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Physical Therapy for Better Birth: Recommendations to Create an Educational Program for Birth Workers

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2017

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ABSTRACT

Physical Therapy for Better Birth: Recommendations to Create an Educational Program for Birth Workers

By Bridget Ochuko, SPT

Background: Maternal morbidity can encompass a wide range of issues that often occur during pregnancy and the postpartum period that can manifest as persisting physical ailments and affect an individual's quality of life. Research has suggested the potential benefits of a multidisciplinary approach to care for birthing people, particularly those facing high-risk pregnancy or those from marginalized population. Gaps remain in the understanding and implementation of beneficial short- and long-term pregnancy and postpartum care to maximize function and improve quality of life for birthing people. Together, pelvic floor physical therapists and doulas are both well positioned to address the gap in PFPT underutilization, particularly among marginalized populations. Doulas may be an important connection to PFPT for their clients.

Objective: The goal of this project was to identify gaps in doulas' knowledge regarding the role of physical therapy in pelvic floor health throughout the continuum of pregnancy and postpartum and to assess doulas' perceptions of racial disparities in maternal health.

Methods: In-depth, 30-minute qualitative interviews were conducted with all participants (n=20). Interviews were held virtually via Google Meet Software.

Results: Though participants were often able to recognize pelvic floor dysfunction, the majority of participants emphasized that they do not have adequate education in the area of pelvic floor physical therapy and pelvic floor function and were interested to learn more. Participants also detailed experiences of race impacting their clients in a negative way within the birthing space, particularly for their Black birthing clients. Finally, participants discussed the state of maternal health today and the changes that should be made to improve the system.

Implications for Practice: Based on the data collected, recommendations were made to guide the development of educational materials to provide birthing professionals with tools to recognize and address these issues within their scope of practice, and to connect their patients to physical therapy care when needed.

Conclusion: This needs assessment identified current knowledge among doulas in this sample regarding pelvic floor function, the influence that racial health disparities have on birthing experiences and outcomes, and educational opportunities to increase physical therapy/inter-professional involvement in birthing and postpartum support.

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DEFINITIONS

Doula: a trained professional who provides nonclinical support to pregnant people before, during, and after birth; some doulas also provide support for abortions, miscarriage, and infant death (Bey et al., 2019).

Diastasis Rectus Abdominus: a pregnancy-related impairment of abdominal wall function defined by an abnormal width of the linea alba (Lee, 2016).

Episiotomy: an incision made in the perineum—the tissue between the vaginal opening and the anus—during childbirth (Berkowitz et al., 2018).

Fecal Incontinence: the inability to control bowel movements, causing stool (feces) to leak unexpectedly from the rectum, ranging from an occasional leakage of stool while passing gas to a complete loss of bowel control (Feldman et al., 2020).

Levator Ani Muscle: a broad, thin muscle that forms the greater part of the floor of the pelvic cavity and play an important role in protecting the pelvic connective tissues from excess load (Ashton-Miller et al., 2015 & Gordon, 2005).

Maternal morbidity: physical and psychological conditions that result from or are aggravated by pregnancy and have an adverse effect on a woman's health (U.S. Department of Health & Human Services, 2021)

Maternal mortality: the death of a woman from pregnancy-related causes during pregnancy or within 42 days of pregnancy, expressed as a ratio to 100,000 live births in the population being studied (WHO, 2004).

Multiparity: women having had at least one previous birth (Miranda et al., 2011).

Nulliparity: women having no previous births (Miranda et al., 2011).

Overactive Bladder (OAB): dysfunction that causes a frequent and sudden urge to urinate that may be difficult to control; may be accompanied with urge incontinence (Urology Care Foundation).

Pelvic Floor Muscle Training: training prescribed to increase strength, endurance, and coordination of pelvic floor muscles with the aims to improve pelvic organ support and increase intraurethral pressure during exertion (Ferreira & Santos, 2011).

Pelvic Floor Physical Therapy: an evidence-based, low-risk, and minimally invasive intervention that has the potential to play a role in the prevention, treatment, and/or management of pelvic floor dysfunction (Lawson & Sacks, 2018).

Positionality: a methodology that requires an individual to identify their own degrees of privilege through factors of race, class, educational attainment, income, ability, gender, and

citizenship with the purpose of understanding how to analyze and act from one's social position within the world (Duarte, 2017).

Postpartum: also known as the puerperium and the "fourth trimester" is the time period after delivery when maternal physiologic changes related to pregnancy return to the nonpregnant state (Dennis et al., 2007).

Pelvic Organ Prolapse: occurs when the muscles and tissues supporting the pelvic organs (the uterus, bladder, or rectum) become weak or loose and result in one or more of the pelvic organs to bulge into the vagina (OASH, 2019).

Urinary Incontinence: the loss of bladder control resulting in the involuntary leakage or urine (South-Paul JE et al., 2020).

ACRONYMS AND ABBREVIATIONS

APTA	American Physical Therapy Association
CDC	Centers for Disease Control
DRA	Diastasis Rectus Abdominus
LAMI	Levator Ani Muscle Injury
PFMT	Pelvic Floor Muscle Training
PFPT	Pelvic Floor Physical Therapy
SMM	Severe Maternal Morbidity

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INTRODUCTION

Maternal morbidity is commonly defined as "unexpected outcomes of labor and delivery that significantly impact a woman's health" (U.S. Department of Health & Human Services, 2021). However, maternal morbidity can encompass a wide range of issues that often occur during pregnancy and the postpartum period, some recognized as severe and leading to mortality, while others manifest as persisting physical ailments that can significantly affect an individual's quality of life. Research has shown the potential benefits of a multidisciplinary approach to care for birthing people, particularly those potentially facing high-risk pregnancy or those from marginalized populations (Benagiano & Brosens, 2014). Significant gaps remain in the understanding and implementation of beneficial short- and long-term pregnancy and postpartum care to maximize function and improve quality of life for birthing people. Physical therapists trained in pelvic floor techniques are ideally positioned to address this gap in education due to their extensive training on the subject of pregnancy and postpartum care and the musculoskeletal functioning of the pelvic floor musculature.

The purpose of the Physical Therapy for Better Birth program is to provide other birthing professionals with tools to recognize these issues and address them in the correct manner within their own scope of practice. Inadequate access to quality healthcare and lack of education on this topic play a major role in these morbidity and mortality rates existing in our country today, particularly for minority birthing people. Improving quality obstetric care across the continuum by engaging in multidisciplinary care, implementing educational programs, and increasing communication about disparities among birthing providers are imperative steps to combatting this issue. This project aims to conduct an exploratory investigation on the potential for pelvic floor physical therapists to collaborate with doulas in order to potentially reduce the impact of the development of certain musculoskeletal disorders associated with maternal morbidity.

LITERATURE REVIEW

Definition of Maternal Morbidity

Maternal health has always been a major healthcare topic when considering global health beginning as early as the 1920's. In recent years, maternal health has shifted to the forefront of not only the global sphere, but as a leading concern in healthcare within the United States as well (World Population Review, 2022). There are concerns about rising maternal mortality, with the highest rates in Louisiana and Georgia, respectively (World Population Review, 2022). While rates of maternal mortality have declined overall, the ratio of Black to White maternal mortality rates has stayed fairly constant. This newfound national prioritization is a result of long overdue discussions surrounding the inherent racial disparities woven into maternal mortality as a whole presenting itself within the United States (Lyndon, Lee, Gilbert, Gould, & Lee, 2012). Much of the data on maternal health focuses on these maternal mortality rates when the burden of maternal mortality is only a fraction of the total burden of maternal morbidity. Because of this, public health experts have started to focus more on maternal morbidity and severe maternal morbidity within the last ten to fifteen years.

The Centers for Disease Control (CDC) defines maternal morbidity as including "physical and psychological conditions that result from or are aggravated by pregnancy and have an adverse effect on a woman's health" (U.S. Department of Health & Human Services, 2021). This differs from severe maternal morbidity (SMM) as SMM is generally referred to as the most severe complications of pregnancy (U.S. Department of Health & Human Services, 2021). For every maternal death, an estimated 50-100 women experience severe maternal morbidity (Chen, et al., 2021). Maternal morbidity has been and continues to be the foundation for high maternal mortality rates in the United States. Complications associated with maternal morbidity such as obstructed or prolonged labor, puerperal sepsis, septic abortion, severe pre-eclampsia and eclampsia, and postpartum hemorrhage are all factors that could potentially lead to death within the first year of postpartum (Koblinsky, Chowdhury, Moran, & Ronsmans, 2012). These complications greatly contribute to the presence of severe maternal morbidity disorders. Certain musculoskeletal disorders, such as pelvic pain, pelvic organ prolapse, and incontinence can also develop during this period. These disorders can manifest throughout the continuum of pregnancy

and postpartum and potentially contribute to this persisting maternal morbidity as well. Pelvic floor physical therapists are specialists in understanding how to identify disorders such as these and provide education and treatment on how to mitigate them and enhance quality of life for birthing people from pregnancy to postpartum and beyond.

In total, SMM affects over 60,000 women annually in the United States, with this number continually rising over the past twenty years (Howell, 2018). Although the persisting maternal mortality rates have caught the attention of the nation, and rightfully so; data shows that SMM is one hundred times more common than maternal death during delivery or postpartum hospitalization (Callaghan, Creanga, & Kuklina, 2012). These statistics emphasize the importance of targeting the issue that is more widespread while also directly contributing to fatal statistics. Because of these alarming rates, there has been a call for public health experts to determine other measures to monitor women's health during pregnancy (Berg, MacKay, Qin, & Callaghan, 2009), in attempts to curb some of the current detrimental and potentially fatal occurrences throughout this process for many. Monitoring conditions contributing to severe morbidity are the first steps to creating a more comprehensive healthcare approach to maternal health. Due to the large cohort of birthing people at high risk for developing these conditions, it has resulted in high direct medical cost, extended length of hospitalization, and ultimately long-term rehabilitation for many people (Callaghan, Creanga, & Kuklina, 2012).

The presence of these disorders not only leaves a lasting effect on the mother experiencing it but contributes to the mounting medical costs our healthcare system continually faces on a sweeping scale due to the large amount of people who need treatment. The focus on a tertiary form of healthcare, meaning implementation of treatment amongst symptomatic patients aiming to reduce severity of disease (Kisling & Das, 2021), rather than a primary or even secondary preventative care has resulted in healthcare experts trying to play catch up with this issue of poor maternal health in a country that spends 19.7% of its GDP on healthcare, the highest health spending among developed countries (Yang, 2022). Overall, combatting SMM is a matter of concern for healthcare provider teams as a whole who are involved in the care of women and birthing people throughout the continuum of pregnancy and postpartum and must work in concert with one another in order to achieve the best outcomes for each case. Due to the increasing need for this, an organized and national approach for the reduction of severe maternal

morbidity and mortality has been called for, and it is up to all sectors of the healthcare system to determine the best course of action.

Trends in SMM have shown that the overall rate of SMM from 1993-2014 has increased by almost 200% from 49.5 to 144.0 (U.S. Department of Health & Human Services, 2021). SMM does not exist without the contribution of overall maternal morbidity and the musculoskeletal conditions that accompany it. In a study done to determine the incidence and risk factors for maternal morbidity during childbirth and hospitalization conducted in California, researchers listed the following disorders as pelvic floor morbidity: episiotomy, third- and fourth-degree laceration, vulvar or perineal hematoma or other trauma, and indication of third- or fourth-degree laceration on the birth certificate (Lyndon, Lee, Gilbert, Gould, & Lee, 2012). The most common morbidities they found within their study cohort were episiotomy, pelvic trauma, maternal infection, postpartum hemorrhage, and third/fourth degree laceration (Lyndon, Lee, Gilbert, Gould, & Lee, 2012). In total, their overall maternal morbidity rate was 241/1000 births. More specifically, the overall rate of pelvic floor morbidity was 156/1000 live births (Lyndon, Lee, Gilbert, Gould, & Lee, 2012), indicating the prevalence of specific pelvic floor morbidity is comparable to overall maternal morbidity. The nature and processes of the most common morbidities found suggest just how preventable much of this morbidity is. Overall, nearly one in four California women giving birth during the study period experienced preventable, potentially life altering morbidity during their hospitalization (Lyndon, Lee, Gilbert, Gould, & Lee, 2012).

In a study conducted from 2008 to 2009, Callaghan and colleagues found that compared with the 1998-1999 period, SMM increased by 75% and delivery and postpartum hospitalizations increased by 114% in 2008-2009 (Callaghan, Creanga, & Kuklina, 2012). In another study where investigators compared the statistics of maternal morbidity at delivery hospitalization in 1993-1997 to 2001-2005, investigators found that during 2001-2005, almost 29% of the delivery hospitalizations involved an obstetric complication, and 4.9% had a preexisting medical condition that could be aggravated by pregnancy (Berg, MacKay, Qin, & Callaghan, 2009). They too found the most common obstetric complications to be third/fourth degree laceration, other obstetric trauma, and additionally gestational diabetes and preeclampsia/eclampsia (Berg, MacKay, Qin, & Callaghan, 2009). These studies indicate not only that maternal morbidity rates have continuously been rising since documentation, but that

many of these morbidities stem from likely preventable issues and may be prevented if steps are taken to address the root of these issues.

Disparities in these mortality and morbidity rates also persist when investigating further root causes. Apparently, the quality of healthcare provided becomes a critical piece in addressing the manifestation of these racial and ethnic disparities (Howell, 2018). Disparities are defined as "differences that result in a particular type of health difference that is closely linked with economic, social, or environmental disadvantage" (Howell, 2018). These differences are complex and a result of numerous factors including social, environmental, biological, genetic, behavioral, and healthcare factors. Racial and ethnic minority women have higher rates of severe maternal morbidity events, with the highest rate being reported for Black women (Howell, 2018). This rate is consistent with the higher risk for maternal mortality amongst Black women in the United States (Lyndon, Lee, Gilbert, Gould, & Lee, 2012). These noted racial and geographic disparities in morbidity during delivery hospitalization also extend into the postpartum period, potentially leading to postpartum hospitalization (Chen, et al., 2021). Not only are they more likely to experience comorbid illnesses and pregnancy complications throughout their pregnancy journey, but these conditions are developed at an earlier age, are less likely to be adequately managed, and more likely to have severe complications and ultimately mortality (Howell, 2018). Data shows the risk of a pregnancy-related death for Black women in certain regions of the United States are comparable to risk for women in some developing countries (Howell, 2018).

Known risk markers related to mortality and severe morbidity along with advanced maternal age include no prenatal care, lower levels of educational attainment, and low socioeconomic status (Howell, 2018). Along with this, results of a study done by Chen and colleagues found that the racial and demographic disparities in SMM during delivery hospitalization also extend to the postpartum period where hospitalizations can also occur due to SMM (Chen, et al., 2021). More specifically, women of color had a higher likelihood of having any factor associated with SMM during delivery and hospitalization and only Black women had a higher likelihood of experiencing severe morbidity in the postdelivery discharge period compared to White women (Chen, et al., 2021). Although data depicts this relationship, data also shows that the increased risk that exists among racial and ethnic minority women "appears to be independent of sociodemographic risk" (Howell, 2018). In other words, the adjustments made for these confounding factors in research do not explain the racial gap in pregnancy-related

mortality in most studies. Data does not explicitly state these same disparities identified for mortality and severe morbidity are also apparent with non-severe, musculoskeletal maternal morbidities. Because the healthcare system runs on a systemic foundation, it can be inferred that risk markers associated with one sector of healthcare are also apparent in other, related sectors of healthcare. Although this is a valid assumption to make, there is a lack of research tying the racial health disparities seen in maternal mortality and SMM to the development of morbid musculoskeletal disorders that result from pregnancy.

Quality of care significantly influences disparities in maternal morbidity, particularly for minority women. In a study conducted by Howell in 2018 where racial and ethnic disparities in severe maternal morbidities and mortality were observed along with the underlying drivers of these disparities, Howell found that recent data suggested a significant portion of racial and ethnic disparities may be explained by variation in hospital quality (Howell, 2018). In a series of studies conducted in New York City, investigators found that Black women were more likely to deliver in hospitals with higher risk-adjusted SMM rates plus the presence of racial differences in the distribution of deliveries potentially contributing to the persistent disparities between Black and White birthing people (Howell, 2018). Howell utilized a simulation method to quantify the impact of delivery location on said disparities and estimated that if Black women delivered at the same hospitals as White women, nearly one thousand Black women could avoid severe morbid events during their delivery hospitalizations which would ultimately reduce the Black maternal morbidity rate by greater than 1%, from 4.2% to 2.9% (Howell, 2018). Howell also determined that putting efforts into addressing both risk factors and chronic illnesses prior to an individual becoming pregnant is crucial in aiming to reduce these disparities (Howell, 2018). All of Howell's observations from this study highlight the potential underlying factors contributing to these lasting disparities. The ability to address risk factors and chronic illness prior to pregnancy are dependent on quality healthcare access. Reducing the probability of delivering in a hospital with high SMM rates or improving quality of care at these facilities is also dependent on quality healthcare access. In order to attempt to address and change these outcomes, it is imperative to start with the source of these problems: access to comprehensive, quality healthcare services.

Each year, approximately 700 women in the United States die from complications associated with pregnancy and childbirth, with a sizeable portion occurring in the postpartum period (Chen, et al., 2021). Understanding that maternal health begins at an individual's decision

to continue a pregnancy all the way through the extended postpartum period, where birthing people need the most support, is vital. The entire cycle, from preconception, to the antenatal period, delivery, and postpartum care are all closely linked and care at each phase of the process can and will impact SMM and/or mortality (Howell, 2018). In order to address maternal morbidity and thus mortality, appropriate availability of quality healthcare, defined as availability of specialized services beyond an obstetrician including an entire multidisciplinary care team, must exist and are important for overall healthy pregnancies (Howell, 2018). Involving a pelvic floor physical therapist and the knowledge that comes with this specialty as a part of the birthing team, along with an OBGYN or midwife, plus a doula, could enhance the ability to identify and address morbidity associated with musculoskeletal issues that contribute to overall quality of life during the postpartum period and beyond.

How is the pelvic floor affected during pregnancy?

In order to understand how a pelvic floor physical therapist could impact the development and progression of certain morbid disorders, it is important to understand how pregnancy impacts the pelvic floor on a musculoskeletal level. Pregnancy is a process that naturally alters the physiological and chemical makeup of the individual preparing to carry and support a new life inside the body. Within these processes, natural changes must occur altering hormone levels, the musculoskeletal system, and essentially all natural functions occurring within the body.

The combination of biomechanical, hormonal, and vascular changes during pregnancy may lead to a wide variety of musculoskeletal disorders, the most frequent being low back pain and pelvic pain (Riahi, Rekik, Bouaziz, & Mohamed, 2017). Almost half (45%) of birthing people experience these musculoskeletal related symptoms during pregnancy and 25% experience them during the postpartum period (Riahi, Rekik, Bouaziz, & Mohamed, 2017). Ultimately, the pregnancy-induced hormonal and physical changes increase the risk of musculoskeletal problems (Riahi, Rekik, Bouaziz, & Mohamed, 2017). Due to the increased stress on the axial skeleton, pelvic girdle, and genital tract, acute disorders such as nonspecific pain, neurologic compression, joint disruption, and septic arthritis can all potentially manifest (Riahi, Rekik, Bouaziz, & Mohamed, 2017). Studies show that virtually all women experience

some degree of this musculoskeletal discomfort during pregnancy and at least 25% have permanently disabling symptoms (Borg-Stein & Dugan, 2007). Changes such as soft-tissue edema, increases in the hormone relaxin, and an overall increased laxity of joints in pregnant people can all contribute to the lasting musculoskeletal changes seen during pregnancy and the postpartum period, potentially even extending past postpartum (Riahi, Rekik, Bouaziz, & Mohamed, 2017). Simply embarking on the pregnancy journey is a risk factor to developing pelvic floor disorders related to the natural changes in the body. For example, a study investigated whether the pregnancy state itself or type of delivery contributed to pelvic organ prolapse (a specific musculoskeletal pelvic disorder that contributes to other morbidities such as pain, discomfort with sex, and incontinence), found that simply being pregnant itself was responsible for the development of the dysfunction (Bozkurt, Yumru, & Şahin, 2014).

The mode of delivery also influences the probability of developing pelvic floor disorders. Modes of delivery potentially increase all major types of pelvic floor dysfunction with nulliparity being associated with the lowest risk, followed by c-section, spontaneous vaginal delivery, and finally any previous instrumental vaginal delivery associated with the highest risk (MacLennan, Taylor, Wilson, & Wilson, 2000). When investigating the effects of these different modes, vaginal childbirth is strongly associated with the incidence of pelvic floor disorders later in life (Hallock & Handa, 2016). Specifically, urinary and fecal incontinence and pelvic organ prolapse are associated with childbirth (Blomquist, Carroll, Muñoz, & Handa, 2020). This is due to potential injury to the deep pelvic floor muscles during labor and delivery as well as functional changes in the muscles following vaginal birth (Hallock & Handa, 2016). Data shows that vaginal delivery causes a notable amount of stretching in all tissues: nervous, muscular, fascial, and ligamentous structures of the pelvic floor (Bozkurt, Yumru, & Şahin, 2014). Excessive strain on these structures can lead to anatomical and functional changes such as prolapse and incontinence, and these occurrences may not be completely reversible (Bozkurt, Yumru, & Şahin, 2014). Data also shows that multiparity can exacerbate the probability of experiencing increased stretch and strain on the tissues of the pelvic floor, which is potentially the first step to developing these disorders (Bozkurt, Yumru, & Şahin, 2014). Along with this, people with reduced pelvic floor muscle strength prior to a vaginal delivery have a higher risk of developing stress urinary incontinence, overactive bladder, and pelvic organ prolapse (Blomquist, Carroll, Muñoz, & Handa, 2020). In people having their first baby, vaginal delivery can cause partial

denervation of the pelvic floor which can lead to urinary and fecal incontinence and is likely the first step along the path leading to prolapse and stress incontinence (Allen, Hosker, Smith, & Warrell, 1990).

In considering pelvic floor disorders specifically, nearly one quarter of all women and more than one-third of older women reported symptoms of at least one pelvic floor disorder (Nygaard, et al., 2008). As the population of older women increases, the national burden related to these disorders will increase as well (Nygaard, et al., 2008). Disorders that encompass pelvic dysfunction include lower urinary tract excretory and defecation disorders, including urinary and anal incontinence, overactive bladder, pelvic organ prolapse, and finally sexual disorders (Bozkurt, Yumru, & Şahin, 2014). Research also shows that these disorders rarely occur on their own and are often present in conjunction with other pelvic disorders (Hallock & Handa, 2016). Wu and colleagues conducted a study to estimate the prevalence and trends of pelvic floor disorders in women in the United States from 2005-2010. The investigators found that of the 8,368 non-pregnant women, 85.3% had urinary incontinence data, 84.2% had fecal incontinence data, and 84.5% had prolapse data; with a total of 94.7% of women with overlap indicating the presence of one or more pelvic disorders (Wu, et al., 2014).

Another study found that up to 75% of women presenting for a routine gynecological appointment demonstrated some degree of prolapse, with 3 to 6% having descent beyond the hymen (Nygaard, et al., 2008). Pelvic girdle pain, defined as pregnancy related pain within the lumbosacral, sacroiliac, and pubic symphysis joints, demonstrated a prevalence of 22% of all women during pregnancy, labor, or the postpartum period (Riahi, Rekik, Bouaziz, & Mohamed, 2017). Of that 22% of women experiencing pelvic girdle pain, 5-8% of those cases occurred with severe symptoms and resulted in disability (Riahi, Rekik, Bouaziz, & Mohamed, 2017). Coccygodynia, pain in the coccyx area in sitting, and pubic symphysis pain are both considered pelvic floor disorders that can be experienced during and following pregnancy. Research shows that 7.3% of coccygodynia in women is due to childbirth (Riahi, Rekik, Bouaziz, & Mohamed, 2017). More recent European studies have identified a much higher rate of pubic symphysis pain following pregnancy. A study done in Denmark found an incidence rate of 20.1% and one in Iran found an incidence rate of 28% (Borg-Stein & Dugan, 2007).

The deep pelvic floor muscles are responsible for a large portion of pelvic floor function and are referred to as the levator ani muscle group. A strong association between levator ani

muscle injury (LAMI) and pelvic organ prolapse has been identified. One study found that having a LAMI increases one's risk for prolapse by 7.3 times (Bozkurt, Yumru, & Şahin, 2014), a staggering increase. LAMI was also associated with instrumental vaginal delivery such as the use of forceps and an increased length of the second stage of labor (Bozkurt, Yumru, & Şahin, 2014). Sexual dysfunction is also associated with pelvic floor dysfunction and could be due to factors associated with the development of pelvic disorder symptoms or potentially surgical procedures performed to correct existing pelvic dysfunction (Bozkurt, Yumru, & Şahin, 2014). More specifically, the incidence of sexual dysfunction in women with urinary incontinence is reported to vary from 26 to 47% (Bozkurt, Yumru, & Şahin, 2014). Other less common, but no less serious pelvic disorders due to pregnancy include transient osteoporosis of the hip, osteonecrosis of the femoral head, osteoporosis and stress fractures, peripartum pubic separation, inflammatory sacroiliitis, disk herniation and sciatica, lumbosacral plexopathy (Riahi, Rekik, Bouaziz, & Mohamed, 2017), and rupture of the pubic symphysis (Borg-Stein & Dugan, 2007). These statistics combined with the estimated growth of the older population over the next 30 years shine a spotlight on the importance of understanding and identifying these disorders in an accurate and timely manner in order to combat the development of symptoms later on for birthing people.

The most important and universal risk factor for the development of postnatal pelvic floor dysfunction has continuously been cited as the presence of similar symptoms before the onset of pregnancy (Durnea, et al., 2017). This is an important factor as the majority of pre-pregnancy risk factors are in fact modifiable. In terms of urinary dysfunction specifically, the presence of similar pre-pregnancy symptoms was also the most important risk factor (Durnea, et al., 2017). Other important associations noted were poor social support with urinary and stress incontinence and induction of labor with the presence of incontinence (Durnea, et al., 2017). Additionally, postnatally, the presence of pre-pregnancy pelvic disorders was significantly associated with persistence of symptoms, such as vaginal laxity and dyspareunia, in the postpartum period (Durnea, et al., 2017). Associations outside of previous pelvic floor dysfunction include smoking, diagnosed depression, lower educational level, poor social support, high body mass index, recurring urinary tract infection, and vigorous exercise (Durnea, et al., 2017). Studies also show that mental health disorders and sexual dysfunction are more common in women with bladder dysfunction (McDowell & Gobert, 2020). Whether the bladder dysfunction or the mental

health disorder and sexual dysfunction occurred first is continually being investigated. Identifying these risk factors emphasizes the fact that many people deal with these disorders prior to ever becoming pregnant, and that the pregnancy state itself can exacerbate already existing symptoms. The pelvic floor muscles anatomically link and functionally affect each pelvic organ; therefore, it is believed that the existence of disorder in one single organ can lead to concomitant pelvic floor muscle dysfunction in other organs (McDowell & Gobert, 2020). In other words, there is an increased likelihood of developing pelvic floor dysfunction in other organs neighboring the organ already experiencing dysfunction. Early symptom detection is key to ensure treatment and resolution of the initial dysfunction before it occurs in other organs. As birthing providers, it is important to recognize the effect vaginal birth and the pre-existence of pelvic dysfunction can have on developing pelvic floor disorders and take the necessary, actionable steps to reduce the likelihood of these occurrences. Accepting pelvic disorders as "normal rather than common" has resulted in a reduced urgency to address these essentially inevitable issues prior to an individual embarking on their own pregnancy journey. This thought process must be altered in both birthing people and birthing providers alike.

What is Pelvic Floor Physical Therapy?

It is important to define the components of pelvic floor physical therapy (PFPT) to fully understand its effectiveness. There is a general low level of understanding of physical therapy, specifically PFPT, not just within patient communities or the general public, but also amongst healthcare professionals. The Academy of Pelvic Health Physical Therapy is a nonprofit professional organization made up of more than 3500 members. This organization is a section of the American Physical Therapy Association (APTA) whose members "provide the latest evidence-based physical therapy services to everyone from childbearing women to peri-menopausal mothers, young athletes to men with incontinence or other pelvic health complications" (The American Physical Therapy Association, 2022). The mission of this organization is to "advance global excellence in abdominal and pelvic health through evidence-based practice, innovative education, research and social responsibility" (The American Physical Therapy Association, 2022). Today, the scope of practice of PFPT has widened to include a multitude of health abdominal and pelvic concerns for all people including incontinence,

pelvic/vaginal pain, prenatal and postpartum musculoskeletal pain, osteoporosis, rehab following breast surgery, low back pain, lymphedema, conditions specific to the female athletes, fibromyalgia, chronic pain, wellness and exercise (The American Physical Therapy Association, 2022).

PFPT is considered an evidence-based, low-risk, and minimally invasive intervention that has the potential to play a role in the prevention, treatment, and/or management of pelvic floor dysfunction if utilized (Lawson & Sacks, 2018). Pelvic floor therapists use external or internal manual therapies, or a combination of both, to work with pelvic dysfunction. These manual therapies include myofascial release, connective tissue manipulation, and joint and scar tissue mobilization (Lawson & Sacks, 2018). Manual therapy uses palpation with the fingers and hands to loosen tight, spastic muscles and lengthen tightened tissues to provide pain relief, while therapies such as neuromuscular stimulation and biofeedback use technology to increase functional awareness of the pelvic floor, improve coordination of muscular contractions, and improve endurance to promote maximal pelvic floor functioning (Lawson & Sacks, 2018). Expertise in these manual therapies is specific to the PFPT profession, allowing therapists to manually impart change on pelvic floor muscles as well as teaching patients how to correctly use their pelvic floor to avoid dysfunction all together. Pelvic floor physical therapists are experts in identifying, assessing, and treating musculoskeletal changes in the body that come with pregnancy including prolapse, incontinence, and pelvic pain. Along with this, they are general experts in the movement systems within the body as a whole, allowing them to address musculoskeletal dysfunction within the entirety of the body that may be due to pregnancy. This means pelvic floor therapists can have a significant impact on the outcomes that result from birthing. Utilizing this therapy in a timely manner could potentially prevent the development of pelvic disorders at all, which emphasizes the importance of engaging in it prior to pregnancy or in the early stages. Bozkurt et al. stated in their review in 2014 that "pelvic floor exercise programs are a strategy to prevent the formation of pelvic floor dysfunction and are recommended to all women in the first trimester" (Bozkurt, Yumru, & Şahin, 2014).

In terms of specific conditions, pelvic floor muscle training (PFMT) is a recommended treatment option for urinary incontinence and pelvic organ prolapse and is also recommended as first line therapy for women with stress urinary incontinence by the American College of Physicians (Blomquist, Carroll, Muñoz, & Handa, 2020). In another review conducted by Borg-

Stein and colleagues, the investigators found that most patients with low back pain responded well to activity and postural modifications and that a regular exercise program before pregnancy reduced the risk of back pain during pregnancy (Borg-Stein & Dugan, 2007). The literature states the importance of people performing PFPT during pregnancy and the early postpartum period taking into account they are correctly isolating and contracting their pelvic floor muscles (Lawson & Sacks, 2018). All in all, the message the medical community must convey to the birthing population and healthcare workers who work with them is that pelvic floor dysfunction is not an acceptable normal result of pregnancy and birth and these issues must be approached with an effective, less invasive modality rather than resorting to medication or surgery (Lawson & Sacks, 2018). That effective, less invasive approach is PFPT. The focus must now shift from simply stating physical therapy can help, to actively increasing access to these services.

Effectiveness of PFPT

Literature has confirmed the effectiveness of PFPT for musculoskeletal and neurological pelvic disorders, particularly when taught by specialized personnel, such as a pelvic floor physical therapist (Lamin, Parrillo, Newman, & Smith, 2016). Research shows that women are more likely to report signs of improvement in symptoms when referred to supervised PFMT rather than performing recommended exercises without supervision (McDowell & Gobert, 2020) further emphasizing the importance of utilizing specialized personnel. Along with this, if PFMT is performed during pregnancy, it is an effective technique that can help restore or develop pelvic floor muscle strength and assist women in controlling this musculature throughout pregnancy and during the expulsive phase of labor (de Oliveira, Borges Lopes, Longo e Pereira, & Zugaib, 2007).

PFMT is said to effectively improve and/or cure symptoms of specific pelvic disorders such as pelvic organ prolapse, fecal incontinence, peripartum and postpartum pelvic floor dysfunction, and hypertonic pelvic disorders (Wallace, Miller, & Mishra, 2019). Notably, these results are achieved when PFMT is done with or without supplemental modalities (Wallace, Miller, & Mishra, 2019). In other words, PFMT is a sufficient intervention to improve symptoms on its own without the addition of other forms of treatment, such as medication or surgery. Systematic reviews on its effectiveness with these disorders have been conducted. Li and

colleagues conducted a review on 13 studies with over 2,000 patients assessing the effectiveness of PFMT as a treatment for women with pelvic organ prolapse or as an adjunct to prolapse surgery. Their results indicated those in the PFMT group gained a greater improvement than controls in prolapse symptom score, more of them reported their prolapse was improving and that they experienced fewer discomfort syndromes associated with their prolapse, and they had greater improvement in muscle strength and endurance (Li, Gong, & Wang, 2016). Dumoulin and colleagues conducted a review assessing the effects of PFMT for women with urinary incontinence compared to no treatment, placebo treatment, or sham treatments. Their review included 31 trials involving over 1,000 women. Notably, the authors mentioned considerable variation in intervention approach, study populations, and outcome measures among studies. Based on the data, investigators determined PFMT can cure or improve symptoms of urinary incontinence and reduce instances of leakage, suggesting that PFMT could be included in first-line conservative management for those suffering from urinary incontinence (Dumoulin, Cacciari, & Hay-Smith, 2018). Retrospective studies have also reported the effectiveness of PFPT in treating sexual pain disorders (Rosenbaum & Owens, 2008). In a systematic review of the effectiveness of PFMT on multiple life domains, five out of twenty-four studies were compared, and all demonstrated a significant improvement in the quality of life in the PFMT muscle group compared to the control group (Radzimińska, et al., 2018).

There is anecdotal evidence to support the use of PFMT for pelvic dysfunction as well. When it comes to stress urinary incontinence, PFMT works to prevent this disorder in several ways by effectively teaching a patient to contract their pelvic floor with the correct timing in order to prevent urethral and bladder neck descent and leakage in response to increased intra-abdominal pressure (Lamin, Parrillo, Newman, & Smith, 2016). With regular and repetitive exercise training, that pelvic floor muscle becomes hypertrophied and can further improve urethral resistance, contributing to improved symptoms of incontinence (Lamin, Parrillo, Newman, & Smith, 2016). Training in this way can also contribute to preventing pelvic organ prolapse (Lamin, Parrillo, Newman, & Smith, 2016). Incontinence is not the only disorder that is positively affected by PFMT. In a study by Glazer and colleagues, the investigators found an association of increased pelvic floor hypertonus and decreased pelvic floor muscle stability in patients with vulvar pain syndromes (Rosenbaum & Owens, 2008). They then demonstrated at

least a 50% rate of effectiveness in reducing vulvar pain with pelvic floor biofeedback training (Rosenbaum & Owens, 2008).

Within the context of pregnancy and childbirth, PFMT may be an additional tool used for relieving musculoskeletal alterations that occur during pregnancy and the puerperal period (de Oliveira, Borges Lopes, Longo e Pereira, & Zugaib, 2007). Additionally, primary prevention pelvic muscle training can be used in women of childbearing age to deter the development of disorders, such as stress urinary incontinence, after delivery (Lamin, Parrillo, Newman, & Smith, 2016). Specifically, this muscle training prior to labor and delivery can assist birthing people in building strength and endurance of the pelvic muscles that assist with vaginal delivery and result in the pelvic floor being less prone to injury and better able to recover after a potentially damaging event (Lamin, Parrillo, Newman, & Smith, 2016). Patients would be benefitted by learning the importance of not only knowing how to contract your pelvic floor muscles, but more importantly when to relax these muscles during the birthing event to prevent severe trauma. These skills are not developed intuitively within our own bodies. Pelvic floor muscles are like all others in the body, implying they can be trained just as the bicep muscle can be trained to do a bicep curl.

A systematic review was conducted of clinical studies investigating the effectiveness of prenatal physical therapy in treating pregnancy-related symptoms. The investigators did not find a significant difference in quality of life in the group of women identified as overweight, no significant evidence that supported aerobic exercise as preventative against gestational diabetes, and no significant difference with regard to perineal pain among the pregnant women without previous vaginal birth (Van Kampen, Devoogdt, De Groef, Gielen, & Geraerts, 2015). Investigators did identify four studies that found a positive effect in favor of the PFMT intervention groups in preventing low back pain, four others found that PFMT resulted in fewer urinary incontinence symptoms during late pregnancy and after delivery, and three studies identified a positive effect of antenatal perineal massage in reducing second or third-degree tears or episiotomies (Van Kampen, Devoogdt, De Groef, Gielen, & Geraerts, 2015). One study also determined that antenatal PFMT seemed to be effective in reducing the risk of postpartum stress (Van Kampen, Devoogdt, De Groef, Gielen, & Geraerts, 2015).

Due to the difficulty of recording and verbalizing the effectiveness of PFPT for the birthing population, there are persisting gaps in evidence citing its overall impact. Although there

is evidence that supports the effectiveness of PFMT throughout pregnancy and postpartum, standards of treatment protocols vary widely (Wallace, Miller, & Mishra, 2019). There is a lack of standardized measures and definitive treatment protocols (Rosenbaum & Owens, 2008), as well as minimal data supporting the preventative efficacy of PFMT (Grant & Currie, 2020). Because of this, there is currently no gold standard for recommended PFPT modalities, therapy session length, frequency, duration, and intensity (Wallace, Miller, & Mishra, 2019). Overall, there is strong evidence to support PFPT, but there are still areas in need of continuing evaluation.

Barriers and Facilitators to Physical Therapy

As previously cited, although physical therapy has commonly been identified as a viable and effective form of treatment for many musculoskeletal disorders and dysfunction, adherence to therapy is often inconsistent. Much of the reason for the low adherence to physical therapy treatment revolves around the multiple barriers blocking individuals' ability to seek and obtain care. General lack of awareness, overall knowledge, and adequate education on the pelvic floor itself present as massive barriers to accessing care. When an individual begins their pregnancy journey, they are bombarded with health messages during their antenatal care; however, PFPT is often not recognized as a priority. Without the adequate support needed to understand the intricacies of the coming change that will occur in the body, birthing people often feel disempowered which ultimately leads to lack of self-efficacy and engagement (Grant & Currie, 2020). This combined lack of knowledge and education with the taboo cloud that shrouds the conversation around the pelvic floor, genitalia, and its accompanying organs have resulted in patients having reluctance to report any issues to healthcare providers (McDowell & Gobert, 2020). Dunivan et al recruited English and Spanish speaking women with pelvic organ prolapse from female urology and urogynecology clinics and interviewed them about their diagnosis. Their data showed that both groups generally felt ashamed of their diagnosis and were uncomfortable speaking with anyone about it, including their providers (McDowell & Gobert, 2020). The primary conceptual reason identified was due to lack of knowledge about what their diagnosis meant, symptoms, and the available treatment options (McDowell & Gobert, 2020).

In 2017, Zoorab and colleagues conducted phone surveys to participants identified to have pelvic dysfunction to discuss their top reasons for not participating in therapy. The top barriers identified were financial constraints (51.4%), perceived lack of utility (37.1%), time constraints (30.0%), and travel issues (18.6%) (Zoorob, et al., 2017). Investigators identified that majority of these treatment barriers were concrete constraints that are areas in which providers can potentially alleviate by changing their approach to their practice. Social/behavioral drivers were also identified, as 84.4% of participants had one or more comorbid pain conditions, 51.4% expressed some level of anxiety regarding the pelvic floor therapy treatment options, and 9.6% did not start treatment because of fear (Zoorob, et al., 2017). The drivers identified in this study emphasize the fact that abstract factors, such as the social and behavioral drivers, are contributing to the concrete factors of financial, time, and travel constraints. Any combination of these barriers can result in an individual feeling alone and ashamed in dealing with these extremely common issues.

Another study by Washington et al. found that insurance status was a barrier to PFPT in Rhode Island. Investigators found that 33% of women with private insurance and 16.7% with other insurance were PFPT non-participants when the therapy was recommended (Washington, Raker, & Sung, 2011). Of those women who did choose to participate in PFPT, 71.2% had private insurance and 28.9% had public, subsidized, or no insurance (Washington, Raker, & Sung, 2011). Along with this, insurance coverage of PFPT services was strongly associated with whether a woman ultimately attended even one therapy session (Washington, Raker, & Sung, 2011). Obtaining PFPT services is highly dependent on the insurer's decision to cover or not. An insurer refusing to cover PFPT services compromises the quality of care provided to the patient and may ultimately result in higher healthcare costs associated with incontinence, among other pelvic disorders (Washington, Raker, & Sung, 2011).

One of the most important things to investigate when considering barriers to care is what birthing people themselves are saying about why adherence to therapy is difficult, even when accessible. In a focus group study done in Scotland, women were asked about their perceptions and experiences of postnatal PFMT. Study authors found that all but one participant was informed by their midwife that they should be doing PFMT after having their baby, and that those who received the informational leaflet were never taught how to correctly engage in PFMT (Grant & Currie, 2020). There was a consensus among participants that there is a lack of

aftercare for women in any capacity after childbirth, particularly with PFMT, and that generally women do not know how to perform a correct pelvic floor contraction and therefore were not confident when attempting to engage on their own (Grant & Currie, 2020). Some participants stated they were unaware of the prevalence of incontinence and prolapse following childbirth until they experienced it themselves, and even once they were made aware, lack of time was the biggest barrier to engagement in any type of physical activity (Grant & Currie, 2020). Some participants suggested replacing the general practitioner check at 6-weeks postpartum with a physical therapy check-up would be more effective and helpful in the postpartum period as new mothers, and all participants felt generally the benefits of PFMT should be more widely discussed in society, particularly with women before they have children, and that information should be more readily available (Grant & Currie, 2020). Lamin and colleagues also found that women cited several reasons for poor PFMT adherence including unrealistic expectations, forgetting to exercise, lack of time or interest, and interference of PFMT with daily activities (Lamin, Parrillo, Newman, & Smith, 2016).

Additionally, when asking the general person about their knowledge of PFPT, there is a gap in understanding its purpose, function, and usefulness. In 2015 Berzuk and Shay evaluated pelvic floor knowledge and the presence of pelvic floor dysfunction in women office workers. Survey data showed that 79% of patients were unaware of pelvic floor dysfunction physical therapy services although nearly two-thirds (64.7%) also suffered from pelvic floor dysfunction (McDowell & Gobert, 2020). Study results also showed that a noticeable number of these patients who had participated in PFPT services (20%) were still not fully aware of the full scope of pelvic floor physical therapy services (McDowell & Gobert, 2020). Berzuk and Shay ultimately concluded that low levels of pelvic floor dysfunction knowledge were associated with a higher prevalence of pelvic floor dysfunction, and alternatively, an increase in knowledge and awareness were significantly associated with an increase in quality of life and an overall decrease in pelvic floor dysfunction symptoms (McDowell & Gobert, 2020). This study brings to light the impact lack of awareness in this area of healthcare has on adherence.

The burden of these statistics does not only fall on the shoulders of patients and how they approach experiencing pelvic disorders. Research states practitioners greatly contribute to this phenomenon as well. Within the physical therapy community, a significant number of patients (64%) receiving general physical therapy services may also be experiencing symptoms

associated with pelvic floor disorder without reporting them (McDowell & Gobert, 2020). Given the high probability that patients may lack the awareness to recognize whether pelvic dysfunction is present, it is thus the responsibility of the provider, in any setting, to initiate these conversations, provide screening for these disorders, and educate patients on what they can do to obtain treatment if needed (McDowell & Gobert, 2020). PFMT is a therapy where time is an important factor. It may take more than one training session to achieve results which necessitates a longer time commitment and increased costs on behalf of the provider. Because of this, it is suspected that physicians may not want to refer their patients out for PFMT for fear of losing revenue (Lamin, Parrillo, Newman, & Smith, 2016). Utilizing therapies such as biofeedback instruments and ultrasound machines also add to the increased cost of an institution providing PFMT, potentially contributing to reasons why PFMT is not offered as the first line of therapy (Lamin, Parrillo, Newman, & Smith, 2016).

In general, there are numerous barriers which may prevent birthing people from getting adequate information and access to PFPT services. Secondary and tertiary treatments, such as surgery and medication, are advertised more widely for pelvic dysfunction and there is little emphasis on the importance of increasing awareness and engaging in proactive and simultaneous therapies in conjunction with pregnancy. Overall, societal beliefs and misconceptions about the pelvic floor, lack of knowledge and education on the subject, lack of adequate patient education by providers, and lack of education for providers in general serve to pose as some of the largest barriers to accessing care. Breaking down these impediments will assist the medical community in identifying and attempting to fix the issues with access and adherence.

What do other health professionals know?

As stated previously, despite the evidence supporting the effectiveness of PFPT, it is not commonly used as a first-line treatment for pelvic floor dysfunction in the United States (Lawson & Sacks, 2018). Patients are often prescribed medication for incontinence and undergo surgical interventions for both incontinence and prolapse. More research is needed to better understand the long-term benefits PFPT offers, the most effective training regimens, and barriers to patient adherence (Lawson & Sacks, 2018). The non-adherence to this therapy goes deeper than a lack of understanding on the patients' part. Education about conservative pelvic floor dysfunction

may be lacking in all facets of graduate education curricula for a number of healthcare professionals, including nurse-midwives and midwives, advanced nurse practitioners, and even physician assistants (Lawson & Sacks, 2018). Only the APTA has a structured graduate curriculum-based educational program for practitioners to learn in detail about pelvic floor dysfunction in birthing people. Pelvic examinations are a part of the undergraduate training for nurse practitioners and physician assistants, but specifics of conservative interventions for bladder and pelvic dysfunction in women is lacking (Lamin, Parrillo, Newman, & Smith, 2016). Furthermore, health professionals may also face resource barriers, particularly lack of insurance reimbursement, in providing these services. Reimbursement for pelvic health services can be challenging to navigate and insurance companies may not cover all treatment modalities in its entirety (Lawson & Sacks, 2018). Ultimately, there is a lack of resources available to appropriately teach patients how to engage in PFPT, no standardized treatment protocol to guide clinical practice, and no standards for long-term follow-up care (Lawson & Sacks, 2018).

The literature shows that one of the most significant barriers to individuals participating in PFPT are the providers they depend on to point them in the right direction when needed. Primary care providers may have partial responsibility in the reason why there is a delay in patients seeking treatment for pelvic floor dysfunction. In 2015, Jirschele et al studied physician barriers to accurately identifying urinary incontinence and imparting treatment. Of the 78 physicians surveyed, most indicated that urinary incontinence was a common problem in their practices, but only 19% were comfortable diagnosing urinary incontinence and 59% agreed differentiating between the different types of urinary incontinence was difficult (McDowell & Gobert, 2020). In total, 69% believed that managing the diagnosis in general was difficult (McDowell & Gobert, 2020). Dessie and colleagues assessed prenatal counseling of obstetrical providers related to postpartum pelvic floor dysfunction at centers with urogynecology services. Of those who participated in the survey, over half (56.3%) reported never discussing postpartum urinary incontinence and 73% never discussed postpartum fecal incontinence during prenatal counseling (McDowell & Gobert, 2020).

In another pilot survey of obstetrical providers at multiple institutions with urogynecology services, nearly half of providers in the sample reported never discussing postpartum stress urinary incontinence or anal sphincter laceration with women during prenatal counseling (Dessie, Hacker, Dodge, & Elkadry, 2015). One third of these providers reported

never even discussing possible pelvic floor dysfunction as a factor that can occur when comparing methods of delivery (Dessie, Hacker, Dodge, & Elkadry, 2015). The most commonly cited reason as to why providers were not counseling patients in pelvic dysfunction was lack of time (McDowell & Gobert, 2020). A substantial portion (39.9%) of providers stated they felt this way due to the increasing pressure for them to see an increasing number of patients in one day. The next most cited reasons included lack of sufficient information regarding pelvic dysfunction (30.1%), the assumption that patients know that pelvic dysfunction is a part of the normal pregnancy and delivery process (14.5%), a perceived low incidence of pelvic floor dysfunction (13.9%), and finally the concern that patients would elect for cesarean delivery if informed of the risks associated with vaginal delivery (7.5%) (Dessie, Hacker, Dodge, & Elkadry, 2015). Along with this, when patients who had a history of pelvic floor dysfunction were at appointments with their obstetricians, one-third of the providers reported never discussing with patients the option of cesarean delivery based on their existing pelvic floor symptoms (Dessie, Hacker, Dodge, & Elkadry, 2015). Although these providers utilize physical therapy and urogynecology services at times, one-third continually reported never referring women with pelvic disorders to therapy based on their symptoms (Dessie, Hacker, Dodge, & Elkadry, 2015). This phenomenon was seen across physicians and residents alike. Compared to physicians, residents were less likely to counsel nulliparous women in pelvic dysfunction risk by mode of delivery and were less likely to report referring women to PFPT (Dessie, Hacker, Dodge, & Elkadry, 2015). Ultimately, despite the prevalence of these conditions and the evidence stating the effectiveness of PFPT, a substantial proportion of obstetrical providers surveyed in this study did not offer any form of prenatal counseling on common pelvic floor symptoms (Dessie, Hacker, Dodge, & Elkadry, 2015). This is indicative of the idea that prenatal counseling regarding pelvic dysfunction risk is not fully addressed at all levels of obstetrical training with limitations of time and information as the most significant barriers (Dessie, Hacker, Dodge, & Elkadry, 2015). This data affirms the need for increasing educational resources, not only for current and future patients, but also to other birthing healthcare experts.

Within the U.S., there has been increasing recognition of the positive impact doula care can have on the quality of maternity care. Doula care is beginning to be viewed as an evidence-based intervention to improve maternal health, patient satisfaction, and healthcare experiences for birthing people (Marshall, et al., 2022). A doula is defined as a trained professional equipped

to provide non-clinical support to pregnant people along the continuum of pregnancy, during the birthing event, and into the postpartum period (Marshall, et al., 2022). A 2017 Cochrane review reported women who receive consistent labor support, the role a doula holds during the birthing event, were more likely to have spontaneous vaginal births and less likely to report negative birthing experiences, having a c-section, or having instrumental vaginal births (Bohren, Hofmeyr, Sakala, Fukuzawa, & Cuthbert, 2017). There is insufficient evidence stating where doulas fall on the spectrum of understanding and utilizing PFPT services for their clients. One can make the assumption that due to the lack of education seemingly present in traditional birthing provider roles (OBGYN's, medical residents, labor and delivery nurses) that those in non-traditional birthing spheres, such as doulas, also lack the sufficient education to understand the function of the pelvic floor throughout pregnancy and the postpartum period. As integral members of the population of birthing providers in the U.S. who get the opportunity to spend extended amounts of time with their clients, it is important to identify where doulas land on this pelvic floor educational spectrum and to identify where their gaps in knowledge are to allow for effective educational programs to be developed.

There is clearly a gap in knowledge amongst those the general public look to for answers throughout this stage in their life. Without adequate knowledge, time, and effective training in these areas, it is impossible for other healthcare providers to promote PFPT and refer their patients to these specialized services, even though they are widely needed. It is apparent that providers will probably not be able to increase the length of prenatal visits, therefore, changing this system of shared information by providing targeted educational resources to both patients and providers to aid in understanding the symptoms of pelvic floor dysfunction and ultimately help direct earlier treatments, as well as potentially aid in decision-making during the peripartum care period would be extremely effective (Dessie, Hacker, Dodge, & Elkadry, 2015). All of this data confirms the importance of why accessible educational programs surrounding the topic of pelvic floor could significantly impact the number of these disorders seen widespread throughout the community.

Closing the Gap

Despite the challenges with determining specific parameters for treatment, PFPT has strong evidence supporting its effectiveness of treating various pelvic floor disorders, particularly those that can manifest throughout the continuum of pregnancy and in the postpartum period. Evidence shows where there are significant gaps in pelvic floor knowledge present within the general public and among other birthing healthcare providers, resulting in a gross under-utilization of an extremely beneficial therapy. When considering the population of doulas, there is no evidence investigating their knowledge and awareness of PFPT, as well as their perceptions of the presence of racial disparities in maternal mortality and morbidity. As such an integral member of a birthing team, understanding their scope of knowledge surrounding this subject would be the first step in determining ways to improve their education surrounding pelvic floor and birthing.

The totality of this evidence sheds light on how an effective educational program surrounding pelvic floor health geared towards other birthing professionals could begin to bridge the gap in knowledge that is acting as a significant barrier to widespread adherence to PFPT. In order to create an all-encompassing program that other birthing professionals can use, assessing doulas' current knowledge and perceptions regarding pelvic floor function and the impact that racial health disparities have on birthing experiences and outcomes is essential. This will allow for the development of sufficient recommendations for the creation of a comprehensive pelvic floor educational program.

METHODOLOGY

Introduction

The overall purpose of the Physical Therapy for Better Birth program was to provide birthing professionals, specifically doulas, with the tools to recognize and address maternal morbidity issues associated with the pelvic floor in the correct manner within their own scope of practice. The student researcher was engaged to conduct a needs assessment to inform the development of an educational program to address pelvic floor health and associated morbidities. The goal of this project was to investigate: 1) what other birthing professionals, specifically doulas, know about the pelvic floor and how it is affected throughout the continuum of pregnancy and postpartum; 2) identify gaps in their knowledge pertaining to this subject and understand their scope of practice pertaining to birthing; and 3) assess doulas' overall perception of the current state of disparities in maternal health outcomes. Following collection of this information, recommendations were made to guide development of a curriculum to provide doulas with tools to recognize these issues, to address them in the correct manner within their own scope of practice, and to connect their patients to physical therapy care when needed. The research that encompasses the entirety of this project includes a literature review, qualitative research, development of recommendations to create an educational program, and finally development of a quantitative assessment tool to utilize within implementation of the program.

The researcher conducted a literature review comprised of 32 total studies with research spanning over twenty years. The majority of the research obtained were studies based in the United States, two of the sources were derived from U.K. based population studies, one study conducted in Taiwan, and one study was conducted in Brazil. The topics addressed in the literature review included defining maternal morbidity and addressing the current state of maternal health within the United States, investigating the function of the pelvic floor throughout pregnancy and postpartum, defining PFPT and its effectiveness, identifying barriers and facilitators to accessing physical therapy services, and finally investigating what other health professionals know about the field of pelvic health physical therapy. The literature review served to identify informational gaps and informed the development of the qualitative interview guide and subsequently the recommendations for developing and implementing an educational

program. More details about the development of the methodology are specified later on in this chapter.

Population and Sample

The population targeted for this project were birth workers, specifically doulas, with a focus on those who worked with marginalized populations. Participants of the qualitative interviews were identified through convenience sampling including personal contacts of the researcher and program team as well as through outreach to doula organizations. Additionally, participants were recruited through snowball sampling by allowing participating doulas to invite other colleagues who would also be interested to participate in the interview. A total number of 20 doulas participated.

The researcher decided to focus on doulas as the target population because these professionals have close, intimate contact with birthing people on a regular basis compared to other types of birthing professionals such a OBGYN's, labor and delivery nurses, and pelvic floor physical therapists. A doula is a trained birthing professional that provides non-clinical support to birthing people throughout their pregnancy journeys. Doulas represent a group of healthcare workers who can potentially collaborate with pelvic floor physical therapists, as their main scope of practice revolves around birth support. Pelvic floor physical therapists have training in birth support as well as deeper anatomical, medical training on the function of the pelvic floor throughout the continuum of pregnancy and postpartum. Doulas could serve as a great referral source for PFPT due to their close contact in working with many birthing people. These professionals have potential to engage and work with physical therapists highly effectively within their scope of practice. The aim for total number of doula participation was 12-15 doulas in order to reach adequate data saturation, as it has previously been recommended that qualitative studies require a minimum sample size of at least 12 to reach saturation (Clarke & Braun 2013; Fugard & Potts, 2014; Guest, Bunce, & Johnson, 2006).

After recruitment of 9 doulas there was a drop off in participation. The supporting foundation, the Global Women's Health Initiative (GWHI), agreed to provide a $50 incentive to those who

participate in order to further increase participation. This value was derived from the average doulas generally charge per hour for their services. According to a team member who also identifies as a doula, doulas average charge per hour is $75-100 for their services. We equated this incentive to the maximum time allowed for each interview which was 30-minutes. After the offering of the incentive, 11 more doulas signed up to participate in these interviews. With a total sample of 20 participants the researcher deemed the sample to have thematic saturation while also providing a range of opinions and knowledge on the topic of PFPT, maternal morbidity, and experiences as birth workers. This was particularly evident as the sample well represented doulas who predominantly worked with marginalized people. With this realization, the researcher also believed they reached saturation on the information obtained from this sample of participants.

Procedures

All interviews were held virtually via web-conferencing software (Google Meet). Written and verbal consent for recording of the interviews was obtained in the invitation email as well as at the time of the interview. All participants agreed to be recorded for investigative purposes. This virtual platform was utilized due to the COVID-19 pandemic, but also allowed for a wider reach in doula participation. Doulas from multiple states were able to participate in these interviews, as opposed to being limited to conducting in-person interviews within Georgia, specifically the city of Atlanta where the researcher is located.

Instruments

The six-question individual interview guide (Appendix B) was developed by the researcher and three other pelvic floor physical therapists, with a primary goal of better understanding what birth workers would want out of an educational workshop. The first four questions assessed participants' baseline knowledge of the pelvic floor and how it functions throughout pregnancy and postpartum and what information they would like to gain regarding education within the field of pelvic health for pregnant persons. Additionally, to further investigate perceptions of disparities in maternal morbidity, the last two questions sought to understand doulas' perceptions of how race affects their clients' care and their own work as a birth worker. The qualitative interview guide included these six questions and related probes:

1. Have you ever heard of pelvic floor physical therapy before and if so, what do you know about it?
2. Have you ever worked with a client that has gone to pelvic floor physical therapy before? Did their birthing experience seem different from those clients who haven't?
3. How confident are you in your knowledge about the pelvic floor and how it functions during pregnancy and postpartum?
4. Have you ever worked with a person who experienced one or more of these symptoms: pain due to their pregnancy, leaking, DRA? Did you think these symptoms were normal?
5. Have you seen a difference in your clients' birthing experience depending on their race?
6. Do you feel like you have the tools to combat maternal morbidity/mortality with the training you've received? What kind of knowledge do you wish you had more of in order to help address these issues in your clientele if applicable?

Following the interviews, the researcher obtained additional demographic information (Appendix C) of the participants in order to further explore nuances present within this sample. The following questions were also answered by the participants following the interviews:

1. Age
2. Race
3. Location of practice (city, state)
4. How long have you been practicing? (years)
5. Where did you complete your training? (city, state)
6. How was your training conducted? (apprenticeship vs. formal education)
7. When (year) did your training occur?
8. What is the predominate race of the birthing clients you serve?
9. What is your highest level of education?
10. Do you work within the healthcare system as well? (e.g. Working in the hospital, at a birthing center, etc.)
11. Do you work within an organization or independently?
12. Do you participate in part-time or full-time doula work?

13. What do you charge for your doula services?
14. Are you able to support yourself solely from this profession or do you have other means of income?
15. Do you engage in pro-bono work?
16. What led you to becoming a doula?

Analysis

Following compilation of the data, a qualitative data analysis of the interviews was conducted utilizing MaxQDA software. First, audio recordings from Google Meet were transcribed and those transcriptions were then uploaded to MaxQDA for analysis. To create the codebook (Appendix D), the researcher began by utilizing deductive codes based on the interview guide and then developed inductive codes that emerged from reading the transcripts. Coded segments were further analyzed by completing thick descriptions and finally redefined into themes corresponding to each interview question. Qualitative findings were used to guide the reasoning and development of recommendations on how to develop an educational program focused on the pelvic floor geared towards doulas.

Future Program Tool Development

The data gathered from the literature review and qualitative research was combined to develop a quantitative pre- and post-assessment tool (Appendix A) that educators can utilize when implementing an educational program. These questions were also based on the previously gathered data which identified the types of things other birthing professionals can and should know in order to appropriately refer clients if pelvic dysfunction is identified. These tools can be utilized in evaluation of future educational health programs to measure changes in participants' knowledge before and after completing the course and will further allow for assessment of the success of future educational workshops developed based on these recommendations.

The quantitative pre-assessment tool is comprised of 28 questions with questions divided into four sections: *"Demographics", "Knowledge of Pelvic Floor PT", "Knowledge of Pelvic Floor Function",* and *"What is your confidence in knowing when/how to address pelvic floor issues?"*.

The post-assessment tool is comprised of the same questions from the pre-assessment tool with an additional six questions added for a total of 34 questions. The post-assessment includes sections for comments and four short-answer questions to allow participants to further elaborate on their experience participating in an educational workshop. These are the tools to be utilized after a program guided by the stated recommendations is created. These tools can be found in Appendix A.

Ethical Considerations

This analysis was determined to be Non-Human Subjects Research by the Emory IRB determination form. IRB approval was waived for this project given that it is an evaluation guided by a needs assessment that is not meant to generalize findings to a broader population.

RESULTS

Participant Demographics

Of the 20 doulas who participated, 18 provided demographic information (Table 1). Of these 18 participants, 72% (13) of the doulas identified as Black or African American, 17% (3) as White, 6% (1) as Asian, and 6% (1) as Latina. The mean age of the participants was 39.6 years with just over one-third (39%) falling within the 35-44-year age range. The years the participants have been practicing ranged from 1.0 to 17 years with a mean of 6.6 years. Just under half (44%) of the doulas fell within the 0-5 years practicing range. Participants reported practicing in a variety of regions across the U.S. including the Southeast, Northeast, South-Central, Midwest, and Pacific regions while almost half (44%), (8) doulas, practiced in the Southeast region of the U.S. Seventeen doulas (94%) indicated they received their doula training via formal education, such as a training workshop, with 2 of those 17 doulas (12%) stating an additional apprenticeship contributed to their education.

Nearly half (44%) of participants reported they predominately serve Black or African American clients. Just over one-quarter (28%) of participants reported they predominately serve White clients and 28% (5) of participants reported the predominate race of clients they served as other, which were determined to fall within the Black, Indigenous, and People of Color (BIPOC) racial category. The majority of respondents (67%) stated they provide doula services on a part-time basis with many (83%) indicating that they are unable to support themselves solely off of the income they receive as a doula. A fifth (22%) of doulas indicated they provide doula services on a full-time basis and 2 doulas (11%) indicated they work as full-time birthing specialists. Those who identified as full-time birthing specialists specified other services they provided included childbirth education, lactation consulting, doula training, and mentoring. The majority of participants (61%) indicated they provide pro-bono services. A small percentage (11%) stated they sometimes engage in those services and 22% stated “not often”. One doula specifically stated they would engage in pro-bono work for the right client but unfortunately has had “very negative experiences providing free services”.

When asked what led each participant to becoming a doula, answers generally fell within three different categories. Four doulas (22%) indicated reflections on their own personal birth experience as well life experiences led them to pursue this work. Six other doula participants (33%) indicated that their fascination with birthing and their desire to be involved in a field they are passionate about led them into doula work. Nearly half of doula participants (44%) indicated that their reason for pursuing doula work was due to the disparities present in birthing for minorities, the high-rate Black people were dying from birth, and their desire to have an impact on increasing advocacy and support for minorities in the birthing space. One doula did not indicate a reason for engaging in doula work.

Table 1. Demographic Information of Doula Participants[1]

Participant Demographics (n=18)	
Race	**Percentage (%)**
Black or African American[2]	13 (72%)
White	3 (17%)
Asian	1 (6%)
Latina	1 (6%)
Age Range	
25-34 years	6 (33%)
35-44 years	7 (39%)
45-54 years	3 (17%)
55+ years	2 (11%)
Region Practicing	
Southeast (GA, SC, NC)	8 (44%)
Northeast (NY, NJ, PA, CT)	7 (39%)
South Central (TX, NO)	1 (6%)
Midwest (NE)	1 (6%)
Pacific (CA)	1 (6%)
Years Practicing	
0-5 years	8 (44%)
6-10 years	5 (28%)
11+ years	5 (28%)
Predominate Race of Clients Served	
Black	8 (44%)
White	5 (28%)
Other (BIPOC)	5 (28%)
Doula Employment Status	
Part-time	12 (67%)
Full-time	4 (22%)
Full-time Birthing Specialist[3]	2 (11%)
Provide Pro-bono Services	
"Yes"	11 (61%)
"Sometimes"	2 (11%)
"Not Often"	4 (22%)
N/A	1 (6%)

[1] These demographics are representative of 18/20 participants. Two participants did not provide demographic information.

[2] Within this category, one participant identified as African Caribbean and one other participant identified as Afro-Latina.

[3] Full-time Birthing Specialist includes not only doula work, but other sectors of birthing (ex. Lactation consultant, childbirth educator, etc.)

Knowledge of Pelvic Floor Physical Therapy

The first question asked of participants was: *"Have you ever heard of pelvic floor physical therapy before and if so, what do you know about it?".* This question served to identify general knowledge of pelvic floor physical therapy and to assess any awareness of the pelvic floor among participants. Within the answers to this question, two major themes were consistently present including "Prior Knowledge of Pelvic Floor Physical Therapy" and "Knowledge Sources".

Prior Knowledge of Pelvic Floor Physical Therapy (PFPT)

Participants ranged in their prior knowledge of PFPT, falling into three different groups: those with no significant knowledge, those with general awareness but no specific knowledge of PFPT, and those with some specific knowledge of PFPT (e.g. able to state specifics of disorders and/or treatments within the realm of PFPT). There were no apparent demographic differences between these groups when considering years practicing, location practicing, and how they received their doula education.

One fifth (20%) of participants stated explicitly that they did not know what pelvic floor physical therapy was or did not know much about it in general. Although 4 participants stated they had no significant knowledge, they did demonstrate a low-level awareness of PFPT by stating they may have heard of it in passing through colleagues or within a training. Regardless, they stated that this level of awareness did not result in them learning more about PFPT in detail. One doula, for example, reported that she did not know what PFPT was but was aware of the importance of pelvic floor lengthening, while another participant mentioned previously having no knowledge of the service until they entered the realm of working with birthing people.

> *"Definitely, because I honestly didn't know that was a thing until I started dealing with pregnant women. So, I had no clue and I wish I would have known that for me." (P15, Black, SE region)*

Two participants were able to provide general information on their knowledge of PFPT without any specificities of treatment. Participants that demonstrated this level of prior knowledge indicated they knew about the effectiveness of pelvic floor physical therapy for pregnant people but were unable to specifically identify which methods or disorders could be addressed. General descriptions of pelvic floor therapy included PFPT can help strengthen the pelvic area after birth,

it is good for the abdominal muscle, it is good for relaxing and stretching, that muscles involved in the pelvic floor can be damaged (before, during, and after) birth, and that it doesn't always have to be internal. One doula described her knowledge of PFPT as,

> *"I have heard about it before. I'm still learning about it. I don't know a lot. But I do know that in terms of both when a birthing person is pregnant and thereafter, that there are things that impact the pelvic floor and some folks do have more complications you could say, and don't know that therapy is an option for improving that." (P13, Black, SE region)*

A quarter of participants were able to give specifics about things pertaining to the pelvic floor physical therapy practice. Detailed descriptions of PFPT included statements of pelvic floor therapy being able to help with incontinence, trauma (specifically tearing of perineum during birth), diastasis recti, constipation, prolapse, and bladder leaking.

> *"As far as what I know, pelvic floor physical therapy, specifically, my knowledge is related to birthing families or postpartum, because that's the industry that I work in. So, with that being said, pelvic floor therapy can help women who are experiencing incontinence after their delivery. Also, if there was some trauma or tearing in the perineum, they can help with supporting regular movement after that trauma has been endured. And from what I understand correctly, [I don't know] if I'm wrong, but they can also help to support with people who suffer from diastasis recti." (P16, Black, SE region)*

One participant specified how their thoughts on what pelvic floor physical therapy encompasses has shifted from only thinking it was beneficial in the postpartum period, to learning it can be helpful throughout the entirety of the birthing process.

> *"I would say things that I think of when I hear pelvic floor therapy is that I wish everyone was automatically screened for it. Both prenatally and postpartum, which my thoughts about that have changed in the last, I'd say two years. Where I used to think of it as only a postpartum thing, but as a birth worker have come to wonder about it during the actual birth process. To look at it differently and think this is actually maybe being impacted before people get to the stage of having babies and just that it's one of those things that research shows me has been overlooked for a really long time and is the root of a lot of problems that affect birthing people for the length of their life. Lower back pain, kind of all those things. So just that it's something that needs attention from a specialist". (P12, White, SE region)*

This was not the only misconception about PFPT that was discussed among participants. The majority of doulas stated they were not aware of PFPT utilization throughout all stages of pregnancy and postpartum. They stated they did not know it was an effective therapy that could be utilized in the prenatal period and during a person's pregnancy, and only had knowledge of its utilization in the postpartum period.

Knowledge Sources

Participants specified sources by which they learned of pelvic floor physical therapy; three major sources identified by participants included the internet, through personal life events, and via

inter-professionalism circles. Those who stated the internet was their main source of knowledge about PFPT cited social media and utilizing self-study through internet research as their means for gaining information. There were five instances where knowledge of PFPT was gained specifically via Instagram and one instance where it was gained via TikTok. Those who cited social media as their source for gaining information often mentioned following specific accounts on certain social media platforms, specifically Instagram.

> *"I have heard about it, and I heard about it from Instagram surprisingly. I can't think of her name off top, but I do follow her. She's a vaginal doctor, is what she calls herself, I think. And she like, there's two of them that I follow, and they just be dropping really good gems. And I actually do want to learn more about it because some of the things that they talk about…because [I'll] be like, I think I have that going on myself. You know what, I think my clients probably have this going on! So, I don't know much about it. Probably within the last three months is when [I've] really been following them, like, really heavy, like watching their page and stuff, just trying to learn different things. But yeah, it's not a topic that's talked about a lot at all." (P04, Black, SE region)*

Because of an interaction on Instagram, one participant first heard about the pelvic floor specializations within the field of physical therapy. This led her to find a physical therapist within her area for referrals.

> *"…I think that if I hadn't followed this particular physical therapist on Instagram, I wouldn't have even known that you could specialize in it and I wouldn't have known to send my clients to her. And then, of course, because of (my friend) being in PT school and all of that, we've had conversations about it." (P18, White, SE region)*

In two instances, participants discussed events within their own lives prompting them to do further individual research to understand what pelvic floor physical therapy is. One participant mentioned a unique experience in a previous profession where she was exposed to working with people who had engaged in PFPT previously, which prompted her to do further research on the subject to better understand what they were referencing.

> *"This is just completely something random that I did as a former, part of my former life before I became a full-time doula. I worked with a law firm on the litigation against the Vaginal Mesh companies….and then some of the other big ones. So, I talked with a lot of people, a lot of women who had had surgeries with those products that had gone horribly wrong. And so, I read through tons of medical records and talked with all of them, and a lot of them went to pelvic floor physical therapists also…and it has such a huge impact, not just on birth, but on sex. And that's a real problem. I think it may have been throughout the course of that job at the law firm where I really started getting into the pelvic floor, but before that, I had started having kids. And so, I had started sort of learning about it on my own there and how important it is and how many problems it can cause when it's not in good shape." (P03, White, SE region)*

Those who identified gaining knowledge of PFPT through inter-professionalism circles specified whether it was through a formal training curriculum or through inter-professional birthing networks they have become a part of over time. Four participants (20%) described either that

their training program included a pelvic floor expert deliver information or that PFPT was mentioned within their training.

> *"And also, in my doula program with MamaGlo, we actually had a pelvic floor therapist come into our training program and I've taken other trainings, and it wasn't like that." (P10, N/A)*

In eight instances, participants mentioned they gained knowledge through traditional Western healthcare channels such as OBGYN's, pelvic floor physical therapists, or nurses. This often included the participant working within the hospital setting, specifically with an OBGYN who was doing referrals.

> *"Yes. I actually used to work in OBGYN. So, a lot of times the doctors used to refer the patients out after delivery because a lot of times they have different issues, whether it was like discomfort or just issues with using the bathroom on themselves and different things." (P19, Black, NE region)*

Those who had some form of traditional healthcare training specified they did not learn about PFPT in detail, but that it was referenced which encouraged them to investigate the therapy themselves. There were three instances where doulas stated their knowledge gained through inter-professionalism was through non-traditional Western healthcare channels such as doula circles and midwifery groups. One specifically mentioned a birth worker collective she was a part of stating:

> *"And what I know about it [PFPT], I have never experienced it myself. But what I know about it [comes] from being part of a birth worker collective and meeting or just sort of connecting online with a few pelvic floor specialists." (P09, Latina, Pacific region)*

Overall, participants discussed a wide range of how they obtained various levels of awareness of PFPT. Most accounts of how information was gained was through relationships participants made with other individuals who have more knowledge of PFPT. These relationships ranged from social media connections, personal experiences, and inter-professional birthing circles as well. There were no significant variations in demographic factors regarding this topic with the exception of age and social media connections. Four out of the five participants who mentioned Instagram all fell within the youngest age range group (25-34 years).

Clients Experience with Pelvic Floor Physical Therapy

The second question asked of participants was: *"Have you ever worked with a client that has gone to pelvic floor physical therapy before? Did their birthing experience seem different from those clients who haven't?"*. This question served to identify whether participants noticed any

changes in response to care and birthing if their clients had experienced PFPT anywhere along the continuum of pregnancy (prenatal, perinatal/pregnancy, postpartum). Within the answers to this question, three major themes emerged including “Referrals”, “Physical Therapy Impacting Birth”, and “Barriers to Accessing Services”.

Referrals

When asked this question, over half of the participants (55%) made a reference to referring their clients in some way to another healthcare provider due to noticing or being told about symptoms that presented as abnormal to them. Of those mentioning referrals, not all directly referred to PFPT but instead were to another provider that had a role on their clients’ birthing team, such as their OBGYN. Additionally, four participants (20%) explicitly stated they had never referred a client and/or worked with a client who had experienced pelvic floor physical therapy before. One participant answered the question stating she would be more intentional about referring clients after this interview:

> *“No, I haven't. But I will be more intentional about it going forward just so that they are aware.” (P13, Black, SE region)*

Amongst the participants who made references to giving referrals, three different instances where referrals can occur were mentioned: during the prenatal period, throughout pregnancy, and finally in the postpartum period. Referring a client during the prenatal period is defined as occurring before the client begins their pregnancy journey, oftentimes specific to those wanting or expecting to be pregnant sometime soon and thus requesting a referral to PFPT to prepare. Referring a client throughout pregnancy means referring the client to a provider at any point throughout the 37-40 weeks a person is pregnant. Referring a client in the postpartum period includes referring them to a provider within the first 6-weeks post giving birth. Though the six-week period is the traditional definition of the postpartum period, this is also beginning to shift with birthing providers defining the postpartum period as 12-weeks post giving birth, with some even defining the postpartum period as an entire year post giving birth. Referrals during these last two stages are when participants generally described referring clients to another type of birthing provider.

Only two participants, both located in the Southeast region (GA), explicitly mentioned referring their clients in the prenatal period. This is significant as both participants who mentioned this also stated they under a midwifery organization. One of those participants goes into detail about prenatal referrals being a standard within her practice before any symptoms are noted.

> *"So, we kind of start talking about it prenatally just from having seen it and encourage people to check in with someone ahead of time. Like prenatally also, because this is a big thing in doula work. Once that baby is born, it's just real hard for people to go somewhere new and do one more thing. So, we've kind of encouraged. We see the same thing with all kinds of therapists. But like, if you meet them ahead of time, it's that much easier to call postpartum. To like make that connection and not feel like you're doing something totally new." (P12, White, SE region)*

Similar to prenatal referrals, participants stated they were not aware of the utilization of PFPT during pregnancy for their clients. Again, only two participants mentioned referring their clients during their pregnancies. One participant describes the specific scenario in which she referred her pregnant client to PFPT:

> *"Yes. Yes. I had a parent who, so I work with pregnant teens and we don't think of them going to pelvic floor [therapy], but their pelvises are just not where they need to be to have a baby. And this parent had twins prior to that, and she had two pregnancies prior to that, and they were both cesareans. She's homeless, so she's like, I really don't want to have another C section because it's going to be super hard for me to move around with the kids and being homeless and things like that. So, from there, we were able to link her in with a Pelvic floor therapist and she had a VBAC [vaginal birth after cesarean]." (P01, Black, SC region)*

The majority of participants who referenced referring their clients stated they refer them in the postpartum period. A total of six doulas mentioned referring their clients during this period. Oftentimes these referrals occurred during postpartum visits with their clients and occurred after dysfunction was mentioned by clients or noticed by doulas.

> *"I haven't worked with anyone who had gotten it beforehand. I've recommended clients to go in postpartum when they have lingering issues. I don't know much about pelvic floor therapy while someone is pregnant. So, I could use more information on that. But yeah, I've recommended it for clients who express that they're having heaviness in their vaginal area that is excessive during their pregnancy and then also for a client of mine who had diastasis recti." (P16, Black, SE region)*

Physical Therapy Impacting Birth

Participants also described awareness of clients who had gone to PFPT due to experiencing specific symptoms associated with their pregnancy or birth. With these descriptions, participants did not previously refer these clients but discussed witnessing the effects PFPT had on these individuals from client accounts or witnessing their pregnancy and birthing experiences. The symptoms discussed manifested throughout their clients' pregnancy, during birthing, or had a significant impact on their quality-of-life following birth. Just over half (55%) of participants

were able to specifically identify experiences clients and/or friends had following therapy and the overall affect it had on the symptoms they experienced. Participants specified two time periods where they were aware of pelvic floor physical therapy affecting their clients throughout their birthing and postpartum journeys: during the birthing event and symptoms developed in the postpartum period.

Participants' references to physical therapy impacting the birthing event included more success with pushing, the ability to have a VBAC (vaginal birth after cesarean), experiencing shorter or more optimal pushing phases, increased comfort with pregnancy and delivery, and increased control during labor and pushing. One doula specified how increased awareness of this area of the body and what an individual should do to avoid trauma contributes to an easier birth with better outcomes for the pregnant person.

> *"And so, what I've noticed is those individuals who want or are doing the exercises, who are very mindful about what should be happening to their pelvic floor and or seeking assistance, typically have shorter pushing phases and report just an extreme comfort in their pregnancy and delivery, with also less trauma afterwards in the postpartum period. So, yeah, I absolutely see that as a real viable means of supporting just great birth outcomes." (P17, Black, NE region)*

References to physical therapy impacting symptoms developed during the postpartum period were mentioned as well. Participants discussed how PFPT helped with symptoms that could significantly impact an individual's quality of life. One doula specified how she had a co-worker who experienced PFPT after having a baby which helped her recover from having painful sex.

> *"And then speaking of the pain, I just remembered too. One of my co-workers, after she had her second child, she went to go see a pelvic floor PT, who I think she still sees, like intermittently. And they gave her, like, a whole list of assignments. And we had this conversation because we were talking about vibrators. And so, she was like, mine was medically prescribed to me. She had to like go find a vibrator and then do all these exercises with it. But she didn't really go into much detail. But she did say that it was really helpful and that the reason that she went was because she had painful sex for, like a year after each baby, and she would go see her doctor. And they'd be like, well, sometimes that happens. And so finally they referred her out [to pelvic floor physical therapy]. And so, she said that was really helpful." (P18, White, SE region)*

Another doula referenced seeing a major difference in clients' postpartum recovery after having gone to PFPT. She stated it assisted with clients being able to have subsequent births with less difficulty after having experienced pelvic floor disorder; specifically prolapse, tearing, and intimacy.

> *"Yes, I have [seen a difference in clients' birthing experiences]. So maybe their birthing....I'm thinking all of the stages of birth. No [to birthing], but their postpartum recovery, for sure. Yes. And then because of that, subsequent babies, yes, made a big difference. Because I had a client who had like a severe prolapse problem after one of her births, and she went to pelvic floor therapy for a year. And then two years later*

had a baby and it made a huge difference for her. In fact, I think she told me she was able to avoid surgery because she was told at one point that maybe it was only going to be fixable through surgery, but she really took it upon herself to do the therapies and get herself strong for the next birth. So, my clients who go, yes. Even some of them have discovered things that aren't… this year I learned about something I've never even heard about. And I'm not sure if I'm going to pronounce it correctly, but she told me she had a cystocele." (P09, Latina, Pacific region)

Barriers to Accessing Services

This second question also prompted participants to discuss barriers to attendance that presented issues to clients trying or wanting to access PFPT and adequate birthing services. Multiple barriers were stated including social stigma surrounding the topic, lack of education on the pelvic floor and PFPT, and providers minimizing symptoms. Others included general lack of available resources to clients, with money and insurance playing a huge role in this. Finally, lack of providers, specifically pelvic floor physical therapists, served as a significant barrier as well.

Almost half (45%) of participants explicitly went into detail about barriers that have prevented their clients from receiving adequate birthing services in a timely manner. Insurance and money were cited as playing a big role in this.

"And honestly, I even see families with great health insurance not getting the care that they need because, I don't know, it's a strange wall that they have to get over to convince people that they actually need this, and it needs to be covered by their insurance. I even had a client who requested, like, a support band belt thing that her OB wanted her to have afterwards. And her insurance company denied covering it, even though her OB wrote a prescription for it and she had to pay for it out of pocket. And I just thought, what if she was someone who couldn't afford to pay for that out of pocket? Why shouldn't she have that if her doctor and the patient have both decided this is the best course of action?" (P09, Latina, Pacific region)

Participants also mentioned the significance of societal factors serving as a barrier to birthing people receiving or seeking out care. Respondents went into detail about perceptions from friends as well as expectations of how women should and do function in society negatively affecting their desire to seek out care. One doula discussed how societal standards for women plus the expectation of women to suffer in silence result in a lack of utilization.

"And I think that so much of this does just happen because women are often just, you know we kind of suffer in silence. Like, pain is almost like the woman's lot. And no one wants to talk to any of their friends and be like, I had a baby and now I have painful sex for a year after. It's like it's almost shameful you know." (P18, White, SE region)

Conversely, three doulas all located within the same area (SE region, GA) discussed ease of referrals and access to services due to the many pelvic floor physical therapists located within this small city in Georgia.

> *"I feel like it's information that we have to tell them and where we are there usually are healthcare providers. There are good ones and there are good ones who take every kind of insurance or no insurance at all, which means we can kind of help anybody who wants to make a switch, make a switch. But that is not the case everywhere. I live outside of Athens in an outer-lying county." (P12, White, SE region)*

One participant specifically stated an insurance barrier that was overcome for one of her clients, which came as a surprise to her. This insurance provider was noted to be Medicaid, or public insurance, rather than a private insurer.

> *"Yeah. And that particular client was actually using Medicaid for their pregnancy and birth and did find a Medicaid pelvic floor PT. So that was one barrier that was taken away." (P11, Asian, MW region)*

Participants discussed their own personal referral patterns in their responses and the barriers that often surfaced when clients attempted to receive care. This also prompted respondents to reflect on stories they've heard from friends and clients about their experiences after having gone to PFPT and how they perceive the therapy's impact on the pelvic floor and birthing if utilized. Overall, over half of the participants had interacted with an individual who experienced PFPT and were able to describe positive effects on their birthing experience.

Confidence in Pelvic Floor Knowledge

The third question asked of participants was: *"How confident are you in your own knowledge about the pelvic floor and how it functions during pregnancy and postpartum?"*. Contrary to question number one, this question focused more on identifying participants' confidence in their own knowledge of how the pelvic floor itself functions, changes, and adapts throughout pregnancy and postpartum. Awareness of PFPT does not always equate to an individual's knowledge of how the pelvic floor muscle itself functions within the body. Oftentimes respondents attributed a lack of knowledge in this area to inadequate education on the function of our bodies, particularly the function of sexual organs. Three major themes emerged within the answers to this question: "Levels of Confidence in Pelvic Floor Knowledge", "Lack of Pelvic Floor Education", and "Seeking Pelvic Floor Knowledge".

Levels of Confidence in Pelvic Floor Knowledge

A number of participants were able to give a sliding scale or percentage of their perceived level of confidence on the subject. Two doulas provided a percentage and a scaled rating out of 10,

stating their confidence levels are continuing to increase but also that there is room for growth of knowledge on this subject. This increase in knowledge was attributed to more time spent working within the field of birthing as well as continuing to create inter-professional relationships with other types of birthing providers.

> *"I mean, out of ten, I would probably give myself a seven, because sometimes when my clients are asking me specific questions, I wish that I knew more of the actual names of the anatomy, like the muscles and the actual ligaments." (P09, Latina, Pacific region)*

One doula specified the level of knowledge she has on the subject is essentially enough to understand that there is a lot more to learn, although she did present to know more than the average participant in these interviews about the pelvic floor. That knowledge did not translate in her own perception of her confidence levels.

> *"So, I would say, I don't know. Maybe not minimal understanding of pelvic floor therapy. I know enough to know I don't know everything about pelvic floor therapy... So yeah, like the function of it. I know some of the red flags to help people understand what they might want to do. But I would not say I have an in depth understanding of...certainly not how it should be treated like. Like that stuff though." (P12, White, SE region)*

Of the 19 participants that directly referenced their levels of confidence on the subject of the pelvic floor's function throughout pregnancy and postpartum, only 4 doulas (20%) explicitly stated they had little to no confidence on this subject matter. One participant perceived the question in reference to pelvic floor physical therapy and determined their confidence to be low due to having little to no knowledge about PFPT as well. For example, knowledge of PFPT can simply be described as awareness that the therapy exists and can assist throughout pregnancy and postpartum, while knowledge of pelvic floor function throughout pregnancy and postpartum would include understanding how the deep pelvic floor muscles can be damaged and excessively stretched during the birthing event, contributing to disorders that can manifest in the postpartum period. This participant equated not having significant knowledge of PFPT to also having no knowledge on the function of the pelvic floor.

> *"Okay. Yeah. So, this is going to be a short interview (laughs) because like I said, I don't know anything in reference to pelvic floor physical therapy. So, I'm not confident in that area at all." (P05, N/A)*

One participant who was able to provide information and understanding of PFPT and its purpose also perceived her own knowledge on this subject as poor as well, despite her knowledge of PFPT.

> *"Oh, my gosh. I would say not very comfortable in it at all. At all. I know that whether someone has a vaginal birth or not and whether it's complicated or uncomplicated, as far as the birth goes in the recovery." (P18, White, SE region)*

Lack of Pelvic Floor Education

The third question on confidence also prompted participants to discuss teaching entities they perceived that did not or do not currently provide adequate pelvic floor education; 50% of participants mentioned this theme. The individuals who did not get adequate pelvic floor education reference this challenge in relation to both birthing providers and the general public. Participants discussed how doula trainings as well other formal healthcare education for birthing providers often did not provide adequate pelvic floor education.

Two participants discussed how their own doula trainings did not provide adequate or any education on the pelvic floor and how it functions throughout pregnancy and postpartum. One referenced multiple trainings that failed to provide any information on the subject.

> *"Yeah. And unfortunately, a lot of doula training does not discuss the importance of the pelvic floor. And I'm going to be honest with you, I've trained at three different organizations, and neither one of them talked about the pelvic floor. The place that I learned about the pelvic floor was childbirth education." (P17, Black, NE region)*

Another participant recalled her previous one doula training that provided her the ability to do the work she's doing today, but still lacked any pelvic floor education.

> *"So, my doula training was twelve years ago and nothing…Nothing. Didn't know that pelvic floor PT existed…We didn't talk about anatomy or physiology or anything. It was all like labor comfort and positions and emotional support." (P11, Asian, MW region)*

Two participants went into specifics about how other birthing professionals, such as nurses and doctors, do not get adequate education on the function of the pelvic floor as well. One doula specifically referenced her own experience within her nursing program.

> *"Yes. That was actually a lot more specific because...my background is a nurse. But even through my nursing program, you learn about the reproductive organs. There's more focus on the anatomy and the organs. You don't learn a lot about the pelvic floor. You learn about the pelvis and the muscles but there is no true introduction to the pelvic floor and how important it is. I didn't realize how important it was until we had the training, and then I started doing my own research on it. And I was like this is major. Why is it not more mainstream than it is?" (P10, N/A)*

Participants did not limit their perception of lack of education to within healthcare, but also amongst the general public as well. Thoughts surrounding this focused on the fact that people do

not get educated on this area of their bodies adequately enough, whether it be within the school system or through societal perceptions. One participant stated:

> *"I'm sure I don't have to tell you, in your research, like, women, we see this all the time. No one teaches women about their bodies." (P12, White, SE region)*

Another participant mentioned the societal perception of what your pelvic floor should be able to do during your child-bearing years contributing to lack of adequate pelvic floor education stating:

> *"And, you know, we grew up in an era. I'm 49, so I grew up in [an era where] my child-bearing years were all about, well, just do your Kegels in your car on your way to grocery shopping and all these things. And that was all we were taught, that's the only information I had. And this is not okay. I'm really concerned. Why isn't this wisdom being made known? And why doesn't anybody really truly respect how important it is?" (P09, Latina, Pacific region)*

Two participants discussed how knowledge and improved perceptions on this subject could be available if classes were readily offered and accessible to the public so that there would be better understanding of the pelvic floor and what happens throughout pregnancy and postpartum, and even potentially impact some of the issues present for birthing people. One of these respondents went into detail about whether PFPT could be considered a component of comprehensive sexual education programs.

> *"I wonder, even if this fall… if it [PFPT] could fall under…I'm sure anything is possible. But if it could fall under the bracket of comprehensive sex education? We learn more about our bodies as we become adults and how inadequate a lot of sex education programs are. It's a lot about abstinence and not getting pregnant. But there are layers to that. And I think that the more we talk my wheels are turning. And I'm like, yeah, this is something that we should learn about much sooner, right…to expand it I think is so taboo from the things that are talked about. Even just sex in itself is so taboo. It should be (taught) through school, elementary through high school in Georgia." (P13, Black, se REGION)*

One participant discussed the difficulties that are presented when information on this subject is not distributed widely for women and how that can affect one's ability to actually understand the full picture of how this area is impacted throughout pregnancy and postpartum.

> *"Yes [access to information is an issue]! And I feel like you bring up a really good point, too, that because so much of this information is not disseminated widely for women that we end up having to crowdsource a lot of this information through social media. So, then you go onto these things, onto these pages that really deal with birth advocacy and they're really loud about like how pelvic floor PT needs to be universal for all birthing bodies following pregnancy and following birth. And that it does seem like there's more of a movement towards it, which is really exciting. But then there is sort of that flip side where it's like, why aren't our OBGYN's and our midwives talking about this instead of us sort of having to figure it out and piece it together ourselves?" (P18, White, SE region)*

Seeking Pelvic Floor Knowledge

Finally, this question prompted participants to discuss specific things pertaining to the pelvic floor and PFPT that they would like to know more about. Eight participants (40%) discussed the type of knowledge hoped to gain in this area. These statements included more general information on the pelvic floor, birthing, and recovery.

One participant stated she already had knowledge on some exercises to help the pelvic floor but would love to know more about how to support clients to feel stronger when approaching the process of pushing during the birthing event.

> *"So, I know some exercises, but I certainly would love to know more [about] how I can really support clients to feel stronger, because a lot of times the fear is that we're not going to be able to open up, we're not going to be able to push, we're just going to be too exhausted to do any of that. But I think it's strengthening of the core and the pelvis, that whole floor, that will give you just the energy and the vitality you need to really have a great birth. So, yeah, I want to know more." (P06, Black, NE region)*

Another participant specified her desire to learn more about supporting clients recovering from reproductive cancer because she works at a cancer center. This was significant as she referenced wanting to know more about a sector of pelvic floor physical therapy that is an even deeper specialization area.

> *"And just on a sidebar because I work at a cancer center, I kind of want to start being that doula help to the cancer patients who have experienced some sort of like reproductive cancer. And now that they're going through the process of being cancer free to work with them, to start potentially having children because we have a lot of patients that get their eggs frozen. So that is something I want to learn more about so that I'm more educated and I can start offering services to people." (P20, Black, NE region)*

One participant discussed specific anatomical and physiological details she would love to visually see referencing the pelvic floor and how it functions during the birthing event stating:

> *"But I would love to know more. I would love to have an opportunity to almost watch, like a movie or something that would show you the way all those things work together and the way that they can move a pelvis or affect the position of a baby or maybe even affect the way the pushing stage, like the way that someone is able to engage their muscle…I wish I could see all of that, like internally. You know how there's movies that show you, like, all the muscles inside of things, like scientific movies and stuff like that? I would love for somebody to make one of those where you can see how the body is working to bring a baby out or how babies are resting inside of a body and how the muscles and tendons and ligaments and all of that is like, if it's not right, if it's not healthy, how it can be changed, how it can be altered." (P09, Latina, Pacific region)*

This question served to identify whether participants' felt confident in their own knowledge on pelvic floor functioning. Although a number of participants described specifics about PFPT and what it is, most felt they had little to no confidence on how the pelvic floor functions. Participants also contemplated on why they don't feel confident in this type of knowledge, as a

birthing professional but also as an individual outside of healthcare, highlighting a lack of education in different teaching spaces. Almost half went on to describe the types of knowledge they wish to seek out on pelvic floor functioning, emphasizing their desire to want to increase their level of knowledge to educate their own clients more effectively.

Recognizing Disorder

The fourth question asked of participants was: *"Have you ever worked with a person who experienced one or more of these symptoms: pain due to their pregnancy, leaking, or diastasis rectus abdominus (DRA)? Did you think these symptoms were normal?"*. It should be noted that with some participants, the definition of DRA had to be described, in which it was described as "the splitting of the abdominals". This question served to identify how often symptoms associated with pelvic disorder manifest in the participants' clients, their ability to identify these symptoms, and their perception of these symptoms as a normal or abnormal part of the pregnancy and postpartum process. The one major theme that surfaced with this question was "Ability to Recognize Disorder".

Ability to Recognize Disorder

Within this major theme, participants described whether or not they had clients who experienced any of these symptoms, and whether they perceived them as normal or abnormal. Of the 20 participants, 18 doulas (90%) confirmed recognizing at least one or more of the symptoms referenced in their clientele. Overall, participants showed generally a good indication of being able to recognize these symptoms that could be related to pelvic floor disorder, even if they weren't completely aware of this.

Two participants mentioned recognizing the symptoms of leaking and DRA in their clients and perceiving them as normal, but that they shouldn't persist, and it would be important for their client to check with their doctor if they did.

> *"I feel like there's a level that can be normal. Everybody is going to have that diastasis at term because that's what the body does. That's the adaptation of pregnancy… And there is a big stress when you've got a baby inside on your pelvic floor organs. And so there can be I feel like a level that can be...not pathological... but it shouldn't persist. It should be fleeting. Or should resolve after pregnancy, after your postpartum recovery… yeah. Like it shouldn't be an ongoing problem… And if it is, then we need to address*

it. But if your bladder is full and your toddler jumps on your belly or something, you're probably going to leak some pee." (P11, Asian, MW region)

One participant described her experience working with several clients who had experienced these issues and how her perception on whether they were normal or not has changed over time.

"Yes, I have worked with several clients. I have a few postpartum clients now that I think have these issues. Again, I can't diagnose them, but I have worked with some. And at first, I did think it was normal. Like, oh, it will stop over time, but now I'm learning that it's not normal." (P04, Black, SE region)

Of the 18 doulas who stated they did recognize symptoms in their clients, 14 participants (78%) stated they perceived these symptoms to be an abnormal function of pregnancy and postpartum. One participant discussed how it took her becoming a doula to understand a symptom like incontinence was not normal.

"Yes, I have worked with clients who have those, but I did know enough to know that those were not normal. Even though it did take becoming a doula to know that incontinence was not normal. And then I guess with the diastasis recti, I guess I would say no, I did not realize that that was not normal. I knew that it [was] a normal variation for the abdominal muscles to pull apart to allow [room for growth], but then the re engagement of them…if it's not happening, then I know that's not normal." (P18, White, SE region)

When describing these symptoms as abnormal, the participants often brough up the "common not normal" phenomenon that pelvic floor physical therapists consistently battle. This phenomenon involves society, doctors, and patients perceiving negative symptoms associated with pregnancy as normal because so many people suffer from them when in fact, they should be considered abnormal symptoms that are simply common amongst many birthing people, partly due to not addressing these symptoms in a timely manner. Three different doulas directly referenced this phenomenon in their answers, with one specifically stating:

"Yes. I've worked with people that have had all of those things, and I've referred all of them to pelvic floor because peeing on yourself…. Just like with a lot of things during pregnancy and postpartum, they are common, but they're not normal." (P01, Black, SC region)

Overall, participants displayed confidence in recognizing symptoms such as pain, leaking, DRA in their clients that they perceive as abnormal. Their experience working with birthing people has provided many of them the ability to identify these symptoms as abnormal and refer when necessary. Although not explicitly addressed in this question, some participants discussed recognizing prolapse in their clients as well.

Race and Birthing

While the first four questions of the qualitative assessment served to identify participants' knowledge regarding PFPT, pelvic floor functioning, as well as disorders associated with pelvic floor dysfunction, the final two questions shifted attention to investigating their subjective experiences working within the birthing sphere, particularly in reference to the impact race has on birthing. These questions served to assess the environment that many of the participants work within and how that can have an impact on conducting their own work as well as on disparities in maternal outcomes. Respondents' accounts were detailed, impactful, and moving when getting deeper into the subject of birthing.

The fifth question asked of participants was: *"Have you seen a difference in your clients' birthing experiences depending on their race?"*. This question focused on experiences they've had supporting their clients when considering sociodemographic and sociocultural factors that could have impacted their birthing. This question served to further address statistics of Black birthing people experiencing maternal mortality at higher rates and how participants' experiences compared. The majority of participants (72%) identified the predominate race of their clients as BIPOC. Another probing question was asked to the participants (84%) who also identified as BIPOC stating: *"Were these experiences compounded for you as a Black doula or a doula of color?"*. Three major themes surfaced within the answers to this question including "Race Impacting Birth", "Provider Decisions Based on Race", and "Positionality".

Race Impacting Birth Experience

Participants provided moving and detailed descriptions of how they had seen race impacting the birthing experiences of their clients on a widespread scale. Seventeen out of the 20 participants (85%) answered "yes" to whether or not they felt their clients' birthing experiences have been impacted by their race. Some doulas who have worked with both Black and White clients described comparisons on what they've seen not only in the birthing space, but also factors outside of the delivery room that can contribute to this. These respondents discussed how their White clients felt more secure, are often more prepared to enter the birthing space with a plan, and have utilized the resources available to them more often before embarking on their journeys.

> *"…I've had a number of White private clients and I work a lot with community services for women of color, low income and immigrant women. And I find that the White women, and maybe because they have more*

economic resources, they tend to be much more secure in birthing. They are much more confident in birthing. And maybe also they've taken the time to do the prenatal classes to really own in on what it means to give birth. And they also have their support system in place. So that makes a difference because a lot of times Black women are going home alone. And some of them, of course, they have families, too. But for those women that don't have a support system, a partner or friends that are going to help them or even pick them up from the hospital, those are the things that need to be in place for you, too. It's not just about the birthing process and everything that goes along with it." (P06, Black, NE region)

Participants also described having to work harder in the birthing space when they were advocating for their Black clients. They attributed this to how they are seen and respected within this space. One doula emphasized how the response to her Black clients' needs are completely different compared to when she's supporting a client of any other race.

"For sure. For sure! Yeah. So, race is definitely a component in care, a component in response to needs, and a huge component in response to approach and respect. So being heard, being seen as the doula in that space, I find I have to work harder to help amplify the client's voices and to make sure that their birth preferences are just absolutely respected on some level. And given a modicum of grace in that space, and that is taxing. It's hard. I have to work so much [more] harder, not necessarily physically, but emotionally and mentally. When I'm in a birth with a Black person than I am with a Hispanic person or even an Asian person. Clearly not the same when I'm in the space with the White person who is getting anything and everything that they want on a silver platter." (P17, Black, NE region)

Recognition of the impact of race in the birthing space was not only experienced by BIPOC doulas. One participant who identified as White discussed the reality of her few experiences working with Black clients due to not being Black herself. Although she was able to recognize the reasons why she doesn't have many Black clients, she did state that with her experiences she did not see differences in terms of their birth outcomes while also acknowledging there hasn't been as many opportunities to actually see those differences.

"Oh, gosh. So as a White doula we don't get hired by a lot of Black clients. Which makes perfect sense. And I think in the Athens area, there may be one doula who is a person of color. And that's just not enough. And so, I want to start by saying that we haven't had too many clients who are women of color… But it hasn't mattered in terms of their birth outcomes, as far as we can tell. And I think a lot of that is dependent on, I mean in Athens it's definitely dependent on the practice they choose. And the clients we've worked with have worked with some of the midwifery practices in town who are very woke and really good about like recognizing racial disparities in healthcare. So yes, all that to say we haven't seen a lot of very different outcomes, but we also haven't had a lot of opportunities to see the difference… We do get hired. Several of the families who are people of color who've hired us have initially said this is one of the reasons that I want a doula because I know about maternal outcomes in terms of [death]....and they want to avoid it too, obviously. And we're like, okay, let's do all the things. You got a great healthcare provider. Let's do some childbirth education, here's some books and podcasts and all the things." (P03, White, SE region)

Many of these participants were also able to give specific accounts of racist events they witnessed while working in the birthing space with their clients. Participants repeatedly described the voices of their clients being minimized or entirely muffled.

> *"To answer the first question concerning my clients, I do feel like their voices are muffled. Example, one of my clients now is having some challenges, and one doctor is telling her this. Another doctor is telling her that, but it's not aligning. And she called me on some "what should I do?" type stuff. And I listened to her vent and in this moment now it's making her scared. Like, what do I do? They're telling me this. They're telling me that. And in reality, everybody should be on the same page because you're caring for her in her pregnancy. But when she voices her opinion about what's going on, it's just like they shut her down. So, then she reaches out to me. So, with that being said, yes, I think that their voices are shut down." (P04, Black, SE region)*

Doulas also described how oftentimes their BIPOC clients were not respected until other birthing providers realized they had a support person. One doula was able to specifically give an account of how not only the fact that her White clients are more respected, but also how if a client's spouse is White, they are oftentimes more respected and included in the entire process. This even pertains to White spouses who are married to a Black birthing person.

> *"Yes. Yes. All the time. I try not to get too deep into it because I serve both. But yeah, it's clear that you can see the difference…. yeah. My first few births, they were younger Black women that I had the opportunity to support and be there for. And before I would meet them at the hospital, they would be there already. And just like the turmoil and everything they went through with how they were being treated or talked down to. And once they saw that that person had a support person, me, they kind of changed their attitude and kind of changed things, how they were saying in their tone. But you can see, like they kind of ignored the pain that they were in, told them oh, honey, that's labor. That's what you're supposed to feel. When I could clearly see that it was a different type of pain, but it gets brushed off or oh we have a hospital or a floor full of women who [are] doing the same thing, you'll be fine. Versus another race that I've witnessed. It was catered to. And she was a Black mom, but her spouse was Caucasian and the family. So that turned around quick. Like they didn't ignore him, they included him versus when I see the Black spouses in there, they're like pushed to the corner. And I'm like the one like, no, you got the right to get up in there. This is your birth just as much as mom, you need to see what's going on. So, yeah, it's a big difference. It's clear. I see it all the time." (P15, Black, SE region)*

Racism experienced in the birthing space was not limited to major aggressions that were obvious to see. One doula, who identified as White, acknowledged she did not have many BIPOC doula clients but described her unique experience also working as a labor and delivery nurse, oftentimes for BIPOC patients. She described witnessing incessant microaggressions against Black birthing patients regularly, providing specific examples:

> *"So, I work in a community hospital. We service a lot of indigent populations. And here we serve 16 surrounding counties that are all rural. So, we have a lot of, like, low socioeconomic [status patients]. And then here in Clark County, the majority of our population is Black, but they don't hold any of the wealth. So, then I feel like we have that coupling of low socioeconomic status plus being Black. So, I feel like just in my experience, it's just a lot more dangerous to give birth as a Black person. Let me think about a specific example that would be a little more valuable to you. There's a lot of racial microaggressions. So, a really simple one is like, if they give their child a creative or like a historically Black name the other nurses...I'll just hear people being like, how could you name your child that?! Especially if they're bigger bodied, I see a lot of...their care is treated very differently. I worked with an OB recently that during the delivery, my patient was a larger Black woman, and during the delivery, he had her in stirrups and was like, he just kept being like, we need to get like, there's too much tissue in the way… And it was obvious what he was*

saying. Like, he was just saying, she's a bigger body and I need this out of the way so I can just get to the baby. And it was really unnecessary. And he would not have said that had she not been Black, honestly.." (P18, White, SE region)

Provider Decisions Based on Race of Patients

Participants also emphasized how the risk of poor maternal outcome is compounded for their Black clients because of decisions made by providers. They attributed this to existing sociodemographic factors that contribute to their overall health prior to entering the birthing space such as lack of a support system, external stressors contributing to high blood pressure, or fearing the outcome of death after labor and delivery, and providers ignoring these factors for BIPOC patients. One doula cited how she views responses to these stressors for her Black clients are not truly considered when physicians make decisions on how to move forward with birth and thus potentially causing negative impacts for those clients.

"Oh, absolutely. Hands down. There has been a huge rise in inductions lately, especially for people of color. And inductions lead to Cesareans, especially for people of color. There is a lack of support in the hospital with people of color because they limit support persons. Anytime a woman is in labor and she has no support, that's going to increase her risk of induction. It's going to increase her risk of Cesarean. Why? Because she's uncomfortable. Her body is going to shut down. She doesn't have the support to relax and to open up. And so, you have arrested labor, but they tell you that's abnormal. Your body is not going to progress in the labor and you just need to go ahead and get an induction or get a cesarean. That's what I've seen with my own clients. That's what I've seen with my doula sibling clients. That's what we discussed in the group chats." (P10, N/A)

Another doula specifically described situations she has witnessed where providers did not provide the same kind of care to their Black patients that they did their White counterparts. She described specific care decisions stating:

"… I also see, like, their care just isn't the same. I can't really describe it. On a provider level...I see the providers are more likely to call a C section, and they're more likely to order a drug screen by urinalysis. And I think that there's also sometimes an assumption that the father is not involved." (P18, White, SE region)

Participants went on to think more deeply when answering this question. Statements on the creation of fear surrounding birthing for Black people and providers were talked about extensively. One doula talked about an experience where she witnessed providers making "fear-based decisions" to essentially make up for the perceptions of racism being present in the birthing space. These decisions in turn led to these providers creating a negative experience and unsettling environment for the birthing person in the postpartum time period.

"But what I want to share is this. I felt almost that her provider was afraid of something, of making a mistake or doing something wrong. There was almost like a hyper vigilance over the postpartum time and the hemorrhaging. The client actually had to say, I don't want anybody to touch me right now. There are

too many things happening at one time. She looked at me and she looked like a deer in the headlights. And I just looked at her and I said, if you need more time, it's okay to say you need more time. And in that moment, it was like, I don't want anyone to touch me right now. And I felt like everybody was like paranoid. I don't know how to explain it, but it was almost like…were they, like, almost afraid that because she's a person of color and if something went wrong, they would be accused of something? I couldn't place where all of this fear was coming from. This happened both times. The Golden Hour was, like, robbed of them, even though all three of us were advocating for the Golden Hour and kept saying, Please, stop touching the baby. Please stop doing what you're doing right now. The baby's nursing. Please stop trying to take the baby's temperature this second, like she finally got a good latch. It was like this really weird onslaught of all these procedures that had to be done immediately. And even just someone coming in, like less than an hour of the baby being born asking, so what's the baby's race? And trying to fill out birth certificate paperwork. And we were all just so confused. And my client just looked at me and said, am I really being asked this right now? I mean, the parents were standing right there. So, it just felt rude. It felt rude, and it felt paranoid, and it felt very strange to me. So, I don't know if it was a byproduct of almost like a fear-based desire for something to not go wrong versus, like, a compassionate desire for things to not go wrong. I don't know." (P09, Latina, Pacific region)

Positionality

Positionality can be defined as a subject that requires an individual to identify their own degrees of privilege through factors of race, class, educational attainment, income, ability, gender, and citizenship (Duarte, 2017). This done for the purpose of understanding how to analyze and act from one's social position within the world (Duarte, 2017). Positionality came up frequently when discussing race and birthing, particularly when minority doulas answered how these experiences were compounded based on their own race.

Participants were consistently able to identify their own positionality within the birthing space, particularly in terms of race and ability status. One doula went into detail about how her knowledge and abilities are perceived based on her race and profession compared to White doulas.

(P05, N/A): "And it's a difference in how a lot of birth givers are believed when they talk about things in reference to medical professionals, in reference to the community at large. So, I would say there is definitely a difference based on perceptions."

(Interviewer): "Do you feel that your Blackness affects you as a birth worker in these spaces in the same way it affects Black birth givers? Or in a similar way? It doesn't have to be the same way, but in any type of way?"

(P05, N/A): "I would say so. Even as a birth worker, I don't feel like we are taken as seriously as non-Black birth workers, specifically White birth workers are taken. It's like we are seen as less competent. And I would say that even though there's not any regulating bodies, especially in [the] doula world, if it doesn't come from certain organizations which are White centered, a lot of times, then your certification or your education training isn't seen as competent as others. Like I say, even though there's no regulating bodies when it comes to doing that. Right now, what we're fighting against in a lot of hospitals, if you don't have certain credentials from certain organizations, a lot of times it's very difficult to get into the hospital as a

birth worker, which has been really interesting. We definitely have to fight against some things even as birth workers. Even when we're doing birth giving."

Black doulas also discussed the difficulties that come with having to amplify the voice of their Black clients while holding space and protecting their own energy as a Black person in the birthing space as well. Many doulas discussed how important it is that they advocate for their Black clients, but also acknowledged the toll it takes on them to continually have this responsibility. One participant went into detail about the lack of representation in hospital settings and the negative impact that has on her and the healthcare community as a whole.

(Interviewer): "How does that compound for you as a Black woman as well, in terms of one, trying to amplify the voice of your patients while also being Black yourself, and then also just within your professional titles, which you spoke on a little bit; about them not believing that you were also a nurse or just not really taking what you were saying for face value? How often do you see that occurring in these instances as well?"

(P10, N/A): "I mean, that's like 99% of the time, I'll be honest with you. I'm not going to act like, okay, well they're trying and we're doing training. Here's the thing. Black Lives Matter was just a terrorist group, and now everybody wants to post it on their social media. Right.? And now all the institutions want to do inclusivity training. Why? Not because you care. Because you want to check it off."

(Interviewer): "You got to check the box, right?"

(P10, N/A): "Absolutely. And so, nothing is changing because you don't even have like, what is your measurement? Like, how are you measuring if things have changed, if the staff has changed? Like, bias is real. People treat you based on how they feel about you, and that's just what it is. And so, it's tough because even just being a Black nurse, I work in intensive care. I work in [the] adult ICU and neonatal ICU. There are very few people of color in the specialty areas. Not because we don't deserve to be there or we can't be there, but because we're not offered these positions. And so, then you have lack of representation. Representation matters. Why? Because we understand things from a different perspective on what's going on. So, it can be tough. It can be exhausting. And always having to be the person to explain. She doesn't have an attitude. She's just asking questions. She's not aggressive, people talk with their hands. No, she hasn't asked you [too many] questions. Those things, they get tough."

Two participants spoke on their positionality, not only within the purview of being a Black doula in the birthing space, but how gender plays a role into this as well. One doula specified the situations where she is met with backlash most often.

(Interviewer): "Now, as you mentioned, that when they noticed your people had support systems, they started to listen to them more. As a Black doula, do you feel that your voice is also muffled at times?"

(P15, Black, SE region): "Depending on where I am, yes. Certain counties, certain hospitals, I do notice that. And it's more so from the male doctors. It's not from midwives, you know people of that nature. It's more so White male doctors, honestly."

Another participant went even further discussing situations where she is met with negative energy. She discusses how her positionality as a professional is challenged by doctors and

nurses, but instead goes on to describe how gender can combat that depending on who is in the birthing space with her.

> *(P06, Black, NE region): "Yes. I'm sometimes met with some negative energy because they don't really want you there. They kind of just want to control the process of the birth."*
>
> *(Interviewer): "So, it's almost like going into the healthcare system…because you work outside the confines [of the system] and know that you're there for support and you're voicing that, sometimes that can be met with combating people not wanting you to do that, not wanting you to be that voice?"*
>
> *(P06, Black, NE region): "Absolutely. Because nurses and doctors, they have a certain persona that they bring to their job. It's like, I know [more], and you're just here. So, they try to operate. But there are times when I find, or I meet with really great nurses that really understand that their job is medical, and they can administer whatever is needed. But I'm here for a different purpose, and they support that. When that happens, when we're working together in the room as a unit, it's a powerful birth. Yeah. And I find that usually when it's all women; women, a midwife or a doctor, obstetrician, nurses, we're all women. Even the tech person, all of them, we're all women, we kind of vibe to protect mom and to help her, to support her as much as possible."*

Once again, recognition of participants' positionality in the birthing space was not only recognized by Black doulas and doulas of color. Even without the additional question prompt of how their own race potentially impacts their clients' experiences, doulas who identified as White also spoke on their own positionality when considering this question. One White doula discussed reading an article about how Black doulas may have to approach the birthing space with a different mindset due to needing to provide more intentional and aggressive support to their Black clients, knowing the potential for a negative birthing outcome.

> *"Although I will say this. I did read an article and I thought about this a little bit since then. About how when it comes to Black mothers going into hospitals, especially if they don't have a good, solid birth team around them who is kind of aware, they really don't have the luxury of having a doula who's going to stand back. [They] can't get [their] hands dirty. That is terrifying. But thankfully, because of the midwifery practices that we work at, our clients haven't been subjected to anything like that. There are other hospitals and other practices, many of them around the world, where more of a bodyguard type of advocacy approach has got to be necessary, I'm sure. I haven't worked in an environment like that, though. Thank God." (P03, White, SE region)*

For Black doulas and doulas of color, topics of past trauma often surfaced when discussing their positionality as well. Many doulas described how their past traumas have impacted how they view and enter into the birthing space, on both a micro and macro scale.

> *"Obviously, I'm closer with my Black, Brown and African American clients because [it's] that saying that they say, like, in the world of psychology. It's like when you're born Black, it's like we already need therapists from the moment that we're born because there's, like, so much trauma that we have behind us, and it just only comes up and it seeps out in certain situations… and I do get a few clients where having the baby, it brings up a lot. It does bring up a lot." (P20, Black, NE region)*

One doula discussed many of the types of people who tend to go into this type of birth work and how that affects their ability to prepare for the realities of the birthing environment. She discussed how one's trauma can potentially hinder their own ability to protect another human being, and how nothing can prepare someone to truly be able to do this work in that capacity.

> *"So, when you look at who these individuals [doulas] are, a lot of them are low-income parents who are looking for opportunities because what are they getting? A free training. And the viability of that and to throw someone who's already probably experienced her own trauma in her own birth space and has not been given the opportunity to heal or deal with that and is now placed in a space where she's got to protect somebody else. I don't think enough training in the world is going to help anybody with that." (P17, Black, SE region)*

Another participant went even further to discuss how she will enter into her own future birthing space and how the traumas she's witnessed as a birth doula have impacted this.

> *"…also transferred anxiety and transferred trauma is real. I personally will not give birth in the hospital. My number one is to be home. And if I can't be home, then I want a birthing center. But a hospital is an absolute no for me. Just an absolute no. And I have no qualms about that. But we live in a society that has been… they have mentally conditioned us. And I say "us" because the focus is on Black people because you can say, oh, you guys are high risk for preeclampsia. You're high risk for diabetes, gestational diabetes. You're high risk for this. You're high risk for all these things, but you [hospitals] don't manage us as if we're high risk. You [hospitals] don't treat us as if we're high risk. But you [hospitals] bill us high risk so you can get the money." (P10, N/A)*

Participants discussed issues they have faced within birthing spaces surrounding the race of their clients as well as their own identifiable race and ethnicity. Their familiarity with discussing this subject was displayed across the board of these conversations and reinforced the literature supporting these experiences. Participants expressed the struggles that Black people and people of color face within the birthing space and how their presence can be integral as well as an impeding factor.

Maternal Morbidity and Mortality

The sixth and final question asked of participants was comprised of two parts: *"Do you feel like you have the tools to combat maternal morbidity and mortality with the training you've received? What kind of knowledge do you wish you had more of in order to help address these issues in your clientele if applicable?"*. These questions served to investigate whether participants felt they were equipped with the knowledge and tools to help address the previously cited significance of maternal morbidity and mortality present in birthing spaces and what kind of tools they wish to be equipped with in order to increase their abilities in impacting this

phenomenon. All 20 participants referenced both existing tools they acquired throughout their trainings and experience as doulas and missing tools they wish they had to enhance their practice. The three major themes that surfaced within the answers to this question included discussions about the "Healthcare System", the participants' "Scope of Practice", and finally the "Tools" present (or absent) in battling this phenomenon of maternal morbidity and mortality.

Healthcare System

Participants also further reflected on the functioning of the healthcare system as a whole, particularly in relation to maternal health and commented on the dire state of maternal health today based off of their experiences working alongside the system. One participant was able to give her perspective as a nurse working within the system as well as a doula, and how pressures to increase volume and cut costs within hospitals result in detrimental situations, particularly for Black birthing people.

> *"...and I know so much about the behind the scenes and how things work and how things go, because the reality is there's a standard protocol. You have your plan and then [the] hospital has theirs. And they can tell you what they want. As a nurse, I know. The first thing that we focus on when you're admitted, they're already planning for your discharge. Why? Because I'm trying to get more people into beds. Hospitals are not, not for profit. They're for profit. And birth has become medicalized in the last 100 years. So, you don't need to be in a hospital. What happens is, unfortunately, because of the way society is built and because of the mental pressures and psychological things that are happening to Black people mentally, you are already conditioned to believe you have to be there. And all these things are affecting you. The anxiety, the depression, the chronic stress. Of course, your blood pressure is going to be high. So, all these things come together to put you in a situation to where you possibly need them." (P10, N/A)*

Doulas also spoke on their clients lack of trust when entering healthcare systems, once again referencing how fear has played a significant role in the state of maternal health as a whole. Similar to how Black people and people of color enter hospital systems with a cloud of fear and doubt surrounding the care they could potentially obtain, or not obtain, participants discussed how birthing people often enter the birthing space with this same cloud of fear going into the process.

> *"There's no trust in that space at all. Even if you have one of the best OBGYNs in the world or one of the best midwives who's really caring, who's really open, who's really going to spend the time and make sure that this process works well for you. You're not going to trust them because your biggest fear is death. And then the partners...I didn't realize I was going to go down this path, but I'm actually getting very emotional about it because they don't want to walk out of the hospital without their wives. So, I think in an effort to highlight the problem and to obviously address it and try to look at what we need to do to change it, we have caused a shift in the way people view birth. Particularly Black people. And it's very hard to get them*

to enjoy their birth space right now and to see that space is sacred and honored and a gift." (P17, Black, NE region)

This same participant went on to contemplate on how the current state of maternal health could potentially lead to other issues that manifest during pregnancy and the postpartum period. A compelling thought that has yet to be extensively investigated in research.

> *"It's not normal! And we get to talk about this, and I would like to see what all of these things have in relation to postpartum depression and anxiety. Right? Because it has to be tied to it. You are not who you are, who you feel. You're already struggling with the concept of being a new mother, and now your body is foreign to you. It's a lot." (P17, Black, NE region)*

Participants also went on to discuss in detail the gaps that they have seen within the healthcare system, with lack of pelvic floor health as also indicative of gaps, contributing to these maternal morbidity and mortality rates. Examples of these gaps in the system were deemed to be both concrete as well as abstract factors. Doulas mentioned things such as providers not approaching pelvic dysfunction from a mechanical perspective, lack of time available to spend with patients, no widespread screening for pelvic disorders, not taking patients' symptoms seriously until it is too late, not enough emphasis on the toll pregnancy and the birthing process takes on our bodies, and not enough appropriate referrals being made when needed. One doula explicitly spoke on the reality of these continued conversations about morbidity and mortality without actionable change.

> *"It's great that we're talking about it. It's just a matter of now being about it. That's the other thing. I mean, conversations are great. They're wonderful. But if there's, like, no action behind it, it just kind of, like falls to the wayside, basically. And I respect, you know, where you're coming from as a provider of sorts, offering services and wanting to do your due diligence to take care of somebody. But sadly enough with the medical world, and I've seen it with certain providers where sometimes unfortunately, with the healthcare system, system that being the keyword, is that sometimes it's about the quantity over the quality. So, I have doctors that are, like, frustrated because they feel like they can't really spend the time with their patients and really provide them with the information that they want to give their patients, doctors who are…at the ends of their workday they are just like, I couldn't give the time. And then the nurses obviously, cause their time is very limited too." (P20, Black, NE region)*

Participants also discussed the lack of information provided to patients during their visits with their birthing providers potentially contributing to these persisting maternal morbidities and mortalities. They discussed the detrimental impact of lack of knowledge provided to patients and how that can result in negative outcomes. Participants emphasized how providers avoiding these topics could result in the removal of autonomy on behalf of the patient to make informed decisions. One doula described seeing this with multiple instances.

> *"There have been instances in which I felt like the healthcare provider didn't provide all of the information to their patient that I thought they should have so they could make an informed choice about what, the decision that was on the table." (P03, White, SE region)*

Cultural competence and awareness in healthcare also came up amongst participants answers. A few doulas mentioned how things pertaining to birthing peoples' cultural wishes are often not included or acknowledged in the birthing space, potentially resulting in the negative experiences within these spaces. One participant expressed how she felt if this was at the forefront within the care of birthing people, it could have a positive impact in the medical field.

> *"But yeah, I think there is always room to gain more knowledge, especially [regarding] our culture. Because there are certain things that people need to feel comfortable. Things that are traditions and things that they had in their family or in their region. So, you always want to take note of the history, of the client history, of their families' history, of their lineages and things like that because they need that to feel comfortable. And that's something that not only do we want to do as birth workers, but that's also something that I really feel like would help in the medical industry is to really start taking note of some of the cultural uniqueness of clients, things like that, in order to feel comfortable, in order for them to feel like this is a protected space for them." (P05, N/A)*

Scope of Practice

Once again, positionality was addressed within the answers to this question, with the focus of participants identifying their role as a doula within these birthing spaces. Participants often described what they believed their role is during the birthing process and how they have significant impact on the provision of care and support for their clients. Doulas emphasized the importance of working as a unit with the birthing person and ensuring the focus of the birth remains on the birthing person, and nothing else.

> *"Like I tell my clients up front, me and whoever else their support person is, we're a tribe. We're in this together. And so, I'm really heavy on empowering them and educating them. So, when we do get in the hospital setting, if that's where they're birthing at, when they come at them with so many different things, they don't freeze, they can still stand grounded in what they believe in." (P04, Black, SE region)*

Participants also emphasized the importance of being a significant source of information for their clients. They discussed the importance of being well equipped to provide answers to some of the most pressing concerns and questions their clients have that they often do not get answered by others involved with their birthing. One doula described how providing this information to her clients in turn results in empowering those clients to have control over their own birthing experience.

> *"Because any and every which way that I can just be a source of information or resource to the resource for women, but Black women [especially], that's what I'm trying to do right now. That's what I'm trying to be in this lifetime. That's what I'm there for, because I'm there to speak on your behalf if you feel like you can't do it yourself. But I'm also there to back you up as well, because we're going to go in as a team.*

Sometimes I joke and say, we got to go in there and jump your provider. We have to jump your provider." (P20, Black, NE region)

Another participant went into detail about what she tries to do as a doula for her clients. She described a major part of her job as a birthing support person is to guide her clients towards birthing providers that consider all aspects of her clients' lives as an integral part of their birthing story. She emphasized the questions she focuses on to ensure she is always giving her clients the support they need at any given point in time.

"So, what you just said made me think of some of the things that I do, and it is leading people towards those providers that I know care about these things and pay attention to these things and provide culturally competent care and things like that. And I do a lot of prenatal work with my clients. Just a lot of like, what's going on? How are you doing? How are you feeling? Did you talk to your provider about that? Here's some language you could use if you have trouble coming up with the question that you're trying to phrase here, write it down. Let me know how that goes. Just like really encouraging them to bring up symptoms that they're worried about, that they're telling me about, that they're not telling the doctors about. And then also just encouraging them like, this is a red flag. That's not how your doctor is supposed to respond to that." (P11, Asian, MW region)

Participants speaking on their role as a doula could not go without touching on limitations they have within their scope of practice, which as a doula, are significant considering they are not technically healthcare providers. Emphasis on staying within their strict scope of practice came up repeatedly among participants. One doula described how she felt that due to their strict scope of practice, she doesn't truly have an impact on whether or not an individual will die in labor.

"…as a doula we don't check any fetal heart tones. We don't do the medical stuff prenatally, during labor or postpartum, none of it. So, if anybody's ever having some sort of medical issue we're always like, okay you need to call your healthcare provider…. I would love to sit here and say as a doula I have a huge impact on whether or not somebody's going to die in labor, but it doesn't really go down like that. If there was some sort of emergency situation, the healthcare providers would handle it." (P03, White, SE region)

One participant discussed where her ability ends and where the ability of other birthing providers should begin, but that there is a lack of intentionality behind what providers are doing in the birthing space. She discussed the risk of retaliation against herself and others who feel the need to speak out against persisting practices in these spaces that could ultimately be detrimental to her clients.

"But also, doulas are not medical providers. We can only do so much. We can only do so much. This needs to be OB's, midwives, hospital administrators, they are the ones who control these things. And they're the ones who are causing these poor outcomes. It needs to be them. Yeah. We can be like, hey, you didn't do that. But then if we ruffle too many feathers, do we get kicked out? Right? Like, the same with nurses and doctors and midwives who speak up against these...speak out against White supremacy, who speak out against hetero-normalcy things like that, they also get shut down. So, it's like it's a bigger issue." (P11, Asian, MW region)

Doulas also spoke about how the reality of these limitations can be harsh for them as providers and for their clients to accept. Essentially, their clients' choice of healthcare provider will ultimately have the biggest impact on their birth outcome, which was a scary realization for some. Oftentimes, participants described feelings of helplessness they experience due to these limitations. Two doulas went into detail on this topic, expressing vulnerability on how their role as a doula and not having a major impact on outcomes as a whole affects them.

> *"I think that sometimes as a birth worker that isn't a medical provider, I do sometimes experience a little bit of feelings of helplessness because there are just things that I can't help with or there's things that I can't do for my clients because that's not my role for them. Does that make sense? So, I often feel trapped. I feel like, how do I help my clients sometimes get better care? Who do I call? How can I call someone?" (P09, Latina, Pacific region)*

Tools

The final theme that presented itself regarding this question served to answer directly whether participants felt they had the tools to combat maternal morbidity and mortality amongst birthing people. Participants went into detail about existing tools they had encountered over time, tools they felt were missing in terms of potentially contributing to impact, and lastly tools they are seeking to help better equip themselves. One participant discussed the basic, foundational skills that contribute to her ability to be an effective doula for her clients.

> *"It starts from listening, from talking to people to really trying to figure out what's happening, getting to the root cause of what's going on. That is how you heal." (P10, N/A)*

A few participants emphasized how their experience as mothers and going through their own journey of birth has significantly contributed to the tools they have gained over time. One doula spoke on how going through her own experience in addition to now increasing her own knowledge on the subject of maternal mortality has provided her with the skills needed to assist other birthing people through this period of their lives.

> *"So, yes, I do feel that I have the training and knowledge, not just because as a doula, but just someone who went through it alone. As a young mom, I've been through it numerous of times. So, to gain insight and actually deal with that on a personal level affected me a lot where I started doing research years before I became a doula. So, I feel like now that I have that knowledge in using those tools and actually continuing with my education on mortality and all of that with infant loss awareness and all of the things we deal with, I feel like I do have what it takes to help someone get through those times or to encourage or support them." (P15, Black, SE region)*

The most consistent tool participants described contributing to what they can do to help their clients involved being lifelong learners. Many doulas explained how they continually take classes to increase their knowledge within the realm of birth. Their motivation to continue to take

these classes revolves around the desire to be the individual that can give birthing people the answers and support that many of them are searching for. One participant discussed the importance of maintaining this mentality in order to be that source for her clients.

> *"But one thing for me that I always do, like I said, I take classes. I take class on class on class. Whoever's offering the information so I can better serve mothers, because again, every client, their journey is different. One mom might have something I might have never heard of. And so, I reach out to my doula village or my midwife village, and I'm asking them, hey, have you heard of this? What is this? How do we address it? What do you suggest? But just by me just being open minded and creating that support circle where if I don't know the answer, I can go get it from someone who does. And I feel like that is definitely helping. So that way, if I'm in the hospital or someone is saying something and I always explain to my clients, even if I am allowed in the hospital, I know how to read the monitor. I know how to read the screen. I know if baby's heart rate is good or not. So just allowing my clients, when they're there to feel comfort that they can just labor and just be at peace and they're not worrying and trying to figure out what the doctors are saying. So, I believe strongly that, you know, just by having that mentality and just wanting to learn and do this work proficiently, that I am able to help combat those rates." (P08, Black, SE region)*

In discussing this question, many participants spoke about tools they felt they did not have that contribute to their inability to have an impact on maternal morbidity and mortality. Many doulas discussed how they felt their previous trainings were not all-encompassing in that they did not touch on important aspects of birthing, such as sociodemographic factors contributing to this phenomenon as well as how to navigate hospital birthing spaces and providers effectively.

> *"And I say this often, particularly when it comes to training community health workers who are coming into the space who are really thinking about, yes, I want to tackle this issue. I want to be part of the change. They're not given enough tools to be able to do that. They don't have enough experience in the birth world to even understand how to navigate that space, how to have a conversation with the nurses, with the doctors, and to be seen and be respected as well." (P17, Black, NE region)*

One participant discussed how the lack of valuing doulas in the healthcare system and healthcare community as a whole affects their ability to have effective change. She mentioned how this reality significantly impacts the profession.

> *"Doulas should be paid more. They're not. They're not validated as they should. You know what I mean? And they [hospital systems] don't feel like that work is important enough for women to be able to make a living from it." (P06, Black, NE region)*

One participant candidly stated how she felt she didn't have the training to truly have an impact on maternal morbidity and mortality. She went on to state how even though she desires to have a role in this effective change, she doesn't know how or where to get this training done.

> *"So, do I have the training to reduce? I don't think I do. I feel like I can give my clients good doula support. But am I trained, or do I know how to change, like affect change in certain areas that I wish I could? No, I don't. And I'm not sure how to get that training or where to go for it." (P09, Latina, Pacific region)*

Arguably, one of the most important responses that participants discussed in this interview revolved around tools they are seeking in order to increase their ability to impact maternal morbidity and mortality among their clients. Doulas spoke on specific things regarding the pelvic floor and pelvic floor physical therapy they would like to be further educated on. A few doulas spoke on specifics about the subject that they would like to know more about.

> *"Hmmm...pushing positions and the pelvic floor, that would be super-duper helpful and how to avoid tearing and that sort of thing. I'm aware that certain positions are easier on the pelvic floor and the perineum than others, but even more detail, like getting into the really nerdy, nitty gritty stuff about all that I would find really thrilling." (P03, White, SE region)*

Others discussed wanting to learn more about the resources available to them within their own communities. This did not only revolve around resources for their clients, but resources for themselves as well. An example of that included increasing knowledge of pelvic floor therapists they could network with in order to provide access to this service more readily for clients if indicated.

> *"And I wouldn't even mind maybe networking with some pelvic floor therapists. So that even if it's something that I can offer in one of my packages, because I think it's very key that parents or mothers need it honestly. So as time goes by, I do plan on just trying to learn more about it and attend some of the classes that they [are] offering." (P04, Black, SE region)*

Another tool that came up with a few doulas surrounded the subject of politics. Participants expressed their desire to understand what's going on within the political spheres of birthing to not only increase their ability to educate their clients, but also to provide channels for doulas themselves to impart effective change within the sphere of birthing without stepping outside of their scope of practice. One doula went into detail on this topic stating:

> *"Definitely need more training. I think the issue is larger than life, and it's not until you're confronted with it that you really understand it, especially as a Black woman. But I feel like I need to get even more political. Like, I need to find out where the meetings are; where do I go? Who do I talk to? Who are the senators that are really pushing for women to have this kind of care?" (P06, Black, NE region)*

Another doula emphasized the importance of research on the effectiveness of PFPT and her desire to engage with it more due to the fact that a lot of her own clients tend to process information in this way to have further discussions with their providers. She described wanting to be a bridge to this knowledge for her clients in the hopes that it would ultimately lead to them having increased ability to advocate for themselves at the right times.

> *"Honestly, keeping up with research is a big one for me because I feel like that's how a lot of the clients that I work with process information and want to be able to discuss it with their healthcare providers. So, I feel like I'm always wanting to know more about how to help people bridge that gap between what's*

currently in practice and whether or not it reflects current research and evidence in best practice. So, I think helping people understand and keep up with research is a pretty big one yeah. Pelvic floor wise I just think understanding how to help people know when they need to raise their hand and say they need a little more help. I say that a lot to people about lactation. Like here's what's maybe considered more normal and it's going to get better over time and here's when you need to raise your hand and say I need more help and support." (P12, White, SE region)

Participants provided a depiction of how race can impact birthing spaces and birthing people as a whole. Oftentimes, their accounts of experiences their BIPOC clients faced bled into their own experiences, for those who identified as minority birth workers. They provided the perspective of a birth worker outside the confines of the birthing system regarding the state of birthing and maternal health in the U.S. today. This resulted in conversations surrounding racism in healthcare, their positionality within the birthing space, and ultimately their belief in their ability to have an impact on maternal morbidity and mortality.

DISCUSSION

In conducting this qualitative analysis, participants provided information regarding their current knowledge on the subject of pelvic floor physical therapy and how the pelvic floor functions throughout pregnancy and postpartum. This needs assessment identified current knowledge among doulas regarding PFPT, the impact that racial health disparities have on birthing experiences and outcomes within this sample, and educational opportunities to increase physical therapy/inter-professional involvement in birthing and postpartum support.

This analysis was unique as the focus of this research was on doulas who do not work within the traditional confines of the healthcare system. Interviewing doulas provided a perspective on a population of birthing providers whose profession is starting to be recognized as an evidence-based intervention utilized to improve maternal health, patient satisfaction, and overall healthcare experiences (Marshall, et al., 2022). These participants were able to provide elaborate details on the specific role they play in their clients' birthing journeys and how impactful their presence is on those who choose to have a doula on their birthing team. Respondents were able to speak not only on their experiences working so closely with birthing people, but also on their experiences working alongside the healthcare system. This is important as they were able to provide experiences with patients as well as specific accounts on happenings within the healthcare system that contribute to the state of maternal health today.

When discussing the first four questions of the interview with participants, the doulas demonstrated an overall lack of knowledge on PFPT and how it can be utilized throughout pregnancy and postpartum. Although there are gaps in research citing doulas' knowledge on the subject, this falls in line with other birthing providers cited as not having adequate education on pelvic floor functioning. As Lawson and Sacks stated in their research, education about conservative pelvic floor function and dysfunction may be lacking in all facets of graduate education curricula for nurse-midwives, midwives, advanced nurse practitioners, and physician assistants (Lawson & Sacks, 2018). Participants discussed hearing about PFPT, primarily through social media and inter-professional sources. For these doulas, inter-professional connections in-person and through the internet were an important factor in increasing their own awareness. Research states there are potential benefits of utilizing the multidisciplinary approach

when caring for birthing people (Benagiano & Brosens, 2014); therefore, creating these types of connections are essential and the first step to establishing this type of care for pregnant people. Doulas connecting with pelvic floor therapists and the OBGYN's their clients are already seeing can create this environment of multidisciplinary care.

Participants also recounted their ability to recognize abnormal symptoms, their clients' experiences with PFPT, and PFPT's impact on their clients' birthing experiences. Almost all (90%) of doulas in this sample confirmed recognizing symptoms related to pelvic disorder among many of their clients, such as pain, leaking, or diastasis rectus. This aligns with data stating nearly half (45%) of birthing people experience musculoskeletal related symptoms during pregnancy and 25% during postpartum (Riahi, Rekik, Bouaziz, & Mohamed, 2017). Of those who were aware of their clients attending PFPT, participants felt those clients had very positive experiences during their birthing event and with recovery after. Systematic reviews citing the effectiveness of PFPT on specific disorders as well as anecdotal evidence supporting its use support the accounts these doulas received from their clients. The combination of biomechanical, hormonal, and vascular changes during pregnancy may lead to morbid musculoskeletal disorders (Riahi, Rekik, Bouaziz, & Mohamed, 2017), emphasizing the importance of doulas being able to recognize disorder, and consequently understand and witness the positive impact PFPT has on developing these disorders.

Respondents also discussed their referral patterns when it comes to recognizing dysfunction in their clients. Over half (55%) referenced referring their clients to another birthing provider after noticing dysfunction. Although referrals did not exclusively go to PFPT, this was a promising finding within this sample because it indicates that the majority of participants are not minimizing the symptoms their clients are experiencing and are referring them when appropriate, although these symptoms are often perceived as "normal". This is important as Dessie and colleagues stated within their findings from their 2015 pilot survey to obstetrical providers, nearly half never discuss symptoms associated with pelvic dysfunction during prenatal counseling with the number one cited reasoning of having no time (39.9%) during these sessions. Reinforcing the ability to recognize disorder with doulas could serve as an effective way to

combat lack of attention to these issues with traditional birthing providers, and lead to patients receiving care in a timely manner when needed.

This study also investigated doulas' subjective experiences with racial disparities in the birthing space. Doulas reflected on their clients' experiences, as well as their own. Overall, participants described the struggles that BIPOC people encounter when embarking on their pregnancy journey, from decreased access to quality services to persistent microaggressions within the birthing space, which supports growing data on the challenges BIPOC individuals face throughout the perinatal period (Saftlas, Koonin, & Atrash, 2000). A major microaggression consistently cited through their anecdotal accounts related to their BIPOC clients' voices being muffled and obtaining little to no respect from their birthing providers. In a 2019 case-study assessing obstetric racism, Davis analyzed the birth stories of Black women within the U.S. and described stories similar to the accounts shared by participants in this study. Davis supports these accounts concluding that "neglect, lack of information, dismissiveness, disrespect, and intervention without explanation, permeate their maternal care and coalesce into obstetric racism" (Davis, 2019). Records of these experiences among many BIPOC birthing people indicate reasons behind why minority women, particularly Black women, have higher rates of severe morbidity events independent of sociodemographic risk (Howell, 2018).

Research shows that women of color have a higher likelihood of experiencing SMM during hospitalization and Black women have a higher likelihood of experiencing it in the postpartum period (Chen, et al., 2021). Participants' accounts of how their Black clients are mistreated within the birthing space could contribute to the occurrence of SMM at birth and in postpartum. Participants also discussed how Black birthing people tend to be less secure with their birthing, there is a cloud of fear when it comes to birthing with the Black community, their partners are less involved and respected, and oftentimes they don't have the same type of support system their white birthing clients have. Participants spoke about having to work harder, both mentally and emotionally, to support their Black clients. Some participants even discussed how Black clients decided to get a doula because they are afraid of dying during childbirth. The maternal mortality statistics of Black women compared to other races is alarming enough, but having these first-hand accounts truly puts this into a real-life perspective. These are issues Black

birthing people and birthing people of color are facing regularly, and we cannot ignore this significant factor of birthing as healthcare providers.

Participants who identified as a BIPOC doula also discussed issues they themselves faced within the birthing space as a birthing support provider primarily surrounding lack of respect. Few studies have investigated relationships between doulas and birthing practitioners. Neel and colleagues sought to investigate maternity care practitioners' perceptions of doulas, and found that some frustration, anger, and resentment persists amongst practitioners in the sample with respect to work with doulas (Neel, Goldman, Marte, Bello, & Nothnagle, 2019), without any consideration of how race may have played a role in this. Doulas are already battling gaining respect regarding their profession. From the accounts of doulas within this sample, it is clear they are battling the intersection of being BIPOC and a doula and having to justify their existence within the birthing space as a professional. Finally, participants identified tools such as more in-depth birthing support training, increased opportunities for collaborations with pelvic floor physical therapists, increased accessibility to community resources for their clientele, and information on politics in birthing that they felt would enhance their practice and potentially maternal health as a whole. These tools provided insight on what educational programs for doulas should encompass regarding pelvic floor function throughout pregnancy and postpartum.

IMPLICATIONS AND RECOMMENDATIONS

Findings from this study have several implications for practice and specifically for the development of educational materials for engaging doulas in PFPT. Below are ***seven concrete recommendations*** (Appendix E) that pelvic floor physical therapists should utilize when creating an educational program geared towards other birthing professionals, specifically doulas. These recommendations will allow for development of an all-encompassing program that not only touches on the importance and effectiveness of pelvic floor physical therapy, but also addresses factors contributing to the underutilization of this therapy, and how physical therapists and birthing professionals can work together to combat this phenomenon and foster a more accessible therapeutic environment for all birthing people, particularly those who are marginalized.

1. Provide specific instruction on the anatomy and physiology of the pelvic floor.

As physical therapists and physical therapy students know, in order to understand the function of a muscle when changes occur within the body, we must understand the basic anatomy and physiology of that musculature first. Physical therapists are well equipped with this knowledge of all the muscles within the body, as they are licensed movement specialists. When it comes to the pelvic floor, this is an integral component to understanding the function of it when the body undergoes significant changes, such as during pregnancy and the postpartum stages. Understanding the basic anatomy allows doulas to better identify when pelvic floor symptoms in their clients become abnormal, leading to earlier and more impactful referrals.

Only participants who had some type of training outside of doula work, such as a labor and delivery nurse, discussed having had some type of previous education on the anatomy of the pelvic floor. Without the opportunity to engage in a medical program or taking the initiative to do the research on their own, the majority of respondents had little prior knowledge of the actual anatomy of the pelvic floor. There was discussion about the benefits of understanding the function of the reproductive organs and vaginal canal during birth, and

adequate education on the anatomy and physiology of the pelvic floor is an integral first step to providing well-rounded knowledge to birthing professionals wishing to learn in greater detail. Understanding the basic anatomy and physiology will allow participants to understand how the pelvic floor muscle functions and changes throughout pregnancy and the postpartum stage and thus will help them to recognize when disorder is present, which are two important aspects to increasing one's overall knowledge and be able to better support an individual throughout their pregnancy and postpartum journey. These were two major themes that were discussed with participants and integral to include in education.

Participants also mentioned multiple instances where pelvic floor education was lacking in general, for both them and their clients. The lack of education surrounding the pelvic floor and the taboo associated with discussions on bodily sexual functions (Grant & Currie, 2020) contribute to this gap in knowledge present for healthcare professionals and the public. Therefore, providing this basic understanding of a muscle that is integral to sexual processes and birthing could help fill those gaps that were absent in previous modes of education. Educators and mentors in doula trainings may not be fully equipped with the knowledge and resources to provide those seeking these trainings with this information, at no fault to these educators. Including this foundational aspect in trainings from PFPTs who specialize in those fields could help to resolve some of the mystery surrounding this part of people's bodies.

2. **Teach participants about how the pelvic floor muscles are affected and change throughout pregnancy, the birthing event, and the postpartum stage.**

After discussing basic anatomy, the training should then address how the pelvic floor is specifically affected throughout the journey of pregnancy. Training for doulas should include not only the anatomy, but also the impact pregnancy has on the pelvic floor, since this is their client population. As the research states, there is a combination of biomechanical, hormonal, and vascular changes that occur during pregnancy that may lead to a wide variety of musculoskeletal disorders that physical therapists understand how to treat (Riahi, Rekik, Bouaziz, & Mohamed, 2017). As previously stated, given that almost half of birthing people experience these musculoskeletal related symptoms during pregnancy and 25% during the

postpartum period (Riahi, Rekik, Bouaziz, & Mohamed, 2017), it is important for doulas o learn so they are better able to identify disorder more effectively and in a timely manner.

Discussing how the pelvic floor could potentially be affected during the birthing event is important as well due to research showing a strong association between vaginal childbirth and the incidence of pelvic floor disorders later in life (Hallock & Handa, 2016). One respondent even went into detail about how beneficial it would be to watch a video of the process of how the pelvic floor can be affected during birthing. Utilizing a tool like this could be a unique opportunity for birth workers to expand their knowledge of active pelvic floor muscle function rather than just anatomy and physiology. Providing this knowledge to doulas will allow them to be well informed of the risks to the pelvic floor associated with vaginal birth and will allow for better preparation in counseling and referring their clients to PFPT to avoid traumas associated with disorder.

3. **Describe what pelvic floor physical therapy is and how it can be effective throughout the journey of pregnancy and the postpartum stage.**

In this study only 25% of participants were able to give specifics pertaining to pelvic floor physical therapy and 20% explicitly stated they did not know what pelvic floor physical therapy was. Ideally, a curriculum should ensure all participants are able to describe what PFPT is and the disorders that can be treated with this therapy. As previously stated in the research, one of the major barriers to people utilizing PFPT is lack of awareness among patients *and* providers (Dessie, Hacker, Dodge, & Elkadry, 2015). The only extensively trained practitioners in this area are pelvic floor physical therapists, so the first step to increasing utilization is by increasing widespread awareness of the therapy. This starts with pelvic floor physical therapists telling other birthing professionals about what this therapy has to offer. Therefore, targeting a group of birth workers who have the ability to spend a lot of time with their pregnant clients to learn about this information could be incredibly effective in increasing awareness.

As a sub-recommendation, when developing this section of the curriculum, educators should consider including certain physical therapy specializations that could be effective for birthing providers to be aware of as well. Although the profession of a doula does not require a medical degree, many of the participants had experience at one time or another working in the medical field and also expressed interests in expanding their knowledge horizons far beyond the foundational scope of practice for a doula. One participant went into detail about wanting to learn about how to support clients who have experienced some type of reproductive cancer and are interested in getting pregnant after the fact. Considering this scenario, there are pelvic floor physical therapists who also focus on oncology and an educator could provide this doula with information on how to support these types of clients within her own scope of practice. Other physical therapy specializations to consider including could be supporting the pregnant female athlete, supporting postpartum return to exercise, supporting the pregnant person with a disability, and supporting the pregnant person with a neurological disorder or injury.

4. **Discuss the four phases of the pregnancy journey: preconception, prenatal, peri-natal/pregnancy, and postpartum; and how pelvic floor physical therapists can have an impact during all stages.**

Once again, increasing awareness of what PFPT can do at all stages of the pregnancy journey are vital in increasing education surrounding this topic for birth workers. Many of the participants who stated that they knew something about PFPT only knew about its utilization during the postpartum period. Of the 55% that made a reference to referring their clients due to recognition of some abnormality, only a few stated they would inform clients about the benefits of PFPT prenatally. Most respondents stated they did not know about PFPT and its effectiveness during the prenatal stages or throughout pregnancy. Over half of the participants did discuss accounts of clients having experienced PFPT and the positive effects it had during their birthing event and when combatting symptoms developed during the postpartum period. These professionals already show an incredible understanding of how effective physical therapy can be for the pregnant person. Increasing doulas' knowledge to understanding how effective PFPT can be at all of these important time periods within the

birthing process will only increase the probability these providers will refer their clients when necessary.

Additionally, educators can provide tools doulas can utilize to help their clients in prepping for the birthing event as well as positioning to utilize during birth that can mitigate occurrence of trauma. When considering the increased probability of experiencing pelvic disorder later in life following vaginal birth (Hallock & Handa, 2016), it would be extremely beneficial for doulas to learn practices that could reduce the possibility of this occurring. This could in turn reduce the possibility of a birthing person experiencing maternal morbidity associated with musculoskeletal pelvic disorders. Tools to consider including could be breathing techniques to utilize during pushing, positioning during pushing, and perineal massage, among many other techniques (McGee, 2021). This section of the education can be touched on with one component of the program or can be presented in a series. For example, the educator could host three different sessions back-to-back, where they first focus on preparing for birth, then focusing on comfort and positioning during the birthing event, and finally having the last session focused on postpartum recovery.

5. **Teach participants how to recognize disorder and when to appropriately refer.**

The majority of participants (90%) were able to recognize symptoms that could be related to pelvic disorder. This is an extremely positive statistic, as it shows that although these birthing professionals felt overall that they didn't have enough knowledge on the subject of the pelvic floor and how it functions, they were able to identify when things may not be functioning optimally. This further emphasizes the indication that doulas are an important and effective group for pelvic floor physical therapists to collaborate with as they have a good understanding of the processes pregnant people undergo. Providing them with this knowledge would not be a huge jump from the experiences they have already had with their clientele.

If doulas are able to become more confident in their knowledge of the pelvic floor and PFPT and incorporate it into their practices regularly, it will in turn potentially increase

awareness within their clientele and encourage more people to seek out PFPT. As one of the doulas mentioned within her interview, unlike OBGYNs, she has the ability to answer her clients' calls at any moment in time. Providing doulas with this tool could serve as a significant way to overcome barriers related to healthcare professionals not having enough time to assess for disorder, as they frequently spend more time with birthing people compared to OBGYN's and labor and delivery nurses (McDowell & Gobert, 2020). This would be beneficial for all providers working in the birthing field and increase the possibility of patients being referred early on when pelvic disorder is identified.

6. **Discuss how race impacts the birthing space and maternal health outcomes including sociodemographic factors, barriers to access, as well as considerations for supporting marginalized birthing populations.**

The topic of how someone's race impacts their birthing experience served to be one of the most informative and integral components of the qualitative interviews. As birthing professionals, it is important we continually shed light on the disparities in maternal mortality and maternal care that both research and now these interviews as well, have highlighted that disproportionately affect women of color, particularly Black birthing people. Especially when working with and educating BIPOC doulas who work with marginalized populations, it is important to include this aspect within the educational program, as improving birthing outcomes and the potential for reducing maternal morbidity and mortality cannot be addressed without including the racial context that contributes to this. Within this topic, educators should include specifics on sociodemographic factors contributing to this, barriers that are compounded for birthing people due to their race and status, and important considerations to consider for the marginalized birthing population.

Previously cited data demonstrated the impact being Black in the birthing space has on their birthing outcomes, which are due to a number of factors including social, environmental, biological, genetic, behavioral, and healthcare factors (Howell, 2018). This study's findings further support this evidence as the majority of participants also cited that they believed their own clients' race impacted their birthing experience. Participants

described how compared to their White birthing clients, BIPOC birthing people's voices are muffled in their birthing space, their symptoms are ignored or receive a delayed response, c-sections are more often requested, and incessant microaggressions are directed at them.

Discussions on how sociodemographic factors play into disparities are also imperative. Speaking on how the lack of a support system can affect birthing as well as feeling uncomfortable within the birthing space should be touched on. Discussing how barriers are compounded for marginalized populations is important as well. Educators should include information on how insurance barriers, limited access to quality healthcare services, and inadequate birthing education for marginalized populations, as described by these participants, can often impact birthing outcomes. To address barriers to access for PFPT, program developers could also consider providing educational birthing materials for patients that doulas provide to their clients that could assist in mitigating pelvic floor symptoms associated with pregnancy and in the postpartum period. This is especially important for their clients who don't readily have access to therapy.

Participants also discussed how previous trauma can often impact their clients' birthing experience. Utilizing trauma-informed care teaching tactics could be a good tool to provide for doulas working with these populations (Hall, White, Ballas, Saxton, & Dempsey, 2021). Trauma informed care is outlined by the Substance Abuse and Mental Health Services Administration with a section on "Guidance for Implementing Trauma-Informed Approach" (SAMHSA, 2014). Emphasizing the importance of being thoughtful of these considerations when working with marginalized birthing people are important factors in potentially having an impact on birthing outcomes for BIPOC people. Pelvic floor physical therapists and doulas may not be able to have an impact at all stages of the birthing process impacted by race, but there are certain points in time where they can work together to be more impactful and proactive in reducing the factors contributing to these disparities.

Positionality is important to discuss here too, as participants described how other healthcare professionals perceive them within the birthing space, particularly if they were Black doulas. Participants discussed how doulas are often not respected and healthcare

professionals feel that their presence can be a hinderance instead of helpful within the space. Those who identified as Black discussed how oftentimes they are not respected as much as their white counterparts and if their doula education is not obtained from a white-centered institution it is more difficult for them to get into the hospital to do their job. In addition to this PFPT course, there are other needs to consider to better support BIPOC doulas. Touching on this topic could start to increase awareness and spark conversations around understanding the importance of addressing these issues. If educators do not identify within these groups themselves, they should collaborate with and incorporate the experiences of BIPOC pelvic floor physical therapists to provide effective tips when navigating these systems.

7. **Provide concrete resources for participants to utilize within their practice pertaining to the location and community of which the participants and their clients reside.**

The most important thing educators can do is provide tangible resources for participants to begin applying within their own practice immediately following the session. For example, one doula in this study discussed how she would thoughtfully add certain questions to her intake form in order to improve her ability to recognize symptoms related to pelvic disorder. Program developers should consider creating concrete questions related to pelvic dysfunction doulas can utilize on their own intake forms to increase the probability that doulas are able to recognize symptoms early on. Two specific tools that would be extremely beneficial for birth workers would be a bank of pelvic floor physical therapists as well as OBGYN's that readily refer to pelvic floor physical therapy within their area. Educators can utilize the APTA Pelvic Health PT Locator to identify therapists anywhere within the country (Academy of Pelvic Health Physical Therapy, 2019). This would eliminate the extra step of doulas having to research these individuals and in turn increase inter-professionalism among these three different birthing providers.

Participants also touched on how they felt their practice could be enhanced by knowing more about how politics affects birthing. Political information may be beyond the purview of an introduction to PFPT course. Educators may want to do the research within their community to identify stakeholders, political activists, and political figures that can have

direct impacts on healthcare and birthing within that community to include within a following course. Educators could provide numbers for birth workers to call to encourage activism on the part of those who work directly with birthing people to potentially impact the number of resources available for them and their clientele. One participant also stated she would like to increase her knowledge on the evidence supporting the effectiveness of PFPT throughout the pregnancy and postpartum stage to better inform her clients. Educators should teach participants about pelvic floor physical therapy as an evidence-based practice and provide birth workers with concrete research resources that will support the utilization of this therapy to provide to their clients.

Finally, discussing ways birth workers themselves can overcome barriers to educating their own clients would be an important aspect of an educational program. Research shows financial constraints, time constraints, travel issues, and insurance serve as barriers to obtaining PFPT services (Zoorob, et al., 2017). Educators should encourage doulas to consider holding their own community educational sessions for expecting birthing people who encounter those barriers when attempting to access care. Doulas can utilize the knowledge they have learned through the program they are participating in, as well as what they have learned within their doula scope of practice to educate the public on the effectiveness of including a doula and/or pelvic floor physical therapist on their birthing team. Along with this, they can utilize these sessions to provide basic support instruction to birthing people for those who cannot afford to hire a doula and run into barriers accessing therapy services.

STRENGTHS AND LIMITATIONS

This assessment utilized quantitative interviews with 20 doulas who ranged in age, race, years of experience, location of practice, and predominate race of clients served. Holding these interviews via Google Meet served as a strength as it allowed for interviewing doulas from other regions of the country. The qualitative assessment questions utilized served to provide a good environment that allowed participants to elaborate on their experiences, oftentimes expanding further than what the questions asked. This allowed for other important themes to surface within these discussions and contributed to a more well-rounded list of recommendations for program creation. This assessment also focused on interviewing a group of birthing professionals that spend a large amount of time with their clients. This allowed for real-life perspectives from not only the doulas, but accounts from the clients they served which resulted in authentic answers that reinforced the previously cited evidence referencing barriers to accessing therapy as well as discrimination experienced within the birthing space. Focusing on recruiting doulas who worked with marginalized populations allowed for attaining the perspective of birth workers and birthing people who are in fact most affected by maternal morbidity and mortality, as the research states.

This study does have several limitations. As convenience sampling was used for recruitment for the qualitative interviews, the sampling frame is unknown and the sample was not chosen at random. Therefore, the sample is unlikely to be representative of the population being studied and is not generalizable to the population of doulas. Additionally, the geographical location of the participating doulas is not specific to a particular region. Therefore, this qualitative data does not represent only one specific city/state or geographical area, but instead wherever the participating doula happened to be located. Because of this, it is impossible to generalize this data to the population of birth workers within the United States. Although these limitations may decrease generalizability to all birth workers and their experiences, they also allowed for a variety of perspectives from different areas to be represented, which can also be viewed as a strength of this study.

One of the delimitations I set included targeting doulas who work with marginalized populations. This resulted in most participants being interviewed identifying as Black and/or a person of color because this population tends to focus their practice on working with

marginalized populations since they often fall within these populations as well. This means most of the data collected by the qualitative interview guide are from the perspective of Black doulas and/or doulas of color. Along with this, there is no set database that lists the entirety of doulas practicing within the United States. Therefore, there is no way to know the predominate race of doulas within the country and whether this sample could potentially be representative of that. Conversely, this too can also be viewed as a strength of the study because those who identify as members of minority populations were able to provide their lived experience within the birthing sphere. Finally, retrospectively asking participants for demographic information resulted in the absence of information from three of the participants. When discussing demographics within this study, it is impossible to apply this information across the board as two are not included within those considerations.

CONCLUSION

This research sheds light on the significant gaps in pelvic floor knowledge among not only the general public, but also among healthcare professionals. Some of the biggest barriers contributing to non-attendance to PFPT include lack of time spent with patients and lack of sufficient knowledge to refer when appropriate amongst traditional birthing professionals, such as OBGYN's. The goal of this assessment was to investigate the scope of knowledge on this subject amongst birth workers, specifically doulas, as well as examine factors that may contribute to disparities in maternal morbidity and access to PFPT services. This study assessed doulas' baseline knowledge of the pelvic floor and how it functions throughout pregnancy and postpartum. Additionally, this research identified both existing and missing resources that contribute to their ability to have an impact on their clients' birthing outcomes.

Through this assessment, the researcher developed seven concrete recommendations that serve as suggestions to build an all-encompassing and effective educational program geared towards birthing professionals. This needs assessment found that doulas within this sample did not have significant knowledge about PFPT, though most were able to identify dysfunction when present. Additionally, participants were eager to know more about PFPT to improve their practice. This study also highlights the racial disparities present within the birthing space and how these experiences set a less than optimal depiction of birthing experiences among BIPOC people and may potentially contribute to maternal morbidity and mortality in the U.S. Utilizing these recommendations when creating and implementing educational programs can assist in filling the gaps in knowledge about pelvic floor function amongst other healthcare birthing professionals. As a healthcare system, if birthing professionals work together to help overcome the barriers many patients face, then all healthcare professionals can have an impact at multiple stages within people's birthing journeys, potentially impacting maternal morbidity and consequently maternal mortality, and having a significant impact on the state of maternal health within our country.

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APPENDIX A: FUTURE PROGRAM TOOLS

Pre-Program Assessment:

Demographics

1. Initials: __ __
2. DOB: __ __ / __ __ / __ __ __ __
3. What age are you today?
4. What is your highest level of education?
    a. Did not finish high school
    b. High school Diploma/GED
    c. 2-year college degree (Associate's)
    d. 4-year college degree (Bachelor's)
    e. Master's Degree
    f. PhD or other advanced professional degree
5. What type of birthing provider are you? Select all that apply.
    a. Midwife
    b. Doula
    c. OBGYN
    d. Obstetric Nurse
    e. Lactation Specialist
    f. Pelvic Floor Physical Therapist
    g. I am training and/or planning to become a birthing provider
    h. Other (Specify)

SKIP to question 10 if answer is (g)

6. How long have you been a birthing provider?
7. If you are a doula, what type of certification(s) did you get? Select all that apply.
    a. Labor and Birth Doula
    b. Postpartum Doula
    c. Antepartum Doula
    d. Fertility Doula
    e. Sex Doula
    f. Abortion Doula
    g. Other (Specify)
    h. N/A
8. Which city/state did you get your certification/license?
9. What is the current city/state you practice in?
10. What are the primary types of births you've attended? Select all that apply.
    a. Hospital
    b. Home
    c. Birthing center
    d. I do not attend births
    e. Don't Know
11. What is your race/ethnicity? (Select all that apply)
    a. White
    b. Black or African American

c. American Indian or Alaskan Native
d. Asian or Pacific Islander
e. Other (Specify)
f. Don't know

12. What is the most common race of your patients/clients? (Select all that apply)
    a. White
    b. Black or African American
    c. American Indian or Alaskan Native
    d. Asian or Pacific Islander
    e. Other (Specify)
    f. Don't know

Knowledge of Pelvic Floor PT

13. How much have you heard about pelvic floor physical therapy before?
    a. None
    b. A little
    c. Some
    d. A lot

SKIP to question 16 if answer is "none"

14. Have you ever taken an educational course on the pelvic floor before?
    a. Yes
    b. No
15. Of the pregnant persons that you have served, how many have you referred to a pelvic floor physical therapist?
    a. 0
    b. 1-5
    c. 5-10
    d. 10+
16. Have you ever worked with a person who experienced one or more of these symptoms? (Select all that apply)
    a. Pelvic trauma due to labor and delivery
    b. Leaking
    c. Diastasis Rectus Abdominus (abdominal separation)
    d. All of the above
    e. None of the above
    f. Don't Know

SKIP to question 18 if answer is (e) or (f)

17. In regard to the previous question, did you think these symptoms experienced by your pregnant clients were normal?
    a. Yes
    b. No
    c. Don't Know
18. How can a pelvic floor physical therapist help a person regain/enhance sexual satisfaction when engaging in penetrative intercourse?

a. Physically stretch introitus (vaginal opening)
b. Suggest dilators that can help improve tolerance to things inserted into the vaginal canal
c. Trigger point release to tight pelvic floor muscles contributing to pelvic pain with intercourse
d. All of the above
e. None of the above
f. Don't Know

19. What disorders can a pelvic floor physical therapist address? (Select all that apply)
    a. Urinary/Fecal incontinence
    b. Pelvic girdle pain
    c. Pelvic organ prolapse
    d. General back pain
    e. A and C only
    f. All of the above
    g. None of the above
    h. Don't Know

Knowledge of Pelvic Floor Function

20. How confident are you in your knowledge about how the pelvic floor functions in general?
    a. Very confident
    b. Somewhat confident
    c. Neutral
    d. Unconfident
    e. Very unconfident
21. How confident are you in your knowledge about how the pelvic floor functions throughout pregnancy?
    a. Very confident
    b. Somewhat confident
    c. Neutral
    d. Unconfident
    e. Very unconfident
22. How confident are you in your knowledge about how the pelvic floor functions throughout postpartum?
    a. Very confident
    b. Somewhat confident
    c. Neutral
    d. Unconfident
    e. Very unconfident
23. Which of these contributes to preparing for the birthing event? (Select all that apply)
    a. Breathing exercises
    b. Kegel exercises
    c. Positioning
    d. Pelvic floor lengthening
    e. Clamshell exercises

f. All of the above
g. None of the above

24. How does Pelvic Organ Prolapse (POP) present in a patient/client?
    a. Patient leaks when they cough, sneeze, or laugh
    b. Patient states they feel a sense of heaviness when they stand up and like something may be coming out when they sit to pee
    c. Patient describes 3 specific points of pain on their vulva
25. What are common complaints of someone suffering from urge or stress incontinence?
    a. "Every time I run or pick up my son, I leak a little bit"
    b. "When I feel like I have to pee, I accidentally leak a little bit before making it to the bathroom"
    c. "I only have to use pads when I'm on my period"
    d. A and B only
    e. All of the above
    f. None of the above
26. What is diastasis rectus abdominus (DRA)?
    a. The involuntary loss of urine with physical exertion
    b. The descent of one or more of the anterior vaginal wall, posterior vaginal wall, the uterus (cervix), or the apex of the vagina (vaginal vault or cuff scar after hysterectomy)
    c. The separation of the rectus abdominus muscle bellies via the linea alba

What is your confidence in knowing when/how to address pelvic floor issues?

27. How confident are you in your knowledge about the pelvic floor and how it functions when the body is preparing for pregnancy?
    a. Very confident
    b. Somewhat confident
    c. Neutral
    d. Unconfident
    e. Very unconfident
28. What are some signs your client may need a referral to a pelvic floor physical therapist?
    a. Your client complains of leaking so often they have to regularly wear pads
    b. Your client complains of persistent pelvic pain and pain with intercourse
    c. Your client wants to learn techniques to make the birthing process more comfortable
    d. Your client just had a baby and is suffering from postpartum depression
    e. A, B, and C only
    f. All of the above
    g. None of the above

Post-Program Assessment:

Demographics

1. Initials: __ __
2. DOB: __ __ / __ __ / __ __ __ __
3. What age are you today?
4. What is your highest level of education?
    a. Did not finish high school
    b. High school Diploma/GED
    c. 2-year college degree (Associate's)
    d. 4-year college degree (Bachelor's)
    e. Master's Degree
    f. PhD or other advanced professional degree
5. What type of birthing provider are you? Select all that apply.
    a. Midwife
    b. Doula
    c. OBGYN
    d. Obstetric Nurse
    e. Lactation Specialist
    f. Pelvic Floor Physical Therapist
    g. I am training and/or planning to become a birthing provider
    h. Other (Specify)

SKIP to question 10 if answer is (g)

6. How long have you been a birthing provider?
7. If you are a doula, what type of certification(s) did you get? Select all that apply.
    a. Labor and Birth Doula
    b. Postpartum Doula
    c. Antepartum Doula
    d. Fertility Doula
    e. Sex Doula
    f. Abortion Doula
    g. Other (Specify)
    h. N/A
8. Which city/state did you get your certification/license?
9. What is the current city/state you practice in?
10. What are the primary types of births you've attended? Select all that apply.
    a. Hospital
    b. Home
    c. Birthing center
    d. I do not attend births
    e. Don't Know
11. What is your race/ethnicity? (Select all that apply)
    a. White
    b. Black or African American
    c. American Indian or Alaskan Native
    d. Asian or Pacific Islander

e. Other (Specify)
f. Don't know

12. What is the most common race of your patients/clients? (Select all that apply)
    a. White
    b. Black or African American
    c. American Indian or Alaskan Native
    d. Asian or Pacific Islander
    e. Other (Specify)
    f. Don't know

Knowledge of Pelvic Floor PT

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    b. A little
    c. Some
    d. A lot

SKIP to question 16 if answer is "none"

14. Have you ever taken an educational course on the pelvic floor before?
    a. Yes
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    c. Diastasis Rectus Abdominus (abdominal separation)
    d. All of the above
    e. None of the above
    f. Don't Know

SKIP to question 18 if answer is (e) or (f)

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    a. Yes
    b. No
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18. How can a pelvic floor physical therapist help a person regain/enhance sexual satisfaction when engaging in penetrative intercourse?
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    c. Pelvic organ prolapse
    d. General back pain
    e. A and C only
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    g. None of the above
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    b. Somewhat confident
    c. Neutral
    d. Unconfident
    e. Very unconfident
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    c. Neutral
    d. Unconfident
    e. Very unconfident
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    b. Kegel exercises
    c. Positioning
    d. Pelvic floor lengthening
    e. Clamshell exercises
    f. All of the above

g. None of the above

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    a. Patient leaks when they cough, sneeze, or laugh
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    c. Patient describes 3 specific points of pain on their vulva
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    a. "Every time I run or pick up my son, I leak a little bit"
    b. "When I feel like I have to pee, I accidentally leak a little bit before making it to the bathroom"
    c. "I only have to use pads when I'm on my period"
    d. A and B only
    e. All of the above
    f. None of the above
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    a. The involuntary loss of urine with physical exertion
    b. The descent of one or more of the anterior vaginal wall, posterior vaginal wall, the uterus (cervix), or the apex of the vagina (vaginal vault or cuff scar after hysterectomy)
    c. The separation of the rectus abdominus muscle bellies via the linea alba

What is your confidence in knowing when/how to address pelvic floor issues?

27. How confident are you in your knowledge about the pelvic floor and how it functions when the body is preparing for pregnancy?
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    a. Your client complains of leaking so often they have to regularly wear pads
    b. Your client complains of persistent pelvic pain and pain with intercourse
    c. Your client wants to learn techniques to make the birthing process more comfortable
    d. Your client just had a baby and is suffering from postpartum depression
    e. A, B, and C only
    f. All of the above
    g. None of the above
29. Do you feel this educational program provided you with the tools and knowledge to recognize pelvic dysfunction in your patients/clients?
    a. Yes
    b. Somewhat
    c. Neutral
    d. A little
    e. No

Comments:

30. Do you feel this educational program provided you with the tools and knowledge to refer your patients/clients to a pelvic floor physical therapist if needed?
    a. Yes
    b. Somewhat
    c. Neutral
    d. A little
    e. No

Comments:

31. What were the most valuable components of this educational program?

32. Was there any information learned from the program that was surprising and/or unexpected to you?

33. What topics/information do you wish this educational program discussed that were not touched on?

34. How will you incorporate what you learned in this session into your future work?

APPENDIX B: QUALITATIVE INTERVIEW GUIDE

1. **Have you ever heard of pelvic floor physical therapy before and if so, what do you know about it?**
2. **Have you ever worked with a client that has gone to pelvic PT before? Did their birthing experience seem different from those clients who haven't?**
3. **How confident are you in your knowledge about the pelvic floor and how it functions during pregnancy and postpartum?**
4. **Have you ever worked with a person who experienced one or more of these symptoms: pain due to their pregnancy, leaking, DRA? Did you think these symptoms were normal?**
5. **Have you seen a difference in your clients' birthing experience depending on their race?**
    a. **Were these experiences compounded for you as a Black doula or doula of color?**
6. **Do you feel like you have the tools to combat maternal morbidity/mortality with the training you've received? What kind of knowledge do you wish you had more of in order to help address these issues in your clientele if applicable?**

APPENDIX C: DEMOGRAPHIC INFORMATION COLLECTION TOOL

Initials
D.O.B.
1. Age
2. Race
3. Location of practice (City, state)
4. How long have you been practicing? (years)
5. Where did you complete your training? (City, state)
6. How was your training conducted? (Apprenticeship vs. formal education)
7. When (year) did your training occur?
8. What is the predominate race of the birthing clients you serve?
9. What is your highest level of education?
10. Do you work within the healthcare system as well? (ex. Working in the hospital, at a birthing center, etc.)
11. Do you work within an organization or independently?
12. Do you participate in part-time or full-time doula work?
13. What do you charge for your doula services?
14. Are you able to support yourself solely from this profession or do you have other means of income?
15. Do you engage in pro-bono work?
16. What led you to becoming a doula?

APPENDIX D: CODEBOOK FOR TRANSCRIPT ANALYSIS

Code Name	Definition	Use for	Examples	Don't use for	Code with
*Code name and placement within hierarchy, (**Bold**=parent code)*	*Provide the full definition of the code*	*List specific inclusion criteria*	*Examples that fall in inclusion*	*List exclusion criteria*	*Double-codes or cross codes that may be used with this code*
Knowledge of Pelvic Floor PT	*Participant expresses they have some type of prior knowledge of what pelvic floor physical therapy is.*				
Interview Question	**1. Have you ever heard of pelvic floor physical therapy before and if so, what do you know about it?**				
Specifics of treatment	Any detailed description of what pelvic floor physical therapy encompasses. This type of knowledge includes specifying specific exercises or treatments PTs can provide in this setting and understanding the effectiveness of care for a pregnant person.	Exercises/therapies, purpose for treatment, disorders it can assist with	*"Obviously pelvic floor physical therapy, I think I know can help with urinary problems, incontinence, constipation, prolapse, those kinds of things."*	Stating awareness of its existence without going into details about what it encompasses and/or how it can help a pregnant person. Does not include statements of knowledge of the *function* of the pelvic floor throughout pregnancy and PP	
Via the internet	Description of how knowledge of what pelvic floor physical therapy is being obtained via the internet, including social media outlets (ex. Instagram, Facebook).		*"Yes. I've heard of pelvic floor physical therapy before. There are a few accounts that I follow on Instagram because that's where I typically will connect with people who are in this kind of work."*		
Via inter-professionalism	Description of how knowledge of pelvic floor physical therapy was obtained through working with another type of birthing provider or from doula colleagues.		*"Yes. I actually used to work in OBGYN. So, a lot of times the doctors used to refer the patients out after delivery because a lot of times they have different issues, whether it was like discomfor or just issues with using the bathroom on themselves and different things."*		
No significant knowledge	Any description of little to no knowledge of what pelvic floor physical therapy is.		*"I don't think I've heard of pelvic floor physical therapy before, but I do know a bit about pelvic floor lengthening because I have to do that with my clients as a doula."*		

Code Name	Definition	Use for	Examples	Don't use for	Code with
Clients Experience with Pelvic Floor PT	*Participant states they have clients who have gone to pelvic floor PT before anywhere along the continuum of pregnancy and PP.*				
Interview Question	**2. Have you ever worked with a client that has gone to pelvic PT before? Did their birthing experience seem different from those clients who haven't?**				
Referred clients	Description of participant referring client to pelvic floor PT at any point in time; can be before, during, or after services		*"As a doula we recommend a pelvic floor physical therapist to our clients really really frequently. And even if they are not having issues, we always give them a heads up. We have a postpartum visit with them about a week after their baby is born. And it's at that visit, I always say something along the lines of it's very common to have something like urinary incontinence after having a baby, but after a few weeks, it should stop and then it becomes abnormal. And you should see a therapist."*		
Barriers to attendance	Description of any barriers that present issues to clients of participants accessing pelvic floor PT	Societal stigma, lack of education, provider minimizing symptoms; can also include barriers that have been overcome to get to therapy	*"And I think that so much of this does just happen because women are often just, you know we kind of suffer in silence. Like, pain is almost like the woman's lot. And no one wants to talk to any of their friends and be like, I had a baby and now I have painful sex for a year after. It's like it's almost shameful you know."*		Could overlap with lack of education as well because that could contribue to an existing barrier as to why a client won't attend
PT affecting birth	Description of clients' experience with birthing or QOL after going to pelvic floor PT; participant must be able to specifically state they are aware of their clients' experiences following therapy	QOL includes other processes involved with the PF not just birthing (ex. Incontinence, painful sex)	*"And so what I've notices is those individuals who want or are doing the exercises, who are very mindful about what should be happening to their pelvic floor and or seekiing assistance, typically have shorter pushing phases and report just an extreme comfort in their pregnancy and delivery, with also less trauma afterwards in the postpartum period. So yeah, I absoluely see that as a real viable means of supporting just great birth outcomes."*		

Code Name	Definition	Use for	Examples	Don't use for	Code with
Access to services	Any description that states limitations to accessing services; can also include ease of access to services	Services include physical therapy as well as any other birthing/healthcare services	*"Yeah. And that particular client was actually using Medicaid for their pregnancy and birth and did find a Medicaid pelvic floor PT. So that was one barrier that was taken away."*		Will overlap with barriers to PT as limited access to services can be a significant barrier to pelvic floor PT
Confidence in Pelvic Floor Knowledge	*Participant describes their confidence on the subject of the pelvic floor in general; does not necessarily have to be related to the pregnancy and PP realm.*				
Interview Question	**3. How confident are you in your knowledge about the pelvic floor and how it functions during pregnancy and postpartum?**				
Current PF knowledge	Description of level of confidence of current PF knowledge		*"I mean out of ten, I would probably give myself a seven, because sometimes when my clients are asking me specific questions, I wish that I knew more of the actual names of the anatomy, like the muscles and the actual ligaments."*		
Seeking PF knowledge	Description of specific things pertaining to the pelvic floor and pelvic floor PT that the participant would like to know more of		*"I wish I could see all of that, like internally. You know how there's movies that show you, like, all the muscles inside of things, like scientific movies and stuff like that. I would love for somebody to make one of those where you can see how the body is working to bring a baby out or how babies are resting inside of a body and how the muscles and tendons and ligaments and all of that is like, if it's not right, if it's not healthy, how it can be changed, how it can be altered."*		
Access to PF knowledge	Description of their perception of ease of access to pelvic floor knowledge				
Lack of PF education	Description of any teaching entitiy lacking pelvic floor education; can include societal perceptions and how that affects general lack of pelvic floor education		*"yeah. And ufortunately, a lot of doula training does not discuss the importance of the pelvic floor. And I'm going to be honest with you, I've trained at three different organizations, and neither one of them talked about the pelvic floor. The place that I learned about the pelvic floor was childbirth education."*		

Code Name	Definition	Use for	Examples	Don't use for	Code with
Clients Experiencing Pelvic Floor Issues	who has suffered from any pelvic floor symptoms associated with pregnancy.				
Interview Question	**4. Have you ever worked with a person who experienced one or more of these symptoms: pain, leaking, DRA? Did you think these symptoms were normal?**				
Recognizing disorder	Description of ability to recognize these specific disorders in clients; can include other pelvic disorders if participant is able to specify	Pain, leaking, DRA, prolapse, incontinence			Could overlap with referring clients to PF therapy due to accurately identifying disorder and then subsequently referring out
Perception of symptoms as normal	Description of whether participant perceived recognized disorders as a normal funcion of the pregnancy and PP continuum.	Participant's perception of symptoms, other healthcare providers' perception of symptoms	*"Yes, I have worked with several clients. I have a few postpartum clients now that I think have these issues. Again, I can't diagnose them, but I have worked with some. And at first, I did think it was normal. Like, oh, it will stop over time, but now I'm learing that it's not normal."*		
Race and Birthing	*Participant describes any experiences where they perceived race potentially affected the care their client received.*				
Interview Question	**5. Have you seen a difference in your clients' birthing experience depending on their race?**				
Racism	Any description of racism present within the care of their client leading up to and throughout their birthing event.		*"You know what, I have. I really have. And that's because I've had a number of white private clients and I work a lot with community services for women of color, low income an immigrant women. And I find that the white women, and maybe because they have more conomic resources, they tend to be much more secure in birthing…"*		
Positionality	Any description of how the participant's own positionality was challenged or respected as birthing support within the birthing space within the realm of race.		*"I would say so. Even as a birth worker, I don't feel like we are taken as seriously as non-Black birth wrkers, specifically white birth workers are taken. It's like we are seen as less competent…"*		

Code Name	Definition	Use for	Examples	Don't use for	Code with
Role as doula	Descriptions of what the participant's responsibilities are as a birth support provider. Can include how race can impact this as well.	May only refer to statement of their role as a doula not in relation to race and birthing, but simply their role as a support person	*"Like I tell my clients up front, me and whoever else their support person is, we're a tribe. We're in this together..."*		
Past Trauma	Any description of past traumas that could have contributed to turmoil within the birthing space.		*"Obviously, I'm closer with my Black, brown, and African American clients because [it's] that saying that they say, like, in the world of psychology. It's like when you're born Black, it's like we already need therapists from the moment that we're born because there's like, so much trauma that we have behind us..."*		
Maternal Morbidity/Mortality	*Participant describes their positionality within birthing and whether they feel if they can and do have an affect on maternal morbidity and mortality in birthing spaces.*				
Interview Question	**6. Do you feel like you have the tools to combat maternal morbidity/mortality with the training you've received? What kind of knowledge do you wish you had more of in order to help address these issues in your clientele if applicable?**				
Existing Tools	Description of existing tools the participant has obtained throughout their time working as a birth support worker. Specificities of how these tools were obtained should be included as well.		*"It stats from listening, from talking to people to really trying to figure out what's happening, getting to the root cause of what's going on. That is how you heal."*		
Seeking Tools	Description of tools the participant would like to obtian in order to enhance their birth support practice.		*"Hmmm...pushing positions and the pelvic floor, that would be super duper helpful and how to avoid tearing and that sort of thing."*		
State of Maternal Health	Any description of the current state of maternal health today and how it is related to maternal morbidity and mortality.		*"There's no trust in that space at all. Even if you have one of the best OBGYNs in the world or one of th ebest midwives who's really caring, who's really open, who's really going to spend the time and make sure that this process works well for you. You're not going to trust them becuase your biggest fear is death..."*		Can overlap with race and birthing, specifically racism and how that contributes to the state of maternal health today

Code Name	Definition	Use for	Examples	Don't use for	Code with
Gaps in Healthcare	Description of any gaps in healthcare that result in inadequate services to birthing people.		*"There have been instances in which I felt like the healthcare provider didn't provide all of th einformaiton to their patient that I thought they should have so they could make an informed choice about what, the decision that was on the table."*		This could overlap with descriptions of lack of education as that could be a contributor to gaps present within healthcare
Limits_Scope of Practice	Description of what the participant is able to do in the birthing space within their scope of practice. Can state things one is not able to do due to their scope of practice.		*"I feel really powerless because I am not a healthcare provider. And we tell our clients at the end of the day, like this is just a harsh reality that we have to talk with out clients about."*		Could also overlap with gaps in healthcare as things doulas can't do must be done by other healthcare providers

APPENDIX E: PROGRAM RECOMMENDATIONS

1. **Provide specific instruction on the anatomy and physiology of the pelvic floor.**
2. **Teach participants about how the pelvic floor muscles are affected and change throughout pregnancy, the birthing event, and the postpartum stage.**
3. **Describe what pelvic floor physical therapy is and how it can be effective throughout the journey of pregnancy and the postpartum stage.**
4. **Discuss the four phases of the pregnancy journey: preconception, prenatal, peri-natal/pregnancy, and postpartum; and how pelvic floor physical therapists can have an impact during all stages.**
5. **Teach participants how to recognize disorder and when to appropriately refer.**
6. **Discuss how race impacts the birthing space and maternal health outcomes including sociodemographic factors, barriers to access, as well as considerations for supporting marginalized birthing populations.**
7. **Provide concrete resources for participants to utilize within their practice pertaining to the location and community of which the participants and their clients reside.**