Effects of Delayed Pushing During Second Stage of Labor on Maternal Exhaustion and Bonding in Early Postpartum

By

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Abstract

This project studied the effects of delayed pushing during the second stage of labor on postpartum fatigue, maternal bonding and readiness to take care of their newborns, as well as birthing mothers' satisfaction of their birth experience. Data were collected from postpartum women who volunteered to participate through answering survey questions during their initial postpartum visits. They were between 38 to 42 weeks of gestation when delivered, had uncomplicated pregnancies, did not receive epidural analgesia during labor, and had uncomplicated vaginal deliveries managed by the board certified nurse midwives in the birthing center. After cervical dilation completed, pushing delayed until the laboring women felt a strong physical pushing reflex and they pushed in the position and the way that was more comfortable for them. The birth outcomes were assessed based on the participants' answers to the questions rating their fatigue, exhaustion, and readiness to take care of their newborns within the first 24 hours after the birth. Other related supplementary data including Apgar score, existing perineal laceration, maternal pain level and discomfort after birth, or any other maternal/neonatal complications were collected by reviewing the certified nurse midwives' progress or delivery notes. Of all participants, 84% were highly satisfied with their birth experience, there were no significant maternal or neonatal complications as stated by the certified nurse midwives. Results of the project provided valuable insights such as delayed pushing resulted in reduced maternal fatigue, improved maternal bonding, readiness to breastfeed as well as provide care to newborns within the first 24 hours after childbirth.

Chapter I

Historically, childbirth was done at home and managed by another woman who had some experience in managing the birth. The birth attendees had no medical or operative education or experience and applied minimum intervention throughout the labor**.** Laboring women were free to take any position which made them comfortable and helped them to adapt to the pain. In late nineteenth century, childbirth was moved to hospitals which improved maternal and fetal outcomes and offered safer childbirth experience to the laboring mothers (Durham & Chapman, 2014). However, this movement affected the natural process of childbirth. Natural birth is defined as birth "that is powered by the innate human capacity of the woman and fetus" (Adam & Low, 2016). The hospital care setting brought pharmacological, instrumental and surgical interventions into the natural childbirth process. Close patient observation and sometimes overused interventions have become routine practice (Durham & Chapman, 2014). Labor augmentation or induction, reginal anesthesia, and electronic fetal monitoring were added to the process which caused patients to go from upright position to constant laying down position in beds (Durham & Chapman, 2014).

Current intrapartum management during the second stage of labor has been questioned by many studies (AWHONN, 2017; Chang et al., 2011; Cheng et al., 2014; Gillesby et al., 2010; Gupta et al., 2012; Kelly et al., 2010; Lai et al., 2015; Osborne &Hanson, 2014). These studies focused on assessing the current management of the second stage of labor. By comparing data obtained from patients who initiated pushing right after completed cervical dilation with those laboring women who delayed pushing, researchers tried to identify negative effects of immediate and guided pushing (directed pushing) techniques on maternal and neonatal physical and psychological wellbeing in early postpartum. They also investigated whether delay

pushing is in the favor of laboring mothers (AWHONN, 2017; Chang et al., 2011; Gillesby et al., 2010; Gupta et al., 2012; Kelly et al., 2010; Lai et al., 2015; Osborne &Hanson, 2014; Yee et al., 2016; Declercq et al., 2014; Hogberg & Nystedt., 2017).

Background and Significance

The second stage of labor starts at the time of completed cervical dilation to the birth of the newborn. The duration of second stage is different for nulliparas (never have had any previous deliveries) and multiparas (they have had at least one previous childbirth). There are several physiological phases (Henson & Osborne, 2014).

- Resting or passive fetal descend is the period that the laboring mother is calm and usually there is no urge to push or to bear down. Fetus can passively descend due to force of maternal contractions (Henson & Osborne, 2014).
- Active pushing is the period that the laboring mother is feeling continuing rectal pressure by fetal presenting part and physiologically feels urge to push (Ferguson's reflex). Pressure of the contractions is intensified. This is the most effective phase for laboring mothers to bear down (Henson & Osborne, 2014).
- Third phase is the delivery of the newborn. This is a physiological process that fetus is pushed out through the pelvic outlet by strong uterine contractions, voluntary, or involuntary bearing down (Henson & Osborne, 2014).

Even though the benefits of delayed pushing are discussed by many evidence-based studies and research, there are still many practitioners that make patients start pushing right after completing cervical dilation. This practice puts the laboring mothers into physiological and psychological hardship, postpartum fatigue, postpartum depression which causes inadequate bonding with their newborns. Also, prolonged pushing increases risk of physical injury to the

women's genitourinary systems that requires long-term physical and psychological treatments which become costly for healthcare system (AWHONN, 2017; Chang et al., 2011; Gillesby et al., 2010; Gupta et al., 2012; Kelly et al., 2010; Lai et al., 2015; Osborne &Hanson, 2014; Yee et al., 2016; Declercq et al., 2014; Hogberg & Nystedt, 2017; Volrethongchai et al., 2013).

Problem Statement

Postpartum fatigue caused by prolonged pushing is known as the most common physical and psychological issue during postpartum that can last up to 18 months after delivery (Volrethongchai et al., 2013). It decreases maternal functional abilities and causes poor quality of life, and negative effects mother-infant relationship and parenting (Volrethongchai et al., 2013). Maternal exhaustion, pain, and perineal discomfort caused by prolonged pushing negatively affect maternal bonding with the newborn and delay breastfeeding during early postpartum. Also, it increases the rate of surgical births such as cesarean section or instrumental vaginal deliveries (Lai et al., 2009).

Research shows that laboring women do not receive benefits from pushing when they do not feel the urge to push and it does not expedite labor progress nor improve maternal or neonatal outcomes (Eberlin, 2016). There is a long-lasting belief about the benefits of considering urge to push practice. However, many women who reached complete dilatation did not have urge to push (Henson & Osborne, 2014). Applying the second stage of labor evidence-based practice guidelines that suggests delaying pushing until the laboring woman urges to push have been difficult (Eberlien, 2016). Many laboring women are instructed to start pushing as soon as complete dilation is achieved. They are placed in lithotomy position (birthing position), instructed to hold their breaths when bearing down for 10 seconds and repeat it for 3-4 times with each contraction (directed pushing). This active pushing technique continues until

delivering of the infant which may take several long hours (Henson & Osborne, 2014).

According to a recent survey, 77% of delivered women stated that pain and discomfort caused by pushing during the second stage of labor interfered with their motherhood and taking care of their newborns (Declercq et al., 2014). A significant interference was stated by 14% of newly delivered mothers and 9% of them rated it as extreme interference (Declercq et al., 2014). The physical and psychological stress caused by the second stage of labor was called fumbling in the dark (Hogberg & Nystedt, 2017). This is described as struggling to cope with motherhood due to physical fatigue and psychological stress after prolonged labor and pushing (Hogberg & Nystedt, 2017).

Prolonged pushing is compared to a severe illness that requires long recovery. Being physically weak and trying to take care of newborns puts the newly delivered mothers in physical and emotional extreme hardship. It is difficult for them to transition to motherhood easily and causes postpartum depression which negatively effects establishing adequate bonding with newborns and initiating breastfeeding after the childbirth (Hogberg & Nystedt, 2017). Several studies recommend allowing nulliparas laboring patients to wait for 2 hours in hopes they feel the urge to push before they start actively pushing. This waiting time is decreased to 1 hours for multipara women who have had at least one previous childbirth (Chang et al., 2011; Eberlien, 2016).

Women's abilities to attend to their newborn's needs after having a cesarean section is another concern associated with prolonged labor. According to Lai and her co-researchers (2015) postpartum fatigue and lack of maternal bonding are seen more significantly with women who gave births through a cesarean section. They concluded maternal bonding was weaker in the first few days of postpartum after cesarean section (Lai et al., 2015). Even though all these studies

discussed the benefits of delayed pushing in the second stage of labor, we still observe initiating active pushing right after completed dilation during the second stage of labor. This project hopes to be able to provide a change into the practice based on existing evidences of the benefits of delaying pushing. This project offers evidence-based practice guidelines to prenatal practitioners and nurses, advocates laboring mothers, and improves maternal, physiological and psychological health and wellbeing during early postpartum

Project Aims

This scholarly project introduces evidence-based guidelines into obstetrical patient care related to pushing strategies. The goal is to provide flexible pushing strategies by which laboring women delay pushing until feeling the urge to push and continue with physiologically guided and nondirected pushing. This project empowers the laboring women's wishes, makes them involved and helps them to be the decision-maker for their care which will provide positive experience and increases the rate of patients' satisfaction of their childbirth experience.

Clinical Question

Does delayed pushing decrease maternal exhaustion, promote maternal bonding and breastfeeding as desired in early postpartum?

Congruence with Organizational Strategic Plan

This project will take place in a birthing Center located north of San Diego, California. Their mission is stated as:

> Our mission is to serve as a philosophical and educational center for birthing and family- making, that honors the unique, natural process of each pregnancy and birth, while fostering a woman's trust in herself; and facilitates connection of people to each other in community, teaching respect for our interdependence upon each other and the

planet in order to live whole, healthy, happy and satisfying lives (Tree of Life, 2017).

Synthesis of Evidence

The following are different pushing techniques during the second stage of labor:

1- Closed Glottis or directed pushing refers to voluntary or involuntary pushing against closed glottis. It is also called Valsalva. This technique has been widely used in the second stage of labor (Prins et al., 2011).

2- Open glottis; is involuntary pushing identified by expiratory grunting and vocalization. It normally takes about 6-8 seconds during each contraction (Durham & Chapman, 2014).

3- Nondirected pushing is to guide and coach the laboring mother to push in a way that makes her more comfortable. She is free to push as much as she desires. There is no direction given by the care provider and the patient pushes as needed.

Delayed pushing and its effects on maternal and neonatal outcomes were studied by Osborne and Hansen. (2014) and Vasiri et al. (2016). Optimal use of maternal energy during second stage increases the efficiency during the second stage of labor. Laboring down is a part of natural physiology of the second stage of labor and it should be used in the laboring mothers' benefit during the second stage of labor. According to Osborne & Hansen (2014), delay pushing until further fetal descent shortens pushing time and decreases maternal exhaustion (Osborne & Hansen, 2014). Also, fatigue and pain were significantly less in the interventional laboring mother when she felt the urge to push. By giving that laboring mothers have more power. They found that spontaneous pushing had no negative effect on neonatal outcomes such as neonate's cord blood's pH or neonatal blood oxygen saturation (Vasiri et al., 2016).

Effects of delayed pushing on postpartum fatigue was reviewed by several studies and research groups (Gillesby et al., 2010; Kelly et al., 2010; Lai et al., 2009; Volrethongchai et al., 2013). Kelly and her colleagues (2010) concluded that delayed pushing for 90 minutes significantly made the pushing time shorter. However, it increased overall duration of labor. They believed delayed pushing for 90 minutes did not prolong the second stage of labor. So, they disputed the previous concern of prolonged second stage of labor caused by delayed pushing (Kelly et al., 2010). Lai and her co-researchers concluded delaying pushing until the laboring mother urges to push would significantly reduce postpartum fatigue (Lai et al., 2009). According to Gillesby and her colleagues (2010), postponing pushing by two hours decreased the total pushing time by 27%, but it increased overall labor duration by 59 minutes. However, the laboring women reported less fatigue compared to the group who did not delay pushing (Gillesby et al., 2010).

Volrethongchai and his colleagues reviewed postpartum fatigue after childbirth in 2013. They stated almost 70% of mothers reported childbirth related fatigue during the first two weeks in postpartum. In some cases, negative effects on newly delivered mothers were reported that took up to 18 months after the birth. Newly delivered mothers described it as physical, psychological, and mental exhaustion which negatively affected physical, psychological and social well-being. Also, they stated that postpartum fatigue did have adverse effect on their daily function as a mother, parental bonding and attachments with their babies, and their families, and decreased duration of breastfeeding (Volrethongchai, Neelasmith &Thinkhamrop., 2013).

Pelvic floor disorders (PFDs) are defined as conditions such as stress urinary incontinence, overreact bladder, fecal incontinence, and pelvic organ prolapse. According to Memon and Handa, (2013) 24% of women are suffering from at least one of PFDs. In 2010,

28.1 million women were diagnosed with PFDs in the United States (Memon & Handa, 2013). They found 16% of these women were suffering from urinary incontinence, 3% with pelvic organ prolapse, and 9% with fecal incontinence (Memon & Handa, 2013).

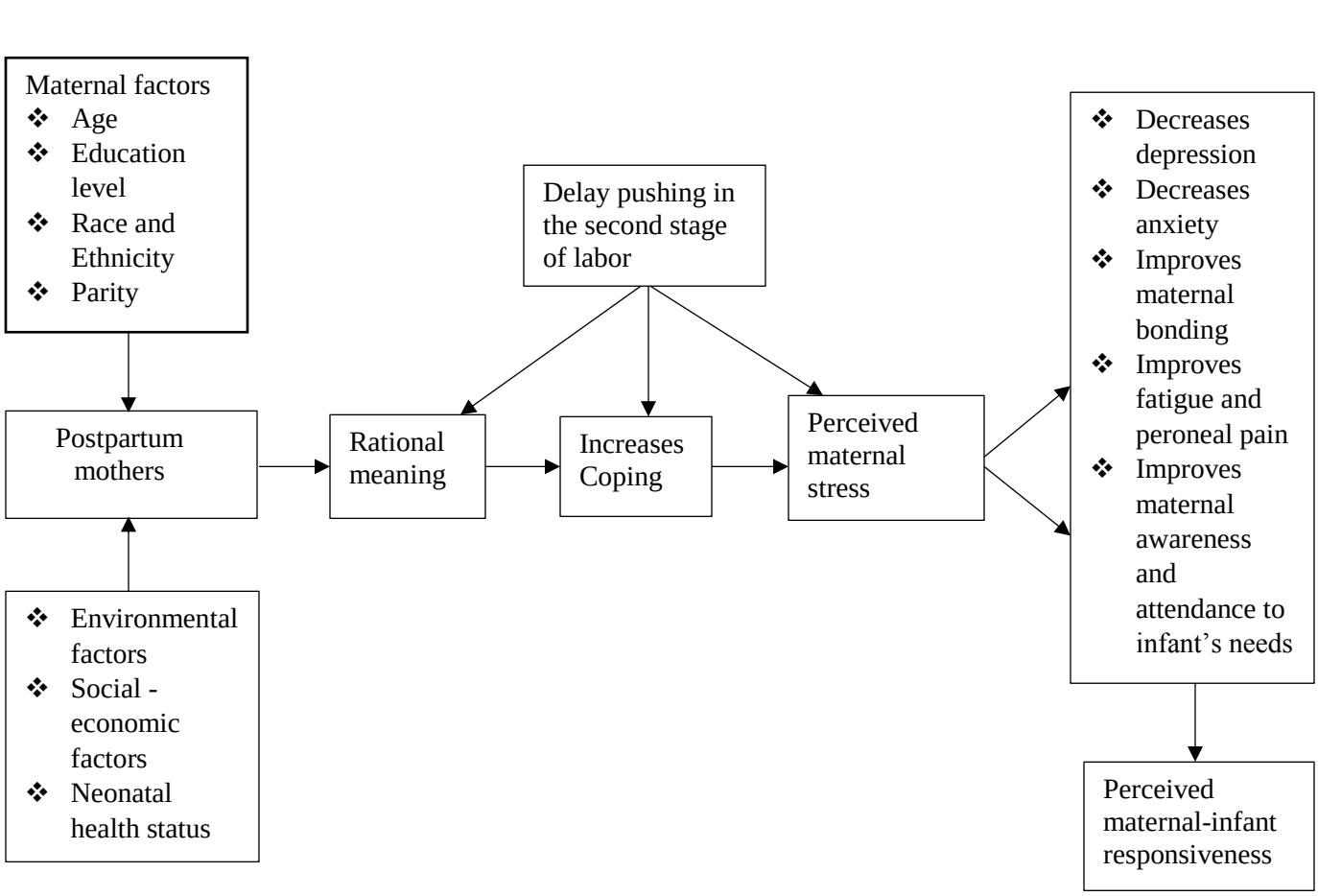
During the second stage of labor and due to force of contraction with no pushing intrauterine pressure can go up to 8 kPa. It increases to 19 kPa during maternal pushing. The increased pressure causes permanent denervation injury to pelvic tissue if it is for extended hours (Memon & Handa, 2013). They concluded prolonged second stage and more specifically pushing more than one hour can cause denervation injury in primiparas delivering mothers. In contrast, they believed passive second stage of labor does not increase risk of PFDs and denervation injuries (Memon & Handa, 2013).

Through conducting research, Yee et al., (2016) and Gromacki and Vincenzo, (2016) reviewed whether prolonged second stage caused by delaying pushing increased incidence of cesarean section in nulliparas. While Gromacki and Vincenzo, (2016) found more than 80% of sample delivered vaginally after spending 5 hours or more in the second stage of labor (Gromacki & Vincenzo, 2016), Yee and her colleagues found that delayed pushing was associated with a higher rate of cesarean section or operative deliveries (11.2% compared with 5.1% in the early pushing group). They also stated delayed pushing was not associated with increasing rate of poor neonatal outcomes compared to the group that pushed early (Yee et al., 2016).

Conceptual or Theoretical Framework

Reva Rubin's framework is considered the framework for this scholarly project. Rubin's framework describes the role of antepartum, intrapartum and postpartum care during childbirth. It also describes the importance of maternal and infant attachment during the

immediate postpartum which is called a very sensitive time (Kinsey &Hupcey, 2013). To achieve optimal neonatal developmental outcomes, parents are recommended to keep close contact with their newborns and create an effective parental bonding (Kinsey & Hupcey, 2013). The Multilingual metaphor repository (below) shows the project framework's three phases. The graphic developed is based on the information learned from reading about Rubin's framework and the article from Howland et al., (2017).



Prolonged pushing and postpartum fatigue may cause ineffective maternal bonding (Hogberg & Nystedt, 2017). This project suggests a change and offers evidence-based practice guidelines which are useful for practitioners and nurses who are involved with intrapartum obstetrical care and the childbirth. The project's key concepts are stress related to prolonged pushing during the

second stage of labor, maternal fatigue and its negative effects on maternal and neonatal physical and psychological heath.

Chapter II: Methodology

Needs Assessment

Postpartum fatigue and its effects on maternal willingness to bond with their newborns is the focus of this project. Postpartum fatigue has been known as a cause of physical and psychosocial hardship for newly delivered mothers (Durham & Chapman, 2014). It may delay breastfeeding which causes neonatal hypoglycemia (Kellams, et al., 2017). Extreme fatigue puts mother and neonate at risk for fall and injury (Kellams et al., 2017). Postpartum depression caused by extreme postpartum fatigue decreases bonding between mother and newborn and delays breastfeeding which affects neonatal growth and development. (Field, 2010). Considering all the concerning effects caused by current practice and management of second stage of labor, there is a need for a change which improves physical and psychological outcomes for the laboring women during the second stage of labor. With providing evidence-based practice guidelines, this project promotes the change into practice which provides benefits to both laboring women and their newborns.

Project Design

This is a pilot project to determine if delayed pushing in the second stage of labor is effective in reducing maternal fatigue in early postpartum, promoting maternal bonding, and initiating prompt breastfeeding when intended.

Setting

This project will take place in ~~a~~ birthing center in northern San Diego. The birthing center is a midwifery care center that offers obstetrical services to pregnant mothers who desire to have unmedicated childbirth with minimized medical interventions. Pregnant mothers are seen for their prenatal care and continue with birthing services, deliveries, and postpartum

care with the center.

Population

The population of this scholarly project are laboring mothers who are under care of board certified nurse midwives. This population is receptive to the change of practice during intrapartum care. The population of pregnant mothers has had uncomplicated pregnancies. The project's population is nulliparas and multiparous and desires to have minimally intervened vaginal deliveries.

Tools of the Project

Questionnaires (Appendix D & E) are the project's tools to gather data. Questionnaire D will be completed by the newly delivered mothers. This questionnaire is designed to be short, containing a few questions about their childbirth and more specifically the second stage of labor experience. With providing short questionnaires, it is hoped to receive more participants' responses.

Appendix E is another questionnaire designed for this project. It will be used to collect additional data such as overall labor progress, length of delay pushing, laceration, and status of maternal discomfort, newborn size which could effect the length of pushing, and maternal bonding with their newborns.

Project Plan

This scholarly project aims to apply an evidence-based change into obstetrical practice by which laboring mother are not obligated to start to push immediately after completed dilation. The delay of pushing in the second stage of labor decreases maternal exhaustion and improves maternal bonding early postpartum. The data collection will be processed in three steps.

1- First step is to inform the newly delivered postpartum women about implementing this

project in the birth center. These women have already delayed pushing as it is a standard practice in the birth center for approximately 90 minutes as recommended by the literature (Gillesby et al., 2010, Kelly et al 2010., Lai et al., 2009. Volrethongchai et al., 2013).

2- Step two is to provide a simple and short questionnaire (Appendix D) to newly delivered women at their first postpartum appointments which is within the first week after their deliveries. The questionnaire is designed to be simple, short and quantifiable. Keeping the questionnaires simple increases the chances of obtaining more responses.

3- Step three is to visit the birthing center 1 time per week to collect the questionnaires as well as other pertinent data from participants' charts (Appendix E). The collected data will be analyzed and reviewed to determine if it was useful in answering the identified question:

> Does delayed pushing decrease maternal exhaustion, improve maternal bonding and breastfeeding in early postpartum, compared to laboring women who started pushing right after completing cervical dilation?

Timelines

This project will take place in a birth center in north of San Diego, CA, from late Winter 2018 until mid-spring 2019 (Appendix F).

Data Analysis

Data will be statistically analyzed in SPSS statistical and analysis software. Since the hired analyst does not have any knowledge about the physiology of the second stage, the bias is decreased, and the accuracy and validity are increased.

Institutional Review Board and/or Ethical Issues

Participants in this project are from different ethnic backgrounds. This project respects and considers all differences and ethnic preferences. There are not any disclosures of

patients' private and sensitive information in this project. Authorization to use or disclose (Release) of participants health Information (Appendix C) is designed to obtain participants consents for this scholarly project to gather their medical information related to this project. To protect patients' privacy and identities the data were collected using patient's medical record numbers (MRN). Medical record numbers were written on the surveys (Appendix D) by the birth center staff. The medical record numbers were erased after answering the surveys' questions (Appendix D&E).

Chapter III: Organizational Assessment and Cost Effectiveness Analysis

Organizational Assessment

The birthing center is a healthcare organization providing a high standard health care and childbirth services with minimal interventions. Patients who desire to deliver in the birthing centers are looking for minimally intervened obstetrical and intrapartum care.

Cost Factors

Budgetary needs involved with this project are listed in appendix G. The source of provided budget is the author. There is no financial assistance, stake holder or donation to this project. I predict other expenses will be added throughout which is considered under other expenses.

Chapter IV: Results

Analysis of Implementation Process

This project took placed between December 2018 to end of April 2019. After receiving approval from Bradley University Committee of Use of Human Subjects in Research (CUHSR), a meeting was held with the funder of the birth center and staff. The data collection process was explained. A flyer (Appendix A) was exhibited throughout the birth center for patients who were laboring to review. This flyer provided general information regarding the implemented scholarly project in the birth center, title, purpose of this project, and the student's information associated with this project. By placing this flyer (Appendix A), patients were made aware that this project was implemented in the birth center and they would have an opportunity to participate if desired.

During this period, a total of 200 pregnant patients delivered in the birth center, 26 Patients (13%) who already delivered in the birth center participated to this project. These individuals were newly delivered females between 22-38 years old, recently had unmedicated vaginal deliveries managed by certified nurse midwives, delayed pushing, and pushed as felt natural without any direct instruction during the second stage of labor. They presented for their postpartum follow up between 2 - 7 days after their childbirth. The participants who were willing to attend received and completed the project packet content listed below:

- Appendix A provided general information to inform the postpartum mothers about the implemented scholarly project, title, purpose of the project, the student and the academical advisor's information. It also informed these individuals that they had an opportunity to participate in the project.

- Appendix B provided more specific information about the project, the researcher's adviser and the researcher's contact information for questions regarding the project.
- Appendix C was an authorization to use or disclose (Release) the participants' health information. By signing this consent, participants authorized the researcher to have access to their related medical records and information to be used by this project.
- Appendix D contained questions about their birth experience that participants answered.
- Appendix E included supplementary forms to appendix D which were completed by researchers by viewing at the participants' charts. Weekly, researcher visited the birth center, collected completed participants' surveys (Appendix D), located the participants' charts through matching medical record numbers written on the participant surveys (Appendix D), reviewed participant's charts, and completed appendix E. By completing appendix E additional required and essential information to this project was obtained. All participants' identifiers were completely removed for appendixes after completing the data collection from charts.

Analysis of Project Outcome Data

According to information obtained through Appendix E, 89 % (23) of participants were able to labor down for 90 minutes or less. These participants pushed between 10 to 60 minutes. More than 75% (19) of participants had some degree of vaginal laceration. They rated post-delivery pain between 3-6 out of scale of 10 and 56% were medicated for post-delivery pain. Babies' birth weights were between 3000 to 3500 grams. All participant breastfed their babies within 30-60 minutes after births. Table 5.1 indicated the patients' responses to surveys (Appendix D). The responses were percentages based on the number of participants.

Table 5.1

Participates responses to surveys (Appendix D)

Questions	Not at all	Somewhat	Moderately So	Very much so
During your labor, did you feel that you were able to relax before you started to push?	15% (4)	0 (0)	38% (10)	46% (12)
To what extent did you feel the urge to push before starting to push?	0 (0)	23% (6)	7.6% (2)	69% (18)
Did you think pushing was the hardest part of your labor?	0 (0)	23% (6)	16% (4)	61.5% (16)
To what extent did you want to delay pushing during your labor?	10% (3)	18% (5)	15% (4)	57% (14)
To what extent were you exhausted immediately after and during the first 24 hours after delivery?	30% (8)	46% (12)	0 (0)	23% (6)
Did you feel you were ready to take care of your newborn immediately after delivery?	0 (0)	20% (5)	32% (8)	48% (13)
Did you feel you were ready to take care of your newborn during the first 24 hours a after delivery?	0 (0)	13% (4)	25% (6)	61.5% (16)
To what extent were you satisfied with your birth experience?	7.6 % (2)	0 (0)	7.6 % (2)	84% (22)

Chapter V: Discussion

Clinical practice ideally should be based on the latest findings and evidence which will bring the best outcome for patients (Simpson, 2006). Many obstetrical awards and labor and delivery units are still not familiar with the best practice in the second stage of labor and more specifically pushing strategies which are beneficial to pregnant women in the second stage of labor (Henson & Osborne, 2014). This project was conducted in a not-for-profit birthing center. Participants answered surveys questions about their childbirth experience in the birth center. A convenient sample of 26 postpartum mothers answered surveys at their first or the second post-delivery follow up appointments which were scheduled within the first week of postpartum. The primary outcome measures were maternal fatigue and perineal injuries and discomfort. The secondary measured outcome was maternal interaction and desire to take care of newborn after delivery.

According to participants' answers, approximately 85% delayed pushing during the second stage of labor at the time cervical dilation was complete until they felt the urge to push. They also pushed in the positions that they were more comfortable with, and 46% of participants were able to relax between contractions during labor. According to participants' responses, 85% of these females had the urge when they started to push. They pushed without any direction or limitation and pushed the way that came to them naturally without being instructed by providers. They pushed as long as they wanted without holding their breath nor pushing while the provider counted 1-10 which was the old way of second stage of labor management (Simpson,2006). They pushed between 10 to 60 minutes. More than half of participants (61.5%) found pushing as the hardest

part of labor.

Active pushing is known as the most stressful time for the fetus (Laughan et al., 2014). By delaying pushing, active pushing is shortened which helps to decrease fetal distress and improves fetal wellbeing during second stage of labor (Laughan et al., 2014). Newborns' wellbeing post-delivery is evaluated by Apgar score which is a quick examination done at 1 and 5 minutes of age by evaluating the newborn's spontaneous breathing efforts, heart rate, muscle tone, reflexes and skin color (MedlinePlus, 2019). Each element has score between 0- 2. An Apgar score of 7, 8, 9 or 10 is a sign of a healthy newborn (MedlinePlus, 2019). In this scholarly project, the participants' newborns' Apgar scores were between 7-9 at 1 minutes and 9-10 at 5 minutes of life.

According to Memon & Handa (2013), severe perineal discomfort resulted by prolonged pushing does commonly interfere with newly delivered mothers' comfort and motherhood (Memon & Handa, 2013). In this project, some degree of perineal discomfort was a complaint of 70% of these postpartum mothers. Maternal exhaustion and a desire to interact with the newborn also were assessed by this project. Findings showed that 48% had the desire to interact with their newborn right after delivery and 61.5% took care of their newborns solely within the first 24 hours of postpartum with 84% of participant rated their birth experience "highly satisfied".

Limitations or Deviations from Project Plan

The small number of 26 participants was a limitation for this scholarly project. According to Faber and Fonseca (2014), small samples or too big group of samples would affect the result of research (Faber & Fonseca, 2014). Also, some of the participants were first time pregnant females who did not have previous experience to compare if there were any differences

between delay or immediate pushing during the second stage of labor which did limit the scholarly project finding.

Implications

Health care providers often resist allowing laboring patients to delay pushing since they believe delay pushing increases the duration of second stage of labor (Simpson, 2006). According to Simpson (2006), Delaying pushing for up to 90 minutes after complete cervical dilation can significantly shorten laboring females' active pushing during the second stage of labor and it does not prolong the second stage of labor (Simpson, 2006). The findings of this project indicated that delaying pushing helped newly delivered mothers to be less exhausted and to enjoy their time with their newborns immediately following delivery with no significant increase in overall time for the second stage of labor.

Chapter VI: Conclusion

One might conclude that recovery from prolonged pushing is comparable with recovery from an illness. Therefore, women who experience prolonged pushing during second stage of labor will have a difficult time to transition to motherhood and be available to take care of their newborns physically and emotionally. It is crucial to advocate for laboring women's wishes during the second stage of labor. Laboring women should be empowered to push in the way they prefer and are comfortable with. It increases their satisfaction and enjoyment of their childbirth experience.

Value of the Project

This scholarly project intended to provide accurate and evidence-based information to care providers such as nurses and nurse midwives who advocate for pregnant women and their families. This project can help them to understand the pathophysiology of the second stage of labor and better options to manage second stage of labor. In addition, with understanding and focusing on what to expect during the second stage of labor, laboring patients will advocate for themselves and their wishes during their childbirth experience.

DNP Essentials

This scholarly project met several DNP Essentials (American Association of College of Nursing, 2011). Clinical scholarship, research and gathering evidence-based data were important aspects and fundamental parts of this practice- focused DNP project. By combining evidence-based knowledge obtained from research and finding gathered from participants' surveys, this project concluded advanced practice strategies which improve the delivery of care during the second stage of labor (essentials I, III, VII, and VIII).

During the time this project was implemented, several meetings and consultations were held with professionals such as obstetricians who had been managing the second stage of labor and pushing strategies for many years. These meetings guided this scholarly project to a purposeful direction and brought different ideas and vision about the second stage of labor management that helps to obtain a better outcome which met the DNP essential VI (American Association of College of Nursing, 2011). These consultations and Interprofessional collaboration with providers improved the strategies taken by this scholarly project which improved the vision and understanding of provided care during the second stage of labor (Essentials VI). Moreover, with empowering pregnant women during the second stage of labor, this project provided a culture that advocated laboring women during the second stage of labor (Essential V).

Plan for Dissemination

This project will be presented to faculty and peers at Bradley University via an online presentation. It also will be available for further review for those who are interested in this topic once it is placed in the DNP Repository.

Attainment of Personal and Professional Goals

As an advanced nurse practitioner and educator, I will invest to advocate for laboring women during the second stage of labor. Findings of this project can positively influence the practice of second stage of labor by sharing evidence-based information and findings with other members of the prenatal team. I will provide childbirth education for pregnant women during prenatal care which optimize their childbirth experience, outcomes and satisfaction.

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Appendix A

Dear Participant:

Congratulations on your new baby. I am a student in the Doctor of Nursing Practice, Family Nurse Practitioner program at Bradley University in Peoria, Illinois. I am implementing a pilot project to learn how new moms rate their satisfaction with their labor and delivery process Therefore, the purpose of this pilot project is to review the effect of delayed pushing during the second stage of labor on maternal exhaustion and maternal bonding in early postpartum. We hope this project will bring a change to provide evidence-based practice guidelines which enhance the maternal and neonatal physiological health and bonding. Your consent to participate in this pilot project is granted by your completing the attached questionnaire. Your participation is anonymous. You do not need to provide your name when completing the short survey. Only medical record number will be used to collect information about your labor experience. These data will be saved on a password protected computer file and only accessed by my research team which includes my project mentor, my faculty advisor, my data analyst, and myself. All data will be destroyed at the end of the project. I sincerely appreciate your kind help and time to answer the following questions.

Appendix B

You are invited to participate in a research study. The purpose of this study is review the effects of delay pushing during labor on newly delivered moms' energy and their willingness to take care of their newborns and bonding during early postpartum compared with the mother who have not delayed pushing. . This study consists of answering questions on a survey. Your participation in this study will take approximately 10 minutes. This is an anonymous survey. there is no link between your name and the research record. Taking part in this study is voluntary. You may choose not to take part or may leave the study at any time.

Questions about this study may be directed to the researcher: Sheila Madgedi at (858) 213-6668 or smadgedi@yahoo.com, or the research advisor in charge of this study: Dr. Peggy Flannigan at (309) 677- 2568 or pnflan@fsmail.bradley.edu. If you have general questions about being a research participant, you may contact the CUHSR office at (309) 677- 3877).

You are voluntarily deciding to participate in this study. Your submission of the survey means that you have read and understood the information presented and have decided and agreed to participate. Your participation also means that all your questions have been answered to your satisfaction. If you think of any additional questions, you should contact the researcher. I sincerely appreciate your kind help and time to answer the following questions if you decide to participate to the project.

Appendix C

Authorization to Use or Disclose (Release) Health Information

that Identifies You for a Research Study

By signing this document, you give permission to Sheila Madgedi, student in the Doctor of Nursing Practice, Family Nurse Practitioner program at Bradley University in Peoria, Illinois to use or disclose (release) your health information that identifies you for the research study described here: **Effects of Delayed Pushing on Maternal Exhaustion and Bonding in Early Postpartum.**

The health information that we may use or disclose (release) for this research includes all information in a medical record, results of physical examinations, medical history related or non-related to your pregnancy, lab tests, labor progress, child birth and postpartum information. This disclosure involves no more than a minimal risk to your privacy based on the following: (A) an adequate plan to protect the identifiers from improper use and disclosure; (B) an adequate plan to destroy the identifiers at the earliest opportunity consistent with the research (unless there is a health or research justification for retaining the identifiers or such retention is otherwise required by law); and (C) adequate written assurances that your protected health information will not be re- used or disclosed to any other person or entity (except as required by law) for authorized oversight of the research study, or for other research for which the use or disclosure would otherwise be permitted; the research could not practicably be conducted without the waiver; and the research could not practicably be conducted without access to and use of the PHI.

Your health information (not your personal information) listed above may be used by and/or disclosed (released) to Sheila Madgedi (Researcher). Sheila Madgedi is required by law to protect your health information. By signing this document, you authorize Sheila Madgedi to use and/or disclose (release) your health information for this research. your information may be shared with other involved parties if permitted by laws governing them. All information that does or can identify you is removed from the research data base, the remaining information will no longer be subject to this authorization and may be used or disclosed for other purposes. No publication or public presentation about the research described above will reveal your identity without another authorization from you.

Please note that you do not have to sign this authorization. The Tree of Life Birth center may not condition (withhold or refuse) treating you on whether you sign this authorization. The research does not involve research-related treatment by the covered entity. The covered entity is not providing health care solely for the purpose of creating protected health information to disclose to the researcher.

Please note that you may change your mind and revoke (take back) this authorization at any time, except to the extent that Sheila Madgedi has already acted based on this authorization and may still use or disclose health information she already has obtained about you as necessary to maintain the integrity or reliability of the research.

To revoke this authorization, you must email Sheila Madgedi at smadgedi@yahoo.com or contact 858-213-6668. This authorization expires by December 30, 2019. Thank you in advance for you kind help with this matter.

Signature of participant or participant's personal representative

_____

Printed name of participant or participant's personal representative

_____

If applicable, a description of the personal representative's authority to sign for the participant

_____

Date

_____

Appendix D

New Moms' Questionnaires

Medical Record number (filled by staff): _____

Which describes your feelings best during labor and within the first 24 hours after delivering your baby? Please circle your response. delivering your baby? Please circle your response.

1. During your labor, did you feel that you were able to relax before you started to push?

   Not at all Somewhat Moderately So Very much so

2. To what extent did you feel the urge to push before actually starting to push?

   Not at all Somewhat Moderately So Very much so

3. Did you think pushing was the hardest part of your labor.

   Not at all Somewhat Moderately So Very much so

4. To what extent did you want to delay pushing during your labor?

   Not at all Somewhat Moderately So Very much so

5. To what extent were you exhausted immediately after and during the first 24 hours after delivery?

   Not at all Somewhat Moderately So Very much so

6. Did you have perineal discomfort and pain during the first 24 hours in postpartum?

   Not at all Somewhat Moderately So Very much so

7. Did you feel you were ready to take care of your newborn immediately after delivery?

   Not at all Somewhat Moderately So Very much so

8. Did you feel you were ready to take care of your newborn during the first 24 hours

after delivery?

Not at all Somewhat Moderately So Very much so

9. To what extent were you satisfied with your birth experience?

Not at all Somewhat Moderately So Very much so

Considering the time, you delayed pushing after you were fully dilated, how satisfied were you by your most recent child birth experience compared to your previous experience if there was any?

_____

_____

_____

_____

_____

_____

Appendix E

This is to be completed by the project team through reviewing the patient's chart.

Medical Record number:

1. Patient age: 2. Number of pregnancies: 3. Number of deliveries
4. Wat was length of labor?

   length of first stage: length of second stage: Length of third stage:
5. Did the patient start to push immediately after reaching full cervical dilation? Yes No

   If no, for how long did the patient labor down?

   Less than 90 minutes more than 90 minutes
6. For how long did the patient push?

   Less than30 minutes 30-60 minutes 60-90 minutes More than 90 minutes
7. Did the patient have vaginal laceration? Yes No

   If yes, what was the patient's vaginal laceration's degree?

   First degree Second degree third degree Fourth degree
8. What was the baby's birth weight?

   Less than 3000 gm 3000-3500 gm 3500-4000 gm More than 4000 gm
9. Did the patient breastfeed within first two hour of birth? Yes No

   Less than 30 minutes 30-60 minutes 60-90 minutes More than 90 minutes
10. What was the patient's pain level after delivery (Numeric, between 0-10)?

    0- 3 (Mild) 3-6 (Moderate) 6-8 (Severe) 8-10 (Intense)
11. Was the patient medicated for pain after delivery? Yes No
12. How much did the patient interact with her baby during first two hours of postpartum?

    Not at all Somewhat Moderately So Very much so

Appendix F: Budget

A. Budget type: Project

B. Start date 4/22/2018 End Date 07/15/2019

C. Description of Equipment or expenses during the scholarly project.

1	Editor (to review and edit paper during Nur725 and Nur 825)	$150
2	Analyst	$0
3	Transportation and related expenses	$0
4	Office supplies	$0
5	Miscellaneous, Electronic needs such as printer and maintenance	$0
6	Fees to purchases related articles and research paper	$100
7	Others: Unexpected expenses such as Fees	$0
	Total Expenses	$250