1) |
| Intimate partner violence and other safety issues | 0 (0.0) | 0 (0.0) | 2 (6.5) | 5 (16.1) | 24 (77.4) |
| Breastfeeding and other infant feeding issues | 0 (0.0) | 0 (0.0) | 1 (3.2) | 8 (25.8) | 22 (71.0) |
| C-section complications | 0 (0.0) | 2 (6.5) | 2 (6.5) | 6 (19.4) | 21 (67.7) |
| Vaginal birth complications | 0 (0.0) | 2 (6.5) | 2 (6.5) | 6 (19.4) | 20 (64.5) |
| Contraceptive counseling and family planning | 0 (0.0) | 1 (3.2) | 3 (9.7) | 10 (32.3) | 17 (54.8) |
| Pregnancy onset complications | 0 (0.0) | 2 (6.5) | 0 (0.0) | 16 (51.6) | 13 (41.9) |
| Contraceptive provision | 0 (0.0) | 2 (6.5) | 3 (9.7) | 10 (32.2) | 16 (51.6) |
| Opioid and other substance abuse | 1 (3.2) | 1 (3.2) | 4 (12.9) | 10 (32.3) | 15 (48.4) |
| Healthy sleep for mom | 2 (6.5) | 1 (3.2) | 8 (25.8) | 7 (22.6) | 13 (41.9) |
| Resuming sexual activities | 1 (3.2) | 2 (6.5) | 7 (22.6) | 11 (35.5) | 10 (32.3) |
| Smoking | 1 (3.2) | 1 (3.2) | 9 (29.0) | 10 (32.3) | 10 (32.3) |
| Non-pregnancy related chronic conditions | 0 (0.0) | 3 (9.7) | 11 (35.5) | 10 (32.3) | 7 (22.6) |
| Transitioning to a primary care provider | 2 (6.5) | 4 (12.9) | 11 (35.5) | 8 (25.8) | 6 (19.4) |
| Safe sleep for baby | 4 (12.9) | 4 (12.9) | 10 (32.3) | 10 (32.3) | 3 (9.7) |
| Weight trajectory and diet information | 2 (6.5) | 9 (29.0) | 10 (32.3) | 5 (16.1) | 5 (16.1) |
| Pelvic exam | 2 (6.5) | 16 (58.1) | 5 (16.1) | 4 (12.9) | 2 (6.5) |

**Frequency of Postpartum Topics**

Providers almost *always* discussed postpartum topics such as postpartum depression (93.5%), contraceptive counseling (93.5%), breastfeeding (87.1%), and resuming sexual activities (87.1%). Vaginal birth complications, C-section complications, and pregnancy onset complications were typically *often* or *always* discussed with clients at postpartum visits. Postpartum topics such as contraceptive provision, intimate partner violence, chronic conditions, and healthy sleep for mom were less frequently discussed with postpartum clients. Pelvic exam, transition to primary care, weight trajectory, opioids, safe sleep for baby, and smoking were the least frequently discussed topics. For a complete breakdown of the frequency of topics, see Table 3. *Not at this visit* responses are not shown in the table. Providers identified that these postpartum topics should be discussed prior to the six-week postpartum visit.

Table 3. *Frequency of Topics*

| Frequency: | Never | Rarely | Sometimes | Often | Always |
|---|---|---|---|---|---|
| Topic | *n* (%) | *n* (%) | *n* (%) | *n* (%) | *n* (%) |
| Postpartum depression and other mental health issues | 0 (0.0) | 0 (0.0) | 0 (0.0) | 1 (3.2) | 29 (93.5) |
| Contraceptive counseling and family planning | 0 (0.0) | 0 (0.0) | 0 (0.0) | 1 (3.2) | 29 (93.5) |
| Breastfeeding and other infant feeding issues | 0 (0.0) | 0 (0.0) | 0 (0.0) | 3 (9.7) | 27 (87.1) |
| Resuming sexual activities | 0 (0.0) | 0 (0.0) | 1 (3.2) | 2 (6.5) | 27 (87.1) |
| Vaginal birth complications | 0 (0.0) | 1 (3.2) | 1 (3.2) | 4 (12.9) | 22 (71.0) |
| C-section complications | 0 (0.0) | 1 (3.2) | 1 (3.2) | 4 (12.9) | 21 (67.7) |
| Pregnancy onset complications | 0 (0.0) | 1 (3.2) | 3 (9.7) | 4 (12.9) | 21 (67.7) |
| Contraceptive provision | 1 (3.2) | 0 (0.0) | 6 (19.4) | 4 (12.9) | 19 (61.3) |
| Intimate partner violence and other safety issues | 0 (0.0) | 2 (6.5) | 8 (25.8) | 2 (6.5) | 17 (54.8) |
| Non-pregnancy related chronic conditions | 0 (0.0) | 2 (6.5) | 8 (25.8) | 9 (29.0) | 11 (35.5) |
| Healthy sleep for mom | 0 (0.0) | 2 (6.5) | 8 (25.8) | 10 (32.3) | 10 (32.3) |
| Pelvic exam | 0 (0.0) | 5 (16.1) | 14 (45.2) | 4 (12.9) | 8 (25.8) |
| Transition to a primary care provider | 1 (3.2) | 5 (16.1) | 13 (41.9) | 3 (9.7) | 9 (29.0) |
| Weight trajectory and diet information | 0 (0.0) | 4 (12.9) | 15 (48.4) | 8 (25.8) | 4 (12.9) |
| Opioid and other substance abuse | 4 (12.9) | 4 (12.9) | 10 (32.3) | 4 (12.9) | 8 (25.8) |
| Safe sleep for baby | 0 (0.0) | 9 (29.0) | 10 (32.3) | 5 (16.1) | 5 (16.1) |
| Smoking | 2 (6.5) | 9 (29.0) | 9 (29.0) | 3 (9.7) | 7 (22.6) |

**Importance Compared to Frequency**

For each of the 17 postpartum topics, the relationship between rating of importance and frequency was assessed using a Spearman's correlation (see Table 4). For six topics, there was a

significant correlation between importance and frequency, such that the higher the rating of importance, the greater the frequency. These topics included chronic conditions, safe sleep for baby, pelvic exam, weight trajectory, transitioning to a primary care provider, and healthy sleep for mom. For example, if a provider ranked safe sleep for baby as high in importance, they were more likely to discuss this topic more frequently. There was no relationship between importance and frequency for the other 11 topics.

Table 4. *Spearman's Correlation Between Importance and Frequency for Topics*

| Topic | Spearman's *rho* | *P* |
|---|---|---|
| Non-pregnancy related chronic conditions | .694 | < .001 |
| Safe sleep for baby | .653 | < .001 |
| Pelvic exam | .599 | < .001 |
| Weight trajectory and diet information | .500 | .004 |
| Transitioning to a primary care provider | .497 | .004 |
| Healthy sleep for mom | .493 | .006 |
| Pregnancy onset complications | .315 | .096 |
| Smoking | .292 | .117 |
| Vaginal birth complications | .286 | .139 |
| C-section complications | .281 | .155 |
| Resuming sexual activities | .232 | .218 |
| Contraceptive counseling and family planning | .143 | .451 |
| Breastfeeding and other infant feeding issues | .108 | .569 |
| Postpartum depression and other mental health issues | -.073 | .703 |
| Intimate partner violence and other safety issues | .072 | .710 |
| Opioid and other substance abuse | .068 | .722 |
| Contraceptive provision | -.060 | .754 |

## Conclusion

The majority of health care providers surveyed were CNMs. Providers ranked mental health issues, intimate partner violence, breastfeeding, C-section complications, vaginal birth complications, and contraceptive counseling as the most important postpartum topics. Providers most often discussed postpartum depression, contraceptive counseling, breastfeeding, and resuming sexual activities. There were discrepancies between which topics providers believed

were important and how frequently they discussed these topics at postpartum visits. There was a significant correlation between importance and frequency for the postpartum topics of chronic conditions, safe sleep for baby, pelvic exam, weight trajectory, transitioning to a primary care provider, and healthy sleep for mom. Providers also had differing opinions on the most effective timing for postpartum visits. However, the majority of providers agreed that postpartum care should occur before the standard six-week appointment. Providers also recommended that clients should attend multiple postpartum visits with the incorporation of telemedicine.

# Chapter IV

## Discussion and Conclusions

The survey results demonstrate that providers believe in the benefits of telemedicine for postpartum visits, recommend earlier and additional postpartum appointments, as well as rank some postpartum topics as more important than others. The limitations of the project, including a limited sample size, will be examined. Practice implications, such as increased postpartum visits, will also be described. There are additional recommendations for future projects that can expand on this area of research.

### Discussion of Findings

This project's findings include providers' beliefs regarding the reasons clients attend or miss a six-week postpartum appointment, the feasibility of telemedicine for postpartum visits, the importance of postpartum topics, and the timing of postpartum care. Providers believed that the main reasons clients attended postpartum appointments were for addressing problems such as breastfeeding concerns, wound healing, postpartum depression, or obtaining contraception. Health care providers cited barriers to attending the postpartum visit as inadequate understanding of the importance of the visit, lack of transportation or childcare, exhaustion, and depression. Therefore, providers should explain the importance of the postpartum visit, even if the client denies any current physical or emotional problems. A client may not fully understand the multitude of reasons to attend a postpartum visit, however, this is an important time to instruct the client on potential warning signs and preventative measures to reduce postpartum complications. The majority of providers believed that telemedicine was a feasible option and is currently used in their practice. The main limitation to telemedicine, described by the providers

surveyed, is the inability to perform a physical exam. However, telemedicine can be a valid option to use in addition to an in-person postpartum visit which can expand the time for client education and allows providers to address any client concerns.

Health care providers believed that the five most important postpartum topics to discuss were postpartum depression, intimate partner violence, breastfeeding issues, c-section complications, and vaginal birth complications. Postpartum depression has been a popular topic recently due to the high incidence rates and negative effects on postpartum people and infants. It is estimated that one in eight people will suffer from postpartum depression (CDC, 2022). Postpartum depression can result in decreased breastfeeding rates, poor adherence to health care recommendations, impaired infant bonding, financial and interpersonal loss, risk for substance use disorders, and suicide (Morehead, 2020). Recommendations for postpartum depression and anxiety screening include an initial screening during the perinatal period and then again at the postpartum visit (ACOG, 2018b). It is important that providers screen postpartum clients early for mental health concerns in order to quickly identify any disorders and provide needed support and treatment. Breastfeeding was ranked high in importance and frequency by most providers. Supporting a postpartum person and their infant with breastfeeding is very important because it can reduce the risk of hypertension, breast cancer, and diabetes in the mother as well as decrease the risk of asthma, obesity, and diabetes in the infant (CDC, 2021). Hemorrhage is another major postpartum complication that can occur after a c-section or vaginal birth. Postpartum hemorrhage is responsible for approximately 13% of pregnancy-related deaths (CDC, 2019a). A delayed postpartum hemorrhage occurs after 24 hours postpartum and up to 12 weeks and affects approximately 1% of pregnancies (ACOG, 2017). Therefore, if the postpartum appointment does

not occur until six-weeks, there is a significant time gap where potential hemorrhage warning signs may be missed.

In contrast, providers believed that the five least important postpartum topics to address were pelvic exam, weight trajectory, safe sleep for baby, transitioning to primary care, and chronic conditions. Providers ranked safe sleep for baby low in importance, however, according to the National Institutes of Health (NIH), placing the infant on their back to sleep is one of the main ways to reduce Sudden Infant Death Syndrome (SIDS) (NIH, n.d.). Transitioning to primary care and addressing chronic conditions are again important topics that often do not receive the necessary attention because the focus is typically on postpartum care. With limited follow-up after the six-week postpartum visit there is a large gap in care until the one-year postpartum mark where clients may then transition to a primary care provider. It is important to have clients under the supervision of a provider for the entire first year postpartum in order to identify any complications and address chronic conditions which may be exacerbated in pregnancy or the postpartum period (ACOG, 2018a). Cardiovascular conditions cause approximately 14% of pregnancy-related deaths and cardiomyopathy is responsible for roughly 9% of deaths (CDC, 2019a). Cardiovascular concerns are typically seen as primary care issues and therefore primary care providers who are seeing postpartum clients should be trained in potential warning signs and complications.

There were discrepancies between providers for the most effective timing of postpartum care. The majority of providers believed that one visit at six-weeks postpartum was not adequate. Almost half of the providers believed that a postpartum visit between one and three weeks would be the most effective, which aligns with ACOG recommendations (ACOG, 2018a). Many providers discussed the importance of multiple postpartum visits and that postpartum education

should begin in the prenatal period. The findings also include health care providers' practices regarding how often postpartum topics are addressed, how much time is spent at a postpartum visit, and how many clients schedule and attend a postpartum visit. Providers most often addressed the postpartum topics of postpartum depression, contraceptive counseling, breastfeeding, resuming sexual activities, and vaginal birth complications. The topics that postpartum providers discussed the least frequently were smoking, safe sleep for baby, substance abuse, weight trajectory, and transition to primary care. Smoking is another known risk factor for SIDS and therefore frequent education on the risks of smoking can reduce potentially fatal outcomes for the infant (NIH, n.d.). It is possible that providers discussed these issues less frequently because they did not apply to their client population. A mean of 89% of clients schedule a postpartum visit, yet, only 79% of clients actually attend the visit. This leaves 10% of clients that are lost to follow-up and a total of 21% of clients that do not receive vital education and care at the postpartum appointment. Therefore, it is extremely important to address the barriers of attending postpartum visits.

There was only a significant correlation between importance and frequency of six of the postpartum topics. These six topics were safe sleep for baby, pelvic exam, weight trajectory, transitioning to a primary care provider, and healthy sleep for mom. Overall, most providers ranked these topics of lower importance and discussed them less often. However, the providers who believed these postpartum topics were more important discussed them more often.

## Limitations

The main limitation of this project is the small sample size. The electronic survey was sent to approximately 500 providers in the Western United States. A minimum sample size of 84 was required to achieve a power of 0.80. There were 55 providers who began the survey and 31

who completed it. The electronic survey began with multiple open-ended questions which may have led to the attrition. Survey fatigue may have also led to less survey responses due to providers being inundated with online surveys during the coronavirus pandemic. The small sample size contributed to the difficulty performing a correlation between the importance of postpartum topics and the frequency of topics. Only six topics were found to be correlated, however, with a larger sample size there may have been a stronger correlation between more topics. The population was also homogenous, with the majority of providers being Certified Nurse-Midwives and Caucasian. This decreases the generalizability of the results to all different types of postpartum providers.

## Practice Implications

Postpartum care and client education are extremely important in order to address an extensive range of topics, identify early complications, and prevent maternal and infant morbidity and mortality. Therefore, all clients should attend their postpartum appointments and postpartum education should begin in the prenatal period. As health care providers, it is important to anticipate postpartum care barriers and act on them in order to increase attendance. Allowing clients to bring their infants to their postpartum appointments can reduce the barriers to care for those who do not have access to childcare. Incorporating telemedicine into postpartum care, if not already done, may increase accessibility to clients with limited or no means of transportation. Postpartum telemedicine appointments can also be beneficial for clients who are too exhausted or depressed to attend in-person visits. Providers should be trained on how to assess for depression and other mental health issues while using telemedicine. Telemedicine has been shown to be effective in the diagnosis and treatment of mental health issues (Nair et al.

2018). Telemedicine can potentially have a large impact on postpartum care and should continue to be relied on to improve client outcomes.

The most effective timing for postpartum care is a continued discussion. The majority of postpartum providers surveyed believe that an earlier visit, within the first one to three weeks, can be very beneficial. Providers also recommend multiple postpartum visits with postpartum education initially occurring in the prenatal period. Additional telemedicine appointments can address client specific concerns or review general postpartum education. With a multitude of important topics to address, a single postpartum client encounter is often inadequate. Providers may check the boxes for addressing postpartum topics, however maternal mortality and morbidity continue to rise. Therefore, more emphasis should be placed on how and when the topics are discussed and what additional care is needed in order to improve outcomes.

## Recommendations for Further Study

This project used an online survey and therefore there is room for future studies to contribute to this area of investigation. With discrepancies between professional organizations as to when the best timing for postpartum visits should occur, future projects should investigate how provider postpartum education directly impacts maternal and infant morbidity and mortality rates. Another area of study could include how many postpartum visits is ideal and at what time points. There are limited randomized controlled studies due to postpartum clients being a vulnerable population. Postpartum care is a growing field of interest and there is still much to be explored on the topic, especially from the provider point-of-view.

## Conclusions

Postpartum care is an integral part of maternity care which is often underemphasized. With poor maternal and infant morbidity and mortality rates in the United States, additional time

and resources should be focused on the postpartum period. One postpartum visit at six-weeks is often too late and insufficient to adequately address all postpartum care topics and concerns. Providers surveyed believe that earlier and more frequent postpartum visits are beneficial in order to guide the transition to parenthood and to address potential and actual postpartum complications. Addressing the barriers to attending postpartum visits in order to increase access for all clients is important in order to improve attendance rates. Telemedicine and home visits are additional tools providers can use to deliver postpartum care that meets the needs of clients. Almost half of providers believed that telemedicine can be beneficial for some postpartum visits, especially in low-risk clients where a physical exam is not indicated. With a multitude of topics to address at postpartum visits, providers must prioritize which topics they believe are important and determine how often they will discuss them. Increasing the number of postpartum appointments will allow providers more time to educate clients on all postpartum topics, including those that the provider might rank lower in importance. Postpartum education must be comprehensive, yet, not overwhelming, and start in the antepartum period. This delicate balance between providing adequate care in a limited timeframe, especially if the client is only attending one appointment, is disadvantageous for the client as well as the provider. Expanding postpartum care is imperative in order to allow more time for thoughtful discussion between providers and clients and to provide thorough postpartum care. Inadequate postpartum care will continue to negatively impact maternal and infant outcomes; therefore, providers and professional organizations must be willing to set standards and make improvements to care.

## Bibliography


Almalik, M. M. (2017). Understanding maternal postpartum needs: A descriptive survey of current maternal health services. *Journal of Clinical Nursing*, *26*(23-24), 4654-4663. https://doi.org/10.1111/jocn.13812

American College of Obstetricians and Gynecologists. (2018a). ACOG committee opinion no. 736: Optimizing postpartum care. *Obstetrics and Gynecology*, *131*(5), e140–e150. https://doi.org/10.1097/AOG.0000000000002633

American College of Obstetricians and Gynecologists. (2018b). ACOG committee opinion no. 757: Screening for perinatal depression. *Obstetrics and Gynecology*, *132*(5), e208–e212. https://doi.org/10.1097/AOG.0000000000002927

American College of Obstetricians and Gynecologists. (2017). Practice bulletin no. 183: Postpartum hemorrhage. *Obstetrics & Gynecology*, *130*(4), e168-e186. doi: 10.1097/AOG.0000000000002351

Association of Women's Health, Obstetric and Neonatal Nurses. (2018). *Save your life: Get care for these POST-BIRTH warning signs*. https://www.awhonn.org/wp-content/uploads/2020/02/pbwssylhandoutenglish.pdf

Beasley, L. O., Ridings, L. E., Smith, T. J., Shields, J. D., Silovsky, J. F., Beasley, W., & Bard, D. (2018). A qualitative evaluation of engagement and attrition in a nurse home visiting program: From the participant and provider perspective. *Prevention Science*, *19*(4), 528-537. https://doi.org/10.1007/s11121-017-0846-5

Brown, H. L., & DeNicola, N. (2020). Telehealth in maternity care. *Obstetrics and Gynecology Clinics of North America*, *47*(3), 497-502. https://doi.org/10.1016/j.ogc.2020.05.003

Centers for Disease Control and Prevention. (2021). *About breastfeeding*.

https://www.cdc.gov/breastfeeding/about-breastfeeding/why-it-matters.html

Centers for Disease Control and Prevention. (2022). *Depression among women.* https://www.cdc.gov/reproductivehealth/depression/index.htm

Centers for Disease Control and Prevention. (2020). *First data released on maternal mortality in over a decade.* https://www.cdc.gov/nchs/pressroom/nchs_press_releases/2020/202001_MMR.htm

Centers for Disease Control and Prevention. (2018). *Infant mortality*. https://www.cdc.gov/reproductivehealth/maternalinfanthealth/infantmortality.htm

Centers for Disease Control and Prevention. (2019a). *Pregnancy-related deaths: Data from 14 U.S. maternal mortality review committees, 2008-2017.* https://www.cdc.gov/reproductivehealth/maternal-mortality/erase-mm/mmr-data-brief.html

Centers for Disease Control and Prevention. (2019b). *Racial and ethnic disparities continue in pregnancy-related deaths*. https://www.cdc.gov/media/releases/2019/p0905-racial-ethnic-disparities-pregnancy-deaths.html

Centers for Disease Control and Prevention. (2021). *Working together to reduce black maternal mortality.* https://www.cdc.gov/healthequity/features/maternal-mortality/index.html

Cincinnati Children's Hospital Medical Center. (2012). *Table of evidence levels*. https://www.cincinnatichildrens.org/service/j/anderson-center/evidence-based-care/legend

Crowther, S., MacIver, E., & Lau, A. (2019). Policy, evidence and practice for post-birth care plans: A scoping review. *BMC Pregnancy and Childbirth*, *19*(1), 137. https://doi.org/10.1186/s12884-019-2274-y

Graham, I. D., Logan, J., Harrison, M. B., Straus, S. E., Tetroe, J., Caswell, W., & Robinson, N. (2006). Lost in knowledge translation: Time for a map? *The Journal of Continuing Education in the Health Professions, 26*(1), 13–24. http://dx.doi.org/10.1002/chp.47

Handler, A., Zimmermann, K., Dominik, B., & Garland, C. E. (2019). Universal early home visiting: A strategy for reaching all postpartum women. *Maternal & Child Health Journal*, *23*(10), 1414–1423. https://doi.org/10.1007/s10995-019-02794-5

Henderson, V., Stumbras, K., Caskey, R., Haider, S., Rankin, K., & Handler, A. (2016). Understanding factors associated with postpartum visit attendance and contraception choices: Listening to low-income postpartum women and health care providers. *Maternal and Child Health Journal. 20*(Suppl 1)132-143. DOI: 10.1007/s10995-016-2044-7

King, T.L., Brucker, M.C., Osborne, K., & Jevitt, C. (Eds.). (2019). *Varney's Midwifery* (6th ed.). Jones & Bartlett Learning.

Hu, F., Strohbach, A., Martinez, N. G., Simon, M. A., & Yee, L. M. (2019). Patient and provider perceptions of a patient navigation program to improve postpartum care among publicly insured women. *American Journal of Perinatology*, *38*(3), 248–257. https://doi.org/10.1055/s-0039-1696671

Jones, E. J., Hernandez, T. L., Edmonds, J. K., & Ferranti, E. P. (2019). Continued disparities in postpartum follow-up and screening among women with gestational diabetes and hypertensive disorders of pregnancy: A systematic review. *The Journal of Perinatal & Neonatal Nursing*, *33*(2), 136-148. https://doi.org/10.1097/JPN.0000000000000399

Karrar, S., & Hong, P. L. (2021). *Antepartum care*. StatPearls Publishing. https://www.ncbi.nlm.nih.gov/books/NBK570635/?report=classic

Kleppel, L., Suplee, P. D., Stuebe, A. M., & Bingham, D. (2016). National initiatives to improve

systems for postpartum care. *Maternal and Child Health Journal, 20*(Suppl 1), 66–70. https://doi.org/10.1007/s10995-016-2171-1

Krishnamurti, T., Simhan, H. N., & Borrero, S. (2020). Competing demands in postpartum care: A national survey of U.S. providers' priorities and practice. *BMC Health Services Research, 20*(1), 284. https://doi.org/10.1186/s12913-020-05144-2

Markwei, M., & Goje, O. (2021). Optimizing mother-baby wellness during the 2019 coronavirus disease pandemic: A case for telemedicine. *Women's Health, 17*. https://doi.org/10.1177/17455065211013262

Martin, A., Horowitz, C., Balbierz, A., & Howell, E. A. (2014). Views of women and clinicians on postpartum preparation and recovery. *Maternal and Child Health Journal, 18*(3), 707-713. https://doi.org/10.1007/s10995-013-1297-7

Morehead, A. N. (2020). *Current recommendations for screening and management of postpartum depression*. https://www.npwomenshealthcare.com/current-recommendations-for-screening-and-management-of-postpartum-depression/

Nair, U., Armfield, N. R., Chatfield, M. D., & Edirippulige, S. (2018). The effectiveness of telemedicine interventions to address maternal depression: A systematic review and meta-analysis. *Journal of Telemedicine and Telecare, 24*(10), 639–650. https://doi.org/10.1177/1357633X18794332

National Archives and Records Administration. (2021). *Code of federal regulations: 160.103*. https://www.ecfr.gov/current/title-45/subtitle-A/subchapter-C/part-160/subpart-A/section-160.103

National Institutes of Health. (n.d.). *About SIDS and safe infant sleep.* https://safetosleep.nichd.nih.gov/safesleepbasics/about

National Partnership for Women & Families. (2020). *Maternity care in the United States: We can–and must–do better*. https://www.nationalpartnership.org/our-work/resources/health-care/maternity-care-in-the-united.pdf

Rodin, D., Silow-Carroll, S., Cross-Barnet, C., Courtot, B., & Hill, I. (2019). Strategies to promote postpartum visit attendance among Medicaid participants. *Journal of Women's Health*, *28*(9), 1246-1253. https://doi.org/10.1089/jwh.2018.7568

Romano, M., Cacciatore, A., Giordano, R., & La Rosa, B. (2010). Postpartum period: Three distinct but continuous phases. *Journal of Prenatal Medicine*, *4*(2), 22–25.

Stuebe, A. M., Kendig, S. J., Suplee, P. D., & D'Oria, R. M. (2021). Consensus bundle on postpartum care basics. *Obstetrics & Gynecology*, *137*(1), 33-40. doi: 10.1097/AOG.0000000000004206

Suplee, P. D., Bingham, D., & Kleppel, L. (2017a). Nurses' knowledge and teaching of possible postpartum complications. *The American Journal of Maternal Child Nursing*, *42*(6), 338–344. https://doi.org/10.1097/NMC.0000000000000371

Suplee, P. D., Kleppel, L., Santa-Donato, A., & Bingham, D. (2017b). Improving postpartum education about warning signs of maternal morbidity and mortality. *Nursing for Women's Health*, *20*(6), 552-567. https://doi.org/10.1016/j.nwh.2016.10.009

Tully, K. P., Stuebe, A. M., & Verbiest, S. B. (2017). The fourth trimester: A critical transition period with unmet maternal health needs. *American Journal of Obstetrics and Gynecology*, *217*(1), 37-41. https://doi.org/10.1016/j.ajog.2017.03.032

Walker, K. C., Arbour, M. W., & Wika, J. C. (2019). Consolidation of guidelines of postpartum care recommendations to address maternal morbidity and mortality. *Nursing for Women's Health*, *23*(6), 508–517. https://doi.org/10.1016/j.nwh.2019.09.004

Wang, E., Glazer, K. B., Howell, E. A., & Janevic, T. M. (2020). Social determinants of pregnancy-related mortality and morbidity in the United States: A systematic review. *Obstetrics and Gynecology, 135*(4), 896–915. https://doi.org/10.1097/AOG.0000000000003762

Whittington, J. R., Ramseyer, A. M., & Taylor, C.B. (2020). Telemedicine in low-risk obstetrics. *Obstetrics and Gynecology Clinics of North America*, *47*(2), 241-247. https://doi.org/10.1016/j.ogc.2020.02.006

World Health Organization. (2022). *WHO recommendations on maternal and newborn care for a positive postnatal experience*. https://www.who.int/publications/i/item/9789240045989

Yonemoto, N., Dowswell, T., Nagai, S., & Mori, R. (2017). Schedules for home visits in the early postpartum period. *The Cochrane Database of Systematic Reviews*, *8*, CD009326. https://doi.org/10.1002/14651858.CD009326.pub3